

UNIVERSITY OF CALIFORNIA    SCRIPPS INSTITUTION OF OCEANOGRAPHY

# DATA REPORT

PHYSICAL AND CHEMICAL DATA  
CCOFI CRUISE 5208  
(MLR 40)  
8-19 August 1952

SIO Reference 57-2  
22 January 1957



UNIVERSITY OF CALIFORNIA  
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 5208

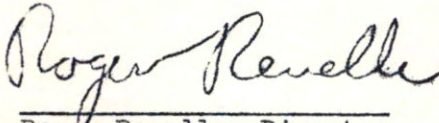
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Approved for distribution:

  
Roger Revelle, Director

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## INTRODUCTION

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

Data are presented in the form of values tabulated at standard depths, and on charts of horizontal distributions. Values of observed depths will be included in a final publication, OCEANIC OBSERVATIONS OF THE PACIFIC. The presentation of data in these Physical and Chemical Reports does not constitute publication, and these interpretations may be subject to modification as the program continues.

In the tabulated data extrapolated values are indicated by parentheses. The time given is the time that the messenger was released. When more than one cast was made on a station, both messenger times and both wire angles are given; the time and the wire angle given first are for the shallow cast. Horizontal lines separate the casts.

Nansen bottle pretripping occurred on Stations 70.80, 77.65 and 100.60. Some of the depths of observations, therefore, may be slightly in error at these stations.



## PERSONNEL

Ships' Captains

Kandie, Harry V., MV BLACK DOUGLAS  
Colbeth, Clifford W., MV SPENCER F. BAIRD  
Davis, Larry, MV CREST

## PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

MV BLACK DOUGLAS

Eckles, Howard, Marine Biologist  
Livingstone, Robert, Marine Biologist  
Anderson, Charles, Marine Technician  
Payne, Miles M., Marine Technician

MV SPENCER F. BAIRD

Horrer, Paul L., Oceanographer  
Ahlstrom, E. H., Marine Biologist  
Arthur, David, Marine Biologist  
McGowan, John, Marine Biologist  
Mead, Richard V., Principle Marine Technician  
Lamplugh, Roscoe, Marine Technician  
Kircher, Robert, Marine Technician  
Whitney, Ralph, Marine Technician  
Focke, Fred, Laboratory Assistant Trainee  
Hathaway, Robert, Laboratory Technician  
Howell, Robert, Marine Technician

MV CREST

Smith, Alan C., Senior Marine Technician  
Wyllie, John G., Marine Technician  
Greenbaum, Richard, Marine Technician  
Miller, Gaylord, Laboratory Assistant Trainee  
Klotz, Jerome, Laboratory Assistant Trainee  
Greene, William, Laboratory Assistant Trainee



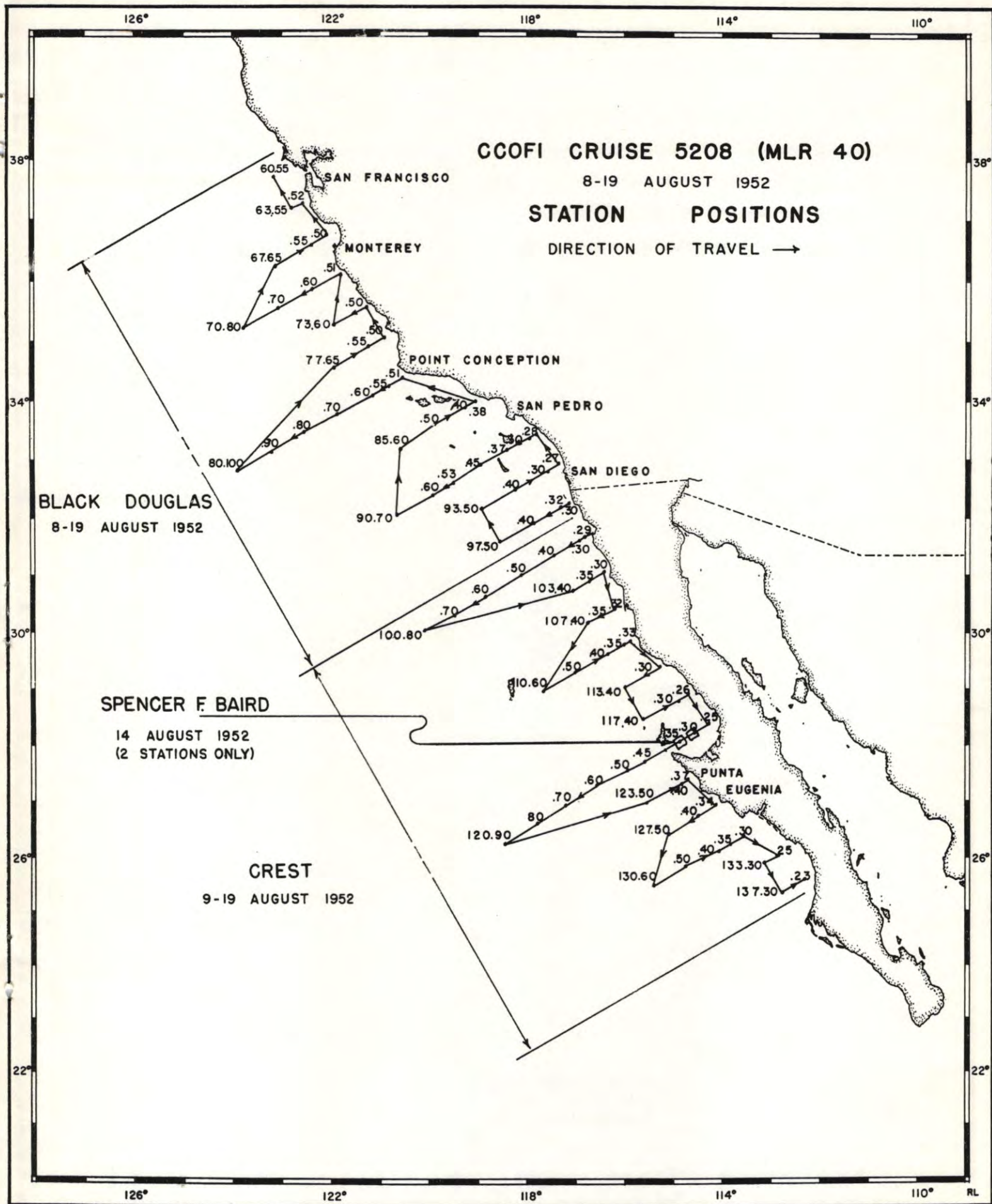


FIGURE 1.

FROM H.O. CHART 0527



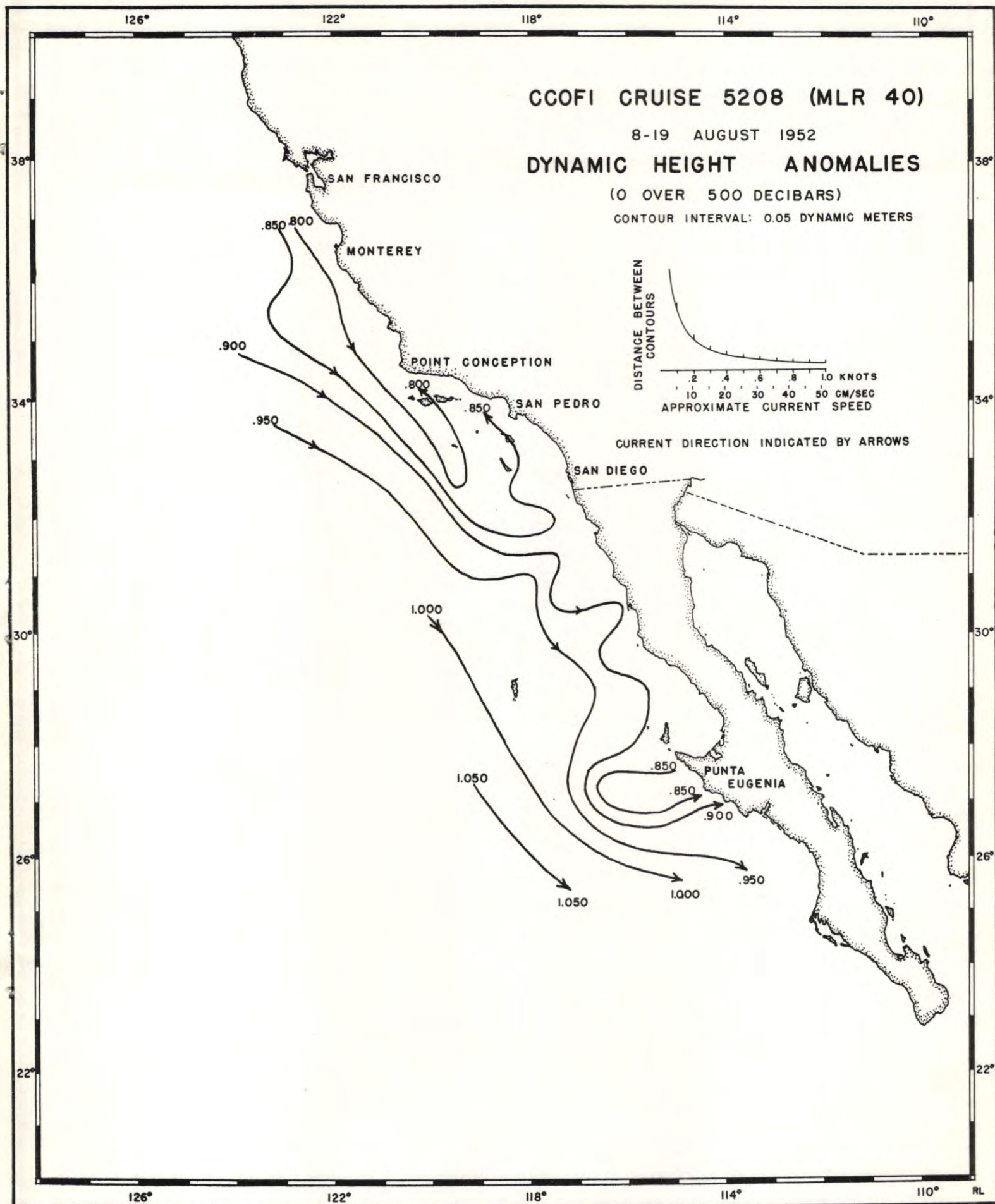


FIGURE 2.

FROM H.O. CHART 0527



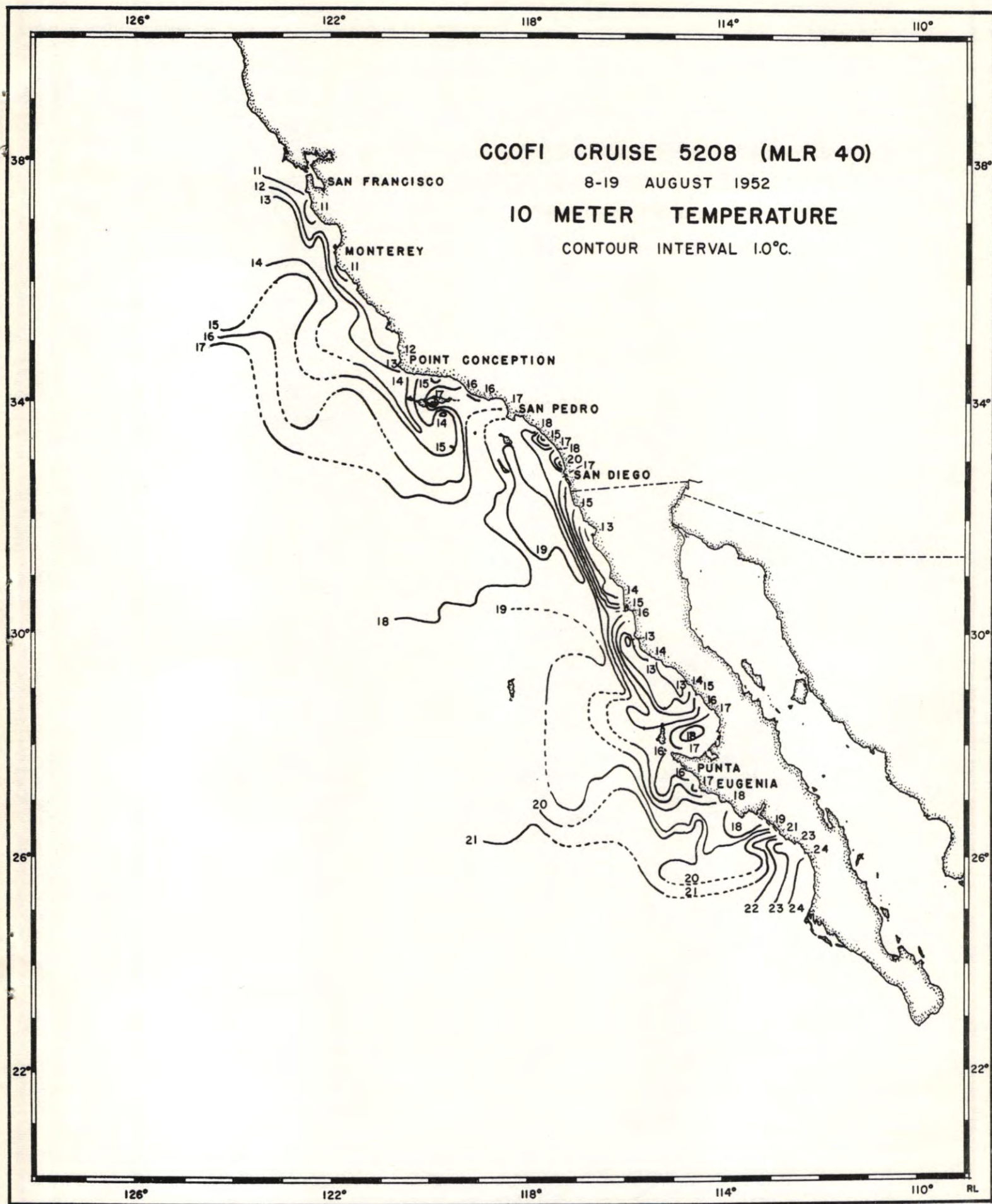


FIGURE 3.

FROM H.O. CHART 0527



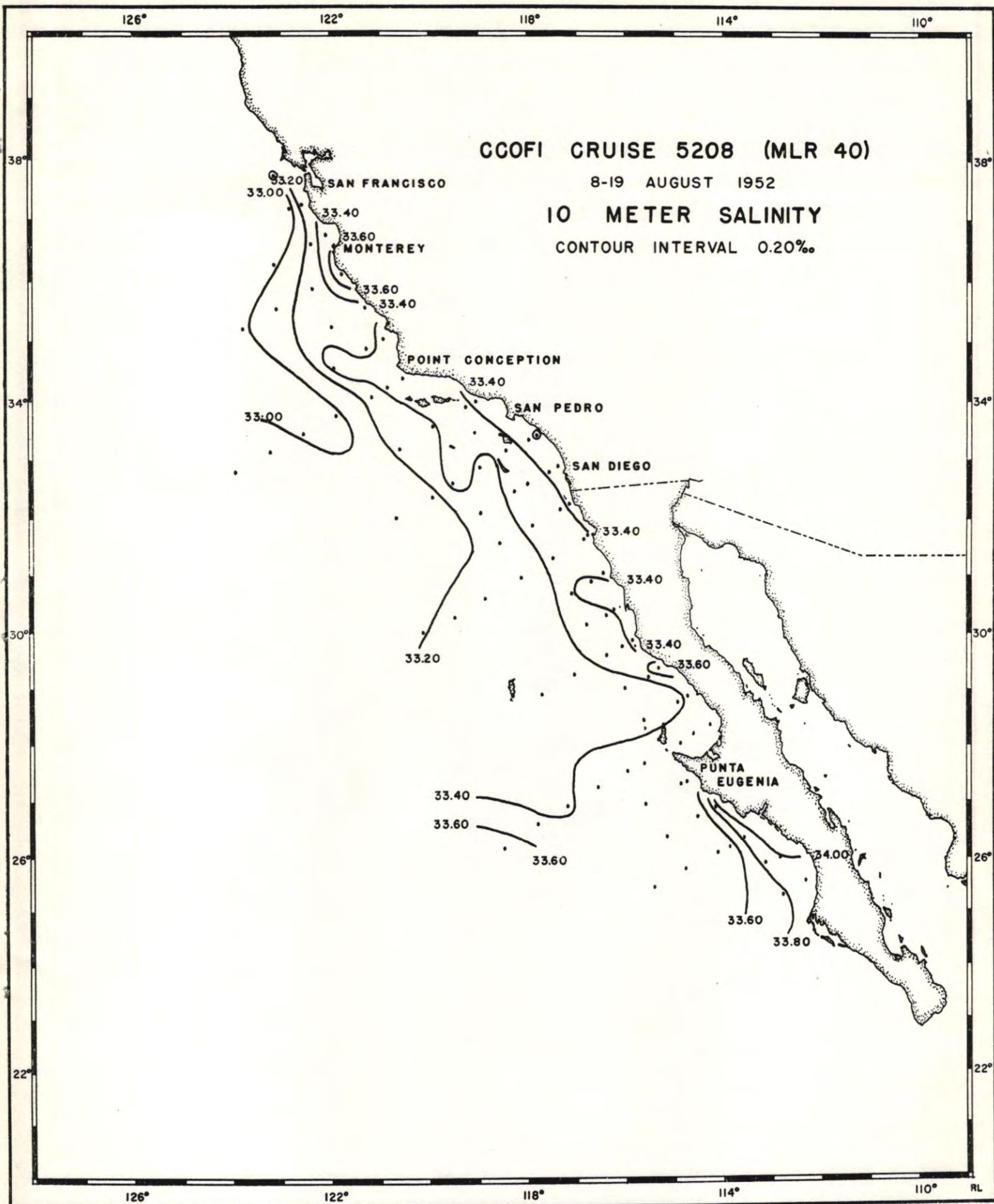


FIGURE 4.

FROM H.O. CHART 0527



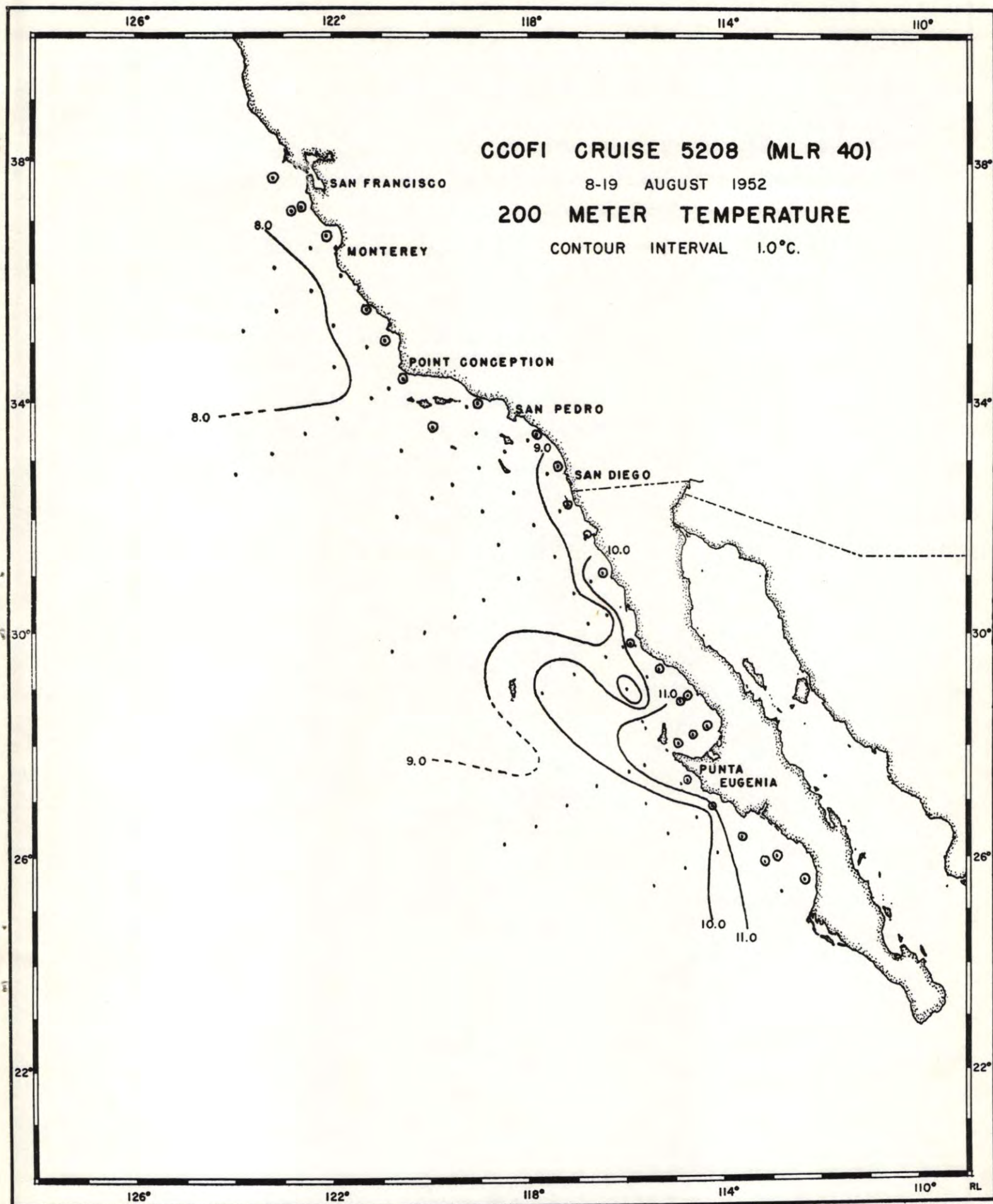


FIGURE 5.

FROM H.O. CHART 0527







## STATION 60.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°46'N 123°12'W; August 19, 1952; 1615 GCT; wire angle: 6°; sounding: 59 fms; depth of observation: 74 m; weather: clear; sea: very high; wind: 320°, force 7.

| Depth | T      | S   | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|-----|-----------------------|---------------|------------|----------------|
| (m)   | (°C)   | (‰) | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 10.15  | -   | -                     | -             | -          | 5.26           |
| 10    | 10.14  | -   | -                     | -             | -          | 5.38           |
| 20    | 10.10  | -   | -                     | -             | -          | 5.30           |
| 30    | 9.93   | -   | -                     | -             | -          | 5.18           |
| 50    | 8.97   | -   | -                     | -             | -          | 4.19           |
| 75    | (8.52) | -   | -                     | -             | -          | (2.86)         |

## STATION 63.52 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°19'N 122°36'W; August 19, 1952; 0318 GCT; wire angle: 0°; sounding: 48 fms; depth of observation: 50 m; weather: clear; sea: rough; wind: 280°, force 3.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 12.51 | 33.06 | 25.01 | 292.2 | .000 | 8.42 |
| 10 | 10.80 | 33.35 | 25.55 | 245.1 | .027 | 5.92 |
| 20 | 10.29 | 33.46 | 25.72 | 228.6 | .052 | 5.14 |
| 30 | 9.02  | 33.44 | 25.92 | 210.6 | .076 | 4.00 |
| 50 | 9.06  | 33.62 | 26.05 | 198.0 | .116 | 2.44 |

## STATION 63.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 37°14'N 122°50'W; August 19, 1952; 0535 GCT; wire angle: 26°; sounding: 120 fms; depth of observation: 176 m; weather: clear; sea: rough; wind: 320°, force 4.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 13.17 | 32.94 | 24.79 | 317.1 | .000 | 6.04 |
| 10  | 13.16 | 32.94 | 24.79 | 317.1 | .032 | 6.02 |
| 20  | 13.04 | 32.94 | 24.81 | 315.1 | .063 | 6.03 |
| 30  | 12.62 | 32.86 | 24.83 | 313.4 | .095 | 6.00 |
| 50  | 10.19 | 32.84 | 25.26 | 273.2 | .153 | 5.81 |
| 75  | 9.10  | 33.19 | 25.71 | 230.7 | .216 | 4.84 |
| 100 | 8.68  | 33.73 | 26.20 | 184.8 | .268 | 2.99 |
| 150 | 8.57  | 33.94 | 26.38 | 168.5 | .357 | 1.88 |



## STATION 67.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°49'N 122°05'W; August 18, 1952; 2050 GCT; wire angle: 7°; sounding: 58 fms; depth of observation: 74 m; weather: clear; sea: rough; wind: 280°, force 4.

| Depth | T      | S       | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|---------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 12.05  | 33.51   | 25.44                 | 254.5         | .000       | 6.27           |
| 10    | 10.89  | 33.51   | 25.66                 | 234.5         | .024       | 5.45           |
| 20    | 10.42  | 33.53   | 25.75                 | 225.4         | .047       | 4.86           |
| 30    | 10.24  | 33.51   | 25.77                 | 224.1         | .070       | 4.66           |
| 50    | 9.42   | 33.69   | 26.05                 | 198.1         | .112       | 2.96           |
| 75    | (9.20) | (33.79) | (26.16)               | (187.8)       | (.160)     | (2.60)         |

## STATION 67.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°39'N 122°26'W; August 18, 1952; 1726 GCT; wire angle: 23°; sounding: 1150 fms; depth of observation: 601 m; weather: clear; sea: very rough; wind: 320°, force 5.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 12.39 | 33.22 | 25.15 | 282.0 | .000 | 6.15 |
| 10  | 11.70 | 33.31 | 25.35 | 263.2 | .027 | 6.14 |
| 20  | 10.87 | 33.32 | 25.51 | 248.4 | .053 | 5.48 |
| 30  | 10.28 | 33.38 | 25.66 | 234.4 | .077 | 5.02 |
| 50  | 9.35  | 33.49 | 25.90 | 211.9 | .122 | 4.05 |
| 75  | 9.25  | 33.79 | 26.15 | 188.6 | .172 | 2.78 |
| 100 | 8.97  | 33.92 | 26.30 | 175.1 | .217 | 2.28 |
| 150 | 8.56  | 33.96 | 26.39 | 166.9 | .303 | 1.86 |
| 200 | 8.22  | 34.09 | 26.55 | 153.1 | .383 | 1.62 |
| 250 | 7.95  | 34.14 | 26.63 | 146.3 | .457 | 1.40 |
| 300 | 7.61  | 34.15 | 26.68 | 141.5 | .529 | 1.25 |
| 400 | 6.78  | 34.23 | 26.86 | 125.5 | .663 | 0.89 |
| 500 | 6.12  | 34.23 | 26.95 | 118.0 | .785 | 0.58 |
| 600 | 5.56  | 34.28 | 27.06 | 108.3 | .898 | 0.37 |



## STATION 67.65 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°19'N 123°09'W; August 18, 1952; 1031 GCT; wire angle: 19°; sounding: 1740 fms; depth of observation: 1095 m; weather: clear; sea: high; wind: 320°, force 7.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 13.96 | 32.88 | 24.58                 | 336.7         | .000       | 6.22           |
| 10    | 13.98 | 32.90 | 24.59                 | 335.9         | .034       | 6.21           |
| 20    | 13.99 | 32.90 | 24.59                 | 336.3         | .067       | 6.32           |
| 30    | 13.99 | 32.89 | 24.58                 | 337.3         | .101       | 6.30           |
| 50    | 11.60 | 32.74 | 24.93                 | 304.3         | .165       | 6.17           |
| 75    | 10.02 | 32.76 | 25.22                 | 276.9         | .238       | 5.79           |
| 100   | 9.32  | 33.14 | 25.63                 | 238.2         | .302       | 5.10           |
| 150   | 8.47  | 33.67 | 26.18                 | 187.0         | .408       | 3.61           |
| 200   | 7.68  | 33.91 | 26.49                 | 158.7         | .495       | 3.11           |
| 250   | 7.42  | 34.03 | 26.62                 | 146.9         | .571       | 2.06           |
| 300   | 6.83  | 34.04 | 26.71                 | 138.8         | .643       | 1.75           |
| 400   | 5.77  | 34.06 | 26.86                 | 124.9         | .775       | 1.25           |
| 500   | 5.07  | 34.12 | 26.99                 | 113.0         | .893       | 0.75           |
| 600   | 4.83  | 34.18 | 27.07                 | 106.7         | 1.003      | 0.50           |
| 700   | 4.53  | 34.29 | 27.19                 | 95.9          | 1.105      | 0.40           |
| 800   | 4.19  | 34.38 | 27.30                 | 86.1          | 1.196      | 0.40           |
| 1000  | 3.70  | 34.44 | 27.39                 | 77.6          | 1.359      | 0.52           |

## STATION 70.51 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 36°10'N 121°46'W; August 16, 1952; 1022 GCT; wire angle: 3°; sounding: 200 fms; depth of observation: 294 m; weather: partly cloudy; sea: moderate; wind: 300°, force 2.

|     |        |         |         |         |        |        |
|-----|--------|---------|---------|---------|--------|--------|
| 0   | 11.10  | 33.61   | 25.70   | 230.4   | .000   | 5.17   |
| 10  | 10.48  | 33.64   | 25.83   | 218.0   | .022   | 4.68   |
| 20  | 10.02  | 33.70   | 25.95   | 206.3   | .044   | 4.00   |
| 30  | 9.80   | 33.71   | 26.00   | 202.2   | .064   | 3.65   |
| 50  | 9.04   | 33.71   | 26.12   | 190.8   | .103   | 3.13   |
| 75  | 9.07   | 33.89   | 26.26   | 178.4   | .150   | 2.47   |
| 100 | 9.07   | 33.93   | 26.29   | 175.9   | .194   | 2.14   |
| 150 | 8.92   | 33.95   | 26.33   | 173.1   | .281   | 2.14   |
| 200 | 8.59   | 34.05   | 26.46   | 161.6   | .365   | 1.73   |
| 250 | 8.35   | 34.07   | 26.51   | 157.4   | .444   | 1.57   |
| 300 | (7.79) | (34.15) | (26.66) | (144.1) | (.520) | (1.44) |



## STATION 70.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°53'N 122°23'W; August 17, 1952; 0716 GCT; wire angle: 15°; sounding: 1500 fms; depth of observation: 1203 m; weather: clear; sea: rough; wind: 320°, force 6.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 15.35 | 33.22 | 24.55                 | 340.0         | .000       | 6.03           |
| 10    | 15.36 | 33.22 | 24.54                 | 340.5         | .034       | 5.93           |
| 20    | 15.35 | 33.22 | 24.55                 | 340.5         | .068       | 6.05           |
| 30    | 15.32 | 33.23 | 24.56                 | 339.5         | .102       | 6.00           |
| 50    | 11.97 | 33.35 | 25.33                 | 266.0         | .163       | 5.38           |
| 75    | 9.66  | 33.44 | 25.81                 | 220.9         | .223       | 4.46           |
| 100   | 9.46  | 33.69 | 26.04                 | 199.7         | .276       | 3.45           |
| 150   | 8.55  | 33.95 | 26.39                 | 167.5         | .368       | 2.50           |
| 200   | 7.73  | 33.96 | 26.52                 | 155.7         | .449       | 2.12           |
| 250   | 7.50  | 34.11 | 26.67                 | 142.1         | .523       | 1.55           |
| 300   | 7.29  | 34.20 | 26.77                 | 133.3         | .592       | 1.08           |
| 400   | 6.58  | 34.18 | 26.85                 | 126.5         | .722       | 0.98           |
| 500   | 5.93  | 34.23 | 26.98                 | 115.6         | .843       | 0.53           |
| 600   | 5.43  | 34.32 | 27.11                 | 103.7         | .952       | 0.40           |
| 700   | 4.89  | 34.38 | 27.22                 | 93.6          | 1.051      | 0.39           |
| 800   | 4.44  | 34.40 | 27.28                 | 87.7          | 1.142      | 0.39           |
| 1000  | 3.86  | 34.46 | 27.39                 | 78.1          | 1.307      | 0.50           |

## STATION 70.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°33'N 123°06'W; August 17, 1952; 1350 GCT; wire angle: 24°; sounding: 2060 fms; depth of observation: 560 m; weather: clear; sea: rough; wind: 320°, force 5.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 15.45 | 33.17 | 24.48 | 345.7 | .000 | 5.81 |
| 10  | 15.44 | 33.17 | 24.49 | 345.8 | .035 | 5.84 |
| 20  | 14.16 | 33.14 | 24.74 | 322.1 | .068 | 5.90 |
| 30  | 12.62 | 33.08 | 25.00 | 297.2 | .099 | 6.03 |
| 50  | 10.08 | 32.90 | 25.32 | 267.0 | .155 | 5.77 |
| 75  | 9.88  | 33.46 | 25.79 | 222.9 | .217 | 4.50 |
| 100 | 9.29  | 33.65 | 26.04 | 200.0 | .269 | 3.32 |
| 150 | 8.20  | 33.93 | 26.43 | 163.8 | .360 | 2.63 |
| 200 | 7.99  | 34.11 | 26.60 | 148.3 | .438 | 1.79 |
| 250 | 7.62  | 34.09 | 26.64 | 145.3 | .512 | 1.62 |
| 300 | 6.90  | 34.06 | 26.71 | 138.3 | .583 | 1.58 |
| 400 | 6.37  | 34.20 | 26.89 | 122.2 | .713 | 0.72 |
| 500 | 5.72  | 34.24 | 27.01 | 112.1 | .830 | 0.52 |



## STATION 70.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°13'N 123°48'W; August 17, 1952; 1936 GCT; wire angle: 40°; sounding: 2220 fms; depth of observation: 603 m; weather: clear; sea: very rough; wind: 320°, force 6.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 14.40 | 32.92 | 24.52                 | 342.5         | .000       | 6.21           |
| 10    | 14.35 | 32.92 | 24.53                 | 341.8         | .034       | 6.19           |
| 20    | 14.28 | 32.91 | 24.54                 | 341.3         | .068       | 6.18           |
| 30    | 14.03 | 32.84 | 24.53                 | 341.8         | .103       | 6.17           |
| 50    | 11.00 | 32.76 | 25.05                 | 292.5         | .166       | 6.13           |
| 75    | 10.02 | 32.82 | 25.27                 | 272.5         | .237       | 5.70           |
| 100   | 9.26  | 33.22 | 25.71                 | 231.4         | .300       | 4.81           |
| 150   | 8.14  | 33.63 | 26.20                 | 185.2         | .404       | 3.68           |
| 200   | 7.69  | 33.95 | 26.52                 | 155.8         | .489       | 2.72           |
| 250   | 7.19  | 34.03 | 26.65                 | 143.7         | .564       | 2.23           |
| 300   | 6.72  | 34.06 | 26.74                 | 135.9         | .634       | 1.69           |
| 400   | 5.85  | 34.15 | 26.92                 | 119.2         | .761       | 0.73           |
| 500   | 5.37  | 34.20 | 27.02                 | 110.7         | .876       | 0.44           |
| 600   | 5.04  | 34.23 | 27.08                 | 105.5         | .984       | 0.37           |

## STATION 73.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°37'N 121°17'W; August 15, 1952; 1943 GCT; wire angle: 10°; sounding: 47 fms; depth of observation: 73 m; weather: overcast; sea: moderate; wind: 320°, force 1.

|    |         |         |         |         |        |        |
|----|---------|---------|---------|---------|--------|--------|
| 0  | 11.27   | 33.39   | 25.50   | 249.6   | .000   | 5.21   |
| 10 | 11.06   | 33.39   | 25.53   | 246.2   | .025   | 5.19   |
| 20 | 11.02   | 33.39   | 25.54   | 245.7   | .049   | 5.13   |
| 30 | 10.71   | 33.53   | 25.70   | 230.4   | .073   | 4.53   |
| 50 | 10.34   | 33.58   | 25.81   | 221.0   | .118   | 4.09   |
| 75 | (10.15) | (33.66) | (25.90) | (212.5) | (.173) | (3.52) |



## STATION 73.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°18'N 121°58'W; August 16, 1952; 0147 GCT; wire angle: 5°; sounding: 1340 fms; depth of observation: 679 m; weather: cloudy; sea: rough; wind: 330°, force 5.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 13.45 | 33.26 | 24.98                 | 298.9         | .000       | 6.11           |
| 10    | 13.44 | 33.26 | 24.98                 | 299.0         | .030       | 6.15           |
| 20    | 13.26 | 33.27 | 25.02                 | 295.0         | .060       | 5.98           |
| 30    | 12.82 | 33.29 | 25.13                 | 285.5         | .089       | 5.93           |
| 50    | 11.78 | 33.41 | 25.42                 | 258.2         | .143       | 5.43           |
| 75    | 10.18 | 33.49 | 25.76                 | 225.5         | .203       | 4.32           |
| 100   | 9.43  | 33.76 | 26.10                 | 194.1         | .256       | 3.09           |
| 150   | 8.46  | 33.92 | 26.38                 | 168.4         | .346       | 2.68           |
| 200   | 8.03  | 34.08 | 26.57                 | 151.1         | .426       | 2.10           |
| 250   | 7.85  | 34.11 | 26.62                 | 147.1         | .501       | 1.58           |
| 300   | 6.83  | 34.10 | 26.75                 | 134.4         | .571       | 1.60           |
| 400   | 6.36  | 34.22 | 26.91                 | 120.6         | .699       | 0.73           |
| 500   | 5.69  | 34.24 | 27.01                 | 111.7         | .815       | 0.50           |
| 600   | 5.31  | 34.26 | 27.07                 | 106.6         | .924       | 0.38           |

## STATION 77.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 35°04'N 120°52'W; August 15, 1952; 1436 GCT; wire angle: 0°; sounding: 85 fms; depth of observation: 75 m; weather: overcast; sea: moderate; wind: calm.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 11.25 | 33.58 | 25.65 | 235.2 | .000 | 4.63 |
| 10 | 11.08 | 33.58 | 25.68 | 232.5 | .023 | 4.89 |
| 20 | 10.99 | 33.60 | 25.71 | 229.7 | .047 | 4.64 |
| 30 | 10.94 | 33.60 | 25.72 | 229.1 | .069 | 4.38 |
| 50 | 10.81 | 33.60 | 25.74 | 227.3 | .115 | 4.12 |
| 75 | 10.05 | 33.75 | 25.99 | 204.2 | .169 | 2.99 |



## STATION 77.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°54'N 121°13'W; August 15, 1952; 1012 GCT; wire angle: 9°; sounding: 324 fms; depth of observation: 434 m; weather: overcast; sea: rough; wind: 310°, force 4.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 12.83 | 33.35 | 25.17                 | 280.5         | .000       | 6.01           |
| 10    | 12.82 | 33.35 | 25.17                 | 280.6         | .028       | 6.05           |
| 20    | 12.60 | 33.40 | 25.25                 | 273.1         | .056       | 5.94           |
| 30    | 11.70 | 33.45 | 25.46                 | 253.3         | .082       | 5.50           |
| 50    | 10.32 | 33.48 | 25.73                 | 228.0         | .130       | 4.27           |
| 75    | 9.55  | 33.74 | 26.06                 | 196.9         | .183       | 2.84           |
| 100   | 9.09  | 33.90 | 26.26                 | 178.4         | .230       | 2.58           |
| 150   | 8.85  | 34.04 | 26.41                 | 165.3         | .316       | 2.12           |
| 200   | 8.60  | 34.12 | 26.51                 | 156.5         | .397       | 1.60           |
| 250   | 8.29  | 34.20 | 26.62                 | 146.9         | .473       | 1.32           |
| 300   | 7.90  | 34.22 | 26.70                 | 140.5         | .544       | 1.13           |
| 400   | 6.90  | 34.25 | 26.86                 | 125.7         | .677       | 0.84           |

## STATION 77.65 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°34'N 121°55'W; August 15, 1952; 0150 GCT; wire angle: 37°; sounding: 2050 fms; depth of observation: 414 m; weather: overcast; sea: rough; wind: 340°, force 5.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 12.98 | 33.46 | 25.23 | 275.3 | .000 | 6.01 |
| 10  | 12.99 | 33.46 | 25.22 | 275.7 | .028 | 6.14 |
| 20  | 13.00 | 33.44 | 25.21 | 277.6 | .055 | 6.02 |
| 30  | 12.97 | 33.50 | 25.26 | 272.9 | .083 | 6.08 |
| 50  | 9.68  | 33.67 | 25.99 | 203.7 | .130 | 3.60 |
| 75  | 8.75  | 33.82 | 26.25 | 178.7 | .178 | 2.85 |
| 100 | 8.74  | 33.93 | 26.34 | 170.9 | .222 | 2.31 |
| 150 | 8.04  | 33.99 | 26.50 | 157.0 | .304 | 2.08 |
| 200 | 7.57  | 34.05 | 26.61 | 146.7 | .380 | 1.75 |
| 250 | 7.09  | 34.06 | 26.69 | 140.1 | .452 | 1.39 |
| 300 | 6.69  | 34.09 | 26.77 | 133.2 | .520 | 1.14 |
| 400 | 5.95  | 34.13 | 26.89 | 122.0 | .647 | 0.73 |



## STATION 80.51 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°26'N 120°32'W; August 12, 1952; 1612 GCT; wire angle: 2°; sounding: 50 fms; depth of observation: 75 m; weather: cloudy; sea: moderate; wind: 320°, force 3.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 12.71 | 33.55 | 25.35                 | 263.6         | .000       | -              |
| 10    | 12.71 | 33.57 | 25.36                 | 262.4         | .026       | -              |
| 20    | 12.64 | 33.57 | 25.38                 | 261.3         | .052       | -              |
| 30    | 11.62 | 33.58 | 25.58                 | 242.4         | .078       | -              |
| 50    | 11.44 | 33.62 | 25.64                 | 236.7         | .126       | -              |
| 75    | 10.62 | 33.62 | 25.79                 | 223.2         | .183       | -              |

## STATION 80.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°19'N 120°48'W; August 12, 1952; 1858 GCT; wire angle: 24°; sounding: 430 fms; depth of observation: 608 m; weather: cloudy; sea: moderate; wind: 300°, force 4.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 13.25 | 33.58 | 25.26 | 271.6 | .000 | 5.80 |
| 10  | 13.33 | 33.58 | 25.25 | 273.3 | .027 | 5.74 |
| 20  | 12.96 | 33.60 | 25.34 | 265.1 | .054 | 5.77 |
| 30  | 12.43 | 33.60 | 25.44 | 255.5 | .080 | 5.30 |
| 50  | 9.80  | 33.68 | 25.98 | 204.8 | .126 | 3.39 |
| 75  | 9.20  | 33.85 | 26.21 | 183.4 | .175 | 2.84 |
| 100 | 9.04  | 34.04 | 26.38 | 167.3 | .219 | 2.18 |
| 150 | 8.89  | 34.11 | 26.46 | 160.8 | .301 | 1.86 |
| 200 | 8.52  | 34.17 | 26.56 | 151.6 | .379 | 1.37 |
| 250 | 8.32  | 34.21 | 26.63 | 146.6 | .453 | 1.23 |
| 300 | 8.08  | 34.25 | 26.69 | 140.9 | .525 | 1.11 |
| 400 | 7.32  | 34.25 | 26.80 | 131.5 | .661 | 0.87 |
| 500 | 5.95  | 34.14 | 26.90 | 122.5 | .788 | 0.83 |
| 600 | 5.69  | 34.31 | 27.07 | 107.8 | .904 | 0.44 |



## STATION 80.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°09'N 121°09'W; August 12-13, 1952; 2307,2332,0003 GCT; wire angle: 35°, 40°, 49°; sounding: 1250 fms; depth of observation: 45, 152, 850 m; weather: overcast; sea: rough; wind: 310°, force 5.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 15.28 | 33.28 | 24.61                 | 334.1         | .000       | 5.24           |
| 10    | 15.29 | 33.24 | 24.57                 | 337.5         | .034       | 5.98           |
| 20    | 14.52 | 33.21 | 24.72                 | 324.2         | .067       | 6.20           |
| 30    | 13.30 | 33.15 | 24.92                 | 304.9         | .098       | 6.16           |
| 50    | 10.02 | 33.06 | 25.46                 | 254.2         | .154       | 5.80           |
| 75    | 9.48  | 33.40 | 25.81                 | 221.0         | .213       | 4.25           |
| 100   | 9.20  | 33.64 | 26.04                 | 199.4         | .266       | 3.34           |
| 150   | 8.44  | 33.95 | 26.40                 | 165.8         | .357       | 2.54           |
| 200   | 8.08  | 34.04 | 26.53                 | 154.8         | .437       | 2.07           |
| 250   | 7.61  | 34.07 | 26.62                 | 146.6         | .513       | 1.87           |
| 300   | 6.72  | 34.07 | 26.75                 | 135.1         | .583       | 1.65           |
| 400   | 6.18  | 34.22 | 26.94                 | 118.2         | .710       | 0.84           |
| 500   | 5.91  | 34.26 | 27.00                 | 113.1         | .826       | 0.59           |
| 600   | 5.58  | 34.30 | 27.07                 | 107.1         | .936       | 0.39           |
| 700   | 5.22  | 34.35 | 27.16                 | 100.0         | 1.039      | 0.32           |
| 800   | 4.73  | 34.40 | 27.25                 | 91.2          | 1.135      | 0.35           |

## STATION 80.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°49'N 121°51'W; August 13, 1952; 0720 GCT; wire angle: 31°; sounding: 2020 fms; depth of observation: 566 m; weather: overcast; sea: rough; wind: 320°, force 5.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 15.93 | 32.88 | 24.16 | 377.1 | .000 | 5.71 |
| 10  | 15.94 | 32.88 | 24.15 | 377.6 | .038 | 5.75 |
| 20  | 15.92 | 32.88 | 24.16 | 377.5 | .075 | 5.77 |
| 30  | 14.70 | 32.88 | 24.42 | 352.3 | .112 | 6.28 |
| 50  | 11.75 | 32.84 | 24.98 | 299.6 | .177 | 6.20 |
| 75  | 10.32 | 32.89 | 25.27 | 272.1 | .249 | 5.78 |
| 100 | 9.44  | 33.11 | 25.59 | 242.3 | .313 | 5.00 |
| 150 | 8.70  | 33.75 | 26.21 | 184.5 | .420 | 3.11 |
| 200 | 8.12  | 33.94 | 26.45 | 162.8 | .506 | 2.30 |
| 250 | 7.66  | 34.02 | 26.58 | 151.0 | .585 | 1.93 |
| 300 | 7.20  | 34.06 | 26.67 | 142.4 | .658 | 1.60 |
| 400 | 6.52  | 34.14 | 26.83 | 128.7 | .794 | 1.00 |
| 500 | 5.62  | 34.16 | 26.96 | 116.8 | .917 | 0.67 |



## STATION 80.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°29'N 122°32'W; August 13, 1952; 1357 GCT; wire angle: 15°; sounding: 2100 fms; depth of observation: 1285 m; weather: overcast; sea: rough; wind: 330°, force 4.

| Depth | T     | S     | $\sigma_t$            | $10^5 \sigma_s$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|-----------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |                 | (dyn.m.)   | (ml/L)         |
| 0     | 15.71 | 32.99 | 24.29                 | 364.4           | .000       | 5.80           |
| 10    | 15.72 | 32.97 | 24.27                 | 366.3           | .037       | 5.68           |
| 20    | 15.72 | 32.97 | 24.27                 | 366.6           | .073       | 5.70           |
| 30    | 15.70 | 32.97 | 24.28                 | 366.5           | .110       | 5.82           |
| 50    | 12.70 | 32.89 | 24.84                 | 313.1           | .178       | 6.07           |
| 75    | 10.34 | 32.89 | 25.27                 | 272.5           | .251       | 5.80           |
| 100   | 9.47  | 33.06 | 25.55                 | 246.5           | .316       | 5.00           |
| 150   | 8.62  | 33.63 | 26.13                 | 192.2           | .426       | 3.55           |
| 200   | 8.29  | 33.84 | 26.34                 | 172.6           | .517       | 2.57           |
| 250   | 7.89  | 33.97 | 26.50                 | 158.0           | .599       | 2.14           |
| 300   | 7.42  | 34.07 | 26.65                 | 144.7           | .675       | 1.78           |
| 400   | 6.53  | 34.17 | 26.85                 | 126.6           | .811       | 1.00           |
| 500   | 5.83  | 34.21 | 26.97                 | 115.7           | .932       | 0.57           |
| 600   | 5.28  | 34.30 | 27.11                 | 103.3           | 1.041      | 0.36           |
| 700   | 4.82  | 34.36 | 27.21                 | 94.2            | 1.140      | 0.31           |
| 800   | 4.42  | 34.39 | 27.28                 | 88.2            | 1.231      | 0.35           |
| 1000  | 3.80  | 34.46 | 27.40                 | 77.3            | 1.397      | 0.53           |

## STATION 80.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°09'N 123°12'W; August 13, 1952; 2210 GCT; wire angle: 26°; sounding: 2320 fms; depth of observation: 573 m; weather: overcast; sea: rough; wind: 340°, force 5.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 17.16 | 33.12 | 24.06 | 386.6 | .000 | 6.07 |
| 10  | 17.16 | 33.15 | 24.08 | 384.7 | .039 | 6.04 |
| 20  | 17.16 | 33.15 | 24.08 | 385.0 | .077 | 5.52 |
| 30  | 17.15 | 33.15 | 24.08 | 385.1 | .116 | 5.52 |
| 50  | 14.30 | 33.13 | 24.70 | 326.4 | .187 | 5.54 |
| 75  | 13.10 | 33.04 | 24.88 | 310.2 | .266 | 6.15 |
| 100 | 11.92 | 33.09 | 25.14 | 285.3 | .341 | 5.68 |
| 150 | 9.03  | 33.29 | 25.80 | 223.6 | .468 | 4.63 |
| 200 | 8.38  | 33.78 | 26.28 | 178.4 | .568 | 3.52 |
| 250 | 8.10  | 34.02 | 26.51 | 157.4 | .652 | 2.62 |
| 300 | 7.62  | 34.09 | 26.64 | 146.1 | .728 | 2.02 |
| 400 | 6.46  | 34.12 | 26.82 | 129.3 | .866 | 1.10 |
| 500 | 5.62  | 34.16 | 26.96 | 116.8 | .989 | 0.67 |



## STATION 80.100 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°49'N 123°54'W; August 14, 1952; 0430 GCT; wire angle: 28°; sounding: 2240 fms; depth of observation: 1203 m; weather: overcast; sea: rough; wind: 350°, force 5.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 17.25 | 33.15 | 24.06                 | 386.4         | .000       | 5.42           |
| 10    | 17.28 | 33.15 | 24.05                 | 387.4         | .039       | 5.58           |
| 20    | 17.28 | 33.15 | 24.05                 | 387.7         | .077       | 5.59           |
| 30    | 17.27 | 33.15 | 24.05                 | 387.8         | .116       | 5.67           |
| 50    | 14.45 | 33.15 | 24.69                 | 328.0         | .188       | 6.05           |
| 75    | 12.99 | 33.11 | 24.95                 | 303.0         | .267       | 6.03           |
| 100   | 11.96 | 33.08 | 25.13                 | 286.8         | .340       | 5.82           |
| 150   | 9.15  | 33.48 | 25.93                 | 211.4         | .465       | 4.41           |
| 200   | 8.39  | 33.76 | 26.26                 | 180.0         | .563       | 3.70           |
| 250   | 7.81  | 33.93 | 26.48                 | 159.8         | .648       | 2.92           |
| 300   | 7.25  | 34.03 | 26.64                 | 145.3         | .724       | 2.22           |
| 400   | 6.43  | 34.13 | 26.83                 | 128.2         | .861       | 1.18           |
| 500   | 5.69  | 34.20 | 26.98                 | 114.7         | .982       | 1.03           |
| 600   | 5.14  | 34.16 | 27.02                 | 111.9         | 1.096      | 0.65           |
| 700   | 4.81  | 34.27 | 27.14                 | 100.8         | 1.202      | 0.44           |
| 800   | 4.53  | 34.42 | 27.29                 | 87.3          | 1.296      | 0.36           |
| 1000  | 3.84  | 34.45 | 27.39                 | 78.6          | 1.462      | 0.57           |

## STATION 85.38 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°01'N 119°02'W; August 12, 1952; 0537 GCT; wire angle: 0°; sounding: 45 fms; depth of observation: 50 m; weather: cloudy; sea: moderate; wind: 300°, force 2.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 16.62 | 33.37 | 24.37 | 356.3 | .000 | 6.36 |
| 10 | 15.60 | 33.35 | 24.59 | 336.0 | .035 | 6.11 |
| 20 | 13.22 | 33.30 | 25.05 | 292.1 | .066 | 6.33 |
| 30 | 12.20 | 33.37 | 25.31 | 268.2 | .094 | 5.77 |
| 50 | 10.08 | 33.35 | 25.67 | 233.7 | .144 | 4.24 |



## STATION 85.40 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°57'N 119°10'W; August 12, 1952; 0250 GCT; wire angle: 12°; sounding: 410 fms; depth of observation: 624 m; weather: cloudy; sea: moderate; wind: 300°, force 3.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 17.67 | 33.42 | 24.16                 | 376.3         | .000       | 5.92           |
| 10    | 17.34 | 33.42 | 24.24                 | 369.1         | .037       | 6.16           |
| 20    | 11.65 | 33.31 | 25.36                 | 262.5         | .069       | 5.70           |
| 30    | 10.80 | 33.31 | 25.52                 | 248.1         | .094       | 4.80           |
| 50    | 10.22 | 33.42 | 25.70                 | 230.8         | .142       | 4.02           |
| 75    | 9.55  | 33.59 | 25.95                 | 208.0         | .197       | 3.45           |
| 100   | 9.33  | 33.75 | 26.11                 | 193.2         | .247       | 2.94           |
| 150   | 9.19  | 34.00 | 26.33                 | 173.5         | .339       | 2.18           |
| 200   | 8.97  | 34.10 | 26.44                 | 163.7         | .423       | 2.03           |
| 250   | 8.78  | 34.15 | 26.51                 | 158.0         | .504       | 1.56           |
| 300   | 8.44  | 34.16 | 26.57                 | 153.0         | .581       | 1.28           |
| 400   | 7.69  | 34.35 | 26.83                 | 129.5         | .723       | 0.78           |
| 500   | 6.78  | 34.29 | 26.91                 | 122.5         | .849       | 0.50           |
| 600   | 5.99  | 34.42 | 27.12                 | 103.6         | .962       | 0.32           |

## STATION 85.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°37'N 119°52'W; August 11, 1952; 2024 GCT; wire angle: 22°; sounding: 160 fms; depth of observation: 141 m; weather: overcast; sea: moderate; wind: 300°, force 3.

|     |        |         |         |         |        |        |
|-----|--------|---------|---------|---------|--------|--------|
| 0   | 14.50  | 33.62   | 25.04   | 293.2   | .000   | 5.71   |
| 10  | 14.50  | 33.40   | 24.87   | 309.6   | .030   | 5.59   |
| 20  | 13.80  | 33.46   | 25.06   | 291.5   | .060   | 5.11   |
| 30  | 9.68   | 33.66   | 25.98   | 204.0   | .085   | 4.60   |
| 50  | 9.63   | 33.76   | 26.07   | 196.2   | .125   | 3.35   |
| 75  | 9.20   | 33.72   | 26.11   | 193.0   | .174   | 2.95   |
| 100 | 8.96   | 33.89   | 26.28   | 177.2   | .220   | 2.44   |
| 150 | (8.87) | (34.04) | (26.41) | (165.6) | (.306) | (2.11) |



## STATION 85.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°13'N 120°33'W; August 11, 1952; 1229 GCT; wire angle: 16°; sounding: 900 fms; depth of observation: 615 m; weather: overcast; sea: rough; wind: 320°, force 4.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 15.34 | 33.37 | 24.66                 | 328.8         | .000       | 5.89           |
| 10    | 15.33 | 33.37 | 24.66                 | 328.9         | .033       | 5.84           |
| 20    | 15.34 | 33.37 | 24.66                 | 329.4         | .066       | 5.91           |
| 30    | 15.30 | 33.39 | 24.69                 | 327.3         | .099       | 5.86           |
| 50    | 13.14 | 33.37 | 25.12                 | 286.1         | .160       | 5.69           |
| 75    | 11.25 | 33.38 | 25.49                 | 251.6         | .227       | 4.90           |
| 100   | 9.11  | 33.59 | 26.02                 | 201.7         | .284       | 3.62           |
| 150   | 8.56  | 33.80 | 26.27                 | 178.7         | .379       | 2.82           |
| 200   | 8.12  | 34.07 | 26.55                 | 153.1         | .462       | 2.43           |
| 250   | 7.48  | 34.05 | 26.62                 | 146.3         | .537       | 2.02           |
| 300   | 6.75  | 34.09 | 26.76                 | 134.0         | .607       | 1.66           |
| 400   | 6.07  | 34.11 | 26.86                 | 125.0         | .736       | 0.96           |
| 500   | 5.62  | 34.28 | 27.05                 | 107.9         | .853       | 0.49           |
| 600   | 5.27  | 34.33 | 27.13                 | 100.9         | .957       | 0.33           |

## STATION 90.28 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°28'N 117°47'W; August 9, 1952; 1735 GCT; wire angle: 0°; sounding: 250 fms; depth of observation: 50 m; weather: overcast; sea: slight; wind: 210°, force 1.

|    |       |   |   |   |   |      |
|----|-------|---|---|---|---|------|
| 0  | 19.51 | - | - | - | - | -    |
| 10 | 16.41 |   |   |   |   |      |
| 20 | 14.58 |   |   |   |   | 6.56 |
| 30 | 12.84 |   |   |   |   | 6.31 |
| 50 | 10.15 |   |   |   |   | 5.64 |



## STATION 90.30 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°24'N 117°55'W; August 9, 1952; 1925 GCT; wire angle: 4°; sounding: 300 fms; depth of observation: 487 m; weather: cloudy; sea: slight; wind: 240°, force 1.

| Depth | T      | S       | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|---------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 20.07  | 33.46   | 23.59                 | 430.9         | .000       | 5.56           |
| 10    | 17.08  | 33.37   | 24.27                 | 366.9         | .040       | 6.03           |
| 20    | 14.58  | 33.35   | 24.81                 | 315.2         | .074       | 6.36           |
| 30    | 12.91  | 33.34   | 25.15                 | 283.5         | .104       | 6.15           |
| 50    | 10.64  | 33.31   | 25.54                 | 245.9         | .157       | 4.78           |
| 75    | 10.27  | 33.49   | 25.75                 | 227.0         | .216       | 4.08           |
| 100   | 9.65   | 33.69   | 26.01                 | 202.7         | .270       | 3.29           |
| 150   | 9.22   | 33.95   | 26.28                 | 177.7         | .365       | 2.75           |
| 200   | 8.62   | 34.11   | 26.50                 | 157.6         | .449       | 2.19           |
| 250   | 8.30   | 34.14   | 26.57                 | 151.5         | .526       | 1.60           |
| 300   | 8.37   | 34.25   | 26.65                 | 145.3         | .600       | 1.00           |
| 400   | 7.53   | 34.26   | 26.78                 | 133.8         | .740       | 0.64           |
| 500   | (7.06) | (34.28) | (26.86)               | (127.2)       | (.870)     | (0.42)         |

## STATION 90.37 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°11'N 118°24'W; August 10, 1952; 0105 GCT; wire angle: 29°; sounding: 650 fms; depth of observation: 890 m; weather: partly cloudy; sea: moderate; wind: 240°, force 3.

|      |        |         |         |        |         |      |
|------|--------|---------|---------|--------|---------|------|
| 0    | 19.69  | 33.53   | 23.74   | 416.4  | .000    | 5.57 |
| 10   | 19.30  | 33.46   | 23.79   | 412.3  | .041    | 5.69 |
| 20   | 18.35  | 33.46   | 24.03   | 389.9  | .082    | 5.93 |
| 30   | 15.30  | 33.46   | 24.74   | 322.2  | .117    | 6.30 |
| 50   | 10.62  | 33.50   | 25.70   | 231.5  | .173    | 6.31 |
| 75   | 9.50   | 33.74   | 26.07   | 196.2  | .226    | 3.15 |
| 100  | 9.11   | 33.85   | 26.22   | 182.4  | .273    | 2.92 |
| 150  | 8.76   | 34.03   | 26.42   | 164.7  | .360    | 2.20 |
| 200  | 8.73   | 34.16   | 26.52   | 155.6  | .440    | 1.63 |
| 250  | 8.45   | 34.23   | 26.62   | 147.0  | .516    | 1.29 |
| 300  | 7.98   | 34.25   | 26.71   | 139.5  | .587    | 0.95 |
| 400  | 7.31   | 34.29   | 26.84   | 128.4  | .721    | 0.56 |
| 500  | 6.55   | 34.29   | 26.94   | 119.4  | .845    | 0.52 |
| 600  | 5.86   | 34.31   | 27.05   | 110.0  | .960    | 0.41 |
| 700  | 5.29   | 34.36   | 27.16   | 100.1  | 1.065   | 0.34 |
| 800  | 4.86   | 34.40   | 27.24   | 92.8   | 1.161   | 0.34 |
| 1000 | (4.27) | (34.43) | (27.33) | (85.2) | (1.340) |      |



## STATION 90.45 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°54'N 118°56'W; August 10, 1952; 0640 GCT; wire angle: 0°; sounding: 995 fms; depth of observation: 587 m; weather: overcast; sea: moderate; wind: 240°, force 3.

| Depth | T      | S       | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|---------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 17.86  | 33.37   | 24.08                 | 384.3         | .000       | 5.54           |
| 10    | 17.88  | 33.39   | 24.09                 | 383.7         | .038       | 5.64           |
| 20    | 17.57  | 33.35   | 24.13                 | 379.7         | .077       | 5.72           |
| 30    | 13.90  | 33.29   | 24.91                 | 306.2         | .111       | 5.90           |
| 50    | 11.08  | 33.31   | 25.47                 | 253.3         | .167       | 4.92           |
| 75    | 9.64   | 33.65   | 25.98                 | 205.0         | .224       | 3.50           |
| 100   | 8.98   | 33.81   | 26.21                 | 183.4         | .273       | 3.18           |
| 150   | 8.76   | 34.05   | 26.43                 | 163.2         | .359       | 2.12           |
| 200   | 8.31   | 34.14   | 26.57                 | 150.7         | .438       | 1.73           |
| 250   | 7.83   | 34.15   | 26.65                 | 143.8         | .511       | 1.36           |
| 300   | 7.78   | 34.28   | 26.76                 | 134.3         | .581       | 0.82           |
| 400   | 7.07   | 34.31   | 26.89                 | 123.6         | .710       | 0.61           |
| 500   | 6.22   | 34.32   | 27.01                 | 112.7         | .828       | 0.42           |
| 600   | (5.72) | (34.39) | (27.13)               | 102.2         | (.936)     |                |

## STATION 90.53 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°38'N 119°29'W; August 10, 1952; 1212 GCT; wire angle: 30°; sounding: 730 fms; depth of observation: 1106 m; weather: overcast; sea: moderate; wind: 270°, force 4.

|      |       |       |       |       |       |      |
|------|-------|-------|-------|-------|-------|------|
| 0    | 16.35 | 33.49 | 24.53 | 341.6 | .000  | 5.65 |
| 10   | 16.33 | 33.51 | 24.55 | 340.0 | .034  | 5.72 |
| 20   | 15.75 | 33.49 | 24.66 | 329.3 | .068  | 5.74 |
| 30   | 13.96 | 33.49 | 25.05 | 292.7 | .099  | 5.60 |
| 50   | 10.11 | 33.50 | 25.78 | 223.1 | .150  | 3.81 |
| 75   | 9.50  | 33.70 | 26.04 | 199.1 | .203  | 3.31 |
| 100  | 8.89  | 33.81 | 26.23 | 182.0 | .251  | 3.10 |
| 150  | 8.37  | 33.98 | 26.44 | 162.6 | .337  | 2.43 |
| 200  | 8.12  | 34.13 | 26.59 | 148.7 | .415  | 1.73 |
| 250  | 7.70  | 34.21 | 26.72 | 137.5 | .486  | 1.15 |
| 300  | 7.18  | 34.22 | 26.80 | 130.3 | .553  | 0.94 |
| 400  | 6.89  | 34.28 | 26.89 | 123.3 | .680  | 0.76 |
| 500  | 6.24  | 34.30 | 26.99 | 114.4 | .799  | 0.42 |
| 600  | 5.61  | 34.32 | 27.09 | 106.0 | .909  | 0.35 |
| 700  | 5.11  | 34.36 | 27.18 | 97.8  | 1.011 | 0.36 |
| 800  | 4.65  | 34.42 | 27.28 | 88.7  | 1.104 | 0.38 |
| 1000 | 4.13  | 34.45 | 27.36 | 82.0  | 1.275 | 0.48 |



## STATION 90.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°25'N 119°58'W; August 10, 1952; 1721 GCT; wire angle: 22°; sounding: 650 fms; depth of observation: 597 m; weather: overcast; sea: moderate; wind: 270°, force 4.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 16.67 | 33.14 | 24.19                 | 374.2         | .000       | 5.56           |
| 10    | 16.67 | 33.15 | 24.19                 | 373.8         | .037       | 5.69           |
| 20    | 16.60 | 33.15 | 24.21                 | 372.5         | .075       | 5.71           |
| 30    | 16.31 | 33.11 | 24.25                 | 369.4         | .112       | 5.80           |
| 50    | 14.07 | 33.04 | 24.68                 | 328.4         | .182       | 6.29           |
| 75    | 11.70 | 33.12 | 25.21                 | 278.7         | .257       | 5.55           |
| 100   | 10.04 | 33.35 | 25.68                 | 234.1         | .322       | 4.40           |
| 150   | 8.71  | 33.74 | 26.20                 | 185.4         | .426       | 3.24           |
| 200   | 8.15  | 33.96 | 26.46                 | 161.7         | .513       | 2.70           |
| 250   | 7.69  | 34.01 | 26.56                 | 152.2         | .592       | 2.31           |
| 300   | 6.98  | 34.06 | 26.70                 | 139.4         | .665       | 1.71           |
| 400   | 6.11  | 34.15 | 26.89                 | 122.5         | .796       | 0.92           |
| 500   | 5.73  | 34.23 | 27.00                 | 113.0         | .913       | 0.42           |
| 600   | 5.40  | 34.29 | 27.09                 | 105.5         | 1.023      | 0.35           |

## STATION 90.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°04'N 120°39'W; August 11, 1952; 0017 GCT; wire angle: 28°; sounding: 2080 fms; depth of observation: 1086 m; weather: overcast; sea: rough; wind: 320°, force 5.

|      |       |       |       |       |       |      |
|------|-------|-------|-------|-------|-------|------|
| 0    | 17.23 | 33.19 | 24.09 | 383.1 | .000  | 5.34 |
| 10   | 17.24 | 33.15 | 24.06 | 386.5 | .038  | 5.99 |
| 20   | 17.23 | 33.15 | 24.06 | 386.6 | .077  | 6.05 |
| 30   | 17.19 | 33.14 | 24.06 | 386.7 | .116  | 6.01 |
| 50   | 14.61 | 33.08 | 24.60 | 336.3 | .188  | 5.53 |
| 75   | 12.65 | 33.11 | 25.02 | 296.6 | .267  | 5.54 |
| 100  | 11.28 | 33.12 | 25.28 | 271.9 | .338  | 5.52 |
| 150  | 9.45  | 33.55 | 25.93 | 210.9 | .459  | 3.78 |
| 200  | 8.50  | 33.89 | 26.35 | 172.1 | .555  | 2.70 |
| 250  | 7.82  | 34.01 | 26.54 | 154.1 | .636  | 2.03 |
| 300  | 7.20  | 34.08 | 26.69 | 140.9 | .710  | 1.63 |
| 400  | 6.16  | 34.12 | 26.86 | 125.4 | .843  | 1.03 |
| 500  | 5.70  | 34.20 | 26.98 | 114.8 | .963  | 0.52 |
| 600  | 5.36  | 34.30 | 27.10 | 104.3 | 1.073 | 0.32 |
| 700  | 4.92  | 34.36 | 27.20 | 95.5  | 1.173 | 0.30 |
| 800  | 4.54  | 34.38 | 27.26 | 90.3  | 1.266 | 0.34 |
| 1000 | 3.94  | 34.46 | 27.39 | 79.0  | 1.435 | 0.60 |



## STATION 93.27 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°56'N 117°19'W; August 9, 1952; 1155 GCT; wire angle: 3°; sounding: 140 fms; depth of observation: 149 m; weather: overcast; sea: slight; wind: calm.

| Depth | T      | S       | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|---------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 20.25  | 33.35   | 23.46                 | 443.4         | .000       | 5.39           |
| 10    | 17.17  | 33.39   | 24.26                 | 367.4         | .041       | 6.13           |
| 20    | 14.85  | 33.49   | 24.86                 | 310.4         | .074       | 6.68           |
| 30    | 12.97  | 33.51   | 25.27                 | 272.1         | .104       | 6.70           |
| 50    | 10.68  | 33.40   | 25.61                 | 239.9         | .155       | 4.76           |
| 75    | 9.75   | 33.69   | 25.99                 | 203.8         | .210       | 3.53           |
| 100   | 9.69   | 33.74   | 26.04                 | 199.7         | .261       | 2.96           |
| 150   | (9.42) | (33.98) | (26.27)               | (178.6)       | (.355)     | (2.28)         |

## STATION 93.30 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°50'N 117°32'W; August 9, 1952; 0851, 0921 GCT; wire angle: 4°, 4°; sounding: 450 fms; depth of observation: 96 m; 585 m; weather: overcast; sea: slight; wind: calm.

|     |        |         |         |         |        |      |
|-----|--------|---------|---------|---------|--------|------|
| 0   | 19.33  | 33.44   | 23.77   | 414.1   | .000   | 5.50 |
| 10  | 17.82  | 33.33   | 24.06   | 386.6   | .040   | 5.64 |
| 20  | 15.16  | 33.31   | 24.66   | 330.0   | .076   | 6.26 |
| 30  | 13.15  | 33.30   | 25.07   | 291.0   | .107   | 6.04 |
| 50  | 11.52  | 33.31   | 25.39   | 260.9   | .162   | 5.23 |
| 75  | 10.15  | 33.41   | 25.71   | 230.9   | .224   | 4.10 |
| 100 | 9.53   | 33.71   | 26.04   | 199.3   | .277   | 3.45 |
| 150 | 8.89   | 33.91   | 26.30   | 175.6   | .371   | 2.91 |
| 200 | 9.42   | 34.22   | 26.46   | 161.9   | .455   | 1.50 |
| 250 | 9.12   | 34.32   | 26.59   | 150.7   | .534   | 1.12 |
| 300 | 8.58   | 34.25   | 26.62   | 148.4   | .608   | 1.05 |
| 400 | 7.74   | 34.34   | 26.81   | 131.0   | .748   | 0.61 |
| 500 | 6.95   | 34.33   | 26.92   | 121.9   | .875   | 0.45 |
| 600 | (6.04) | (34.36) | (27.06) | (108.7) | (.990) |      |



## STATION 93.40 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°30'N 118°12'W; August 9, 1952; 0237 GCT; wire angle: 9°; sounding: 930 fms; depth of observation: 585 m; weather: overcast; sea: moderate; wind: 300°, force 2.

| Depth | T      | S       | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|---------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 18.83  | 33.39   | 23.86                 | 405.7         | .000       | 4.86           |
| 10    | 18.24  | 33.46   | 24.06                 | 386.9         | .040       | 5.35           |
| 20    | 17.25  | 33.37   | 24.23                 | 371.0         | .078       | 5.62           |
| 30    | 13.90  | 33.27   | 24.89                 | 307.7         | .111       | 6.00           |
| 50    | 12.28  | 33.33   | 25.26                 | 273.1         | .170       | 5.98           |
| 75    | 9.86   | 33.40   | 25.75                 | 227.0         | .232       | 4.50           |
| 100   | 9.51   | 33.63   | 25.99                 | 204.9         | .286       | 3.58           |
| 150   | 9.32   | 33.91   | 26.23                 | 182.2         | .383       | 2.66           |
| 200   | 8.62   | 34.08   | 26.48                 | 159.8         | .468       | 2.23           |
| 250   | 8.56   | 34.19   | 26.57                 | 151.7         | .546       | 1.51           |
| 300   | 7.78   | 34.24   | 26.73                 | 137.3         | .618       | 1.16           |
| 400   | 6.98   | 34.23   | 26.84                 | 128.3         | .751       | 0.67           |
| 500   | 6.12   | 34.28   | 26.99                 | 114.3         | .872       | 0.37           |
| 600   | (5.49) | (34.35) | (27.12)               | (102.2)       | (.981)     |                |

## STATION 93.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°10'N 118°54'W; August 8, 1952; 2042 GCT; wire angle: 19°; sounding: 820 fms; depth of observation: 556 m; weather: overcast; sea: moderate; wind: 300°, force 2.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 17.15 | 33.31 | 24.20 | 372.5 | .000 | 5.58 |
| 10  | 16.89 | 33.30 | 24.26 | 367.7 | .037 | 5.75 |
| 20  | 15.93 | 33.31 | 24.49 | 346.3 | .073 | 5.92 |
| 30  | 14.90 | 33.35 | 24.74 | 322.0 | .106 | 6.03 |
| 50  | 12.25 | 33.29 | 25.24 | 275.4 | .166 | 5.50 |
| 75  | 9.75  | 33.43 | 25.79 | 223.0 | .228 | 4.16 |
| 100 | 9.07  | 33.60 | 26.03 | 200.3 | .281 | 3.36 |
| 150 | 8.55  | 33.83 | 26.29 | 176.4 | .375 | 2.50 |
| 200 | 8.21  | 34.12 | 26.57 | 150.7 | .457 | 1.75 |
| 250 | 7.85  | 34.17 | 26.67 | 142.6 | .530 | 1.13 |
| 300 | 7.28  | 34.20 | 26.77 | 133.1 | .599 | 0.80 |
| 400 | 6.58  | 34.28 | 26.93 | 119.1 | .725 | 0.48 |
| 500 | 6.10  | 34.26 | 26.98 | 115.5 | .843 | 0.35 |



## STATION 97.30 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°15'N 117°09'W; August 8, 1952; 0103 GCT; wire angle: 10°; sounding: 33 fms; depth of observation: 30 m; weather: overcast; sea: slight; wind: 280°, force 1.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 20.06 | 33.48 | 23.61                 | 429.2         | .000       | 5.73           |
| 10    | 12.80 | 33.37 | 25.19                 | 278.7         | .035       | 5.63           |
| 20    | 11.02 | 33.55 | 25.66                 | 233.9         | .061       | 4.41           |
| 30    | 10.38 | 33.55 | 25.78                 | 223.4         | .084       | 3.84           |

## STATION 97.32 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°12'N 117°17'W; August 8, 1952; 0230 GCT; wire angle: 17°; sounding: 740 fms; depth of observation: 567 m; weather: partly cloudy; sea: moderate; wind: calm.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 20.05 | 33.49 | 23.62 | 428.3 | .000 | 5.26 |
| 10  | 18.25 | 33.45 | 24.05 | 387.9 | .041 | 5.47 |
| 20  | 14.80 | 33.31 | 24.73 | 322.6 | .076 | 5.89 |
| 30  | 12.50 | 33.31 | 25.20 | 278.1 | .106 | 5.70 |
| 50  | 10.55 | 33.43 | 25.65 | 235.5 | .158 | 4.00 |
| 75  | 9.94  | 33.61 | 25.90 | 212.8 | .214 | 3.31 |
| 100 | 9.63  | 33.85 | 26.14 | 190.6 | .264 | 2.40 |
| 150 | 9.58  | 34.03 | 26.29 | 177.5 | .356 | 2.40 |
| 200 | 9.45  | 34.21 | 26.45 | 163.1 | .441 | 1.98 |
| 250 | 9.09  | 34.26 | 26.54 | 154.7 | .521 | 1.56 |
| 300 | 8.33  | 34.26 | 26.66 | 143.9 | .595 | 1.23 |
| 400 | 7.75  | 34.32 | 26.80 | 132.6 | .734 | 0.65 |
| 500 | 6.74  | 34.32 | 26.94 | 119.8 | .860 | 0.41 |



## STATION 97.40 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°56'N 117°50'W; August 8, 1952; 0830 GCT; wire angle: 0°; sounding: 590 fms; depth of observation: 586 m; weather: overcast; sea: moderate; wind: 290°, force 1.

| Depth | T      | S       | $\sigma_t$            | $10^5 s$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|---------|-----------------------|----------|------------|----------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |          | (dyn.m.)   | (ml/L)         |
| 0     | 19.01  | 33.49   | 23.89                 | 402.8    | .000       | 5.55           |
| 10    | 18.99  | 33.49   | 23.89                 | 402.6    | .040       | 5.52           |
| 20    | 17.15  | 33.49   | 24.34                 | 360.0    | .078       | 6.07           |
| 30    | 12.95  | 33.43   | 25.21                 | 277.6    | .110       | 5.80           |
| 50    | 10.65  | 33.49   | 25.68                 | 232.8    | .161       | 4.42           |
| 75    | 9.63   | 33.65   | 25.98                 | 204.9    | .216       | 3.48           |
| 100   | 9.28   | 33.78   | 26.14                 | 190.3    | .265       | 3.17           |
| 150   | 9.15   | 34.10   | 26.41                 | 165.5    | .354       | 2.23           |
| 200   | 8.79   | 34.22   | 26.56                 | 152.0    | .434       | 1.63           |
| 250   | 8.87   | 34.34   | 26.64                 | 145.3    | .508       | 0.92           |
| 300   | 8.79   | 34.34   | 26.66                 | 145.0    | .581       | 0.65           |
| 400   | 7.42   | 34.28   | 26.81                 | 130.8    | .719       | 0.64           |
| 500   | 6.58   | 34.29   | 26.94                 | 119.8    | .844       | 0.40           |
| 600   | (5.98) | (34.37) | (27.08)               | (107.1)  | (.957)     |                |

## STATION 97.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°36'N 118°30'W; August 8, 1952; 1455 GCT; wire angle: 3°; sounding: 1120 fms; depth of observation: 591 m; weather: overcast; sea: moderate; wind: 280°, force 1.

|     |        |         |         |         |        |        |
|-----|--------|---------|---------|---------|--------|--------|
| 0   | 17.56  | 33.37   | 24.15   | 377.4   | .000   | 5.70   |
| 10  | 17.56  | 33.37   | 24.15   | 377.7   | .038   | 5.72   |
| 20  | 17.31  | 33.39   | 24.23   | 370.9   | .075   | 5.76   |
| 30  | 14.52  | 33.22   | 24.72   | 323.7   | .110   | 5.99   |
| 50  | 12.22  | 33.31   | 25.26   | 273.4   | .170   | 5.47   |
| 75  | 10.05  | 33.41   | 25.72   | 229.3   | .232   | 4.42   |
| 100 | 9.55   | 33.59   | 25.95   | 208.5   | .287   | 3.66   |
| 150 | 8.65   | 33.84   | 26.29   | 177.1   | .384   | 2.93   |
| 200 | 8.16   | 33.97   | 26.46   | 161.1   | .468   | 2.38   |
| 250 | 7.80   | 34.14   | 26.65   | 144.1   | .544   | 1.82   |
| 300 | 7.54   | 34.21   | 26.74   | 136.0   | .615   | 1.33   |
| 400 | 6.82   | 34.32   | 26.93   | 119.4   | .742   | 0.53   |
| 500 | 6.19   | 34.34   | 27.03   | 110.8   | .857   | 0.37   |
| 600 | (5.67) | (34.33) | (27.09) | (106.0) | (.966) | (0.28) |



## STATION 100.29 (Interpolated Values at Standard Depths)

CREST: 31°42'N 116°44'W; August 9, 1952; 0252 GCT; wire angle: 0°;  
 sounding: 55 fms; depth of observation: 50 m; weather: partly cloudy;  
 sea: slight; wind: 140°, force 1.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 15.51 | 33.40 | 24.65                 | 330.2         | .000       | 7.52           |
| 10    | 12.61 | 33.40 | 25.25                 | 273.0         | .030       | 6.32           |
| 20    | 10.95 | 33.46 | 25.61                 | 239.4         | .056       | 4.61           |
| 30    | 10.78 | 33.55 | 25.71                 | 230.1         | .079       | 4.16           |
| 50    | 10.38 | 33.69 | 25.89                 | 213.5         | .124       | 3.00           |

## STATION 100.30 (Interpolated Values at Standard Depths)

CREST: 31°40'N 116°46'W; August 9, 1952; 0417 GCT; wire angle: 14°;  
 sounding: 240 fms; depth of observation: 342 m; weather: cloudy; sea:  
 moderate; wind: 320°, force 2.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 18.48 | 33.49 | 24.02 | 390.1 | .000 | 5.53 |
| 10  | 13.46 | 33.42 | 25.10 | 287.6 | .034 | 6.39 |
| 20  | 11.59 | 33.39 | 25.44 | 255.6 | .061 | 5.30 |
| 30  | 10.97 | 33.39 | 25.55 | 245.1 | .086 | 4.60 |
| 50  | 10.33 | 33.62 | 25.84 | 217.9 | .132 | 3.60 |
| 75  | 9.97  | 33.85 | 26.08 | 195.5 | .184 | 2.12 |
| 100 | 9.94  | 33.87 | 26.10 | 194.1 | .233 | 1.83 |
| 150 | 9.75  | 33.98 | 26.22 | 183.9 | .327 | 1.41 |
| 200 | 9.82  | 34.15 | 26.34 | 173.5 | .417 | 1.18 |
| 250 | 9.72  | 34.27 | 26.45 | 164.0 | .501 | 1.22 |
| 300 | 9.21  | 34.33 | 26.58 | 152.4 | .580 |      |



## STATION 100.40 (Interpolated Values at Standard Depths)

CREST: 31°21'N 117°27'W; August 9, 1952; 0928 GCT; wire angle: 15°;  
 sounding: 1000 fms; depth of observation: 1153 m; weather: cloudy;  
 sea: slight; wind: 320°, force 2.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 19.30 | 33.46 | 23.79                 | 412.0         | .000       | 5.30           |
| 10    | 19.30 | 33.44 | 23.78                 | 413.7         | .041       | 5.12           |
| 20    | 19.30 | 33.44 | 23.78                 | 414.1         | .083       | 4.85           |
| 30    | 19.10 | 33.42 | 23.81                 | 411.0         | .124       | 4.90           |
| 50    | 13.65 | 33.24 | 24.92                 | 305.5         | .196       | 5.87           |
| 75    | 11.40 | 33.33 | 25.42                 | 257.9         | .266       | 4.88           |
| 100   | 10.24 | 33.63 | 25.86                 | 216.7         | .325       | 3.76           |
| 150   | 9.67  | 33.97 | 26.22                 | 183.3         | .425       | 2.57           |
| 200   | 8.43  | 34.01 | 26.45                 | 162.1         | .512       | 2.66           |
| 250   | 7.86  | 34.15 | 26.65                 | 144.3         | .588       | 2.09           |
| 300   | 7.50  | 34.18 | 26.72                 | 137.7         | .659       | 1.31           |
| 400   | 7.23  | 34.40 | 26.94                 | 119.2         | .787       | 0.47           |
| 500   | 6.27  | 34.35 | 27.03                 | 111.1         | .902       | 0.37           |
| 600   | 5.56  | 34.37 | 27.13                 | 101.6         | 1.009      | 0.30           |
| 700   | 5.07  | 34.41 | 27.22                 | 93.6          | 1.106      | 0.30           |
| 800   | 4.71  | 34.47 | 27.31                 | 85.8          | 1.196      | 0.31           |
| 1000  | 4.10  | 34.50 | 27.40                 | 78.0          | 1.360      | 0.50           |

## STATION 100.50 (Interpolated Values at Standard Depths)

CREST: 31°00'N 118°07'W; August 9, 1952; 1454 GCT; wire angle: 0°;  
 sounding: 760 fms; depth of observation: 592 m; weather: overcast;  
 sea: moderate; wind: 280°, force 2.

|     |        |         |         |         |         |        |
|-----|--------|---------|---------|---------|---------|--------|
| 0   | 18.00  | 33.22   | 23.93   | 398.5   | .000    | 5.21   |
| 10  | 17.98  | 33.22   | 23.94   | 398.3   | .040    | 5.36   |
| 20  | 17.29  | 33.17   | 24.06   | 386.5   | .079    | 5.26   |
| 30  | 16.34  | 33.14   | 24.26   | 367.8   | .117    | 4.80   |
| 50  | 15.02  | 33.13   | 24.55   | 341.1   | .188    | 5.38   |
| 75  | 13.30  | 33.13   | 24.91   | 307.4   | .269    | 5.30   |
| 100 | 12.09  | 33.31   | 25.28   | 272.2   | .341    | 4.58   |
| 150 | 9.54   | 33.54   | 25.91   | 213.0   | .463    | 3.65   |
| 200 | 8.88   | 34.00   | 26.38   | 169.7   | .558    | 2.66   |
| 250 | 8.17   | 34.14   | 26.59   | 149.5   | .638    | 1.90   |
| 300 | 7.93   | 34.17   | 26.65   | 144.6   | .712    | 1.53   |
| 400 | 6.96   | 34.28   | 26.88   | 124.3   | .846    | 0.73   |
| 500 | 6.12   | 34.29   | 27.00   | 113.6   | .965    | 0.38   |
| 600 | (5.70) | (34.37) | (27.11) | (103.5) | (1.073) | (0.29) |



## STATION 100.60 (Interpolated Values at Standard Depths)

CREST: 30°37'N 118°48'W; August 9, 1952; 1942 GCT; wire angle: 4°;  
 sounding: 1650 fms; depth of observation: 1083 m; weather: overcast;  
 sea: rough; wind: 290°, force 3.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 18.77 | 33.39 | 23.87                 | 404.3         | .000       | 5.70           |
| 10    | 18.76 | 33.39 | 23.87                 | 404.3         | .040       | 5.44           |
| 20    | 18.41 | 33.34 | 23.92                 | 400.0         | .081       | 6.07           |
| 30    | 17.19 | 33.26 | 24.16                 | 378.0         | .120       | 6.10           |
| 50    | 14.95 | 33.19 | 24.61                 | 335.2         | .191       | 5.10           |
| 75    | 13.68 | 33.15 | 24.85                 | 313.3         | .272       | 4.84           |
| 100   | 11.72 | 33.15 | 25.23                 | 277.4         | .346       | 4.82           |
| 150   | 9.41  | 33.54 | 25.93                 | 211.0         | .468       | 3.80           |
| 200   | 8.79  | 33.90 | 26.31                 | 175.7         | .565       | 2.99           |
| 250   | 8.09  | 34.05 | 26.54                 | 155.0         | .647       | 1.91           |
| 300   | 7.61  | 34.14 | 26.68                 | 142.2         | .722       | 1.13           |
| 400   | 6.68  | 34.27 | 26.91                 | 121.2         | .853       | 0.50           |
| 500   | 5.92  | 34.31 | 27.04                 | 109.5         | .969       | 0.40           |
| 600   | 5.39  | 34.33 | 27.12                 | 102.4         | 1.075      | 0.39           |
| 700   | 5.00  | 34.36 | 27.19                 | 96.5          | 1.174      | 0.41           |
| 800   | 4.66  | 34.44 | 27.29                 | 87.4          | 1.266      | 0.44           |
| 1000  | 4.03  | 34.46 | 27.38                 | 80.1          | 1.433      | 0.54           |

## STATION 100.70 (Interpolated Values at Standard Depths)

CREST: 30°18'N 119°26'W; August 10, 1952; 0044 GCT; wire angle: 20°;  
 sounding: 2000 fms; depth of observation: 556 m; weather: cloudy;  
 sea: rough; wind: 300°, force 4.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 19.08 | 33.31 | 23.73 | 417.5 | .000 | 4.83 |
| 10  | 19.07 | 33.31 | 23.73 | 417.6 | .042 | 5.38 |
| 20  | 17.20 | 33.27 | 24.16 | 377.2 | .081 | 5.46 |
| 30  | 16.39 | 33.23 | 24.32 | 362.4 | .118 | 5.27 |
| 50  | 14.72 | 33.24 | 24.70 | 326.9 | .187 | 5.75 |
| 75  | 13.47 | 33.13 | 24.87 | 310.7 | .267 | 5.20 |
| 100 | 12.25 | 33.18 | 25.15 | 284.7 | .342 | 5.21 |
| 150 | 9.39  | 33.51 | 25.91 | 212.9 | .466 | 4.48 |
| 200 | 8.54  | 33.94 | 26.38 | 169.0 | .561 | 3.12 |
| 250 | 7.90  | 34.03 | 26.55 | 153.7 | .642 | 2.42 |
| 300 | 7.36  | 34.06 | 26.65 | 144.6 | .717 | 1.92 |
| 400 | 6.56  | 34.20 | 26.87 | 124.7 | .851 | 0.82 |
| 500 | 5.87  | 34.29 | 27.03 | 110.3 | .969 | 0.47 |



## STATION 100.80 (Interpolated Values at Standard Depths)

CREST: 30°01'N 120°07'W; August 10, 1952; 0558, 0626 GCT; wire angle: 25°, 35°; sounding: 2100 fms; depth of observation: 254, 1008 m; weather: cloudy; sea: rough; wind: 320°, force 4.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 18.36 | 33.19 | 23.82                 | 409.1         | .000       | 5.04           |
| 10    | 18.35 | 33.19 | 23.82                 | 409.2         | .041       | 5.00           |
| 20    | 18.03 | 33.17 | 23.89                 | 403.5         | .082       | 4.92           |
| 30    | 17.57 | 33.18 | 24.00                 | 392.4         | .121       | 5.02           |
| 50    | 16.33 | 33.44 | 24.49                 | 346.3         | .195       | 5.22           |
| 75    | 15.00 | 33.46 | 24.81                 | 317.2         | .278       | 5.40           |
| 100   | 13.13 | 33.33 | 25.09                 | 290.1         | .354       | 5.51           |
| 150   | 10.01 | 33.29 | 25.64                 | 239.0         | .486       | 4.23           |
| 200   | 8.68  | 33.87 | 26.30                 | 176.2         | .590       | 2.81           |
| 250   | 8.33  | 34.04 | 26.49                 | 159.3         | .674       | 2.22           |
| 300   | 7.83  | 34.11 | 26.62                 | 147.6         | .751       | 1.79           |
| 400   | 6.61  | 34.23 | 26.89                 | 123.2         | .886       | 0.74           |
| 500   | 5.96  | 34.24 | 26.98                 | 115.2         | 1.005      | 0.52           |
| 600   | 5.39  | 34.32 | 27.11                 | 103.2         | 1.115      | 0.42           |
| 700   | 4.91  | 34.39 | 27.22                 | 93.1          | 1.213      | 0.40           |
| 800   | 4.51  | 34.41 | 27.28                 | 87.8          | 1.303      | 0.41           |
| 1000  | 3.90  | 34.45 | 27.38                 | 79.3          | 1.470      | 0.58           |

## STATION 103.30 (Interpolated Values at Standard Depths)

CREST: 31°05'N 116°25'W; August 11, 1952; 0917 GCT; wire angle: 0°; sounding: 43 fms; depth of observation: 50 m; weather: overcast; sea: rough; wind: 320°, force 4.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 15.29 | 33.53 | 24.80 | 316.1 | .000 | 5.99 |
| 10 | 13.44 | 33.50 | 25.16 | 281.3 | .030 | 5.44 |
| 20 | 11.60 | 33.48 | 25.50 | 249.1 | .056 | 4.67 |
| 30 | 10.45 | 33.49 | 25.72 | 229.0 | .080 | 3.66 |
| 50 | 10.15 | 33.66 | 25.90 | 212.0 | .124 | 2.85 |



## STATION 103.35 (Interpolated Values at Standard Depths)

CREST: 30°53'N 116°42'W; August 11, 1952; 0618 GCT; wire angle: 30°;  
 sounding: 970 fms; depth of observation: 584 m; weather: overcast;  
 sea: moderate; wind: 320°, force 5.

| Depth | T      | S       | $\sigma_t$            | 10 <sup>5</sup> $\delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|---------|-----------------------|--------------------------|------------|----------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |                          | (dyn.m.)   | (ml/L)         |
| 0     | 16.97  | 33.40   | 24.32                 | 361.9                    | .000       | 5.42           |
| 10    | 16.90  | 33.38   | 24.32                 | 362.1                    | .036       | 5.20           |
| 20    | 12.50  | 33.29   | 25.19                 | 279.3                    | .068       | 6.06           |
| 30    | 11.20  | 33.31   | 25.45                 | 254.9                    | .095       | 4.45           |
| 50    | 10.32  | 33.70   | 25.90                 | 211.8                    | .142       | 2.51           |
| 75    | 10.17  | 33.85   | 26.05                 | 198.8                    | .193       | 1.94           |
| 100   | 10.10  | 33.91   | 26.10                 | 193.7                    | .242       | 1.72           |
| 150   | 10.04  | 34.10   | 26.26                 | 179.7                    | .335       | 1.44           |
| 200   | 10.19  | 34.36   | 26.44                 | 164.1                    | .421       | 0.65           |
| 250   | 9.87   | 34.40   | 26.53                 | 156.9                    | .502       | 0.58           |
| 300   | 9.46   | 34.39   | 26.59                 | 152.0                    | .579       | 0.62           |
| 400   | 8.17   | 34.35   | 26.76                 | 136.6                    | .723       | 0.54           |
| 500   | 6.88   | 34.33   | 26.93                 | 121.0                    | .852       | 0.42           |
| 600   | (5.82) | (34.28) | (27.03)               | (111.7)                  | (.968)     |                |

## STATION 103.40 (Interpolated Values at Standard Depths)

CREST: 30°43'N 117°04'W; August 11, 1952; 0237, 0256 GCT; wire angle:  
 30°, 30°; sounding: 850 fms; depth of observation: 134, 575 m; weather:  
 cloudy; sea: rough; wind: 330°, force 5.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 18.51 | 33.42 | 23.96 | 395.9 | .000 | 4.95 |
| 10  | 18.46 | 33.40 | 23.96 | 396.5 | .040 | 5.42 |
| 20  | 17.53 | 33.40 | 24.18 | 375.2 | .078 | 5.48 |
| 30  | 16.29 | 33.37 | 24.45 | 350.0 | .114 | 6.05 |
| 50  | 11.02 | 33.40 | 25.55 | 245.7 | .174 | 4.41 |
| 75  | 10.06 | 33.55 | 25.83 | 219.1 | .232 | 3.71 |
| 100 | 9.40  | 33.77 | 26.11 | 192.9 | .284 | 3.00 |
| 150 | 8.99  | 34.00 | 26.36 | 170.4 | .374 | 2.33 |
| 200 | 8.52  | 34.10 | 26.51 | 156.8 | .456 | 1.88 |
| 250 | 8.28  | 34.17 | 26.60 | 148.9 | .533 | 1.52 |
| 300 | 7.91  | 34.23 | 26.70 | 139.9 | .605 | 1.31 |
| 400 | 6.84  | 34.25 | 26.87 | 124.8 | .737 | 0.69 |
| 500 | 6.20  | 34.33 | 27.02 | 111.7 | .856 | 0.40 |



## STATION 107.32 (Interpolated Values at Standard Depths)

CREST: 30°26'N 116°11'W; August 11, 1952; 1404 GCT; wire angle: 43°;  
 sounding: 220 fms; depth of observation: 238 m; weather: overcast;  
 sea: rough; wind: 340°, force 5.

| Depth | T     | S     | $\sigma_t$            | $10^5 S$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|----------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |          | (dyn.m.)   | (ml/L)         |
| 0     | 19.29 | 33.33 | 23.69                 | 421.2    | .000       | 5.17           |
| 10    | 15.67 | 33.33 | 24.56                 | 339.0    | .038       | 4.50           |
| 20    | 14.55 | 33.30 | 24.78                 | 318.2    | .071       | 5.03           |
| 30    | 12.90 | 33.30 | 25.12                 | 286.3    | .101       | 4.68           |
| 50    | 10.56 | 33.53 | 25.73                 | 228.3    | .153       | 3.49           |
| 75    | 10.07 | 33.90 | 26.10                 | 193.4    | .205       | 2.07           |
| 100   | 10.16 | 34.00 | 26.16                 | 188.0    | .253       | 1.46           |
| 150   | 10.50 | 34.15 | 26.22                 | 183.7    | .346       | 1.10           |
| 200   | 10.08 | 34.37 | 26.47                 | 161.5    | .432       | 0.76           |

## STATION 107.35 (Interpolated Values at Standard Depths)

CREST: 30°20'N 116°20'W; August 11, 1952; 1616, 1652 GCT; wire angle:  
 20°, 30°; sounding: 940 fms; depth of observation: 211, 643 m; weather:  
 overcast; sea: moderate; wind: 320°, force 4.

|     |       |       |       |       |       |      |
|-----|-------|-------|-------|-------|-------|------|
| 0   | 18.79 | 33.44 | 23.90 | 401.1 | .000  | 5.22 |
| 10  | 18.91 | 33.46 | 23.89 | 402.9 | .040  | 4.64 |
| 20  | 18.92 | 33.45 | 23.88 | 404.2 | .081  | 5.31 |
| 30  | 18.89 | 33.40 | 23.85 | 407.4 | .121  | 5.25 |
| 50  | 13.78 | 33.26 | 24.91 | 306.6 | .193  | 4.38 |
| 75  | 10.70 | 33.22 | 25.46 | 254.1 | .263  | 4.05 |
| 100 | 9.96  | 33.54 | 25.84 | 218.8 | .322  | 3.51 |
| 150 | 9.54  | 33.93 | 26.21 | 184.2 | .422  | 2.56 |
| 200 | 8.49  | 34.03 | 26.46 | 161.5 | .509  | 2.21 |
| 250 | 8.00  | 34.13 | 26.61 | 147.8 | .586  | 1.92 |
| 300 | 7.59  | 34.14 | 26.68 | 141.9 | .659  | 1.62 |
| 400 | 7.10  | 34.24 | 26.83 | 129.2 | .794  | 0.82 |
| 500 | 6.62  | 34.34 | 26.97 | 116.6 | .917  | 0.45 |
| 600 | 5.99  | 34.36 | 27.07 | 108.0 | 1.029 | 0.31 |



## STATION 107.40 (Interpolated Values at Standard Depths)

CREST: 30°10'N 116°44'W; August 11, 1952; 1953, 2019 GCT; wire angle: 17°, 25°; sounding: 1430 fms; depth of observation: 257, 593 m; weather: overcast; sea: rough; wind: 340°, force 3.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 18.90 | 33.42 | 23.86                 | 405.2         | .000       | 5.70           |
| 10    | 18.90 | 33.42 | 23.86                 | 405.5         | .041       | 5.44           |
| 20    | 18.92 | 33.39 | 23.83                 | 408.5         | .081       | 5.45           |
| 30    | 16.60 | 33.23 | 24.27                 | 367.0         | .120       | 6.00           |
| 50    | 14.15 | 33.12 | 24.73                 | 324.1         | .189       | 5.45           |
| 75    | 11.90 | 33.13 | 25.18                 | 281.5         | .265       | 5.50           |
| 100   | 10.42 | 33.20 | 25.50                 | 251.4         | .331       | 4.59           |
| 150   | 9.06  | 33.79 | 26.18                 | 187.1         | .441       | 3.39           |
| 200   | 8.47  | 34.06 | 26.49                 | 159.0         | .528       | 2.65           |
| 250   | 8.10  | 34.13 | 26.60                 | 149.2         | .605       | 1.91           |
| 300   | 8.02  | 34.32 | 26.76                 | 134.9         | .676       | 0.82           |
| 400   | 7.40  | 34.36 | 26.88                 | 124.6         | .805       | 0.51           |
| 500   | 6.52  | 34.33 | 26.98                 | 116.0         | .926       | 0.38           |
| 600   | 5.90  | 34.33 | 27.06                 | 109.0         | 1.038      | 0.41           |

## STATION 110.33 (Interpolated Values at Standard Depths)

CREST: 29°50'N 115°52'W; August 12, 1952; 2334 GCT; wire angle: 2°; sounding: 27 fms; depth of observation: 30 m; weather: partly cloudy; sea: moderate; wind: 320°, force 4.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 13.90 | 33.44 | 25.02 | 294.4 | .000 | 4.83 |
| 10 | 12.23 | 33.24 | 25.20 | 277.8 | .029 | 4.91 |
| 20 | 11.36 | 33.46 | 25.53 | 246.4 | .055 | 3.84 |
| 30 | 11.10 | 33.58 | 25.67 | 233.3 | .079 | 3.82 |



## STATION 110.35 (Interpolated Values at Standard Depths)

CREST: 29°46'N 116°00'W; August 12, 1952; 2105, 2136 GCT; wire angle: 22°, missing; sounding: 700 fms; depth of observation: 130,548 m; weather: overcast; sea: moderate; wind: 260°, force 4.

| Depth | T     | S     | $\sigma_t$            | 10 <sup>5</sup> $\delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|--------------------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |                          | (dyn.m.)   | (ml/L)         |
| 0     | 15.97 | 33.36 | 24.51                 | 342.9                    | .000       | 5.54           |
| 10    | 14.38 | 33.42 | 24.91                 | 305.7                    | .032       | 5.52           |
| 20    | 13.80 | 33.42 | 25.03                 | 294.5                    | .062       | 5.52           |
| 30    | 12.02 | 33.48 | 25.43                 | 256.8                    | .090       | 4.49           |
| 50    | 11.08 | 33.68 | 25.75                 | 226.0                    | .138       | 3.08           |
| 75    | 10.47 | 33.77 | 25.93                 | 209.6                    | .193       | 2.40           |
| 100   | 10.16 | 33.86 | 26.06                 | 198.4                    | .244       | 1.72           |
| 150   | 10.48 | 34.28 | 26.33                 | 173.8                    | .337       | 1.27           |
| 200   | 10.82 | 34.39 | 26.35                 | 172.6                    | .423       | 0.72           |
| 250   | 9.94  | 34.35 | 26.47                 | 161.7                    | .507       | 1.09           |
| 300   | 9.38  | 34.36 | 26.58                 | 152.9                    | .586       | 0.90           |
| 400   | 8.59  | 34.41 | 26.74                 | 138.6                    | .731       | 0.42           |
| 500   | 7.29  | 34.35 | 26.89                 | 125.3                    | .863       | 0.32           |

## STATION 110.40 (Interpolated Values at Standard Depths)

CREST: 29°36'N 116°20'W; August 12, 1952; 1745 GCT; wire angle: 10°; sounding: 1250 fms; depth of observation: 579 m; weather: overcast; sea: moderate; wind: 320°, force 4.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 18.94 | 33.46 | 23.88 | 403.3 | .000 | 4.45 |
| 10  | 18.92 | 33.49 | 23.91 | 400.9 | .040 | 5.05 |
| 20  | 15.50 | 33.27 | 24.55 | 340.0 | .077 | 5.76 |
| 30  | 14.52 | 33.22 | 24.72 | 323.7 | .110 | 5.62 |
| 50  | 12.71 | 33.21 | 25.08 | 289.8 | .172 | 5.21 |
| 75  | 11.25 | 33.29 | 25.42 | 258.3 | .240 | 4.53 |
| 100 | 10.38 | 33.61 | 25.82 | 220.5 | .300 | 3.67 |
| 150 | 9.47  | 33.92 | 26.22 | 183.8 | .401 | 2.68 |
| 200 | 9.25  | 34.19 | 26.46 | 161.4 | .488 | 1.57 |
| 250 | 9.11  | 34.34 | 26.60 | 149.1 | .565 | 0.95 |
| 300 | 8.51  | 34.34 | 26.70 | 140.7 | .638 | 0.92 |
| 400 | 7.99  | 34.40 | 26.83 | 130.2 | .773 | 0.39 |
| 500 | 6.68  | 34.38 | 27.00 | 114.5 | .895 | 0.31 |



## STATION 110.50 (Interpolated Values at Standard Depths)

CREST: 29°17'N 116°59'W; August 12, 1952; 1227 GCT; wire angle: 15°;  
 sounding: 1600 fms; depth of observation: 1151 m; weather: overcast;  
 sea: rough; wind: 330°, force 5.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 18.68 | 33.37 | 23.88                 | 403.6         | .000       | 5.36           |
| 10    | 18.68 | 33.39 | 23.89                 | 402.4         | .040       | 5.10           |
| 20    | 18.67 | 33.38 | 23.89                 | 403.2         | .081       | 5.20           |
| 30    | 18.64 | 33.36 | 23.88                 | 404.3         | .121       | 5.39           |
| 50    | 15.77 | 33.30 | 24.51                 | 344.4         | .196       | 5.55           |
| 75    | 12.80 | 33.22 | 25.08                 | 291.4         | .275       | 5.05           |
| 100   | 10.74 | 33.53 | 25.70                 | 232.4         | .341       | 4.14           |
| 150   | 10.33 | 34.00 | 26.14                 | 191.9         | .447       | 2.30           |
| 200   | 10.20 | 34.35 | 26.43                 | 165.0         | .536       | 1.39           |
| 250   | 10.21 | 34.50 | 26.55                 | 155.2         | .616       | 0.71           |
| 300   | 8.83  | 34.30 | 26.62                 | 148.6         | .692       | 1.23           |
| 400   | 8.25  | 34.45 | 26.83                 | 130.4         | .832       | 0.39           |
| 500   | 7.70  | 34.44 | 26.90                 | 124.6         | .959       | 0.26           |
| 600   | 6.61  | 34.41 | 27.03                 | 112.7         | 1.078      | 0.28           |
| 700   | 5.62  | 34.39 | 27.14                 | 102.2         | 1.185      | 0.32           |
| 800   | 5.04  | 34.38 | 27.20                 | 96.6          | 1.285      | 0.46           |
| 1000  | 4.37  | 34.45 | 27.33                 | 85.0          | 1.466      | 0.70           |

## STATION 110.60 (Interpolated Values at Standard Depths)

CREST: 28°56'N 117°39'W; August 12, 1952; 0714 GCT; wire angle: 10°;  
 sounding: 1840 fms; depth of observation: 627 m; weather: overcast;  
 sea: rough; wind: 320°, force 5.

|     |       |       |       |       |       |      |
|-----|-------|-------|-------|-------|-------|------|
| 0   | 19.58 | 33.39 | 23.67 | 423.9 | .000  | 4.99 |
| 10  | 19.58 | 33.39 | 23.67 | 424.2 | .042  | 5.28 |
| 20  | 19.60 | 33.37 | 23.64 | 426.5 | .085  | 5.18 |
| 30  | 19.50 | 33.33 | 23.64 | 427.3 | .128  | 5.51 |
| 50  | 16.00 | 33.25 | 24.42 | 353.0 | .206  | 5.70 |
| 75  | 12.70 | 33.31 | 25.16 | 282.9 | .285  | 5.75 |
| 100 | 10.73 | 33.53 | 25.70 | 232.2 | .350  | 3.75 |
| 150 | 10.97 | 34.28 | 26.24 | 182.2 | .453  | 1.28 |
| 200 | 10.07 | 34.44 | 26.52 | 156.2 | .538  | 1.03 |
| 250 | 9.62  | 34.45 | 26.61 | 149.1 | .614  | 0.82 |
| 300 | 9.41  | 34.49 | 26.67 | 143.8 | .687  | 0.50 |
| 400 | 7.82  | 34.31 | 26.78 | 134.3 | .826  | 0.62 |
| 500 | 6.72  | 34.33 | 26.95 | 118.7 | .953  | 0.59 |
| 600 | 5.88  | 34.34 | 27.07 | 108.0 | 1.066 | 0.36 |



## STATION 113.30 (Interpolated Values at Standard Depths)

CREST: 29°22'N 115°18'W; August 13, 1952; 0405 GCT; wire angle: 15°;  
sounding: 38 fms; depth of observation: 29 m; weather: clear; sea:  
moderate; wind: 300°, force 6.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 12.62 | 33.58 | 25.39                 | 259.7         | .000       | 3.43           |
| 10    | 12.54 | 33.62 | 25.44                 | 255.5         | .026       | 3.88           |
| 20    | 11.65 | 33.62 | 25.60                 | 239.7         | .051       | 3.42           |

## STATION 113.40 (Interpolated Values at Standard Depths)

CREST: 29°02'N 115°58'W; August 13, 1952; 0908 GCT; wire angle: 35°;  
sounding: 980 fms; depth of observation: 537 m; weather: overcast;  
sea: moderate; wind: 320°, force 5.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 18.41 | 33.40 | 23.97 | 395.0 | .000 | 4.99 |
| 10  | 18.40 | 33.38 | 23.96 | 396.5 | .040 | 5.75 |
| 20  | 17.23 | 33.30 | 24.18 | 375.7 | .078 | 5.43 |
| 30  | 15.66 | 33.20 | 24.46 | 348.8 | .114 | 5.61 |
| 50  | 14.18 | 33.15 | 24.74 | 322.6 | .182 | 5.98 |
| 75  | 12.05 | 33.19 | 25.20 | 279.8 | .257 | 5.79 |
| 100 | 10.22 | 33.26 | 25.58 | 243.7 | .322 | 5.57 |
| 150 | 9.21  | 33.82 | 26.18 | 187.2 | .430 | 3.44 |
| 200 | 8.70  | 34.02 | 26.42 | 165.5 | .518 | 2.89 |
| 250 | 8.59  | 34.16 | 26.55 | 154.3 | .598 | 1.71 |
| 300 | 8.06  | 34.20 | 26.66 | 144.3 | .673 | 1.31 |
| 400 | 6.96  | 34.25 | 26.86 | 126.5 | .808 | 0.87 |
| 500 | 6.48  | 34.34 | 26.99 | 114.7 | .929 | 0.33 |

## STATION 117.26 (Interpolated Values at Standard Depths)

CREST: 28°56'N 114°41'W; August 13, 1952; 2103 GCT; wire angle: 5°;  
sounding: 45 fms; depth of observation: 50 m; weather: partly cloudy;  
sea: moderate; wind: 300°, force 3.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 15.86 | 33.54 | 24.68 | 327.4 | .000 | 4.48 |
| 10 | 15.40 | 33.53 | 24.77 | 318.6 | .032 | 4.61 |
| 20 | 12.64 | 33.58 | 25.38 | 260.6 | .061 | 3.25 |
| 30 | 11.54 | 33.50 | 25.61 | 239.9 | .087 | 3.30 |
| 50 | 10.35 | 33.50 | 25.74 | 227.1 | .136 | 1.51 |



## STATION 117.30 (Interpolated Values at Standard Depths)

CREST: 28°47'N 114°56'W; August 13, 1952; 1840 GCT; wire angle: 0°;  
 sounding: 55 fms; depth of observation: 75 m; weather: overcast; sea:  
 moderate; wind: 320°, force 4.

| Depth | T     | S     | $\sigma_t$            | 10 <sup>5</sup> $\delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|--------------------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |                          | (dyn.m.)   | (ml/L)         |
| 0     | 15.45 | 33.42 | 24.68                 | 327.5                    | .000       | 5.68           |
| 10    | 15.03 | 33.37 | 24.73                 | 322.6                    | .033       | 5.67           |
| 20    | 12.54 | 33.28 | 25.17                 | 280.8                    | .063       | 5.02           |
| 30    | 12.22 | 33.24 | 25.20                 | 278.1                    | .091       | 4.75           |
| 50    | 11.04 | 33.39 | 25.54                 | 246.7                    | .143       | 3.70           |
| 75    | 10.54 | 33.82 | 25.96                 | 207.1                    | .200       | 5.17           |

## STATION 117.40 (Interpolated Values at Standard Depths)

CREST: 28°28'N 115°36'W; August 13, 1952; 1342 GCT; wire angle: 7°;  
 sounding: 500 fms; depth of observation: 546 m; weather: overcast;  
 sea: moderate; wind: 320°, force 3.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 15.49 | 33.26 | 24.55 | 340.0 | .000 | 5.24 |
| 10  | 15.46 | 33.26 | 24.55 | 339.6 | .034 | 5.76 |
| 20  | 13.72 | 33.15 | 24.84 | 312.7 | .067 | 5.85 |
| 30  | 13.31 | 33.29 | 25.03 | 294.8 | .097 | 5.10 |
| 50  | 13.29 | 33.48 | 25.18 | 280.9 | .155 | 4.82 |
| 75  | 12.35 | 33.49 | 25.37 | 263.2 | .223 | 3.20 |
| 100 | 10.92 | 33.82 | 25.89 | 214.1 | .282 | 1.53 |
| 150 | 11.50 | 34.42 | 26.25 | 181.2 | .381 | 0.38 |
| 200 | 11.45 | 34.56 | 26.37 | 171.2 | .469 | 0.34 |
| 250 | 10.98 | 34.60 | 26.49 | 161.1 | .552 | 0.52 |
| 300 | 9.26  | 34.43 | 26.65 | 145.8 | .629 | 0.40 |
| 400 | 8.43  | 34.42 | 26.77 | 135.4 | .770 | 0.28 |
| 500 | 7.43  | 34.39 | 26.90 | 124.4 | .899 |      |



## STATION 120.25 (Interpolated Values at Standard Depths)

CREST: 28°23'N 114°15'W; August 14, 1952; 0208 GCT; wire angle: 10°; sounding: 30 fms; depth of observation: 29 m; weather: overcast; sea: moderate; wind: 310°, force 5.

| Depth | T       | S       | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|---------|---------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)    | (‰)     | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 17.39   | 33.53   | 24.32                 | 361.9         | .000       | 5.42           |
| 10    | 17.38   | 33.55   | 24.33                 | 360.5         | .036       | 5.42           |
| 20    | 14.28   | 33.55   | 25.03                 | 294.5         | .069       | 5.65           |
| 30    | (11.53) | (33.62) | (25.63)               | (237.8)       | (.095)     | (3.45)         |

## STATION 120.30 (Interpolated Values at Standard Depths)

SPENCER F. BAIRD: 28°13'N 114°33'W; August 14, 1952; 0458 GCT; wire angle: 25°; sounding: 50 fms; depth of observation: 68 m; weather: partly cloudy; sea: rough; wind: 320°, force 3.

|    |      |       |       |       |      |      |
|----|------|-------|-------|-------|------|------|
| 0  | 18.5 | 33.60 | 24.10 | 382.6 | .000 | 6.55 |
| 10 | 18.5 | 33.57 | 24.08 | 385.1 | .038 | 6.54 |
| 20 | 18.4 | 33.58 | 24.11 | 382.3 | .077 | 5.76 |
| 30 | 17.6 | 33.60 | 24.32 | 362.5 | .114 | 6.88 |
| 50 | 13.9 | 33.56 | 25.12 | 287.0 | .179 | 5.75 |

## STATION 120.35 (Interpolated Values at Standard Depths)

SPENCER F. BAIRD: 28°02'N 114°54'W; August 14, 1952; 0949 GCT; wire angle: 5°; sounding: 47 fms; depth of observation: 50 m; weather: partly cloudy; sea: moderate; wind: 360°, force 3.

|    |      |       |       |       |      |      |
|----|------|-------|-------|-------|------|------|
| 0  | 18.6 | 33.57 | 24.05 | 387.1 | .000 | 5.76 |
| 10 | 18.6 | 33.58 | 24.06 | 386.7 | .039 | 5.80 |
| 20 | 18.5 | 33.58 | 24.08 | 384.7 | .077 | 5.90 |
| 30 | 18.2 | 33.57 | 24.15 | 378.6 | .115 | 5.91 |
| 50 | 16.0 | 33.57 | 24.67 | 329.7 | .186 | 5.70 |



## STATION 120.45 (Interpolated Values at Standard Depths)

CREST: 27°43'N 115°33'W; August 15, 1952; 0623 GCT; wire angle: 25°; sounding: 1200 fms; depth of observation: 1086 m; weather: clear; sea: slight; wind: 010°, force 3.

| Depth | T     | S     | $\sigma_t$            | 10 <sup>5</sup> $\delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|--------------------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |                          | (dyn.m.)   | (ml/L)         |
| 0     | 17.94 | 33.53 | 24.18                 | 374.5                    | .000       | 5.20           |
| 10    | 17.92 | 33.53 | 24.19                 | 374.4                    | .037       | 4.68           |
| 20    | 15.55 | 33.36 | 24.61                 | 334.5                    | .073       | 5.61           |
| 30    | 13.57 | 33.35 | 25.02                 | 295.4                    | .104       | 5.59           |
| 50    | 11.56 | 33.36 | 25.42                 | 258.0                    | .160       | 3.80           |
| 75    | 11.28 | 33.79 | 25.80                 | 221.9                    | .220       | 2.55           |
| 100   | 11.62 | 34.12 | 26.00                 | 204.2                    | .273       | 1.18           |
| 150   | 11.98 | 34.51 | 26.23                 | 183.3                    | .370       | 0.35           |
| 200   | 11.47 | 34.58 | 26.38                 | 170.1                    | .458       | 0.26           |
| 250   | 10.92 | 34.60 | 26.50                 | 160.0                    | .541       | 0.28           |
| 300   | 10.25 | 34.62 | 26.63                 | 148.1                    | .618       | 0.22           |
| 400   | 8.91  | 34.51 | 26.77                 | 136.3                    | .760       | 0.20           |
| 500   | 7.58  | 34.43 | 26.91                 | 123.6                    | .890       | 0.26           |
| 600   | 6.40  | 34.43 | 27.07                 | 108.4                    | 1.006      | 0.25           |
| 700   | 5.46  | 34.43 | 27.19                 | 97.5                     | 1.109      | 0.30           |
| 800   | 4.83  | 34.43 | 27.26                 | 90.2                     | 1.203      | 0.38           |
| 1000  | 4.07  | 34.47 | 27.38                 | 79.8                     | 1.373      | 0.58           |

## STATION 120.50 (Interpolated Values at Standard Depths)

CREST: 27°34'N 115°56'W; August 15, 1952; 1005 GCT; wire angle: 25°; sounding: 2000 fms; depth of observation: 596 m; weather: clear; sea: slight; wind: 040°, force 3.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 19.37 | 33.51 | 23.81 | 410.0 | .000 | 4.93 |
| 10  | 19.33 | 33.53 | 23.84 | 407.9 | .041 | 5.00 |
| 20  | 18.50 | 33.53 | 24.04 | 388.3 | .081 | 5.17 |
| 30  | 15.85 | 33.49 | 24.64 | 331.7 | .117 | 5.11 |
| 50  | 11.78 | 33.44 | 25.44 | 256.0 | .175 | 3.63 |
| 75  | 10.65 | 33.60 | 25.77 | 225.2 | .236 | 3.58 |
| 100 | 10.69 | 33.97 | 26.05 | 199.1 | .289 | 2.14 |
| 150 | 11.32 | 34.55 | 26.39 | 168.4 | .381 | 0.64 |
| 200 | 10.79 | 34.65 | 26.56 | 153.0 | .461 | 0.26 |
| 250 | 10.30 | 34.65 | 26.65 | 145.7 | .536 | 0.23 |
| 300 | 9.36  | 34.51 | 26.70 | 141.5 | .607 | 0.30 |
| 400 | 8.29  | 34.51 | 26.87 | 126.6 | .741 | 0.23 |
| 500 | 6.92  | 34.44 | 27.01 | 113.4 | .861 | 0.22 |
| 600 | 5.97  | 34.38 | 27.09 | 106.3 | .971 | 0.25 |



## STATION 120.60 (Interpolated Values at Standard Depths)

CREST: 27°16'N 116°32'W; August 15, 1952; 1455 GCT; wire angle: 9°;  
 sounding: 1950 fms; depth of observation: 1150 m; weather: partly cloudy;  
 sea: moderate; wind: 010°, force 3.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 19.62 | 33.60 | 23.81                 | 409.6         | .000       | 4.86           |
| 10    | 19.60 | 33.58 | 23.80                 | 410.9         | .041       | 5.37           |
| 20    | 18.40 | 33.49 | 24.04                 | 388.9         | .081       | 5.98           |
| 30    | 15.25 | 33.51 | 24.79                 | 317.5         | .116       | 6.04           |
| 50    | 12.59 | 33.66 | 25.46                 | 254.5         | .174       | 4.13           |
| 75    | 10.80 | 33.72 | 25.84                 | 218.9         | .233       | 3.35           |
| 100   | 10.43 | 33.96 | 26.09                 | 195.5         | .284       | 2.62           |
| 150   | 10.36 | 34.34 | 26.39                 | 167.3         | .375       | 1.37           |
| 200   | 9.02  | 34.25 | 26.55                 | 153.4         | .455       | 1.81           |
| 250   | 8.96  | 34.37 | 26.65                 | 144.5         | .530       | 0.93           |
| 300   | 9.40  | 34.55 | 26.72                 | 139.2         | .601       | 0.27           |
| 400   | 7.43  | 34.43 | 26.93                 | 119.8         | .730       | 0.33           |
| 500   | 6.73  | 34.47 | 27.06                 | 108.5         | .844       | 0.21           |
| 600   | 6.07  | 34.44 | 27.12                 | 103.1         | .950       | 0.19           |
| 700   | 5.44  | 34.43 | 27.19                 | 96.9          | 1.050      | 0.22           |
| 800   | 4.93  | 34.45 | 27.27                 | 90.0          | 1.144      | 0.29           |
| 1000  | 4.10  | 34.52 | 27.42                 | 76.5          | 1.310      | 0.46           |

## STATION 120.70 (Interpolated Values at Standard Depths)

CREST: 26°54'N 117°10'W; August 15, 1952; 1903 GCT; wire angle: 21°;  
 sounding: 2000+ fms; depth of observation: 519 m; weather: partly cloudy;  
 sea: moderate; wind: 040°, force 4.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 19.10 | 33.37 | 23.77 | 413.6 | .000 | 5.50 |
| 10  | 18.65 | 33.39 | 23.90 | 401.7 | .041 | 5.36 |
| 20  | 17.81 | 33.35 | 24.08 | 385.3 | .080 | 5.58 |
| 30  | 16.80 | 33.30 | 24.28 | 366.3 | .118 | 5.48 |
| 50  | 15.28 | 33.31 | 24.63 | 333.3 | .188 | 5.88 |
| 75  | 13.40 | 33.26 | 24.99 | 299.8 | .267 | 6.23 |
| 100 | 10.90 | 33.23 | 25.44 | 257.2 | .336 | 5.05 |
| 150 | 9.55  | 33.75 | 26.07 | 197.7 | .450 | 3.98 |
| 200 | 9.47  | 34.14 | 26.39 | 168.6 | .542 | 1.92 |
| 250 | 8.98  | 34.29 | 26.59 | 150.7 | .622 | 1.32 |
| 300 | 8.52  | 34.31 | 26.67 | 143.1 | .695 | 0.95 |
| 400 | 7.68  | 34.39 | 26.86 | 126.4 | .830 | 0.45 |
| 500 | 6.76  | 34.36 | 26.97 | 117.1 | .951 | 0.36 |



## STATION 120.80 (Interpolated Values at Standard Depths)

CREST: 26°33'N 117°48'W; August 15, 1952; 2354 GCT; wire angle: 22°; sounding: 2000+ fms; depth of observation: 1102 m; weather: cloudy; sea: moderate; wind: 050°, force 4.

| Depth | T     | S     | $\sigma_t$            | $10^5 s$ | $\Delta D$ | $O_2$  |
|-------|-------|-------|-----------------------|----------|------------|--------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |          | (dyn.m.)   | (ml/L) |
| 0     | 20.98 | 33.48 | 23.37                 | 452.5    | .000       | 3.40   |
| 10    | 20.93 | 33.49 | 23.39                 | 450.9    | .045       | 4.89   |
| 20    | 20.75 | 33.48 | 23.43                 | 447.3    | .090       | 5.21   |
| 30    | 19.06 | 33.49 | 23.87                 | 404.9    | .133       | 5.29   |
| 50    | 17.60 | 33.58 | 24.30                 | 364.6    | .210       | 5.39   |
| 75    | 16.25 | 33.62 | 24.65                 | 332.2    | .297       | 5.18   |
| 100   | 15.00 | 33.62 | 24.93                 | 306.2    | .377       | 5.24   |
| 150   | 10.78 | 33.64 | 25.78                 | 226.0    | .510       | 3.40   |
| 200   | 9.73  | 34.02 | 26.25                 | 181.6    | .612       | 2.82   |
| 250   | 8.76  | 34.10 | 26.47                 | 161.4    | .697       | 2.26   |
| 300   | 8.40  | 34.23 | 26.63                 | 147.2    | .774       | 1.21   |
| 400   | 7.70  | 34.39 | 26.86                 | 126.7    | .911       | 0.42   |
| 500   | 6.78  | 34.37 | 26.97                 | 116.6    | 1.033      | 0.33   |
| 600   | 5.99  | 34.38 | 27.09                 | 106.5    | 1.145      | 0.30   |
| 700   | 5.42  | 34.42 | 27.19                 | 97.3     | 1.246      | 0.27   |
| 800   | 4.93  | 34.42 | 27.25                 | 92.2     | 1.341      | 0.29   |
| 1000  | 4.13  | 34.50 | 27.40                 | 78.4     | 1.512      | 0.50   |

## STATION 120.90 (Interpolated Values at Standard Depths)

CREST: 26°12'N 118°27'W; August 16, 1952; 0422 GCT; wire angle: 9°; sounding: 2000+ fms; depth of observation: 581 m; weather: clear; sea: moderate; wind: 050°, force 4.

|     |        |         |         |         |         |      |
|-----|--------|---------|---------|---------|---------|------|
| 0   | 21.25  | 33.78   | 23.52   | 437.8   | .000    | 4.26 |
| 10  | 21.26  | 33.78   | 23.52   | 438.4   | .044    | 4.41 |
| 20  | 21.27  | 33.75   | 23.49   | 441.2   | .088    | 4.53 |
| 30  | 20.40  | 33.71   | 23.69   | 422.1   | .131    | 4.98 |
| 50  | 18.59  | 33.71   | 24.16   | 378.3   | .211    | 4.88 |
| 75  | 16.38  | 33.57   | 24.58   | 338.7   | .301    | 5.41 |
| 100 | 15.00  | 33.53   | 24.86   | 312.8   | .382    | 4.87 |
| 150 | 10.95  | 33.55   | 25.68   | 235.6   | .519    | 4.00 |
| 200 | 9.62   | 34.04   | 26.29   | 178.4   | .623    | 2.71 |
| 250 | 9.30   | 34.18   | 26.45   | 163.9   | .708    | 1.84 |
| 300 | 9.20   | 34.29   | 26.55   | 155.2   | .788    | 1.09 |
| 400 | 8.09   | 34.40   | 26.81   | 131.7   | .931    | 0.42 |
| 500 | 6.76   | 34.37   | 26.98   | 116.3   | 1.055   | 0.27 |
| 600 | (5.93) | (34.36) | (27.08) | (107.2) | (1.167) |      |



## STATION 123.37 (Interpolated Values at Standard Depths)

CREST: 27°24'N 114°40'W; August 17, 1952; 0133 GCT; wire angle: 2°;  
 sounding: 37 fms; depth of observation: 50 m; weather: cloudy; sea:  
 moderate; wind: 270°, force 3.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 17.70 | 33.49 | 24.21                 | 371.9         | .000       | 5.43           |
| 10    | 15.92 | 33.49 | 24.63                 | 332.6         | .035       | 5.64           |
| 20    | 14.26 | 33.40 | 24.92                 | 305.0         | .067       | 5.38           |
| 30    | 12.66 | 33.46 | 25.29                 | 270.0         | .096       | 5.47           |
| 50    | 12.92 | 33.96 | 25.62                 | 238.7         | .147       | 1.09           |

## STATION 123.40 (Interpolated Values at Standard Depths)

CREST: 27°18'N 114°52'W; August 16, 1952; 2323 GCT; wire angle: 10°;  
 sounding: 213 fms; depth of observation: 284 m; weather: partly cloudy; sea:  
 moderate; wind: 340°, force 3.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 21.12 | 33.58 | 23.40 | 448.9 | .000 | 4.88 |
| 10  | 18.80 | 33.55 | 23.99 | 393.7 | .042 | 5.44 |
| 20  | 16.00 | 33.44 | 24.57 | 338.3 | .079 | 5.71 |
| 30  | 13.71 | 33.43 | 25.05 | 292.2 | .110 | 4.25 |
| 50  | 11.86 | 33.54 | 25.50 | 250.0 | .164 | 3.67 |
| 75  | 10.99 | 33.90 | 25.94 | 208.8 | .222 | 3.21 |
| 100 | 11.67 | 34.29 | 26.12 | 192.6 | .272 | 1.02 |
| 150 | 12.01 | 34.53 | 26.24 | 182.3 | .366 | 0.34 |
| 200 | 11.34 | 34.60 | 26.42 | 166.3 | .453 | 0.57 |
| 250 | 10.78 | 34.60 | 26.52 | 157.6 | .534 | 0.42 |



## STATION 123.50 (Interpolated Values at Standard Depths)

CREST: 26°58'N 115°31'W; August 16, 1952; 1846 GCT; wire angle: 2°;  
 sounding: 1800 fms; depth of observation: 590 m; weather: partly cloudy; sea:  
 slight; wind: 020°, force 2.

| Depth | T      | S       | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | $O_2$  |
|-------|--------|---------|-----------------------|---------------|------------|--------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L) |
| 0     | 20.62  | 33.62   | 23.57                 | 433.2         | .000       | 5.00   |
| 10    | 18.36  | 33.57   | 24.11                 | 381.8         | .041       | 4.83   |
| 20    | 17.69  | 33.55   | 24.26                 | 367.9         | .078       | 5.43   |
| 30    | 16.50  | 33.34   | 24.38                 | 356.8         | .114       | 5.40   |
| 50    | 13.00  | 33.56   | 25.30                 | 269.5         | .177       | 4.76   |
| 75    | 11.10  | 33.83   | 25.87                 | 215.9         | .238       | 3.10   |
| 100   | 10.40  | 33.97   | 26.10                 | 194.2         | .289       | 2.72   |
| 150   | 9.46   | 34.15   | 26.40                 | 166.7         | .379       | 2.02   |
| 200   | 9.10   | 34.37   | 26.63                 | 145.7         | .457       | 1.72   |
| 250   | 9.33   | 34.58   | 26.76                 | 134.9         | .528       | 0.34   |
| 300   | 9.13   | 34.53   | 26.75                 | 136.4         | .595       | 0.19   |
| 400   | 7.91   | 34.52   | 26.93                 | 120.2         | .724       | 0.21   |
| 500   | 6.78   | 34.49   | 27.07                 | 107.7         | .838       | 0.21   |
| 600   | (5.95) | (34.47) | (27.16)               | (99.3)        | (.941)     | (0.18) |

## STATION 127.34 (Interpolated Values at Standard Depths)

CREST: 26°55'N 114°06'W; August 17, 1952; 0638 GCT; wire angle: 0°;  
 sounding: 40 fms; depth of observation: 50 m; weather: clear; sea:  
 moderate; wind: calm.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 21.08 | 33.93 | 23.68 | 422.5 | .000 | 5.75 |
| 10 | 19.44 | 34.02 | 24.18 | 375.1 | .040 | 4.95 |
| 20 | 17.32 | 33.93 | 24.64 | 331.8 | .075 | 5.03 |
| 30 | 16.62 | 33.98 | 24.84 | 312.7 | .107 | 4.18 |
| 50 | 13.22 | 33.91 | 25.52 | 248.0 | .164 | 1.67 |



## STATION 127.40 (Interpolated Values at Standard Depths)

CREST: 26°44'N 114°30'W; August 17, 1952; 0930 GCT; wire angle: 4°;  
 sounding: 1700 fms; depth of observation: 591 m; weather: partly  
 cloudy; sea: moderate; wind: 320°, force 1.

| Depth | T      | S       | $\sigma_t$            | 10 <sup>5</sup> $\delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|--------|---------|-----------------------|--------------------------|------------|----------------|
| (m)   | (°C)   | (‰)     | (mg/cm <sup>3</sup> ) |                          | (dyn.m.)   | (ml/L)         |
| 0     | 22.20  | 33.57   | 23.10                 | 478.0                    | .000       | 3.40           |
| 10    | 20.15  | 33.55   | 23.64                 | 426.7                    | .045       | 4.17           |
| 20    | 19.87  | 33.58   | 23.73                 | 417.9                    | .087       | 4.08           |
| 30    | 17.00  | 33.40   | 24.31                 | 363.5                    | .127       | 5.18           |
| 50    | 13.30  | 33.35   | 25.08                 | 290.7                    | .192       | 4.18           |
| 75    | 12.05  | 33.48   | 25.42                 | 258.4                    | .261       | 3.33           |
| 100   | 10.59  | 33.68   | 25.84                 | 218.8                    | .320       | 2.93           |
| 150   | 9.99   | 34.11   | 26.28                 | 178.2                    | .419       | 2.01           |
| 200   | 9.23   | 34.21   | 26.48                 | 159.6                    | .504       | 1.42           |
| 250   | 9.14   | 34.32   | 26.58                 | 151.0                    | .582       | 0.82           |
| 300   | 8.62   | 34.38   | 26.71                 | 139.5                    | .654       | 0.57           |
| 400   | 7.46   | 34.36   | 26.87                 | 125.4                    | .787       | 0.38           |
| 500   | 6.70   | 34.41   | 27.02                 | 112.5                    | .906       | 0.20           |
| 600   | (6.17) | (34.43) | (27.10)               | (105.2)                  | (1.015)    | (0.20)         |

## STATION 127.50 (Interpolated Values at Standard Depths)

CREST: 26°23'N 115°08'W; August 17, 1952; 1418 GCT; wire angle: 0°;  
 sounding: 1780 fms; depth of observation: 592 m; weather: cloudy; sea:  
 slight; wind: 240°, force 1.

|     |        |         |         |         |         |        |
|-----|--------|---------|---------|---------|---------|--------|
| 0   | 20.17  | 33.48   | 23.58   | 432.0   | .000    | 5.00   |
| 10  | 19.07  | 33.48   | 23.86   | 405.3   | .042    | 5.32   |
| 20  | 18.63  | 33.51   | 24.00   | 392.7   | .082    | 5.23   |
| 30  | 17.30  | 33.43   | 24.26   | 368.1   | .120    | 5.54   |
| 50  | 14.06  | 33.24   | 24.84   | 313.6   | .188    | 5.28   |
| 75  | 12.08  | 33.40   | 25.35   | 264.9   | .260    | 4.60   |
| 100 | 10.13  | 33.44   | 25.73   | 228.9   | .322    | 4.29   |
| 150 | 10.08  | 34.13   | 26.28   | 178.2   | .424    | 2.15   |
| 200 | 9.18   | 34.24   | 26.51   | 156.6   | .507    | 1.61   |
| 250 | 8.70   | 34.29   | 26.63   | 146.4   | .583    | 1.20   |
| 300 | 8.58   | 34.37   | 26.71   | 139.6   | .655    | 0.53   |
| 400 | 7.90   | 34.42   | 26.85   | 127.4   | .788    | 0.35   |
| 500 | 6.57   | 34.38   | 27.01   | 113.0   | .908    | 0.27   |
| 600 | (5.71) | (34.38) | (27.12) | (102.8) | (1.016) | (0.23) |



## STATION 130.30 (Interpolated Values at Standard Depths)

CREST: 26°22'N 113°31'W; August 18, 1952; 1352 GCT; wire angle: 0°; sounding: 40 fms; depth of observation: 57 m; weather: partly cloudy; sea: slight; wind: 290°, force 3.

| Depth | T     | S     | $\sigma_t$            | 10 <sup>5</sup> s | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|-------------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |                   | (dyn.m.)   | (ml/L)         |
| 0     | 21.26 | 34.02 | 23.70                 | 420.7             | .000       | 5.29           |
| 10    | 16.45 | 33.91 | 24.83                 | 313.5             | .037       | 4.05           |
| 20    | 13.30 | 33.85 | 25.46                 | 253.2             | .065       | 2.99           |
| 30    | 12.57 | 33.97 | 25.70                 | 230.9             | .089       | 2.00           |
| 50    | 12.93 | 34.34 | 25.92                 | 211.0             | .133       | 0.42           |

## STATION 130.35 (Interpolated Values at Standard Depths)

CREST: 26°15'N 113°48'W; August 18, 1952; 1041 GCT; wire angle: 25°; sounding: 270 fms; depth of observation: 320 m; weather: clear; sea: moderate; wind: 350°, force 4.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 21.17 | 33.53 | 23.35 | 453.8 | .000 | 5.16 |
| 10  | 18.60 | 33.51 | 24.00 | 391.8 | .042 | 5.58 |
| 20  | 16.62 | 33.45 | 24.43 | 351.1 | .079 | 5.68 |
| 30  | 14.90 | 33.39 | 24.77 | 319.0 | .113 | 5.67 |
| 50  | 13.09 | 33.46 | 25.20 | 278.6 | .173 | 2.38 |
| 75  | 12.50 | 34.09 | 25.81 | 221.9 | .235 | 1.60 |
| 100 | 12.25 | 34.23 | 25.96 | 207.6 | .289 | 1.20 |
| 150 | 12.24 | 34.59 | 26.24 | 182.2 | .386 | 0.45 |
| 200 | 11.52 | 34.63 | 26.41 | 167.3 | .474 | 0.39 |
| 250 | 10.94 | 34.67 | 26.55 | 155.2 | .554 | 0.22 |
| 300 | 10.27 | 34.65 | 26.65 | 146.3 | .630 | 0.23 |



## STATION 130.40 (Interpolated Values at Standard Depths)

CREST: 26°07'N 114°06'W; August 18, 1952; 0709, 0727 GCT; wire angle: 18°, 24°; sounding: 1200 fms; depth of observation: 71, 1090 m; weather: clear; sea: moderate; wind: 320°, force 3.

| Depth | T     | S     | $\sigma_t$            | 10 <sup>5</sup> $\delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|--------------------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |                          | (dyn.m.)   | (ml/L)         |
| 0     | 20.87 | 33.49 | 23.40                 | 449.0                    | .000       | 4.26           |
| 10    | 19.54 | 33.49 | 23.75                 | 416.0                    | .043       | 4.56           |
| 20    | 18.15 | 33.41 | 24.04                 | 388.8                    | .083       | 4.43           |
| 30    | 16.90 | 33.38 | 24.32                 | 362.7                    | .121       | 4.48           |
| 50    | 15.00 | 33.33 | 24.71                 | 326.0                    | .190       | 4.82           |
| 75    | 12.80 | 33.32 | 25.15                 | 284.0                    | .266       | 4.68           |
| 100   | 11.81 | 33.68 | 25.62                 | 240.0                    | .332       | 3.60           |
| 150   | 11.37 | 34.24 | 26.14                 | 192.1                    | .440       | 1.49           |
| 200   | 10.68 | 34.47 | 26.44                 | 164.3                    | .529       | 0.79           |
| 250   | 10.00 | 34.45 | 26.54                 | 155.4                    | .609       | 0.72           |
| 300   | 8.93  | 34.38 | 26.66                 | 144.3                    | .684       | 0.70           |
| 400   | 7.75  | 34.40 | 26.86                 | 126.7                    | .819       | 0.35           |
| 500   | 6.80  | 34.41 | 27.00                 | 113.9                    | .939       | 0.30           |
| 600   | 5.91  | 34.39 | 27.10                 | 104.7                    | 1.049      | 0.30           |
| 700   | 5.36  | 34.45 | 27.22                 | 94.4                     | 1.148      | 0.29           |
| 800   | 4.94  | 34.49 | 27.30                 | 87.2                     | 1.239      | 0.30           |
| 1000  | 4.25  | 34.52 | 27.40                 | 78.4                     | 1.405      | 0.51           |

## STATION 130.50 (Interpolated Values at Standard Depths)

CREST: 25°49'N 114°46'W; August 18, 1952; 0238 GCT; wire angle: 10°; sounding: 1800 fms; depth of observation: 576 m; weather: partly cloudy; sea: moderate; wind: 300°, force 3.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 21.52 | 33.44 | 23.19 | 469.4 | .000 | 5.11 |
| 10  | 19.60 | 33.42 | 23.68 | 422.5 | .045 | 5.03 |
| 20  | 19.11 | 33.44 | 23.82 | 409.5 | .086 | 4.84 |
| 30  | 18.30 | 33.44 | 24.03 | 390.5 | .126 | 4.97 |
| 50  | 15.61 | 33.30 | 24.55 | 341.0 | .199 | 5.29 |
| 75  | 14.50 | 33.33 | 24.81 | 316.5 | .282 | 5.35 |
| 100 | 12.80 | 33.30 | 25.14 | 286.1 | .357 | 5.25 |
| 150 | 10.06 | 33.85 | 26.06 | 198.5 | .478 | 2.88 |
| 200 | 9.80  | 34.23 | 26.40 | 167.3 | .569 | 1.56 |
| 250 | 9.14  | 34.31 | 26.58 | 151.8 | .649 | 1.20 |
| 300 | 9.15  | 34.42 | 26.66 | 144.8 | .723 | 0.54 |
| 400 | 7.72  | 34.37 | 26.84 | 128.4 | .860 | 0.41 |
| 500 | 6.75  | 34.37 | 26.98 | 116.2 | .982 | 0.32 |



## STATION 130.60 (Interpolated Values at Standard Depths)

CREST: 25°28'N 115°24'W; August 17, 1952; 2050 GCT; wire angle: 11°;  
 sounding: 1950 fms; depth of observation: 1156 m; weather: cloudy; sea:  
 moderate; wind: 270°, force 1.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 23.12 | 33.64 | 22.89                 | 497.8         | .000       | 4.88           |
| 10    | 20.76 | 33.49 | 23.43                 | 446.5         | .047       | 5.10           |
| 20    | 20.21 | 33.42 | 23.52                 | 438.0         | .091       | 5.15           |
| 30    | 19.77 | 33.48 | 23.68                 | 423.0         | .134       | 5.25           |
| 50    | 17.00 | 33.64 | 24.49                 | 346.6         | .211       | 5.64           |
| 75    | 15.80 | 33.55 | 24.70                 | 327.5         | .296       | 5.73           |
| 100   | 14.10 | 33.53 | 25.05                 | 294.4         | .373       | 5.21           |
| 150   | 10.72 | 33.84 | 25.94                 | 210.3         | .500       | 3.11           |
| 200   | 9.73  | 34.09 | 26.31                 | 176.4         | .596       | 2.29           |
| 250   | 9.19  | 34.20 | 26.48                 | 160.7         | .681       | 1.76           |
| 300   | 8.82  | 34.29 | 26.61                 | 149.2         | .758       | 1.15           |
| 400   | 7.87  | 34.39 | 26.84                 | 129.2         | .897       | 0.48           |
| 500   | 6.87  | 34.37 | 26.96                 | 117.9         | 1.021      | 0.30           |
| 600   | 6.13  | 34.38 | 27.07                 | 108.4         | 1.134      | 0.28           |
| 700   | 5.53  | 34.40 | 27.16                 | 100.2         | 1.238      | 0.28           |
| 800   | 5.00  | 34.44 | 27.25                 | 91.6          | 1.334      | 0.34           |
| 1000  | 4.25  | 34.49 | 27.38                 | 80.6          | 1.506      | 0.44           |

## STATION 133.25 (Interpolated Values at Standard Depths)

CREST: 26°04'N 112°48'W; August 18, 1952; 1815 GCT; wire angle: 2°;  
 sounding: 44 fms; depth of observation: 50 m; weather: clear; sea:  
 slight; wind: 300°, force 3.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 23.89 | 34.00 | 22.94 | 493.2 | .000 | 4.69 |
| 10 | 23.04 | 34.00 | 23.19 | 470.0 | .048 | 5.17 |
| 20 | 17.96 | 33.75 | 24.35 | 359.6 | .090 | 5.61 |
| 30 | 13.86 | 33.62 | 25.17 | 281.2 | .122 | 4.56 |
| 50 | 13.38 | 34.18 | 25.70 | 231.3 | .173 | 1.50 |



## STATION 133.30 (Interpolated Values at Standard Depths)

CREST: 25°54'N 113°08'W; August 18, 1952; 2044 GCT; wire angle: 2°;  
sounding: 98 fms; depth of observation: 129 m; weather: clear; sea:  
moderate; wind: 280°, force 3.

| Depth | T     | S     | $\sigma_t$            | $10^5 \delta$ | $\Delta D$ | O <sub>2</sub> |
|-------|-------|-------|-----------------------|---------------|------------|----------------|
| (m)   | (°C)  | (‰)   | (mg/cm <sup>3</sup> ) |               | (dyn.m.)   | (ml/L)         |
| 0     | 23.86 | 33.98 | 22.93                 | 493.8         | .000       | 4.92           |
| 10    | 22.14 | 33.93 | 23.39                 | 450.7         | .047       | 4.64           |
| 20    | 16.10 | 33.62 | 24.68                 | 327.3         | .086       | 5.26           |
| 30    | 13.60 | 33.55 | 25.17                 | 281.3         | .117       | 4.73           |
| 50    | 12.46 | 33.66 | 25.48                 | 252.1         | .170       | 3.65           |
| 75    | 11.83 | 34.10 | 25.94                 | 208.9         | .228       | 2.12           |
| 100   | 12.44 | 34.38 | 26.04                 | 200.1         | .279       | 0.99           |

## STATION 137.23 (Interpolated Values at Standard Depths)

CREST: 25°34'N 112°18'W; August 19, 1952; 0401 GCT; wire angle: 8°;  
sounding: 40 fms; depth of observation: 50 m; weather: clear; sea:  
slight; wind: 330°, force 3.

|    |       |       |       |       |      |      |
|----|-------|-------|-------|-------|------|------|
| 0  | 25.14 | 33.95 | 22.53 | 532.5 | .000 | 4.80 |
| 10 | 24.38 | 33.93 | 22.74 | 512.5 | .052 | 4.70 |
| 20 | 18.18 | 33.62 | 24.19 | 374.2 | .097 | 5.95 |
| 30 | 16.06 | 33.51 | 24.61 | 324.8 | .132 | 5.77 |
| 50 | 13.54 | 33.73 | 25.32 | 267.4 | .192 | 3.64 |

## STATION 137.30 (Interpolated Values at Standard Depths)

CREST: 25°20'N 112°46'W; August 19, 1952; 0102 GCT; wire angle: 29°;  
sounding: 200 fms; depth of observation: 299 m; weather: clear; sea:  
moderate; wind: 280°, force 4.

|     |       |       |       |       |      |      |
|-----|-------|-------|-------|-------|------|------|
| 0   | 23.66 | 33.77 | 22.83 | 503.4 | .000 | 4.48 |
| 10  | 22.85 | 33.75 | 23.05 | 482.9 | .049 | 4.70 |
| 20  | 19.72 | 33.55 | 23.75 | 416.4 | .094 | 5.02 |
| 30  | 16.80 | 33.49 | 24.42 | 352.5 | .133 | 5.60 |
| 50  | 14.39 | 33.49 | 24.96 | 301.9 | .198 | 6.41 |
| 75  | 12.30 | 33.77 | 25.60 | 241.7 | .266 | 3.50 |
| 100 | 11.99 | 34.03 | 25.86 | 217.5 | .323 | 1.75 |
| 150 | 12.50 | 34.57 | 26.18 | 188.5 | .425 | 0.30 |
| 200 | 11.89 | 34.63 | 26.34 | 174.0 | .516 | 0.16 |
| 250 | 11.11 | 34.63 | 26.49 | 161.2 | .599 | 0.14 |
| 300 | 10.90 | 34.61 | 26.51 | 160.1 | .680 | 0.15 |



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