

|                                    |           |                              |          |              |          |                       |                         |             |          |                  |                 |                   |             |         |                 |                 |  |
|------------------------------------|-----------|------------------------------|----------|--------------|----------|-----------------------|-------------------------|-------------|----------|------------------|-----------------|-------------------|-------------|---------|-----------------|-----------------|--|
| VESSEL<br>NOAA SHIP MILLER FREEMAN |           | PROJECT & LEG<br>MF-00-06    |          | DSDB I.D.    |          | STATION DESIGNATION   |                         |             |          |                  |                 |                   |             |         |                 |                 |  |
| CONSC<br>CAST #                    | LATITUDE  | LONGITUDE                    |          | DATE JD=     |          | TIME<br>(GMT)         | DRY<br>BULB             | WET<br>BULB | PRESSURE | SEA STATE        | WIND<br>DIR     | WIND<br>SFD.      | CLOUD (amt) | WEATHER | BOTTOM<br>DEPTH | STA.<br>NAME/ID |  |
| 031                                | 5521.89 N | 168571.16 W                  |          | 08 MAY 00    |          | 1007                  | 3.0                     | 1.8         | 2036     | 3401             | 27              | 61                | 967         |         |                 |                 |  |
| SBE 9+                             | 91660     | TIMES                        |          | JD/TIME      |          | DATA LOCATION         |                         |             |          | REMARKS          |                 |                   |             |         |                 |                 |  |
| PRESS SN                           | 29772     | DATA ON.                     |          |              |          | Tape/Diskette ID      |                         |             |          | File Name/Header |                 |                   |             |         |                 |                 |  |
| PRI TEMP SN                        | 889       | START DOWN                   |          |              |          |                       |                         |             |          | CTD031           |                 |                   |             |         |                 |                 |  |
| SEC TEMP SN                        | 884       | AT DEPTH                     |          |              |          |                       |                         |             |          |                  |                 |                   |             |         |                 |                 |  |
| PRI COND SN                        | 480       | AT SURFACE                   |          |              |          |                       |                         |             |          |                  |                 |                   |             |         |                 |                 |  |
| SEC COND SN                        | 530       | PAR SN 4242                  |          | FLUOR SN 153 |          | CHAM SN 109           |                         |             |          |                  |                 | MAX DEPTH = 903 m |             |         |                 |                 |  |
| POS                                | TRIP      | CTD CONVERTED MONITOR VALUES |          |              |          |                       |                         |             |          |                  |                 |                   |             |         |                 |                 |  |
| DEPTH                              | PRESSURE  | PRI TEMP.                    | SEC TEMP | SALINITY     | SALINITY | SAMPLE BOTTLE<br>DATA | SAMPLE BOTTLE<br>NUMBER | SAL         | NUTR.    | CHL              | WHIT'S<br>NUTR. |                   |             |         |                 |                 |  |
| 1                                  | 1000      |                              |          |              |          |                       |                         | 23          |          |                  |                 | 1916              |             |         |                 |                 |  |
| 2                                  | 500       |                              |          |              |          |                       |                         |             |          |                  |                 | 1906              |             |         |                 |                 |  |
| 3                                  | 250       |                              |          |              |          |                       |                         |             |          |                  |                 | 1892              |             |         |                 |                 |  |
| 4                                  | 200       |                              |          |              |          |                       |                         |             |          |                  |                 | 1882              |             |         |                 |                 |  |
| 5                                  | 150       |                              |          |              |          |                       |                         |             |          |                  |                 | 1872              |             |         |                 |                 |  |
| 6                                  | 100       |                              |          |              |          |                       |                         |             |          |                  |                 | 1862              |             |         |                 |                 |  |
| 7                                  | 75        |                              |          |              |          |                       |                         |             |          |                  |                 | 1852              |             |         |                 |                 |  |
| 8                                  | 50        |                              |          |              |          |                       |                         |             |          |                  |                 | 1842              |             |         |                 |                 |  |
| 9                                  | 40        |                              |          |              |          |                       |                         |             |          |                  |                 | 1832              |             |         |                 |                 |  |
| 10                                 | 30        |                              |          |              |          |                       |                         |             |          |                  |                 | 1822              |             |         |                 |                 |  |
| 11                                 | 20        |                              |          |              |          |                       |                         |             |          |                  |                 | 1812              |             |         |                 |                 |  |
| 12                                 | 10        |                              |          |              |          |                       |                         |             |          |                  |                 | 1802              |             |         |                 |                 |  |

From Bucket

179

Winch/Bridge ponie stopped around 730m  
continued down to 903.

| VESSEL                   |            | PROJECT & LEG                |            |   |          | STATION DESIGNATION                               |                    |                      |          |           |              |           |             |         |              |              |
|--------------------------|------------|------------------------------|------------|---|----------|---|--------------------|----------------------|----------|-----------|--------------|-----------|-------------|---------|--------------|--------------|
| NOAA Ship MILLER FREEMAN |            | MF-00-06                     |            |   |          | DSD8 I.D.   |                    |                      |          |           |              |           |             |         |              |              |
| CONSC                    | LATITUDE   | LONGITUDE                    |            | DATE JD=  |          | TIME (GMT)  | DRY BULB           | WET BULB             | PRESSURE | SEA STATE | WIND DIRN    | WIND SPD. | CLOUD (amt) | WEATHER | BOTTOM DEPTH | STA. NAME/ID |
| CAST #                   | DEG MIN    | DEG MIN                      | DAY        | MO  | YR       | HR MIN  | (°C)               | (°C)                 | (mb)     | (deg)     | (m/s)        |           |             |         | (m)          |              |
| 632                      | 5522.18 N  | 116810.38 W                  | 08         | MAY   | 00       | 0619  | 3.3                | 2.2                  | 203      | 7340      | 14           | 773       | 513         |         |              |              |
| SBE 9+                   | 91660      | TIMES                        |            | JD/TIME   |          | DATA LOCATION                                     |                    |                      |          |           |              |           |             |         |              |              |
| PRESS SN                 | 29772      | DATA ON.                     |            |   |          | Tape/Diskette ID                                  |                    | File Name/Header     |          |           |              |           |             |         |              |              |
| PRI TEMP SN              | 889        | START DOWN                   |            |   |          | CTD 032   |                    |                      |          |           |              |           |             |         |              |              |
| SEC TEMP SN              | 884        | AT DEPTH                     |            |   |          |   |                    |                      |          |           |              |           |             |         |              |              |
| PRI COND SN              | 480        | AT SURFACE                   |            |   |          |   |                    |                      |          |           |              |           |             |         |              |              |
| SEC COND SN              | 530        | PAR S/N 4242                 |            | <input checked="" type="checkbox"/> FLUOR S/N 153 |          | <input checked="" type="checkbox"/> CHLAM S/N 109 |                    |                      |          |           |              |           |             |         |              |              |
| POS.                     | TRIP DEPTH | CTD CONVERTED MONITOR VALUES |            |   |          |   |                    |                      |          |           |              |           |             |         |              |              |
|                          |            | PRESSURE                     | PRI. TEMP. | SEC. TEMP.  | SALINITY | SALINITY  | SAMPLE BOTTLE DATA | SAMPLE BOTTLE NUMBER |          |           |              |           |             |         |              |              |
| 1                        | Bot        |                              |            |   |          |   |                    | SAL                  | NUTR     | CHL       | WHIT'S NUTR. |           |             |         |              |              |
| 2                        | 250        |                              |            |   |          |   |                    | 22                   |          |           |              | 203L      |             |         |              |              |
| 3                        | 260        |                              |            |   |          |   |                    |                      |          |           |              | 202L      |             |         |              |              |
| 4                        | 150        |                              |            |   |          |   |                    |                      |          |           |              | 201L      |             |         |              |              |
| 5                        | 100        |                              |            |   |          |   |                    |                      |          |           |              | 199L      |             |         |              |              |
| 6                        | 75         |                              |            |   |          |   |                    |                      |          |           |              | 198L      |             |         |              |              |
| 7                        | 50         |                              |            |   |          |   |                    |                      |          |           |              | 197L      |             |         |              |              |
| 8                        | 40         |                              |            |   |          |   |                    |                      |          |           |              | 196L      |             |         |              |              |
| 9                        | 30         |                              |            |   |          |   |                    |                      |          |           |              | 195L      |             |         |              |              |
| 10                       | 20         |                              |            |   |          |   |                    |                      |          |           |              | 194L      |             |         |              |              |
| 11                       | 10         |                              |            |   |          |   |                    |                      |          |           |              | 193L      |             |         |              |              |
| 12                       | 0          |                              |            |   |          |   |                    |                      |          |           |              | 192L      |             |         |              |              |

☒ Cleaned air bleed valve

MAX DEPTH = 501 m

REMARKS  
W/O 507

| VESSEL                   |          | PROJECT & LEG                |           | STATION DESIGNATION |          |                    |          |                      |           |          |             |              |              |             |
|--------------------------|----------|------------------------------|-----------|---------------------|----------|--------------------|----------|----------------------|-----------|----------|-------------|--------------|--------------|-------------|
| NOAA Ship MILLER FREEMAN |          | MF-00-06                     |           | DSDB I.D.           |          |                    |          |                      |           |          |             |              |              |             |
| CONSC CAST #             | LATITUDE | LONGITUDE                    | DATE JD=  | TIME (GMT)          | DRY BULB | WET BULB           | PRESSURE | SEA STATE            | WIND DIRN | WIND SPD | CLOUD (amt) | TYPE WEATHER | BOTTOM DEPTH | STA NAME/ID |
| 0335525.74               | 16804.31 | 16804.31                     | 16804.31  | 16804.31            | 16804.31 | 16804.31           | 16804.31 | 16804.31             | 16804.31  | 16804.31 | 16804.31    | 16804.31     | 16804.31     | 16804.31    |
| DEG MIN                  | DEG MIN  | DEG MIN                      | DAY MO YR | HR MIN              | (°C)     | (°C)               | (mb)     | (deg)                | (m/s)     | (m)      |             |              |              |             |
| 0335525.74               | 16804.31 | 16804.31                     | MAY 00    | 0811                | 1.5      | 0.02               | 0373     | 4014                 | 763       | 216      |             |              |              |             |
| SBE 9+                   | 91650    | TIMES                        | JD/TIME   | DATA LOCATION       |          | REMARKS            |          |                      |           |          |             |              |              |             |
| PRESS SN                 | 29772    | DATA ON.                     |           | Tape/Diskette ID    |          | File Name/Header   |          |                      |           |          |             |              |              |             |
| PRI TEMP SN              | 889      | START DOWN                   |           |                     |          | CT0033             |          |                      |           |          |             |              |              |             |
| SEC TEMP SN              | 884      | AT DEPTH                     |           |                     |          |                    |          |                      |           |          |             |              |              |             |
| PRI COND SN              | 480      | AT SURFACE                   |           |                     |          |                    |          |                      |           |          |             |              |              |             |
| SEC COND SN              | 530      | PAR SN                       | 4242      | FLUOR SN 153        |          | CHAM SN 109        |          |                      |           |          |             |              |              |             |
| POS.                     | DEPTH    | CTD CONVERTED MONITOR VALUES |           |                     |          | SAMPLE BOTTLE DATA |          | SAMPLE BOTTLE NUMBER |           |          |             |              |              |             |
|                          |          | PRESSURE                     | PRI TEMP. | SEC TEMP            | SALINITY | SALINITY           | SAL      | NUTR.                | CHL       | WHIT'S   |             |              |              |             |
| 1                        | Bottom   |                              |           |                     |          |                    | 21       |                      |           |          | 214         |              |              |             |
| 2                        | 200      |                              |           |                     |          |                    |          |                      |           |          | 213         |              |              |             |
| 3                        | 150      |                              |           |                     |          |                    |          |                      |           |          | 212         |              |              |             |
| 4                        | 100      |                              |           |                     |          |                    |          |                      |           |          | 211         |              |              |             |
| 5                        | 75       |                              |           |                     |          |                    |          |                      |           |          | 210         |              |              |             |
| 6                        | 50       |                              |           |                     |          |                    |          |                      |           |          | 209         |              |              |             |
| 7                        | 40       |                              |           |                     |          |                    |          |                      |           |          | 208         |              |              |             |
| 8                        | 30       |                              |           |                     |          |                    |          |                      |           |          | 207         |              |              |             |
| 9                        | 20       |                              |           |                     |          |                    |          |                      |           |          | 206         |              |              |             |
| 10                       | 10       |                              |           |                     |          |                    |          |                      |           |          | 205         |              |              |             |
| 11                       | 0        |                              |           |                     |          |                    |          |                      |           |          | 204         |              |              |             |
| 12                       |          |                              |           |                     |          |                    |          |                      |           |          |             |              |              |             |

Cleaned air bleed valve

MAX DEPTH = 210 m

| VESSEL                   |            | PROJECT & LEG                |           | DSD8 I.D. |          | STATION DESIGNATION |               |  |             |          |           |              |              |             |         |                 |                 |
|--------------------------|------------|------------------------------|-----------|-----------|----------|---------------------|---------------|--|-------------|----------|-----------|--------------|--------------|-------------|---------|-----------------|-----------------|
| NOAA Ship MILLER FREEMAN |            | MF-00-06                     |           |           |          |                     |               |  |             |          |           |              |              |             |         |                 |                 |
| CONSC<br>CAST #          | LATITUDE   | DEG                          | MIN       | DEG       | MIN      | DATE JD=            | TIME<br>(GMT) | DRY<br>BULB  | WET<br>BULB | PRESSURE | SEA STATE | WIND<br>DIRN | WIND<br>SPD. | CLOUD (amt) | WEATHER | BOTTOM<br>DEPTH | STA.<br>NAME/ID |
| 0345532.95               | N 16745.94 |                              |           |           |          | 08 MAY 00           | 1108          | 1.0  | 0.0         | 2135     | 030       | 14           | 852          | 137         |         |                 |                 |
| SBE 9+                   | 91650      | TIMES                        |           | JD/TIME   |          | DATA LOCATION       |               | REMARKS  |             |          |           |              |              |             |         |                 |                 |
| PRESS SN                 | 29772      | DATA ON.                     |           |           |          | Tape/Diskette ID    |               | Sampling order<br>Bottom-100+50-40-30<br>-20-10-0-75 |             |          |           |              |              |             |         |                 |                 |
| PRI TEMP SN              | 889        | START DOWN                   |           |           |          | File Name/Header    |               | CTD034   |             |          |           |              |              |             |         |                 |                 |
| SEC TEMP SN              | 884        | AT DEPTH                     |           |           |          |                     |               | MAX DEPTH = 130 m                                    |             |          |           |              |              |             |         |                 |                 |
| PRI COND SN              | 480        | AT SURFACE                   |           |           |          |                     |               | Cleaned air bleed valve                              |             |          |           |              |              |             |         |                 |                 |
| SEC COND SN              | 530        | PAR SN 4242                  |           |           |          | FLUOR SN 153        |               | CHAM SN 109  |             |          |           |              |              |             |         |                 |                 |
| POS.                     | DEPTH      | CTD CONVERTED MONITOR VALUES |           |           |          |                     |               |  |             |          |           |              |              |             |         |                 |                 |
|                          |            | PRESSURE                     | PRI TEMP. | SEC TEMP  | SALINITY | SALINITY            | SAL           | NUTR.  | CHL.        | WHIT'S   |           |              |              |             |         |                 |                 |
| 1                        | Bottom     |                              |           |           |          |                     | 28            |  |             | 223 L    |           |              |              |             |         |                 |                 |
| 2                        | 100        |                              |           |           |          |                     |               |  |             | 222 L    |           |              |              |             |         |                 |                 |
| 3                        | 75         |                              |           |           |          |                     |               |  |             | 221 L    |           |              |              |             |         |                 |                 |
| 4                        | 50         |                              |           |           |          |                     |               |  |             | 220 L    |           |              |              |             |         |                 |                 |
| 5                        | 40         |                              |           |           |          |                     |               |  |             | 219 L    |           |              |              |             |         |                 |                 |
| 6                        | 30         |                              |           |           |          |                     |               |  |             | 218 L    |           |              |              |             |         |                 |                 |
| 7                        | 20         |                              |           |           |          |                     |               |  |             | 217 L    |           |              |              |             |         |                 |                 |
| 8                        | 10         |                              |           |           |          |                     |               |  |             | 216 L    |           |              |              |             |         |                 |                 |
| 9                        | 0          |                              |           |           |          |                     |               |  |             | 215 L    |           |              |              |             |         |                 |                 |
| 10                       |            |                              |           |           |          |                     |               |  |             |          |           |              |              |             |         |                 |                 |
| 11                       |            |                              |           |           |          |                     |               |  |             |          |           |              |              |             |         |                 |                 |
| 12                       |            |                              |           |           |          |                     |               |  |             |          |           |              |              |             |         |                 |                 |

★ Samples in Bottles  
are correct

[illegible]

|                                    |               |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
|------------------------------------|---------------|---------------------------|----|--|-----|---|-------------|-------------|----------|------------------|------------|---------------------|-------------|-----------------------|---------|-----------------------|-----------------|
| VESSEL<br>NOAA Ship MILLER FREEMAN |               | PROJECT & LEG<br>MF-00-06 |    | DSD8 I.D.  |     | STATION DESIGNATION                             |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| CONSC<br>CAST #                    | LATITUDE      | LONGITUDE                 |    | DATE JD=   |     | TIME<br>(GMT)                                   | DRY<br>BULB | WET<br>BULB | PRESSURE | SEA STATE        | VISIBILITY | WIND<br>DIRN        | WIND<br>SPD | CLOUD (amt)           | WEATHER | BOTTOM<br>DEPTH       | STA.<br>NAME/ID |
| 0345                               | 54.6.06N      | 167.10.17W                | 08 | MAY  | 001 | 1426  | 0.6         | 0.0         | 2237     | 020              | 128        | 52                  | 137         |                       |         |                       |                 |
| SBE 9+                             | 91660         | TIMES                     |    | JD/TIME  |     | DATA LOCATION                                   |             |             |          | REMARKS          |            |                     |             |                       |         |                       |                 |
| PRESS SN                           | 29772         | DATA ON.                  |    |  |     | Tape/Diskette ID                                |             |             |          | File Name/Header |            |                     |             |                       |         |                       |                 |
| PRI TEMP SN                        | 889           | START DOWN                |    |  |     | CTD036  |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| SEC TEMP SN                        | 884           | AT DEPTH                  |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| PRI COND SN                        | 480           | AT SURFACE                |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| SEC COND SN                        | 530           | PAR SN 4242               |    | <input checked="" type="checkbox"/> FLUOR SN 153 |     | <input checked="" type="checkbox"/> CHAM SN 109 |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| CTD CONVERTED MONITOR VALUES       |               |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| POS.                               | TRIP<br>DEPTH | PRESSURE                  |    | PRI TEMP.  |     | SEC TEMP  |             | SALINITY    |          | SALINITY         |            | SAL. BOTTLE<br>DATA |             | SAL. BOTTLE<br>NUMBER |         | SAL. BOTTLE<br>NUMBER |                 |
| 1                                  | Bottom        |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 2                                  | 100           |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 3                                  | 75            |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 4                                  | 50            |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 5                                  | 40            |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 6                                  | 30            |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 7                                  | 20            |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 8                                  | 10            |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 9                                  | 0             |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 10                                 |               |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 11                                 |               |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |
| 12                                 |               |                           |    |  |     |   |             |             |          |                  |            |                     |             |                       |         |                       |                 |

☒ Cleaned air bleed valve  
MAX DEPTH = 131 m

| VESSEL                       |            | PROJECT & LEG |             | STATION DESIGNATION |              |             |                                   |           |             |             |             |                    |                 |                 |
|------------------------------|------------|---------------|-------------|---------------------|--------------|-------------|-----------------------------------|-----------|-------------|-------------|-------------|--------------------|-----------------|-----------------|
| NOAA Ship MILLER FREEMAN     |            | MF-00-06      |             | DSDBI.D.            |              |             |                                   |           |             |             |             |                    |                 |                 |
| CONSC<br>CAST #              | LATITUDE   | LONGITUDE     | DATE JD=    | TIME<br>(GMT)       | DRY<br>BULB  | WET<br>BULB | PRESSURE                          | SEA STATE | WIND<br>DIR | WIND<br>SPD | CLOUD (amt) | WEATHER            | BOTTOM<br>DEPTH | STA.<br>NAME/ID |
| 037                          | 55 54.04 N | 166 54.19 W   | 08 MAY 00   | 1606                | 0.7          | 0.1         | 2337                              | 005       | 13          | 862         | 135         |                    |                 |                 |
| DEG                          | MIN        | DEG           | MIN         | DAY                 | MO           | YR          | HR                                | MIN       | (°C)        | (°C)        | (mb)        | (deg)              | (m/s)           | (m)             |
| SBE 9+                       |            | 91660         | TIMES       |                     | JD/TIME      |             | DATA LOCATION                     |           |             |             |             |                    |                 |                 |
| PRESS SN                     |            | 29772         | DATA ON.    |                     |              |             | Tape/Diskette ID File Name/Header |           |             |             |             |                    |                 |                 |
| PRI TEMP SN                  |            | R89           | START DOWN  |                     |              |             | CTD 037                           |           |             |             |             |                    |                 |                 |
| SEC TEMP SN                  |            | R84           | AT DEPTH    |                     |              |             |                                   |           |             |             |             |                    |                 |                 |
| PRI COND SN                  |            | 480           | AT SURFACE  |                     |              |             |                                   |           |             |             |             |                    |                 |                 |
| SEC COND SN                  |            | 530           | PAR SN 4242 |                     | FLUOR SN 153 |             | CHAM SN 109                       |           |             |             |             |                    |                 |                 |
| CTD CONVERTED MONITOR VALUES |            |               |             |                     |              |             |                                   |           |             |             |             |                    |                 |                 |
| POS.                         | TRIP       | PRESSURE      |             | PRI TEMP.           |              | SEC TEMP    |                                   | SALINITY  |             | SALINITY    |             | SAMPLE BOTTLE DATA |                 |                 |
| DEPTH                        |            |               |             |                     |              |             |                                   |           |             |             |             |                    |                 |                 |
| 1                            | Bottom     |               |             |                     |              |             |                                   |           |             |             |             | SAL. 07            |                 |                 |
| 2                            | 100        |               |             |                     |              |             |                                   |           |             |             |             | 250 L              |                 |                 |
| 3                            | 75         |               |             |                     |              |             |                                   |           |             |             |             | 248 L              |                 |                 |
| 4                            | 50         |               |             |                     |              |             |                                   |           |             |             |             | 247 L              |                 |                 |
| 5                            | 40         |               |             |                     |              |             |                                   |           |             |             |             | 246 L              |                 |                 |
| 6                            | 30         |               |             |                     |              |             |                                   |           |             |             |             | 245 L              |                 |                 |
| 7                            | 20         |               |             |                     |              |             |                                   |           |             |             |             | 244 L              |                 |                 |
| 8                            | 10         |               |             |                     |              |             |                                   |           |             |             |             | 243 L              |                 |                 |
| 9                            | 0          |               |             |                     |              |             |                                   |           |             |             |             | 242 L              |                 |                 |
| 10                           |            |               |             |                     |              |             |                                   |           |             |             |             |                    |                 |                 |
| 11                           |            |               |             |                     |              |             |                                   |           |             |             |             |                    |                 |                 |
| 12                           |            |               |             |                     |              |             |                                   |           |             |             |             |                    |                 |                 |

✓ Samples are in correct bottles

REMARKS Saw pling  
Order Bottom - 100-75-40  
-30-20-10-0-50  
✓ Cleaned air bleed valve  
MAX DEPTH = 127 m

| VESSEL                       | PROJECT & LEG | DSD8 I.D.    | STATION DESIGNATION  |
|------------------------------|---------------|--------------|----------------------|
| NOAA Ship MILLER FREEMAN     | MF-00-06      |              |                      |
| CONSC CAST #                 | LATITUDE      | LONGITUDE    | DATE JD=             |
| DEG MIN                      | DEG MIN       | DAY MO YR    | TIME (GMT)           |
| DRY BULB                     | WET BULB      | PRESSURE     | SEA STATE VISIBILITY |
| WIND DIRN                    | WIND SPD.     | CLOUD (amt)  | WEATHER              |
| BOTTOM DEPTH                 | STA NAME/ID   |              |                      |
| SBE 9+                       | Q1660         | TIMES        | JD/TIME              |
| PRESS SN                     | 29772         | DATA ON      |                      |
| PRI TEMP SN                  | R89           | START DOWN   |                      |
| SEC TEMP SN                  | R84           | AT DEPTH     |                      |
| PRI COND SN                  | 480           | AT SURFACE   |                      |
| SEC COND SN                  | 530           | PAR S/N 4242 | FLUOR S/N 153        |
| CTD CONVERTED MONITOR VALUES | CHIAM S/N 109 |              |                      |
| TRIP DEPTH                   | PRESSURE      | PRI. TEMP.   | SEC. TEMP.           |
| SALINITY                     | SALINITY      | SAL          | NUTR                 |
| CHL                          | WHIT'S NUTR   |              |                      |
| 1                            | 100           |              |                      |
| 2                            | 75            |              |                      |
| 3                            | 50            |              |                      |
| 4                            | 40            |              |                      |
| 5                            | 30            |              |                      |
| 6                            | 20            |              |                      |
| 7                            | 10            |              |                      |
| 8                            | 0             |              |                      |
| 9                            |               |              |                      |
| 10                           |               |              |                      |
| 11                           |               |              |                      |
| 12                           |               |              |                      |
| REMARKS                      |               |              |                      |
| Cleaned air bleed valve      |               |              |                      |
| MAX DEPTH = 125 m            |               |              |                      |



[illegible]

|                                    |  |                           |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
|------------------------------------|--|---------------------------|--|---|--|---|--|---------------------|--|------------------|--|-------------|--|----------|--|-----------|--|------------|--|-----------------|--|--------------|--|-------------|--|---------|--|-----------------|--|-----------------|--|
| VESSEL<br>NOAA Ship MILLER FREEMAN |  | PROJECT & LEG<br>MF-00-06 |  |   |  | DSDB I.D.   |  | STATION DESIGNATION |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| CONSC<br>CAST #                    |  | LATITUDE                  |  | LONGITUDE   |  | DATE JD=  |  | TIME<br>(GMT)       |  | DRY<br>BULB      |  | WET<br>BULB |  | PRESSURE |  | SEA STATE |  | VISIBILITY |  | WIND<br>DIRN    |  | WIND<br>SPD. |  | CLOUD (amt) |  | WEATHER |  | BOTTOM<br>DEPTH |  | STA.<br>NAME/ID |  |
| DEG MIN                            |  | DEG MIN                   |  | DAY MO YR   |  | HR MIN  |  | °C                  |  | °C               |  | (mb)        |  | · ·      |  | (deg)     |  | (m/s)      |  | · ·             |  | · ·          |  | (m)         |  |         |  |                 |  |                 |  |
| 56 03.57 N                         |  | 16 62 01.18 W             |  | 08 MAY 00   |  | 21 27   |  | 1.5                 |  | 0.2              |  | 2.6         |  | 4.7      |  | 3.5       |  | 5.5        |  | 1.4             |  | 8.6          |  | 2           |  | 12      |  | 1               |  |                 |  |
| SBE 9+<br>91660                    |  | TIMES                     |  | JD/TIME   |  | DATA LOCATION                                     |  | Tape/Diskette ID    |  | File Name/Header |  | REMARKS     |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| PRESS SN<br>29772                  |  | DATA ON.                  |  |   |  |   |  |                     |  |                  |  | 120 w/o     |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| PRI TEMP SN<br>889                 |  | START DOWN                |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| SEC TEMP SN<br>884                 |  | AT DEPTH                  |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| PRI COND SN<br>480                 |  | AT SURFACE                |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| SEC COND SN<br>530                 |  | PAR S/N 4242              |  | <input checked="" type="checkbox"/> FLUOR S/N 153 |  | <input checked="" type="checkbox"/> CHLAM S/N 109 |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| POS.                               |  | TRAP<br>DEPTH             |  | PRESSURE  |  | PRI TEMP.   |  | SEC. TEMP           |  | SALINITY         |  | SALINITY    |  | SAL.     |  | NUTR.     |  | CHL        |  | WHIT'S<br>NUTR. |  |              |  |             |  |         |  |                 |  |                 |  |
| 1                                  |  | 13.5                      |  |   |  |   |  |                     |  |                  |  |             |  | 27       |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 2                                  |  | 100                       |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 3                                  |  | 75                        |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 4                                  |  | 50                        |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 5                                  |  | 40                        |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 6                                  |  | 30                        |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 7                                  |  | 20                        |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 8                                  |  | 0                         |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 9                                  |  |                           |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 10                                 |  |                           |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 11                                 |  |                           |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 12                                 |  |                           |  |   |  |   |  |                     |  |                  |  |             |  |          |  |           |  |            |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |

☒ Cleaned air bleed valve

MAX. DEPTH = 117 m

| VESSEL                   |            | PROJECT & LEG                |            | DSDB I.D.                         |                    | STATION DESIGNATION  |                       |
|--------------------------|------------|------------------------------|------------|-----------------------------------|--------------------|----------------------|-----------------------|
| NOAA Ship MILLER FREEMAN |            | MF-00-06                     |            |                                   |                    |                      |                       |
| CONSC                    | LATITUDE   | LONGITUDE                    | DATE JD=   | TIME (GMT)                        | DRY BULB           | WET BULB             | PRESSURE              |
| CAST #                   | DEG MIN    | DEG MIN                      | DAY MO YR  | HR MIN                            | (°C)               | (°C)                 | (mb)                  |
| 041                      | 56 03.64 N | 166 20.11 W                  | 08 MAY 00  | 21 49                             | 1.5                | 0.0                  | 26.47                 |
| SBE 9+                   | 01660      | TIMES                        | JD/TIME    | DATA LOCATION                     |                    |                      |                       |
| PRESS SN                 | 29772      | DATA ON                      |            | Tape/Diskette ID File Name/Header |                    |                      |                       |
| PRI TEMP SN              | 889        | START DOWN                   |            | CTD 041                           |                    |                      |                       |
| SEC TEMP SN              | 884        | AT DEPTH                     |            |                                   |                    |                      |                       |
| PRI COND SN              | 480        | AT SURFACE                   |            |                                   |                    |                      |                       |
| SEC COND SN              | 530        | PAR S/N 4242                 |            | FLUOR S/N 153                     | CHIAM S/N 109      |                      |                       |
| POS.                     | TRIP DEPTH | CTD CONVERTED MONITOR VALUES |            |                                   | SAMPLE BOTTLE DATA | SAMPLE BOTTLE NUMBER |                       |
|                          |            | PRESSURE                     | PRI. TEMP. | SEC. TEMP.                        | SALINITY           | SALINITY             | SAL. NUTR. CHL. WHITS |
| 1                        | 13         |                              |            |                                   |                    |                      |                       |
| 2                        | 13         |                              |            |                                   |                    |                      |                       |
| 3                        | 13         |                              |            |                                   |                    |                      | 278L                  |
| 4                        | 9          |                              |            |                                   |                    |                      |                       |
| 5                        | 9          |                              |            |                                   |                    |                      |                       |
| 6                        | 9          |                              |            |                                   |                    |                      | 277L                  |
| 7                        | 5          |                              |            |                                   |                    |                      |                       |
| 8                        | 5          |                              |            |                                   |                    |                      |                       |
| 9                        | 5          |                              |            |                                   |                    |                      | 276L                  |
| 10                       |            |                              |            |                                   |                    |                      |                       |
| 11                       |            |                              |            |                                   |                    |                      |                       |
| 12                       |            |                              |            |                                   |                    |                      |                       |

REMARKS  
w/o = 17  
Cleaned air bleed valve  
MAX. DEPTH = 20 m

|                                    |  |                           |  |                              |  |                     |  |
|------------------------------------|--|---------------------------|--|------------------------------|--|---------------------|--|
| VESSEL<br>NOAA Ship MILLER FREEMAN |  | PROJECT & LEG<br>MF-00-06 |  | DSD8 I.D.                    |  | STATION DESIGNATION |  |
| CONSC<br>CAST #                    |  | LATITUDE                  |  | LONGITUDE                    |  | DATE JD=            |  |
| DEG MIN                            |  | DEG MIN                   |  | DAY MO YR                    |  | TIME (GMT)          |  |
| 042 55 55.01 N                     |  | 166 10 29 W               |  | 09 MAY 00                    |  | 00 26               |  |
| SBE 9+                             |  | 91660                     |  | TIMES                        |  | JD/TIME             |  |
| PRESS SN                           |  | 29772                     |  | DATA ON                      |  | Tape/Diskette ID    |  |
| PRI TEMP SN                        |  | 889                       |  | START DOWN                   |  | File Name/Header    |  |
| SEC TEMP SN                        |  | 884                       |  | AT DEPTH                     |  | CTD042              |  |
| PRI COND SN                        |  | 480                       |  | AT SURFACE                   |  | MAX. DEPTH = 115 m  |  |
| SEC COND SN                        |  | 530                       |  | PAR SN 4242                  |  | FLUOR SN 153        |  |
| POS                                |  | TRIP                      |  | CTD CONVERTED MONITOR VALUES |  | SAMPLE BOTTLE DATA  |  |
| DEPTH                              |  | PRESSURE                  |  | PRI. TEMP.                   |  | SEC. TEMP.          |  |
| 1 bottom                           |  | 110                       |  |                              |  |                     |  |
| 2 75                               |  |                           |  |                              |  |                     |  |
| 3 50                               |  |                           |  |                              |  |                     |  |
| 4 46                               |  |                           |  |                              |  |                     |  |
| 5 30                               |  |                           |  |                              |  |                     |  |
| 6 20                               |  |                           |  |                              |  |                     |  |
| 7 10                               |  |                           |  |                              |  |                     |  |
| 8 0                                |  |                           |  |                              |  |                     |  |
| 9                                  |  |                           |  |                              |  |                     |  |
| 10                                 |  |                           |  |                              |  |                     |  |
| 11                                 |  |                           |  |                              |  |                     |  |
| 12                                 |  |                           |  |                              |  |                     |  |

Fluoro Scale Factor set to 10  
in Data File Before This Cast

|                                    |  |                           |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
|------------------------------------|--|---------------------------|--|------------------------------|--|--|--|---|--|----------|--|----------|--|----------|--|-----------|--|-------------|--|-----------|--|-----------|--|-------------|--|---------|--|--------------|--|--------------|--|
| VESSEL<br>NOAA Ship MILLER FREEMAN |  | PROJECT & LEG<br>MF-00-06 |  |                              |  | DSD8 I.D.  |  | STATION DESIGNATION                               |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| CONSC<br>CAST #                    |  | LATITUDE                  |  | LONGITUDE                    |  | DATE JD=   |  | TIME (GMT)  |  | DRY BULB |  | WET BULB |  | PRESSURE |  | SEA STATE |  | VISIBILITY  |  | WIND DIRL |  | WIND SPD. |  | CLOUD (amt) |  | WEATHER |  | BOTTOM DEPTH |  | STA. NAME/ID |  |
| 043                                |  | 5609.82 N                 |  | 16606.17 W                   |  | 09 MAY 00  |  | 0237  |  | 11.1     |  | 0.0274   |  | 70.0     |  | 51.3      |  | 862         |  | 1211      |  |           |  |             |  |         |  |              |  |              |  |
| SBE 9+                             |  | 91660                     |  | TIMES                        |  | JD/TIME  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| PRESS SN                           |  | 29772                     |  | DATA ON                      |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| PRI TEMP SN                        |  | 889                       |  | START DOWN                   |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| SEC TEMP SN                        |  | 884                       |  | AT DEPTH                     |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| PRI COND SN                        |  | 480                       |  | AT SURFACE                   |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| SEC COND SN                        |  | 530                       |  | PAR S/N 4242                 |  | <input checked="" type="checkbox"/> FLUOR SN 153 |  | <input checked="" type="checkbox"/> CHIAM S/N 109 |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| POS. TRIP DEPTH                    |  |                           |  | CTD CONVERTED MONITOR VALUES |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
|                                    |  | PRESSURE                  |  | PRI TEMP.                    |  | SEC TEMP   |  | SALINITY  |  | SALINITY |  | SAL.     |  | NUTR.    |  | CHL       |  | WHIT'S NUTR |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 1                                  |  | 8.1                       |  |                              |  |  |  |   |  |          |  | 04       |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 2                                  |  | 7.5                       |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 3                                  |  | 5.0                       |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 4                                  |  | 4.0                       |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 5                                  |  | 3.0                       |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 6                                  |  | 2.0                       |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 7                                  |  | 1.0                       |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 8                                  |  | 0                         |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 9                                  |  |                           |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 10                                 |  |                           |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 11                                 |  |                           |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |
| 12                                 |  |                           |  |                              |  |  |  |   |  |          |  |          |  |          |  |           |  |             |  |           |  |           |  |             |  |         |  |              |  |              |  |

98 = W/S

☒ Cleaned air bleed valve

MAX. DEPTH = 99 m

CTD043

|                                    |  |                           |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
|------------------------------------|--|---------------------------|--|------------------------------|--|-----------------------|--|-------------------------|--|------------------|--|------------------|--|----------|--|-----------|--|-----------------|--|--------------|--|-------------|--|---------|--|-----------------|--|-----------------|--|
| VESSEL<br>NOAA Ship MILLER FREEMAN |  | PROJECT & LEG<br>MF-00-06 |  |                              |  | DSDB I.D.             |  | STATION DESIGNATION     |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| CONSC<br>CAST #                    |  | LATITUDE<br>DEG MIN       |  | LONGITUDE<br>DEG MIN         |  | DATE JD=<br>DAY MO YR |  | TIME<br>(GMT)           |  | DRY<br>BULB      |  | WET<br>BULB      |  | PRESSURE |  | SEA STATE |  | WIND<br>DIRL    |  | WIND<br>SPD. |  | CLOUD (amt) |  | WEATHER |  | BOTTOM<br>DEPTH |  | STA.<br>NAME/ID |  |
| 04456                              |  | 03.54 N                   |  | 16620.10 W                   |  | 09 MAY 00             |  | 1825                    |  | 0.0              |  | 0.8              |  | 344      |  | 735       |  | 09              |  | 86           |  | 2           |  | 121     |  |                 |  |                 |  |
| SBE 9+                             |  | 91660                     |  | TIMES                        |  | JD/TIME               |  | DATA LOCATION           |  | Tape/Diskette ID |  | File Name/Header |  | REMARKS  |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| PRESS SN                           |  | 29772                     |  | DATA ON.                     |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| PRI TEMP SN                        |  | R89                       |  | START DOWN                   |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| SEC TEMP SN                        |  | R84                       |  | AT DEPTH                     |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| PRI COND SN                        |  | 480                       |  | AT SURFACE                   |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| SEC COND SN                        |  | 530                       |  | PAR S/N 4242                 |  | FLUOR S/N 153         |  | CHAM S/N 109            |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| POS.                               |  | TRIP<br>DEPTH             |  | CTD CONVERTED MONITOR VALUES |  | SAMPLE BOTTLE<br>DATA |  | SAMPLE BOTTLE<br>NUMBER |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
|                                    |  | PRESSURE                  |  | PRI TEMP.                    |  | SEC TEMP.             |  | SALINITY                |  | SALINITY         |  | SAL.             |  | NUTR.    |  | CHL.      |  | WHIT'S<br>NUTR. |  |              |  |             |  |         |  |                 |  |                 |  |
| 1                                  |  | 20                        |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 2                                  |  | 20                        |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 3                                  |  | 10                        |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 4                                  |  | 7                         |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 5                                  |  | 7                         |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 6                                  |  | 3                         |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 7                                  |  | 3                         |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 8                                  |  | 2                         |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 9                                  |  | 0                         |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 10                                 |  | 0                         |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 11                                 |  |                           |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |
| 12                                 |  |                           |  |                              |  |                       |  |                         |  |                  |  |                  |  |          |  |           |  |                 |  |              |  |             |  |         |  |                 |  |                 |  |

Cleaned air bleed valve  
MAX DEPTH = 113 m

REMARKS  
Salinity sample  
at 7 meters

☒ Cleaned air bleed valve

|             |  |                          |  |                              |  |                    |  |                      |  |                         |  |
|-------------|--|--------------------------|--|------------------------------|--|--------------------|--|----------------------|--|-------------------------|--|
| VESSEL      |  | NOAA Ship MILLER FREEMAN |  | PROJECT & LEG                |  | MF-00-06           |  | DSD8 I.D.            |  | STATION DESIGNATION     |  |
| CONSC       |  | LATITUDE                 |  | LONGITUDE                    |  | DATE JD=           |  | TIME (GMT)           |  | DRY BULB                |  |
| CAST #      |  | DEG MIN                  |  | DEG MIN                      |  | DAY MO YR          |  | HR MIN               |  | WET BULB                |  |
| 04656       |  | 23.38 N                  |  | 16523.53 W                   |  | 9 MAY 00           |  | 2246                 |  | 0.0-0.5353731010        |  |
| SBE 9+      |  | 91660                    |  | TIMES                        |  | JD/TIME            |  | DATA LOCATION        |  | REMARKS                 |  |
| PRESS SN    |  | 29772                    |  | DATA ON                      |  |                    |  | Tape/Diskette ID     |  | File Name/Header        |  |
| PRI TEMP SN |  | 889                      |  | START DOWN                   |  |                    |  | CTD 046              |  | 83 = 40                 |  |
| SEC TEMP SN |  | 884                      |  | AT DEPTH                     |  |                    |  |                      |  | Cleaned air bleed valve |  |
| PRI COND SN |  | 480                      |  | AT SURFACE                   |  |                    |  |                      |  | MAX. DEPTH = 81 m       |  |
| SEC COND SN |  | 530                      |  | PAR SN 4242                  |  | FLUOR SN 153       |  | CHAM SN 109          |  |                         |  |
| POS.        |  | TRIP                     |  | CTD CONVERTED MONITOR VALUES |  | SAMPLE BOTTLE DATA |  | SAMPLE BOTTLE NUMBER |  | SAMPLE BOTTLE NUMBER    |  |
| DEPTH       |  | PRESSURE                 |  | PRI TEMP.                    |  | SEC TEMP           |  | SALINITY             |  | SALINITY                |  |
| 1           |  |                          |  |                              |  |                    |  |                      |  | 29                      |  |
| 2           |  | Bot                      |  |                              |  |                    |  |                      |  | 315 L                   |  |
| 3           |  | 50                       |  |                              |  |                    |  |                      |  | 314 L                   |  |
| 4           |  | 40                       |  |                              |  |                    |  |                      |  | 313 L                   |  |
| 5           |  | 30                       |  |                              |  |                    |  |                      |  | 312 L                   |  |
| 6           |  | 20                       |  |                              |  |                    |  |                      |  | 311 L                   |  |
| 7           |  | 10                       |  |                              |  |                    |  |                      |  | 310 L                   |  |
| 8           |  | 0                        |  |                              |  |                    |  |                      |  | 309 L                   |  |
| 9           |  |                          |  |                              |  |                    |  |                      |  |                         |  |
| 10          |  |                          |  |                              |  |                    |  |                      |  |                         |  |
| 11          |  |                          |  |                              |  |                    |  |                      |  |                         |  |
| 12          |  |                          |  |                              |  |                    |  |                      |  |                         |  |



|                                    |          |                              |        |                         |     |                      |      |
|------------------------------------|----------|------------------------------|--------|-------------------------|-----|----------------------|------|
| VESSEL<br>NOAA Ship MILLER FREEMAN |          | PROJECT & LEG<br>MF-00-06    |        | DSDB I.D.               |     | STATION DESIGNATION  |      |
| CONSC<br>CAST #                    |          | LATITUDE                     |        | LONGITUDE               |     | DATE JD=             |      |
| 047                                | 5630.53N | 165                          | 00.05W | 10                      | MAY | 010                  | 0026 |
| DEG                                | MIN      | DEG                          | MIN    | DAY                     | MO  | YR                   | HR   |
|                                    |          |                              |        |                         |     |                      | MIN  |
| SBE 9+                             |          | TIMES                        |        | JD/TIME                 |     | DATA LOCATION        |      |
| PRESS SN 29772                     |          | DATA ON                      |        | Tape/Diskette ID        |     | File Name/Header     |      |
| PRI TEMP SN 889                    |          | START DOWN                   |        | CTD 047                 |     |                      |      |
| SEC TEMP SN 884                    |          | AT DEPTH                     |        |                         |     |                      |      |
| PRI COND SN 480                    |          | AT SURFACE                   |        |                         |     |                      |      |
| SEC COND SN 530                    |          | PAR S/N 4242                 |        | FLUOR SN 153            |     | CHIAM S/N 109        |      |
| POS. TRIP DEPTH                    |          | CTD CONVERTED MONITOR VALUES |        | SAMPLE BOTTLE DATA      |     | SAMPLE BOTTLE NUMBER |      |
| PRESSURE                           |          | PRI. TEMP.                   |        | SEC. TEMP.              |     | SALINITY             |      |
| 1 Bot                              |          |                              |        |                         |     | SAL. 08              |      |
| 2 50                               |          |                              |        |                         |     | 322L                 |      |
| 3 40                               |          |                              |        |                         |     | 321L                 |      |
| 4 30                               |          |                              |        |                         |     | 320L                 |      |
| 5 20                               |          |                              |        |                         |     | 319L                 |      |
| 6 10                               |          |                              |        |                         |     | 318L                 |      |
| 7 0                                |          |                              |        |                         |     | 317L                 |      |
| 8                                  |          |                              |        |                         |     | 316L                 |      |
| 9                                  |          |                              |        |                         |     |                      |      |
| 10                                 |          |                              |        |                         |     |                      |      |
| 11                                 |          |                              |        |                         |     |                      |      |
| 12                                 |          |                              |        |                         |     |                      |      |
| REMARKS                            |          | C20 = 77                     |        | Cleaned air bleed valve |     | MAX. DEPTH = 75 m    |      |
| TIME (GMT)                         |          | DRY BULB                     |        | WET BULB                |     | PRESSURE             |      |
| SEA STATE                          |          | VISIBILITY                   |        | WIND DIR.               |     | WIND SPD.            |      |
| CLOUD (amt)                        |          | WEATHER                      |        | BOTTOM DEPTH            |     | STA. NAME/ID         |      |
| 862                                |          | 80                           |        |                         |     |                      |      |

| VESSEL  |               | PROJECT & LEG                |               | DSDB I.D.            |                       | STATION DESIGNATION |                         |
|---|---------------|------------------------------|---------------|----------------------|-----------------------|---------------------|-------------------------|
| NOAA Ship MILLER FREEMAN                                    |               | MF-00-06                     |               |                      |                       |                     |                         |
| CONSC<br>CAST #   | LATITUDE      | LONGITUDE                    | DATE JD=      | TIME<br>(GMT)        | DRY<br>BULB           | WET<br>BULB         | SEA STATE<br>VISIBILITY |
| 0485637.59 N  | 116436.70 W   | 10                           | MAY 010       | 021211.9             | 1.535                 | 3732515             | 862                     |
| SBE 9+  | 91660         | TIMES                        | JD/TIME       | DATA LOCATION        |                       |                     |                         |
| PRESS SN  | 29772         | DATA ON.                     |               | Tape/Diskette ID     |                       |                     |                         |
| PRI TEMP SN   | 889           | START DOWN                   |               | File Name/Header     |                       |                     |                         |
| SEC TEMP SN   | 884           | AT DEPTH                     |               | CTD 048              |                       |                     |                         |
| PRI COND SN   | 480           | AT SURFACE                   |               |                      |                       |                     |                         |
| SEC COND SN   | 530           | PAR S/N 4242                 | FLUOR S/N 153 | CHIAM S/N 109        |                       |                     |                         |
| POS.  | TRIP<br>DEPTH | CTD CONVERTED MONITOR VALUES |               |                      | SAMPLE BOTTLE<br>DATA |                     |                         |
| 1   | Bot           | PRESSURE                     | PRI TEMP.     | SEC TEMP             | SALINITY              | SALINITY            | SAL. 19                 |
| 2   | 50            |                              |               |                      |                       |                     | 329 L                   |
| 3   | 40            |                              |               |                      |                       |                     | 328 L                   |
| 4   | 30            |                              |               |                      |                       |                     | 327 L                   |
| 5   | 20            |                              |               |                      |                       |                     | 326 L                   |
| 6   | 10            |                              |               |                      |                       |                     | 325 L                   |
| 7   | 0             |                              |               |                      |                       |                     | 324 L                   |
| 8   |               |                              |               |                      |                       |                     | 323 L                   |
| 9   |               |                              |               |                      |                       |                     |                         |
| 10  |               |                              |               |                      |                       |                     |                         |
| 11  |               |                              |               |                      |                       |                     |                         |
| 12  |               |                              |               |                      |                       |                     |                         |
| REMARKS   |               |                              |               | W0 = 68              |                       |                     |                         |
| <input checked="" type="checkbox"/> Cleaned air bleed valve |               |                              |               | MAX. DEPTH = 70 m    |                       |                     |                         |
| SAMPLE BOTTLE NUMBER  |               |                              |               | SAMPLE BOTTLE NUMBER |                       |                     |                         |

|                                    |  |                           |  |                      |  |                         |  |
|------------------------------------|--|---------------------------|--|----------------------|--|-------------------------|--|
| VESSEL<br>NOAA Ship MILLER FREEMAN |  | PROJECT & LEG<br>MF-00-06 |  | DSDB I.D.            |  | STATION DESIGNATION     |  |
| CONSC<br>CAST #                    |  | LATITUDE<br>DEG MIN       |  | LONGITUDE<br>DEG MIN |  | DATE JD=<br>DAY MO YR   |  |
| TIME<br>(GMT)                      |  | DRY<br>BULB               |  | WET<br>BULB          |  | SEA STATE<br>VISIBILITY |  |
| WIND<br>DIRL                       |  | WIND<br>SPD.              |  | CLOUD (amt)          |  | WEATHER                 |  |
| BOTTOM<br>DEPTH                    |  | STATION<br>NAME/ID        |  |                      |  |                         |  |
| SBE 9+<br>PRESS SN                 |  | 29772                     |  | TIMES<br>DATA ON.    |  | JD/TIME                 |  |
| PRI TEMP SN                        |  | 889                       |  | START DOWN           |  |                         |  |
| SEC TEMP SN                        |  | 884                       |  | AT DEPTH             |  |                         |  |
| PRI COND SN                        |  | 480                       |  | AT SURFACE           |  |                         |  |
| SEC COND SN                        |  | 530                       |  | PAR SN 4242          |  | FLUOR SN 153            |  |
|                                    |  |                           |  | CHAM SN 109          |  |                         |  |
| POS. TRIP<br>DEPTH                 |  | PRESSURE                  |  | PRI. TEMP.           |  | SEC. TEMP.              |  |
|                                    |  | SALINITY                  |  | SALINITY             |  | SALINITY                |  |
|                                    |  | SAL.                      |  | NUTR.                |  | CHL.                    |  |
|                                    |  | WHIT'S<br>NUTR.           |  |                      |  |                         |  |
| 1                                  |  | 6.8                       |  |                      |  | 17                      |  |
| 2                                  |  | 50                        |  |                      |  | 335L                    |  |
| 3                                  |  | 40                        |  |                      |  | 334L                    |  |
| 4                                  |  | 30                        |  |                      |  | 333L                    |  |
| 5                                  |  | 20                        |  |                      |  | 332L                    |  |
| 6                                  |  | 10                        |  |                      |  | 331L                    |  |
| 7                                  |  | 0                         |  |                      |  | 330L                    |  |
| 8                                  |  |                           |  |                      |  |                         |  |
| 9                                  |  |                           |  |                      |  |                         |  |
| 10                                 |  |                           |  |                      |  |                         |  |
| 11                                 |  |                           |  |                      |  |                         |  |
| 12                                 |  |                           |  |                      |  |                         |  |

REMARKS  
W0-64

Cleaned air bleed valve

MAX. DEPTH = 65 m

CTD 049

DATA LOCATION

Tape/Diskette ID File Name/Header

CTD CONVERTED MONITOR VALUES

|                                    |  |                              |  |   |  |   |  |
|------------------------------------|--|------------------------------|--|---|--|---|--|
| VESSEL<br>NOAA Ship MILLER FREEMAN |  | PROJECT & LEG<br>MF-00-06    |  | DSDB I.D.   |  | STATION DESIGNATION<br>43-15                                |  |
| CONSC<br>CAST #                    |  | LATITUDE                     |  | LONGITUDE   |  | DATE JD=  |  |
| DEG MIN                            |  | DEG MIN                      |  | DAY MO YR   |  | TIME (GMT)  |  |
| 050 56 52.71 N                     |  | 16 40 3.35 W                 |  | 10 MAY 01 02 01 4                                 |  | 1.8   |  |
| SBE 9+<br>PRESS SN 29772           |  | TIMES<br>DATA ON             |  | JD/TIME   |  | DATA LOCATION   |  |
| PRI TEMP SN 889                    |  | START DOWN                   |  | Tape/Diskette ID                                  |  | File Name/Header  |  |
| SEC TEMP SN 884                    |  | AT DEPTH                     |  | CTD050  |  | REMARKS<br>68 = 40  |  |
| PRI COND SN 480                    |  | AT SURFACE                   |  | MAX. DEPTH = 66 m                                 |  | <input checked="" type="checkbox"/> Cleaned air bleed valve |  |
| SEC COND SN 530                    |  | PAR S/N 4242                 |  | <input checked="" type="checkbox"/> FLUOR S/N 153 |  | <input checked="" type="checkbox"/> CHAM S/N 109            |  |
| POS. TRIP<br>DEPTH                 |  | CTD CONVERTED MONITOR VALUES |  | SAMPLE BOTTLE<br>DATA                             |  | SAMPLE BOTTLE NUMBER  |  |
| PRESSURE                           |  | PRI TEMP.                    |  | SEC TEMP  |  | SALINITY  |  |
| 1 21                               |  |                              |  |   |  | SAL. NUTR. CHL. WHITS<br>NUTR.                              |  |
| 2 21                               |  |                              |  |   |  | 342L  |  |
| 3 11                               |  |                              |  |   |  | 341L  |  |
| 4 8                                |  |                              |  |   |  | 340L  |  |
| 5 8                                |  |                              |  |   |  | -   |  |
| 6 4                                |  |                              |  |   |  | 339L  |  |
| 7 4                                |  |                              |  |   |  | -   |  |
| 8 3                                |  |                              |  |   |  | 338L  |  |
| 9 3                                |  |                              |  |   |  | -   |  |
| 10 1                               |  |                              |  |   |  | 337L  |  |
| 11 1                               |  |                              |  |   |  | -   |  |
| 12                                 |  |                              |  |   |  | -   |  |

no Salinity Tony W. reads all the water.

|                                    |  |                           |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
|------------------------------------|--|---------------------------|--|------------------------------|--|--|--|---|--|------------------|--|------------------|--|----------|--|-----------|--|------------|--|-----------|--|-----------|--|-------------|--|---------|--|--------------|--|-------------|--|
| VESSEL<br>NOAA Ship MILLER FREEMAN |  | PROJECT & LEG<br>MF-00-06 |  |                              |  | DSD8 I.D.  |  | STATION DESIGNATION<br>46-16                    |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| CONSC<br>CAST #                    |  | LATITUDE                  |  | LONGITUDE                    |  | DATE JD=   |  | TIME (GMT)                                      |  | DRY BULB         |  | WET BULB         |  | PRESSURE |  | SEA STATE |  | VISIBILITY |  | WIND DIRN |  | WIND SPD. |  | CLOUD (amt) |  | WEATHER |  | BOTTOM DEPTH |  | STA NAME/ID |  |
| 0515                               |  | 24.2                      |  | 116.4                        |  | 03.2   |  | 110   |  | MAY 01           |  | 2105             |  | 1.8      |  | 1.0       |  | 34.4       |  | 30.6      |  | 14        |  | 88          |  | 7       |  | 73           |  |             |  |
| SBE 9+                             |  | 91660                     |  | TIMES                        |  | JD/TIME  |  | DATA LOCATION                                   |  | Tape/Diskette ID |  | File Name/Header |  | REMARKS  |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| PRESS SN                           |  | 29772                     |  | DATA ON                      |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| PRI TEMP SN                        |  | 889                       |  | START DOWN                   |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| SEC TEMP SN                        |  | 884                       |  | AT DEPTH                     |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| PRI COND SN                        |  | 480                       |  | AT SURFACE                   |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| SEC COND SN                        |  | 530                       |  | PAR SN 4242                  |  | <input checked="" type="checkbox"/> FLUOR SN 153 |  | <input checked="" type="checkbox"/> CHAM SN 109 |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| POS                                |  | TRIP DEPTH                |  | CTD CONVERTED MONITOR VALUES |  | SAMPLE BOTTLE DATA                               |  | SAMPLE BOTTLE NUMBER                            |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 1                                  |  | 65                        |  | PRESSURE                     |  | PRI TEMP.  |  | SEC TEMP  |  | SALINITY         |  | SALINITY         |  | SAL      |  | NUTR      |  | CHL        |  | WHITS     |  |           |  |             |  |         |  |              |  |             |  |
| 2                                  |  | 40                        |  |                              |  |  |  |   |  |                  |  |                  |  | 10       |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 3                                  |  | 30                        |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 4                                  |  | 13                        |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 5                                  |  | 13                        |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 6                                  |  | 13                        |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 7                                  |  | 9                         |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 8                                  |  | 9                         |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 9                                  |  | 9                         |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 10                                 |  | 5                         |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 11                                 |  | 5                         |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |
| 12                                 |  | 5                         |  |                              |  |  |  |   |  |                  |  |                  |  |          |  |           |  |            |  |           |  |           |  |             |  |         |  |              |  |             |  |

\* NOTE  
REVERSE  
BOTTLE ORDER  
FOR NUTRIENTS

Ended up with 65, 65, 40, 30  
13, 13, 13, 9, 9, 9

Rosette two up on first bottle

W/O = 62

☒ Cleaned air bleed valve  
MAX. DEPTH = 65 m

\* Keweenaw  
Order

added cost to pick up 5 m samples