

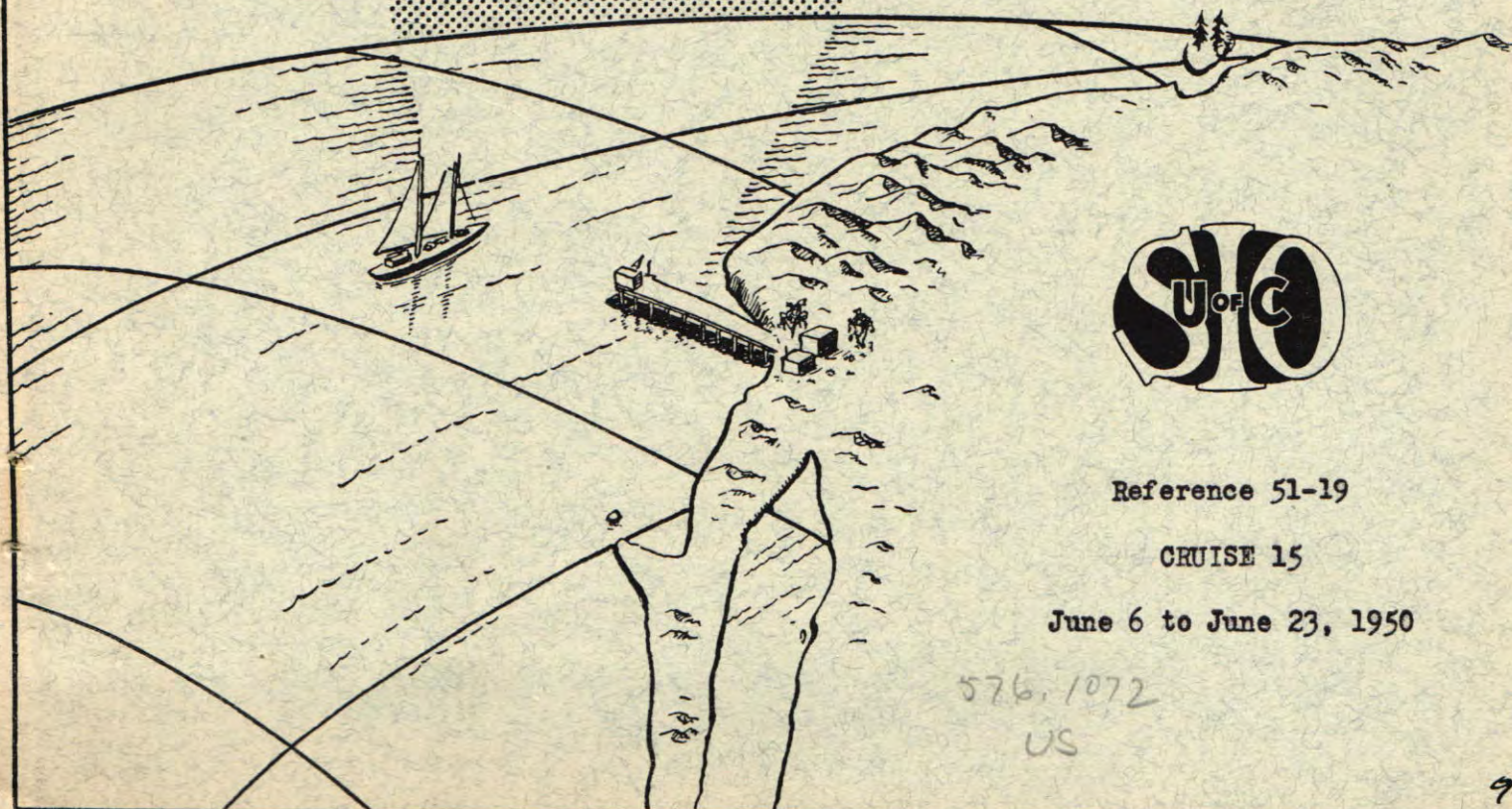
CALIFORNIA STATE FISHERIES LABORATORY  
TERMINAL ISLAND, CALIFORNIA

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NOT CORRECTED

UNIVERSITY OF CALIFORNIA  
SCRIPPS INSTITUTION OF OCEANOGRAPHY

## PHYSICAL AND CHEMICAL DATA

MARINE LIFE RESEARCH PROGRAM  
DIVISION OF OCEANOGRAPHY



Reference 51-19

CRUISE 15

June 6 to June 23, 1950

576.1072  
US



UNIVERSITY OF CALIFORNIA

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Report prepared August 20, 1951

Physical and Chemical Data Report No. 15



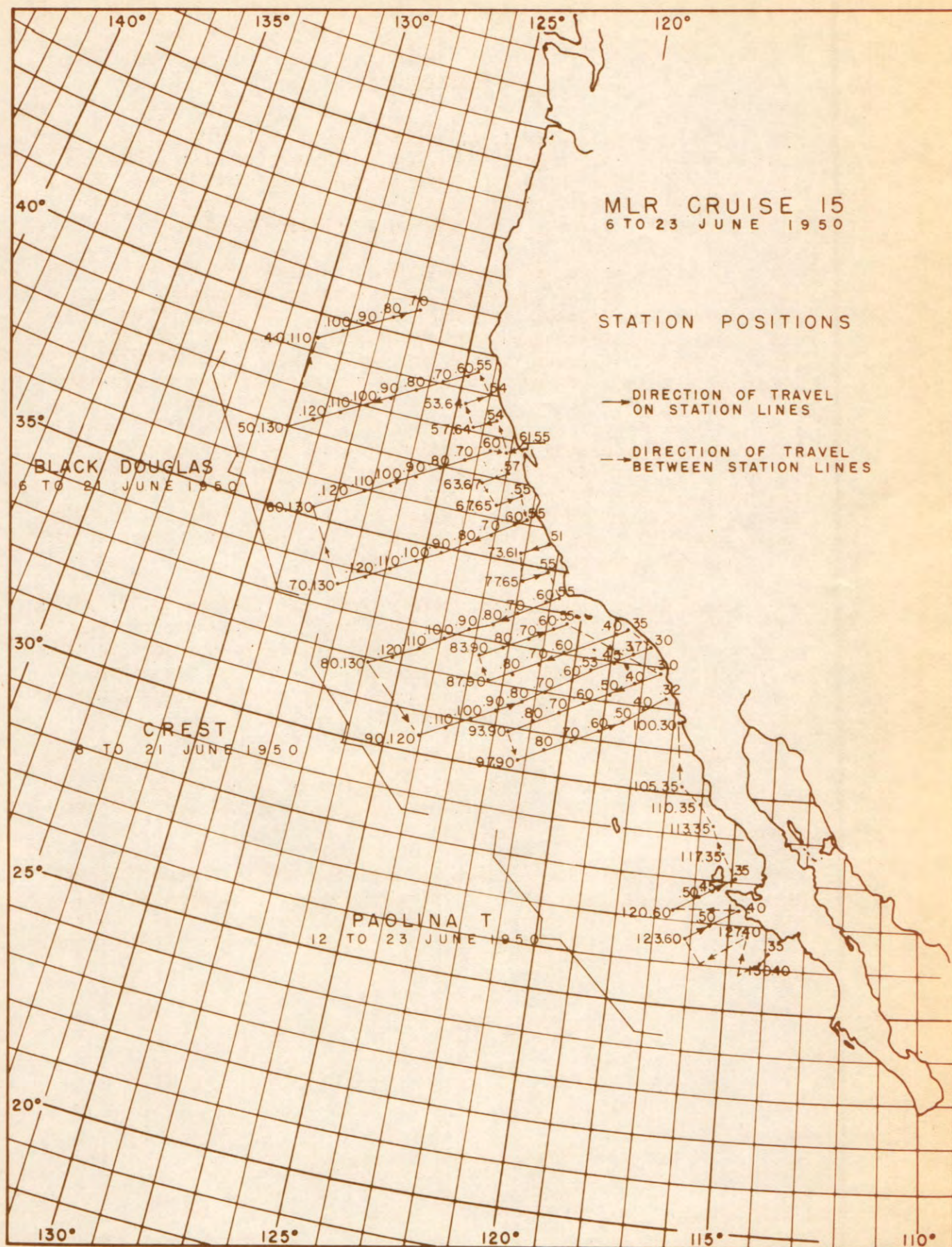
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# INTRODUCTION

The data presented in this report were collected on the fifteenth full-scale cruise conducted in the Marine Life Research Program. The three ships participating were the MV CREST and the MV PAOLINA-T, of the Scripps Institution of Oceanography, and the MV BLACK DOUGLAS, of the U. S. Fish and Wildlife Service.

Data are presented in the form of tabulated values at standard depths and of charts of horizontal distributions. On the charts of horizontal distribution a circle is drawn around the station dot if the quantity represented is missing for that station; an "X" is drawn through the station dot if the value observed does not conform to the field and was not used in drawing the contours.

In the tabulated data extrapolated values are indicated by parentheses. The time given is the time when the messenger was released. When more than one cast was made on a station, both messenger time and both wire angles are given; the time and the wire angle given first are for the shallow cast. Horizontal lines signify the depth to which each cast reached.

Because of Nansen bottle pretripping on Stations 77.65, 90.53, 93.30, 93.60, 93.80, and 123.40, it was difficult to ascertain depths of observation taken. In processing such stations an effort is made to correct for the pretripping. The Nansen bottle at 600 meters on the CREST stations is believed to have leaked occasionally; hence its salinity and oxygen values were modified or rejected.

The original data and the data as modified during various steps in processing are on file with the Division of Oceanography. Copies may be made available. The data are processed on the six standard forms of this division.

The presentation of data in these Physical and Chemical Data Reports does not constitute publication, and this information may be subject to modification as the program continues. Results of various phases of the investigations will be published in scientific journals for general distribution.



## PERSONNEL

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Roger R. Revelle, Director of the Scripps Institution of  
Oceanography

### Oceanographers

Horrer, Paul L., Assistant Oceanographer  
Reid, Robert O., Assistant Oceanographer  
Lewis, George J., Jr., Associate in Oceanography  
Reid, Joseph L., Jr., Associate in Oceanography  
Wooster, Warren S., Associate in Oceanography

### Marine Superintendent

Stose, Clemens W.

### Ships' Captains

Brandal, G., MV CREST  
Joelson, S. M., MV BLACK DOUGLAS  
Ekberg, P. R., MV PAOLINA-T

## PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

### MV BLACK DOUGLAS

Thrailkill, James R., Marine Biologist  
Kramer, David, Marine Biologist  
Colter, John C., Chemistry Aid  
Carlson, Deane R., Marine Technician, Scripps Institution  
Beckwith, Warren W., Jr., Marine Technician, Scripps Institution  
Wisner, Robert L., Senior Laboratory Technician, Scripps  
Institution  
Eschen, E., Student, San Francisco State College  
Kerr, R., Student, San Francisco State College

### MV CREST

Marquardt, Robert L., Senior Marine Technician  
Gossett, David A., Marine Technician  
Sibley, Slade W., Marine Technician  
Wilson, Ray E., Marine Technician, Chemical  
Vetter, Richard C., Research Assistant  
Counts, Robert C., Marine Biologist, U. S. Fish and Wildlife  
Service

### PAOLINA-T

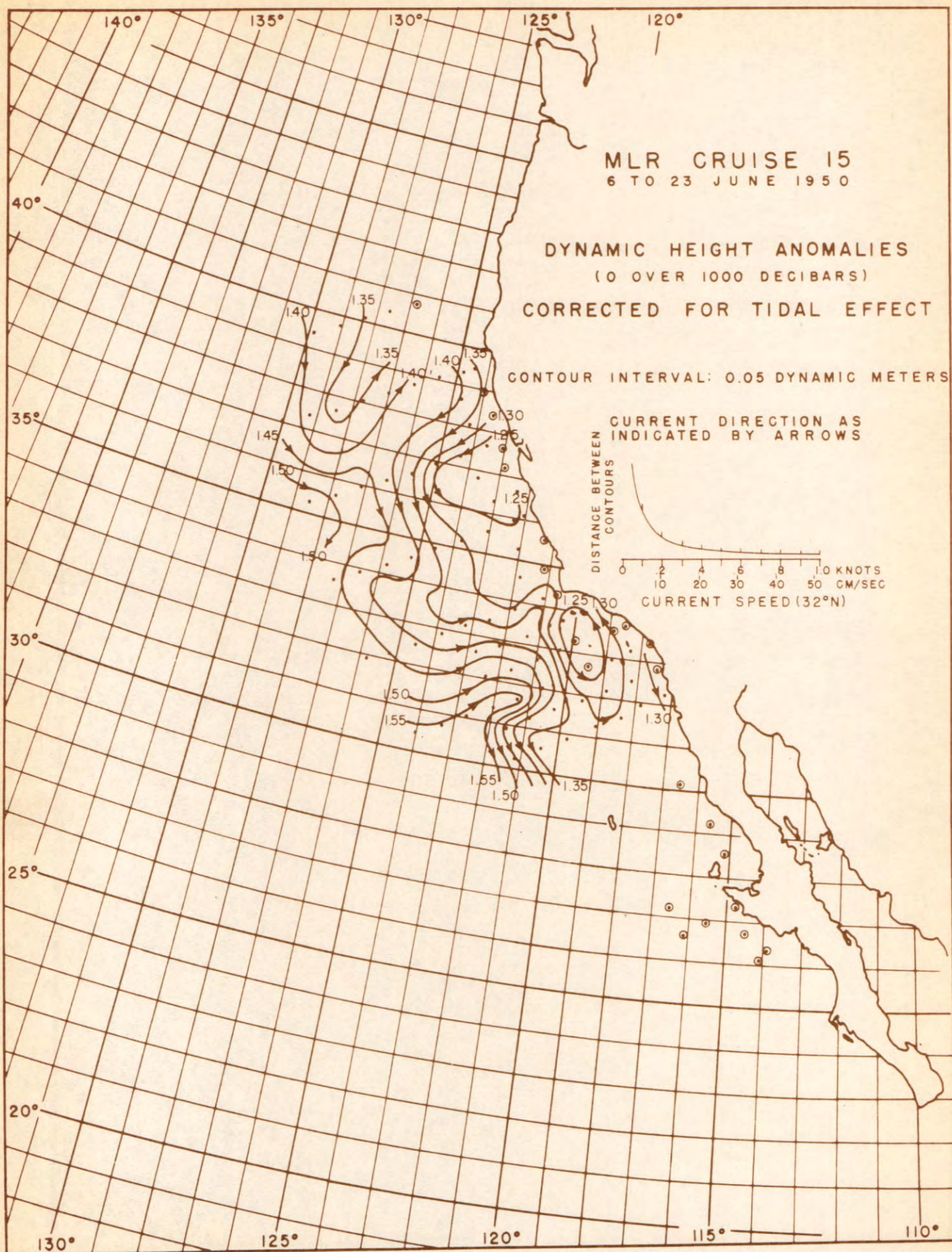
Sampson, Robert K., Jr., Senior Marine Technician  
Clark, Peter S., Marine Technician  
Forshaw, Andrew W., Marine Technician  
Koide, Minoru, Marine Technician, Chemical  
Kvammen, Kenneth R., Research Assistant



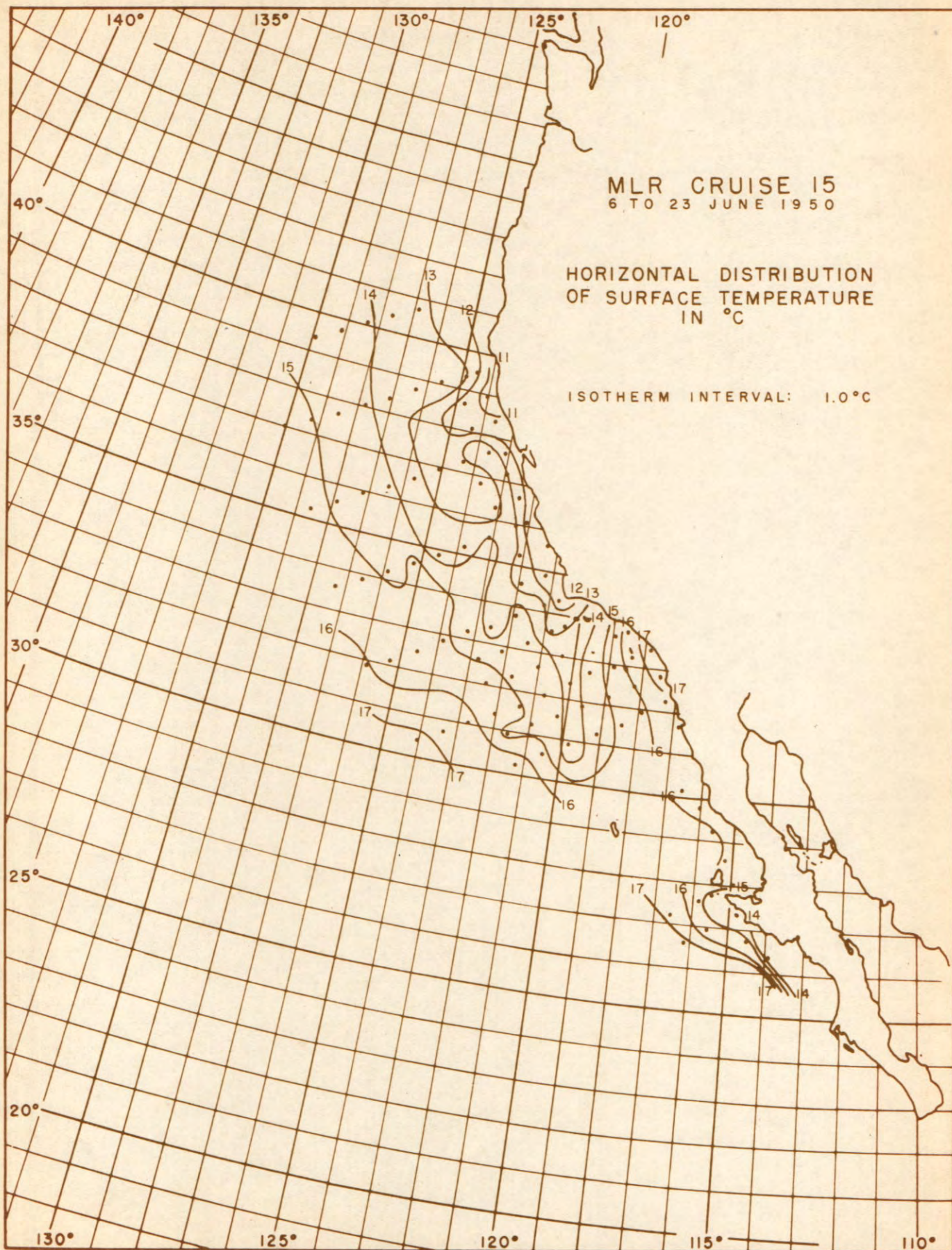
## PERSONNEL PARTICIPATING IN PREPARATION OF DATA

Ames, Robert F., Laboratory Assistant Trainee  
Barney, Ruth M., Secretary  
Barstow, Mary C., Laboratory Technician  
Beckwith, Warren W., Jr., Senior Marine Technician  
Brown, Curthie F., Engineering Aid  
Browne, Geneva S., Engineering Aid  
Cunningham, Leonard M., Jr., Marine Technician  
Eby, Lorraine L., Engineering Aid  
Edwards, Frank H., Jr., Marine Technician  
Forshaw, Andrew W., Engineering Aid  
Gilkey, Robert W., Marine Technician  
Gossett, David A., Senior Marine Technician  
Haddow, Robert W., Marine Technician  
Hargrett, Anne L., Typist-Clerk  
Haulman, Doris V., Engineering Aid  
Hazelbaker, Bernard R., Engineering Aid  
Herreshoff, Karl F., Marine Technician, Chemical  
Hodges, Carol J., Engineering Aid  
Hutchins, Dorsey M., Typist-Clerk  
Jennings, Fennan D., Research Assistant  
Kartrude, Robert C., Senior Engineering Aid  
Matheny, Gladys K., Engineering Aid  
Kirk, Robert W., Laboratory Technician  
Klein, Hans T., Principal Laboratory Technician  
Mao, Han-Lee, Research Assistant  
McCoy, Willis M., Engineering Aid  
Mead, Richard V., Principal Marine Technician  
Miller, Bernadette L., Engineering Aid  
Milne, Peter, Marine Technician  
Payne, Miles M., Laboratory Assistant Trainee  
Propsner, Ruth O., Engineering Aid  
Ratty, Donald K., Marine Technician  
Richardson, Shirley B., Laboratory Technician  
Shippey, Henry G., Marine Technician  
Simmons, Charles V., Laboratory Assistant Trainee  
Smith, Alan C., Senior Marine Technician  
Squire, Mary C., Laboratory Technician  
Trent, Luz F., Laboratory Technician  
Veitzer, Leonard M., Marine Technician  
Wheeler, Marshall L., Jr., Laboratory Technician  
Whitney, Alice D., Engineering Aid  
Wilburn, Virginia A., Statistician  
Wilkes, Frances C., Engineering Aid  
Winchell, Perrin, Marine Technician, Chemical

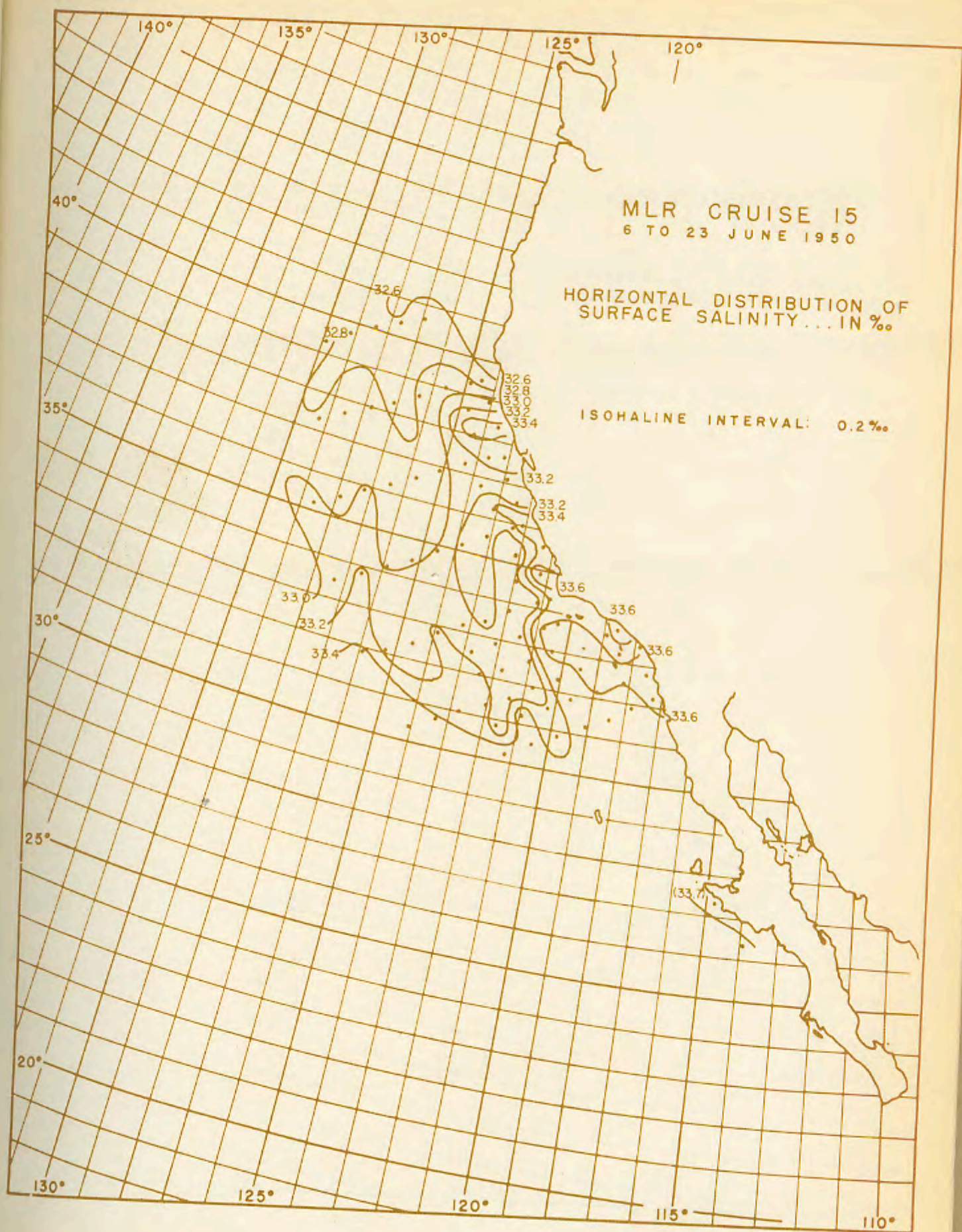




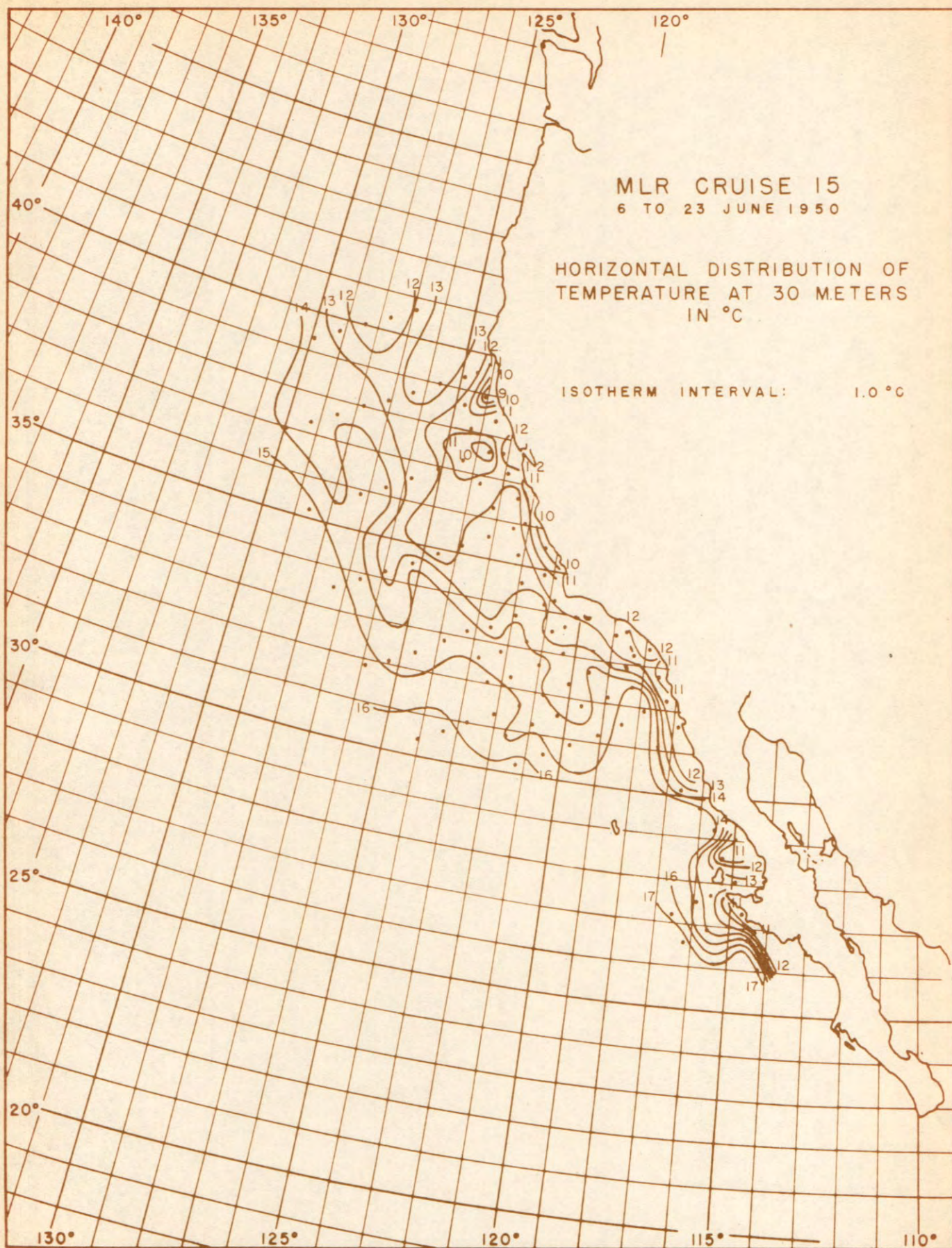














## STATION 40.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 40°42'N 126°55'W June 21, 1950 0058 GCT Wire angle: 25°  
 Sounding: 1,680 fms. Depth of observation: 45 m. Weather: overcast  
 Sea: high Wind: 340°, force 6

| Depth<br>(m) | T<br>(°C) | S<br>(%) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.19     | 32.70    | 24.60                               | 335.1         | .0000                  | -                        | -                               |
| 10           | 13.15     | 32.66    | 24.57                               | 337.5         | .0338                  | -                        | -                               |
| 20           | 13.15     | 32.66    | 24.57                               | 337.7         | .0677                  | -                        | -                               |
| 30           | 12.06     | 32.67    | 24.79                               | 317.2         | .1005                  | -                        | -                               |

## STATION 40.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 40°23'N 127°40'W June 20, 1950 1729 GCT Wire angle: 33°  
 Sounding: 900 fms. Depth of observation: 1,004 m. Weather: overcast  
 Sea: rough Wind: 340°, force 5

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 13.59 | 32.66 | 24.49 | 345.7 | .0000 | 5.82 | - |
| 10   | 13.59 | 32.66 | 24.49 | 345.9 | .0347 | 5.80 | - |
| 20   | 12.40 | 32.74 | 24.78 | 318.0 | .0680 | 5.87 | - |
| 30   | 11.75 | 32.74 | 24.90 | 306.5 | .0994 | 5.88 | - |
| 50   | 11.07 | 32.74 | 25.03 | 295.2 | .1599 | 5.90 | - |
| 75   | 10.10 | 32.75 | 25.20 | 278.9 | .2320 | 5.82 | - |
| 100  | 9.45  | 32.84 | 25.38 | 262.5 | .3001 | 5.39 | - |
| 150  | 9.04  | 32.99 | 25.56 | 246.0 | .428  | 5.02 | - |
| 200  | 8.20  | 33.66 | 26.21 | 184.7 | .537  | 3.52 | - |
| 250  | 7.65  | 33.92 | 26.50 | 158.3 | .623  | 2.52 | - |
| 300  | 7.05  | 34.01 | 26.65 | 144.1 | .699  | 2.00 | - |
| 400  | 6.05  | 34.08 | 26.84 | 127.0 | .836  | 1.32 | - |
| 500  | 5.34  | 34.19 | 27.02 | 111.1 | .956  | .97  | - |
| 600  | 4.88  | 34.25 | 27.12 | 102.1 | 1.063 | .55  | - |
| 700  | 4.59  | 34.28 | 27.17 | 97.4  | 1.164 | .30  | - |
| 800  | 4.20  | 34.37 | 27.29 | 87.1  | 1.257 | .30  | - |
| 1000 | 3.49  | 34.43 | 27.41 | 76.0  | 1.422 | .34  | - |



## STATION 40.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 40°02'N 128°25'W June 20, 1950 1001 GCT Wire angle: 0°  
 Sounding: 2,480 fms. Depth of observation: 1,194 m. Weather: overcast  
 Sea: rough Wind: 300°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 S$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|----------|------------------------|--------------------------|---------------------------------|
| 0            | 14.28     | 32.79    | 24.44                               | 349.6    | .0000                  | 6.05                     | -                               |
| 10           | 13.34     | 32.88    | 24.71                               | 324.9    | .0339                  | 6.15                     | -                               |
| 20           | 12.45     | 32.87    | 24.87                               | 309.3    | .0657                  | 6.21                     | -                               |
| 30           | 11.55     | 32.87    | 25.04                               | 293.5    | .0960                  | 6.19                     | -                               |
| 50           | 9.97      | 32.94    | 25.37                               | 262.3    | .1518                  | 5.80                     | -                               |
| 75           | 8.85      | 33.20    | 25.75                               | 226.2    | .2132                  | 5.87                     | -                               |
| 100          | 8.52      | 33.60    | 26.12                               | 192.1    | .2658                  | 4.40                     | -                               |
| 150          | 7.86      | 33.83    | 26.40                               | 166.3    | .356                   | 2.87                     | -                               |
| 200          | 7.40      | 33.98    | 26.58                               | 149.6    | .436                   | 2.26                     | -                               |
| 250          | 6.95      | 34.04    | 26.69                               | 139.7    | .508                   | 1.93                     | -                               |
| 300          | 6.49      | 34.07    | 26.78                               | 132.1    | .577                   | 1.69                     | -                               |
| 400          | 5.71      | 34.11    | 26.91                               | 120.4    | .704                   | 1.07                     | -                               |
| 500          | 5.20      | 34.20    | 27.04                               | 108.6    | .820                   | .60                      | -                               |
| 600          | 4.76      | 34.27    | 27.15                               | 99.2     | .925                   | .32                      | -                               |
| 700          | 4.40      | 34.33    | 27.23                               | 91.5     | 1.021                  | .30                      | -                               |
| 800          | 4.10      | 34.38    | 27.30                               | 85.2     | 1.110                  | .30                      | -                               |
| 1000         | 3.53      | 34.47    | 27.43                               | 73.5     | 1.270                  | .41                      | -                               |

## STATION 40.100 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 39°42'N 129°10'W June 20, 1950 0325 GCT Wire angle: 7°  
 Sounding: 2,500 fms. Depth of observation: 1,185 m. Weather: partly cloudy  
 Sea: moderate Wind: 310°, force 2

|      |       |         |         |        |         |       |   |
|------|-------|---------|---------|--------|---------|-------|---|
| 0    | 14.39 | 32.75   | 24.39   | 354.8  | .0000   | 5.97  | - |
| 10   | 14.26 | 32.72   | 24.39   | 354.6  | .0356   | 5.93  | - |
| 20   | 13.40 | 32.73   | 24.58   | 337.4  | .0703   | 6.27  | - |
| 30   | 12.27 | 32.75   | 24.81   | 315.1  | .1031   | 6.40  | - |
| 50   | 11.91 | 32.79   | 24.91   | 306.1  | .1655   | 6.45  | - |
| 75   | 9.03  | 32.81   | 25.42   | 257.8  | .2364   | 6.05  | - |
| 100  | 8.97  | 33.35   | 25.85   | 217.3  | .2962   | 5.12  | - |
| 150  | 8.46  | 34.04   | 26.47   | 159.5  | .391    | 2.95  | - |
| 200  | 7.94  | 34.05   | 26.56   | 152.0  | .469    | 2.27  | - |
| 250  | 7.35  | 34.04   | 26.64   | 145.2  | .544    | 1.98  | - |
| 300  | 6.67  | 34.02   | 26.71   | 138.2  | .616    | 1.77  | - |
| 400  | 5.75  | 34.08   | 26.88   | 123.2  | .747    | 1.37  | - |
| 500  | 5.12  | 34.12   | 26.99   | 113.6  | .867    | .74   | - |
| 600  | 4.59  | 34.21   | 27.12   | 101.6  | .975    | .44   | - |
| 700  | 4.24  | 34.29   | 27.22   | 92.6   | 1.073   | .33   | - |
| 800  | 3.99  | 34.35   | 27.29   | 86.1   | 1.164   | .30   | - |
| 1000 | 3.46  | (34.45) | (27.42) | (74.2) | (1.326) | (.32) | - |



STATION 40.110 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 39°23'N 129°55'W June 18, 1950 2035 GCT Wire angle: 17°  
Sounding: 2,460 fms. Depth of observation: 1,131 m. Weather: overcast  
Sea: rough Wind: 310°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.93     | 32.83    | 24.34                               | 359.8         | .0000                  | 5.92                     | -                               |
| 10           | 14.64     | 32.83    | 24.40                               | 354.2         | .0358                  | 6.05                     | -                               |
| 20           | 14.27     | 32.82    | 24.47                               | 347.7         | .0711                  | 5.90                     | -                               |
| 30           | 13.90     | 32.80    | 24.53                               | 342.2         | .1057                  | 5.95                     | -                               |
| 50           | 11.50     | 32.74    | 24.95                               | 302.6         | .1705                  | 6.45                     | -                               |
| 75           | 10.50     | 32.77    | 25.15                               | 284.0         | .2442                  | 6.35                     | -                               |
| 100          | 9.51      | 32.72    | 25.28                               | 272.3         | .3142                  | 6.38                     | -                               |
| 150          | 8.09      | 32.87    | 25.61                               | 240.9         | .443                   | 5.87                     | -                               |
| 200          | 7.70      | 33.72    | 26.33                               | 173.1         | .548                   | 4.88                     | -                               |
| 250          | 7.20      | 33.87    | 26.52                               | 155.8         | .630                   | 4.01                     | -                               |
| 300          | 6.36      | 33.93    | 26.68                               | 140.8         | .705                   | 3.32                     | -                               |
| 400          | 5.20      | 33.96    | 26.85                               | 125.4         | .839                   | 2.45                     | -                               |
| 500          | 4.76      | 34.10    | 27.01                               | 110.8         | .958                   | .99                      | -                               |
| 600          | 4.63      | 34.21    | 27.11                               | 102.1         | 1.066                  | .45                      | -                               |
| 700          | 4.29      | 34.26    | 27.19                               | 95.4          | 1.165                  | .31                      | -                               |
| 800          | 3.92      | 34.29    | 27.25                               | 89.7          | 1.259                  | .32                      | -                               |
| 1000         | 3.50      | 34.39    | 27.37                               | 79.1          | 1.430                  | .44                      | -                               |

STATION 50.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 39°30'N 124°30'W June 17, 1950 0055 GCT Wire angle: 18°  
Sounding: 1,110 fms. Depth of observation: 1,075 m. Weather: overcast  
Sea: moderate Wind: 320°, force 2

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 12.48 | 32.63 | 24.68 | 327.1 | .0000 | 6.40 | - |
| 10   | 12.44 | 32.66 | 24.71 | 324.3 | .0327 | 6.30 | - |
| 20   | 12.30 | 32.68 | 24.75 | 320.6 | .0651 | 6.24 | - |
| 30   | 12.06 | 32.70 | 24.81 | 315.0 | .0970 | 6.23 | - |
| 50   | 9.35  | 32.84 | 25.39 | 260.0 | .1548 | 6.30 | - |
| 75   | 9.29  | 32.87 | 25.43 | 257.3 | .2198 | 5.57 | - |
| 100  | 8.76  | 33.39 | 25.92 | 211.2 | .2787 | 4.87 | - |
| 150  | 8.37  | 33.72 | 26.24 | 181.9 | .378  | 4.02 | - |
| 200  | 7.79  | 33.92 | 26.48 | 159.5 | .464  | 2.69 | - |
| 250  | 7.08  | 34.00 | 26.64 | 144.5 | .540  | 2.26 | - |
| 300  | 6.52  | 34.04 | 26.75 | 134.7 | .611  | 1.87 | - |
| 400  | 5.78  | 34.07 | 26.87 | 124.3 | .741  | .96  | - |
| 500  | 5.39  | 34.14 | 26.97 | 115.4 | .862  | .59  | - |
| 600  | 5.03  | 34.22 | 27.08 | 106.2 | .974  | .45  | - |
| 700  | 4.51  | 34.27 | 27.17 | 97.2  | 1.076 | .33  | - |
| 800  | 4.25  | 34.35 | 27.27 | 89.1  | 1.171 | .33  | - |
| 1000 | 3.80  | 34.44 | 27.38 | 78.9  | 1.340 | .46  | - |



## STATION 50.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 39°20'N 124°52'W June 17, 1950 0510 GCT Wire angle: 2°  
 Sounding: 1,615 fms. Depth of observation: 1,191 m. Weather: overcast  
 Sea: moderate Wind: calm

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.37     | 32.81    | 24.65                               | 330.4         | .0000                  | 6.04                     | -                               |
| 10           | 13.03     | 32.81    | 24.71                               | 324.2         | .0329                  | 6.00                     | -                               |
| 20           | 12.99     | 32.81    | 24.72                               | 323.7         | .0654                  | 6.09                     | -                               |
| 30           | 12.95     | 32.82    | 24.74                               | 322.          | .0978                  | 6.08                     | -                               |
| 50           | 12.66     | 32.86    | 24.83                               | 313.6         | .1618                  | 5.92                     | -                               |
| 75           | 10.85     | 32.84    | 25.14                               | 284.6         | .2370                  | 6.22                     | -                               |
| 100          | 9.85      | 32.86    | 25.33                               | 267.3         | .3064                  | 5.43                     | -                               |
| 150          | 8.46      | 33.41    | 25.98                               | 206.2         | .426                   | 4.08                     | -                               |
| 200          | 8.17      | 33.83    | 26.35                               | 171.7         | .521                   | 2.70                     | -                               |
| 250          | 7.84      | 33.97    | 26.51                               | 157.3         | .604                   | 2.34                     | -                               |
| 300          | 7.15      | 34.04    | 26.66                               | 143.2         | .679                   | 1.93                     | -                               |
| 400          | 5.50      | 34.08    | 26.91                               | 120.1         | .812                   | .94                      | -                               |
| 500          | 4.94      | 34.09    | 26.98                               | 113.7         | .930                   | .59                      | -                               |
| 600          | 4.85      | 34.23    | 27.10                               | 103.2         | 1.039                  | .42                      | -                               |
| 700          | 4.55      | 34.29    | 27.19                               | 96.2          | 1.140                  | .35                      | -                               |
| 800          | 4.08      | 34.33    | 27.27                               | 88.6          | 1.233                  | .33                      | -                               |
| 1000         | 3.65      | 34.43    | 27.39                               | 77.9          | 1.402                  | .42                      | -                               |

## STATION 50.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 39°00'N 125°36.5'W June 17, 1950 1112, 1125 GCT Wire  
 angle: 7°, 7° Sounding: 2,100 fms. Depth of observation: 10, 1183 m.  
 Weather: intermittent slight drizzle Sea: moderate Wind: 320°, force 1

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 13.43 | 32.86 | 24.67 | 327.9 | .0000 | 5.72 | - |
| 10   | 13.48 | 32.84 | 24.65 | 330.6 | .0331 | 5.93 | - |
| 20   | 13.40 | 32.84 | 24.66 | 329.3 | .0662 | 5.99 | - |
| 30   | 13.20 | 32.84 | 24.70 | 325.7 | .0991 | 6.01 | - |
| 50   | 12.65 | 32.86 | 24.83 | 314.4 | .1634 | 6.00 | - |
| 75   | 11.50 | 32.92 | 25.09 | 289.9 | .2394 | 6.02 | - |
| 100  | 9.84  | 33.14 | 25.55 | 246.4 | .3068 | 5.71 | - |
| 150  | 8.77  | 33.46 | 25.97 | 207.1 | .421  | 3.90 | - |
| 200  | 8.18  | 33.89 | 26.40 | 167.4 | .515  | 2.56 | - |
| 250  | 7.66  | 33.98 | 26.54 | 154.0 | .596  | 2.05 | - |
| 300  | 7.20  | 34.02 | 26.64 | 145.4 | .672  | 1.67 | - |
| 400  | 6.31  | 34.04 | 26.78 | 133.3 | .812  | .95  | - |
| 500  | 5.58  | 34.10 | 26.92 | 120.8 | .940  | .68  | - |
| 600  | 4.93  | 34.14 | 27.02 | 110.9 | 1.057 | .45  | - |
| 700  | 4.48  | 34.18 | 27.11 | 103.5 | 1.165 | .35  | - |
| 800  | 4.14  | 34.25 | 27.20 | 95.3  | 1.265 | .33  | - |
| 1000 | 3.68  | 34.43 | 27.39 | 78.2  | 1.441 | .34  | - |



## STATION 50.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 38° 40'N 126° 21'W June 17, 1950 1731, 1758 GCT Wire angle:  
5°, 5° Sounding: 2,360 fms. Depth of observation: 296, 1,183 m. Weather:  
overcast Sea: slight Wind: calm

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.47     | 32.84    | 24.65                               | 330.1         | .0000                  | 5.82                     | -                               |
| 10           | 13.40     | 32.84    | 24.66                               | 329.0         | .0331                  | 5.92                     | -                               |
| 20           | 13.33     | 32.84    | 24.68                               | 328.0         | .0661                  | 6.05                     | -                               |
| 30           | 13.22     | 32.85    | 24.71                               | 325.4         | .0989                  | 6.12                     | -                               |
| 50           | 12.94     | 32.91    | 24.81                               | 316.1         | .1633                  | 6.15                     | -                               |
| 75           | 12.61     | 32.88    | 24.85                               | 312.8         | .2424                  | 5.99                     | -                               |
| 100          | 10.30     | 33.03    | 25.39                               | 262.0         | .3147                  | 5.73                     | -                               |
| 150          | 9.49      | 33.51    | 25.89                               | 214.5         | .435                   | 3.80                     | -                               |
| 200          | 8.45      | 33.78    | 26.27                               | 179.5         | .534                   | 3.05                     | -                               |
| 250          | 7.76      | 33.96    | 26.51                               | 156.9         | .619                   | 2.30                     | -                               |
| 300          | 7.34      | 34.04    | 26.64                               | 145.9         | .695                   | 1.70                     | -                               |
| 400          | 6.43      | 34.07    | 26.78                               | 132.7         | .835                   | 1.30                     | -                               |
| 500          | 5.64      | 34.09    | 26.90                               | 122.3         | .964                   | .77                      | -                               |
| 600          | 5.31      | 34.22    | 27.04                               | 109.6         | 1.081                  | .35                      | -                               |
| 700          | 4.90      | 34.30    | 27.15                               | 99.7          | 1.186                  | .33                      | -                               |
| 800          | 4.41      | 34.35    | 27.25                               | 91.1          | 1.283                  | .32                      | -                               |
| 1000         | 3.93      | 34.43    | 27.36                               | 81.2          | 1.457                  | .36                      | -                               |

## STATION 50.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 38° 20'N 127° 05'W June 18, 1950 0018, 0134 GCT Wire angle:  
2°, 5° Sounding: 2,460 fms. Depth of obsn: 299, 1,190 m. Weather: overcast  
Sea: moderate Wind: 320°, force 2

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 13.61 | 33.75 | 25.32 | 266.0 | .0000 | 6.21 | - |
| 10   | 13.35 | 33.75 | 25.37 | 261.3 | .0265 | 6.17 | - |
| 20   | 13.12 | 33.74 | 25.41 | 257.8 | .0525 | 6.15 | - |
| 30   | 12.90 | 33.72 | 25.44 | 255.4 | .0783 | 6.17 | - |
| 50   | 11.65 | 33.68 | 25.65 | 236.0 | .1277 | 6.30 | - |
| 75   | 10.52 | 33.74 | 25.90 | 212.7 | .1841 | 6.20 | - |
| 100  | 9.67  | 33.75 | 26.05 | 198.6 | .2358 | 6.05 | - |
| 150  | 8.80  | 33.94 | 26.34 | 172.0 | .329  | 4.55 | - |
| 200  | 8.65  | 33.85 | 26.29 | 177.3 | .417  | 2.40 | - |
| 250  | 8.28  | 33.93 | 26.41 | 166.7 | .504  | 2.12 | - |
| 300  | 7.47  | 33.96 | 26.56 | 153.6 | .584  | 2.02 | - |
| 400  | 6.52  | 34.04 | 26.75 | 136.1 | .730  | 1.15 | - |
| 500  | 5.63  | 34.07 | 26.89 | 123.6 | .861  | .86  | - |
| 600  | 5.12  | 34.23 | 27.07 | 106.5 | .977  | .57  | - |
| 700  | 4.77  | 34.32 | 27.18 | 96.6  | 1.080 | .40  | - |
| 800  | 4.38  | 34.33 | 27.24 | 92.2  | 1.175 | .42  | - |
| 1000 | 3.69  | 34.38 | 27.35 | 82.0  | 1.351 | .49  | - |



## STATION 50.100 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 38°00'N 127°49'W June 18, 1950 0805 GCT Wire angle: 0°  
 Sounding: 2,500 fms. Depth of observation: 1,197 m. Weather: overcast  
 Sea: rough Wind: 280°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.12     | 32.94    | 24.59                               | 335.5         | .0000                  | 5.90                     | -                               |
| 10           | 13.98     | 32.94    | 24.62                               | 332.9         | .0336                  | 5.72                     | -                               |
| 20           | 13.63     | 32.94    | 24.69                               | 326.4         | .0667                  | 5.45                     | -                               |
| 30           | 13.52     | 32.94    | 24.72                               | 324.5         | .0993                  | 5.43                     | -                               |
| 50           | 12.20     | 32.97    | 25.00                               | 298.1         | .1619                  | 5.95                     | -                               |
| 75           | 10.07     | 33.03    | 25.42                               | 257.7         | .2318                  | 5.70                     | -                               |
| 100          | 9.27      | 33.26    | 25.74                               | 228.6         | .2929                  | 4.82                     | -                               |
| 150          | 8.29      | 33.78    | 26.29                               | 176.3         | .395                   | 2.80                     | -                               |
| 200          | 7.83      | 33.94    | 26.49                               | 158.6         | .479                   | 2.27                     | -                               |
| 250          | 7.31      | 33.99    | 26.60                               | 148.4         | .556                   | 2.00                     | -                               |
| 300          | 6.62      | 34.00    | 26.70                               | 139.0         | .629                   | 1.77                     | -                               |
| 400          | 5.93      | 34.11    | 26.88                               | 123.2         | .761                   | .88                      | -                               |
| 500          | 5.36      | 34.18    | 27.01                               | 112.1         | .880                   | .60                      | -                               |
| 600          | 4.93      | 34.18    | 27.06                               | 107.9         | .991                   | .35                      | -                               |
| 700          | 4.56      | 34.22    | 27.13                               | 101.5         | 1.096                  | .33                      | -                               |
| 800          | 4.24      | 34.30    | 27.23                               | 92.7          | 1.195                  | .30                      | -                               |
| 1000         | 3.77      | 34.42    | 27.37                               | 80.0          | 1.369                  | .35                      | -                               |

## STATION 50.110 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°40'N 128°33'W June 18, 1950 1405 GCT Wire angle: 6°  
 Sounding: 2,500 fms. Depth of observation: 1,187 m. Weather: overcast  
 Sea: moderate Wind: 310°, force 2

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.30 | 32.92 | 24.54 | 340.5 | .0000 | 5.50 | - |
| 10   | 14.34 | 32.92 | 24.53 | 341.6 | .0342 | 5.60 | - |
| 20   | 14.21 | 32.93 | 24.57 | 338.5 | .0684 | 5.83 | - |
| 30   | 13.95 | 32.97 | 24.65 | 330.7 | .1020 | 5.88 | - |
| 50   | 13.60 | 33.03 | 24.77 | 319.9 | .1674 | 5.70 | - |
| 75   | 12.33 | 32.94 | 24.95 | 303.2 | .2457 | 5.94 | - |
| 100  | 9.55  | 33.10 | 25.57 | 244.8 | .3146 | 5.35 | - |
| 150  | 8.23  | 33.76 | 26.29 | 176.9 | .421  | 3.19 | - |
| 200  | 7.77  | 33.96 | 26.51 | 156.2 | .505  | 2.17 | - |
| 250  | 7.26  | 34.03 | 26.64 | 144.7 | .580  | 1.65 | - |
| 300  | 6.65  | 34.07 | 26.76 | 134.2 | .651  | 1.37 | - |
| 400  | 5.89  | 34.13 | 26.90 | 121.2 | .779  | .69  | - |
| 500  | 5.34  | 34.19 | 27.02 | 111.1 | .897  | .73  | - |
| 600  | 4.92  | 34.30 | 27.15 | 98.9  | 1.003 | .47  | - |
| 700  | 4.57  | 34.34 | 27.22 | 92.7  | 1.099 | .47  | - |
| 800  | 4.29  | 34.36 | 27.27 | 88.9  | 1.191 | .47  | - |
| 1000 | 3.79  | 34.44 | 27.38 | 78.8  | 1.361 | .64  | - |



## STATION 50.120 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°20'N 129°16.5'W June 18, 1950 1949 GCT Wire angle: missing  
 Sounding: 2,600 fms. Depth of observation: 1,193 m. Weather: partly cloudy  
 Sea: slight Wind: 260°, force 2

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.07     | 32.81    | 24.29                               | 364.2         | .0000                  | 5.81                     | -                               |
| 10           | 13.94     | 32.84    | 24.55                               | 339.5         | .0353                  | 5.86                     | -                               |
| 20           | 13.75     | 32.84    | 24.59                               | 336.1         | .0692                  | 5.82                     | -                               |
| 30           | 13.55     | 32.84    | 24.63                               | 332.4         | .1028                  | 5.83                     | -                               |
| 50           | 13.05     | 32.88    | 24.76                               | 320.4         | .1684                  | 5.90                     | -                               |
| 75           | 12.45     | 32.88    | 24.88                               | 309.8         | .2476                  | 5.82                     | -                               |
| 100          | 10.00     | 33.24    | 25.60                               | 241.6         | .3170                  | 5.05                     | -                               |
| 150          | 7.67      | 33.52    | 26.18                               | 186.7         | .425                   | 4.39                     | -                               |
| 200          | 7.36      | 33.86    | 26.49                               | 157.9         | .512                   | 3.00                     | -                               |
| 250          | 6.85      | 33.94    | 26.63                               | 145.8         | .588                   | 2.88                     | -                               |
| 300          | 6.15      | 33.96    | 26.73                               | 135.9         | .659                   | 2.69                     | -                               |
| 400          | 5.27      | 33.96    | 26.84                               | 126.2         | .791                   | 1.55                     | -                               |
| 500          | 5.24      | 34.06    | 26.92                               | 119.5         | .915                   | .63                      | -                               |
| 600          | 4.68      | 34.21    | 27.11                               | 102.7         | 1.027                  | .50                      | -                               |
| 700          | 4.31      | 34.30    | 27.22                               | 92.6          | 1.126                  | .40                      | -                               |
| 800          | 4.10      | 34.36    | 27.29                               | 86.6          | 1.216                  | .33                      | -                               |
| 1000         | 3.50      | 34.43    | 27.41                               | 76.1          | 1.381                  | .40                      | -                               |

## STATION 50.130 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°00'N 130°00'W June 19, 1950 0143 GCT Wire angle: 6°  
 Sounding: 2,700 fms. Depth of observation: 1,190 m. Weather: partly cloudy  
 Sea: moderate Wind: 260°, force 2

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 15.87 | 32.83 | 24.13 | 379.5 | .0000 | 5.04 | - |
| 10   | 14.60 | 32.83 | 24.41 | 353.4 | .0368 | 5.96 | - |
| 20   | 14.35 | 32.82 | 24.45 | 349.3 | .0721 | 5.75 | - |
| 30   | 13.92 | 32.80 | 24.53 | 342.6 | .1068 | 5.65 | - |
| 50   | 12.17 | 32.77 | 24.85 | 312.3 | .1726 | 6.00 | - |
| 75   | 10.66 | 32.72 | 25.08 | 290.3 | .2484 | 5.92 | - |
| 100  | 9.70  | 32.72 | 25.24 | 275.3 | .3195 | 5.97 | - |
| 150  | 8.04  | 33.10 | 25.80 | 223.1 | .445  | 5.10 | - |
| 200  | 8.46  | 33.80 | 26.28 | 178.1 | .546  | 2.99 | - |
| 250  | 7.85  | 33.92 | 26.47 | 161.2 | .631  | 2.25 | - |
| 300  | 7.00  | 33.99 | 26.65 | 144.9 | .708  | 1.88 | - |
| 400  | 5.76  | 34.05 | 26.85 | 125.5 | .845  | 1.27 | - |
| 500  | 5.14  | 34.14 | 27.00 | 112.4 | .965  | .82  | - |
| 600  | 4.66  | 34.18 | 27.09 | 104.7 | 1.074 | .60  | - |
| 700  | 4.25  | 34.23 | 27.17 | 97.1  | 1.176 | .45  | - |
| 800  | 3.90  | 34.29 | 27.25 | 89.5  | 1.270 | .35  | - |
| 1000 | 3.56  | 34.43 | 27.40 | 76.8  | 1.439 | .37  | - |



## STATION 53.54 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 38°58'N 124°00'W June 16, 1950 1741 GCT Wire angle: 22°  
 Sounding: 210 fms. Depth of observation: 302 m. Weather: overcast  
 Sea: moderate Wind: 320°, force 2

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 10.44     | 33.03    | 25.36                               | 262.3         | .0000                  | 5.88                     | -                               |
| 10           | 9.73      | 33.03    | 25.48                               | 251.1         | .0258                  | 6.30                     | -                               |
| 20           | 8.65      | 33.12    | 25.72                               | 228.2         | .0498                  | 5.60                     | -                               |
| 30           | 8.35      | 33.36    | 25.96                               | 206.2         | .0716                  | 4.60                     | -                               |
| 50           | 8.34      | 33.61    | 26.15                               | 187.9         | .1112                  | 3.74                     | -                               |
| 75           | 8.53      | 33.85    | 26.31                               | 173.3         | .1566                  | 4.00                     | -                               |
| 100          | 8.15      | 33.94    | 26.44                               | 161.5         | .1988                  | 3.00                     | -                               |
| 150          | 7.55      | 34.09    | 26.65                               | 142.7         | .275                   | 1.76                     | -                               |
| 200          | 7.36      | 34.09    | 26.67                               | 140.9         | .347                   | 1.54                     | -                               |
| 250          | 7.07      | 34.13    | 26.75                               | 134.7         | .416                   | 1.28                     | -                               |
| 300          | 6.56      | 34.16    | 26.84                               | 126.3         | .482                   | 1.06                     | -                               |

## STATION 53.64 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 38° 38'N 124°44'W June 16, 1950 1037, 0924 GCT Wire angle:  
 2°, 23° Sounding: 2,150 fms. Depth of observation: 25, 1,161 m. Weather:  
 overcast Sea: very rough Wind: 320°, force 5

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 11.53 | 33.26 | 25.35 | 263.7 | .0000 | 5.87 | - |
| 10   | 11.52 | 33.28 | 25.36 | 262.3 | .0264 | 5.87 | - |
| 20   | 11.58 | 33.35 | 25.41 | 258.4 | .0525 | 5.81 | - |
| 30   | 11.70 | 33.35 | 25.39 | 260.7 | .0786 | 5.57 | - |
| 50   | 8.77  | 33.15 | 25.73 | 228.3 | .1277 | 5.20 | - |
| 75   | 9.39  | 33.61 | 25.99 | 204.1 | .1821 | 5.55 | - |
| 100  | 8.50  | 33.80 | 26.28 | 177.0 | .2300 | 2.83 | - |
| 150  | 7.84  | 33.97 | 26.51 | 155.7 | .314  | 2.02 | - |
| 200  | 7.61  | 34.04 | 26.00 | 148.1 | .390  | 1.70 | - |
| 250  | 7.12  | 34.04 | 26.67 | 142.0 | .463  | 1.58 | - |
| 300  | 6.15  | 34.04 | 26.80 | 129.9 | .532  | 1.50 | - |
| 400  | 5.56  | 34.13 | 26.94 | 117.1 | .656  | .69  | - |
| 500  | 5.40  | 34.24 | 27.05 | 108.1 | .770  | .40  | - |
| 600  | 4.87  | 34.25 | 27.12 | 102.0 | .876  | .32  | - |
| 700  | 4.57  | 34.31 | 27.20 | 95.0  | .975  | .33  | - |
| 800  | 4.30  | 34.38 | 27.28 | 87.5  | 1.067 | .33  | - |
| 1000 | 3.60  | 34.44 | 27.40 | 76.5  | 1.233 | .46  | - |



## STATION 57.54 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 38°24'N 123°35'W June 15, 1950 1825 GCT Wire angle: 6°  
 Sounding: 140 fms. Depth of observation: 203 m. Weather: overcast  
 Sea: rough Wind: 320°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 11.21     | 33.48    | 25.58                               | 241.9         | .0000                  | 5.90                     | -                               |
| 10           | 11.16     | 33.48    | 25.58                               | 241.3         | .0243                  | 5.58                     | -                               |
| 20           | 11.16     | 33.48    | 25.58                               | 241.5         | .0485                  | 5.77                     | -                               |
| 30           | 11.15     | 33.48    | 25.59                               | 241.6         | .0727                  | 5.74                     | -                               |
| 50           | 9.92      | 33.55    | 25.85                               | 216.4         | .1188                  | 4.73                     | -                               |
| 75           | 8.86      | 33.69    | 26.14                               | 190.0         | .1699                  | 3.18                     | -                               |
| 100          | 8.47      | 33.79    | 26.27                               | 177.3         | .2161                  | 2.86                     | -                               |
| 150          | 7.90      | 33.95    | 26.49                               | 158.0         | .300                   | 2.61                     | -                               |
| 200          | 7.54      | 34.00    | 26.58                               | 150.0         | .378                   | -                        | -                               |

## STATION 57.64 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 38°04'N 124°19'W June 16, 1950 0047 GCT Wire angle: 12°  
 Sounding: 2,130 fms. Depth of observation: 1,238 m. Weather: overcast  
 Sea: rough Wind: 320°, force 5

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 11.40 | 33.55 | 25.60 | 240.0 | .0000 | -    | - |
| 10   | 11.38 | 33.51 | 25.57 | 242.9 | .0242 | -    | - |
| 20   | 11.34 | 33.55 | 25.61 | 239.4 | .0485 | -    | - |
| 30   | 11.30 | 33.56 | 25.62 | 238.2 | .0724 | -    | - |
| 50   | 10.20 | 33.59 | 25.84 | 218.0 | .1183 | -    | - |
| 75   | 8.88  | 33.75 | 26.18 | 185.9 | .1690 | -    | - |
| 100  | 8.55  | 33.91 | 26.36 | 169.6 | .2138 | -    | - |
| 150  | 8.01  | 34.01 | 26.52 | 155.1 | .295  | -    | - |
| 200  | 7.45  | 34.04 | 26.62 | 145.8 | .371  | 1.99 | - |
| 250  | 6.94  | 34.05 | 26.70 | 138.9 | .443  | 1.56 | - |
| 300  | 6.40  | 34.07 | 26.79 | 130.9 | .511  | 1.26 | - |
| 400  | 5.92  | 34.12 | 26.89 | 122.3 | .639  | 1.16 | - |
| 500  | 5.58  | 34.24 | 27.03 | 110.4 | .756  | .82  | - |
| 600  | 5.08  | 34.31 | 27.14 | 100.1 | .862  | .44  | - |
| 700  | 4.69  | 34.34 | 27.21 | 94.2  | .960  | .37  | - |
| 800  | 4.37  | 34.37 | 27.27 | 89.1  | 1.053 | .34  | - |
| 1000 | 3.73  | 34.44 | 27.39 | 78.1  | 1.222 | .45  | - |



## STATION 60.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°37'N 123°37'W June 15, 1950 0120 GCT Wire angle: 20°  
 Sounding: 1,760 fms. Depth of observation: 1,216 m. Weather: cloudy  
 Sea: rough Wind: 320°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>( $\text{ng/cm}^3$ ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>( $\mu\text{g at/L}$ ) |
|--------------|-----------|----------|------------------------------------|---------------|------------------------|--------------------------|----------------------------------------------|
| 0            | 13.60     | 33.28    | 24.96                              | 300.3         | .0000                  | 5.75                     | -                                            |
| 10           | 13.57     | 33.28    | 24.97                              | 300.0         | .0301                  | 5.90                     | -                                            |
| 20           | 13.50     | 33.29    | 24.99                              | 298.2         | .0602                  | 5.79                     | -                                            |
| 30           | 9.95      | 33.35    | 25.69                              | 231.3         | .0867                  | 5.49                     | -                                            |
| 50           | 9.30      | 33.71    | 26.08                              | 194.8         | .1296                  | 3.50                     | -                                            |
| 75           | 8.72      | 33.84    | 26.28                              | 176.8         | .1763                  | 2.75                     | -                                            |
| 100          | 8.42      | 33.88    | 26.35                              | 169.9         | .2199                  | 2.37                     | -                                            |
| 150          | 7.87      | 34.04    | 26.56                              | 150.9         | .301                   | 1.81                     | -                                            |
| 200          | 7.50      | 34.11    | 26.67                              | 141.3         | .374                   | 1.59                     | -                                            |
| 250          | 7.05      | 34.12    | 26.74                              | 135.1         | .444                   | 1.44                     | -                                            |
| 300          | 6.50      | 34.11    | 26.81                              | 129.3         | .510                   | 1.21                     | -                                            |
| 400          | 5.75      | 34.14    | 26.93                              | 118.7         | .635                   | .71                      | -                                            |
| 500          | 5.28      | 34.21    | 27.04                              | 108.9         | .750                   | .42                      | -                                            |
| 600          | 4.97      | 34.28    | 27.13                              | 101.0         | .856                   | .33                      | -                                            |
| 700          | 4.70      | 34.35    | 27.22                              | 93.6          | .954                   | .33                      | -                                            |
| 800          | 4.47      | 34.42    | 27.30                              | 86.6          | 1.045                  | .33                      | -                                            |
| 1000         | 3.89      | 34.49    | 27.41                              | 76.3          | 1.210                  | .42                      | -                                            |

## STATION 60.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°17'N 124°21'W June 14, 1950 1850 GCT Wire angle: 2°  
 Sounding: 2,225 fms. Depth of observation: 1,185 m. Weather: overcast  
 Sea: rough Wind: 320°, force 4

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 12.97 | 33.08 | 24.93 | 303.0 | .0000 | 5.80 | - |
| 10   | 12.98 | 33.01 | 24.88 | 308.6 | .0307 | 5.81 | - |
| 20   | 12.96 | 33.03 | 24.90 | 307.0 | .0616 | 5.89 | - |
| 30   | 10.70 | 33.07 | 25.35 | 264.2 | .0903 | 5.90 | - |
| 50   | 10.56 | 33.40 | 25.63 | 237.9 | .1407 | 5.78 | - |
| 75   | 9.05  | 33.46 | 25.93 | 219.0 | .1970 | 4.12 | - |
| 100  | 8.55  | 33.72 | 26.21 | 183.6 | .2466 | 3.54 | - |
| 150  | 8.00  | 33.93 | 26.46 | 160.9 | .333  | 2.71 | - |
| 200  | 7.50  | 34.04 | 26.61 | 146.5 | .411  | 2.11 | - |
| 250  | 6.90  | 34.04 | 26.70 | 139.1 | .483  | 1.79 | - |
| 300  | 6.25  | 34.04 | 26.78 | 131.2 | .551  | 1.52 | - |
| 400  | 5.62  | 34.20 | 26.99 | 112.6 | .674  | .70  | - |
| 500  | 5.02  | 34.20 | 27.06 | 106.5 | .784  | .42  | - |
| 600  | 4.75  | 34.32 | 27.19 | 95.4  | .886  | .33  | - |
| 700  | 4.45  | 34.37 | 27.26 | 89.1  | .979  | .34  | - |
| 800  | 4.10  | 34.40 | 27.32 | 83.7  | 1.066 | .35  | - |
| 1000 | 3.61  | 34.53 | 27.47 | 70.0  | 1.222 | .54  | - |



## STATION 60.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°57'N 125°04'W June 14, 1950 1146 GCT Wire angle: 25°  
 Sounding: 2,400 fms. Depth of observation: 1,128 m. Weather: partly cloudy  
 Sea: rough Wind: 320°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 12.30     | 32.92    | 24.94                               | 302.4         | .0000                  | 6.07                     | -                               |
| 10           | 12.24     | 32.94    | 24.97                               | 300.1         | .0302                  | 6.14                     | -                               |
| 20           | 12.17     | 32.92    | 24.96                               | 300.5         | .0604                  | 6.21                     | -                               |
| 30           | 12.10     | 32.92    | 24.98                               | 299.5         | .0905                  | 6.17                     | -                               |
| 50           | 9.42      | 33.21    | 25.67                               | 233.7         | .1441                  | 5.49                     | -                               |
| 75           | 8.47      | 33.54    | 26.08                               | 195.4         | .1980                  | 4.36                     | -                               |
| 100          | 8.53      | 33.80    | 26.27                               | 177.4         | .2449                  | 3.55                     | -                               |
| 150          | 7.79      | 33.98    | 26.53                               | 154.2         | .328                   | 2.51                     | -                               |
| 200          | 7.40      | 34.05    | 26.64                               | 144.4         | .404                   | 1.95                     | -                               |
| 250          | 7.00      | 34.08    | 26.72                               | 137.4         | .475                   | 1.47                     | -                               |
| 300          | 6.51      | 34.09    | 26.79                               | 130.9         | .542                   | 1.14                     | -                               |
| 400          | 5.20      | 34.15    | 27.00                               | 111.2         | .664                   | .87                      | -                               |
| 500          | 4.94      | 34.24    | 27.10                               | 102.5         | .772                   | .35                      | -                               |
| 600          | 4.61      | 34.35    | 27.23                               | 91.5          | .870                   | .30                      | -                               |
| 700          | 4.35      | 34.41    | 27.30                               | 84.9          | .959                   | .31                      | -                               |
| 800          | 4.13      | 34.45    | 27.36                               | 80.3          | 1.042                  | .35                      | -                               |
| 1000         | 3.66      | 34.50    | 27.44                               | 72.8          | 1.197                  | .38                      | -                               |

## STATION 60.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°37'N 125°47'W June 14, 1950 0323 GCT Wire angle: 20°  
 Sounding: 2,480 fms. Depth of observation: 1,103 m. Weather: overcast  
 Sea: rough Wind: 340°, force 4

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 13.42 | 32.86 | 24.67 | 327.7 | .0000 | 5.75 | - |
| 10   | 13.42 | 32.86 | 24.67 | 327.9 | .0329 | 5.84 | - |
| 20   | 13.15 | 32.83 | 24.70 | 325.3 | .0657 | 5.98 | - |
| 30   | 12.85 | 32.83 | 24.76 | 319.9 | .0981 | 6.11 | - |
| 50   | 12.12 | 32.83 | 24.90 | 306.9 | .1611 | 6.21 | - |
| 75   | 11.55 | 32.87 | 25.04 | 294.4 | .2367 | 5.93 | - |
| 100  | 10.37 | 32.91 | 25.28 | 272.0 | .3079 | 6.04 | - |
| 150  | 9.08  | 33.39 | 25.87 | 217.0 | .431  | 4.55 | - |
| 200  | 8.52  | 33.79 | 26.27 | 179.8 | .531  | 3.01 | - |
| 250  | 8.00  | 34.00 | 26.51 | 157.4 | .616  | 2.24 | - |
| 300  | 7.34  | 34.07 | 26.66 | 143.6 | .692  | 1.81 | - |
| 400  | 6.37  | 34.11 | 26.82 | 128.9 | .829  | 1.12 | - |
| 500  | 5.62  | 34.20 | 26.99 | 113.8 | .951  | .59  | - |
| 600  | 5.05  | 34.26 | 27.10 | 103.5 | 1.061 | .31  | - |
| 700  | 4.58  | 34.32 | 27.21 | 94.3  | 1.161 | .27  | - |
| 800  | 4.27  | 34.39 | 27.29 | 86.4  | 1.252 | .27  | - |
| 1000 | 3.85  | 34.49 | 27.42 | 75.8  | 1.416 | .38  | - |



## STATION 60.100 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°17'N 126°30'W June 13, 1950 2003 GCT Wire angle: 35°  
 Sounding: 2,540 fms. Depth of observation: 952 m. Weather: overcast  
 Sea: rough Wind: 350°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \sigma$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.26     | 32.97    | 24.59                               | 336.0         | .0000                  | 5.81                     | -                               |
| 10           | 14.27     | 32.97    | 24.58                               | 336.5         | .0338                  | 5.84                     | -                               |
| 20           | 14.27     | 32.95    | 24.57                               | 338.2         | .0676                  | 5.81                     | -                               |
| 30           | 14.33     | 33.01    | 24.60                               | 335.3         | .1014                  | 5.76                     | -                               |
| 50           | 13.00     | 33.04    | 24.90                               | 307.7         | .1661                  | 5.80                     | -                               |
| 75           | 12.45     | 32.86    | 24.86                               | 311.3         | .2439                  | 5.90                     | -                               |
| 100          | 9.80      | 32.87    | 25.34                               | 265.7         | .3165                  | 5.68                     | -                               |
| 150          | 8.87      | 33.25    | 25.79                               | 224.1         | .440                   | 4.96                     | -                               |
| 200          | 8.26      | 33.78    | 26.30                               | 176.7         | .541                   | 4.00                     | -                               |
| 250          | 7.52      | 33.92    | 26.52                               | 156.5         | .625                   | 3.40                     | -                               |
| 300          | 6.87      | 33.96    | 26.64                               | 145.3         | .701                   | 3.14                     | -                               |
| 400          | 5.64      | 34.02    | 26.85                               | 126.3         | .837                   | 2.17                     | -                               |
| 500          | 4.87      | 34.03    | 26.94                               | 117.3         | .960                   | 1.21                     | -                               |
| 600          | 4.48      | 34.14    | 27.07                               | 105.5         | 1.073                  | .76                      | -                               |
| 700          | 4.36      | 34.29    | 27.21                               | 94.0          | 1.173                  | .39                      | -                               |
| 800          | 4.25      | 34.40    | 27.30                               | 85.4          | 1.264                  | .34                      | -                               |
| 1000         | (3.67)    | (34.46)  | (27.41)                             | (75.9)        | (1.427)                | (.39)                    | -                               |

## STATION 60.110 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°57'N 127°12'W June 13, 1950 1244 GCT Wire angle: 11°  
 Sounding: 2,630 fms. Depth of observation: 1,241 m. Weather: overcast  
 Sea: rough Wind: 350°, force 5

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.77 | 33.01 | 24.51 | 343.4 | .0000 | 5.51 | - |
| 10   | 14.80 | 33.04 | 24.53 | 342.1 | .0344 | 5.41 | - |
| 20   | 14.76 | 33.03 | 24.53 | 342.3 | .0688 | 5.51 | - |
| 30   | 14.32 | 33.00 | 24.60 | 335.8 | .1028 | 5.61 | - |
| 50   | 13.50 | 32.96 | 24.74 | 323.1 | .1690 | 5.71 | - |
| 75   | 12.05 | 32.81 | 24.90 | 307.7 | .2483 | 5.84 | - |
| 100  | 10.85 | 32.90 | 25.19 | 280.7 | .3224 | 5.69 | - |
| 150  | 9.06  | 33.17 | 25.70 | 232.9 | .452  | 4.87 | - |
| 200  | 8.60  | 33.60 | 26.11 | 195.0 | .559  | 4.54 | - |
| 250  | 8.18  | 33.93 | 26.43 | 165.2 | .650  | 4.11 | - |
| 300  | 7.27  | 33.97 | 26.59 | 150.1 | .730  | 3.45 | - |
| 400  | 5.83  | 33.98 | 26.79 | 131.6 | .872  | 1.94 | - |
| 500  | 5.10  | 34.10 | 26.97 | 114.8 | .996  | 1.02 | - |
| 600  | 4.65  | 34.14 | 27.05 | 107.5 | 1.108 | .61  | - |
| 700  | 4.30  | 34.19 | 27.13 | 100.7 | 1.213 | .50  | - |
| 800  | 4.10  | 34.31 | 27.25 | 90.3  | 1.310 | .36  | - |
| 1000 | 3.63  | 34.42 | 27.38 | 78.4  | 1.480 | .43  | - |



## STATION 60.120 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°37'N 127°54.5'W June 13, 1950 0511 GCT Wire angle: 12°  
 Sounding: 2,600 fms. Depth of observation: 1,169 m. Weather: overcast  
 Sea: moderate Wind: 020°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.80     | 32.90    | 24.42                               | 352.0         | .0000                  | 5.60                     | -                               |
| 10           | 14.80     | 32.90    | 24.42                               | 352.3         | .0354                  | 5.32                     | -                               |
| 20           | 14.77     | 32.85    | 24.39                               | 355.6         | .0709                  | 5.50                     | -                               |
| 30           | 13.90     | 32.84    | 24.56                               | 339.2         | .1058                  | 5.71                     | -                               |
| 50           | 13.40     | 32.83    | 24.66                               | 330.8         | .1731                  | 5.83                     | -                               |
| 75           | 11.59     | 32.81    | 24.99                               | 299.6         | .2523                  | 5.83                     | -                               |
| 100          | 10.45     | 32.81    | 25.19                               | 280.7         | .3253                  | 5.59                     | -                               |
| 150          | 8.35      | 33.17    | 25.81                               | 222.4         | .452                   | 4.85                     | -                               |
| 200          | 7.85      | 33.68    | 26.28                               | 178.2         | .553                   | 3.64                     | -                               |
| 250          | 7.32      | 33.87    | 26.51                               | 157.4         | .637                   | 3.06                     | -                               |
| 300          | 6.67      | 33.96    | 26.67                               | 142.6         | .713                   | 2.64                     | -                               |
| 400          | 5.66      | 34.00    | 26.83                               | 128.0         | .849                   | 1.51                     | -                               |
| 500          | 5.07      | 34.09    | 26.97                               | 115.2         | .972                   | .86                      | -                               |
| 600          | 4.52      | 34.22    | 27.13                               | 100.1         | 1.081                  | .33                      | -                               |
| 700          | 4.20      | 34.29    | 27.22                               | 92.1          | 1.178                  | .30                      | -                               |
| 800          | 4.00      | 34.32    | 27.27                               | 88.4          | 1.269                  | .32                      | -                               |
| 1000         | 3.53      | 34.42    | 27.39                               | 77.2          | 1.436                  | .35                      | -                               |

## STATION 60.130 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°17'N 128°37'W June 12, 1950 2120 GCT Wire angle: 17°  
 Sounding: 2,580 fms. Depth of observation: 1,099 m. Weather: overcast  
 Sea: moderate Wind: 340°, force 3

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 15.61 | 33.11 | 24.40 | 353.5 | .0000 | 5.58 | - |
| 10   | 15.63 | 33.10 | 24.39 | 354.9 | .0356 | 5.36 | - |
| 20   | 15.56 | 33.13 | 24.43 | 351.5 | .0710 | 5.40 | - |
| 30   | 15.43 | 33.13 | 24.46 | 349.1 | .1062 | 5.57 | - |
| 50   | 15.32 | 33.16 | 24.51 | 345.1 | .1760 | 6.06 | - |
| 75   | 14.66 | 33.27 | 24.73 | 324.1 | .2601 | 5.30 | - |
| 100  | 13.62 | 33.33 | 25.00 | 299.6 | .3386 | 4.56 | - |
| 150  | 10.70 | 33.25 | 25.49 | 253.4 | .478  | 5.09 | - |
| 200  | 9.10  | 33.56 | 26.00 | 205.6 | .593  | 4.76 | - |
| 250  | 8.17  | 33.81 | 26.34 | 174.0 | .689  | 4.54 | - |
| 300  | 7.36  | 33.91 | 26.53 | 155.8 | .772  | 4.12 | - |
| 400  | 5.94  | 33.97 | 26.77 | 133.7 | .918  | 2.06 | - |
| 500  | 5.10  | 34.01 | 26.90 | 121.5 | 1.047 | 1.20 | - |
| 600  | 4.64  | 34.12 | 27.04 | 108.9 | 1.163 | .54  | - |
| 700  | 4.29  | 34.20 | 27.14 | 99.8  | 1.268 | .35  | - |
| 800  | 4.07  | 34.27 | 27.22 | 93.0  | 1.366 | .35  | - |
| 1000 | 3.64  | 34.40 | 27.37 | 80.0  | 1.541 | .35  | - |



## STATION 61.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°37'N 123°07.5'W June 15, 1950 0650 GCT Wire angle: 40°  
 Sounding: 540 fms. Depth of observation: 632 m. Weather: overcast  
 Sea: rough Wind: 320°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-----------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 12.81     | 33.26    | 25.10                 | 286.8         | .0000                  | 6.00                     | -                               |
| 10           | 12.82     | 33.27    | 25.11                 | 286.5         | .0288                  | 6.09                     | -                               |
| 20           | 12.80     | 33.33    | 25.16                 | 281.9         | .0573                  | 6.09                     | -                               |
| 30           | 12.42     | 33.32    | 25.23                 | 275.9         | .0853                  | 6.09                     | -                               |
| 50           | 11.63     | 33.33    | 25.38                 | 261.4         | .1393                  | 5.94                     | -                               |
| 75           | 9.18      | 33.58    | 26.00                 | 203.1         | .1977                  | 4.17                     | -                               |
| 100          | 8.61      | 33.78    | 26.25                 | 180.1         | .2459                  | 3.11                     | -                               |
| 150          | 8.08      | 33.90    | 26.42                 | 164.3         | .333                   | 3.01                     | -                               |
| 200          | 7.64      | 34.02    | 26.58                 | 150.0         | .412                   | 2.35                     | -                               |
| 250          | 7.38      | 34.08    | 26.66                 | 142.7         | .485                   | 1.63                     | -                               |
| 300          | 7.16      | 34.12    | 26.73                 | 137.4         | .556                   | 1.24                     | -                               |
| 400          | 6.40      | 34.15    | 26.85                 | 126.4         | .689                   | .97                      | -                               |
| 500          | 5.70      | 34.19    | 26.97                 | 115.6         | .811                   | .51                      | -                               |
| 600          | 5.28      | 34.29    | 27.10                 | 104.1         | .922                   | .39                      | -                               |

## STATION 63.57 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°09'N 122°58'W June 6, 1950 0335 GCT Wire angle: 15°  
 Sounding: 320 fms. Depth of observation: 382 m. Weather: partly cloudy  
 Sea: very rough Wind: 320°, force 6

|     |       |       |       |       |       |   |   |
|-----|-------|-------|-------|-------|-------|---|---|
| 0   | 13.05 | 33.15 | 24.97 | 299.4 | .0000 | - | - |
| 10  | 13.05 | 33.15 | 24.97 | 299.6 | .0301 | - | - |
| 20  | 12.30 | 33.36 | 25.28 | 270.5 | .0587 | - | - |
| 30  | 11.75 | 33.38 | 25.40 | 259.4 | .0853 | - | - |
| 50  | 10.08 | 33.39 | 25.70 | 230.8 | .1345 | - | - |
| 75  | 9.10  | 33.53 | 25.97 | 205.5 | .1894 | - | - |
| 100 | 8.87  | 33.75 | 26.18 | 186.2 | .2387 | - | - |
| 150 | 8.02  | 33.90 | 26.43 | 163.4 | .327  | - | - |
| 200 | 7.88  | 34.07 | 26.58 | 149.7 | .406  | - | - |
| 250 | 7.46  | 34.14 | 26.70 | 139.3 | .478  | - | - |
| 300 | 7.03  | 34.14 | 26.76 | 134.1 | .547  | - | - |



## STATION 63.67 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°49'N 123°41'W June 6, 1950 2034 GCT Wire angle: 22°  
 Sounding: 2,040 fms. Depth of observation: 1,244 m. Weather: partly cloudy  
 Sea: high Wind: 320°, force 6

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | 10 <sup>5</sup> $\delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|--------------------------|------------------------|--------------------------|---------------------------------|
| 0            | 12.01     | 33.12    | 25.15                               | 282.5                    | .0000                  | 6.94                     | -                               |
| 10           | 12.04     | 33.08    | 25.11                               | 286.2                    | .0285                  | 6.22                     | -                               |
| 20           | 11.92     | 33.09    | 25.14                               | 283.5                    | .0571                  | 6.10                     | -                               |
| 30           | 11.65     | 33.12    | 25.22                               | 276.8                    | .0853                  | 6.00                     | -                               |
| 50           | 9.54      | 33.21    | 25.65                               | 235.6                    | .1368                  | 5.56                     | -                               |
| 75           | 9.30      | 33.43    | 25.86                               | 216.0                    | .1935                  | 4.70                     | -                               |
| 100          | 8.53      | 33.71    | 26.20                               | 184.1                    | .2439                  | 3.94                     | -                               |
| 150          | 7.87      | 33.94    | 26.48                               | 158.3                    | .330                   | 2.60                     | -                               |
| 200          | 7.32      | 34.00    | 26.61                               | 147.0                    | .407                   | 2.19                     | -                               |
| 250          | 6.80      | 34.02    | 26.70                               | 139.2                    | .479                   | 1.83                     | -                               |
| 300          | 6.29      | 34.06    | 26.79                               | 130.2                    | .547                   | 1.33                     | -                               |
| 400          | 5.66      | 34.16    | 26.95                               | 116.1                    | .671                   | .75                      | -                               |
| 500          | 5.47      | 34.24    | 27.04                               | 109.0                    | .785                   | .39                      | -                               |
| 600          | 4.87      | 34.30    | 27.16                               | 98.3                     | .889                   | .34                      | -                               |
| 700          | 4.50      | 34.36    | 27.25                               | 90.4                     | .984                   | .35                      | -                               |
| 800          | 4.23      | 34.41    | 27.31                               | 84.5                     | 1.073                  | .32                      | -                               |
| 1000         | 3.70      | 34.48    | 27.43                               | 74.8                     | 1.234                  | .72                      | -                               |

## STATION 67.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°39'N 122°26'W June 7, 1950 1708 GCT Wire angle: 5°  
 Sounding: 1,140 fms. Depth of observation: 1,328 m. Weather: partly cloudy  
 Sea: very rough Wind: 320°, force 4

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 12.40 | 33.14 | 25.09 | 288.0 | .0000 | 6.28 | - |
| 10   | 12.30 | 33.16 | 25.13 | 285.0 | .0288 | 5.96 | - |
| 20   | 12.31 | 33.17 | 25.13 | 284.7 | .0574 | 5.59 | - |
| 30   | 12.31 | 33.17 | 25.13 | 284.9 | .0860 | 5.24 | - |
| 50   | 11.00 | 33.41 | 25.56 | 244.6 | .1392 | 4.60 | - |
| 75   | 10.01 | 33.53 | 25.82 | 219.8 | .1975 | 3.95 | - |
| 100  | 9.41  | 33.62 | 25.99 | 204.1 | .2509 | 3.45 | - |
| 150  | 8.48  | 33.95 | 26.40 | 166.5 | .344  | 2.65 | - |
| 200  | 7.81  | 34.05 | 26.58 | 150.1 | .424  | 1.95 | - |
| 250  | 7.28  | 34.11 | 26.70 | 139.1 | .497  | 1.52 | - |
| 300  | 6.68  | 34.15 | 26.81 | 128.7 | .564  | 1.27 | - |
| 400  | 5.88  | 34.21 | 26.97 | 115.2 | .687  | .91  | - |
| 500  | 5.45  | 34.25 | 27.05 | 108.0 | .800  | .58  | - |
| 600  | 4.94  | 34.31 | 27.16 | 98.4  | .904  | .41  | - |
| 700  | 4.70  | 34.41 | 27.26 | 89.1  | .998  | .34  | - |
| 800  | 4.45  | 34.54 | 27.39 | 77.5  | 1.083 | .34  | - |
| 1000 | 3.89  | 34.60 | 27.50 | 68.2  | 1.230 | .51  | - |



## STATION 67.65 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°19'N 123°09'W June 7, 1950 0320 GCT Wire angle: 26°  
 Sounding: 1,790 fms. Depth of observation: 1,177 m. Weather: partly cloudy  
 Sea: high Wind: 320°, force 6

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 12.14     | 33.40    | 25.34                               | 264.2         | .0000                  | 5.71                     | -                               |
| 10           | 12.13     | 33.37    | 25.32                               | 266.5         | .0266                  | 5.15                     | -                               |
| 20           | 12.11     | 33.37    | 25.32                               | 266.3         | .0534                  | 5.27                     | -                               |
| 30           | 12.06     | 33.37    | 25.33                               | 265.7         | .0801                  | 5.29                     | -                               |
| 50           | 9.50      | 33.44    | 25.84                               | 217.9         | .1287                  | 4.55                     | -                               |
| 75           | 8.70      | 33.76    | 26.22                               | 182.5         | .1790                  | 3.28                     | -                               |
| 100          | 8.10      | 33.89    | 26.41                               | 164.5         | .2227                  | 2.84                     | -                               |
| 150          | 7.66      | 33.96    | 26.53                               | 153.9         | .303                   | 2.63                     | -                               |
| 200          | 7.21      | 34.02    | 26.64                               | 144.0         | .378                   | 2.09                     | -                               |
| 250          | 6.80      | 34.07    | 26.74                               | 135.5         | .448                   | 1.54                     | -                               |
| 300          | 6.54      | 34.11    | 26.80                               | 129.8         | .515                   | 1.09                     | -                               |
| 400          | 5.98      | 34.22    | 26.96                               | 115.7         | .639                   | .51                      | -                               |
| 500          | 5.46      | 34.30    | 27.09                               | 104.4         | .750                   | .47                      | -                               |
| 600          | 4.93      | 34.32    | 27.17                               | 97.5          | .852                   | .37                      | -                               |
| 700          | 4.52      | 34.44    | 27.31                               | 84.7          | .944                   | .32                      | -                               |
| 800          | 4.20      | 34.51    | 27.40                               | 76.7          | 1.025                  | .32                      | -                               |
| 1000         | 3.76      | 34.45    | 27.40                               | 77.7          | 1.181                  | .45                      | -                               |

## STATION 70.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°03'N 122°02'W June 9, 1950 1857 GCT Wire angle: 37°  
 Sounding: 740 fms. Depth of observation: 942 m. Weather: haze  
 Sea: rough Wind: 320°, force 4

|      |        |         |         |        |         |      |   |
|------|--------|---------|---------|--------|---------|------|---|
| 0    | 11.69  | 33.55   | 25.54   | 245.1  | .0000   | 5.98 | - |
| 10   | 11.61  | 33.50   | 25.52   | 247.6  | .0247   | 5.60 | - |
| 20   | 11.30  | 33.49   | 25.57   | 243.2  | .0494   | 5.76 | - |
| 30   | 11.19  | 33.51   | 25.60   | 240.0  | .0736   | 5.70 | - |
| 50   | 10.96  | 33.56   | 25.68   | 232.8  | .1212   | 5.25 | - |
| 75   | 10.12  | 33.65   | 25.90   | 212.7  | .1772   | 4.70 | - |
| 100  | 9.55   | 33.78   | 26.10   | 194.5  | .2284   | 4.06 | - |
| 150  | 8.72   | 33.91   | 26.33   | 173.0  | .321    | 2.62 | - |
| 200  | 7.66   | 34.01   | 26.57   | 151.0  | .402    | 2.10 | - |
| 250  | 7.21   | 34.09   | 26.69   | 139.6  | .476    | 1.78 | - |
| 300  | 6.90   | 34.14   | 26.78   | 132.4  | .544    | 1.19 | - |
| 400  | 6.25   | 34.21   | 26.92   | 119.9  | .671    | .86  | - |
| 500  | 5.79   | 34.22   | 26.98   | 114.5  | .790    | .45  | - |
| 600  | 5.25   | 34.31   | 27.12   | 102.2  | .899    | .33  | - |
| 700  | 4.88   | 34.38   | 27.22   | 93.6   | .998    | .30  | - |
| 800  | 4.60   | 34.44   | 27.30   | 86.7   | 1.089   | .30  | - |
| 1000 | (3.88) | (34.48) | (27.41) | (76.9) | (1.254) | -    | - |



## STATION 70.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°53'N 122°23'W June 9, 1950 2340 GCT Wire angle: 18°  
 Sounding: 1,730 fms. Depth of observation: 1,127 m. Weather: cloudy  
 Sea: moderate Wind: 300°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.58     | 33.22    | 24.92                               | 304.3         | .0000                  | 5.85                     | -                               |
| 10           | 13.22     | 33.17    | 24.95                               | 301.4         | .0304                  | 6.05                     | -                               |
| 20           | 13.12     | 33.19    | 24.99                               | 298.2         | .0605                  | 5.97                     | -                               |
| 30           | 13.09     | 33.25    | 25.04                               | 293.5         | .0902                  | 5.81                     | -                               |
| 50           | 10.70     | 33.40    | 25.60                               | 240.3         | .1439                  | 5.33                     | -                               |
| 75           | 9.65      | 33.70    | 26.02                               | 201.5         | .1994                  | 3.60                     | -                               |
| 100          | 9.12      | 33.76    | 26.15                               | 189.3         | .2485                  | 2.92                     | -                               |
| 150          | 8.37      | 33.91    | 26.38                               | 167.8         | .338                   | 2.34                     | -                               |
| 200          | 7.85      | 34.01    | 26.54                               | 153.7         | .419                   | 2.16                     | -                               |
| 250          | 7.20      | 34.02    | 26.64                               | 144.6         | .494                   | 1.88                     | -                               |
| 300          | 6.70      | 34.03    | 26.72                               | 137.8         | .566                   | 1.41                     | -                               |
| 400          | 6.21      | 34.19    | 26.91                               | 120.9         | .696                   | .65                      | -                               |
| 500          | 5.70      | 34.25    | 27.02                               | 111.2         | .813                   | .41                      | -                               |
| 600          | 5.43      | 34.36    | 27.14                               | 100.8         | .920                   | .33                      | -                               |
| 700          | 4.92      | 34.47    | 27.29                               | 87.4          | 1.015                  | .32                      | -                               |
| 800          | 4.50      | 34.49    | 27.35                               | 81.8          | 1.100                  | .34                      | -                               |
| 1000         | 3.88      | 34.48    | 27.41                               | 76.9          | 1.261                  | .47                      | -                               |

## STATION 70.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°33'N 123°06'W June 10, 1950 0658 GCT Wire angle: 10°  
 Sounding: 2,080 fms. Depth of observation: 1,165 m. Weather: overcast  
 Sea: slight Wind: 260°, force 1

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 13.95 | 33.28 | 24.89 | 307.2 | .0000 | 5.83 | - |
| 10   | 13.61 | 33.33 | 25.00 | 297.1 | .0303 | 5.98 | - |
| 20   | 13.16 | 33.34 | 25.10 | 288.0 | .0597 | 5.90 | - |
| 30   | 12.95 | 33.36 | 25.15 | 282.8 | .0884 | 5.67 | - |
| 50   | 10.16 | 33.77 | 25.99 | 204.0 | .1373 | 5.36 | - |
| 75   | 9.05  | 33.78 | 26.18 | 186.2 | .1863 | 2.86 | - |
| 100  | 8.83  | 33.88 | 26.29 | 176.0 | .2319 | 2.60 | - |
| 150  | 8.24  | 33.98 | 26.46 | 160.7 | .317  | 2.19 | - |
| 200  | 7.76  | 34.07 | 26.60 | 147.9 | .394  | 1.76 | - |
| 250  | 7.24  | 34.10 | 26.70 | 139.2 | .467  | 1.46 | - |
| 300  | 6.65  | 34.11 | 26.79 | 131.2 | .535  | 1.29 | - |
| 400  | 6.04  | 34.14 | 26.89 | 122.4 | .663  | .79  | - |
| 500  | 5.75  | 34.31 | 27.06 | 107.4 | .779  | .34  | - |
| 600  | 5.27  | 34.37 | 27.17 | 98.0  | .882  | .28  | - |
| 700  | 4.79  | 34.41 | 27.25 | 90.2  | .977  | .28  | - |
| 800  | 4.39  | 34.42 | 27.31 | 85.6  | 1.066 | .30  | - |
| 1000 | 3.83  | 34.46 | 27.40 | 77.8  | 1.231 | .40  | - |



## STATION 70.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°13'N 123°48'W June 10, 1950 1339 GCT Wire angle: 0°  
 Sounding: 2,240 fms. Depth of observation: 1,191 m. Weather: overcast  
 Sea: rough Wind: 280°, force 2

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.85     | 33.24    | 24.88                               | 308.1         | .0000                  | 5.91                     | -                               |
| 10           | 13.33     | 33.24    | 24.99                               | 298.3         | .0304                  | 6.15                     | -                               |
| 20           | 12.74     | 33.24    | 25.10                               | 287.4         | .0598                  | 6.14                     | -                               |
| 30           | 12.18     | 33.25    | 25.22                               | 276.7         | .0882                  | 5.99                     | -                               |
| 50           | 10.03     | 33.41    | 25.73                               | 228.5         | .1389                  | 5.44                     | -                               |
| 75           | 9.12      | 33.55    | 25.99                               | 204.4         | .1933                  | 4.95                     | -                               |
| 100          | 8.64      | 33.63    | 26.12                               | 191.7         | .2432                  | 4.20                     | -                               |
| 150          | 8.45      | 33.92    | 26.38                               | 168.2         | .334                   | 2.06                     | -                               |
| 200          | 8.08      | 34.02    | 26.51                               | 156.3         | .415                   | 1.74                     | -                               |
| 250          | 7.24      | 34.02    | 26.64                               | 145.2         | .491                   | 1.67                     | -                               |
| 300          | 6.41      | 34.02    | 26.75                               | 134.8         | .562                   | 1.65                     | -                               |
| 400          | 5.66      | 34.11    | 26.91                               | 119.8         | .690                   | .89                      | -                               |
| 500          | 5.30      | 34.23    | 27.05                               | 107.6         | .805                   | .39                      | -                               |
| 600          | 5.02      | 34.30    | 27.14                               | 100.1         | .910                   | .32                      | -                               |
| 700          | 4.70      | 34.36    | 27.22                               | 92.8          | 1.007                  | .31                      | -                               |
| 800          | 4.31      | 34.43    | 27.32                               | 83.9          | 1.096                  | .30                      | -                               |
| 1000         | 3.75      | 34.49    | 27.43                               | 74.6          | 1.257                  | .48                      | -                               |

## STATION 70.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°53'N 124°30'W June 10, 1950 1945 GCT Wire angle: 9°  
 Sounding: 2,340 fms. Depth of observation: 1,165 m. Weather: cloudy  
 Sea: moderate Wind: 250°, force 1

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 13.85 | 33.01 | 24.70 | 325.0 | .0000 | 4.90 | - |
| 10   | 12.30 | 32.99 | 24.99 | 297.5 | .0312 | 5.56 | - |
| 20   | 12.01 | 32.99 | 25.05 | 292.5 | .0609 | 5.85 | - |
| 30   | 11.37 | 33.00 | 25.17 | 280.7 | .0896 | 5.86 | - |
| 50   | 11.16 | 33.24 | 25.40 | 259.9 | .1440 | 5.30 | - |
| 75   | 9.00  | 33.17 | 25.71 | 230.7 | .2056 | 4.89 | - |
| 100  | 8.73  | 33.45 | 25.97 | 206.3 | .2606 | 3.85 | - |
| 150  | 8.18  | 33.81 | 26.33 | 172.4 | .356  | 3.06 | - |
| 200  | 7.85  | 33.98 | 26.52 | 155.9 | .439  | 2.04 | - |
| 250  | 7.45  | 34.08 | 26.65 | 143.6 | .514  | 1.55 | - |
| 300  | 6.99  | 34.13 | 26.76 | 134.3 | .584  | 1.34 | - |
| 400  | 5.75  | 34.09 | 26.89 | 122.4 | .713  | 1.05 | - |
| 500  | 5.24  | 34.19 | 27.03 | 109.9 | .831  | .54  | - |
| 600  | 4.85  | 34.27 | 27.14 | 100.3 | .937  | .30  | - |
| 700  | 4.52  | 34.35 | 27.24 | 91.4  | 1.033 | .30  | - |
| 800  | 4.24  | 34.43 | 27.33 | 83.1  | 1.122 | .30  | - |
| 1000 | 3.66  | 34.46 | 27.41 | 75.8  | 1.282 | .45  | - |



## STATION 70.100 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°33'N 125°12'W June 11, 1950 0304 GCT Wire angle: 28°  
 Sounding: 2,520 fms. Depth of observation: 1,025 m. Weather: partly cloudy  
 Sea: moderate Wind: 250°, force 2

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.09     | 32.97    | 24.41                               | 352.9         | .0000                  | 5.39                     | -                               |
| 10           | 14.75     | 33.03    | 24.53                               | 341.8         | .0349                  | 5.39                     | -                               |
| 20           | 14.65     | 32.95    | 24.49                               | 345.9         | .0694                  | 5.62                     | -                               |
| 30           | 13.95     | 32.95    | 24.64                               | 332.1         | .1034                  | 5.58                     | -                               |
| 50           | 13.89     | 32.98    | 24.67                               | 329.3         | .1699                  | 5.38                     | -                               |
| 75           | 12.66     | 33.00    | 24.93                               | 304.9         | .2496                  | 5.60                     | -                               |
| 100          | 11.82     | 32.99    | 25.08                               | 290.9         | .3246                  | 5.59                     | -                               |
| 150          | 10.40     | 33.26    | 25.55                               | 247.7         | .460                   | 4.33                     | -                               |
| 200          | 8.78      | 33.72    | 26.17                               | 188.9         | .570                   | 3.01                     | -                               |
| 250          | 8.14      | 33.94    | 26.44                               | 163.9         | .659                   | 2.49                     | -                               |
| 300          | 7.57      | 34.02    | 26.59                               | 150.6         | .738                   | 2.05                     | -                               |
| 400          | 6.67      | 34.11    | 26.78                               | 132.9         | .881                   | 1.05                     | -                               |
| 500          | 6.40      | 34.27    | 26.95                               | 118.9         | 1.008                  | .40                      | -                               |
| 600          | 5.80      | 34.33    | 27.07                               | 107.8         | 1.122                  | .38                      | -                               |
| 700          | 5.18      | 34.35    | 27.16                               | 99.5          | 1.227                  | .35                      | -                               |
| 800          | 4.75      | 34.37    | 27.23                               | 93.7          | 1.325                  | .30                      | -                               |
| 1000         | 3.99      | 34.42    | 27.35                               | 82.6          | 1.503                  | .35                      | -                               |

## STATION 70.110 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°13'N 125°54'W June 11, 1950 1113 GCT Wire angle: 15°  
 Sounding: 2,220 fms. Depth of observation: 1,321 Weather: clear  
 Sea: rough Wind: 260°, force 3

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.78 | 32.99 | 24.49 | 345.0 | .0000 | 5.63 | - |
| 10   | 14.82 | 32.96 | 24.46 | 348.3 | .0348 | 5.56 | - |
| 20   | 13.27 | 32.97 | 24.79 | 317.3 | .0682 | 5.65 | - |
| 30   | 12.87 | 32.97 | 24.87 | 310.0 | .0997 | 5.84 | - |
| 50   | 12.57 | 32.93 | 24.90 | 307.8 | .1618 | 5.96 | - |
| 75   | 12.23 | 32.94 | 24.97 | 301.4 | .2384 | 5.95 | - |
| 100  | 11.60 | 33.03 | 25.16 | 284.1 | .3120 | 5.74 | - |
| 150  | 9.13  | 33.56 | 25.99 | 205.2 | .435  | 4.36 | - |
| 200  | 8.27  | 33.88 | 26.38 | 169.4 | .529  | 3.00 | - |
| 250  | 7.76  | 33.99 | 26.54 | 154.7 | .611  | 2.44 | - |
| 300  | 7.07  | 34.01 | 26.65 | 144.3 | .686  | 1.89 | - |
| 400  | 6.00  | 34.07 | 26.84 | 127.1 | .823  | 1.05 | - |
| 500  | 5.46  | 34.21 | 27.02 | 111.1 | .943  | .48  | - |
| 600  | 5.12  | 34.30 | 27.13 | 101.4 | 1.051 | .33  | - |
| 700  | 4.93  | 34.36 | 27.20 | 95.7  | 1.150 | .30  | - |
| 800  | 4.62  | 34.45 | 27.30 | 86.2  | 1.242 | .32  | - |
| 1000 | 3.94  | 34.47 | 27.39 | 78.4  | 1.408 | .46  | - |



## STATION 70.120 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°53'N 126°35.5'W June 11, 1950 1858 GCT Wire angle: 10°  
 Sounding: 2,560 fms. Depth of observation: 1,173 m. Weather: partly cloudy  
 Sea: rough Wind: 290°, force 2

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \sigma$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.42     | 33.22    | 24.53                               | 341.5         | .0000                  | 5.64                     | -                               |
| 10           | 15.21     | 33.22    | 24.58                               | 337.3         | .0341                  | 5.49                     | -                               |
| 20           | 15.06     | 33.22    | 24.61                               | 334.5         | .0678                  | 5.19                     | -                               |
| 30           | 14.93     | 33.22    | 24.64                               | 332.1         | .1013                  | 5.13                     | -                               |
| 50           | 14.66     | 33.26    | 24.73                               | 324.2         | .1672                  | 5.09                     | -                               |
| 75           | 12.57     | 33.26    | 25.15                               | 284.1         | .2437                  | 4.83                     | -                               |
| 100          | 10.45     | 33.45    | 25.69                               | 233.4         | .3088                  | 4.23                     | -                               |
| 150          | 8.64      | 33.75    | 26.22                               | 183.7         | .414                   | 2.89                     | -                               |
| 200          | 7.94      | 33.96    | 26.49                               | 158.7         | .500                   | 2.50                     | -                               |
| 250          | 7.39      | 34.03    | 26.62                               | 146.5         | .577                   | 2.03                     | -                               |
| 300          | 6.88      | 34.05    | 26.71                               | 138.8         | .649                   | 1.55                     | -                               |
| 400          | 5.82      | 34.10    | 26.89                               | 122.6         | .780                   | 1.04                     | -                               |
| 500          | 5.17      | 34.15    | 27.00                               | 112.0         | .899                   | .55                      | -                               |
| 600          | 4.66      | 34.24    | 27.13                               | 100.2         | 1.006                  | .33                      | -                               |
| 700          | 4.30      | 34.32    | 27.24                               | 91.0          | 1.102                  | .30                      | -                               |
| 800          | 4.02      | 34.39    | 27.32                               | 83.5          | 1.190                  | .30                      | -                               |
| 1000         | 3.56      | 34.44    | 27.41                               | 76.1          | 1.352                  | .43                      | -                               |

## STATION 70.130 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°33'N 127°16.5'W June 12, 1950 0240 GCT Wire angle: 20°  
 Sounding: 2,420 fms. Depth of observation: 1,122 m. Weather: cloudy  
 Sea: rough Wind: 320°, force 3

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 15.40 | 33.06 | 24.41 | 352.7 | .0000 | 5.54 | - |
| 10   | 15.40 | 33.04 | 24.40 | 354.5 | .0355 | 5.41 | - |
| 20   | 15.30 | 33.12 | 24.48 | 346.8 | .0707 | 5.45 | - |
| 30   | 15.08 | 33.13 | 24.53 | 341.8 | .1053 | 5.52 | - |
| 50   | 14.85 | 33.11 | 24.57 | 339.1 | .1737 | 5.52 | - |
| 75   | 13.50 | 33.03 | 24.79 | 318.6 | .2564 | 5.57 | - |
| 100  | 13.81 | 33.26 | 24.90 | 308.5 | .3353 | 6.11 | - |
| 150  | 10.30 | 33.25 | 25.56 | 246.7 | .475  | 4.80 | - |
| 200  | 8.85  | 33.69 | 26.14 | 192.2 | .586  | 3.69 | - |
| 250  | 7.94  | 33.88 | 26.42 | 165.4 | .676  | 3.30 | - |
| 300  | 7.35  | 33.97 | 26.58 | 151.2 | .755  | 2.91 | - |
| 400  | 6.41  | 34.05 | 26.77 | 133.9 | .899  | 1.41 | - |
| 500  | 5.48  | 34.11 | 26.94 | 118.8 | 1.026 | .91  | - |
| 600  | 5.00  | 34.18 | 27.05 | 108.8 | 1.141 | .40  | - |
| 700  | 4.50  | 34.26 | 27.17 | 97.8  | 1.246 | .30  | - |
| 800  | 4.10  | 34.34 | 27.27 | 88.1  | 1.339 | .28  | - |
| 1000 | 3.75  | 34.44 | 27.39 | 78.3  | 1.508 | .40  | - |



## STATION 73.51 (Interpolated Values at Standard Depths)

CREST: 35°35'N 121°20'W June 8, 1950 1610 GCT Wire angle: 31°  
 Sounding: 170 fms. Depth of observation: 260 m. Weather: clear  
 Sea: rough Wind: 320°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 11.46     | 33.44    | 25.50                               | 249.2         | .0000                  | 5.87                     | -                               |
| 10           | 11.41     | 33.40    | 25.48                               | 251.5         | .0251                  | 6.20                     | -                               |
| 20           | 10.37     | 33.35    | 25.62                               | 237.9         | .0497                  | 5.25                     | -                               |
| 30           | 9.88      | 33.36    | 25.71                               | 229.4         | .0732                  | 4.65                     | -                               |
| 50           | 9.26      | 33.67    | 26.06                               | 197.1         | .1160                  | 3.85                     | -                               |
| 75           | 8.80      | 33.86    | 26.28                               | 176.5         | .1630                  | 2.82                     | -                               |
| 100          | 8.50      | 33.92    | 26.37                               | 168.1         | .2063                  | 2.38                     | -                               |
| 150          | 8.15      | 34.00    | 26.49                               | 157.9         | .288                   | 2.06                     | -                               |
| 200          | 7.93      | 34.11    | 26.61                               | 147.4         | .365                   | 1.33                     | -                               |
| 250          | 7.61      | 34.17    | 26.70                               | 139.2         | .437                   | -                        | -                               |

## STATION 73.61 (Interpolated Values at Standard Depths)

CREST: 35°15'N 122°03'W June 8, 1950 2034 GCT Wire angle: 25°  
 Sounding: 1,700 fms. Depth of observation: 1185 Weather: clear  
 Sea: rough Wind: 340°, force 5

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 12.97 | 33.04 | 24.90 | 305.9 | .0000 | 6.65 | - |
| 10   | 12.98 | 33.04 | 24.90 | 306.4 | .0307 | 6.18 | - |
| 20   | 12.91 | 33.04 | 24.91 | 305.3 | .0614 | 5.98 | - |
| 30   | 12.90 | 33.04 | 24.92 | 305.4 | .0921 | 5.83 | - |
| 50   | 11.35 | 33.10 | 25.26 | 273.5 | .1503 | 5.61 | - |
| 75   | 10.52 | 33.46 | 25.68 | 233.3 | .2140 | 5.27 | - |
| 100  | 9.60  | 33.59 | 25.94 | 209.3 | .2697 | 3.95 | - |
| 150  | 8.93  | 33.84 | 26.24 | 181.4 | .368  | 2.93 | - |
| 200  | 8.37  | 33.97 | 26.43 | 164.2 | .455  | 2.21 | - |
| 250  | 7.90  | 34.05 | 26.56 | 152.3 | .535  | 1.86 | - |
| 300  | 7.52  | 34.12 | 26.67 | 142.5 | .609  | 1.66 | - |
| 400  | 6.79  | 34.18 | 26.82 | 129.4 | .746  | .95  | - |
| 500  | 6.08  | 34.18 | 26.92 | 121.3 | .872  | .80  | - |
| 600  | 5.19  | 34.21 | 27.05 | 108.9 | .988  | .64  | - |
| 700  | 4.79  | 34.27 | 27.14 | 100.6 | 1.094 | .41  | - |
| 800  | 4.58  | 34.33 | 27.21 | 94.6  | 1.193 | .35  | - |
| 1000 | 3.93  | 34.36 | 27.31 | 86.4  | 1.376 | .74  | - |



## STATION 77.55 (Interpolated Values at Standard Depths)

CREST: 34°54'N 121°13'W June 9, 1950 0755 GCT Wire angle: 8°  
 Sounding: 310 fms. Depth of observation: 498 m. Weather: clear  
 Sea: very rough Wind: 340°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | 10 <sup>5</sup> $\delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>( $\mu$ g at/L) |
|--------------|-----------|----------|-------------------------------------|--------------------------|------------------------|--------------------------|---------------------------------------|
| 0            | 11.48     | 33.66    | 25.67                               | 233.3                    | .0000                  | 6.26                     | -                                     |
| 10           | 11.52     | 33.62    | 25.63                               | 237.2                    | .0236                  | 6.30                     | -                                     |
| 20           | 11.44     | 33.63    | 25.65                               | 235.3                    | .0473                  | 5.50                     | -                                     |
| 30           | 11.15     | 33.64    | 25.71                               | 229.8                    | .0707                  | 4.97                     | -                                     |
| 50           | 9.29      | 33.64    | 26.03                               | 199.8                    | .1139                  | 4.22                     | -                                     |
| 75           | 9.39      | 33.82    | 26.15                               | 188.5                    | .1627                  | 2.90                     | -                                     |
| 100          | 8.76      | 33.87    | 26.29                               | 175.7                    | .2085                  | 2.63                     | -                                     |
| 150          | 7.88      | 33.96    | 26.50                               | 157.0                    | .292                   | 2.28                     | -                                     |
| 200          | 7.47      | 34.04    | 26.62                               | 146.1                    | .369                   | 1.67                     | -                                     |
| 250          | 7.20      | 34.11    | 26.71                               | 137.9                    | .440                   | 1.26                     | -                                     |
| 300          | 6.78      | 34.13    | 26.79                               | 131.5                    | .508                   | (.87)                    | -                                     |
| 400          | 6.35      | 34.22    | 26.91                               | 120.5                    | .635                   | -                        | -                                     |
| 500          | (6.00)    | (34.20)  | (26.94)                             | (118.7)                  | (.756)                 | -                        | -                                     |

## STATION 77.65 (Interpolated Values at Standard Depths)

CREST: 34°34'N 121°55'W June 9, 1950 0157 GCT Wire angle: 38°  
 Sounding: 2,100 fms. Depth of observation: 1066 m. Weather: clear  
 Sea: rough Wind: 340°, force 6

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 12.82 | 33.15 | 25.02 | 295.1 | .0000 | 6.33 | - |
| 10   | 12.82 | 33.13 | 25.00 | 296.8 | .0297 | 6.25 | - |
| 20   | 12.74 | 33.13 | 25.02 | 295.5 | .0594 | 6.30 | - |
| 30   | 12.68 | 33.14 | 25.04 | 293.9 | .0890 | 6.30 | - |
| 50   | 10.90 | 33.45 | 25.61 | 239.9 | .1427 | 6.00 | - |
| 75   | 9.80  | 33.48 | 25.82 | 220.1 | .2005 | 4.70 | - |
| 100  | 8.73  | 33.55 | 26.05 | 198.9 | .2532 | 3.50 | - |
| 150  | 8.39  | 33.87 | 26.35 | 171.1 | .346  | 2.78 | - |
| 200  | 7.73  | 33.99 | 26.54 | 153.5 | .428  | 2.56 | - |
| 250  | 7.22  | 34.02 | 26.64 | 144.9 | .503  | 2.28 | - |
| 300  | 6.78  | 34.04 | 26.71 | 138.2 | .574  | 1.83 | - |
| 400  | 6.03  | 34.11 | 26.87 | 124.5 | .707  | 1.16 | - |
| 500  | 5.47  | 34.19 | 27.00 | 112.7 | .827  | .67  | - |
| 600  | 5.08  | 34.27 | 27.11 | 103.1 | .935  | .45  | - |
| 700  | 4.76  | 34.32 | 27.19 | 96.5  | 1.036 | .44  | - |
| 800  | 4.50  | 34.33 | 27.22 | 93.6  | 1.132 | .46  | - |
| 1000 | 3.95  | 34.42 | 27.35 | 82.2  | 1.310 | .67  | - |



## STATION 80.55 (Interpolated Values at Standard Depths)

CREST: 34°19'N 120°48'W June 9, 1950 1418 GCT Wire angle: 33°  
 Sounding: 450 fms. Depth of observation: 591 m. Weather: partly cloudy  
 Sea: rough Wind: 340°, force 6

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 11.51     | 33.42    | 25.47                               | 251.5         | .0000                  | 4.95                     | -                               |
| 10           | 11.50     | 33.49    | 25.53                               | 246.4         | .0250                  | 4.66                     | -                               |
| 20           | 11.48     | 33.49    | 25.53                               | 246.3         | .0497                  | 5.08                     | -                               |
| 30           | 11.46     | 33.47    | 25.52                               | 247.7         | .0745                  | 4.72                     | -                               |
| 50           | 10.25     | 33.35    | 25.64                               | 236.5         | .1232                  | 3.22                     | -                               |
| 75           | 9.75      | 33.80    | 26.08                               | 195.7         | .1775                  | 2.77                     | -                               |
| 100          | 9.09      | 33.82    | 26.20                               | 184.4         | .2253                  | 2.52                     | -                               |
| 150          | 8.55      | 34.00    | 26.43                               | 163.8         | .313                   | 1.74                     | -                               |
| 200          | 8.35      | 34.07    | 26.51                               | 156.5         | .394                   | 1.06                     | -                               |
| 250          | 8.17      | 34.11    | 26.57                               | 151.8         | .471                   | .81                      | -                               |
| 300          | 7.74      | 34.17    | 26.68                               | 141.9         | .545                   | .60                      | -                               |
| 400          | 7.11      | 34.18    | 26.78                               | 133.8         | .684                   | -                        | -                               |
| 500          | 6.62      | 34.23    | 26.89                               | 124.8         | .815                   | -                        | -                               |
| 600          | (5.98)    | (34.25)  | (26.98)                             | (116.1)       | (.936)                 | -                        | -                               |

## STATION 80.60 (Interpolated Values at Standard Depths)

CREST: 34°09'N 121°09'W June 9, 1950 1802 GCT Wire angle: 37°  
 Sounding: 1,400 fms. Depth of observation: 976 m. Weather: cloudy  
 Sea: very rough Wind: 320°, force 6

|      |        |         |         |        |         |       |   |
|------|--------|---------|---------|--------|---------|-------|---|
| 0    | 13.49  | 33.15   | 24.88   | 307.7  | .0000   | 5.65  | - |
| 10   | 13.50  | 33.14   | 24.87   | 308.9  | .0310   | 5.93  | - |
| 20   | 13.46  | 33.13   | 24.87   | 309.1  | .0620   | 5.73  | - |
| 30   | 13.45  | 33.13   | 24.88   | 309.2  | .0930   | 5.72  | - |
| 50   | 12.55  | 33.32   | 25.20   | 278.8  | .1521   | 5.68  | - |
| 75   | 12.10  | 33.34   | 25.30   | 269.6  | .2210   | 5.44  | - |
| 100  | 9.72   | 33.33   | 25.72   | 230.5  | .2840   | 4.70  | - |
| 150  | 8.88   | 33.73   | 26.16   | 188.8  | .389    | 3.53  | - |
| 200  | 8.17   | 33.88   | 26.39   | 167.9  | .479    | 3.00  | - |
| 250  | 7.38   | 33.97   | 26.58   | 150.8  | .560    | 2.35  | - |
| 300  | 6.89   | 34.00   | 26.67   | 142.6  | .633    | 1.87  | - |
| 400  | 5.93   | 34.18   | 26.94   | 118.0  | .765    | 1.00  | - |
| 500  | 5.43   | 34.27   | 27.07   | 106.3  | .878    | .61   | - |
| 600  | 5.05   | 34.33   | 27.16   | 98.3   | .981    | .45   | - |
| 700  | 4.74   | 34.37   | 27.23   | 92.6   | 1.077   | .45   | - |
| 800  | 4.47   | 34.40   | 27.28   | 88.1   | 1.169   | .49   | - |
| 1000 | (3.93) | (34.42) | (27.35) | (81.9) | (1.341) | (.79) | - |



## STATION 80.70 (Interpolated Values at Standard Depths)

CREST: 33°49'N 121°58'W June 9, 1950 2348 GCT Wire angle: 22°  
 Sounding: 2,150 fms. Depth of observation: 1220 m. Weather: partly cloudy  
 Sea: moderate Wind: 320°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(%) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \sigma$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.11     | 33.13    | 24.74                               | 321.3         | .0000                  | 6.18                     | -                               |
| 10           | 14.10     | 33.13    | 24.74                               | 321.4         | .0323                  | 5.84                     | -                               |
| 20           | 13.97     | 33.13    | 24.77                               | 319.1         | .0644                  | 6.00                     | -                               |
| 30           | 13.92     | 33.13    | 24.78                               | 318.4         | .0964                  | 6.25                     | -                               |
| 50           | 12.25     | 33.24    | 25.20                               | 279.1         | .1565                  | 5.85                     | -                               |
| 75           | 11.40     | 33.40    | 25.48                               | 252.8         | .2233                  | 5.16                     | -                               |
| 100          | 10.00     | 33.51    | 25.81                               | 221.6         | .2830                  | 4.42                     | -                               |
| 150          | 8.77      | 33.82    | 26.25                               | 180.4         | .384                   | 2.72                     | -                               |
| 200          | 7.91      | 33.96    | 26.49                               | 158.3         | .469                   | 2.50                     | -                               |
| 250          | 7.26      | 34.01    | 26.62                               | 146.2         | .546                   | 2.24                     | -                               |
| 300          | 6.52      | 34.03    | 26.74                               | 135.5         | .617                   | 1.91                     | -                               |
| 400          | 5.63      | 34.06    | 26.88                               | 123.2         | .747                   | 1.34                     | -                               |
| 500          | 5.35      | 34.17    | 27.00                               | 112.7         | .866                   | .65                      | -                               |
| 600          | 5.04      | 34.25    | 27.10                               | 104.1         | .976                   | .62                      | -                               |
| 700          | 4.66      | 34.30    | 27.18                               | 96.8          | 1.077                  | .65                      | -                               |
| 800          | 4.37      | 34.35    | 27.25                               | 90.6          | 1.172                  | .65                      | -                               |
| 1000         | 3.86      | 34.42    | 27.36                               | 81.1          | 1.345                  | .72                      | -                               |

## STATION 80.80 (Interpolated Values at Standard Depths)

CREST: 33°31'N 122°33'W June 10, 1950 0534 GCT Wire angle: 20°  
 Sounding: 2,200 fms. Depth of observation: 1218 m. Weather: cloudy  
 Sea: rough Wind: 270°, force 3

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 13.49 | 33.28 | 24.98 | 298.2 | .0000 | 5.63 | - |
| 10   | 13.40 | 33.26 | 24.99 | 298.2 | .0299 | 5.85 | - |
| 20   | 13.13 | 33.27 | 25.05 | 292.6 | .0596 | 5.84 | - |
| 30   | 13.10 | 33.29 | 25.07 | 290.8 | .0889 | 5.78 | - |
| 50   | 12.07 | 33.30 | 25.28 | 271.5 | .1454 | 5.65 | - |
| 75   | 11.16 | 33.46 | 25.57 | 244.2 | .2102 | 4.84 | - |
| 100  | 9.50  | 33.52 | 25.90 | 212.9 | .2677 | 3.80 | - |
| 150  | 8.30  | 33.76 | 26.28 | 177.9 | .366  | 3.80 | - |
| 200  | 7.80  | 33.91 | 26.47 | 160.4 | .451  | 3.63 | - |
| 250  | 7.22  | 33.96 | 26.59 | 149.3 | .529  | 3.18 | - |
| 300  | 6.87  | 33.99 | 26.66 | 143.1 | .603  | 2.40 | - |
| 400  | 6.10  | 34.12 | 26.87 | 124.7 | .738  | 1.17 | - |
| 500  | 5.68  | 34.24 | 27.01 | 111.6 | .857  | .80  | - |
| 600  | 5.10  | 34.27 | 27.11 | 103.3 | .965  | .65  | - |
| 700  | 4.66  | 34.30 | 27.18 | 96.8  | 1.066 | .60  | - |
| 800  | 4.40  | 34.37 | 27.26 | 89.5  | 1.161 | .48  | - |
| 1000 | 3.84  | 34.44 | 27.38 | 79.4  | 1.331 | .54  | - |



## STATION 80.90 (Interpolated Values at Standard Depths)

CREST: 33°12'N 123°12'W June 10, 1950 1120 GCT Wire angle: 11°  
 Sounding: 2,200 fms. Depth of observation: 1185 m. Weather: drizzle  
 Sea: slight Wind: 340°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.76     | 33.15    | 24.62                               | 332.9         | .0000                  | 5.82                     | -                               |
| 10           | 14.77     | 33.15    | 24.62                               | 333.4         | .0334                  | 6.04                     | -                               |
| 20           | 14.55     | 33.15    | 24.66                               | 329.2         | .0667                  | 6.12                     | -                               |
| 30           | 14.54     | 33.15    | 24.67                               | 329.3         | .0998                  | 6.15                     | -                               |
| 50           | 14.06     | 33.19    | 24.80                               | 317.2         | .1647                  | 5.60                     | -                               |
| 75           | 12.30     | 33.10    | 25.08                               | 290.9         | .2412                  | 5.60                     | -                               |
| 100          | 10.72     | 33.23    | 25.47                               | 254.2         | .3098                  | 5.12                     | -                               |
| 150          | 9.07      | 33.52    | 25.97                               | 207.2         | .426                   | 4.42                     | -                               |
| 200          | 8.12      | 33.90    | 26.41                               | 165.7         | .520                   | 3.43                     | -                               |
| 250          | 7.43      | 34.01    | 26.60                               | 148.5         | .599                   | 2.65                     | -                               |
| 300          | 6.84      | 34.04    | 26.70                               | 139.0         | .671                   | 2.05                     | -                               |
| 400          | 5.99      | 34.07    | 26.84                               | 127.0         | .805                   | 1.22                     | -                               |
| 500          | 5.28      | 34.15    | 26.99                               | 113.3         | .927                   | .76                      | -                               |
| 600          | 4.84      | 34.23    | 27.11                               | 103.1         | 1.036                  | .55                      | -                               |
| 700          | 4.53      | 34.28    | 27.18                               | 96.7          | 1.137                  | .47                      | -                               |
| 800          | 4.30      | 34.34    | 27.25                               | 90.5          | 1.231                  | .45                      | -                               |
| 1000         | 3.73      | 34.44    | 27.39                               | 78.1          | 1.402                  | .70                      | -                               |

## STATION 80.100 (Interpolated Values at Standard Depths)

CREST: 32°49'N 123°56'W June 10, 1950 1706 GCT Wire angle: 5°  
 Sounding: 2,300 fms. Depth of observation: 1199 m. Weather: clear  
 Sea: rough Wind: 270°, force 2

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 15.13 | 33.22 | 24.59 | 335.4 | .0000 | 5.65 | - |
| 10   | 14.96 | 33.21 | 24.62 | 332.9 | .0335 | 5.33 | - |
| 20   | 14.76 | 33.24 | 24.69 | 326.9 | .0667 | 5.43 | - |
| 30   | 14.64 | 33.24 | 24.71 | 324.7 | .0994 | 5.50 | - |
| 50   | 14.12 | 33.19 | 24.79 | 318.4 | .1640 | 5.58 | - |
| 75   | 11.38 | 33.10 | 25.25 | 274.5 | .2385 | 5.64 | - |
| 100  | 10.23 | 33.28 | 25.59 | 242.4 | .3036 | 4.73 | - |
| 150  | 8.78  | 33.66 | 26.13 | 192.4 | .413  | 3.54 | - |
| 200  | 8.12  | 33.86 | 26.38 | 168.7 | .504  | 2.87 | - |
| 250  | 7.45  | 33.96 | 26.56 | 152.5 | .585  | 2.50 | - |
| 300  | 6.81  | 34.02 | 26.69 | 140.1 | .659  | 2.12 | - |
| 400  | 5.92  | 34.05 | 26.83 | 127.6 | .793  | 1.18 | - |
| 500  | 5.21  | 34.13 | 26.98 | 114.0 | .915  | .77  | - |
| 600  | 4.58  | 34.36 | 27.24 | 90.4  | 1.018 | .64  | - |
| 700  | 4.23  | 34.40 | 27.31 | 84.3  | 1.106 | .51  | - |
| 800  | 4.08  | 34.42 | 27.34 | 82.0  | 1.190 | .46  | - |
| 1000 | 3.60  | 34.45 | 27.41 | 75.8  | 1.350 | .71  | - |



## STATION 80.110 (Interpolated Values at Standard Depths)

CREST: 32°29'N 124°34'W June 10, 1950 2252 GCT Wire angle: 23°  
 Sounding: 2,350 fms. Depth of observation: 1099 m. Weather: cloudy  
 Sea: rough Wind: 240°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.52     | 33.12    | 24.43                               | 350.9         | .0000                  | 4.67                     | -                               |
| 10           | 14.73     | 33.04    | 24.54                               | 340.6         | .0347                  | 5.28                     | -                               |
| 20           | 14.59     | 33.10    | 24.62                               | 333.7         | .0686                  | 5.39                     | -                               |
| 30           | 14.56     | 33.09    | 24.62                               | 334.1         | .1021                  | 5.45                     | -                               |
| 50           | 13.97     | 33.06    | 24.72                               | 325.0         | .1683                  | 5.58                     | -                               |
| 75           | 12.75     | 33.19    | 25.06                               | 292.6         | .2459                  | 5.68                     | -                               |
| 100          | 9.44      | 33.20    | 25.66                               | 235.7         | .3124                  | 5.50                     | -                               |
| 150          | 8.50      | 33.43    | 25.99                               | 205.3         | .423                   | 4.25                     | -                               |
| 200          | 8.06      | 33.92    | 26.44                               | 163.4         | .516                   | 3.10                     | -                               |
| 250          | 7.36      | 33.99    | 26.59                               | 149.1         | .595                   | 2.69                     | -                               |
| 300          | 6.77      | 34.00    | 26.68                               | 141.0         | .668                   | 2.11                     | -                               |
| 400          | 6.00      | 34.09    | 26.86                               | 125.6         | .802                   | 1.04                     | -                               |
| 500          | 5.20      | 34.25    | 27.08                               | 104.9         | .918                   | .70                      | -                               |
| 600          | 4.68      | 34.31    | 27.19                               | 95.3          | 1.020                  | .54                      | -                               |
| 700          | 4.55      | 34.35    | 27.23                               | 91.8          | 1.114                  | .48                      | -                               |
| 800          | 4.34      | 34.40    | 27.30                               | 86.5          | 1.204                  | .49                      | -                               |
| 1000         | 3.62      | 34.49    | 27.44                               | 73.1          | 1.365                  | .71                      | -                               |

## STATION 80.120 (Interpolated Values at Standard Depths)

CREST: 32°09'N 125°15'W June 11, 1950 0438 GCT Wire angle: 12°  
 Sounding: 2,230 fms. Depth of observation: 1163 m. Weather: clear  
 Sea: moderate Wind: 270°, force 3

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 15.66 | 33.08 | 24.37 | 356.8 | .0000 | 5.52 | - |
| 10   | 14.84 | 33.09 | 24.56 | 339.2 | .0349 | 5.60 | - |
| 20   | 14.77 | 33.05 | 24.54 | 341.0 | .0691 | 6.15 | - |
| 30   | 14.70 | 33.04 | 24.55 | 340.6 | .1033 | 6.19 | - |
| 50   | 14.27 | 33.04 | 24.64 | 332.4 | .1709 | 5.71 | - |
| 75   | 14.41 | 33.03 | 24.60 | 336.6 | .2550 | 5.23 | - |
| 100  | 13.25 | 33.09 | 24.89 | 310.0 | .3364 | 4.77 | - |
| 150  | 10.77 | 33.38 | 25.58 | 245.0 | .476  | 3.99 | - |
| 200  | 8.77  | 33.73 | 26.18 | 188.0 | .585  | 3.65 | - |
| 250  | 7.86  | 33.98 | 26.51 | 156.9 | .672  | 3.08 | - |
| 300  | 7.31  | 34.05 | 26.65 | 144.7 | .748  | 2.35 | - |
| 400  | 5.84  | 34.02 | 26.82 | 128.8 | .886  | 1.71 | - |
| 500  | 5.15  | 34.11 | 26.97 | 114.7 | 1.009 | 1.28 | - |
| 600  | 5.12  | 34.21 | 27.06 | 108.0 | 1.121 | .64  | - |
| 700  | 4.79  | 34.30 | 27.17 | 98.4  | 1.225 | .47  | - |
| 800  | 4.37  | 33.37 | 27.27 | 89.1  | 1.320 | .45  | - |
| 1000 | 3.77  | 34.47 | 27.41 | 76.3  | 1.487 | .66  | - |



## STATION 80.130 (Interpolated Values at Standard Depths)

CREST: 31°49'N 125°56'W June 11, 1950 1024 GCT Wire angle: 8°  
 Sounding: 2,250 fms. Depth of observation: 1198 m. Weather: clear  
 Sea: moderate Wind: 270°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 16.11     | 33.42    | 24.53                               | 341.5         | .0000                  | 6.00                     | -                               |
| 10           | 16.10     | 33.39    | 24.51                               | 343.8         | .0344                  | 5.76                     | -                               |
| 20           | 15.60     | 33.32    | 24.57                               | 338.5         | .0687                  | 5.92                     | -                               |
| 30           | 15.55     | 33.31    | 24.57                               | 338.5         | .1026                  | 6.02                     | -                               |
| 50           | 15.31     | 33.38    | 24.68                               | 328.9         | .1697                  | 6.07                     | -                               |
| 75           | 15.69     | 33.43    | 24.63                               | 334.0         | .2530                  | 5.60                     | -                               |
| 100          | 13.28     | 33.36    | 25.09                               | 290.8         | .3316                  | 5.74                     | -                               |
| 150          | 12.50     | 33.73    | 25.53                               | 250.1         | .468                   | 5.03                     | -                               |
| 200          | 9.65      | 33.73    | 26.04                               | 201.7         | .582                   | 4.60                     | -                               |
| 250          | 8.47      | 33.81    | 26.29                               | 178.4         | .677                   | 4.12                     | -                               |
| 300          | 7.63      | 33.99    | 26.56                               | 153.7         | .761                   | 3.48                     | -                               |
| 400          | 6.21      | 34.04    | 26.79                               | 132.0         | .905                   | 2.07                     | -                               |
| 500          | 5.17      | 34.11    | 26.97                               | 115.0         | 1.029                  | 1.21                     | -                               |
| 600          | 4.78      | 34.21    | 27.10                               | 103.9         | 1.140                  | .79                      | -                               |
| 700          | 4.44      | 34.31    | 27.21                               | 93.4          | 1.239                  | .50                      | -                               |
| 800          | 4.10      | 34.40    | 27.32                               | 83.7          | 1.329                  | .35                      | -                               |
| 1000         | 3.69      | 34.51    | 27.45                               | 72.4          | 1.487                  | .75                      | -                               |

## STATION 83.55 (Interpolated Values at Standard Depths)

CREST: 33°41'N 120°25'W June 16, 1950 1454 GCT Wire angle: 12°  
 Sounding: 700 fms. Depth of observation: 1250 m. Weather: drizzle  
 Sea: rough Wind: 320°, force 4

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 12.88 | 33.62 | 25.37 | 261.6 | .0000 | 5.53 | - |
| 10   | 12.86 | 33.66 | 25.40 | 258.6 | .0261 | 5.23 | - |
| 20   | 12.75 | 33.62 | 25.39 | 259.7 | .0521 | 5.50 | - |
| 30   | 12.25 | 33.62 | 25.49 | 250.7 | .0778 | 5.68 | - |
| 50   | 11.33 | 33.64 | 25.68 | 233.3 | .1264 | 4.87 | - |
| 75   | 9.50  | 33.77 | 26.10 | 194.0 | .1801 | 3.15 | - |
| 100  | 9.01  | 33.92 | 26.29 | 175.7 | .2266 | 2.60 | - |
| 150  | 8.41  | 34.07 | 26.50 | 156.5 | .310  | 2.08 | - |
| 200  | 7.92  | 34.15 | 26.64 | 144.3 | .386  | 1.37 | - |
| 250  | 7.55  | 34.20 | 26.73 | 136.2 | .457  | 1.05 | - |
| 300  | 7.30  | 34.24 | 26.80 | 130.5 | .524  | .92  | - |
| 400  | 6.87  | 34.30 | 26.91 | 121.6 | .651  | .72  | - |
| 500  | 6.30  | 34.33 | 27.01 | 113.1 | .769  | .56  | - |
| 600  | 5.73  | 34.35 | 27.09 | 105.4 | .879  | .48  | - |
| 700  | 5.30  | 34.36 | 27.15 | 100.3 | .983  | .45  | - |
| 800  | 4.89  | 34.38 | 27.22 | 94.7  | 1.082 | .47  | - |
| 1000 | 4.17  | 34.49 | 27.38 | 79.7  | 1.258 | .63  | - |



## STATION 83.60 (Interpolated Values at Standard Depths)

CREST: 33°32'N 120°45'W June 16, 1950 1118 GCT Wire angle: 22°  
 Sounding: 950 fms. Depth of observation: 1197 m. Weather: drizzle  
 Sea: rough Wind: 320°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>( $\mu$ g at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------------|
| 0            | 12.97     | 33.62    | 25.35                               | 263.3         | .0000                  | 6.30                     | -                                     |
| 10           | 12.97     | 33.62    | 25.35                               | 263.6         | .0264                  | 6.03                     | -                                     |
| 20           | 12.90     | 33.66    | 25.40                               | 259.6         | .0527                  | 5.99                     | -                                     |
| 30           | 12.50     | 33.65    | 25.47                               | 253.1         | .0784                  | 5.90                     | -                                     |
| 50           | 11.42     | 33.59    | 25.62                               | 238.6         | .1279                  | 5.43                     | -                                     |
| 75           | 10.59     | 33.66    | 25.83                               | 219.8         | .1855                  | 4.72                     | -                                     |
| 100          | 9.35      | 33.67    | 26.04                               | 199.5         | .2382                  | 4.00                     | -                                     |
| 150          | 8.37      | 33.90    | 26.38                               | 168.5         | .331                   | 3.11                     | -                                     |
| 200          | 8.07      | 34.09    | 26.57                               | 150.9         | .411                   | 1.95                     | -                                     |
| 250          | 7.68      | 34.18    | 26.70                               | 139.5         | .484                   | 1.54                     | -                                     |
| 300          | 7.21      | 34.24    | 26.81                               | 129.2         | .552                   | 1.24                     | -                                     |
| 400          | 6.63      | 34.29    | 26.93                               | 119.1         | .677                   | .78                      | -                                     |
| 500          | 6.03      | 34.33    | 27.04                               | 109.5         | .792                   | .62                      | -                                     |
| 600          | 5.55      | 34.39    | 27.15                               | 100.1         | .898                   | .56                      | -                                     |
| 700          | 5.11      | 34.43    | 27.23                               | 92.7          | .996                   | .56                      | -                                     |
| 800          | 4.70      | 34.45    | 27.30                               | 87.2          | 1.086                  | .55                      | -                                     |
| 1000         | 4.18      | 34.45    | 27.35                               | 82.7          | 1.258                  | .75                      | -                                     |

## STATION 83.70 (Interpolated Values at Standard Depths)

CREST: 33°13'N 121°25'W June 16, 1950 0605 GCT Wire angle: 20°  
 Sounding: 2,000 fms. Depth of observation: 1206 m. Weather: overcast  
 Sea: rough Wind: 320°, force 4

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.71 | 33.17 | 24.65 | 330.4 | .0000 | 5.53 | - |
| 10   | 14.67 | 33.11 | 24.61 | 334.3 | .0334 | 6.10 | - |
| 20   | 13.97 | 33.08 | 24.73 | 322.7 | .0664 | 6.23 | - |
| 30   | 13.89 | 33.07 | 24.74 | 322.2 | .0987 | 6.24 | - |
| 50   | 12.38 | 33.06 | 25.03 | 294.7 | .1607 | 6.14 | - |
| 75   | 12.04 | 33.15 | 25.17 | 282.5 | .2333 | 5.68 | - |
| 100  | 9.45  | 33.04 | 25.53 | 247.7 | .3000 | 5.30 | - |
| 150  | 8.59  | 33.70 | 26.19 | 186.6 | .409  | 3.80 | - |
| 200  | 8.10  | 33.96 | 26.46 | 161.0 | .497  | 2.81 | - |
| 250  | 7.51  | 33.98 | 26.57 | 151.9 | .576  | 2.25 | - |
| 300  | 6.82  | 34.00 | 26.68 | 141.7 | .650  | 1.82 | - |
| 400  | 5.95  | 34.13 | 26.89 | 122.0 | .782  | 1.18 | - |
| 500  | 5.39  | 34.20 | 27.02 | 111.0 | .900  | .71  | - |
| 600  | 4.92  | 34.27 | 27.13 | 101.1 | 1.007 | .61  | - |
| 700  | 4.63  | 34.35 | 27.22 | 92.7  | 1.105 | .60  | - |
| 800  | 4.47  | 34.43 | 27.30 | 85.9  | 1.195 | .60  | - |
| 1000 | 3.89  | 34.49 | 27.41 | 76.3  | 1.359 | .74  | - |



## STATION 83.80 (Interpolated Values at Standard Depths)

CREST: 32°54'N 122°07'W June 16, 1950 0052 GCT Wire angle: 44°  
 Sounding: 2,175 fms. Depth of observation: 791 m. Weather: rain showers  
 Sea: rough Wind: 320°, force 4

| Depth | T      | S       | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> | PO <sub>4</sub> -P |
|-------|--------|---------|-----------------------|---------------|------------|----------------|--------------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         | (µg at/L)          |
| 0     | 14.55  | 33.06   | 24.59                 | 335.3         | .0000      | 5.30           | -                  |
| 10    | 14.40  | 33.04   | 24.61                 | 334.0         | .0336      | 5.56           | -                  |
| 20    | 14.18  | 33.04   | 24.66                 | 329.8         | .0669      | 5.23           | -                  |
| 30    | 14.17  | 33.02   | 24.64                 | 331.4         | .1001      | 5.33           | -                  |
| 50    | 14.03  | 33.14   | 24.77                 | 320.3         | .1656      | 5.25           | -                  |
| 75    | 12.85  | 33.08   | 24.96                 | 302.6         | .2439      | 4.82           | -                  |
| 100   | 10.32  | 33.12   | 25.45                 | 255.7         | .3141      | 4.63           | -                  |
| 150   | 9.13   | 33.60   | 26.02                 | 202.2         | .429       | 3.16           | -                  |
| 200   | 8.37   | 33.89   | 26.37                 | 170.2         | .523       | 2.22           | -                  |
| 250   | 7.81   | 34.02   | 26.55                 | 153.2         | .605       | 1.80           | -                  |
| 300   | 7.10   | 34.02   | 26.65                 | 144.0         | .679       | 1.52           | -                  |
| 400   | 6.06   | 34.07   | 26.83                 | 127.9         | .816       | 1.27           | -                  |
| 500   | 5.56   | 34.17   | 26.97                 | 115.3         | .939       | .78            | -                  |
| 600   | 4.99   | 34.22   | 27.08                 | 105.7         | 1.051      | .56            | -                  |
| 700   | 4.53   | 34.26   | 27.16                 | 98.2          | 1.153      | .45            | -                  |
| 800   | (4.30) | (34.34) | (27.25)               | (90.5)        | (1.249)    | (.40)          | -                  |
| 1000  | (3.75) | (34.44) | (27.39)               | (78.3)        | (1.419)    | -              | -                  |

## STATION 83.90 (Interpolated Values at Standard Depths)

CREST: 32°36'N 122°46'W June 15, 1950 1939 GCT Wire Angle: 23°  
 Sounding: 2,130 fms. Depth of observation: 1160 m. Weather: overcast  
 Sea: very rough Wind: 320°, force missing

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.91 | 33.08 | 24.53 | 341.1 | .0000 | 6.02 | - |
| 10   | 14.88 | 33.08 | 24.54 | 340.8 | .0342 | 5.89 | - |
| 20   | 14.82 | 33.06 | 24.54 | 341.3 | .0685 | 5.83 | - |
| 30   | 14.78 | 33.05 | 24.54 | 341.5 | .1027 | 5.85 | - |
| 50   | 14.48 | 33.03 | 24.59 | 337.4 | .1710 | 5.97 | - |
| 75   | 14.10 | 33.00 | 24.64 | 332.6 | .2552 | 6.18 | - |
| 100  | 12.45 | 33.03 | 25.00 | 299.4 | .3347 | 6.39 | - |
| 150  | 9.99  | 33.36 | 25.69 | 233.6 | .469  | 5.41 | - |
| 200  | 8.20  | 33.68 | 26.23 | 183.2 | .574  | 3.98 | - |
| 250  | 7.54  | 33.89 | 26.49 | 159.0 | .660  | 3.38 | - |
| 300  | 7.08  | 33.99 | 26.63 | 146.0 | .737  | 2.75 | - |
| 400  | 6.14  | 34.05 | 26.81 | 130.4 | .876  | 1.37 | - |
| 500  | 5.48  | 34.17 | 26.98 | 114.3 | .999  | .74  | - |
| 600  | 4.95  | 34.26 | 27.12 | 102.2 | 1.109 | .64  | - |
| 700  | 4.56  | 34.32 | 27.21 | 94.1  | 1.208 | .63  | - |
| 800  | 4.22  | 34.34 | 27.26 | 89.5  | 1.301 | .63  | - |
| 1000 | 3.66  | 34.35 | 27.33 | 83.9  | 1.476 | .77  | - |



## STATION 87.35 (Interpolated Values at Standard Depths)

CREST: 33°49'N 118°37'W June 14, 1950 0806 GCT Wire angle: 0°  
 Sounding: 400 fms. Depth of observation: 703 m. Weather: partly cloudy  
 Sea: slight Wind: 270°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 16.10     | 33.60    | 24.67                               | 328.2         | .0000                  | 5.85                     | -                               |
| 10           | 15.61     | 33.58    | 24.76                               | 319.4         | .0325                  | 6.09                     | -                               |
| 20           | 13.48     | 33.57    | 25.21                               | 277.2         | .0625                  | 5.95                     | -                               |
| 30           | 11.80     | 33.57    | 25.54                               | 246.3         | .0887                  | 5.47                     | -                               |
| 50           | 10.33     | 33.58    | 25.81                               | 220.8         | .1357                  | 3.97                     | -                               |
| 75           | 9.78      | 33.76    | 26.04                               | 199.1         | .1885                  | 3.03                     | -                               |
| 100          | 9.10      | 33.89    | 26.25                               | 179.3         | .2361                  | 2.57                     | -                               |
| 150          | 8.71      | 34.04    | 26.43                               | 163.2         | .322                   | 1.94                     | -                               |
| 200          | 8.52      | 34.13    | 26.53                               | 154.6         | .402                   | 1.53                     | -                               |
| 250          | 7.97      | 34.13    | 26.62                               | 147.4         | .478                   | 1.13                     | -                               |
| 300          | 7.65      | 34.16    | 26.69                               | 141.4         | .551                   | .78                      | -                               |
| 400          | 7.04      | 34.24    | 26.84                               | 128.4         | .687                   | -                        | -                               |
| 500          | 6.41      | 34.27    | 26.94                               | 119.0         | .812                   | -                        | -                               |
| 600          | 5.91      | 34.31    | 27.04                               | 110.7         | .928                   | -                        | -                               |
| 700          | 5.37      | 34.34    | 27.13                               | 102.7         | 1.035                  | -                        | -                               |

## STATION 87.40 (Interpolated Values at Standard Depths)

CREST: 33°40'N 118°58'W June 14, 1950 1126 GCT Wire angle: 5°  
 Sounding: 390 fms. Depth of observation: 603 m. Weather: partly cloudy  
 Sea: moderate Wind: 360°, force 3

|     |       |       |       |       |       |      |   |
|-----|-------|-------|-------|-------|-------|------|---|
| 0   | 15.69 | 33.57 | 24.74 | 321.6 | .0000 | 6.01 | - |
| 10  | 15.64 | 33.57 | 24.75 | 320.8 | .0322 | 5.95 | - |
| 20  | 13.75 | 33.57 | 25.15 | 282.5 | .0625 | 5.80 | - |
| 30  | 11.90 | 33.57 | 25.52 | 248.1 | .0892 | 5.45 | - |
| 50  | 9.93  | 33.64 | 25.92 | 209.9 | .1352 | 3.46 | - |
| 75  | 9.62  | 33.82 | 26.12 | 192.1 | .1857 | 2.95 | - |
| 100 | 9.01  | 33.89 | 26.27 | 178.0 | .2323 | 2.66 | - |
| 150 | 8.57  | 34.01 | 26.43 | 163.3 | .318  | 2.15 | - |
| 200 | 8.19  | 34.07 | 26.54 | 154.2 | .398  | 1.75 | - |
| 250 | 7.78  | 34.13 | 26.64 | 144.6 | .473  | 1.06 | - |
| 300 | 7.38  | 34.16 | 26.73 | 137.5 | .544  | .75  | - |
| 400 | 6.65  | 34.25 | 26.90 | 122.3 | .675  | -    | - |
| 500 | 6.20  | 34.27 | 26.97 | 116.2 | .796  | -    | - |
| 600 | 5.76  | 34.27 | 27.03 | 111.7 | .911  | -    | - |



## STATION 87.60 (Interpolated Values at Standard Depths)

CREST: 33°00'N 120°21'W June 14, 1950 2038 GCT Wire angle: 23°  
 Sounding: 350 fms. Depth of observation: 742 m. Weather: cloudy  
 Sea: rough Wind: 320°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \sigma$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.50     | 33.68    | 25.29                               | 269.0         | .0000                  | 5.88                     | -                               |
| 10           | 13.50     | 33.64    | 25.26                               | 272.2         | .0272                  | 5.56                     | -                               |
| 20           | 13.41     | 33.64    | 25.28                               | 270.7         | .0544                  | 5.70                     | -                               |
| 30           | 13.35     | 33.64    | 25.29                               | 269.8         | .0816                  | 5.68                     | -                               |
| 50           | 11.15     | 33.67    | 25.73                               | 228.0         | .1316                  | 4.33                     | -                               |
| 75           | 9.80      | 33.69    | 25.98                               | 204.6         | .1860                  | 3.48                     | -                               |
| 100          | 9.15      | 33.80    | 26.18                               | 186.8         | .2352                  | 2.90                     | -                               |
| 150          | 5.87      | 33.93    | 26.75                               | 132.7         | .316                   | 2.42                     | -                               |
| 200          | 4.98      | 34.08    | 26.97                               | 111.7         | .377                   | 1.60                     | -                               |
| 250          | 4.50      | 34.15    | 27.08                               | 101.6         | .431                   | 1.00                     | -                               |
| 300          | 4.36      | 34.17    | 27.11                               | 99.1          | .481                   | .83                      | -                               |
| 400          | 3.76      | 34.25    | 27.24                               | 87.6          | .576                   | .65                      | -                               |
| 500          | 3.28      | 34.32    | 27.34                               | 78.2          | .659                   | .60                      | -                               |
| 600          | 2.81      | 34.33    | 27.39                               | 73.5          | .736                   | -                        | -                               |
| 700          | 2.47      | 34.35    | 27.43                               | 69.2          | .808                   | -                        | -                               |

## STATION 87.70 (Interpolated Values at Standard Depths)

CREST: 32°39'N 121°03'W June 15, 1950 0220 GCT Wire angle: 35°  
 Sounding: 2,000 fms. Depth of observation: 955 m. Weather: overcast  
 Sea: rough Wind: 320°, force 4

|      |        |         |         |        |         |       |   |
|------|--------|---------|---------|--------|---------|-------|---|
| 0    | 14.76  | 33.13   | 24.60   | 334.4  | .0000   | 5.37  | - |
| 10   | 14.76  | 33.13   | 24.60   | 334.7  | .0336   | 5.25  | - |
| 20   | 14.75  | 33.13   | 24.61   | 334.7  | .0672   | 5.00  | - |
| 30   | 14.74  | 33.11   | 24.59   | 336.3  | .1009   | 5.03  | - |
| 50   | 14.47  | 33.10   | 24.64   | 332.0  | .1680   | 5.07  | - |
| 75   | 13.07  | 33.26   | 25.05   | 293.5  | .2467   | 5.11  | - |
| 100  | 10.42  | 33.47   | 25.71   | 231.5  | .3127   | 4.98  | - |
| 150  | 9.23   | 33.56   | 25.98   | 206.7  | .423    | 3.47  | - |
| 200  | 8.42   | 33.71   | 26.22   | 184.2  | .521    | 2.67  | - |
| 250  | 7.83   | 33.98   | 26.52   | 156.5  | .607    | 2.23  | - |
| 300  | 7.26   | 34.03   | 26.64   | 145.5  | .683    | 1.88  | - |
| 400  | 6.07   | 34.10   | 26.85   | 125.8  | .820    | 1.16  | - |
| 500  | 5.46   | 34.17   | 26.99   | 114.1  | .941    | .80   | - |
| 600  | 4.94   | 34.25   | 27.11   | 102.8  | 1.050   | .57   | - |
| 700  | 4.62   | 34.35   | 27.22   | 92.6   | 1.149   | .45   | - |
| 800  | 4.35   | 34.38   | 27.28   | 88.1   | 1.240   | .43   | - |
| 1000 | (3.75) | (34.41) | (27.36) | (80.5) | (1.411) | (.75) | - |



## STATION 87.80 (Interpolated Values at Standard Depths)

CREST: 32°20'N 121°43'W June 15, 1950 0802 GCT Wire angle: 23°  
 Sounding: 2,250 fms. Depth of observation: 1.196 m. Weather: cloudy  
 Sea: very rough Wind: 320°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \sigma$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.45     | 33.06    | 24.62                               | 333.2         | .0000                  | 6.23                     | -                               |
| 10           | 14.45     | 33.06    | 24.62                               | 333.5         | .0335                  | 5.88                     | -                               |
| 20           | 14.45     | 33.06    | 24.62                               | 333.8         | .0670                  | 6.10                     | -                               |
| 30           | 14.49     | 33.08    | 24.62                               | 333.4         | .1005                  | 6.09                     | -                               |
| 50           | 14.52     | 33.13    | 24.66                               | 330.9         | .1672                  | 5.95                     | -                               |
| 75           | 14.12     | 33.07    | 24.69                               | 327.9         | .2500                  | 5.92                     | -                               |
| 100          | 13.76     | 33.32    | 24.96                               | 303.1         | .3294                  | 5.90                     | -                               |
| 150          | 10.21     | 33.25    | 25.57                               | 245.3         | .467                   | 5.35                     | -                               |
| 200          | 8.78      | 33.73    | 26.18                               | 188.1         | .577                   | 3.65                     | -                               |
| 250          | 7.97      | 33.94    | 26.47                               | 161.4         | .665                   | 2.92                     | -                               |
| 300          | 7.25      | 34.00    | 26.62                               | 147.6         | .742                   | 2.59                     | -                               |
| 400          | 6.22      | 34.06    | 26.80                               | 130.7         | .883                   | 2.21                     | -                               |
| 500          | 5.58      | 34.14    | 26.95                               | 117.8         | 1.008                  | .92                      | -                               |
| 600          | 5.00      | 34.22    | 27.08                               | 105.8         | 1.121                  | .78                      | -                               |
| 700          | 4.55      | 34.30    | 27.19                               | 95.5          | 1.222                  | .61                      | -                               |
| 800          | 4.23      | 34.40    | 27.31                               | 85.2          | 1.314                  | .47                      | -                               |
| 1000         | 3.69      | 34.47    | 27.42                               | 75.4          | 1.476                  | .72                      | -                               |

## STATION 87.90 (Interpolated Values at Standard Depths)

CREST: 32°01'N 122°24'W June 15, 1950 1344 GCT Wire angle: 21°  
 Sounding: 2,275 fms. Depth of observation: 1190 m. Weather: overcast  
 Sea: rough Wind: 320°, force 4

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 15.52 | 33.33 | 24.59 | 335.5 | .0000 | 5.64 | - |
| 10   | 15.52 | 33.34 | 24.60 | 335.1 | .0337 | 5.50 | - |
| 20   | 15.52 | 33.35 | 24.61 | 334.6 | .0673 | 5.53 | - |
| 30   | 15.52 | 33.37 | 24.62 | 333.4 | .1008 | 5.61 | - |
| 50   | 15.63 | 33.48 | 24.68 | 328.3 | .1673 | 5.78 | - |
| 75   | 14.32 | 33.14 | 24.70 | 326.8 | .2497 | 5.78 | - |
| 100  | 14.23 | 33.44 | 24.95 | 303.7 | .3290 | 5.54 | - |
| 150  | 11.15 | 33.49 | 25.59 | 243.5 | .467  | 5.14 | - |
| 200  | 9.06  | 33.66 | 26.08 | 197.6 | .578  | 4.07 | - |
| 250  | 8.33  | 33.86 | 26.35 | 172.7 | .671  | 3.66 | - |
| 300  | 7.49  | 33.97 | 26.56 | 153.2 | .753  | 3.29 | - |
| 400  | 6.60  | 34.05 | 26.75 | 136.4 | .899  | 1.59 | - |
| 500  | 5.60  | 34.13 | 26.94 | 118.8 | 1.028 | 1.04 | - |
| 600  | 4.72  | 34.23 | 27.12 | 101.7 | 1.139 | .78  | - |
| 700  | 4.50  | 34.33 | 27.22 | 92.6  | 1.237 | .62  | - |
| 800  | 4.43  | 34.41 | 27.29 | 86.9  | 1.328 | .59  | - |
| 1000 | 3.92  | 34.47 | 27.39 | 78.1  | 1.495 | .70  | - |



## STATION 90.30 (Interpolated Values at Standard Depths)

CREST: 33°24'N 117°55'W June 14, 1950 0248 GCT Wire angle: 6°  
 Sounding: 335 fms. Depth of observation: 502 m. Weather: cloudy  
 Sea: slight Wind: 220°, force 1

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | 10 <sup>5</sup> S | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|-------------------|------------------------|--------------------------|---------------------------------|
| 0            | 17.20     | 33.58    | 24.40                               | 354.0             | .0000                  | 5.39                     | -                               |
| 10           | 16.49     | 33.57    | 24.56                               | 339.2             | .0348                  | 5.50                     | -                               |
| 20           | 14.52     | 33.50    | 24.94                               | 303.0             | .0670                  | 5.92                     | -                               |
| 30           | 12.75     | 33.49    | 25.29                               | 269.5             | .0958                  | 6.02                     | -                               |
| 50           | 10.72     | 33.58    | 25.74                               | 227.3             | .1457                  | 4.50                     | -                               |
| 75           | 9.61      | 33.71    | 26.03                               | 200.1             | .1994                  | 2.99                     | -                               |
| 100          | 9.27      | 33.83    | 26.18                               | 186.4             | .2480                  | 2.74                     | -                               |
| 150          | 8.79      | 34.02    | 26.40                               | 165.9             | .337                   | 2.18                     | -                               |
| 200          | 8.49      | 34.08    | 26.50                               | 157.9             | .418                   | 1.73                     | -                               |
| 250          | 8.63      | 34.25    | 26.61                               | 148.3             | .495                   | .99                      | -                               |
| 300          | 8.08      | 34.27    | 26.71                               | 139.5             | .568                   | .60                      | -                               |
| 400          | 7.40      | 34.29    | 26.82                               | 129.8             | .704                   | -                        | -                               |
| 500          | 6.40      | 34.24    | 26.92                               | 121.1             | .830                   | -                        | -                               |

## STATION 90.37 (Interpolated Values at Standard Depths)

CREST: 33°11'N 118°24'W June 13, 1950 2135 GCT Wire angle: 16°  
 Sounding: 630 fms. Depth of observation: 980 m. Weather: partly cloudy  
 Sea: moderate Wind: 270°, force 8

|      |        |         |         |        |         |      |   |
|------|--------|---------|---------|--------|---------|------|---|
| 0    | 16.53  | 33.57   | 24.55   | 339.8  | .0000   | 5.53 | - |
| 10   | 16.25  | 33.53   | 24.58   | 336.8  | .0340   | 5.72 | - |
| 20   | 13.80  | 33.48   | 25.07   | 290.1  | .0654   | 5.52 | - |
| 30   | 11.25  | 33.48   | 25.57   | 243.3  | .0922   | 5.08 | - |
| 50   | 10.25  | 33.58   | 25.82   | 219.5  | .1387   | 4.25 | - |
| 75   | 9.60   | 33.71   | 26.03   | 200.0  | .1914   | 3.52 | - |
| 100  | 9.06   | 33.89   | 26.26   | 178.7  | .2391   | 2.88 | - |
| 150  | 8.58   | 34.00   | 26.42   | 164.2  | .325    | 2.27 | - |
| 200  | 8.19   | 34.11   | 26.57   | 151.2  | .405    | 1.87 | - |
| 250  | 7.84   | 34.17   | 26.67   | 142.5  | .479    | 1.44 | - |
| 300  | 7.54   | 34.21   | 26.74   | 136.1  | .549    | 1.02 | - |
| 400  | 7.27   | 34.29   | 26.84   | 127.9  | .682    | .66  | - |
| 500  | 6.28   | 34.28   | 26.97   | 116.5  | .805    | .50  | - |
| 600  | 5.71   | 34.30   | 27.06   | 108.8  | .919    | .45  | - |
| 700  | 5.10   | 34.34   | 27.16   | 99.3   | 1.024   | .46  | - |
| 800  | 4.78   | 34.37   | 27.22   | 94.1   | 1.122   | -    | - |
| 1000 | (4.19) | (34.44) | (27.34) | (83.6) | (1.301) | -    | - |



## STATION 90.45 (Interpolated Values at Standard Depths)

CREST: 32°56'N 118°58'W June 13, 1950 1622 GCT Wire angle: 20°  
 Sounding: 850 fms. Depth of observation: 1,226 m. Weather: overcast  
 Sea: rough Wind: 320°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.30     | 33.66    | 24.89                               | 306.8         | .0000                  | 5.38                     | -                               |
| 10           | 15.31     | 33.62    | 24.86                               | 310.2         | .0310                  | 5.72                     | -                               |
| 20           | 14.95     | 33.58    | 24.91                               | 305.9         | .0619                  | 5.28                     | -                               |
| 30           | 12.30     | 33.58    | 25.45                               | 254.6         | .0900                  | 4.30                     | -                               |
| 50           | 10.20     | 33.62    | 25.86                               | 215.7         | .1373                  | 3.10                     | -                               |
| 75           | 9.70      | 33.78    | 26.07                               | 196.4         | .1891                  | 2.73                     | -                               |
| 100          | 9.11      | 33.86    | 26.23                               | 181.7         | .2367                  | 2.44                     | -                               |
| 150          | 8.67      | 34.06    | 26.46                               | 161.1         | .323                   | 1.70                     | -                               |
| 200          | 8.28      | 34.19    | 26.62                               | 146.6         | .400                   | 1.30                     | -                               |
| 250          | 7.82      | 34.22    | 26.71                               | 138.5         | .472                   | 1.11                     | -                               |
| 300          | 7.40      | 34.22    | 26.77                               | 133.4         | .541                   | .98                      | -                               |
| 400          | 6.66      | 34.24    | 26.89                               | 123.2         | .670                   | .65                      | -                               |
| 500          | 6.13      | 34.30    | 27.00                               | 113.0         | .789                   | .44                      | -                               |
| 600          | 5.58      | 34.34    | 27.11                               | 104.2         | .899                   | .47                      | -                               |
| 700          | 5.15      | 34.38    | 27.19                               | 96.9          | 1.000                  | .48                      | -                               |
| 800          | 4.79      | 34.44    | 27.28                               | 89.1          | 1.094                  | .48                      | -                               |
| 1000         | 4.11      | 34.49    | 27.39                               | 78.9          | 1.264                  | .52                      | -                               |

## STATION 90.53 (Interpolated Values at Standard Depths)

CREST: 32°40'N 119°30'W June 13, 1950 1109 GCT Wire angle: 23°  
 Sounding: 400 fms. Depth of observation: 544 m. Weather: cloudy  
 Sea: rough Wind: 320°, force 5

|     |       |       |       |       |       |      |   |
|-----|-------|-------|-------|-------|-------|------|---|
| 0   | 14.39 | 33.60 | 25.04 | 292.5 | .0000 | 6.08 | - |
| 10  | 14.39 | 33.66 | 25.09 | 288.3 | .0292 | 6.00 | - |
| 20  | 14.36 | 33.63 | 25.07 | 290.2 | .0582 | 5.90 | - |
| 30  | 14.00 | 33.62 | 25.14 | 284.0 | .0870 | 5.67 | - |
| 50  | 11.05 | 33.63 | 25.72 | 229.2 | .1386 | 4.52 | - |
| 75  | 9.76  | 33.70 | 26.00 | 203.2 | .1930 | 3.72 | - |
| 100 | 9.07  | 33.76 | 26.16 | 188.5 | .2422 | 3.53 | - |
| 150 | 8.40  | 34.12 | 26.54 | 152.7 | .328  | 2.05 | - |
| 200 | 7.90  | 34.18 | 26.67 | 141.8 | .402  | 1.48 | - |
| 250 | 7.59  | 34.22 | 26.74 | 135.2 | .472  | 1.15 | - |
| 300 | 7.30  | 34.28 | 26.83 | 127.5 | .538  | .90  | - |
| 400 | 6.59  | 34.34 | 26.98 | 114.8 | .660  | .65  | - |
| 500 | 5.91  | 34.37 | 27.09 | 105.0 | .771  | .50  | - |



## STATION 90.60 (Interpolated Values at Standard Depths)

CREST: 32°22'N 120°00'W June 13, 1950 0556 GCT Wire angle: 30°  
 Sounding: 1,600 fms. Depth of observation: 1,066 m. Weather: cloudy  
 Sea: rough Wind: 340°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.81     | 33.51    | 25.10                               | 287.5         | .0000                  | 4.56                     | -                               |
| 10           | 13.85     | 33.53    | 25.10                               | 287.1         | .0288                  | 5.30                     | -                               |
| 20           | 13.76     | 33.51    | 25.11                               | 287.1         | .0577                  | 5.64                     | -                               |
| 30           | 13.30     | 33.48    | 25.18                               | 280.6         | .0862                  | 5.78                     | -                               |
| 50           | 12.30     | 33.39    | 25.30                               | 269.0         | .1414                  | 5.90                     | -                               |
| 75           | 11.62     | 33.37    | 25.42                               | 258.9         | .2078                  | 5.90                     | -                               |
| 100          | 9.77      | 33.57    | 25.90                               | 213.5         | .2672                  | 5.85                     | -                               |
| 150          | 8.65      | 33.93    | 26.36                               | 170.5         | .364                   | 2.40                     | -                               |
| 200          | 7.90      | 33.99    | 26.52                               | 155.9         | .446                   | 2.00                     | -                               |
| 250          | 6.55      | 33.99    | 26.71                               | 138.1         | .520                   | 1.80                     | -                               |
| 300          | 6.16      | 34.01    | 26.77                               | 132.3         | .588                   | 1.63                     | -                               |
| 400          | 6.16      | 34.18    | 26.91                               | 121.0         | .716                   | .75                      | -                               |
| 500          | 5.94      | 34.33    | 27.05                               | 108.3         | .831                   | .65                      | -                               |
| 600          | 5.39      | 34.38    | 27.16                               | 98.8          | .936                   | .62                      | -                               |
| 700          | 4.44      | 34.40    | 27.28                               | 86.7          | 1.030                  | .60                      | -                               |
| 800          | 4.58      | 34.41    | 27.28                               | 88.7          | 1.118                  | .56                      | -                               |
| 1000         | 3.98      | 34.44    | 27.36                               | 81.0          | 1.290                  | .72                      | -                               |

## STATION 90.70 (Interpolated Values at Standard Depths)

CREST: 32°00'N 120°44'W June 13, 1950 0043 GCT Wire angle: 32°  
 Sounding: 2,100 fms. Depth of observation: 1,084 m. Weather: cloudy  
 Sea: rough Wind: 340°, force 5-6

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.59 | 33.13 | 24.64 | 330.9 | .0000 | 5.85 | - |
| 10   | 14.59 | 33.12 | 24.63 | 331.9 | .0333 | 5.85 | - |
| 20   | 14.06 | 33.06 | 24.70 | 326.0 | .0663 | 5.95 | - |
| 30   | 13.95 | 33.13 | 24.72 | 324.1 | .0989 | 5.93 | - |
| 50   | 13.78 | 33.08 | 24.77 | 319.8 | .1636 | 5.75 | - |
| 75   | 13.55 | 33.07 | 24.81 | 316.7 | .2436 | 5.66 | - |
| 100  | 11.15 | 33.06 | 25.26 | 274.0 | .3180 | 5.84 | - |
| 150  | 9.33  | 33.50 | 25.91 | 212.7 | .440  | 4.04 | - |
| 200  | 8.25  | 33.83 | 26.34 | 172.8 | .538  | 3.10 | - |
| 250  | 7.62  | 33.95 | 26.53 | 155.7 | .620  | 2.78 | - |
| 300  | 7.14  | 34.00 | 26.63 | 146.0 | .696  | 2.46 | - |
| 400  | 5.84  | 34.01 | 26.81 | 129.5 | .835  | 1.63 | - |
| 500  | 5.15  | 34.08 | 26.95 | 116.9 | .959  | 1.00 | - |
| 600  | 4.92  | 34.21 | 27.08 | 105.6 | 1.072 | .64  | - |
| 700  | 4.81  | 34.37 | 27.22 | 93.4  | 1.172 | .51  | - |
| 800  | 4.55  | 34.41 | 27.28 | 88.3  | 1.264 | .56  | - |
| 1000 | 3.84  | 34.45 | 27.39 | 78.6  | 1.433 | .71  | - |



## STATION 90.80 (Interpolated Values at Standard Depths)

CREST: 31°39'N 121°21'W June 12, 1950 1930 GCT Wire angle: 20°  
 Sounding: 2,040 fms. Depth of observation: 1,210 m. Weather: cloudy  
 Sea: rough Wind: 330°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \sigma$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.35     | 33.12    | 24.47                               | 347.3         | .0000                  | 5.60                     | -                               |
| 10           | 15.32     | 33.12    | 24.47                               | 347.0         | .0349                  | 5.52                     | -                               |
| 20           | 15.25     | 33.13    | 24.50                               | 345.0         | .0696                  | 5.54                     | -                               |
| 30           | 15.11     | 33.13    | 24.53                               | 342.4         | .1041                  | 5.55                     | -                               |
| 50           | 14.89     | 33.13    | 24.58                               | 338.4         | .1725                  | 5.55                     | -                               |
| 75           | 15.05     | 33.13    | 24.54                               | 342.4         | .2581                  | 5.60                     | -                               |
| 100          | 13.73     | 33.20    | 24.87                               | 311.3         | .3403                  | 5.92                     | -                               |
| 150          | 10.95     | 33.15    | 25.37                               | 265.0         | .485                   | 5.36                     | -                               |
| 200          | 9.10      | 33.54    | 25.98                               | 207.1         | .604                   | 3.87                     | -                               |
| 250          | 8.11      | 33.84    | 26.37                               | 170.9         | .699                   | 2.69                     | -                               |
| 300          | 7.50      | 33.94    | 26.54                               | 155.5         | .782                   | 1.85                     | -                               |
| 400          | 6.46      | 34.05    | 26.76                               | 134.6         | .928                   | 1.04                     | -                               |
| 500          | 5.44      | 34.05    | 26.89                               | 122.7         | 1.058                  | .94                      | -                               |
| 600          | 4.90      | 34.15    | 27.04                               | 109.8         | 1.175                  | .77                      | -                               |
| 700          | 4.62      | 34.27    | 27.16                               | 98.5          | 1.280                  | .64                      | -                               |
| 800          | 4.29      | 34.33    | 27.25                               | 91.1          | 1.376                  | .57                      | -                               |
| 1000         | 3.79      | 34.40    | 27.35                               | 81.7          | 1.551                  | .75                      | -                               |

## STATION 90.90 (Interpolated Values at Standard Depths)

CREST: 31°20'N 122°02'W June 12, 1950 1417 GCT Wire angle: 30°  
 Sounding: 2,150 fms. Depth of observation: 1,052 m. Weather: cloudy  
 Sea: rough Wind: 320°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \sigma$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.79     | 33.24    | 24.46                               | 347.8         | .0000                  | 5.35                     | -                               |
| 10           | 15.80     | 33.22    | 24.45                               | 349.8         | .0350                  | 5.05                     | -                               |
| 20           | 15.64     | 33.22    | 24.48                               | 346.7         | .0700                  | 5.16                     | -                               |
| 30           | 15.56     | 33.24    | 24.51                               | 343.8         | .1046                  | 5.11                     | -                               |
| 50           | 15.75     | 33.40    | 24.59                               | 336.7         | .1730                  | 5.02                     | -                               |
| 75           | 16.08     | 33.50    | 24.60                               | 337.3         | .2577                  | 5.09                     | -                               |
| 100          | 14.49     | 33.46    | 24.92                               | 307.4         | .3389                  | 5.07                     | -                               |
| 150          | 12.90     | 33.65    | 25.39                               | 263.5         | .483                   | 4.79                     | -                               |
| 200          | 9.90      | 33.70    | 25.97                               | 208.0         | .601                   | 4.00                     | -                               |
| 250          | 8.64      | 33.84    | 26.29                               | 178.8         | .699                   | 3.40                     | -                               |
| 300          | 7.81      | 33.94    | 26.49                               | 160.0         | .784                   | 2.84                     | -                               |
| 400          | 6.52      | 34.04    | 26.75                               | 136.1         | .933                   | 1.58                     | -                               |
| 500          | 5.77      | 34.11    | 26.90                               | 122.4         | 1.064                  | .99                      | -                               |
| 600          | 5.34      | 34.19    | 27.02                               | 112.2         | 1.182                  | .69                      | -                               |
| 700          | 4.66      | 34.27    | 27.16                               | 99.0          | 1.289                  | .44                      | -                               |
| 800          | 4.28      | 34.33    | 27.25                               | 91.0          | 1.385                  | .53                      | -                               |
| 1000         | 3.87      | 34.41    | 27.35                               | 82.0          | 1.559                  | .60                      | -                               |



## STATION 90.100 (Interpolated Values at Standard Depths)

CREST: 31°02'N 122°41'W June 12, 1950 0904 GCT Wire angle: 20°  
 Sounding: 2,100 fms. Depth of observation: 1,198 m. WEather: cloudy  
 Sea: rough Wind: 320°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 16.20     | 33.29    | 24.41                               | 353.0         | .0000                  | 5.37                     | -                               |
| 10           | 16.20     | 33.30    | 24.42                               | 352.5         | .0354                  | 5.67                     | -                               |
| 20           | 16.02     | 33.30    | 24.46                               | 348.9         | .0706                  | 5.64                     | -                               |
| 30           | 15.95     | 33.30    | 24.47                               | 347.7         | .1056                  | 5.60                     | -                               |
| 50           | 15.75     | 33.33    | 24.54                               | 341.8         | .1749                  | 5.55                     | -                               |
| 75           | 16.06     | 33.55    | 24.64                               | 333.2         | .2597                  | 5.30                     | -                               |
| 100          | 15.10     | 33.57    | 24.87                               | 312.0         | .3409                  | 5.13                     | -                               |
| 150          | 12.70     | 33.57    | 25.37                               | 265.6         | .486                   | 4.92                     | -                               |
| 200          | 10.10     | 33.63    | 25.89                               | 216.4         | .608                   | 4.56                     | -                               |
| 250          | 8.82      | 33.87    | 26.28                               | 179.3         | .707                   | 4.13                     | -                               |
| 300          | 8.03      | 33.97    | 26.48                               | 160.9         | .793                   | 3.51                     | -                               |
| 400          | 6.87      | 34.04    | 26.70                               | 140.9         | .945                   | 1.77                     | -                               |
| 500          | 6.08      | 34.14    | 26.88                               | 124.2         | 1.079                  | .83                      | -                               |
| 600          | 5.53      | 34.21    | 27.01                               | 113.2         | 1.199                  | .75                      | -                               |
| 700          | 4.94      | 34.27    | 27.13                               | 102.4         | 1.307                  | .55                      | -                               |
| 800          | 4.43      | 34.35    | 27.25                               | 91.3          | 1.405                  | .40                      | -                               |
| 1000         | 3.82      | 34.43    | 27.37                               | 79.9          | 1.578                  | .63                      | -                               |

## STATION 90.110 (Interpolated Values at Standard Depths)

CREST: 30°43'N 123°21'W June 12, 1950 0351 GCT Wire angle: 31°  
 Sounding: 2,100 fms. Depth of observation: 1,019 m. Weather: partly cloudy  
 Sea: rough Wind: 340°, force 4

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 16.60 | 33.44 | 24.43 | 350.8 | .0000 | 5.70 | - |
| 10   | 16.50 | 33.42 | 24.44 | 350.3 | .0352 | 5.70 | - |
| 20   | 16.19 | 33.42 | 24.51 | 343.9 | .0700 | 5.86 | - |
| 30   | 16.10 | 33.42 | 24.53 | 342.2 | .1045 | 5.88 | - |
| 50   | 16.11 | 33.52 | 24.61 | 335.7 | .1726 | 5.48 | - |
| 75   | 15.70 | 33.53 | 24.71 | 326.9 | .2559 | 5.60 | - |
| 100  | 14.50 | 33.48 | 24.93 | 306.2 | .3355 | 5.57 | - |
| 150  | 12.97 | 33.47 | 25.23 | 278.1 | .483  | 5.14 | - |
| 200  | 10.52 | 33.68 | 25.85 | 219.8 | .608  | 4.64 | - |
| 250  | 8.95  | 33.84 | 26.24 | 183.5 | .709  | 4.00 | - |
| 300  | 8.07  | 33.97 | 26.48 | 161.5 | .796  | 2.90 | - |
| 400  | 6.82  | 34.07 | 26.73 | 137.9 | .947  | 1.85 | - |
| 500  | 6.03  | 34.12 | 26.88 | 125.1 | 1.080 | 1.15 | - |
| 600  | 5.46  | 34.18 | 26.99 | 114.5 | 1.201 | .74  | - |
| 700  | 5.00  | 34.24 | 27.09 | 105.4 | 1.312 | .50  | - |
| 800  | 4.65  | 34.35 | 27.22 | 94.0  | 1.413 | .45  | - |
| 1000 | 3.96  | 34.47 | 27.39 | 78.6  | 1.587 | .70  | - |



## STATION 90.120 (Interpolated Values at Standard Depths)

CREST: 30°24'N 124°02'W June 11, 1950 2238 GCT Wire angle: 4°  
 Sounding: 2,250 fms. Depth of observation: 1200 m. Weather: cloudy  
 Sea: rough Wind: 360°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \sigma$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 17.36     | 33.66    | 24.42                               | 351.8         | .0000                  | 4.84                     | -                               |
| 10           | 16.79     | 33.61    | 24.52                               | 342.9         | .0349                  | 5.47                     | -                               |
| 20           | 16.70     | 33.63    | 24.55                               | 339.7         | .0691                  | 5.55                     | -                               |
| 30           | 16.70     | 33.70    | 24.61                               | 334.9         | .1030                  | 5.53                     | -                               |
| 50           | 16.90     | 33.82    | 24.65                               | 331.3         | .1700                  | 5.36                     | -                               |
| 75           | 17.25     | 33.91    | 24.64                               | 333.4         | .2535                  | 5.32                     | -                               |
| 100          | 17.30     | 33.92    | 24.63                               | 334.6         | .3375                  | 5.26                     | -                               |
| 150          | 14.30     | 33.93    | 25.32                               | 270.6         | .490                   | 5.16                     | -                               |
| 200          | 11.13     | 33.72    | 25.78                               | 227.3         | .615                   | 4.69                     | -                               |
| 250          | 9.17      | 33.84    | 26.20                               | 187.0         | .720                   | 3.72                     | -                               |
| 300          | 7.91      | 34.02    | 26.54                               | 155.5         | .806                   | 2.74                     | -                               |
| 400          | 6.50      | 34.05    | 26.76                               | 135.1         | .952                   | 1.65                     | -                               |
| 500          | 5.17      | 34.18    | 27.03                               | 109.7         | 1.076                  | .66                      | -                               |
| 600          | 5.28      | 34.27    | 27.09                               | 105.6         | 1.184                  | .60                      | -                               |
| 700          | 4.90      | 34.31    | 27.16                               | 99.0          | 1.288                  | .59                      | -                               |
| 800          | 4.48      | 34.34    | 27.23                               | 92.6          | 1.384                  | .54                      | -                               |
| 1000         | 3.89      | 34.45    | 27.38                               | 79.2          | 1.558                  | .69                      | -                               |

## STATION 93.30 (Interpolated Values at Standard Depths)

CREST: 32°47'N 117°31'W June 18, 1950 1238 GCT Wire angle: 0°  
 Sounding: 390 fms. Depth of observation: 455 m. Weather: overcast  
 Sea: moderate Wind: 270°, force 1

|     |       |       |       |       |       |      |   |
|-----|-------|-------|-------|-------|-------|------|---|
| 0   | 17.16 | 33.64 | 24.45 | 348.7 | .0000 | 5.49 | - |
| 10  | 15.54 | 33.60 | 24.79 | 316.5 | .0334 | 5.77 | - |
| 20  | 11.85 | 33.54 | 25.50 | 249.2 | .0618 | 5.00 | - |
| 30  | 10.72 | 33.53 | 25.70 | 230.6 | .0859 | 4.06 | - |
| 50  | 9.92  | 33.73 | 25.99 | 203.1 | .1295 | 3.06 | - |
| 75  | 9.41  | 33.86 | 26.18 | 185.9 | .1783 | 2.60 | - |
| 100 | 9.08  | 33.96 | 26.31 | 173.9 | .2236 | 2.59 | - |
| 150 | 8.60  | 34.07 | 26.47 | 159.4 | .307  | 2.19 | - |
| 200 | 8.60  | 34.25 | 26.61 | 147.0 | .385  | 1.64 | - |
| 250 | 7.98  | 34.15 | 26.63 | 146.0 | .458  | 1.27 | - |
| 300 | 7.76  | 34.25 | 26.74 | 136.3 | .529  | .88  | - |
| 400 | 7.16  | 34.31 | 26.87 | 124.9 | .661  | .57  | - |



## STATION 93.40 (Interpolated Values at Standard Depths)

CREST: 32°29'N 118°13'W June 18, 1950 1751 GCT Wire angle: 20°  
 Sounding: 850 fms. Depth of observation: 1135 m. Weather: overcast  
 Sea: rough Wind: 270°, force 1-2

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 16.02     | 33.60    | 24.69                               | 326.5         | .0000                  | 5.69                     | -                               |
| 10           | 16.00     | 33.58    | 24.68                               | 327.8         | .0328                  | 5.91                     | -                               |
| 20           | 15.80     | 33.56    | 24.71                               | 325.2         | .0656                  | 5.85                     | -                               |
| 30           | 15.00     | 33.54    | 24.87                               | 310.1         | .0975                  | 5.67                     | -                               |
| 50           | 11.27     | 33.46    | 25.55                               | 245.5         | .1534                  | 5.35                     | -                               |
| 75           | 10.72     | 33.56    | 25.73                               | 229.3         | .2131                  | 4.15                     | -                               |
| 100          | 9.30      | 33.80    | 26.15                               | 189.1         | .2657                  | 3.26                     | -                               |
| 150          | 8.75      | 33.97    | 26.37                               | 169.0         | .356                   | 2.53                     | -                               |
| 200          | 8.14      | 34.07    | 26.54                               | 153.4         | .437                   | 2.04                     | -                               |
| 250          | 7.69      | 34.14    | 26.67                               | 142.6         | .512                   | 1.49                     | -                               |
| 300          | 7.33      | 34.18    | 26.75                               | 135.3         | .582                   | 1.03                     | -                               |
| 400          | 6.76      | 34.25    | 26.88                               | 123.8         | .712                   | .64                      | -                               |
| 500          | 6.07      | 34.29    | 27.00                               | 113.0         | .832                   | .56                      | -                               |
| 600          | 5.51      | 34.33    | 27.11                               | 104.0         | .941                   | .52                      | -                               |
| 700          | 5.05      | 34.36    | 27.19                               | 96.1          | 1.042                  | .48                      | -                               |
| 800          | 4.66      | 34.36    | 27.23                               | 93.4          | 1.138                  | .50                      | -                               |
| 1000         | 4.06      | 34.38    | 27.31                               | 86.5          | 1.320                  | .61                      | -                               |

## STATION 93.50 (Interpolated Values at Standard Depths)

CREST: 32°10'N 118°53'W June 18, 1950 2304 GCT Wire angle: 27°  
 Sounding: 650 fms. Depth of observation: 1102 m. Weather: overcast  
 Sea: very rough Wind: 320°, force 6

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.87 | 33.60 | 24.94 | 302.2 | .0000 | 5.22 | - |
| 10   | 14.88 | 33.62 | 24.95 | 301.3 | .0303 | 5.07 | - |
| 20   | 14.87 | 33.62 | 24.96 | 301.3 | .0605 | 5.47 | - |
| 30   | 14.79 | 33.62 | 24.97 | 300.0 | .0907 | 5.00 | - |
| 50   | 9.54  | 33.75 | 26.07 | 195.6 | .1405 | 2.92 | - |
| 75   | 9.07  | 33.92 | 26.28 | 176.2 | .1873 | 2.62 | - |
| 100  | 8.69  | 34.02 | 26.42 | 163.5 | .2300 | 2.24 | - |
| 150  | 8.30  | 34.10 | 26.54 | 152.7 | .310  | 1.94 | - |
| 200  | 7.82  | 34.13 | 26.64 | 144.4 | .384  | 1.44 | - |
| 250  | 7.42  | 34.18 | 26.74 | 135.8 | .455  | 1.11 | - |
| 300  | 7.07  | 34.22 | 26.82 | 128.8 | .522  | .85  | - |
| 400  | 6.45  | 34.23 | 26.91 | 121.1 | .647  | .57  | - |
| 500  | 5.93  | 34.25 | 26.99 | 114.1 | .766  | .52  | - |
| 600  | 5.52  | 34.32 | 27.10 | 104.9 | .877  | .55  | - |
| 700  | 5.11  | 34.39 | 27.20 | 95.7  | .978  | .44  | - |
| 800  | 4.77  | 34.42 | 27.26 | 90.3  | 1.072 | .45  | - |
| 1000 | 4.05  | 34.47 | 27.38 | 79.7  | 1.244 | .57  | - |



## STATION 93.60 (Interpolated Values at Standard Depths)

CREST: 31°51'N 119°36'W June 19, 1950 0417 GCT Wire angle: 42°  
 Sounding: 1,000 fms. Depth of observation 1024 m. Weather: overcast  
 Sea: high Wind: 320°, force 6

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.93     | 33.49    | 25.06                               | 291.4         | .0000                  | 6.10                     | -                               |
| 10           | 13.91     | 33.49    | 25.06                               | 291.2         | .0292                  | 6.28                     | -                               |
| 20           | 13.90     | 33.50    | 25.07                               | 290.6         | .0585                  | 5.95                     | -                               |
| 30           | 13.88     | 33.55    | 25.11                               | 286.8         | .0874                  | 5.89                     | -                               |
| 50           | 12.65     | 33.48    | 25.31                               | 268.9         | .1433                  | 5.98                     | -                               |
| 75           | 10.32     | 33.55    | 25.79                               | 223.4         | .2051                  | 5.00                     | -                               |
| 100          | 9.58      | 33.67    | 26.00                               | 203.1         | .2588                  | 3.25                     | -                               |
| 150          | 8.63      | 33.85    | 26.30                               | 176.1         | .354                   | 2.74                     | -                               |
| 200          | 7.89      | 33.99    | 26.52                               | 155.7         | .438                   | 2.65                     | -                               |
| 250          | 7.59      | 34.15    | 26.69                               | 140.4         | .512                   | 1.85                     | -                               |
| 300          | 7.37      | 34.20    | 26.76                               | 134.4         | .582                   | 1.03                     | -                               |
| 400          | 6.50      | 34.20    | 26.88                               | 124.0         | .712                   | .72                      | -                               |
| 500          | 5.84      | 34.24    | 26.99                               | 113.7         | .832                   | .67                      | -                               |
| 600          | 5.41      | 34.31    | 27.10                               | 104.2         | .942                   | .57                      | -                               |
| 700          | 5.05      | 34.37    | 27.19                               | 96.4          | 1.043                  | .55                      | -                               |
| 800          | 4.62      | 34.40    | 27.26                               | 89.9          | 1.137                  | .58                      | -                               |
| 1000         | 3.96      | 34.42    | 27.35                               | 82.3          | 1.311                  | .69                      | -                               |

## STATION 93.70 (Interpolated Values at Standard Depths)

CREST: 31°32'N 120°16'W June 19, 1950 0932 GCT Wire angle: 32°  
 Sounding: 2,050 fms. Depth of observation: 1,032 m. Weather: overcast  
 Sea: very rough Wind: 320°, force 5

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.71 | 33.22 | 24.68 | 326.8 | .0000 | 5.92 | - |
| 10   | 14.69 | 33.22 | 24.69 | 326.6 | .0328 | 6.02 | - |
| 20   | 14.67 | 33.22 | 24.69 | 326.5 | .0656 | 5.63 | - |
| 30   | 14.68 | 33.22 | 24.69 | 327.0 | .0984 | 5.60 | - |
| 50   | 14.45 | 33.25 | 24.76 | 320.7 | .1635 | 5.65 | - |
| 75   | 13.75 | 33.37 | 25.00 | 298.6 | .2413 | 5.73 | - |
| 100  | 11.32 | 33.32 | 25.43 | 257.8 | .3113 | 4.77 | - |
| 150  | 9.60  | 33.71 | 26.03 | 201.4 | .427  | 3.02 | - |
| 200  | 8.71  | 33.96 | 26.37 | 170.1 | .520  | 2.24 | - |
| 250  | 8.11  | 34.07 | 26.55 | 153.9 | .602  | 1.73 | - |
| 300  | 7.67  | 34.13 | 26.66 | 143.9 | .677  | 1.30 | - |
| 400  | 6.74  | 34.19 | 26.84 | 128.0 | .814  | .77  | - |
| 500  | 6.06  | 34.25 | 26.97 | 115.8 | .937  | .57  | - |
| 600  | 5.50  | 34.30 | 27.08 | 106.1 | 1.049 | .49  | - |
| 700  | 4.99  | 34.35 | 27.18 | 97.1  | 1.152 | .45  | - |
| 800  | 4.55  | 34.37 | 27.25 | 91.3  | 1.247 | .49  | - |
| 1000 | 3.90  | 34.45 | 27.38 | 79.4  | 1.419 | .65  | - |



## STATION 93.80 (Interpolated Values at Standard Depths)

CREST: 31°13'N 120°56'W June 19, 1950 1445 GCT Wire angle: 49°  
 Sounding: 2,075 fms. Depth of observation: 1,129 m. Weather: overcast  
 Sea: high Wind: 320°, force 5-6

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.88     | 33.53    | 24.89                               | 307.6         | .0000                  | 5.65                     | -                               |
| 10           | 14.87     | 33.42    | 24.80                               | 315.7         | .0313                  | 6.02                     | -                               |
| 20           | 14.87     | 33.42    | 24.80                               | 316.0         | .0630                  | 5.64                     | -                               |
| 30           | 14.88     | 33.42    | 24.80                               | 316.4         | .0947                  | 5.84                     | -                               |
| 50           | 14.65     | 33.44    | 24.87                               | 310.8         | .1578                  | 6.33                     | -                               |
| 75           | 12.20     | 33.44    | 25.36                               | 264.1         | .2300                  | 5.32                     | -                               |
| 100          | 10.68     | 33.48    | 25.67                               | 235.1         | .2928                  | 5.57                     | -                               |
| 150          | 9.24      | 33.79    | 26.15                               | 189.9         | .400                   | 3.52                     | -                               |
| 200          | 8.43      | 34.00    | 26.45                               | 162.9         | .489                   | 2.73                     | -                               |
| 250          | 7.67      | 34.04    | 26.59                               | 149.7         | .567                   | 2.48                     | -                               |
| 300          | 7.08      | 34.07    | 26.70                               | 140.0         | .640                   | 2.17                     | -                               |
| 400          | 6.30      | 34.20    | 26.90                               | 121.3         | .772                   | .85                      | -                               |
| 500          | 5.87      | 34.28    | 27.02                               | 111.1         | .889                   | .53                      | -                               |
| 600          | 5.42      | 34.34    | 27.12                               | 102.1         | .997                   | .39                      | -                               |
| 700          | 4.89      | 34.38    | 27.22                               | 93.7          | 1.096                  | .35                      | -                               |
| 800          | 4.52      | 34.43    | 27.30                               | 86.5          | 1.187                  | .47                      | -                               |
| 1000         | 3.94      | 34.48    | 27.40                               | 77.6          | 1.353                  | .80                      | -                               |

## STATION 93.90 (Interpolated Values at Standard Depths)

CREST: 30°54'N 121°38'W June 19, 1950 1958 GCT Wire angle: 25°  
 Sounding: 2,100 fms. Depth of observation: 1,219 m. Weather: overcast  
 Sea: very rough Wind: 320°, force 5

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.85 | 33.15 | 24.60 | 334.8 | .0000 | 4.68 | - |
| 10   | 14.83 | 33.13 | 24.59 | 336.1 | .0337 | 4.95 | - |
| 20   | 14.82 | 33.12 | 24.58 | 336.9 | .0675 | 4.57 | - |
| 30   | 14.82 | 33.12 | 24.58 | 337.2 | .1013 | 4.32 | - |
| 50   | 14.78 | 33.13 | 24.60 | 336.2 | .1690 | 4.02 | - |
| 75   | 13.98 | 33.14 | 24.78 | 320.0 | .2514 | 5.25 | - |
| 100  | 12.28 | 33.11 | 25.09 | 290.4 | .3282 | 4.98 | - |
| 150  | 10.12 | 33.40 | 25.70 | 232.7 | .460  | 3.97 | - |
| 200  | 8.78  | 33.82 | 26.25 | 181.5 | .564  | 3.18 | - |
| 250  | 7.88  | 33.95 | 26.49 | 159.4 | .650  | 2.52 | - |
| 300  | 7.24  | 34.03 | 26.64 | 145.2 | .727  | 1.98 | - |
| 400  | 6.56  | 34.16 | 26.85 | 127.9 | .864  | 1.06 | - |
| 500  | 6.10  | 34.27 | 26.98 | 114.9 | .987  | .51  | - |
| 600  | 5.59  | 34.32 | 27.09 | 105.8 | 1.098 | .45  | - |
| 700  | 5.08  | 34.35 | 27.17 | 98.3  | 1.201 | .43  | - |
| 800  | 4.71  | 34.38 | 27.24 | 92.5  | 1.297 | .45  | - |
| 1000 | 4.05  | 34.48 | 27.39 | 78.9  | 1.471 | .55  | - |



## STATION 97.32 (Interpolated Values at Standard Depths)

CREST: 32°11'N 117°18'W June 21, 1950 1113 GCT Wire angle: 4°  
 Sounding: 715 fms. Depth of observation: 1,208 m. Weather: overcast  
 Sea: moderate Wind: 040°, force 1

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 16.65     | 33.66    | 24.59                               | 335.8         | .0000                  | 5.57                     | -                               |
| 10           | 16.46     | 33.58    | 24.57                               | 337.8         | .0338                  | 5.94                     | -                               |
| 20           | 14.05     | 33.57    | 25.09                               | 288.4         | .0653                  | 5.78                     | -                               |
| 30           | 11.75     | 33.57    | 25.55                               | 245.4         | .0920                  | 5.50                     | -                               |
| 50           | 10.82     | 33.57    | 25.72                               | 229.7         | .1398                  | 4.58                     | -                               |
| 75           | 10.13     | 33.64    | 25.89                               | 213.6         | .1955                  | 3.38                     | -                               |
| 100          | 9.28      | 33.81    | 26.16                               | 188.0         | .2461                  | 2.99                     | -                               |
| 150          | 8.75      | 34.04    | 26.43                               | 163.8         | .335                   | 2.49                     | -                               |
| 200          | 8.18      | 34.09    | 26.55                               | 152.5         | .414                   | 2.18                     | -                               |
| 250          | 7.78      | 34.14    | 26.65                               | 143.9         | .489                   | 1.77                     | -                               |
| 300          | 7.62      | 34.22    | 26.74                               | 136.5         | .560                   | 1.13                     | -                               |
| 400          | 7.08      | 34.33    | 26.90                               | 122.3         | .690                   | .56                      | -                               |
| 500          | 6.37      | 34.36    | 27.02                               | 111.8         | .808                   | .55                      | -                               |
| 600          | 5.73      | 34.37    | 27.11                               | 103.9         | .917                   | .52                      | -                               |
| 700          | 5.23      | 34.39    | 27.19                               | 97.2          | 1.018                  | .48                      | -                               |
| 800          | 4.81      | 34.42    | 27.26                               | 90.8          | 1.113                  | .45                      | -                               |
| 1000         | 4.11      | 34.49    | 27.39                               | 78.9          | 1.285                  | .77                      | -                               |

## STATION 97.40 (Interpolated Values at Standard Depths)

CREST: 31°56'N 117°52'W June 21, 1950 0527 GCT Wire angle: 3°  
 Sounding: 780 fms. Depth of observation: 1,289 m. Weather: overcast  
 Sea: rough Wind: 270°, force 1

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 15.62 | 33.46 | 24.67 | 328.1 | .0000 | 5.03 | - |
| 10   | 15.45 | 33.53 | 24.76 | 319.7 | .0325 | 4.60 | - |
| 20   | 15.36 | 33.54 | 24.79 | 317.4 | .0645 | 5.30 | - |
| 30   | 15.30 | 33.53 | 24.79 | 317.1 | .0964 | 5.35 | - |
| 50   | 12.50 | 33.44 | 25.30 | 269.0 | .1553 | 5.27 | - |
| 75   | 11.35 | 33.50 | 25.57 | 244.5 | .2198 | 3.97 | - |
| 100  | 10.30 | 33.63 | 25.85 | 217.7 | .2780 | 3.38 | - |
| 150  | 8.90  | 33.88 | 26.28 | 178.0 | .378  | 3.15 | - |
| 200  | 8.10  | 34.02 | 26.51 | 156.6 | .462  | 2.82 | - |
| 250  | 7.60  | 34.10 | 26.65 | 144.3 | .538  | 1.90 | - |
| 300  | 7.37  | 34.17 | 26.73 | 136.6 | .608  | 1.13 | - |
| 400  | 6.86  | 34.25 | 26.87 | 125.2 | .740  | .65  | - |
| 500  | 6.14  | 34.31 | 27.01 | 112.4 | .860  | .49  | - |
| 600  | 5.55  | 34.35 | 27.12 | 103.1 | .969  | .39  | - |
| 700  | 5.12  | 34.37 | 27.18 | 97.3  | 1.070 | .41  | - |
| 800  | 4.78  | 34.40 | 27.25 | 91.9  | 1.165 | .52  | - |
| 1000 | 4.18  | 34.48 | 27.38 | 80.5  | 1.340 | .60  | - |



## STATION 97.50 (Interpolated Values at Standard Depths)

CREST: 31°31'N 118°28'W June 21, 1950 0041 GCT Wire angle: 16°  
 Sounding: 825 fms. Depth of observation: 1234 m. Weather: overcast  
 Sea: moderate Wind: 270°, force 1

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 s$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|----------|------------------------|--------------------------|---------------------------------|
| 0            | 15.77     | 33.53    | 24.69                               | 326.2    | .0000                  | 5.75                     | -                               |
| 10           | 15.47     | 33.52    | 24.75                               | 320.9    | .0325                  | 5.53                     | -                               |
| 20           | 15.45     | 33.55    | 24.78                               | 318.5    | .0646                  | 5.55                     | -                               |
| 30           | 15.42     | 33.56    | 24.79                               | 317.5    | .0965                  | 5.64                     | -                               |
| 50           | 12.96     | 33.44    | 25.21                               | 277.6    | .1563                  | 5.74                     | -                               |
| 75           | 11.00     | 33.50    | 25.63                               | 238.5    | .2212                  | 4.90                     | -                               |
| 100          | 9.95      | 33.57    | 25.87                               | 216.4    | .2784                  | 3.90                     | -                               |
| 150          | 8.97      | 33.94    | 26.31                               | 174.6    | .377                   | 2.85                     | -                               |
| 200          | 8.35      | 34.04    | 26.49                               | 158.7    | .461                   | 2.34                     | -                               |
| 250          | 7.81      | 34.13    | 26.64                               | 145.1    | .537                   | 1.85                     | -                               |
| 300          | 7.35      | 34.19    | 26.75                               | 134.9    | .608                   | 1.34                     | -                               |
| 400          | 6.67      | 34.23    | 26.88                               | 124.1    | .738                   | .73                      | -                               |
| 500          | 6.10      | 34.30    | 27.01                               | 112.6    | .858                   | .50                      | -                               |
| 600          | 5.50      | 34.33    | 27.11                               | 103.9    | .967                   | .50                      | -                               |
| 700          | 4.96      | 34.36    | 27.19                               | 96.0     | 1.068                  | .50                      | -                               |
| 800          | 4.59      | 34.43    | 27.29                               | 87.3     | 1.160                  | .47                      | -                               |
| 1000         | 3.96      | 34.49    | 27.41                               | 77.1     | 1.327                  | .67                      | -                               |

## STATION 97.60 (Interpolated Values at Standard Depths)

CREST: 31°13'N 119°09'W June 20, 1950 1955 GCT Wire angle: 18°  
 Sounding: 800 fms. Depth of observation: 1,147 m. Weather: overcast  
 Sea: moderate Wind: 320°, force 2

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 14.90 | 33.55 | 24.90 | 306.5 | .0000 | 5.07 | - |
| 10   | 14.73 | 33.55 | 24.93 | 303.3 | .0306 | 5.40 | - |
| 20   | 14.60 | 33.50 | 24.92 | 304.6 | .0611 | 5.60 | - |
| 30   | 14.17 | 33.47 | 24.99 | 298.4 | .0914 | 5.68 | - |
| 50   | 11.55 | 33.42 | 25.47 | 253.4 | .1468 | 5.37 | - |
| 75   | 10.92 | 33.31 | 25.50 | 251.1 | .2103 | 4.57 | - |
| 100  | 10.00 | 33.69 | 25.95 | 208.3 | .2681 | 3.43 | - |
| 150  | 8.61  | 33.94 | 26.37 | 169.1 | .363  | 2.76 | - |
| 200  | 8.30  | 34.14 | 26.57 | 150.6 | .444  | 1.50 | - |
| 250  | 7.85  | 34.16 | 26.66 | 143.4 | .518  | 1.23 | - |
| 300  | 7.31  | 34.18 | 26.75 | 135.1 | .588  | 1.00 | - |
| 400  | 6.55  | 34.24 | 26.90 | 121.7 | .717  | .54  | - |
| 500  | 5.97  | 34.28 | 27.01 | 112.4 | .835  | .50  | - |
| 600  | 5.45  | 34.33 | 27.11 | 103.3 | .944  | .45  | - |
| 700  | 4.97  | 34.37 | 27.20 | 95.4  | 1.044 | .45  | - |
| 800  | 4.58  | 34.42 | 27.28 | 87.9  | 1.137 | .45  | - |
| 1000 | 3.84  | 34.50 | 27.43 | 74.9  | 1.302 | .69  | - |



## STATION 97.70 (Interpolated Values at Standard Depths)

CREST: 30°54'N 119°50'W June 20, 1950 1409 GCT Wire angle: 9°  
 Sounding: 1,950 fms. Depth of observation: 1,261, 1,297 m. Weather: overcast  
 Sea: rough Wind: 320°, force 4

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 13.67     | 33.26    | 24.93                               | 303.2         | .0000                  | 5.59                     | -                               |
| 10           | 13.65     | 33.22    | 24.91                               | 306.0         | .0306                  | 5.83                     | -                               |
| 20           | 13.66     | 33.29    | 24.96                               | 301.3         | .0611                  | 5.92                     | -                               |
| 30           | 13.64     | 33.32    | 24.98                               | 298.9         | .0912                  | 5.94                     | -                               |
| 50           | 13.37     | 33.38    | 25.09                               | 289.8         | .1504                  | 5.78                     | -                               |
| 75           | 11.90     | 33.40    | 25.39                               | 261.6         | .2197                  | 5.43                     | -                               |
| 100          | 11.00     | 33.47    | 25.61                               | 241.3         | .2829                  | 3.95                     | -                               |
| 150          | 8.78      | 33.86    | 26.28                               | 177.6         | .388                   | 3.73                     | -                               |
| 200          | 8.05      | 34.00    | 26.50                               | 157.3         | .473                   | 3.50                     | -                               |
| 250          | 7.65      | 34.10    | 26.64                               | 145.0         | .549                   | 2.83                     | -                               |
| 300          | 7.39      | 34.19    | 26.75                               | 135.4         | .619                   | 1.74                     | -                               |
| 400          | 6.80      | 34.26    | 26.88                               | 123.6         | .750                   | .73                      | -                               |
| 500          | 6.11      | 34.34    | 27.04                               | 109.8         | .868                   | .58                      | -                               |
| 600          | 5.48      | 34.37    | 27.14                               | 100.7         | .974                   | .55                      | -                               |
| 700          | 4.96      | 34.37    | 27.20                               | 95.3          | 1.073                  | .52                      | -                               |
| 800          | 4.62      | 34.40    | 27.26                               | 89.9          | 1.166                  | .51                      | -                               |
| 1000         | 3.98      | 34.50    | 27.41                               | 76.6          | 1.335                  | .60                      | -                               |

## STATION 97.80 (Interpolated Values at Standard Depths)

CREST: 30°35'N 120°31'W June 20, 1950 0823 GCT Wire angle: 28°  
 Sounding: 1,950 fms. Depth of observation: 1,235 m. Weather: drizzle  
 Sea: very rough Wind: 320°, force 4

|      |       |       |       |       |       |      |   |
|------|-------|-------|-------|-------|-------|------|---|
| 0    | 15.60 | 33.55 | 24.74 | 321.1 | .0000 | 4.81 | - |
| 10   | 15.58 | 33.48 | 24.69 | 326.1 | .0325 | 5.36 | - |
| 20   | 15.57 | 33.48 | 24.70 | 326.2 | .0652 | 4.90 | - |
| 30   | 15.56 | 33.48 | 24.70 | 326.3 | .0980 | 4.69 | - |
| 50   | 14.20 | 33.44 | 24.96 | 301.7 | .1611 | 5.36 | - |
| 75   | 11.80 | 33.46 | 25.45 | 255.4 | .2311 | 4.63 | - |
| 100  | 10.13 | 33.55 | 25.82 | 220.8 | .2910 | 4.06 | - |
| 150  | 8.98  | 33.84 | 26.23 | 182.1 | .392  | 2.65 | - |
| 200  | 8.27  | 33.94 | 26.42 | 165.0 | .480  | 2.59 | - |
| 250  | 7.73  | 34.00 | 26.55 | 153.5 | .560  | 2.34 | - |
| 300  | 7.28  | 34.11 | 26.70 | 139.8 | .634  | 1.45 | - |
| 400  | 6.49  | 34.21 | 26.89 | 123.1 | .766  | .98  | - |
| 500  | 5.82  | 34.28 | 27.03 | 110.5 | .884  | .49  | - |
| 600  | 5.23  | 34.33 | 27.14 | 100.5 | .991  | .42  | - |
| 700  | 4.79  | 34.37 | 27.22 | 93.2  | 1.088 | .42  | - |
| 800  | 4.46  | 34.41 | 27.29 | 87.2  | 1.180 | .43  | - |
| 1000 | 3.90  | 34.47 | 27.40 | 77.9  | 1.347 | .64  | - |



## STATION 97.90 (Interpolated Values at Standard Depths)

CREST: 30°16'N 121°12'W June 20, 1950 0237 GCT Wire angle: 36°  
 Sounding: 2,100 fms. Depth of observation: 1136 m. Weather: overcast  
 Sea: very rough Wind: 320°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 16.47     | 33.53    | 24.53                               | 341.4         | .0000                  | 5.80                     | -                               |
| 10           | 16.47     | 33.53    | 24.53                               | 341.7         | .0343                  | 5.53                     | -                               |
| 20           | 16.46     | 33.53    | 24.53                               | 341.7         | .0686                  | 5.33                     | -                               |
| 30           | 16.45     | 33.53    | 24.54                               | 341.8         | .1029                  | 5.33                     | -                               |
| 50           | 16.40     | 33.53    | 24.55                               | 341.3         | .1716                  | 5.38                     | -                               |
| 75           | 13.96     | 33.37    | 24.96                               | 302.7         | .2525                  | 5.90                     | -                               |
| 100          | 12.67     | 33.50    | 25.32                               | 269.0         | .3244                  | 5.47                     | -                               |
| 150          | 10.18     | 33.56    | 25.82                               | 221.9         | .448                   | 4.30                     | -                               |
| 200          | 9.03      | 33.88    | 26.26                               | 180.9         | .549                   | 3.05                     | -                               |
| 250          | 8.26      | 34.03    | 26.49                               | 159.0         | .635                   | 2.30                     | -                               |
| 300          | 7.69      | 34.09    | 26.63                               | 147.1         | .712                   | 1.75                     | -                               |
| 400          | 6.90      | 34.19    | 26.82                               | 130.2         | .852                   | 1.06                     | -                               |
| 500          | 6.17      | 34.25    | 26.96                               | 117.3         | .977                   | .63                      | -                               |
| 600          | 5.75      | 34.31    | 27.06                               | 108.6         | 1.091                  | .53                      | -                               |
| 700          | 5.15      | 34.36    | 27.17                               | 98.4          | 1.195                  | .51                      | -                               |
| 800          | 4.59      | 34.40    | 27.27                               | 89.5          | 1.290                  | .51                      | -                               |
| 1000         | 3.93      | 34.43    | 27.36                               | 81.2          | 1.463                  | .70                      | -                               |

## STATION 100.30 (Interpolated Values at Standard Depths)

PAOLINA-T: 31°40.5'N 116°46.5'W June 23, 1950 1027 GCT Wire angle: 4°  
 Sounding: 240 fms. Depth of observation: 358 m. Weather: overcast  
 Sea: rough Wind: 310°, force 3

|     |       |   |   |   |   |      |      |
|-----|-------|---|---|---|---|------|------|
| 0   | 16.89 | - | - | - | - | 5.31 | .35  |
| 10  | 15.00 | - | - | - | - | 6.02 | .42  |
| 20  | 12.38 | - | - | - | - | 5.15 | .60  |
| 30  | 11.77 | - | - | - | - | 4.70 | .88  |
| 50  | 10.70 | - | - | - | - | 4.33 | 1.41 |
| 75  | 9.58  | - | - | - | - | 3.10 | 1.75 |
| 100 | 9.05  | - | - | - | - | 2.81 | 1.96 |
| 150 | 8.89  | - | - | - | - | 1.90 | 2.28 |
| 200 | 8.74  | - | - | - | - | 1.27 | 2.44 |
| 250 | 8.31  | - | - | - | - | 1.19 | 2.48 |
| 300 | 8.07  | - | - | - | - | .94  | 2.62 |



## STATION 105.35 (Interpolated Values at Standard Depths)

PAOLINA-T: 30°09'N 116°33'W June 23, 1950 0032 GCT Wire angle: 20°  
 Sounding: 800 fms. Depth of observation: 1,172 m. Weather: cloudy  
 Sea: very rough Wind: 320°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.44     | -        | -                                   | -             | -                      | 5.58                     | .40                             |
| 10           | 16.10     | -        | -                                   | -             | -                      | 5.92                     | .40                             |
| 20           | 16.10     | -        | -                                   | -             | -                      | 6.10                     | .45                             |
| 30           | 13.13     | -        | -                                   | -             | -                      | 6.10                     | .63                             |
| 50           | 11.16     | -        | -                                   | -             | -                      | 4.25                     | 1.30                            |
| 75           | 10.05     | -        | -                                   | -             | -                      | 3.45                     | 1.70                            |
| 100          | 9.42      | -        | -                                   | -             | -                      | 3.34                     | 1.86                            |
| 150          | 8.95      | -        | -                                   | -             | -                      | 2.39                     | 2.10                            |
| 200          | 8.50      | -        | -                                   | -             | -                      | 2.24                     | 2.22                            |
| 250          | 8.13      | -        | -                                   | -             | -                      | 1.75                     | 2.38                            |
| 300          | 7.72      | -        | -                                   | -             | -                      | 1.10                     | 2.60                            |
| 400          | 7.00      | -        | -                                   | -             | -                      | .70                      | 2.88                            |
| 500          | 6.61      | -        | -                                   | -             | -                      | .55                      | 3.00                            |
| 600          | 5.94      | -        | -                                   | -             | -                      | .31                      | 3.02                            |
| 700          | 5.31      | -        | -                                   | -             | -                      | .39                      | 3.11                            |
| 800          | 4.87      | -        | -                                   | -             | -                      | .42                      | 3.17                            |
| 1000         | 4.18      | -        | -                                   | -             | -                      | .65                      | 3.16                            |

## STATION 110.35 (Interpolated Values at Standard Depths)

PAOLINA-T: 29°46.5'N 116°00'W June 22, 1950 1538 GCT Wire angle: 17°  
 Sounding: 900 fms. Depth of observation: 1,165 m. Weather: overcast  
 Sea: rough Wind: 290°, force 2

|      |       |   |   |   |   |      |      |
|------|-------|---|---|---|---|------|------|
| 0    | 15.61 | - | - | - | - | 5.30 | .39  |
| 10   | 15.50 | - | - | - | - | 5.31 | .42  |
| 20   | 15.27 | - | - | - | - | 5.42 | .44  |
| 30   | 15.22 | - | - | - | - | 5.49 | .50  |
| 50   | 12.70 | - | - | - | - | 5.56 | .68  |
| 75   | 11.26 | - | - | - | - | 4.60 | 1.11 |
| 100  | 9.82  | - | - | - | - | 3.77 | 1.58 |
| 150  | 8.93  | - | - | - | - | 3.01 | 2.09 |
| 200  | 8.25  | - | - | - | - | 2.53 | 2.53 |
| 250  | 7.65  | - | - | - | - | 1.85 | 2.63 |
| 300  | 7.30  | - | - | - | - | 1.15 | 2.67 |
| 400  | 6.94  | - | - | - | - | .66  | 2.98 |
| 500  | 6.38  | - | - | - | - | .54  | 3.04 |
| 600  | 5.84  | - | - | - | - | .35  | 3.16 |
| 700  | 5.34  | - | - | - | - | .40  | 3.16 |
| 800  | 4.85  | - | - | - | - | .40  | 3.16 |
| 1000 | 4.13  | - | - | - | - | .50  | 3.16 |



## STATION 113.35 (Interpolated Values at Standard Depths)

PAOLINA-T: 29°12'N 115°39'W June 22, 1950 0909 GCT Wire angle: 18°  
 Sounding: 800 fms. Depth of observation: 1,161 m. Weather: overcast  
 Sea: rough Wind: 300°, force 2

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 16.31     | -        | -                                   | -             | -                      | 5.47                     | .37                             |
| 10           | 16.20     | -        | -                                   | -             | -                      | 5.35                     | .39                             |
| 20           | 16.01     | -        | -                                   | -             | -                      | 5.54                     | .40                             |
| 30           | 15.87     | -        | -                                   | -             | -                      | 5.56                     | .40                             |
| 50           | 15.10     | -        | -                                   | -             | -                      | 5.55                     | .43                             |
| 75           | 12.91     | -        | -                                   | -             | -                      | 5.25                     | .69                             |
| 100          | 10.90     | -        | -                                   | -             | -                      | 4.85                     | .96                             |
| 150          | 9.10      | -        | -                                   | -             | -                      | 3.10                     | 1.94                            |
| 200          | 8.39      | -        | -                                   | -             | -                      | 2.34                     | 2.18                            |
| 250          | 7.89      | -        | -                                   | -             | -                      | 1.90                     | 2.34                            |
| 300          | 7.67      | -        | -                                   | -             | -                      | 1.55                     | 2.52                            |
| 400          | 7.40      | -        | -                                   | -             | -                      | .74                      | 2.90                            |
| 500          | 7.00      | -        | -                                   | -             | -                      | .38                      | 3.07                            |
| 600          | 6.03      | -        | -                                   | -             | -                      | .36                      | 3.17                            |
| 700          | 5.35      | -        | -                                   | -             | -                      | .41                      | 3.16                            |
| 800          | 5.04      | -        | -                                   | -             | -                      | .47                      | 3.16                            |
| 1000         | 4.20      | -        | -                                   | -             | -                      | .57                      | 3.16                            |

## STATION 117.35 (Interpolated Values at Standard Depths)

PAOLINA-T: 28°37'N 115°16'W June 22, 1950 0239 GCT Wire angle: 10°  
 Sounding: 100 fms. Depth of observation: 148 m. Weather: partly cloudy  
 Sea: rough Wind: 270°, force 2

|     |         |   |   |   |   |       |        |
|-----|---------|---|---|---|---|-------|--------|
| 0   | 15.95   | - | - | - | - | 5.76  | .32    |
| 10  | 12.79   | - | - | - | - | 4.08  | 1.03   |
| 20  | 11.00   | - | - | - | - | 3.00  | 1.55   |
| 30  | 10.43   | - | - | - | - | 2.98  | 1.62   |
| 50  | 9.90    | - | - | - | - | 3.07  | 1.66   |
| 75  | 9.61    | - | - | - | - | 1.90  | 2.17   |
| 100 | 9.78    | - | - | - | - | 1.57  | 2.30   |
| 150 | (10.01) | - | - | - | - | (.83) | (2.56) |



## STATION 120.35 (Interpolated Values at Standard Depths)

PAOLINA-T: 28°03'N 114°54'W June 21, 1950 2114 GCT Wire angle: 3°  
 Sounding: 45 fms. Depth of observation: 60 m. Weather: haze  
 Sea: smooth Wind: 320°

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(μg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.39     | -        | -                                   | -             | -                      | 4.79                     | .41                             |
| 10           | 14.72     | -        | -                                   | -             | -                      | 4.79                     | .47                             |
| 20           | 14.14     | -        | -                                   | -             | -                      | 4.70                     | .58                             |
| 30           | 13.83     | -        | -                                   | -             | -                      | 4.44                     | .73                             |
| 50           | 11.54     | -        | -                                   | -             | -                      | -                        | -                               |

## STATION 120.45 (Interpolated Values at Standard Depths)

PAOLINA-T: 27°43'N 115°33'W June 21, 1950 1547 GCT Wire angle: 7°  
 Sounding: 1,200 fms. Depth of observation: 1,222 m. Weather: overcast  
 Sea: rough Wind: 320°, force 2

|      |       |   |   |   |   |      |      |
|------|-------|---|---|---|---|------|------|
| 0    | 14.42 | - | - | - | - | 5.55 | .33  |
| 10   | 14.32 | - | - | - | - | 5.95 | .39  |
| 20   | 13.88 | - | - | - | - | 5.81 | .54  |
| 30   | 13.65 | - | - | - | - | 4.88 | .73  |
| 50   | 10.17 | - | - | - | - | 3.66 | 1.50 |
| 75   | 10.06 | - | - | - | - | 2.34 | 1.98 |
| 100  | 10.10 | - | - | - | - | 1.74 | 2.19 |
| 150  | 9.32  | - | - | - | - | 1.05 | 2.30 |
| 200  | 10.13 | - | - | - | - | .45  | 2.60 |
| 250  | 9.74  | - | - | - | - | .25  | 2.74 |
| 300  | 9.15  | - | - | - | - | .24  | 2.80 |
| 400  | 8.19  | - | - | - | - | .23  | 2.88 |
| 500  | 7.03  | - | - | - | - | .24  | 3.00 |
| 600  | 6.37  | - | - | - | - | .26  | 3.04 |
| 700  | 5.75  | - | - | - | - | .31  | 3.04 |
| 800  | 5.16  | - | - | - | - | .39  | 3.04 |
| 1000 | 4.20  | - | - | - | - | .58  | 3.03 |



## STATION 120.50 (Interpolated Values at Standard Depths)

PAOLINA-T: 27°33'N 115°52.5'W June 21, 1950 0438 GCT Wire angle: 12°  
 Sounding: 2,300 fms. Depth of observation: 1,183 m. Weather: overcast  
 Sea: rough Wind: 320°, force 2

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.80     | -        | -                                   | -             | -                      | (5.72)                   | .31                             |
| 10           | 15.51     | -        | -                                   | -             | -                      | 5.72                     | .31                             |
| 20           | 15.39     | -        | -                                   | -             | -                      | 6.08                     | .31                             |
| 30           | 14.30     | -        | -                                   | -             | -                      | 6.07                     | .32                             |
| 50           | 12.20     | -        | -                                   | -             | -                      | 4.92                     | .91                             |
| 75           | 10.45     | -        | -                                   | -             | -                      | 4.10                     | 1.38                            |
| 100          | 9.87      | -        | -                                   | -             | -                      | 2.87                     | 1.77                            |
| 150          | 10.04     | -        | -                                   | -             | -                      | 1.55                     | 2.31                            |
| 200          | 9.18      | -        | -                                   | -             | -                      | 1.38                     | 2.51                            |
| 250          | 8.78      | -        | -                                   | -             | -                      | 1.19                     | 2.58                            |
| 300          | 8.50      | -        | -                                   | -             | -                      | .92                      | 2.64                            |
| 400          | 7.51      | -        | -                                   | -             | -                      | .48                      | 2.88                            |
| 500          | 6.80      | -        | -                                   | -             | -                      | .27                      | 2.98                            |
| 600          | 6.10      | -        | -                                   | -             | -                      | .27                      | 3.00                            |
| 700          | 5.53      | -        | -                                   | -             | -                      | .28                      | 3.10                            |
| 800          | 5.00      | -        | -                                   | -             | -                      | .34                      | 3.17                            |
| 1000         | 4.22      | -        | -                                   | -             | -                      | .58                      | 3.15                            |

## STATION 120.60 (Interpolated Values at Standard Depths)

PAOLINA-T: 27°13'N 116°31.5'W June 20, 1950 1920 GCT Wire angle: 5°  
 Sounding: 2,100 fms. Depth of observation: 1,219 m. Weather: overcast  
 Sea: rough Wind: 320°, force 3

|      |       |   |   |   |   |      |       |
|------|-------|---|---|---|---|------|-------|
| 0    | 16.84 | - | - | - | - | 5.03 | (.40) |
| 10   | 16.83 | - | - | - | - | 5.00 | .46   |
| 20   | 16.82 | - | - | - | - | 5.14 | .59   |
| 30   | 16.80 | - | - | - | - | 5.22 | .60   |
| 50   | 16.12 | - | - | - | - | 5.30 | .57   |
| 75   | 14.97 | - | - | - | - | 5.33 | .52   |
| 100  | 13.38 | - | - | - | - | 5.35 | .70   |
| 150  | 9.78  | - | - | - | - | 3.75 | 1.65  |
| 200  | 9.02  | - | - | - | - | 2.58 | 2.06  |
| 250  | 8.58  | - | - | - | - | 1.87 | 2.36  |
| 300  | 8.17  | - | - | - | - | 1.27 | 2.62  |
| 400  | 7.35  | - | - | - | - | .65  | 2.89  |
| 500  | 6.46  | - | - | - | - | .40  | 3.02  |
| 600  | 5.68  | - | - | - | - | .34  | 3.15  |
| 700  | 5.14  | - | - | - | - | .33  | 3.15  |
| 800  | 4.72  | - | - | - | - | .40  | 3.16  |
| 1000 | 3.98  | - | - | - | - | .68  | 3.14  |



## STATION 123.40 (Interpolated Values at Standard Depths)

PAOLINA-T: 27°18'N 114°51.5'W June 12, 1950 1757, 1817 GCT Wire angle: 17°,  
 20° Sounding: 350 fms. Depth of observation: 197, 352 m. Weather: haze  
 Sea: rough Wind: 320°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 14.26     | 33.68    | 25.13                               | 284.0         | .0000                  | 5.04                     | -                               |
| 10           | 12.52     | 33.62    | 25.44                               | 255.2         | .0271                  | 4.50                     | -                               |
| 20           | 11.35     | 33.62    | 25.66                               | 234.5         | .0516                  | 4.15                     | -                               |
| 30           | 11.01     | 33.63    | 25.73                               | 228.1         | .0749                  | 3.88                     | -                               |
| 50           | 10.72     | 33.67    | 25.81                               | 220.7         | .1200                  | 3.25                     | -                               |
| 75           | 10.68     | 34.21    | 26.24                               | 180.7         | .1704                  | 1.65                     | -                               |
| 100          | 10.98     | 34.41    | 26.34                               | 171.6         | .2147                  | .81                      | -                               |
| 150          | 10.91     | 34.47    | 26.40                               | 167.2         | .300                   | .33                      | -                               |
| 200          | 10.68     | 34.51    | 26.47                               | 161.4         | .383                   | .68                      | -                               |
| 250          | 10.16     | 34.51    | 26.56                               | 153.7         | .462                   | .44                      | -                               |
| 300          | 9.95      | 34.52    | 26.61                               | 150.5         | .539                   | -                        | -                               |

## STATION 123.40 (Interpolated Values at Standard Depths)

PAOLINA-T: 27°18'N 114°51.5'W June 20, 1950 0653 GCT Wire angle: 17°  
 Sounding: 250 fms. Depth of observation: 401 m. Weather: clear  
 Sea: rough Wind: 320°, force 2-3

|     |       |   |   |   |   |       |        |
|-----|-------|---|---|---|---|-------|--------|
| 0   | 11.78 | - | - | - | - | 4.45  | 1.36   |
| 10  | 11.76 | - | - | - | - | 4.43  | 1.44   |
| 20  | 10.80 | - | - | - | - | 4.15  | 1.66   |
| 30  | 10.77 | - | - | - | - | 3.10  | 1.88   |
| 50  | 10.76 | - | - | - | - | 2.10  | 2.36   |
| 75  | 10.86 | - | - | - | - | .63   | 2.87   |
| 100 | 10.76 | - | - | - | - | .44   | 3.00   |
| 150 | 10.65 | - | - | - | - | .27   | 3.00   |
| 200 | 10.32 | - | - | - | - | .40   | 3.02   |
| 250 | 10.18 | - | - | - | - | .40   | 3.01   |
| 300 | 9.61  | - | - | - | - | (.21) | (3.03) |
| 400 | 8.67  | - | - | - | - | -     | -      |



## STATION 123.50 (Interpolated Values at Standard Depths)

PAOLINA-T: 26°58'N 115°30.5'W June 20, 1950 0007 GCT Wire angle: 48°  
 Sounding: 2,000 fms. Depth of observation: 616 m. Weather: overcast  
 Sea: very rough Wind: 320°, force 3

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.51     | -        | -                                   | -             | -                      | 5.65                     | .42                             |
| 10           | 15.30     | -        | -                                   | -             | -                      | 5.60                     | .52                             |
| 20           | 14.50     | -        | -                                   | -             | -                      | 5.56                     | .90                             |
| 30           | 13.70     | -        | -                                   | -             | -                      | 5.15                     | 1.00                            |
| 50           | 13.00     | -        | -                                   | -             | -                      | 4.84                     | 1.03                            |
| 75           | 12.45     | -        | -                                   | -             | -                      | 4.45                     | 1.18                            |
| 100          | 10.35     | -        | -                                   | -             | -                      | 3.55                     | 1.53                            |
| 150          | 9.68      | -        | -                                   | -             | -                      | 2.02                     | 2.13                            |
| 200          | 9.28      | -        | -                                   | -             | -                      | 1.25                     | 2.46                            |
| 250          | 9.04      | -        | -                                   | -             | -                      | .55                      | 2.70                            |
| 300          | 8.37      | -        | -                                   | -             | -                      | .50                      | 2.82                            |
| 400          | 7.13      | -        | -                                   | -             | -                      | .36                      | 2.92                            |
| 500          | 6.53      | -        | -                                   | -             | -                      | .25                      | 3.05                            |
| 600          | 5.86      | -        | -                                   | -             | -                      | .25                      | 3.04                            |

## STATION 123.60 (Interpolated Values at Standard Depths)

PAOLINA-T: 26°38.5'N 116°09'W June 19, 1950 1755 GCT Wire angle: 16°  
 Sounding: 2,100 fms. Depth of observation: 1,157 m. Weather: overcast  
 Sea: very rough Wind: 320°, force 4

|      |       |   |   |   |   |      |      |
|------|-------|---|---|---|---|------|------|
| 0    | 17.67 | - | - | - | - | 5.20 | .35  |
| 10   | 17.67 | - | - | - | - | 5.35 | .36  |
| 20   | 17.66 | - | - | - | - | 5.21 | .32  |
| 30   | 17.65 | - | - | - | - | 5.21 | .32  |
| 50   | 17.61 | - | - | - | - | 5.55 | .35  |
| 75   | 15.45 | - | - | - | - | 5.36 | .39  |
| 100  | 13.00 | - | - | - | - | 5.24 | .54  |
| 150  | 10.50 | - | - | - | - | 4.00 | 1.50 |
| 200  | 11.12 | - | - | - | - | 1.26 | 2.31 |
| 250  | 10.27 | - | - | - | - | .95  | 2.51 |
| 300  | 9.35  | - | - | - | - | .80  | 2.63 |
| 400  | 8.06  | - | - | - | - | .60  | 2.80 |
| 500  | 7.04  | - | - | - | - | .36  | 2.96 |
| 600  | 6.29  | - | - | - | - | .24  | 3.11 |
| 700  | 5.59  | - | - | - | - | .26  | 3.13 |
| 800  | 4.97  | - | - | - | - | .30  | 3.13 |
| 1000 | 4.16  | - | - | - | - | .58  | 3.11 |



## STATION 127.40 (Interpolated Values at Standard Depths)

PAOLINA-T: 26°43.5'N 114°29.5'W June 18, 1950 2030 GCT Wire angle: 37°  
 Sounding: 1,650 fms. Depth of observation: 1,059 m. Weather: partly cloudy  
 Sea: very rough Wind: 290°, force 5

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 15.50     | -        | -                                   | -             | -                      | 5.75                     | .34                             |
| 10           | 15.48     | -        | -                                   | -             | -                      | 5.76                     | .33                             |
| 20           | 15.31     | -        | -                                   | -             | -                      | 5.66                     | .33                             |
| 30           | 15.26     | -        | -                                   | -             | -                      | 5.52                     | .36                             |
| 50           | 12.80     | -        | -                                   | -             | -                      | 5.05                     | .62                             |
| 75           | 10.99     | -        | -                                   | -             | -                      | 3.77                     | 1.51                            |
| 100          | 10.28     | -        | -                                   | -             | -                      | 2.73                     | 1.88                            |
| 150          | 10.35     | -        | -                                   | -             | -                      | 1.25                     | 2.36                            |
| 200          | 10.18     | -        | -                                   | -             | -                      | .70                      | 2.58                            |
| 250          | 9.60      | -        | -                                   | -             | -                      | .46                      | 2.69                            |
| 300          | 9.12      | -        | -                                   | -             | -                      | .35                      | 2.76                            |
| 400          | 8.20      | -        | -                                   | -             | -                      | .26                      | 2.92                            |
| 500          | 7.37      | -        | -                                   | -             | -                      | .29                      | 3.09                            |
| 600          | 6.40      | -        | -                                   | -             | -                      | .35                      | 3.12                            |
| 700          | 5.60      | -        | -                                   | -             | -                      | .35                      | 3.12                            |
| 800          | 5.12      | -        | -                                   | -             | -                      | .45                      | 3.12                            |
| 1000         | 4.35      | -        | -                                   | -             | -                      | .55                      | 3.11                            |

## STATION 130.35 (Interpolated Values at Standard Depths)

PAOLINA-T: 26°22'N 113°54'W June 14, 1950 1853 GCT Wire angle: 10°  
 Sounding: 110 fms. Depth of observation: 56 m. Weather: clear  
 Sea: very rough Wind: 340°, force 5

|     |       |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|-------|------|------|
| 0   | 13.95 | 33.75 | 25.25 | 272.7 | .0000 | 5.75 | .82  |
| 10  | 13.75 | 33.77 | 25.31 | 267.6 | .0271 | 5.70 | .85  |
| 20  | 13.45 | 33.72 | 25.33 | 265.6 | .0539 | 4.50 | 1.14 |
| 30  | 11.79 | 33.71 | 25.65 | 235.8 | .0791 | 3.10 | 1.56 |
| 50  | 11.61 | 34.05 | 25.94 | 208.0 | .1237 | 1.82 | 2.11 |
| 75  | 11.38 | 34.36 | 26.23 | 181.7 | .1727 | .54  | 2.55 |
| 100 | 11.37 | 34.44 | 26.29 | 176.3 | .2177 | .43  | 2.53 |
| 150 | 11.12 | 34.57 | 26.44 | 163.5 | .303  | .35  | -    |



## STATION 130.40 (Interpolated Values at Standard Depths)

PAOLINA-T: 26°09'N 114°07.5'W June 14, 1950 2226 GCT Wire angle: 13°

Sounding: 1,100 fms. Depth of observation: 1,380 m. Weather: clear

Sea: very rough Wind: 340°, force 6

| Depth<br>(m) | T<br>(°C) | S<br>(‰) | $\sigma_t$<br>(mg/cm <sup>3</sup> ) | $10^5 \delta$ | $\Delta D$<br>(dyn.m.) | O <sub>2</sub><br>(ml/L) | PO <sub>4</sub> -P<br>(µg at/L) |
|--------------|-----------|----------|-------------------------------------|---------------|------------------------|--------------------------|---------------------------------|
| 0            | 17.16     | -        | -                                   | -             | -                      | 5.21                     | .53                             |
| 10           | 17.17     | -        | -                                   | -             | -                      | 5.67                     | .55                             |
| 20           | 16.70     | -        | -                                   | -             | -                      | 5.67                     | .59                             |
| 30           | 16.50     | -        | -                                   | -             | -                      | 5.60                     | .69                             |
| 50           | 14.65     | -        | -                                   | -             | -                      | 4.55                     | 1.20                            |
| 75           | 11.25     | -        | -                                   | -             | -                      | 3.05                     | 2.00                            |
| 100          | 11.60     | -        | -                                   | -             | -                      | 1.48                     | 2.36                            |
| 150          | 11.19     | -        | -                                   | -             | -                      | .82                      | 2.53                            |
| 200          | 10.69     | -        | -                                   | -             | -                      | .30                      | 2.57                            |
| 250          | 10.30     | -        | -                                   | -             | -                      | .28                      | 2.61                            |
| 300          | 9.79      | -        | -                                   | -             | -                      | .28                      | 2.69                            |
| 400          | 8.30      | -        | -                                   | -             | -                      | .22                      | 2.80                            |
| 500          | 7.25      | -        | -                                   | -             | -                      | .20                      | 2.93                            |
| 600          | 6.56      | -        | -                                   | -             | -                      | .25                      | 3.04                            |
| 700          | 5.87      | -        | -                                   | -             | -                      | .30                      | 3.06                            |
| 800          | 5.35      | -        | -                                   | -             | -                      | .32                      | 3.13                            |
| 1000         | 4.48      | -        | -                                   | -             | -                      | .52                      | 3.11                            |



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Commonwealth Sc. & Ind. Res. Org.  
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