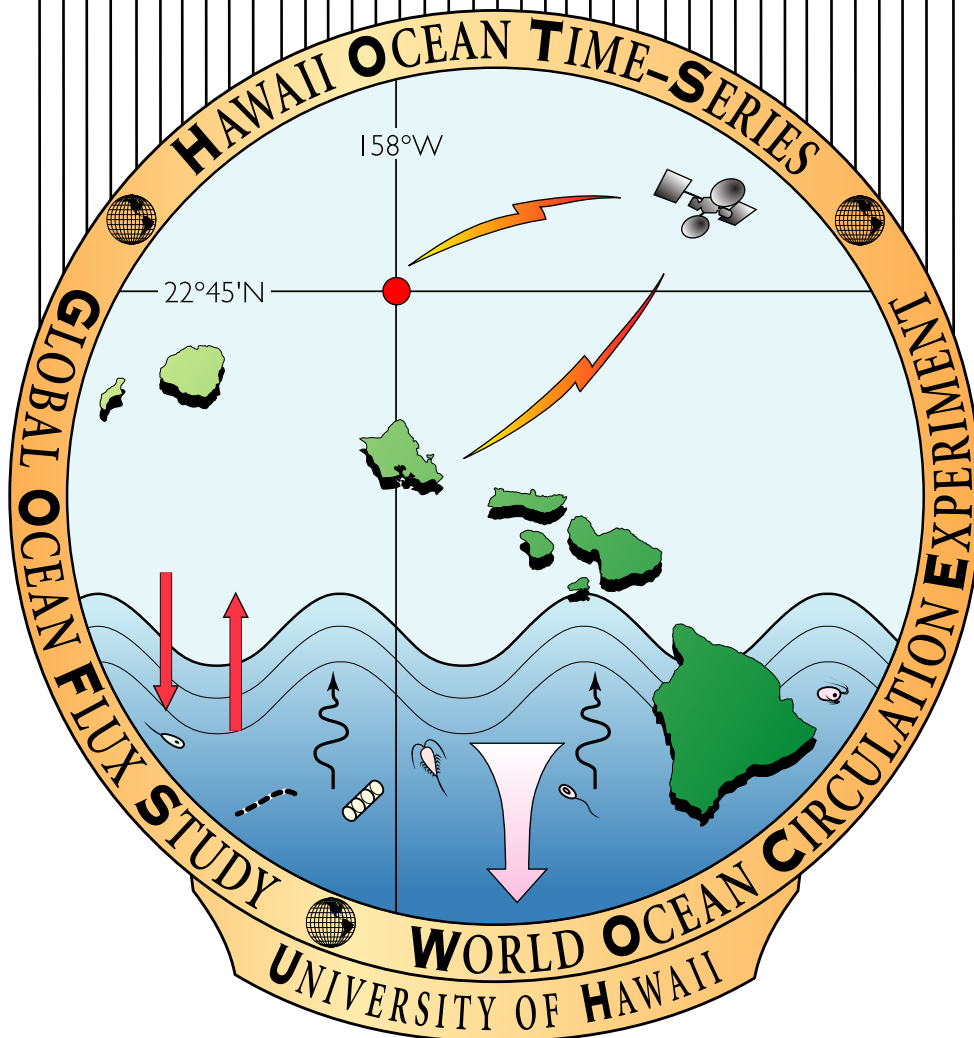


# Hawaii Ocean Time-series Program

# HOT 527



# Hawaii Ocean Time-Series

## HOT-305

### KAHE Station Data Sheet

Station #           1            
 Cast #           1            
 Operator(s):   TC,AW,DS,ES  

Date:       9-9-2018       (HST)  
 Time:       1315       (HST)

| Rosette Position | Desired Depth | Oxygen  | Sample Temp. | DIC/Alk | pH    | Nuts | LLN/LLP | Chl <i>a</i> |  |
|------------------|---------------|---------|--------------|---------|-------|------|---------|--------------|--|
| 1                | <b>1000</b>   | 1       | 6.6          |         |       |      |         |              |  |
| 2                | <b>750</b>    | 2,3,4   | 7.9          |         |       |      |         |              |  |
| 3                | <b>500</b>    | 5       | 9.2          |         |       |      |         |              |  |
| 4                | <b>350</b>    | 6       | 12.6         |         |       | 4    |         |              |  |
| 5                | <b>250</b>    | 7       | 14.9         |         |       | 5    |         |              |  |
| 6                | <b>200</b>    |         |              |         |       |      |         |              |  |
| 7                | <b>175</b>    |         |              |         |       |      |         | 7            |  |
| 8                | <b>150</b>    | 8       | 20.5         |         |       | 8    | 8       | 8            |  |
| 9                | <b>125</b>    |         |              |         |       |      |         | 9            |  |
| 10               | <b>100</b>    | 9,10,11 | 23.7         |         |       | 10   | 10      | 10A-B        |  |
| 11               | <b>75</b>     |         |              |         |       |      |         | 11           |  |
| 12               | <b>45</b>     | 12      | 26.4         | 12      | 1     | 12   | 12      | 12           |  |
| 13               | <b>25</b>     | 13      | 26.6         | 13      | 2     |      |         | 13A-B        |  |
| 14               | <b>5</b>      | 14      | 27.1         | 14      | 3,4,5 | 14   | 14      | 14           |  |
| 15               | <b>5</b>      | QC      | 27.1         |         |       |      |         |              |  |
| 16               |               |         |              |         |       |      |         |              |  |
| 17               |               |         |              |         |       |      |         |              |  |
| 18               |               |         |              |         |       |      |         |              |  |
| 19               |               |         |              |         |       |      |         |              |  |
| 20               |               |         |              |         |       |      |         |              |  |
| 21               |               |         |              |         |       |      |         |              |  |
| 22               |               |         |              |         |       |      |         |              |  |
| 23               |               |         |              |         |       |      |         |              |  |
| 24               |               |         |              |         |       |      |         |              |  |

Notes:

# Hawaii Ocean Time-Series

## HOT-305

### KAHE Station Data Sheet

Station # 1

Date: 9-9-2018 (HST)

Cast # 1

Time: 13:15 (HST)

Operator(s): TC, AWDS, FS

| Rosette Position | Desired Depth | Oxygen  | Sample Temp. | DIC/Alk | pH    | Nuts | LLN/LLP | Chl <i>a</i> |  |
|------------------|---------------|---------|--------------|---------|-------|------|---------|--------------|--|
| 1                | 1000          | 1       | 6.6          |         |       |      |         |              |  |
| 2                | 750           | 2,3,4   | 7.9          |         |       |      |         |              |  |
| 3                | 500           | 5       | 9.2          |         |       |      |         |              |  |
| 4                | 350           | 6       | 12.6         |         |       | 4    |         |              |  |
| 5                | 250           | 7       | 14.9         |         |       | 5    |         |              |  |
| 6                | 200           |         | 16.9         |         |       |      |         |              |  |
| 7                | 175           |         |              |         |       |      |         | 7            |  |
| 8                | 150           | 8       | 20.5         |         |       | 8    | 8       | 8            |  |
| 9                | 125           |         |              |         |       |      |         | 9            |  |
| 10               | 100           | 9,10,11 | 23.7         |         |       | 10   | 10      | 10A-B        |  |
| 11               | 75            |         |              |         |       |      |         | 11           |  |
| 12               | 45            | 12      | 26.4         | 12      | 1     | 12   | 12      | 12           |  |
| 13               | 25            | 13      | 26.6         | 13      | 2     |      |         | 13A-B        |  |
| 14               | 5             | 14      | 27.1         | 14      | 3,4,5 | 14   | 14      | 14           |  |
| 15               | 5             | QC      | 27.1         |         |       |      |         |              |  |
| 16               |               |         |              |         |       |      |         |              |  |
| 17               |               |         |              |         |       |      |         |              |  |
| 18               |               |         |              |         |       |      |         |              |  |
| 19               |               |         |              |         |       |      |         |              |  |
| 20               |               |         |              |         |       |      |         |              |  |
| 21               |               |         |              |         |       |      |         |              |  |
| 22               |               |         |              |         |       |      |         |              |  |
| 23               |               |         |              |         |       |      |         |              |  |
| 24               |               |         |              |         |       |      |         |              |  |

Notes:

# Hawaii Ocean Time-series

## HOT-305 Primary Production Data Sheet

Station #                   2                    
 Cast #                       1                    
 Operator(s):   TB, RT, KB, CF                  

Date:           9/10/2018           (HST)  
 Time:           0200           (HST)

| Rosette Position | Desired Depth  | Light Bottle | Chl <i>a</i> FCM | KB | SFS | SF-S O2 | Temp |
|------------------|----------------|--------------|------------------|----|-----|---------|------|
| 1                | <b>200</b>     |              |                  |    |     |         |      |
| 2                | <b>Sal min</b> |              |                  |    |     |         |      |
| 3                | <b>175</b>     |              | 3A-B             |    |     |         |      |
| 4                | <b>150</b>     |              | 4A-B             |    |     |         |      |
| 5                | <b>125</b>     | 3-1          | 5                |    | X   |         |      |
| 6                | <b>125</b>     | 3-2          | 6                |    | X   |         |      |
| 7                | <b>125</b>     | 3-3          | 7                |    | X   |         |      |
| 8                | <b>100</b>     | 4-1          | 8                |    | X   |         |      |
| 9                | <b>100</b>     | 4-2          | 9                |    | X   |         |      |
| 10               | <b>100</b>     | 4-3          | 10               |    | X   |         |      |
| 11               | <b>75</b>      | 5-1          | 11               |    | X   |         |      |
| 12               | <b>75</b>      | 5-2          | 12               |    | X   |         |      |
| 13               | <b>75</b>      | 5-3          | 13               |    | X   |         |      |
| 14               | <b>45</b>      | 6-1          | 14               |    | X   |         |      |
| 15               | <b>45</b>      | 6-2          | 15               |    | X   |         |      |
| 16               | <b>45</b>      | 6-3          | 16               |    | X   |         |      |
| 17               | <b>25</b>      | 7-1          | 17               |    | X   |         |      |
| 18               | <b>25</b>      | 7-2          | 18               |    | X   |         |      |
| 19               | <b>25</b>      | 7-3          | 19               |    | X   |         |      |
| 20               | <b>15</b>      |              |                  |    |     | X       |      |
| 21               | <b>5</b>       | 8-1          | 21               |    | X   |         |      |
| 22               | <b>5</b>       | 8-2          | 22               |    | X   |         |      |
| 23               | <b>5</b>       | 8-3          | 23               |    | X   |         |      |
| 24               | <b>5</b>       |              |                  | X  |     |         |      |

Notes:

# Hawaii Ocean Time-series

## HOT-305 Primary Production Data Sheet

Station # 2  
 Cast # 1  
 Operator(s): TB, RT, KB, CF

Date: 9/10/2018 (HST)  
 Time: \_\_\_\_\_ (HST)

| Rosette Position | Desired Depth | Light Bottle | Chl <i>a</i> FCM | KB | SFS          | SF-S O2 | Temp |
|------------------|---------------|--------------|------------------|----|--------------|---------|------|
| 1                | 200           |              |                  |    |              |         |      |
| 2                | Sal min       |              |                  |    |              |         |      |
| 3                | 175           |              | 3A-B             |    | <del>X</del> |         |      |
| 4                | 150           |              | 4A-B             |    | <del>X</del> |         |      |
| 5                | 125           | 3-1          | 5                |    | X            |         |      |
| 6                | 125           | 3-2          | 6                |    | X            |         |      |
| 7                | 125           | 3-3          | 7                |    | X            |         |      |
| 8                | 100           | 4-1          | 8                |    | X            |         |      |
| 9                | 100           | 4-2          | 9                |    | X            |         |      |
| 10               | 100           | 4-3          | 10               |    | X            |         |      |
| 11               | 75            | 5-1          | 11               |    | X            |         |      |
| 12               | 75            | 5-2          | 12               |    | X            |         |      |
| 13               | 75            | 5-3          | 13               |    | X            |         |      |
| 14               | 45            | 6-1          | 14               |    | X            |         |      |
| 15               | 45            | 6-2          | 15               |    | X            |         |      |
| 16               | 45            | 6-3          | 16               |    | X            |         |      |
| 17               | 25            | 7-1          | 17               |    | X            |         |      |
| 18               | 25            | 7-2          | 18               |    | X            |         |      |
| 19               | 25            | 7-3          | 19               |    | X            |         |      |
| 20               | 15            |              |                  |    |              | X       |      |
| 21               | 5             | 8-1          | 21               |    | X            |         |      |
| 22               | 5             | 8-2          | 22               |    | X            |         |      |
| 23               | 5             | 8-3          | 23               |    | X            |         |      |
| 24               | 5             |              |                  | X  |              |         |      |

Notes:

# Hawaii Ocean Time-series

## HOT-305

### WOCE Deep Data Sheet

Station # 2  
 Cast # 2  
 Operator(s): DS,TC,ES

Date: 9/10/18 (HST)  
 Time: 0500 (HST)

| Rosette Position | Desired Depth | Oxygen   | Sample Temp. | DIC/ Alk | pH    | DOC   | Nutrient | Refrig. Si |  |
|------------------|---------------|----------|--------------|----------|-------|-------|----------|------------|--|
| 1                | 4800          | 15       | 3.8          |          |       |       | 1        | 1          |  |
| 2                | 4600          | 16       | 3.9          |          |       |       | 2        | 2          |  |
| 3                | 4500          | 17,18,19 | 4.0          | 3A-B     | 1,2,3 | 3ABC  | 3A-B     | 3A-B       |  |
| 4                | 4400          | 20       | 3.8          |          |       |       | 4        | 4          |  |
| 5                | 4200          | 21       | 3.7          |          |       |       | 5        | 5          |  |
| 6                | 4000          | 22       | 3.8          |          |       |       | 6        | 6          |  |
| 7                | 3800          | 23,24,25 | 4.2          |          |       | 7ABC  | 7A-B     | 7A-B       |  |
| 8                | 3600          | 26       | 3.9          |          |       |       | 8        | 8          |  |
| 9                | 3400          | 27       | 4.0          |          |       |       | 9        | 9          |  |
| 10               | 3200          | 28       | 4.0          |          |       |       | 10       | 10         |  |
| 11               | 3000          | 29,30,31 | 4.3          | 11       | 4     | 11ABC | 11A-B    | 11A-B      |  |
| 12               | 2800          | 32       | 4.1          |          |       |       | 12       | 12         |  |
| 13               | 2600          | 33       | 4.1          |          |       |       | 13       | 13         |  |
| 14               | 2400          | 34       | 4.3          |          |       |       | 14       | 14         |  |
| 15               | 2200          | 35       | 4.5          |          |       |       | 15       | 15         |  |
| 16               | 2000          | 36       | 4.6          | 16       | 5     | 16ABC | 16A-B    | 16A-B      |  |
| 17               | 1800          | 37,38,39 | 5.0          |          |       |       | 17       | 17         |  |
| 18               | 1600          | 150      | 5.0          |          |       |       | 18       | 18         |  |
| 19               | 1400          | 41       | 5.3          |          |       |       | 19       | 19         |  |
| 20               | 1200          | 42       | 5.6          |          |       |       | 20       | 20         |  |
| 21               | 1000          | 43       | 5.9          |          |       |       | 21       | 21         |  |
| 22               | 750           | 44       | 6.6          |          |       |       | 22       | 22         |  |
| 23               | 500           | 45       | 8.8          |          |       |       | 23       | 23         |  |
| 24               | 5             | 46       | 26.5         |          |       |       | 24       |            |  |

Notes:

# Hawaii Ocean Time-series

## HOT-305

### WOCE Deep Data Sheet

Station # 2

Cast # 2

Operator(s): DS,TC,ES

Date: 9/10/18 (HST)

Time: 0500 (HST)

| Rosette Position | Desired Depth | Oxygen   | Sample Temp. | DIC/Alk | pH    | DOC   | Nutrient | Refrig. Si |  |
|------------------|---------------|----------|--------------|---------|-------|-------|----------|------------|--|
| 1                | 4800          | 15       | 3.8          |         |       |       | 1        | 1          |  |
| 2                | 4600          | 16       | 3.9          |         |       |       | 2        | 2          |  |
| 3                | 4500          | 17,18,19 | 4.0          | 3A-B    | 1,2,3 | 3ABC  | 3A-B     | 3A-B       |  |
| 4                | 4400          | 20       | 3.8          |         |       |       | 4        | 4          |  |
| 5                | 4200          | 21       | 3.7          |         |       |       | 5        | 5          |  |
| 6                | 4000          | 22       | 3.8          |         |       |       | 6        | 6          |  |
| 7                | 3800          | 23,24,25 | 4.2          |         |       | 7ABC  | 7A-B     | 7A-B       |  |
| 8                | 3600          | 26       | 3.9          |         |       |       | 8        | 8          |  |
| 9                | 3400          | 27       | 4.0          |         |       |       | 9        | 9          |  |
| 10               | 3200          | 28       | 4.0          |         |       |       | 10       | 10         |  |
| 11               | 3000          | 29,30,31 | 4.3          | 11      | 4     | 11ABC | 11A-B    | 11A-B      |  |
| 12               | 2800          | 32       | 4.1          |         |       |       | 12       | 12         |  |
| 13               | 2600          | 33       | 4.1          |         |       |       | 13       | 13         |  |
| 14               | 2400          | 34       | 4.3          |         |       |       | 14       | 14         |  |
| 15               | 2200          | 35       | 4.5          |         |       |       | 15       | 15         |  |
| 16               | 2000          | 36       | 4.6          | 16      | 5     | 16ABC | 16A-B    | 16A-B      |  |
| 17               | 1800          | 37,38,39 | 5.0          |         |       |       | 17       | 17         |  |
| 18               | 1600          | 150      | 5.6          |         |       |       | 18       | 18         |  |
| 19               | 1400          | 41       | 5.3          |         |       |       | 19       | 19         |  |
| 20               | 1200          | 42       | 5.6          |         |       |       | 20       | 20         |  |
| 21               | 1000          | 43       | 5.9          |         |       |       | 21       | 21         |  |
| 22               | 750           | 44       | 6.6          |         |       |       | 22       | 22         |  |
| 23               | 500           | 45       | 8.8          |         |       |       | 23       | 23         |  |
| 24               | 5             | 46       | 26.5         |         |       |       | 24       |            |  |

Notes:

# Hawaii Ocean Time-series

## HOT-305

### PO Shallow Data Sheet

Station #                   2                    
 Cast #                     3                      
 Operator(s):   DS, AW, TC, ES                  

Date:           9/10/2018           (HST)  
 Time:           11:08           (HST)

| Rosette Position | Desired Depth | Oxygen   | Sample Temp. | DIC/Alk | pH  | DOC | Nutrient | Refrig. Si | Replicate Depths |
|------------------|---------------|----------|--------------|---------|-----|-----|----------|------------|------------------|
| 1                | <b>1020</b>   | 47,48,49 | 7.0          | 1       | 1   | 1   | 1A-B     | 1A-B       | <b>1020</b>      |
| 2                | <b>966</b>    | 50       | 6.9          |         |     |     | 2        | 2          |                  |
| 3                | <b>912</b>    | 51       | 6.8          |         |     |     | 3        | 3          |                  |
| 4                | <b>858</b>    | 52       | 7.1          |         |     |     | 4        | 4          |                  |
| 5                | <b>780</b>    | 53       | 7.1          |         |     |     | 5        | 5          |                  |
| 6                | <b>743</b>    | 54,55,56 | 7.7          | 6       | 2   | 6   | 6        | 6          | <b>750</b>       |
| 7                | <b>692</b>    | 57       | 7.6          |         |     |     | 7        | 7          |                  |
| 8                | <b>625</b>    | 58       | 7.7          |         |     |     | 8        | 8          |                  |
| 9                | <b>575</b>    | 59       | 8.2          | 9       | 3   | 9   | 9        | 9          | <b>600</b>       |
| 10               | <b>526</b>    | 60       | 8.8          |         |     |     | 10A-B    | 10A-B      | <b>525</b>       |
| 11               | <b>493</b>    | 61       | 9.2          | 11      | 4   | 11  | 11       | 11         | <b>500</b>       |
| 12               | <b>452</b>    | 62,63,64 | 10.0         |         |     |     | 12       | 12         |                  |
| 13               | <b>410</b>    | 65       | 10.5         |         |     |     | 13       | 13         |                  |
| 14               | <b>347</b>    | 66       | 12.0         | 14AB    | 5,6 | 14  | 14       | 14         | <b>350</b>       |
| 15               | <b>294</b>    | 67       | 13.0         |         |     |     | 15       |            |                  |
| 16               | <b>242</b>    | 68,69,70 | 15.1         | 16      | 7   | 16  | 16       |            | <b>250/225</b>   |
| 17               | <b>190</b>    | 71       | 16.8         |         |     |     | 17       |            |                  |
| 18               | <b>140</b>    | 72       | 19.3         |         |     |     | 18 A-B   |            |                  |
| 19               | <b>94</b>     | 73       | 21.2         |         |     |     | 19       |            | <b>150</b>       |
| 20               | <b>62</b>     | 74       | 23.0         |         |     |     | 20       |            |                  |
| 21               | <b>40</b>     | 75       | 24.3         |         |     |     | 21       |            |                  |
| 22               | <b>34</b>     | 76       | 25.2         |         |     |     | 22       |            |                  |
| 23               | <b>13</b>     | 77       | 26.9         |         |     |     | 23       |            |                  |
| 24               | <b>5</b>      | 78       | 27.0         |         |     |     | 24       |            |                  |

Notes:



# Hawaii Ocean Time-series

**HOT-305**

## PO Shallow Data Sheet

Station # 2  
 Cast # 3  
 Operator(s): DS, AW, TC, ES

Date: 9/10/2018 (HST)  
 Time: 11:08 (HST)

| Rosette Position | Desired Depth | Oxygen   | Sample Temp. | DIC/Alk | pH  | DOC | Nutrient | Refrig. Si | Replicate Depths |
|------------------|---------------|----------|--------------|---------|-----|-----|----------|------------|------------------|
| 1                | 1020          | 47,48,49 | 7.0          | 1       | 1   | 1   | 1A-B     | 1A-B       | 1020             |
| 2                | 966           | 50       | 6.9          |         |     |     | 2        | 2          |                  |
| 3                | 912           | 51       | 6.8          |         |     |     | 3        | 3          |                  |
| 4                | 858           | 52       | 7.1          |         |     |     | 4        | 4          |                  |
| 5                | 780           | 53       | 7.1          |         |     |     | 5        | 5          |                  |
| 6                | 743           | 54,55,56 | 7.7          | 6       | 2   | 6   | 6        | 6          | 750              |
| 7                | 692           | 57       | 7.6          |         |     |     | 7        | 7          |                  |
| 8                | 625           | 58       | 7.7          |         |     |     | 8        | 8          |                  |
| 9                | 575           | 59       | 8.2          | 9       | 3   | 9   | 9        | 9          | 600              |
| 10               | 526           | 60       | 8.8          |         |     |     | 10A-B    | 10A-B      | 525              |
| 11               | 493           | 61       | 9.2          | 11      | 4   | 11  | 11       | 11         | 500              |
| 12               | 452           | 62,63,64 | 10.0         |         |     |     | 12       | 12         |                  |
| 13               | 410           | 65       | 10.5         |         |     |     | 13       | 13         |                  |
| 14               | 347           | 66       | 12.0         | 14AB    | 5,6 | 14  | 14       | 14         | 350              |
| 15               | 294           | 67       | 13.0         |         |     |     | 15       |            |                  |
| 16               | 242           | 68,69,70 | 15.1         | 16      | 7   | 16  | 16       |            | 250/225          |
| 17               | 190           | 71       | 16.8         |         |     |     | 17       |            |                  |
| 18               | 140           | 72       | 19.3         |         |     |     | 18 A-B   |            |                  |
| 19               | 94            | 73       | 21.2         |         |     |     | 19       |            | 150              |
| 20               | 62            | 74       | 23.0         |         |     |     | 20       |            |                  |
| 21               | 40            | 75       | 24.3         |         |     |     | 21       |            |                  |
| 22               | 34            | 76       | 25.2         |         |     |     | 22       |            |                  |
| 23               | 13            | 77       | 26.9         |         |     |     | 23       |            |                  |
| 24               | 5             | 78       | 27.0         |         |     |     | 24       |            |                  |

Notes:

# Hawaii Ocean Time-series

## HOT- 305

### PC/PN Data Sheet

Station # 2 Date: 9/10/2018 (HST)  
 Cast # 4 Time: 1420 (HST)  
 Operator(s): CF, KB, TB, RT Pre-screen mesh size: 202 um  
 Blank #'s B1 B2 B3

| Rosette Position | Desired Depth  | Carboy # | Total Volume | Sample # | DNA |  |  |
|------------------|----------------|----------|--------------|----------|-----|--|--|
| 1                | <b>1000</b>    |          |              |          |     |  |  |
| 2                | <b>700</b>     |          |              |          |     |  |  |
| 3                | <b>Sal Min</b> |          |              |          |     |  |  |
| 4                | <b>350</b>     | 1        | 10           | 4        |     |  |  |
| 5                | <b>350</b>     | 2        | 10           | 5        |     |  |  |
| 6                | <b>250</b>     | 3        | 10           | 6        |     |  |  |
| 7                | <b>200</b>     | 4        | 10           | 7        |     |  |  |
| 8                | <b>175</b>     | 5        | 10           | 8        |     |  |  |
| 9                | <b>150</b>     | 6        | 10           | 9        |     |  |  |
| 10               | <b>125</b>     | 7,8      | 4,4          | 10A-B    |     |  |  |
| 11               | <b>100</b>     | 9        | 4            | 11       |     |  |  |
| 12               | <b>75</b>      | 10       | 4            | 12       |     |  |  |
| 13               | <b>75</b>      |          |              |          | X   |  |  |
| 14               | <b>45</b>      | 11       | 4            | 14       |     |  |  |
| 15               | <b>45</b>      |          |              |          | X   |  |  |
| 16               | <b>25</b>      | 12,13    | 4,4          | 16A-B    |     |  |  |
| 17               | <b>25</b>      |          |              |          | X   |  |  |
| 18               | <b>5</b>       | 14       | 4            | 18       |     |  |  |
| 19               | <b>5</b>       |          |              |          | X   |  |  |
| 20               |                |          |              |          |     |  |  |
| 21               |                |          |              |          |     |  |  |
| 22               |                |          |              |          |     |  |  |
| 23               |                |          |              |          |     |  |  |
| 24               |                |          |              |          |     |  |  |

**Notes: Had some problems with the pressure regulator. Too much pressure went through some of the carboys. Filter from carboy #7 was ripped. Lots of leaks in carboy # 1 (>2 L lost).**

# Hawaii Ocean Time-series

HOT- 305

## PC/PN Data Sheet

Station # 2 Date: 9/10/2018 (HST)  
 Cast # 4 Time: 1400 (HST)  
 Operator(s): CF, KB, TB, RT Pre-screen mesh size: 202 um  
 Blank #'s B1 B2 B3

| Rosette Position | Desired Depth  | Carboy # | Total Volume | Sample # | DNA |  |  |
|------------------|----------------|----------|--------------|----------|-----|--|--|
| 1                | <b>1000</b>    |          |              |          |     |  |  |
| 2                | <b>700</b>     |          |              |          |     |  |  |
| 3                | <b>Sal Min</b> |          |              |          |     |  |  |
| 4                | <b>350</b>     | 1        | 10           | 4        |     |  |  |
| 5                | <b>350</b>     | 2        | 10           | 5        |     |  |  |
| 6                | <b>250</b>     | 3        | 10           | 6        |     |  |  |
| 7                | <b>200</b>     | 4        | 10           | 7        |     |  |  |
| 8                | <b>175</b>     | 5        | 10           | 8        |     |  |  |
| 9                | <b>150</b>     | 6        | 10           | 9        |     |  |  |
| 10               | <b>125</b>     | 7,8      | 4,4          | 10A-B    |     |  |  |
| 11               | <b>100</b>     | 9        | 4            | 11       |     |  |  |
| 12               | <b>75</b>      | 10       | 4            | 12       |     |  |  |
| 13               | <b>75</b>      |          |              |          | X   |  |  |
| 14               | <b>45</b>      | 11       | 4            | 14       |     |  |  |
| 15               | <b>45</b>      |          |              |          | X   |  |  |
| 16               | <b>25</b>      | 12,13    | 4,4          | 16A-B    |     |  |  |
| 17               | <b>25</b>      |          |              |          | X   |  |  |
| 18               | <b>5</b>       | 14       | 4            | 18       |     |  |  |
| 19               | <b>5</b>       |          |              |          | X   |  |  |
| 20               |                |          |              |          |     |  |  |
| 21               |                |          |              |          |     |  |  |
| 22               |                |          |              |          |     |  |  |
| 23               |                |          |              |          |     |  |  |
| 24               |                |          |              |          |     |  |  |

Notes: Had some problems w/ the pressure regulator. Too much pressure went through some. :)  
 Filter (carboy #7) was broken.

# Hawaii Ocean Time-series

## HOT- 305

### Particulate Phosphorus Data Sheet

Station # 2 Date: 9/10/2018 (HST)  
 Cast # 5 Time: 17:05 (HST)  
 Operator(s): RT, TB, KB, CF Pre-screen mesh size: 202 um  
 Blank #'s B1 B2 B3

| Rosette Position | Desired Depth  | Carboy # | Total Volume | Sample # | SF-S   | O2 SF-S | Temp |  |
|------------------|----------------|----------|--------------|----------|--------|---------|------|--|
| 1                | <b>1000</b>    |          |              |          |        |         |      |  |
| 2                | <b>Sal min</b> |          |              |          |        |         |      |  |
| 3                | <b>350</b>     | 1        | 10           | 3        |        |         |      |  |
| 4                | <b>350</b>     | 2        | 10           | 4        |        |         |      |  |
| 5                | <b>250</b>     | 3        | 10           | 5        |        |         |      |  |
| 6                | <b>200</b>     | 4        | 10           | 6        |        |         |      |  |
| 7                | <b>175</b>     | 5        | 10           | 7        |        |         |      |  |
| 8                | <b>150</b>     | 6        | 10           | 8        |        |         |      |  |
| 9                | <b>125</b>     | 7,8      | 4,4          | 9A-B     |        |         |      |  |
| 10               | <b>100</b>     | 9        | 4            | 10       |        |         |      |  |
| 11               | <b>75</b>      | 10       | 4            | 11       |        |         |      |  |
| 12               | <b>45</b>      | 11       | 4            | 12       |        |         |      |  |
| 13               | <b>25</b>      | 12,13    | 4,4          | 13A-B    |        |         |      |  |
| 14               | <b>25</b>      |          |              |          | 14A,B  |         |      |  |
| 15               | <b>15</b>      |          |              |          |        | X       |      |  |
| 16               | <b>5</b>       | 14       | 4            | 16       |        |         |      |  |
| 17               | <b>5</b>       |          |              |          | 17 A,B |         |      |  |
| 18               |                |          |              |          |        |         |      |  |
| 19               |                |          |              |          |        |         |      |  |
| 20               |                |          |              |          |        |         |      |  |
| 21               |                |          |              |          |        |         |      |  |
| 22               |                |          |              |          |        |         |      |  |
| 23               |                |          |              |          |        |         |      |  |
| 24               |                |          |              |          |        |         |      |  |

**Notes: Carboy filter # 8 torn**

# Hawaii Ocean Time-series

## HOT- 305

### Particulate Phosphorus Data Sheet

Station # 2 Date: 9/10/2018 (HST)  
 Cast # 5 Time: 17:05 (HST)  
 Operator(s): RT, TB, KB, CF Pre-screen mesh size: 202 um  
 Blank #'s B1 B2 B3

| Rosette Position | Desired Depth  | Carboy # | Total Volume | Sample # | SF-S   | O2 SF-S | Temp |
|------------------|----------------|----------|--------------|----------|--------|---------|------|
| 1                | <b>1000</b>    |          |              |          |        |         |      |
| 2                | <b>Sal min</b> |          |              |          |        |         |      |
| 3                | <b>350</b>     | 1        | 10           | 3        |        |         |      |
| 4                | <b>350</b>     | 2        | 10           | 4        |        |         |      |
| 5                | <b>250</b>     | 3        | 10           | 5        |        |         |      |
| 6                | <b>200</b>     | 4        | 10           | 6        |        |         |      |
| 7                | <b>175</b>     | 5        | 10           | 7        |        |         |      |
| 8                | <b>150</b>     | 6        | 10           | 8        |        |         |      |
| 9                | <b>125</b>     | 7,8      | 4,4          | 9A-B     |        |         |      |
| 10               | <b>100</b>     | 9        | 4            | 10       |        |         |      |
| 11               | <b>75</b>      | 10       | 4            | 11       |        |         |      |
| 12               | <b>45</b>      | 11       | 4            | 12       |        |         |      |
| 13               | <b>25</b>      | 12,13    | 4,4          | 13A-B    |        |         |      |
| 14               | <b>25</b>      |          |              |          | 18 A,B |         |      |
| 15               | <b>15</b>      |          |              |          |        | X       | 27.1 |
| 16               | <b>5</b>       | 14       | 4            | 16       |        |         |      |
| 17               | <b>5</b>       |          |              |          | 21 A,B |         |      |
| 18               |                |          |              |          |        |         |      |
| 19               |                |          |              |          |        |         |      |
| 20               |                |          |              |          |        |         |      |
| 21               |                |          |              |          |        |         |      |
| 22               |                |          |              |          |        |         |      |
| 23               |                |          |              |          |        |         |      |
| 24               |                |          |              |          |        |         |      |

Notes: Carboy filter 8 torn

# Hawaii Ocean Time-series

## HOT-305

### BEACH Shallow Data Sheet (1/2)

Station # 2  
 Cast # 6  
 Operator(s): TB, RT, KB, CF

Date: 9/10/2018 (HST)  
 Time: 20:00 (HST)

| Rosette Position | Desired Depth            | Oxygen   | Sample Temp. | DIC/ALK | Quay DIC | Keeling DIC | SF-S  | pH  | DOC |
|------------------|--------------------------|----------|--------------|---------|----------|-------------|-------|-----|-----|
| 1                | <b>1000</b>              | 79       | 6.9          |         |          |             |       |     |     |
| 2                | <b>O<sub>2</sub> min</b> | 80       | 9.5          |         |          |             |       |     |     |
| 3                | <b>Sal min</b>           | 81       | 9.6          |         |          |             |       |     |     |
| 4                | <b>200</b>               | 82       | 17.1         | 4       |          |             |       | 1   | 4   |
| 5                | <b>175</b>               | 83       | 19.0         |         |          |             |       |     | 5   |
| 6                | <b>165</b>               | 84       | 19.2         |         |          |             |       |     |     |
| 7                | <b>150</b>               | 85       | 19.8         | 7       |          |             |       | 2   | 7   |
| 8                | <b>130</b>               |          |              |         |          |             |       |     |     |
| 9                | <b>125</b>               | 86       | 20.6         |         |          |             |       |     | 9   |
| 10               | <b>115</b>               | 87       | 21.4         |         |          |             |       |     |     |
| 11               | <b>110</b>               |          |              |         |          |             |       |     |     |
| 12               | <b>100</b>               | 88,89,90 | 21.7         | 12      |          |             |       | 3   | 12  |
| 13               | <b>90</b>                |          |              |         |          |             |       |     |     |
| 14               | <b>85</b>                | 91       | 22.3         |         |          |             |       |     |     |
| 15               | <b>75</b>                | 92       | 23.4         | 15      |          |             |       | 4   | 15  |
| 16               | <b>60</b>                |          |              |         |          |             |       |     | 16  |
| 17               | <b>45</b>                | 93       | 24.8         | 17      |          |             |       | 5   | 17  |
| 18               | <b>35</b>                |          |              |         |          |             |       |     | 18  |
| 19               | <b>25</b>                | 94       | 26.7         | 19      |          |             |       | 6   | 19  |
| 20               | <b>25</b>                |          |              |         | 20       |             | 20A-B |     |     |
| 21               | <b>15</b>                |          | 27.0         |         |          |             |       |     | 21  |
| 22               | <b>5</b>                 | 95       |              | 22A-B   |          |             |       | 7,8 | 22  |
| 23               | <b>5</b>                 |          |              |         | 23       | 23A-B       |       |     |     |
| 24               | <b>5</b>                 |          |              |         |          |             | 24A-B |     |     |

**Notes: Keeling**

Hawaii Ocean Time-series  
HOT-305  
BEACH Shallow Data Sheet (1/2)

Station # 2  
 Cast # 6  
 Operator(s): TB, RT, KB, CF

Date: 9/10/2018 (HST)  
 Time: 20:00 (HST)

| Rosette Position | Desired Depth      | Oxygen   | Sample Temp. | DIC/ALK | Quay DIC | Keeling DIC | SF-S  | pH  | DOC |
|------------------|--------------------|----------|--------------|---------|----------|-------------|-------|-----|-----|
| 1                | 1000               | 79       | 6.9          |         |          |             |       |     |     |
| 2                | O <sub>2</sub> min | 80       | 9.5          |         |          |             |       |     |     |
| 3                | Sal min            | 81       | 9.6          |         |          |             |       |     |     |
| 4                | 200                | 82       | 17.1         | 4       |          |             |       | 1   | 4   |
| 5                | 175                | 83       | 17.0         |         |          |             |       |     | 5   |
| 6                | 165                | 84       | 19.2         |         |          |             |       |     |     |
| 7                | 150                | 85       | 19.8         | 7       |          |             |       | 2   | 7   |
| 8                | 130                |          |              |         |          |             |       |     |     |
| 9                | 125                | 86       | 20.6         |         |          |             |       |     | 9   |
| 10               | 115                | 87       | 21.4         |         |          |             |       |     |     |
| 11               | 110                |          |              |         |          |             |       |     |     |
| 12               | 100                | 88,89,90 | 21.7         | 12      |          |             |       | 3   | 12  |
| 13               | 90                 |          |              |         |          |             |       |     |     |
| 14               | 85                 | 91       | 22.3         |         |          |             |       |     |     |
| 15               | 75                 | 92       | 23.4         | 15      |          |             |       | 4   | 15  |
| 16               | 60                 |          |              |         |          |             |       |     | 16  |
| 17               | 45                 | 93       | 24.8         | 17      |          |             |       | 5   | 17  |
| 18               | 35                 |          |              |         |          |             |       |     | 18  |
| 19               | 25                 | 94       | 26.7         | 19      |          |             |       | 6   | 19  |
| 20               | 25                 |          |              |         | 20       |             | 20A-B |     |     |
| 21               | 15                 |          |              |         |          |             |       |     | 21  |
| 22               | 5                  | 95       | 27.0         | 22A-B   |          |             |       | 7,8 | 22  |
| 23               | 5                  |          |              |         | 23       | 23A-B       |       |     |     |
| 24               | 5                  |          |              |         |          |             | 24A-B |     |     |

Notes: Keeling

**Hawaii Ocean Time-series**  
**HOT-305**  
**BEACH Shallow Data Sheet (2/2)**

Station #           2            
 Cast #           6            
 Operator(s):   TB, RT, KB, CF  

Date:           9/10/2018           (HST)  
 Time:           20:00           (HST)

| Rosette Position | Desired Depth            | Nutrient |  | LLN   | LLP |  |  |  |
|------------------|--------------------------|----------|--|-------|-----|--|--|--|
| 1                | <b>1000</b>              |          |  |       |     |  |  |  |
| 2                | <b>O<sub>2</sub> min</b> |          |  |       |     |  |  |  |
| 3                | <b>Sal min</b>           |          |  |       |     |  |  |  |
| 4                | <b>200</b>               | 4        |  |       |     |  |  |  |
| 5                | <b>175</b>               | 5        |  | 5     | 5   |  |  |  |
| 6                | <b>165</b>               |          |  | 6     |     |  |  |  |
| 7                | <b>150</b>               | 7        |  | 7A-B  | 7   |  |  |  |
| 8                | <b>130</b>               |          |  | 8     |     |  |  |  |
| 9                | <b>125</b>               | 9A-B     |  | 9     | 9   |  |  |  |
| 10               | <b>115</b>               |          |  | 10    | 10  |  |  |  |
| 11               | <b>110</b>               |          |  | 11    |     |  |  |  |
| 12               | <b>100</b>               | 12       |  | 12A-B | 12  |  |  |  |
| 13               | <b>90</b>                |          |  | 13    |     |  |  |  |
| 14               | <b>85</b>                |          |  | 14    | 14  |  |  |  |
| 15               | <b>75</b>                | 15       |  | 15    | 15  |  |  |  |
| 16               | <b>60</b>                | 16       |  | 16    | 16  |  |  |  |
| 17               | <b>45</b>                | 17A-B    |  | 17    | 17  |  |  |  |
| 18               | <b>35</b>                | 18       |  | 18    |     |  |  |  |
| 19               | <b>25</b>                | 19       |  | 19    | 19  |  |  |  |
| 20               | <b>25</b>                |          |  |       |     |  |  |  |
| 21               | <b>15</b>                | 21       |  | 21    |     |  |  |  |
| 22               | <b>5</b>                 | 22       |  | 22A-B | 22  |  |  |  |
| 23               | <b>5</b>                 |          |  |       |     |  |  |  |
| 24               | <b>5</b>                 |          |  |       |     |  |  |  |

Notes:



# Hawaii Ocean Time-series

## HOT-305

### BEACH Shallow Data Sheet (2/2)

Station # 2  
 Cast # 6  
 Operator(s): TB, RT, KB, CF

Date: 9/10/2018 (HST)  
 Time: 20:00 (HST)

| Rosette Position | Desired Depth            | Nutrient | Refrig. Si | LLN   | LLP |  |  |  |
|------------------|--------------------------|----------|------------|-------|-----|--|--|--|
| 1                | <b>1000</b>              |          |            |       |     |  |  |  |
| 2                | <b>O<sub>2</sub> min</b> |          |            |       |     |  |  |  |
| 3                | <b>Sal min</b>           |          |            |       |     |  |  |  |
| 4                | <b>200</b>               | 4        | 4          |       |     |  |  |  |
| 5                | <b>175</b>               | 5        |            | 5     | 5   |  |  |  |
| 6                | <b>165</b>               |          |            | 6     |     |  |  |  |
| 7                | <b>150</b>               | 7        |            | 7A-B  | 7   |  |  |  |
| 8                | <b>130</b>               |          |            | 8     |     |  |  |  |
| 9                | <b>125</b>               | 9A-B     |            | 9     | 9   |  |  |  |
| 10               | <b>115</b>               |          |            | 10    | 10  |  |  |  |
| 11               | <b>110</b>               |          |            | 11    |     |  |  |  |
| 12               | <b>100</b>               | 12       |            | 12A-B | 12  |  |  |  |
| 13               | <b>90</b>                |          |            | 13    |     |  |  |  |
| 14               | <b>85</b>                |          |            | 14    | 14  |  |  |  |
| 15               | <b>75</b>                | 15       |            | 15    | 15  |  |  |  |
| 16               | <b>60</b>                | 16       |            | 16    | 16  |  |  |  |
| 17               | <b>45</b>                | 17A-B    |            | 17    | 17  |  |  |  |
| 18               | <b>35</b>                | 18       |            | 18    |     |  |  |  |
| 19               | <b>25</b>                | 19       |            | 19    | 19  |  |  |  |
| 20               | <b>25</b>                |          |            |       |     |  |  |  |
| 21               | <b>15</b>                | 21       |            | 21    |     |  |  |  |
| 22               | <b>5</b>                 | 22       |            | 22A-B | 22  |  |  |  |
| 23               | <b>5</b>                 |          |            |       |     |  |  |  |
| 24               | <b>5</b>                 |          |            |       |     |  |  |  |

Notes:

# Hawaii Ocean Time-series

## HOT-305

### HPLC & Chl *a*. Bottle Data Sheet

Station # 2  
 Cast # 7  
 Operator(s): RT, TB, KKB, CF

Date: 9/10/2018 (HST)  
 Time: 23:20 (HST)

| Rosette Position | Desired Depth  | Carboy # | Total Volume | HPLC  | Chl <i>a</i> . | DNA |  |  |
|------------------|----------------|----------|--------------|-------|----------------|-----|--|--|
| 1                | <b>1000</b>    |          |              |       |                |     |  |  |
| 2                | <b>Sal min</b> |          |              |       |                |     |  |  |
| 3                | <b>175</b>     | 1        | 10           | 3     | 3              |     |  |  |
| 4                | <b>175</b>     |          |              |       |                | X   |  |  |
| 5                | <b>150</b>     | 2        | 10           | 5     | 5              |     |  |  |
| 6                | <b>150</b>     |          |              |       |                | X   |  |  |
| 7                | <b>135</b>     | 7        | 4            | 7     | 7A-B           |     |  |  |
| 8                | <b>125</b>     | 8,9      | 4,4          | 8A-B  | 8              |     |  |  |
| 9                | <b>125</b>     |          |              |       |                | X   |  |  |
| 10               | <b>115</b>     | 10       | 4            | 10    | 10             |     |  |  |
| 11               | <b>100</b>     | 11       | 4            | 11    | 11             |     |  |  |
| 12               | <b>100</b>     |          |              |       |                | X   |  |  |
| 13               | <b>85</b>      | 12       | 4            | 13    | 13             |     |  |  |
| 14               | <b>75</b>      | 13       | 4            | 14    | 14             |     |  |  |
| 15               | <b>60</b>      | 14       | 4            | 15    | 15A-B          |     |  |  |
| 16               | <b>45</b>      | 15,16    | 4,4          | 16A-B | 16             |     |  |  |
| 17               | <b>25</b>      | 3        | 10           | 17    | 17             |     |  |  |
| 18               | <b>5</b>       | 4        | 10           | 18    | 18             |     |  |  |
| 19               |                |          |              |       |                |     |  |  |
| 20               |                |          |              |       |                |     |  |  |
| 21               |                |          |              |       |                |     |  |  |
| 22               |                |          |              |       |                |     |  |  |
| 23               |                |          |              |       |                |     |  |  |
| 24               |                |          |              |       |                |     |  |  |

**Notes: Used combusted GFF for Chl *a* and HPLC**

# Hawaii Ocean Time-series

## HOT-305

### HPLC & Chl *a*. Bottle Data Sheet

Station # 2  
 Cast # 7  
 Operator(s): RT, TB, KB, CF

Date: 9/10/2018 (HST)  
 Time: 23:10 (HST)

| Rosette Position | Desired Depth  | Carboy # | Total Volume | HPLC  | Chl <i>a</i> . | DNA |  |  |
|------------------|----------------|----------|--------------|-------|----------------|-----|--|--|
| 1                | <b>1000</b>    |          |              |       |                |     |  |  |
| 2                | <b>Sal min</b> |          |              |       |                |     |  |  |
| 3                | <b>175</b>     | 1        | 10           | 3     | 3              |     |  |  |
| 4                | <b>175</b>     |          |              |       |                | X   |  |  |
| 5                | <b>150</b>     | 2        | 10           | 5     | 5              |     |  |  |
| 6                | <b>150</b>     |          |              |       |                | X   |  |  |
| 7                | <b>135</b>     | 7        | 4            | 7     | 7A-B           |     |  |  |
| 8                | <b>125</b>     | 8,9      | 4,4          | 8A-B  | 8              |     |  |  |
| 9                | <b>125</b>     |          |              |       |                | X   |  |  |
| 10               | <b>115</b>     | 10       | 4            | 10    | 10             |     |  |  |
| 11               | <b>100</b>     | 11       | 4            | 11    | 11             |     |  |  |
| 12               | <b>100</b>     |          |              |       |                | X   |  |  |
| 13               | <b>85</b>      | 12       | 4            | 13    | 13             |     |  |  |
| 14               | <b>75</b>      | 13       | 4            | 14    | 14             |     |  |  |
| 15               | <b>60</b>      | 14       | 4            | 15    | 15A-B          |     |  |  |
| 16               | <b>45</b>      | 15,16    | 4,4          | 16A-B | 16             |     |  |  |
| 17               | <b>25</b>      | 3        | 10           | 17    | 17             |     |  |  |
| 18               | <b>5</b>       | 4        | 10           | 18    | 18             |     |  |  |
| 19               |                |          |              |       |                |     |  |  |
| 20               |                |          |              |       |                |     |  |  |
| 21               |                |          |              |       |                |     |  |  |
| 22               |                |          |              |       |                |     |  |  |
| 23               |                |          |              |       |                |     |  |  |
| 24               |                |          |              |       |                |     |  |  |

1-4  
7-16

Notes Used combusted GFF  
for chl a + HPLC

# Hawaii Ocean Time-series

**HOT-304**

## PUR Data Sheet

Station # 2

Date: 9/11/2018 (HST)

Cast # 8

Time: 0200 (HST)

Operator(s): TB, RT, KKB, CF

| Rosette Position | Desired Depth | Carboy # | Total Volume | PUR  | SF-S  |  |  |  |
|------------------|---------------|----------|--------------|------|-------|--|--|--|
| 1                | <b>1000</b>   |          |              |      |       |  |  |  |
| 2                | <b>250</b>    |          |              |      |       |  |  |  |
| 3                | <b>175</b>    | 1        | 10           | 3    |       |  |  |  |
| 4                | <b>150</b>    | 2        | 10           | 4    |       |  |  |  |
| 5                | <b>125</b>    | 7,8      | 4,4          | 5A-B |       |  |  |  |
| 6                | <b>100</b>    | 9        | 4            | 6    |       |  |  |  |
| 7                | <b>75</b>     | 10       | 4            | 7    |       |  |  |  |
| 8                | <b>45</b>     | 11,12    | 4,4          | 8A-B |       |  |  |  |
| 9                | <b>25</b>     | 3        | 10           | 9    |       |  |  |  |
| 10               | <b>25</b>     |          |              |      | 10A,B |  |  |  |
| 11               | <b>5</b>      | 4        | 10           | 11   |       |  |  |  |
| 12               | <b>5</b>      |          |              |      | 12A,B |  |  |  |
| 13               |               |          |              |      |       |  |  |  |
| 14               |               |          |              |      |       |  |  |  |
| 15               |               |          |              |      |       |  |  |  |
| 16               |               |          |              |      |       |  |  |  |
| 17               |               |          |              |      |       |  |  |  |
| 18               |               |          |              |      |       |  |  |  |
| 19               |               |          |              |      |       |  |  |  |
| 20               |               |          |              |      |       |  |  |  |
| 21               |               |          |              |      |       |  |  |  |
| 22               |               |          |              |      |       |  |  |  |
| 23               |               |          |              |      |       |  |  |  |
| 24               |               |          |              |      |       |  |  |  |

**Notes:**

# Hawaii Ocean Time-series

HOT-304

## PUR Data Sheet

Station # 2

Cast # 8

Operator(s): TB, RT, KKB, CF

Date: 9/11/2018 (HST)

Time: 0200 (HST)

| Rosette Position | Desired Depth | Carboy # | Total Volume | PUR  | SF-S  |  |  |  |
|------------------|---------------|----------|--------------|------|-------|--|--|--|
| 1                | 1000          |          |              |      |       |  |  |  |
| 2                | 250           |          |              |      |       |  |  |  |
| 3                | 175           | 1        | 10           | 3    |       |  |  |  |
| 4                | 150           | 2        | 10           | 4    |       |  |  |  |
| 5                | 125           | 7,8      | 4,4          | 5A-B |       |  |  |  |
| 6                | 100           | 9        | 4            | 6    |       |  |  |  |
| 7                | 75            | 10       | 4            | 7    |       |  |  |  |
| 8                | 45            | 11,12    | 4,4          | 8A-B |       |  |  |  |
| 9                | 25            | 3        | 10           | 9    |       |  |  |  |
| 10               | 25            |          |              |      | 10A,B |  |  |  |
| 11               | 5             | 4        | 10           | 11   |       |  |  |  |
| 12               | 5             |          |              |      | 12A,B |  |  |  |
| 13               |               |          |              |      |       |  |  |  |
| 14               |               |          |              |      |       |  |  |  |
| 15               |               |          |              |      |       |  |  |  |
| 16               |               |          |              |      |       |  |  |  |
| 17               |               |          |              |      |       |  |  |  |
| 18               |               |          |              |      |       |  |  |  |
| 19               |               |          |              |      |       |  |  |  |
| 20               |               |          |              |      |       |  |  |  |
| 21               |               |          |              |      |       |  |  |  |
| 22               |               |          |              |      |       |  |  |  |
| 23               |               |          |              |      |       |  |  |  |
| 24               |               |          |              |      |       |  |  |  |

Notes:

# Hawaii Ocean Time-series

## HOT- 305

### OPEN Data Sheet

Station # 2  
 Cast # 9  
 Operator(s): DS,TC,ES,AW

Date: 9/11/18 (HST)  
 Time: 0515 (HST)

| Rosette Position | Desired Depth  | DNA | SFS | MC | Salts | O2 SF-S     | Temp. |  |
|------------------|----------------|-----|-----|----|-------|-------------|-------|--|
| 1                | <b>1020</b>    |     |     |    | X     |             |       |  |
| 2                | <b>Sal min</b> |     |     |    | X     |             |       |  |
| 3                | <b>275</b>     | X   |     |    |       |             |       |  |
| 4                | <b>250</b>     | X   |     |    |       |             |       |  |
| 5                | <b>225</b>     | X   |     |    |       |             |       |  |
| 6                | <b>200</b>     | X   |     |    |       |             |       |  |
| 7                | <b>175</b>     |     |     | X  |       |             |       |  |
| 8                | <b>150</b>     |     |     | X  |       |             |       |  |
| 9                | <b>125</b>     |     |     | X  |       |             |       |  |
| 10               | <b>100</b>     |     |     | X  |       |             |       |  |
| 11               | <b>75</b>      |     |     | X  |       |             |       |  |
| 12               | <b>45</b>      |     |     | X  |       |             |       |  |
| 13               | <b>25</b>      |     |     | X  |       |             |       |  |
| 14               | <b>25</b>      |     | X   |    |       |             |       |  |
| 15               | <b>15</b>      |     |     |    |       | 127,128,129 | 26.6  |  |
| 16               | <b>5</b>       |     | X   |    | X     |             |       |  |
| 17               | <b>5</b>       |     |     | X  |       |             |       |  |
| 18               |                |     |     |    |       |             |       |  |
| 19               |                |     |     |    |       |             |       |  |
| 20               |                |     |     |    |       |             |       |  |
| 21               |                |     |     |    |       |             |       |  |
| 22               |                |     |     |    |       |             |       |  |
| 23               |                |     |     |    |       |             |       |  |
| 24               |                |     |     |    |       |             |       |  |

Notes:

# Hawaii Ocean Time-series

HOT- 305

## OPEN Data Sheet

Station # 2  
 Cast # 9  
 Operator(s): DS,TC,ES,AW

Date: 9/11/18 (HST)  
 Time: 0515 (HST)

| Rosette Position | Desired Depth  | DNA | SFS | MC | Salts | O2 SF-S | Temp. |
|------------------|----------------|-----|-----|----|-------|---------|-------|
| 1                | <b>1020</b>    |     |     |    | X     |         |       |
| 2                | <b>Sal min</b> |     |     |    | X     |         |       |
| 3                | <b>275</b>     | X   |     |    |       |         |       |
| 4                | <b>250</b>     | X   |     |    |       |         |       |
| 5                | <b>225</b>     | X   |     |    |       |         |       |
| 6                | <b>200</b>     | X   |     |    |       |         |       |
| 7                | <b>175</b>     |     |     | X  |       |         |       |
| 8                | <b>150</b>     |     |     | X  |       |         |       |
| 9                | <b>125</b>     |     |     | X  |       |         |       |
| 10               | <b>100</b>     |     |     | X  |       |         |       |
| 11               | <b>75</b>      |     |     | X  |       |         |       |
| 12               | <b>45</b>      |     |     | X  |       |         |       |
| 13               | <b>25</b>      |     |     | X  |       |         |       |
| 14               | <b>25</b>      |     | X   |    |       |         |       |
| 15               | <b>15</b>      |     |     |    |       | X       | 26.6  |
| 16               | <b>5</b>       |     | X   |    | X     |         |       |
| 17               | <b>5</b>       |     |     | X  |       |         |       |
| 18               |                |     |     |    |       |         |       |
| 19               |                |     |     |    |       |         |       |
| 20               |                |     |     |    |       |         |       |
| 21               |                |     |     |    |       |         |       |
| 22               |                |     |     |    |       |         |       |
| 23               |                |     |     |    |       |         |       |
| 24               |                |     |     |    |       |         |       |

Notes:

O<sub>2</sub> 129, 128, 129

# Hawaii Ocean Time-series

## HOT- 305

### Particulate Silica Data Sheet

Station # 2 Date: 9/11/2018 (HST)  
 Cast # 10 Time: 0800 (HST)  
 Operator(s): DS,TC,AW,ES Pre-screen mesh size: none  
 Blank # **B1, B2, B3**

| Rosette Position | Desired Depth  | Carboy # | Total Volume | Sample # | SF-S | Salts | TC (1L) |  |
|------------------|----------------|----------|--------------|----------|------|-------|---------|--|
| 1                | <b>1000</b>    |          |              |          |      | X     |         |  |
| 2                | <b>Sal min</b> |          |              |          |      | X     |         |  |
| 3                | <b>175</b>     | 7        | 4            | 3        |      |       |         |  |
| 4                | <b>150</b>     | 8        | 4            | 4        |      |       |         |  |
| 5                | <b>125</b>     | 9,10     | 4,4          | 5A-B     |      |       |         |  |
| 6                | <b>100</b>     | 11       | 4            | 6        |      |       |         |  |
| 7                | <b>75</b>      | 12       | 4            | 7        |      |       |         |  |
| 8                | <b>45</b>      | 13       | 4            | 8        |      |       |         |  |
| 9                | <b>25</b>      | 14,15    | 4,4          | 9A-B     |      |       |         |  |
| 10               | <b>25</b>      |          |              |          | X    |       | X       |  |
| 11               | <b>5</b>       |          |              |          | X    |       |         |  |
| 12               | <b>5</b>       | 16       | 4            | 12       |      | X     |         |  |
| 13               |                |          |              |          |      |       |         |  |
| 14               |                |          |              |          |      |       |         |  |
| 15               |                |          |              |          |      |       |         |  |
| 16               |                |          |              |          |      |       |         |  |
| 17               |                |          |              |          |      |       |         |  |
| 18               |                |          |              |          |      |       |         |  |
| 19               |                |          |              |          |      |       |         |  |
| 20               |                |          |              |          |      |       |         |  |
| 21               |                |          |              |          |      |       |         |  |
| 22               |                |          |              |          |      |       |         |  |
| 23               |                |          |              |          |      |       |         |  |
| 24               |                |          |              |          |      |       |         |  |

Notes:



# Hawaii Ocean Time-series

HOT- **305**

## Particulate Silica Data Sheet

Station # 2 Date: 9/11/2018 (HST)  
 Cast # 10 Time: 0800 (HST)  
 Operator(s): DS,TC,AW,ES Pre-screen mesh size: none  
 Blank # **B1, B2, B3**

| Rosette Position | Desired Depth  | Carboy # | Total Volume | Sample # | SF-S | Salts | TC (1L) |
|------------------|----------------|----------|--------------|----------|------|-------|---------|
| 1                | <b>1000</b>    |          |              |          |      | X     |         |
| 2                | <b>Sal min</b> |          |              |          |      | X     |         |
| 3                | <b>175</b>     | 7        | 4            | 3        |      |       |         |
| 4                | <b>150</b>     | 8        | 4            | 4        |      |       |         |
| 5                | <b>125</b>     | 9,10     | 4,4          | 5A-B     |      |       |         |
| 6                | <b>100</b>     | 11       | 4            | 6        |      |       |         |
| 7                | <b>75</b>      | 12       | 4            | 7        |      |       |         |
| 8                | <b>45</b>      | 13       | 4            | 8        |      |       |         |
| 9                | <b>25</b>      | 14,15    | 4,4          | 9A-B     |      |       |         |
| 10               | <b>25</b>      |          |              |          | X    |       | X       |
| 11               | <b>5</b>       |          |              |          | X    |       |         |
| 12               | <b>5</b>       | 16       | 4            | 12       |      | X     |         |
| 13               |                |          |              |          |      |       |         |
| 14               |                |          |              |          |      |       |         |
| 15               |                |          |              |          |      |       |         |
| 16               |                |          |              |          |      |       |         |
| 17               |                |          |              |          |      |       |         |
| 18               |                |          |              |          |      |       |         |
| 19               |                |          |              |          |      |       |         |
| 20               |                |          |              |          |      |       |         |
| 21               |                |          |              |          |      |       |         |
| 22               |                |          |              |          |      |       |         |
| 23               |                |          |              |          |      |       |         |
| 24               |                |          |              |          |      |       |         |

Notes:

# Hawaii Ocean Time-series

## HOT-305

### OPEN CAST Data Sheet

Station # 2  
 Cast # 11  
 Operator(s): MB,TC,DS,ES,AW

Date: 9/11/18 (HST)  
 Time: 1130 (HST)

| Rosette Position | Desired Depth  | SW | SF-S  | O2 SF-S | Temp | KT | SALTS |
|------------------|----------------|----|-------|---------|------|----|-------|
| 1                | <b>1000</b>    |    |       |         |      |    | X     |
| 2                | <b>1000</b>    |    |       |         |      | X  |       |
| 3                | <b>1000</b>    |    |       |         |      | X  |       |
| 4                | <b>1000</b>    |    |       |         |      | X  |       |
| 5                | <b>1000</b>    |    |       |         |      | X  |       |
| 6                | <b>1000</b>    |    |       |         |      | X  |       |
| 7                | <b>1000</b>    |    |       |         |      | X  |       |
| 8                | <b>800</b>     | X  |       |         |      |    |       |
| 9                | <b>600</b>     | X  |       |         |      |    |       |
| 10               | <b>Sal Min</b> |    |       |         |      |    | X     |
| 11               | <b>400</b>     | X  |       |         |      |    |       |
| 12               | <b>300</b>     | X  |       |         |      |    |       |
| 13               | <b>250</b>     | X  |       |         |      |    |       |
| 14               | <b>175</b>     | X  |       |         |      |    |       |
| 15               | <b>150</b>     | X  |       |         |      |    |       |
| 16               | <b>125</b>     | X  |       |         |      |    |       |
| 17               | <b>100</b>     | X  |       |         |      |    |       |
| 18               | <b>75</b>      | X  |       |         |      |    | X     |
| 19               | <b>45</b>      | X  |       |         |      |    |       |
| 20               | <b>25</b>      | X  |       |         |      |    |       |
| 21               | <b>25</b>      |    | 21A,B |         |      |    |       |
| 22               | <b>15</b>      |    |       | X       |      |    |       |
| 23               | <b>5</b>       | X  | 23A,B |         |      |    |       |
| 24               | <b>5</b>       |    |       |         |      |    | X     |

Notes:

# Hawaii Ocean Time-series

**HOT-305**

## OPEN CAST Data Sheet

Station # 2  
 Cast # 11  
 Operator(s): MB,TC,DS,ES,AW

Date: 9/11/18 (HST)  
 Time: 1130 (HST)

| Rosette Position | Desired Depth | SW | SF-S  | O2 SF-S | Temp | KT | Salts |
|------------------|---------------|----|-------|---------|------|----|-------|
| 1                | 1000          |    |       |         |      |    | X     |
| 2                | 1000          |    |       |         |      | X  |       |
| 3                | 1000          |    |       |         |      | X  |       |
| 4                | 1000          |    |       |         |      | X  |       |
| 5                | 1000          |    |       |         |      | X  |       |
| 6                | 1000          |    |       |         |      | X  |       |
| 7                | 1000          |    |       |         |      | X  |       |
| 8                | 800           | X  |       |         |      |    |       |
| 9                | 600           | X  |       |         |      |    |       |
| 10               | Sal Min       |    |       |         |      |    | X     |
| 11               | 400           | X  |       |         |      |    |       |
| 12               | 300           | X  |       |         |      |    |       |
| 13               | 250           | X  |       |         |      |    |       |
| 14               | 175           | X  |       |         |      |    |       |
| 15               | 150           | X  |       |         |      |    |       |
| 16               | 125           | X  |       |         |      |    |       |
| 17               | 100           | X  |       |         |      |    |       |
| 18               | 75            | X  |       |         |      |    |       |
| 19               | 45            | X  |       |         |      |    | X     |
| 20               | 25            | X  |       |         |      |    |       |
| 21               | 25            |    | 21A,B |         |      |    |       |
| 22               | 15            |    |       | X       |      |    |       |
| 23               | 5             | X  | 23A,B |         |      |    |       |
| 24               | 5             |    |       |         |      |    | X     |

Notes:

# Hawaii Ocean Time-series

## HOT- 305

### ATP Data Sheet

Station # 2 Date: 9/11/2018 (HST)  
 Cast # 12 Time: 14:30 (HST)  
 Operator(s): KKB, CF Pre-screen mesh size: 202um  
 Blank #'s 28, 29, 30

| Rosette Position | Desired Depth  | ATP Tube #'s | Volume Filtered | Carboy # | SF-S    | DNA |  |
|------------------|----------------|--------------|-----------------|----------|---------|-----|--|
| 1                | <b>1020</b>    |              |                 |          |         |     |  |
| 2                | <b>1000</b>    |              |                 |          |         | X   |  |
| 3                | <b>770</b>     |              |                 |          |         | X   |  |
| 4                | <b>500</b>     |              |                 |          |         | X   |  |
| 5                | <b>Sal min</b> |              |                 |          |         |     |  |
| 6                | <b>400</b>     |              |                 |          |         | X   |  |
| 7                | <b>350</b>     | 1 – 3        | 3x2             | 1        |         |     |  |
| 8                | <b>300</b>     |              |                 |          |         | X   |  |
| 9                | <b>250</b>     | 4 – 6        | 3x2             | 2        |         |     |  |
| 10               | <b>150</b>     | 7 – 9        | 3x1             | 7        |         |     |  |
| 11               | <b>125</b>     | 10 – 12      | 3x1             | 8        |         |     |  |
| 12               | <b>100</b>     | 13 – 15      | 3x1             | 9        |         |     |  |
| 13               | <b>75</b>      | 16 – 18      | 3x1             | 10       |         |     |  |
| 14               | <b>45</b>      | 19 – 21      | 3x1             | 11       |         |     |  |
| 15               | <b>25</b>      | 22 – 24      | 3x1             | 12       |         |     |  |
| 16               | <b>25</b>      |              |                 |          | 16A,B   |     |  |
| 17               | <b>5</b>       | 25 - 27      | 3x1             | 13       |         |     |  |
| 18               | <b>5</b>       |              |                 |          | 18 A, B |     |  |
| 19               |                |              |                 |          |         |     |  |
| 20               |                |              |                 |          |         |     |  |
| 21               |                |              |                 |          |         |     |  |
| 22               |                |              |                 |          |         |     |  |
| 23               |                |              |                 |          |         |     |  |
| 24               |                |              |                 |          |         |     |  |

**Notes: ATP filter #1 lost about 10mL. Filter #5 fell on bench top.**

# Hawaii Ocean Time-series

## HOT- 305

### ATP Data Sheet

Station # 2  
 Cast # 12  
 Operator(s): RT, CF, KKB, TB  
 Blank #'s 28, 29, 30

Date: 9/11/18 (HST)  
 Time: 1430 (HST)  
 Pre-screen mesh size: 202um

| Rosette Position | Desired Depth | ATP Tube #'s | Volume Filtered | Carboy # | SF-S  | DNA |  |
|------------------|---------------|--------------|-----------------|----------|-------|-----|--|
| 1                | 1020          |              |                 |          |       |     |  |
| 2                | 1000          |              |                 |          |       |     |  |
| 3                | 770           |              |                 |          |       | X   |  |
| 4                | 500           |              |                 |          |       | X   |  |
| 5                | Sal min       |              |                 |          |       | X   |  |
| 6                | 400           |              |                 |          |       |     |  |
| 7                | 350           | 1 - 3        | 3x2             | 1        |       | X   |  |
| 8                | 300           |              |                 |          |       |     |  |
| 9                | 250           | 4 - 6        | 3x2             | 2        |       | X   |  |
| 10               | 150           | 7 - 9        | 3x1             | 7        |       |     |  |
| 11               | 125           | 10 - 12      | 3x1             | 8        |       |     |  |
| 12               | 100           | 13 - 15      | 3x1             | 9        |       |     |  |
| 13               | 75            | 16 - 18      | 3x1             | 10       |       |     |  |
| 14               | 45            | 19 - 21      | 3x1             | 11       |       |     |  |
| 15               | 25            | 22 - 24      | 3x1             | 12       |       |     |  |
| 16               | 25            |              |                 |          | 16A,B |     |  |
| 17               | 5             | 25 - 27      | 3x1             | 13       |       |     |  |
| 18               | 5             |              |                 |          | 18A,B |     |  |
| 19               |               |              |                 |          |       |     |  |
| 20               |               |              |                 |          |       |     |  |
| 21               |               |              |                 |          |       |     |  |
| 22               |               |              |                 |          |       |     |  |
| 23               |               |              |                 |          |       |     |  |
| 24               |               |              |                 |          |       |     |  |

Notes: ATP #11 → lost ~10mL  
 #5 filter → dropped

# Hawaii Ocean Time-series

## HOT- 305

### STATION 52 Data Sheet

Station # 52  
 Cast # 1  
 Operator(s): RT, TB, KKB, CF, MB

Date: 9/11/2018 (HST)  
 Time: 17:40 (HST)

| Rosette Position | Desired Depth | DIC/TA | pH    | SF-S | SF-O2   | Temp |  |  |
|------------------|---------------|--------|-------|------|---------|------|--|--|
| 1                | <b>25</b>     |        |       |      |         |      |  |  |
| 2                | <b>25</b>     |        |       | X    |         |      |  |  |
| 3                | <b>15</b>     |        |       |      | 130-132 | 26.9 |  |  |
| 4                | <b>5</b>      | 1 A,B  | 1,2,3 | X    |         |      |  |  |
| 5                |               |        |       |      |         |      |  |  |
| 6                |               |        |       |      |         |      |  |  |
| 7                |               |        |       |      |         |      |  |  |
| 8                |               |        |       |      |         |      |  |  |
| 9                |               |        |       |      |         |      |  |  |
| 10               |               |        |       |      |         |      |  |  |
| 11               |               |        |       |      |         |      |  |  |
| 12               |               |        |       |      |         |      |  |  |
| 13               |               |        |       |      |         |      |  |  |
| 14               |               |        |       |      |         |      |  |  |
| 15               |               |        |       |      |         |      |  |  |
| 16               |               |        |       |      |         |      |  |  |
| 17               |               |        |       |      |         |      |  |  |
| 18               |               |        |       |      |         |      |  |  |
| 19               |               |        |       |      |         |      |  |  |
|                  |               |        |       |      |         |      |  |  |
|                  |               |        |       |      |         |      |  |  |
|                  |               |        |       |      |         |      |  |  |
|                  |               |        |       |      |         |      |  |  |
|                  |               |        |       |      |         |      |  |  |

Notes:

# Hawaii Ocean Time-series

HOT- 305

## STATION 52 Data Sheet

Station # 52

Date: 9/11/2018 (HST)

Cast # 1

Time: 17:40 (HST)

Operator(s): TB, RT, KK, B, MB, CF

| Rosette Position | Desired Depth | DIC/TA | pH    | SF-S | SF-O <sub>2</sub> |         | Temp   |
|------------------|---------------|--------|-------|------|-------------------|---------|--------|
| 1                | 25            |        |       | X    |                   |         |        |
| 2                | 25            |        |       | X    |                   |         |        |
| 3                | 15            | 1A,B   | 1,2,3 |      |                   |         |        |
| 4                | 5             | 1A,B   | 1,2,3 | X    | X →               | 130-132 | 26.9°C |
| 5                |               |        |       |      |                   |         |        |
| 6                |               |        |       |      |                   |         |        |
| 7                |               |        |       |      |                   |         |        |
| 8                |               |        |       |      |                   |         |        |
| 9                |               |        |       |      |                   |         |        |
| 10               |               |        |       |      |                   |         |        |
| 11               |               |        |       |      |                   |         |        |
| 12               |               |        |       |      |                   |         |        |
| 13               |               |        |       |      |                   |         |        |
| 14               |               |        |       |      |                   |         |        |
| 15               |               |        |       |      |                   |         |        |
| 16               |               |        |       |      |                   |         |        |
| 17               |               |        |       |      |                   |         |        |
| 18               |               |        |       |      |                   |         |        |
| 19               |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |
|                  |               |        |       |      |                   |         |        |

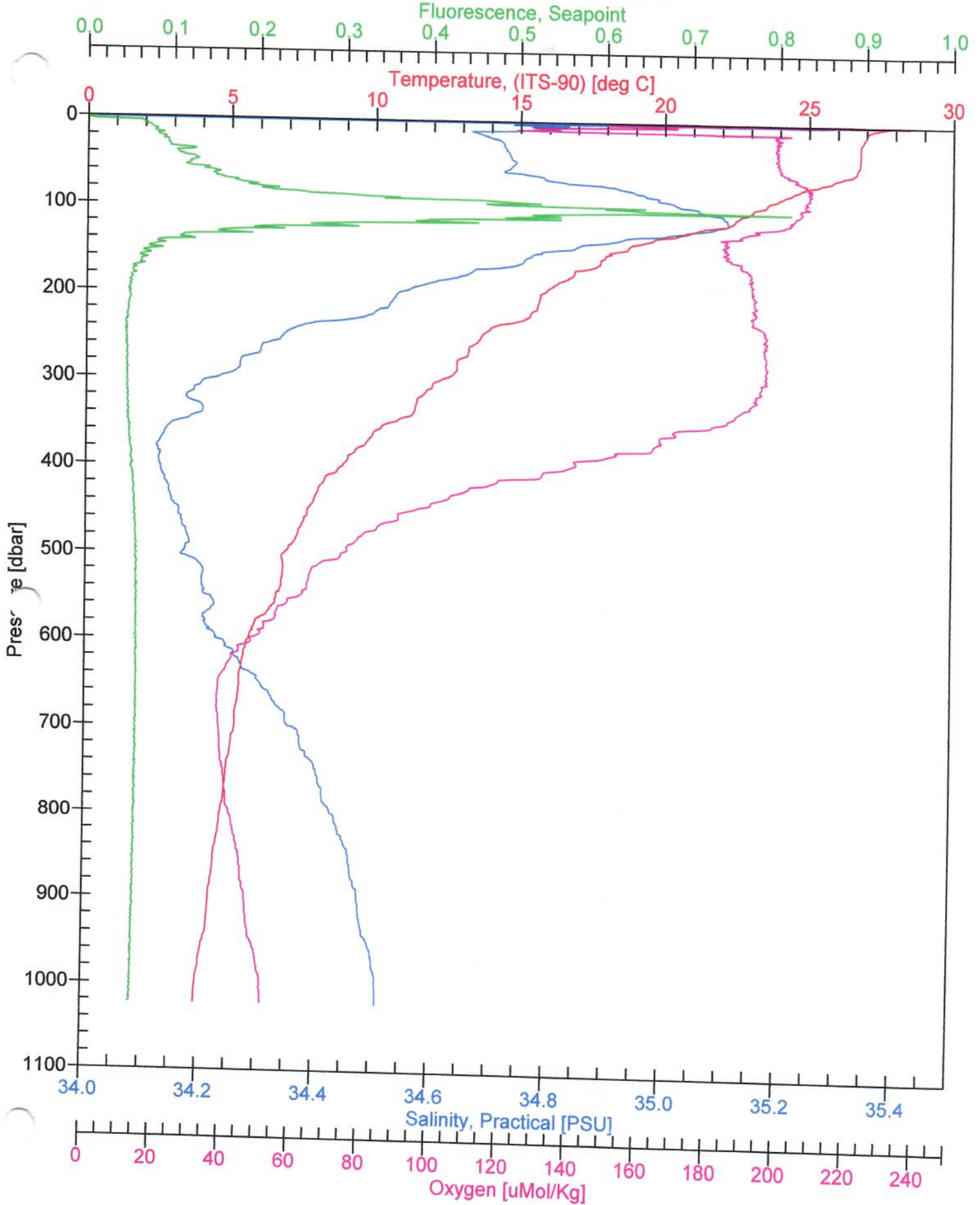
Notes:



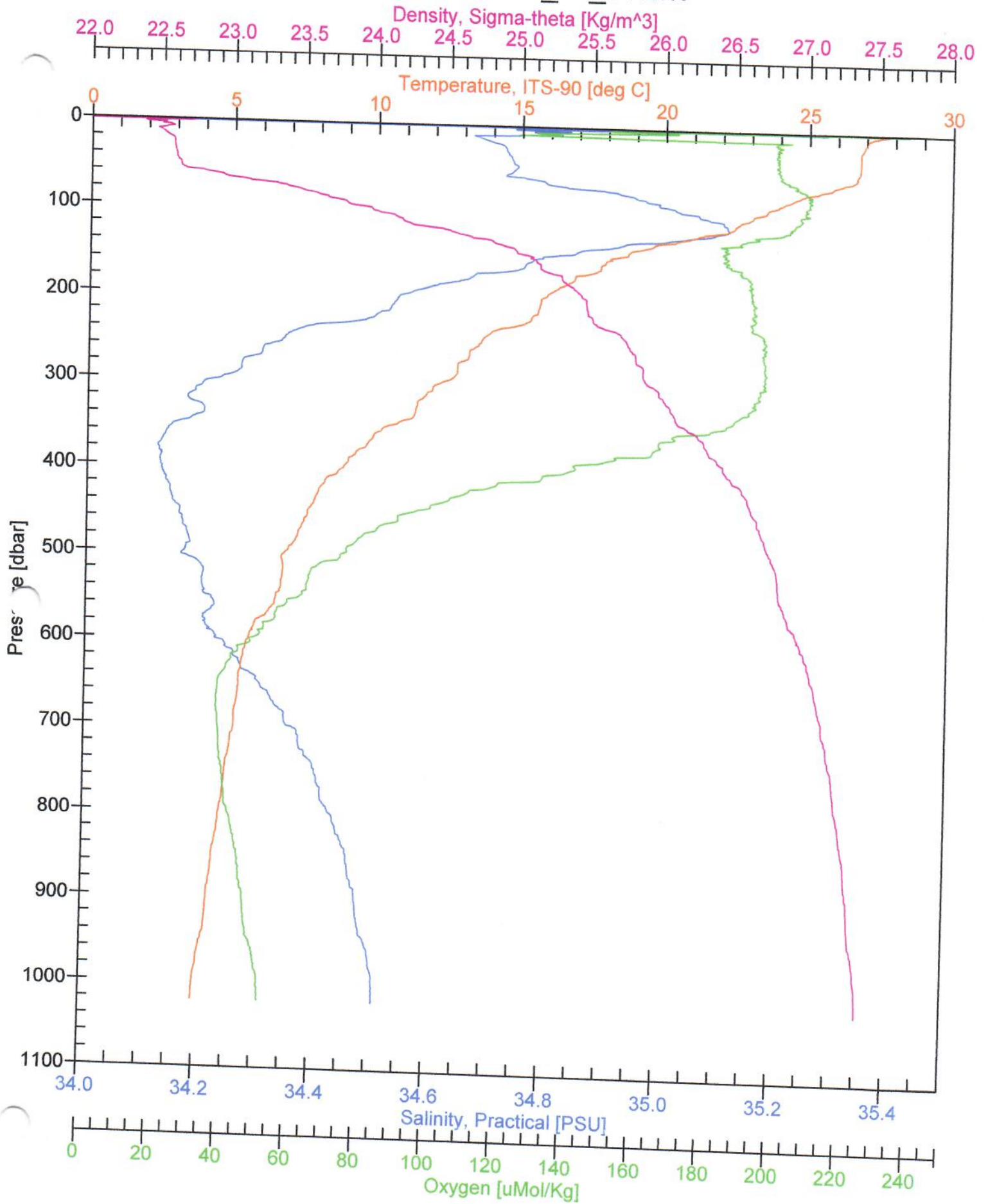




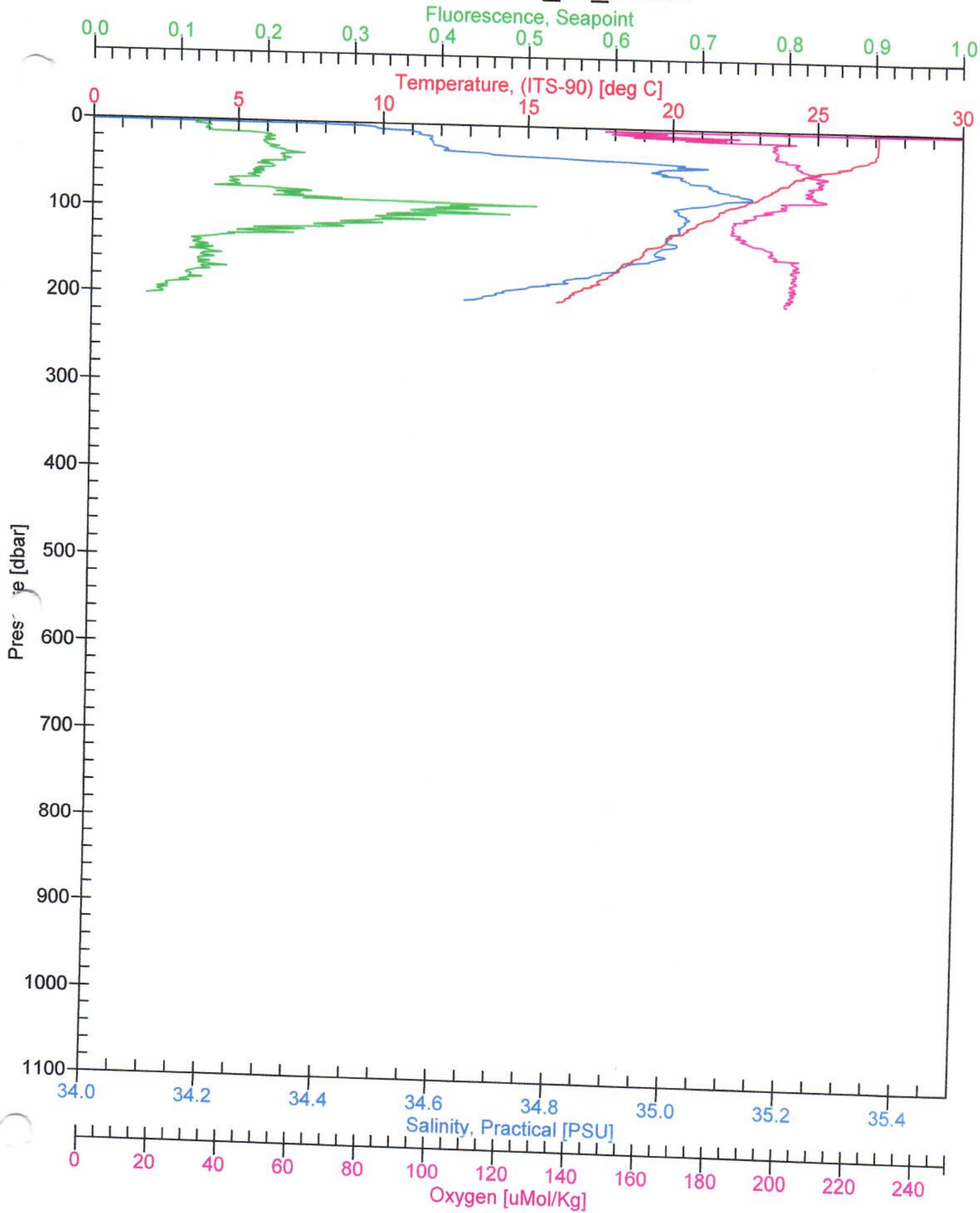
# G-1000, hot-305\_s1\_c1.cnv



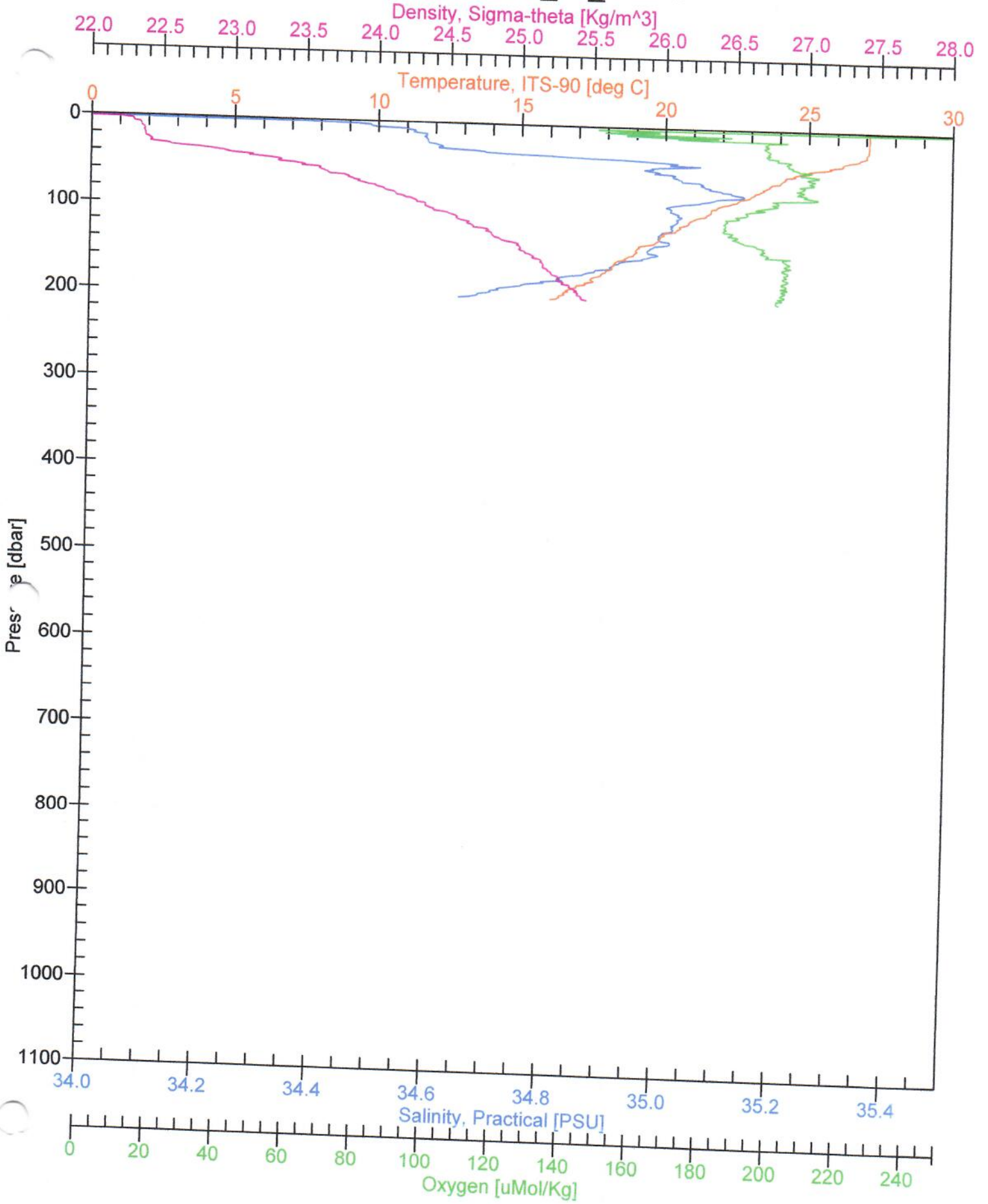
# W-1000, hot-305\_s1\_c1.cnv



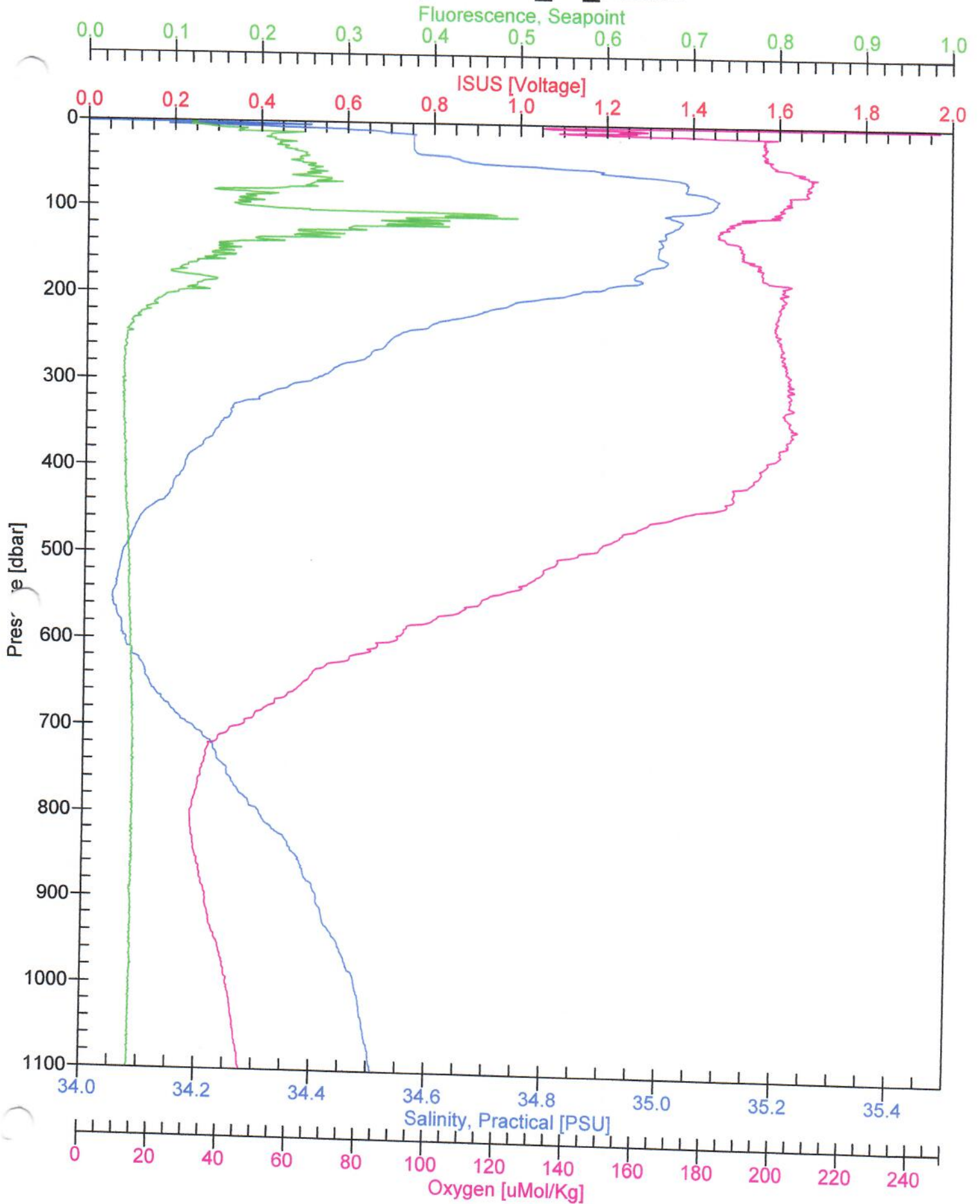
# G-1000, hot-305\_s2\_c1.cnv



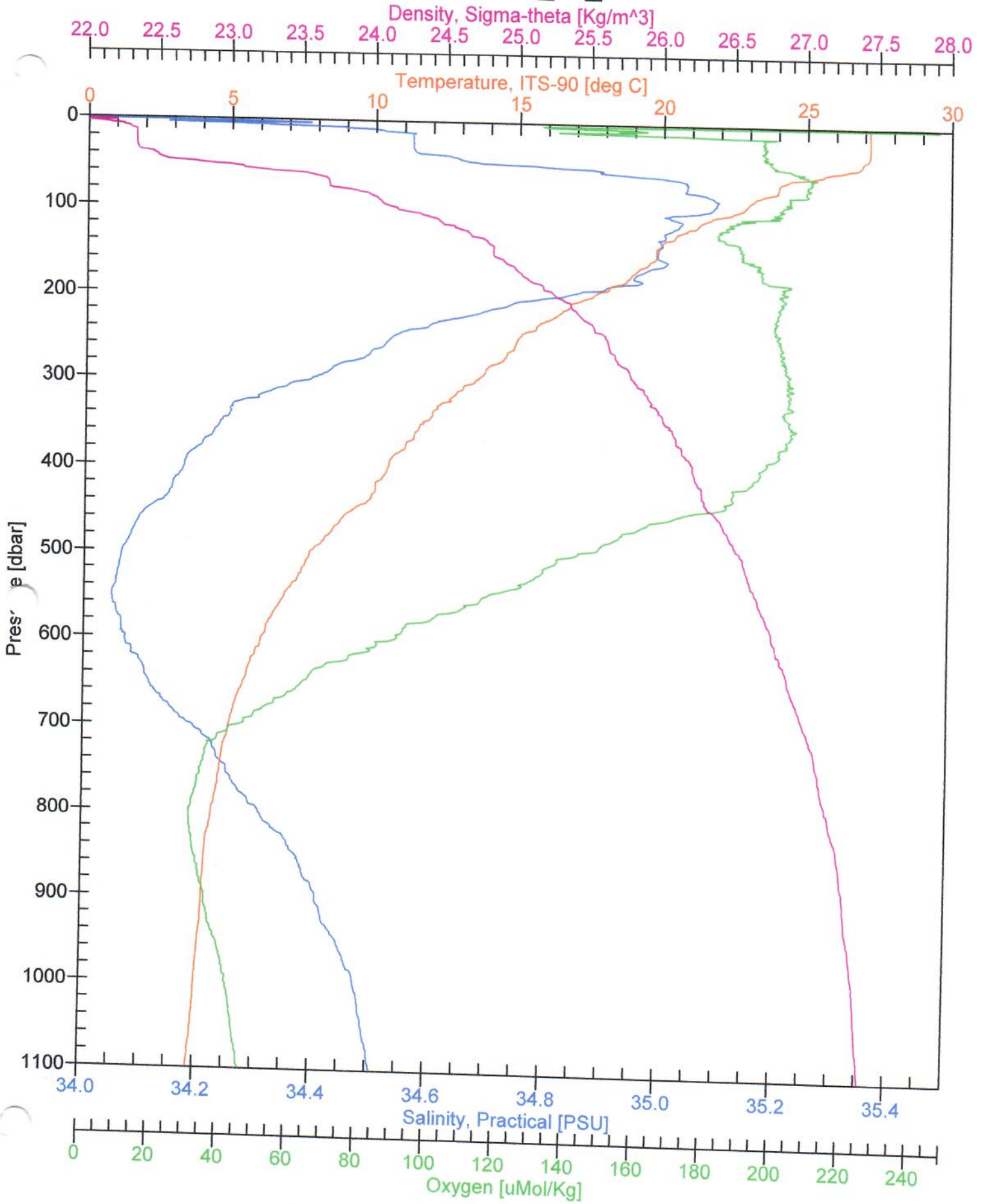
# W-1000, hot-305\_s2\_c1.cnv



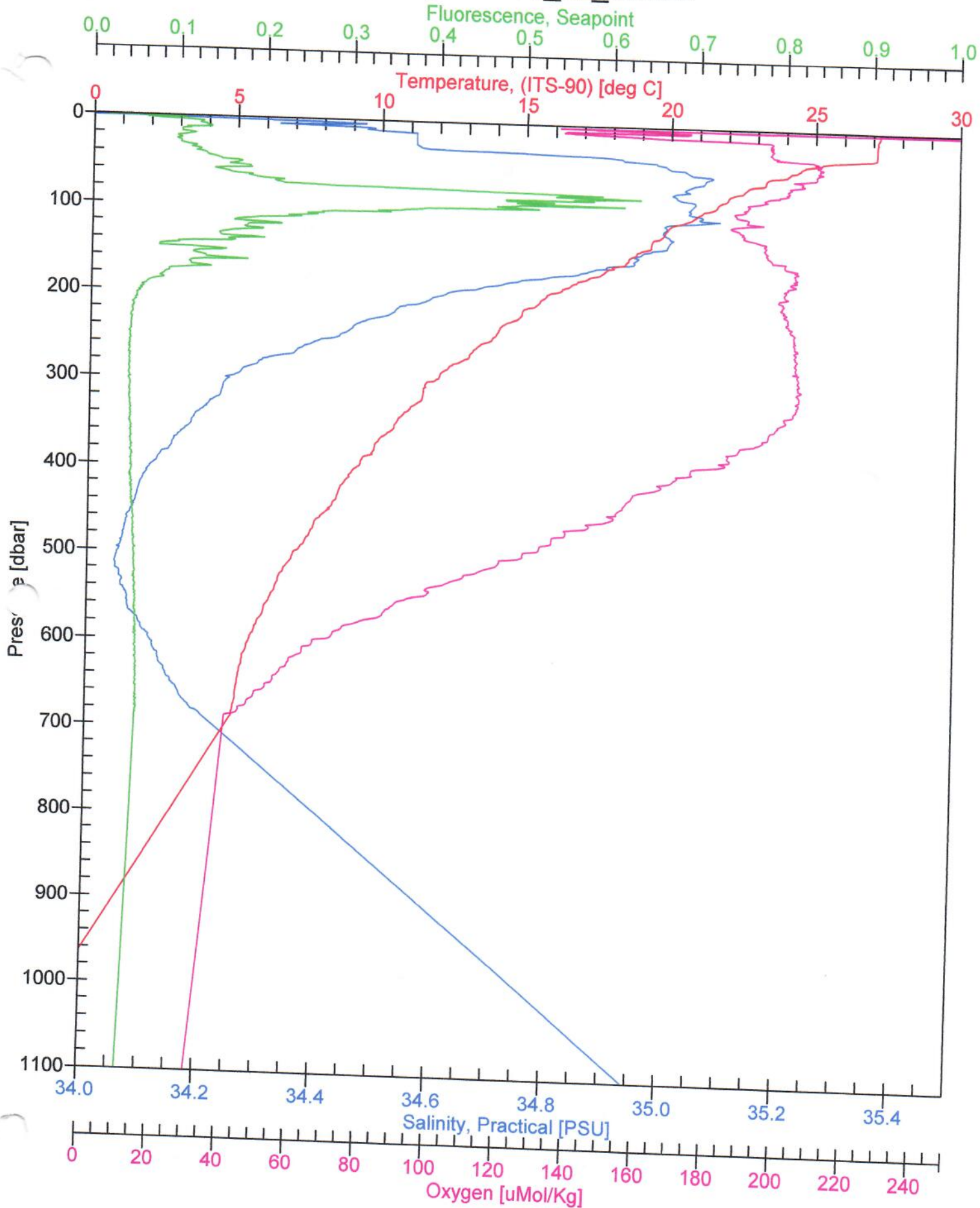
# G-1000, hot-305\_s2\_c2.cnv



# W-1000, hot-305\_s2\_c2.cnv

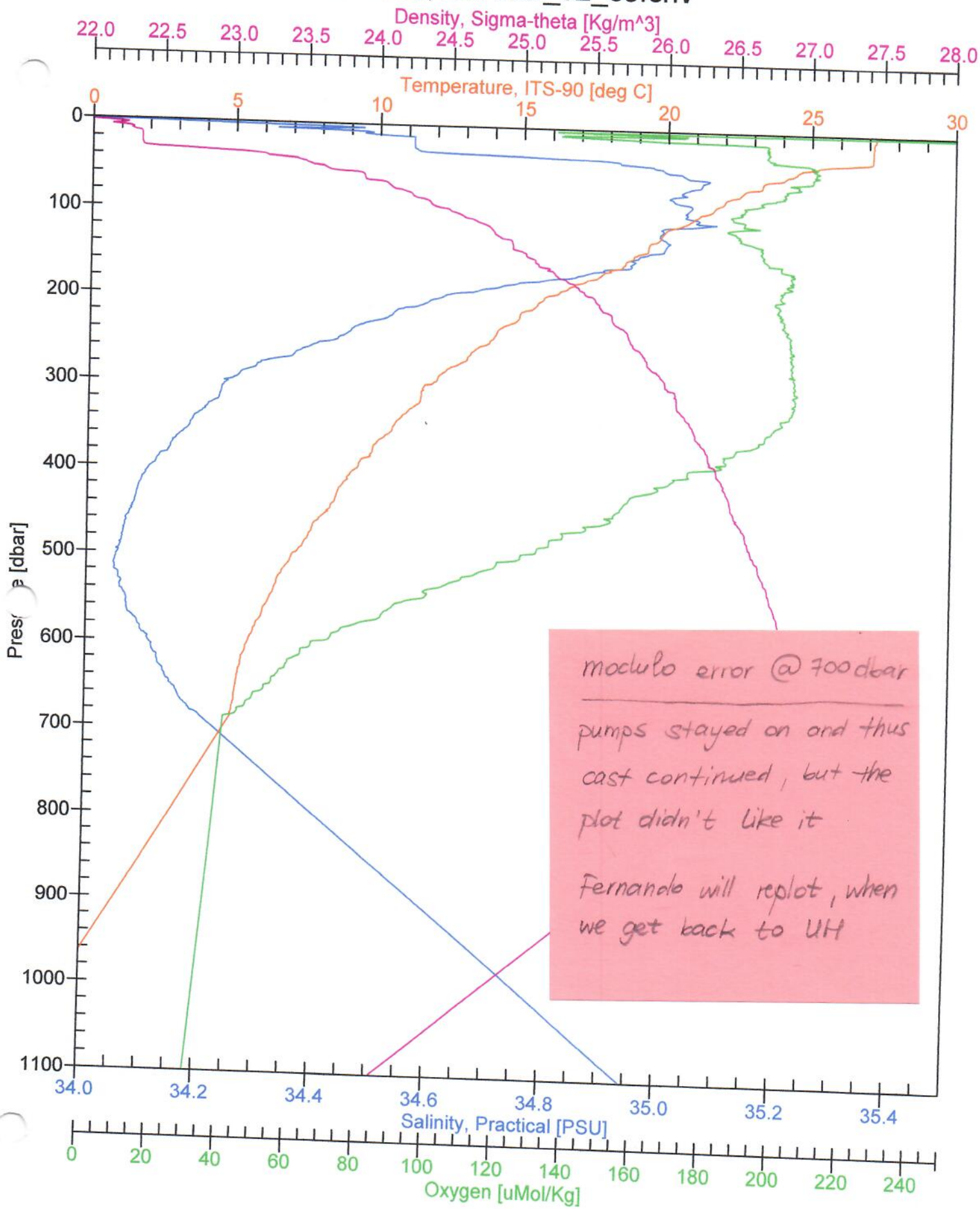


# G-1000, hot-305\_s2\_c3.cnv

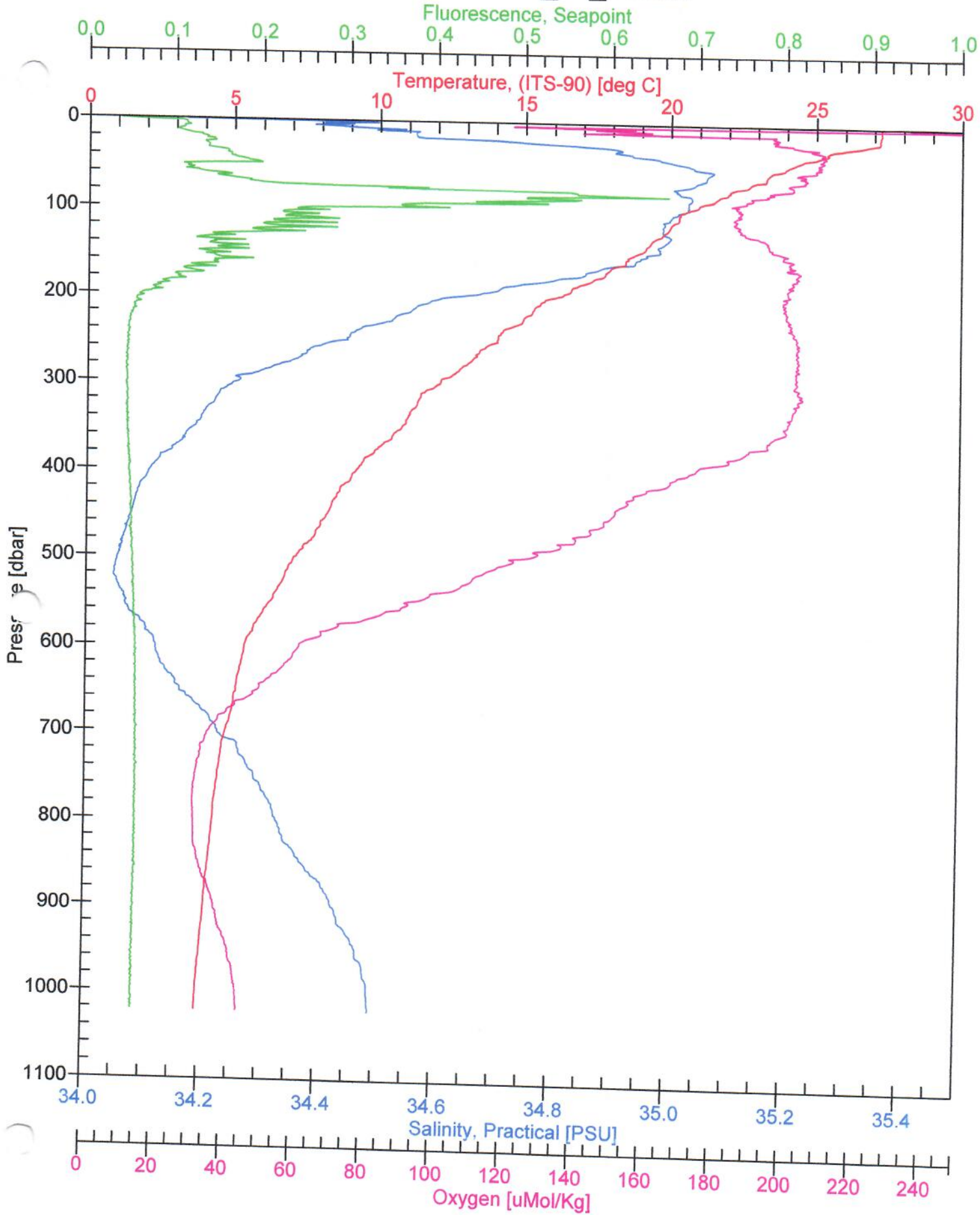




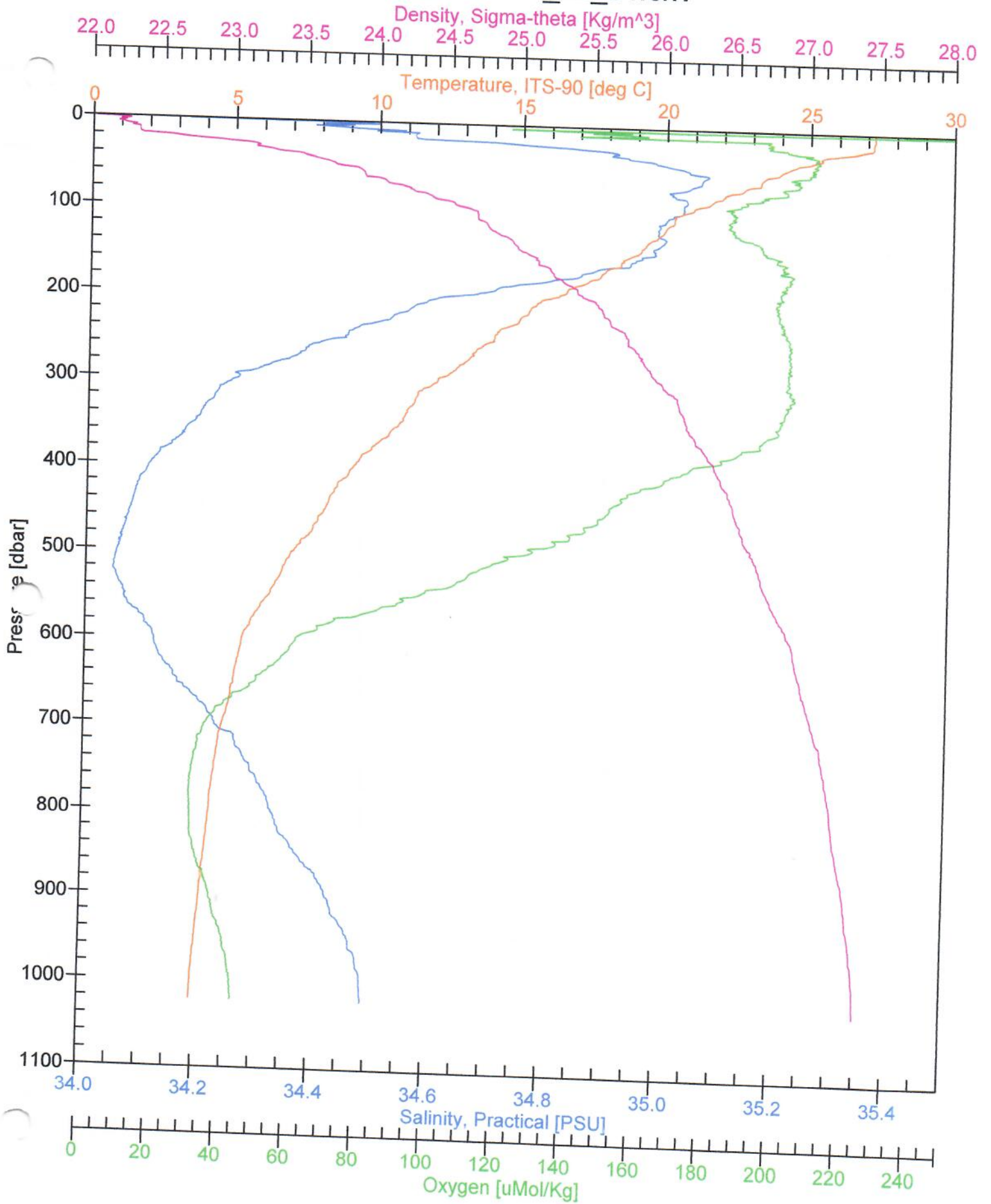
# W-1000, hot-305\_s2\_c3.cnv



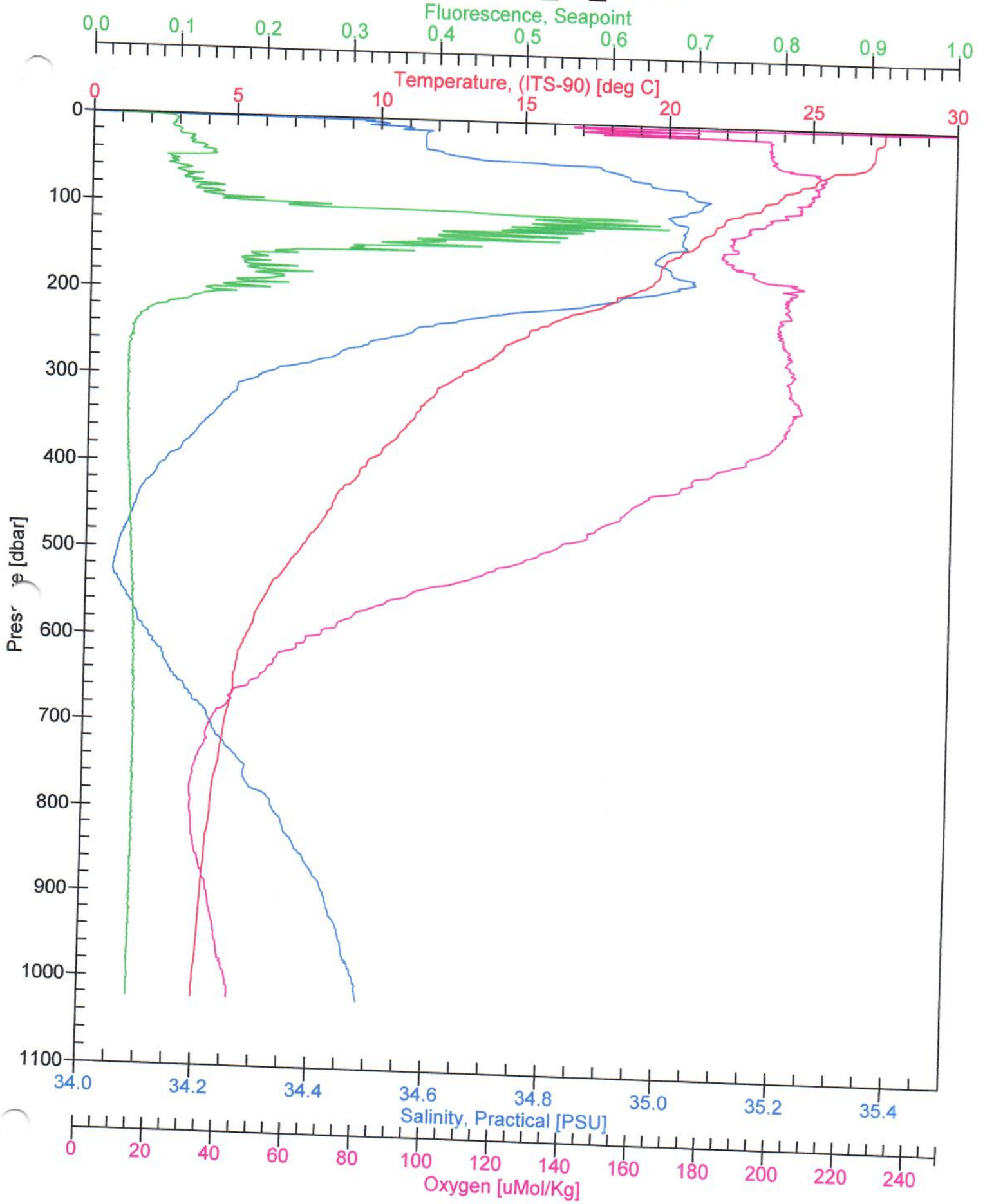
# G-1000, hot-305\_s2\_c4.cnv



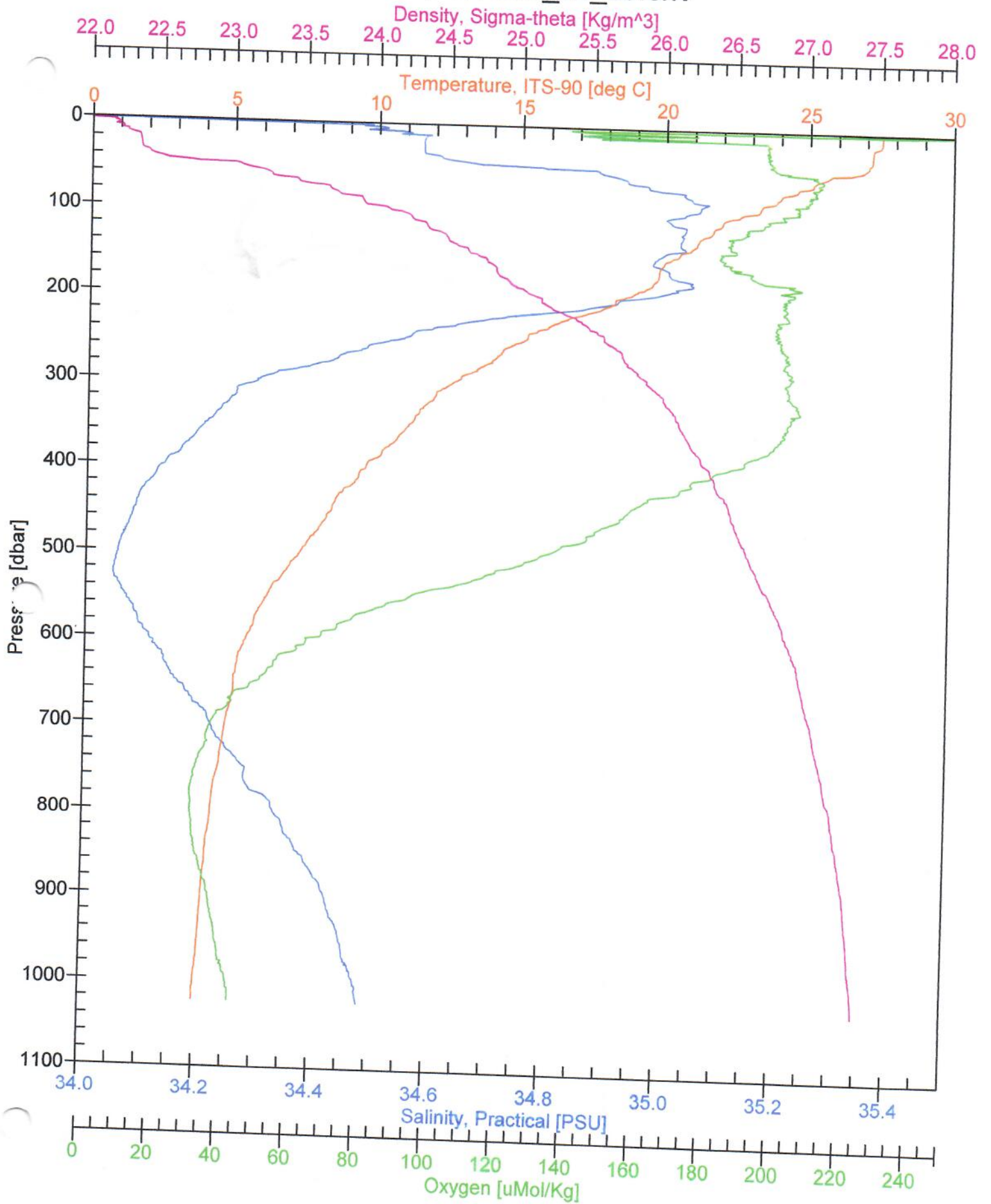
# W-1000, hot-305\_s2\_c4.cnv



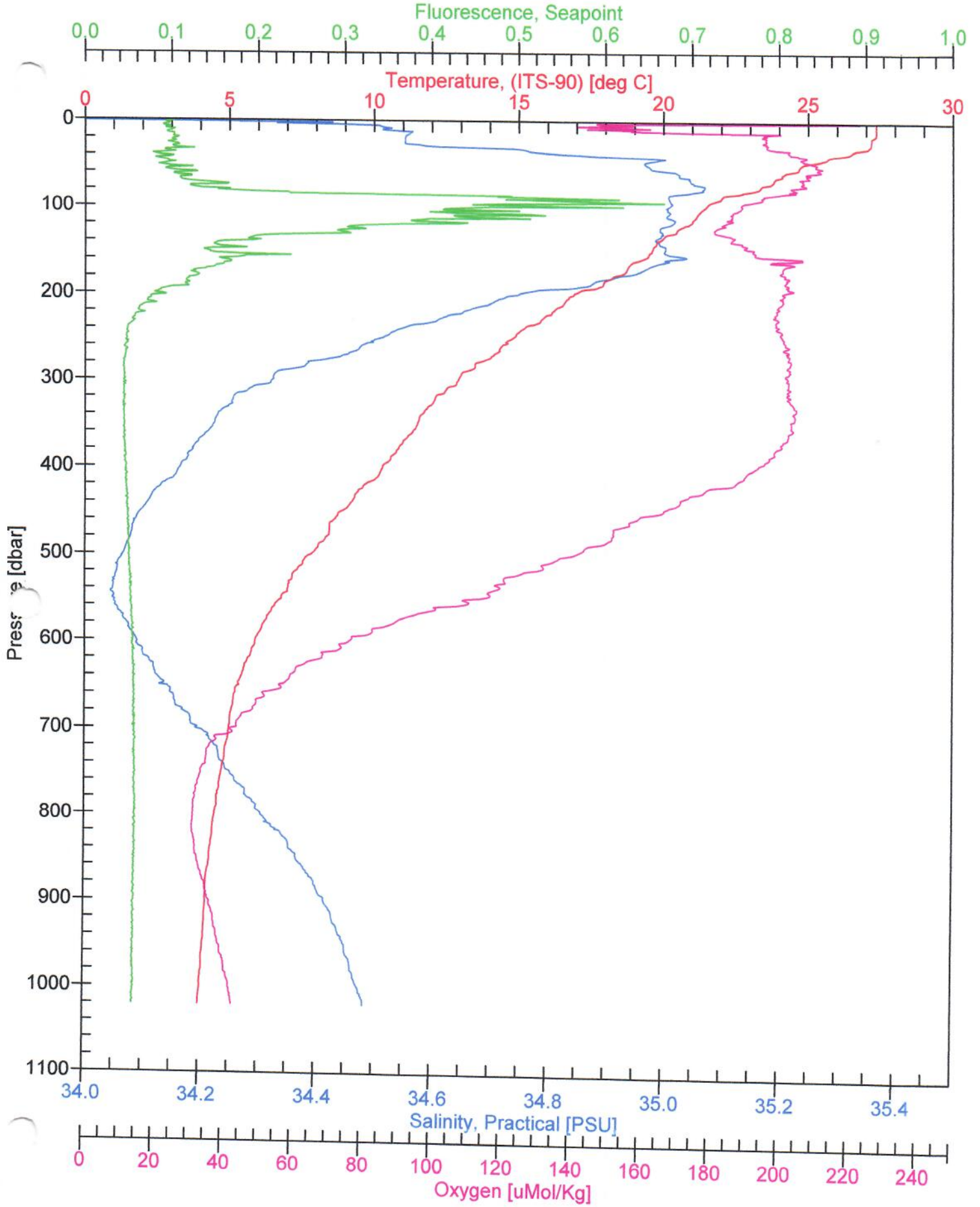
# G-1000, hot-305\_s2\_c5.cnv



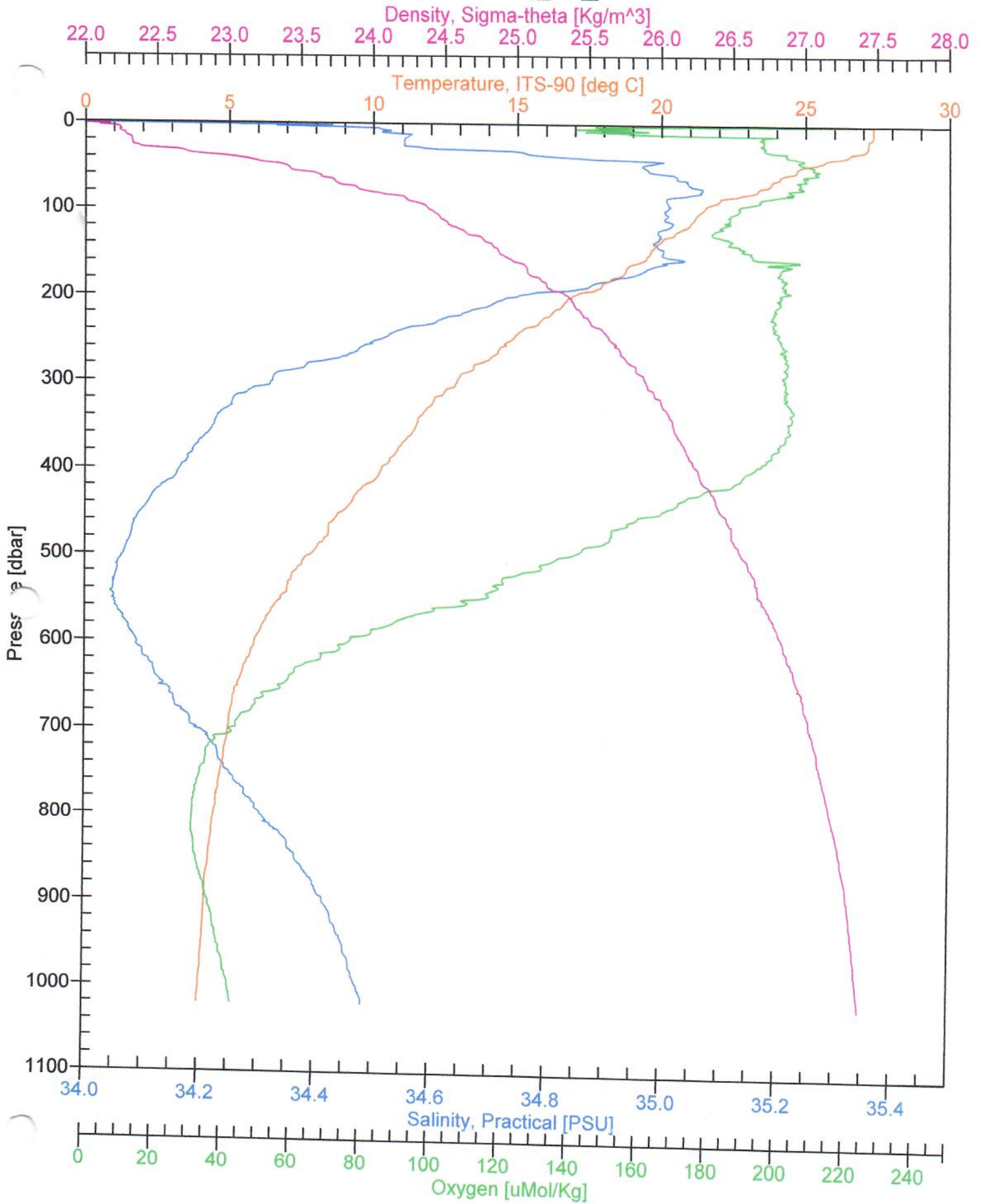
# W-1000, hot-305\_s2\_c5.cnv



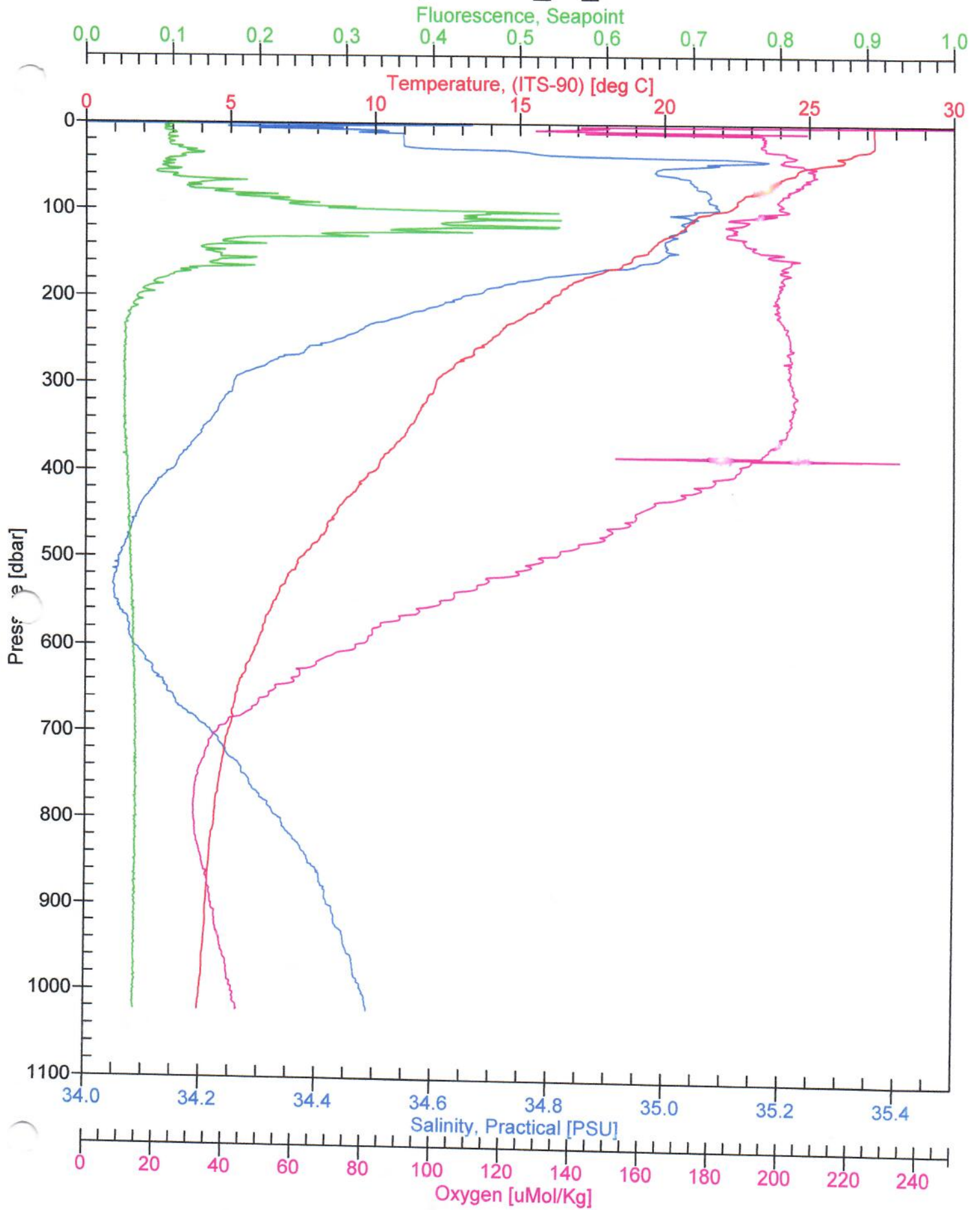
# G-1000, hot-305\_s2\_c6.cnv



# W-1000, hot-305\_s2\_c6.cnv

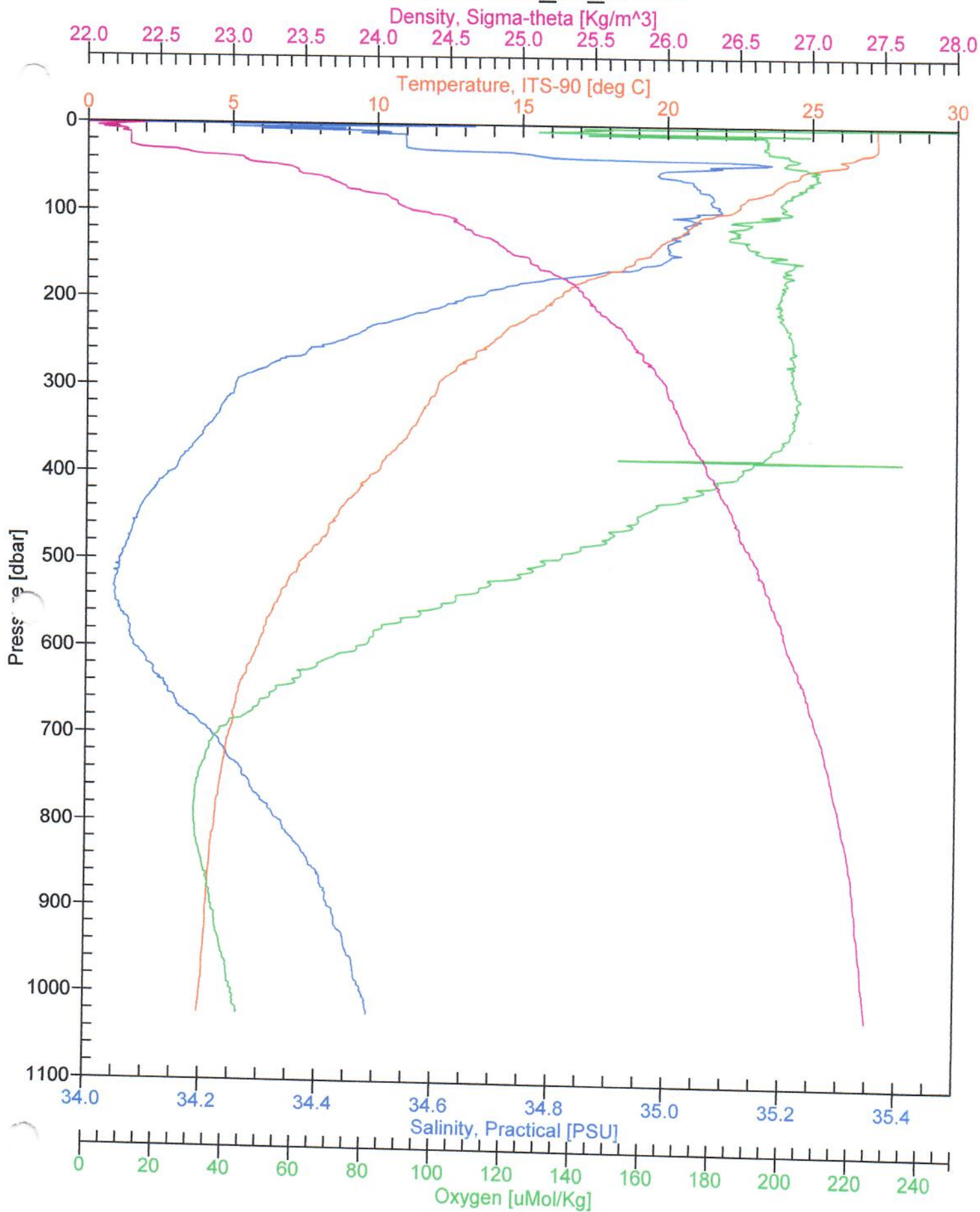


# G-1000, hot-305\_s2\_c7.cnv

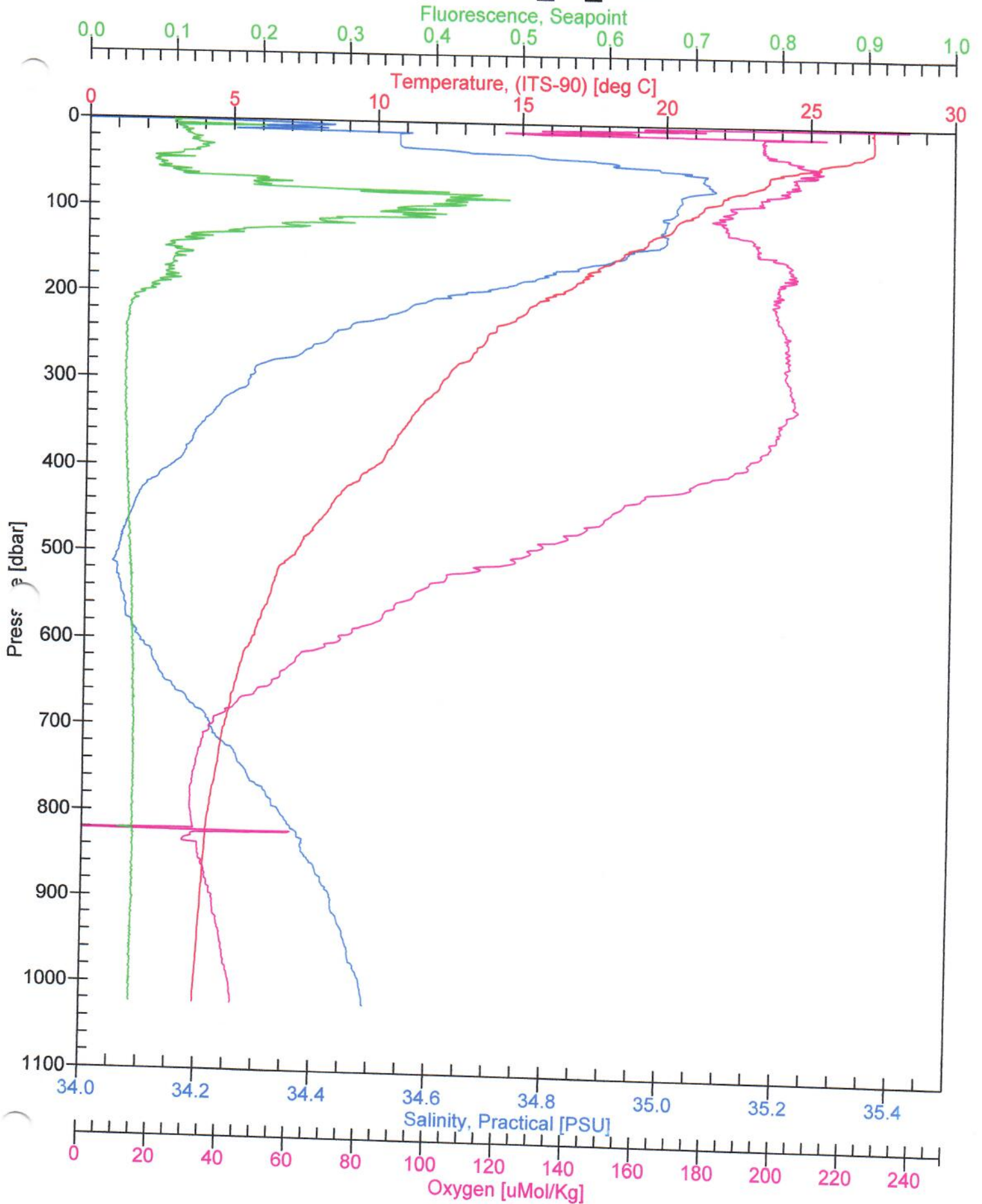




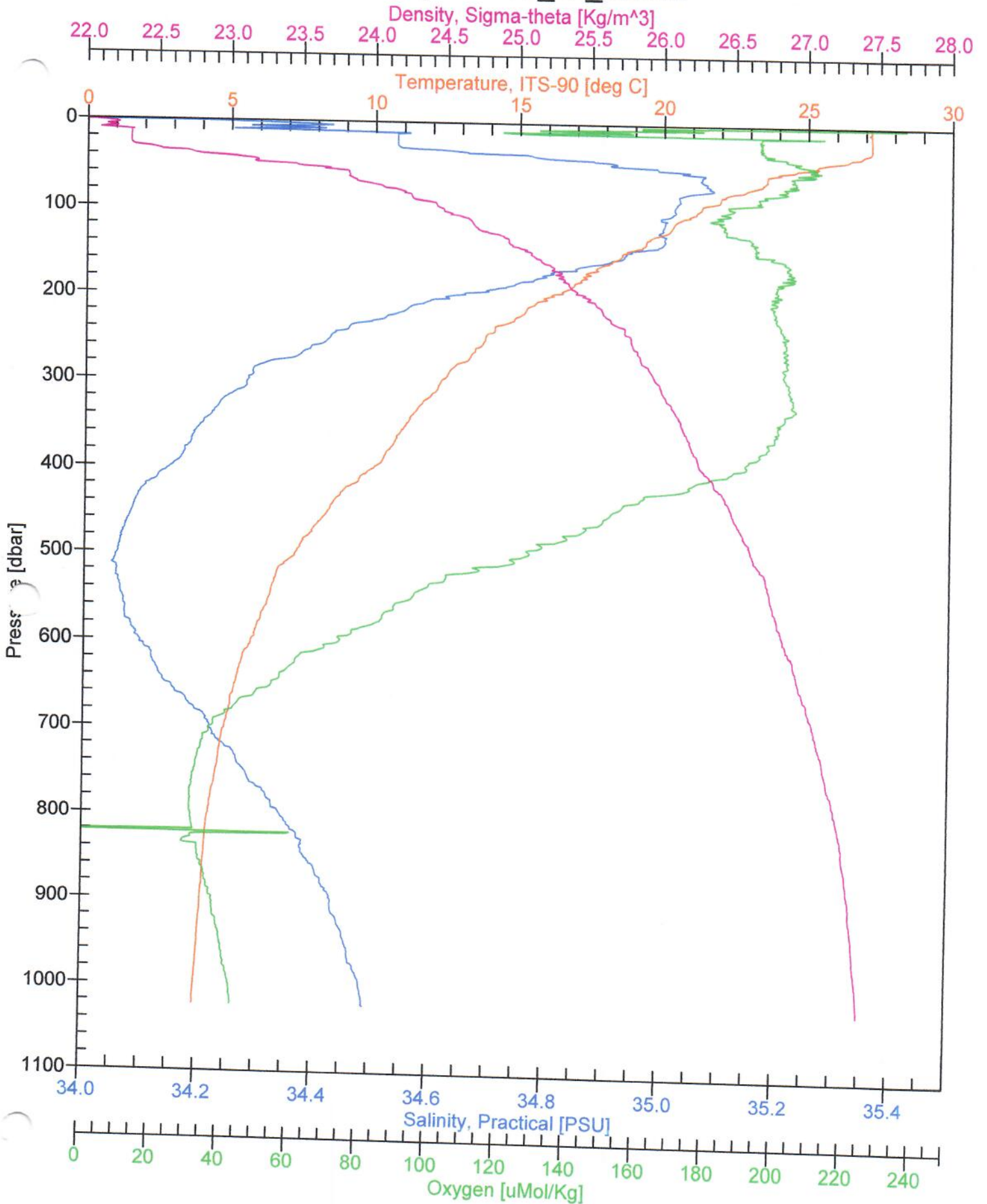
# W-1000, hot-305\_s2\_c7.cnv



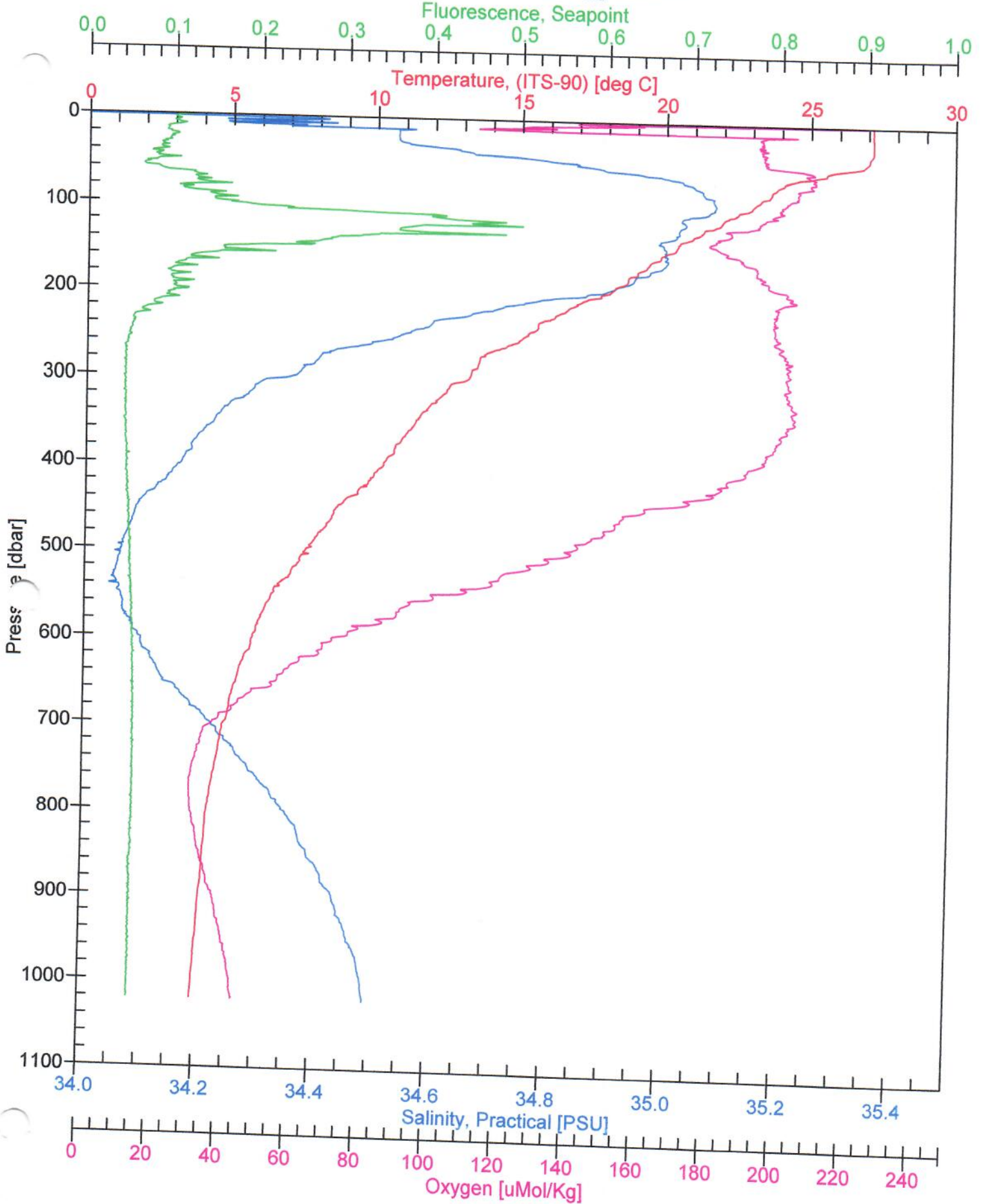
# G-1000, hot-305\_s2\_c8.cnv



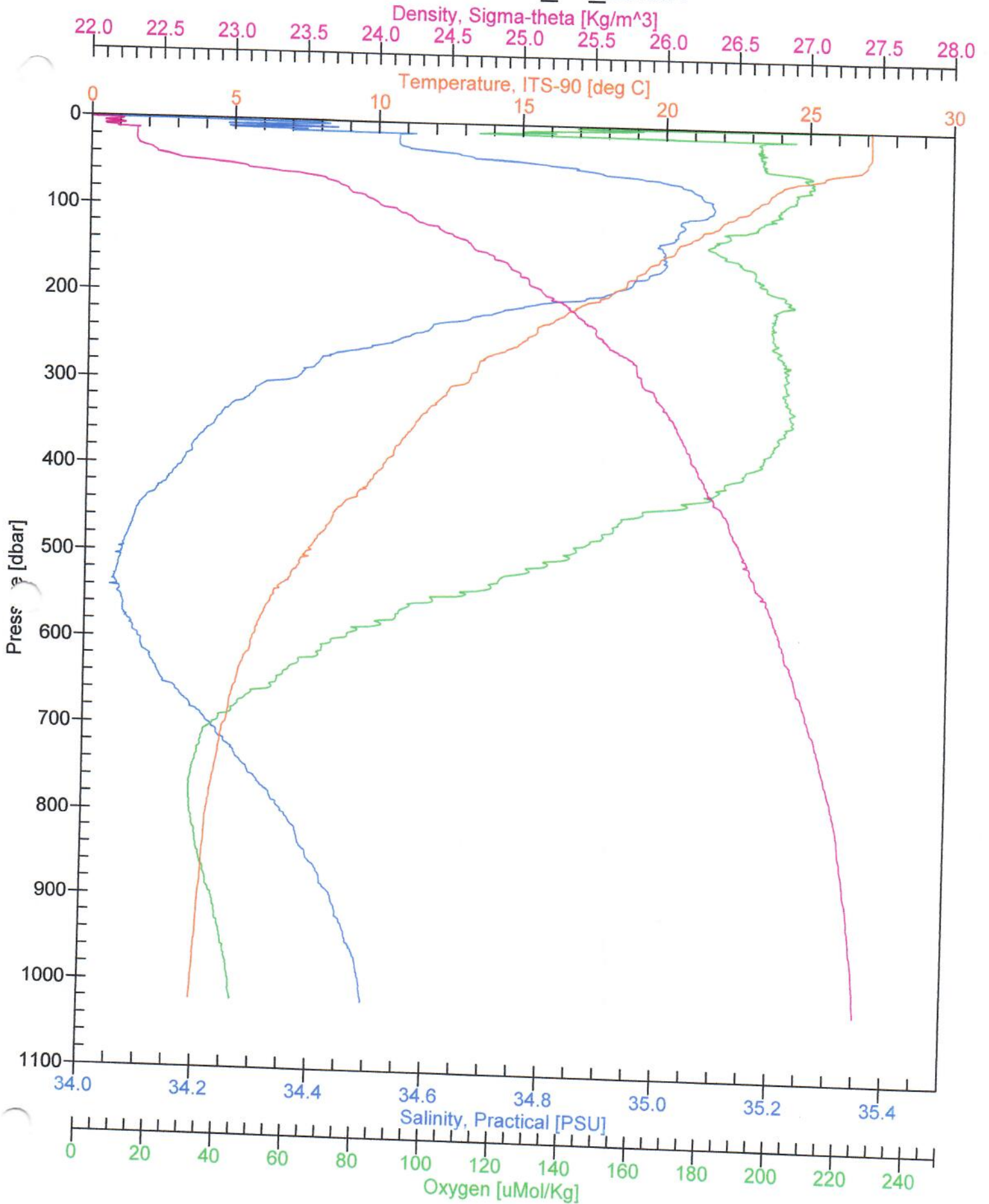
# W-1000, hot-305\_s2\_c8.cnv



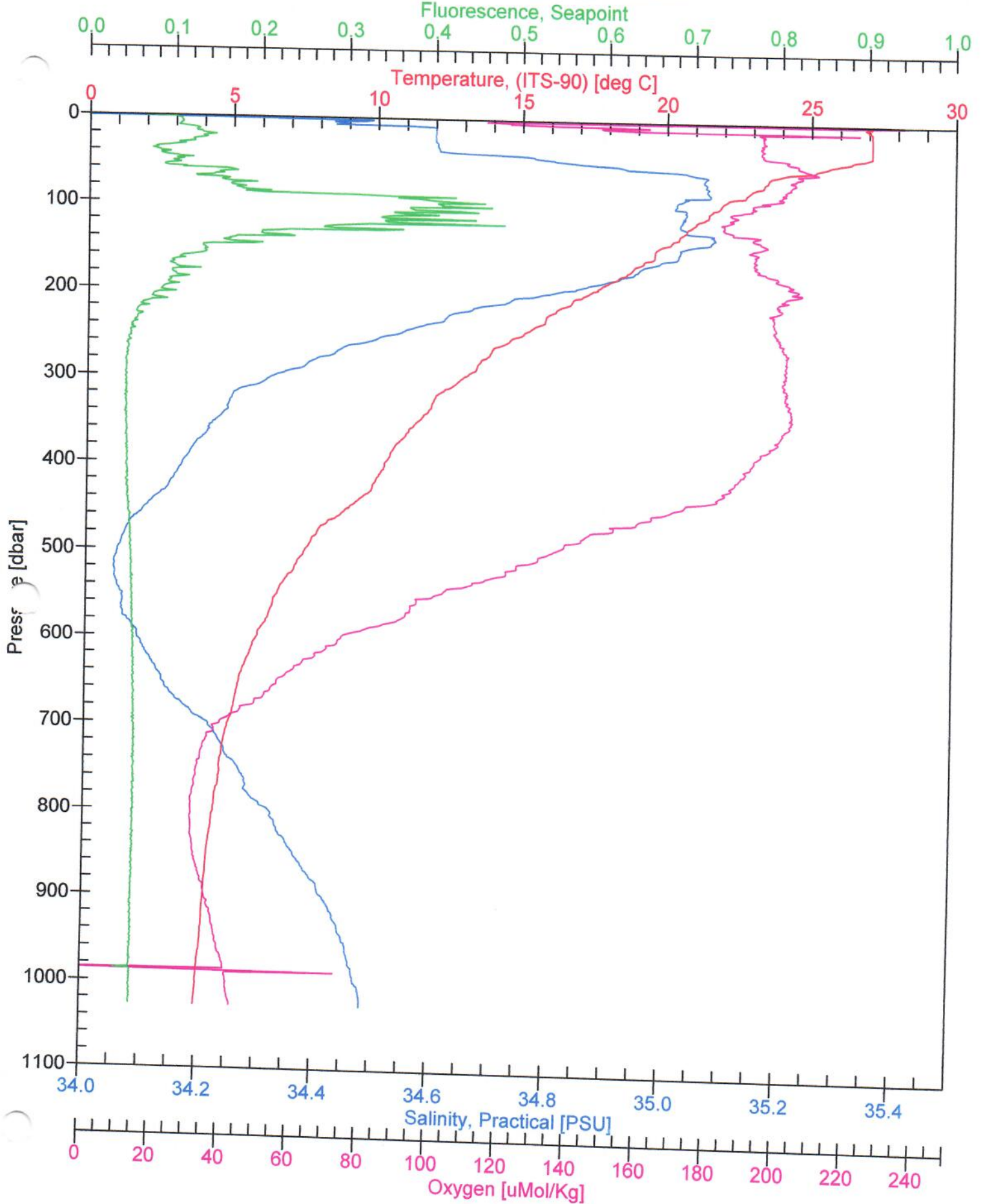
# G-1000, hot-305\_s2\_c9.cnv



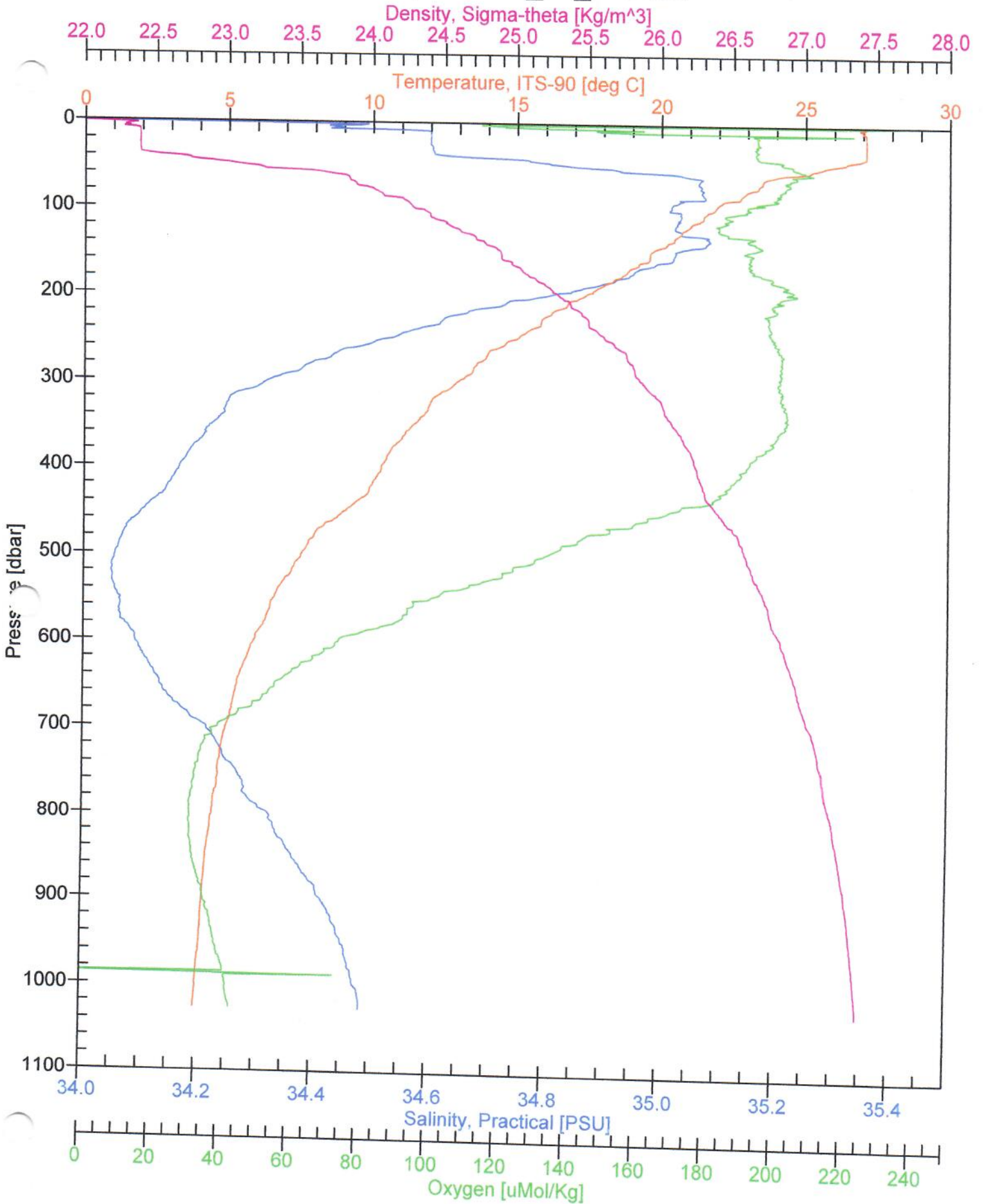
# W-1000, hot-305\_s2\_c9.cnv



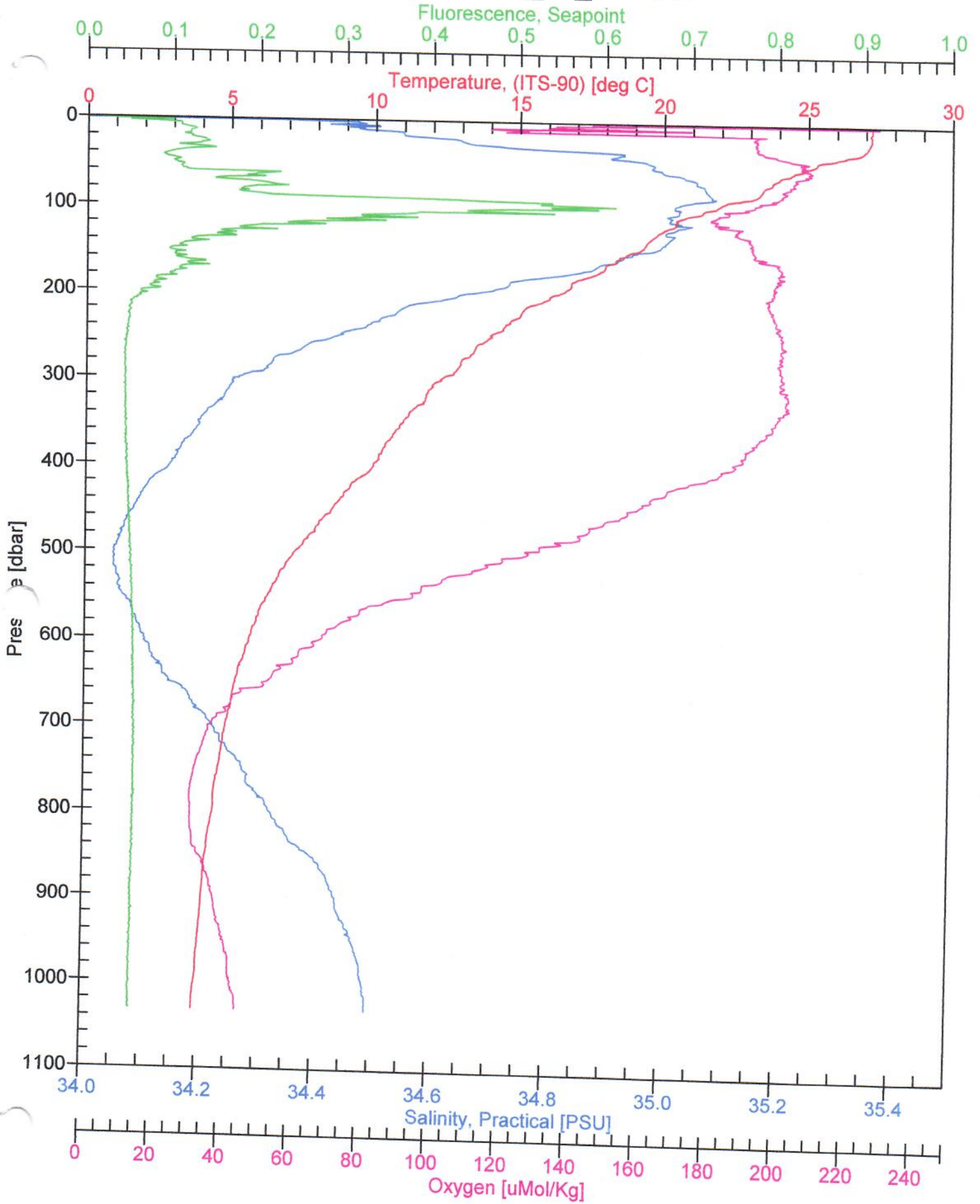
# G-1000, hot-305\_s2\_c10.cnv



# W-1000, hot-305\_s2\_c10.cnv

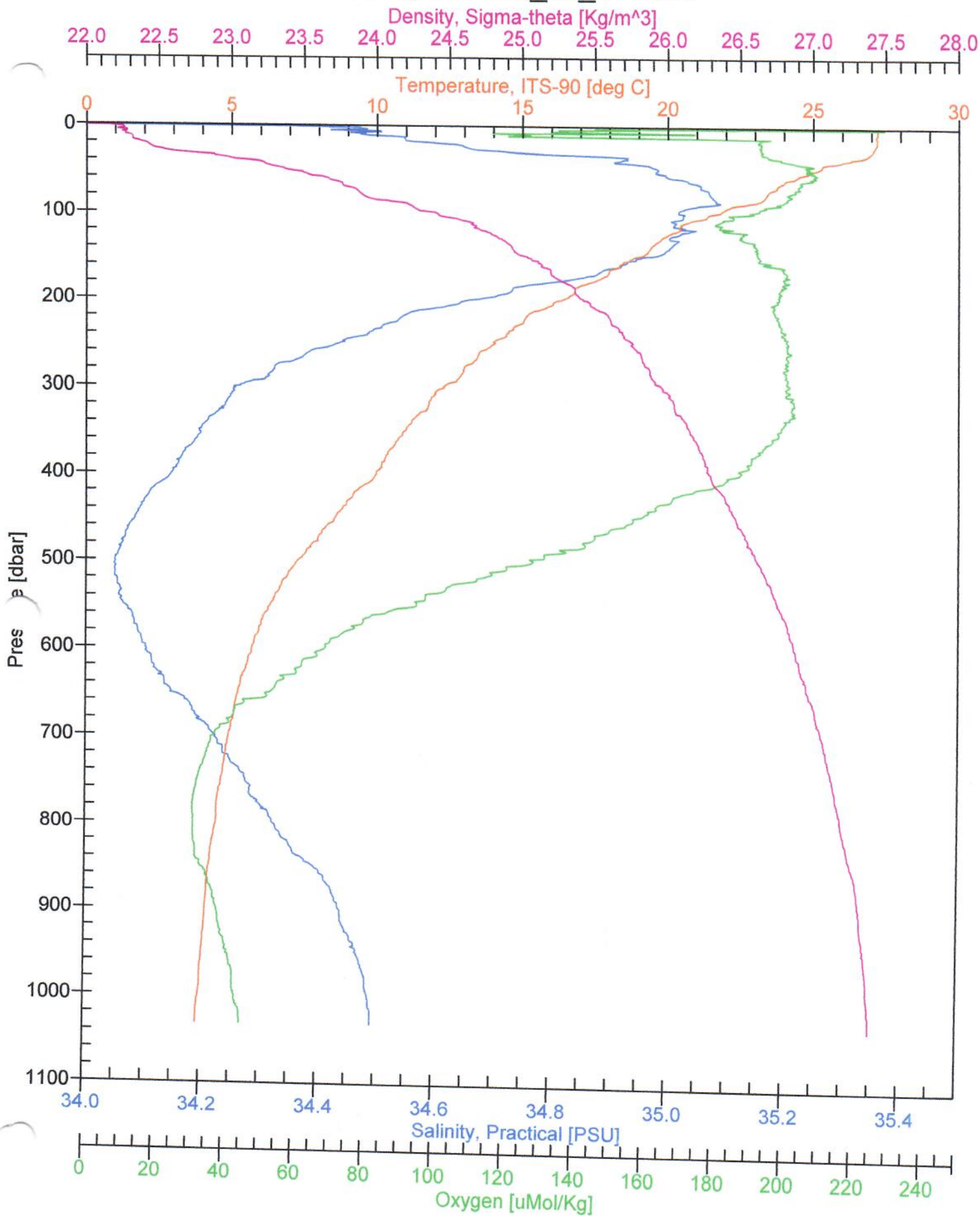


# G-1000, hot-305\_s2\_c11.cnv

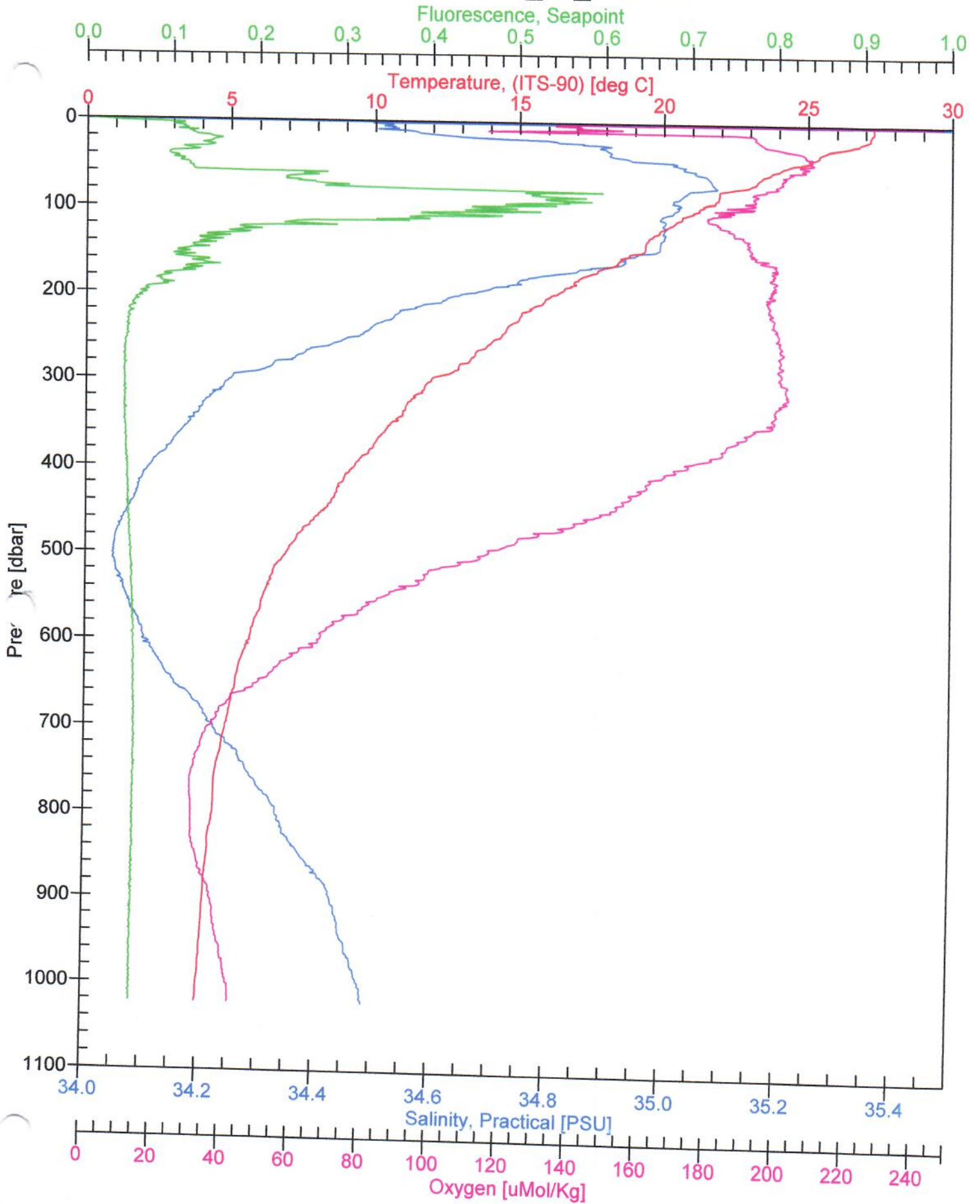




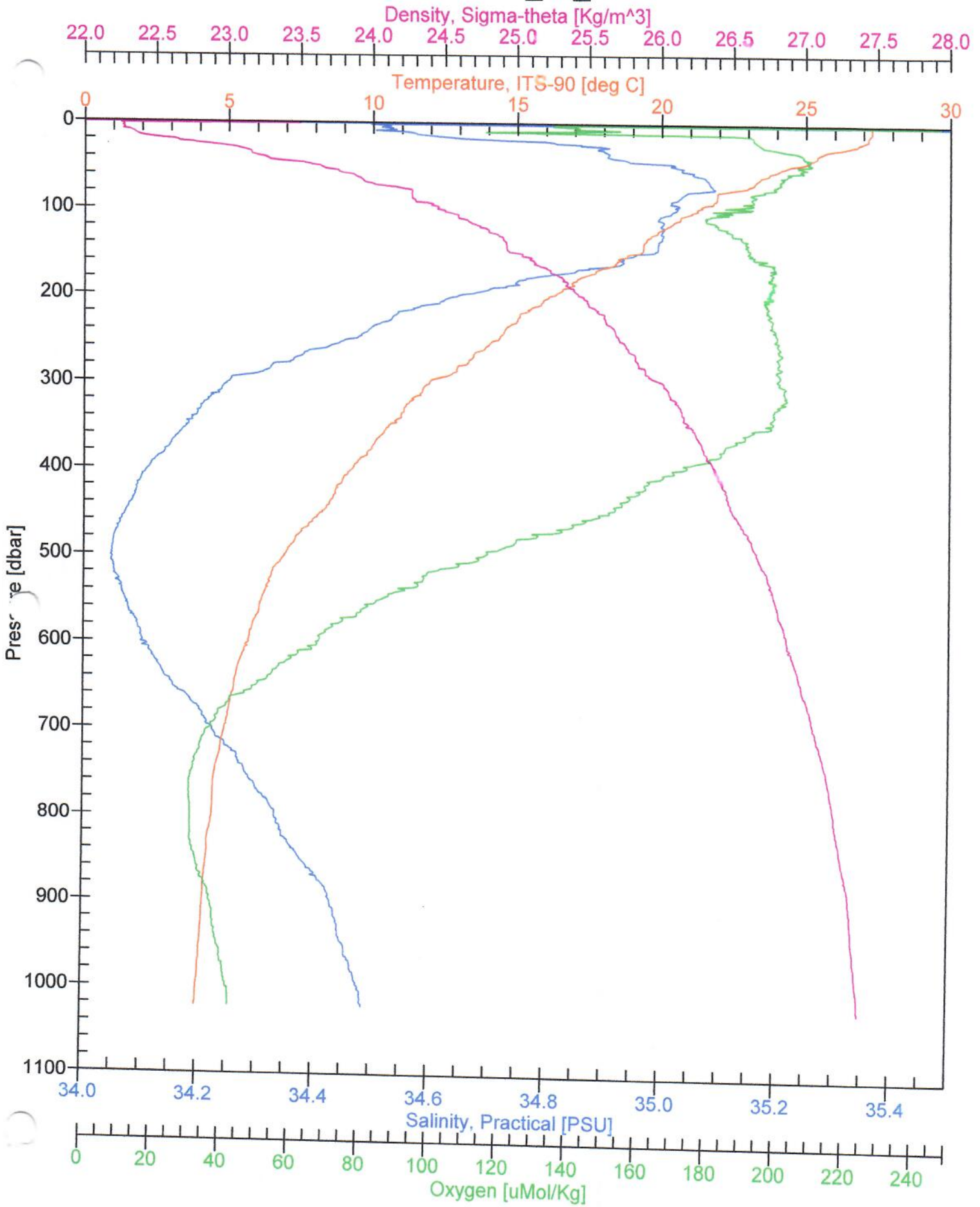
# W-1000, hot-305\_s2\_c11.cnv



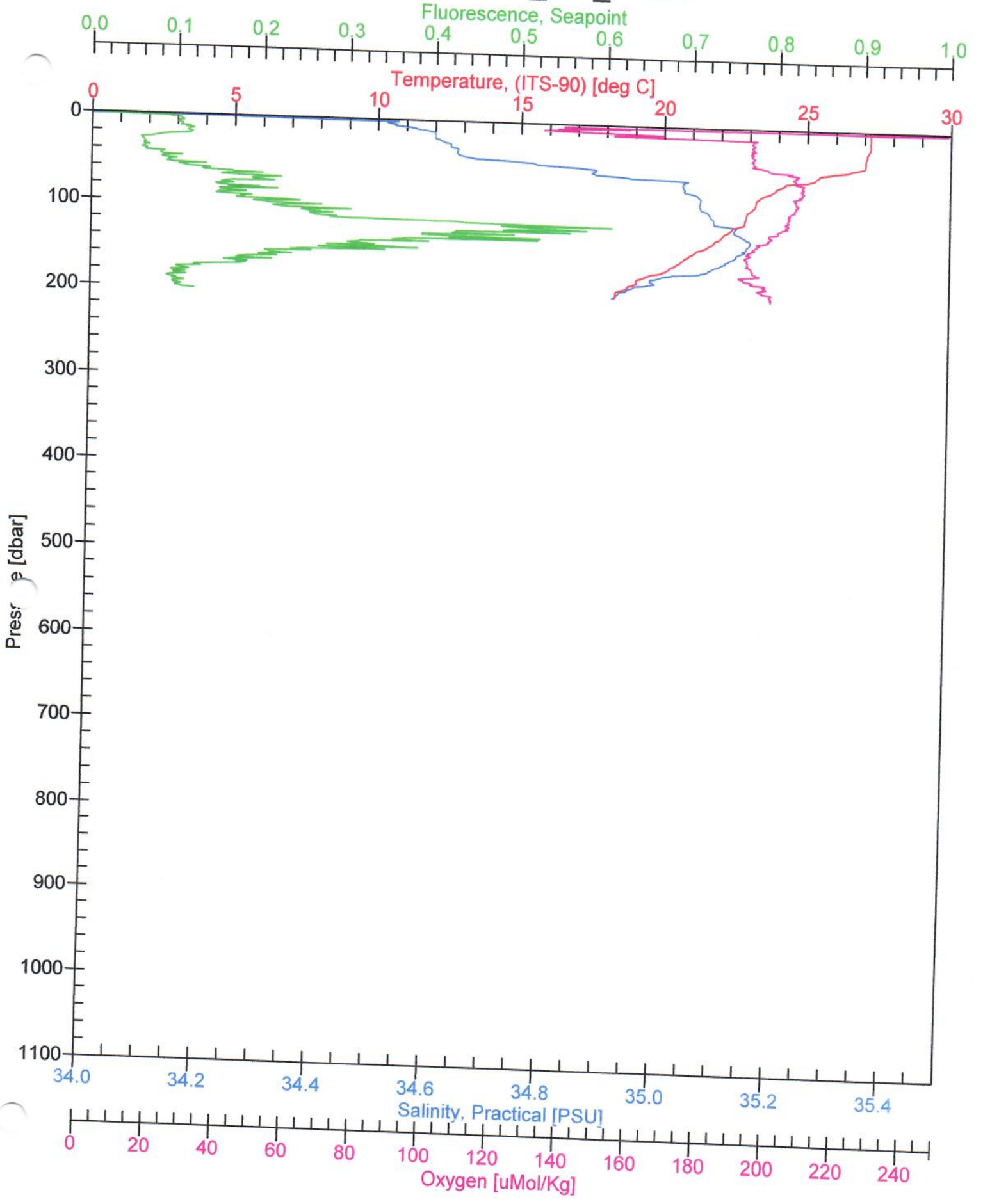
# G-1000, hot-305\_s2\_c12.cnv



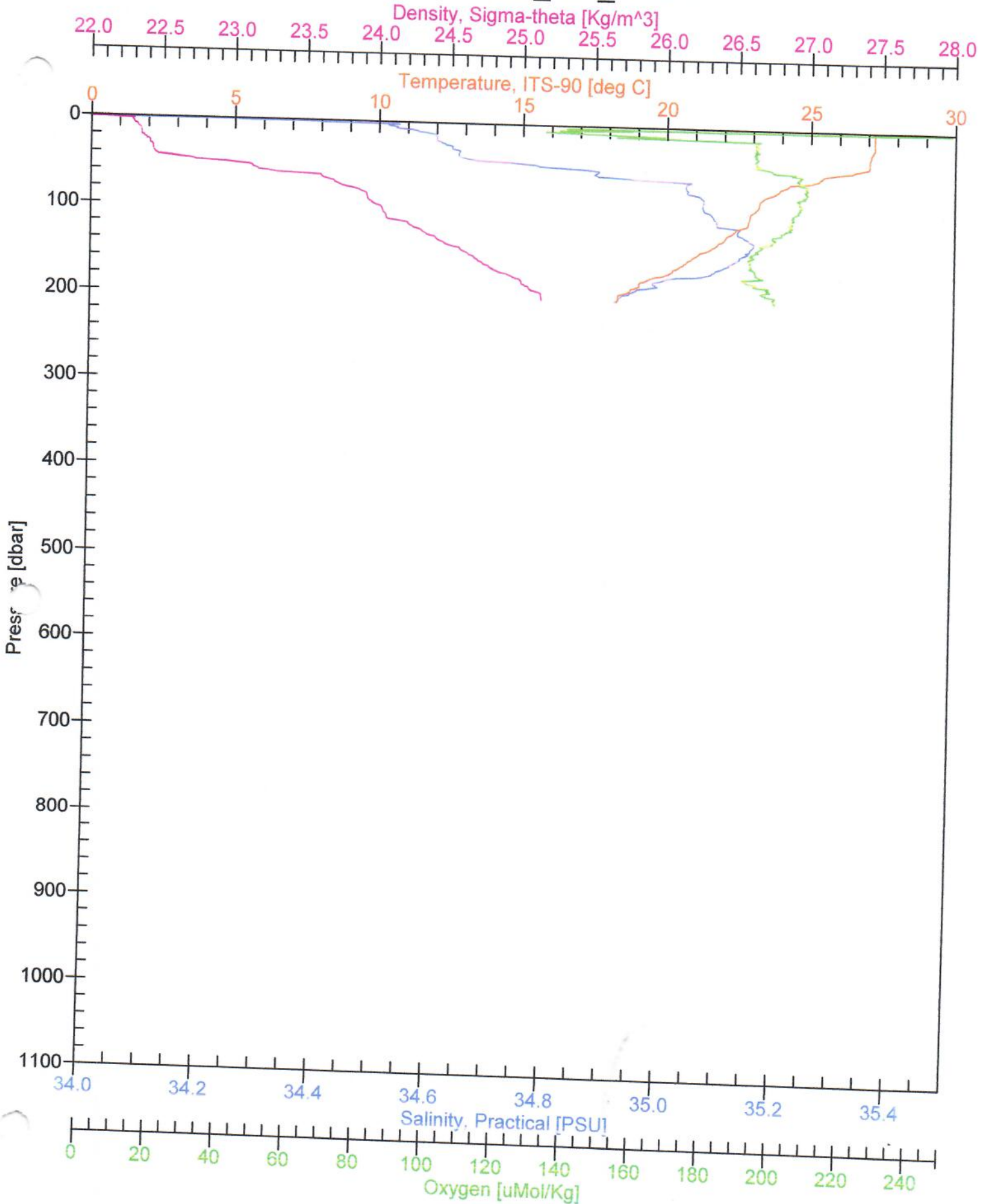
# W-1000, hot-305\_s2\_c12.cnv



# G-1000, hot-305\_s52\_c1.cnv



# W-1000, hot-305\_s52\_c1.cnv



# Hawaii Ocean Time-series

## HOT-305

### In Situ Primary Production Data Sheet

Operators: BW, DS, TC, ES (in) CF, KB (out)

Date in: 9/10/2018

Time in: 0428 (HST)

Date out: 9/10/2018Time out: 19:10 (HST)

| Incubation Depth | ✓ |
|------------------|---|
| 175              | ✓ |
| 150              | ✓ |
| 125              | ✓ |
| 100              | ✓ |
| 75               | ✓ |
| 45               | ✓ |
| 25               | ✓ |
| 5                | ✓ |

Insertion Depth

Owner

|       |       |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

Position in: 22° 47.32 ' N 157° 59.76' W

Position out: 22° 49.17 ' N 157° 53.77' W

Average weather condition during incubation:

Average sea state during incubation:

Notes: For set #4 of the B-phenylethylamine scintillation vials, both 4 and 5 (250uL) each were added. Added 250 uL of #5 to B-phenylethylamine scintillation vials as regular.

Begin Inoculation 0330Filtration time 19:30End Inoculation 0340

# Hawaii Ocean Time-series HOT-305 In Situ Primary Production Data Sheet

Operators: BW, DS, TC, ES

Date in: 9/10/2018

Time in: 0428 (HST)

Date out: 9/10/2018

Time out: 19:10 (HST)

| Incubation Depth | ✓ |
|------------------|---|
| 175              | ✓ |
| 150              | ✓ |
| 125              | ✓ |
| 100              | ✓ |
| 75               | ✓ |
| 45               | ✓ |
| 25               | ✓ |
| 5                | ✓ |

| Insertion Depth | Owner |
|-----------------|-------|
| _____           | _____ |
| _____           | _____ |
| _____           | _____ |
| _____           | _____ |
| _____           | _____ |
| _____           | _____ |
| _____           | _____ |
| _____           | _____ |
| _____           | _____ |

Position in: 22° 47.32 ' N 157° 59.76' W

Position out: 22° 49.175 N 157° 53.778 W

Average weather condition during incubation:  
Average sea state during incubation:

Notes: Set #4 added both 4 & 5 (250- $\mu$ l each) into B-phenylethylamine  
Added 250- $\mu$ l of #5 into set #5 scintillation vials as regular.

Begin Inoculation 0330  
Filtration time 19:30

End Inoculation 0340

# Hawaii Ocean Time-series HOT-305 Sediment Trap Data Sheet

Type of traps: PIT for HOT  
Operator(s): TB, BW, RT, KKB, CF  
Position in: 22° 44.96'N 157° 57.82

Date: 9/9/2018  
Wind: 7-10  
Sea State: \_\_\_\_\_

Time in: 150 m            2318  
(HST) \_\_\_\_\_  
                              \_\_\_\_\_  
                              \_\_\_\_\_  
                              \_\_\_\_\_

Time released: 2335  
Time started: 2303

Operator(s): DS, TC, ES, AW  
Position out: 22° 41.66' 158° 11.04  
Overall sea state: \_\_\_\_\_

Date: 9/11/2018  
Wind: \_\_\_\_\_  
Sea state: \_\_\_\_\_

Time Out: 150 m            1030  
(HST) \_\_\_\_\_  
                              \_\_\_\_\_  
                              \_\_\_\_\_  
                              \_\_\_\_\_

Notes: weight on board at 1036, recovered early to avoid tropical storm Olivia.



# Hawaii Ocean Time-series HOT-305 Sediment Trap Data Sheet

Type of traps: PIT for HOT

Date: 9/9/2018

Operator(s): TB, BW, RT, CF, KB

Wind: 17-10

Position in: 22° 47.04' 158° 03.01'

Sea State: \_\_\_\_\_

22° 44.96' 157° 57.82'

Time in: 150 m

Time released: 23:03

(HST) \_\_\_\_\_

Time started: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Operator(s): \_\_\_\_\_

Date: \_\_\_\_\_

Position out: 22° 41.66' 158° 11.04'

Wind: \_\_\_\_\_

Overall sea state: \_\_\_\_\_

Sea state: \_\_\_\_\_

\_\_\_\_\_

Time Out: 150 m

Notes: \_\_\_\_\_

(HST) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Data Sheet for Sediment Trap Volumes

Cruise #: 305

Analyst: TC,DS

- Directions: 1) Mark the traps with 2 lines  
a) Line #1 is at the interface

| Trap Name | Depth (m) | Height (cm)<br>at Line #2<br>(Top Line) |
|-----------|-----------|---|
|           |           |   |
| A         | 150       | 39.5                                    |
| B         | 150       | 40.0                                    |
| C         | 150       | 38.6                                    |
| D         | 150       | 39.5                                    |
| E         | 150       | 40.0                                    |
| F         | 150       | 38.8                                    |
| G         | 150       | 40.0                                    |
| H         | 150       | 40.6                                    |
| I         | 150       | 36.5                                    |
| J         | 150       | 39.5                                    |
| K         | 150       | 39.0                                    |
| L         | 150       | 39.0                                    |
|           |           |   |

# Data Sheet for Sediment Trap Volumes

Cruise #: 305

Analyst: \_\_\_\_\_

- Directions: 1) Mark the traps with 2 lines  
a) Line #1 is at the interface

| Trap Name | Depth (m) | Height (cm)<br>at Line #2<br>(Top Line) |
|-----------|-----------|---|
|           |           |   |
| A         | 150       |   |
| B         | 150       |   |
| C         | 150       |   |
| D         | 150       |   |
| E         | 150       |   |
| F         | 150       |   |
| G         | 150       |   |
| H         | 150       |   |
| I         | 150       |   |
| J         | 150       |   |
| K         | 150       |   |
| L         | 150       |   |
|           |           |   |

## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G1000GRS  | 12L         | 27.84 | KT       |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

MLD 47  
 DCM: 105  
 Smin 375

|  |   |
|--|---|
| Station: 1   | Cast: 1   |
| Latitude<br>start: 21° 20.6374<br>end: 21° 20.6836 | Longitude<br>start: 158° 16.4117<br>end: 158° 16.3971 |
| Depth of water:<br>1616 meters                     | Date (GMT):<br>9 1 9 1 18                             |
| Pressure on Deck                                   | Time:   |
| Begin: -0.39                                       | Start Log: 23:10                                      |
| End: -0.33   | In Water: 23:16                                       |
| Max cast pressure:<br>1020 dbar                    | Out of Water:<br>00:26                                |

| Trip/<br>Niskin | Time<br>stopped        | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|------------------------|--------------------|----------|-----------------|----------|
|                 |                        |                    |          |                 |          |
| 1               | 23:40:30               | 23:40:50           | 1020     | 1020            |          |
| 2               | 23:47:00               | 23:47:30           | 750      | 750             |          |
| 3               | 23:53:50               | 23:54:10           | 500      | 500             |          |
| 4               | 23:58:35               | 23:58:55           | 349      | 350             |          |
| 5               | 00:03:35               | 00:03:55           | 249      | 250             |          |
| 6               | 00:06:00               | 00:06:20           | 199      | 200             |          |
| 7               | 00:08:20               | 00:08:40           | 174      | 175             |          |
| 8               | 10:30                  | 10:50              | 150      | 150             |          |
| 9               | 12:30                  | 12:50              | 123      | 125             |          |
| 10              | 14:25                  | 14:45              | 100      | 100             |          |
| 11              | 16:15                  | 16:35              | 74       | 75              |          |
| 12              | 18:15                  | 18:35              | 44       | 45              |          |
| 13              | 20:30                  | 20:50              | 25       | 25              |          |
| 14              | 23:30                  | 23:50              | 5        | 5               |          |
| 15              |                        | 24:00              | 5        | 5               |          |
| 16              |                        |                    |          |                 |          |
| 17              |                        |                    |          |                 |          |
| 18              | <del>TEST FIRE @</del> |                    |          |                 |          |
| 19              |                        |                    |          |                 |          |
| 20              |                        |                    |          |                 |          |
| 21              |                        |                    |          |                 |          |
| 22              | <del>5 dbar</del>      |                    |          |                 |          |
| 23              |                        |                    |          |                 |          |
| 24              |                        |                    |          |                 |          |



## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type  | Bottle type | SST   | Operator |
|------------|-------------|-------|----------|
| G 1000 GPS | 12L         | 27.10 | SN       |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

MLD: 3.0 db  
 DCM: 90 db  
 S-min: NA

pp

I Forgot  
😊

|                             |                               |
|-----------------------------|-------------------------------|
| Station: 2                  | Cast: 1                       |
| Latitude start: 22° 45.2830 | Longitude start: 157° 57.2827 |
| end: *                      | end: *                        |
| Depth of water: 4224 meters | Date (GMT): 09 110 2018       |
| Pressure on Deck            | Time:                         |
| Begin: -0.42                | Start Log: 11:52:35           |
| End: -0.40                  | In Water: 12:02:38            |
| Max cast pressure: 200 dbar | Out of Water: 12:37:30        |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
| 1               |                 | 12:13:30           | 200      | 200             |          |
| 2               |                 | 12:15:40           | 185      | 185             |          |
| 3               |                 | 16:50              | 175      | 175             |          |
| 4               |                 | 18:40              | 150      | 150             |          |
| 5               |                 | 20:40              | 125      | 125             | }        |
| 6               |                 | :45                | 123      | 125             |          |
| 7               |                 | :50                | 124      | 125             |          |
| 8               |                 | 23:25              | 97       | 100             | }        |
| 9               |                 | :30                | 98       | 100             |          |
| 10              |                 | :35                | 99       | 100             |          |
| 11              |                 | 25:50              | 77       | 75              | }        |
| 12              |                 | :55                | 75       | 75              |          |
| 13              |                 | 26:00              | 75       | 75              |          |
| 14              |                 | 28:45              | 45       | 45              | }        |
| 15              |                 | :50                | 45       | 45              |          |
| 16              |                 | :55                | 46       | 45              |          |
| 17              |                 | 31:50              | 26       | 25              | }        |
| 18              |                 | :55                | 24       | 25              |          |
| 19              |                 | 32:00              | 25       | 25              |          |
| 20              |                 | 34:05              | 15       | 15              |          |
| 21              |                 | 35:10              | 6        | 5               | }        |
| 22              |                 | :15                | 5        | 5               |          |
| 23              |                 | :20                | 6        | 5               |          |
| 24              |                 | :25                | 7        | 5               |          |

## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G5000GRS  | 12L         | 27.11 | KT       |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

MLD 37  
 DCM 105  
 Smin 550

|  |   |
|--|---|
| Station: 2   | Cast: 2   |
| Latitude<br>start: 22° 44.9987<br>end: 22° 45.0112 | Longitude<br>start: 157° 59.9469<br>end: 157° 59.8746 |
| Depth of water:<br>4744 meters                     | Date (GMT):<br>9 1 10 18                              |
| Pressure on Deck                                   | Time:   |
| Begin: -0.43                                       | Start Log: 15:12                                      |
| End: -0.61   | In Water: 15:16                                       |
| Max cast pressure:<br>4806 dbar                    | Out of Water: 19:12                                   |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments           |
|-----------------|-----------------|--------------------|----------|-----------------|--------------------|
|                 |                 |                    |          |                 |                    |
| 1               |                 | 17:06:40           | 4806     | 4806            | 7 m off the bottom |
| 2               | 17:11:00        | 17:11:20           | 4600     | 4600            |                    |
| 3               |                 | :14:45             | 4499     | 4500            |                    |
| 4               |                 | :18:00             | 4398     | 4400            |                    |
| 5               |                 | :22:45             | 4199     | 4200            |                    |
| 6               |                 | :27:50             | 3999     | 4000            |                    |
| 7               |                 | 32:50              | 3801     | 3800            |                    |
| 8               | 37:30           | 37:50              | 3600     | 3600            |                    |
| 9               | 45:40           | 46:00              | 3398     | 3400            |                    |
| 10              | 50:50           | 51:10              | 3200     | 3200            |                    |
| 11              | 55:50           | 56:10              | 2999     | 3000            |                    |
| 12              | 18:00:35        | 18:00:55           | 2797     | 2800            |                    |
| 13              | 05:20           | 05:50              | 2599     | 2600            |                    |
| 14              | 10:25           | 10:45              | 2399     | 2400            |                    |
| 15              | 15:30           | 15:50              | 2200     | 2200            |                    |
| 16              | 20:15           | 20:35              | 1998     | 2000            |                    |
| 17              | 25:00           | 25:00              | 1799     | 1800            |                    |
| 18              | 32:40           | 33:00              | 1599     | 1600            |                    |
| 19              | 37:20           | 37:40              | 1400     | 1400            |                    |
| 20              | 42:10           | 42:30              | 1200     | 1200            |                    |
| 21              | 47:30           | 47:50              | 1000     | 1000            |                    |
| 22              | 53:15           | 53:35              | 750      | 750             |                    |
| 23              | 59:20           | 59:40              | 501      | 500             |                    |
| 24              | 19:10:00        | 19:10:20           | 5        | 5               |                    |

| Hawaii Ocean Time Series  |                 | Station #:    | 2                        | Cast #:  | 2        | Box #:     | 4,5 |
|---------------------------|-----------------|---------------|--------------------------|----------|----------|------------|-----|
| Salinity Sample Log Sheet |                 |               | Cruise #:                | HOT-305  | Sampler: | KT, JS, AM |     |
| Niskin #                  | Depth           | Serial #      | Serial # <del> Dup</del> | Comments |          |            |     |
| 1                         | 4800            | 73            | 97                       |          |          |            |     |
| 2                         | 4600            | 74            | 98                       |          |          |            |     |
| 3                         | 4500            | 75            | 99                       |          |          |            |     |
| 4                         | 4400            | <del>76</del> | 100                      |          |          |            |     |
| 5                         | 4200            | 77            | 101                      |          |          |            |     |
| 6                         | 4000            | 78            | 102                      |          |          |            |     |
| 7                         | 3800            | 79            | 103                      |          |          |            |     |
| 8                         | 3600            | 80            | 104                      |          |          |            |     |
| 9                         | 3400            | 81            | 105                      |          |          |            |     |
| 10                        | 3200            | 82            | 106                      |          |          |            |     |
| 11                        | <del>3000</del> | 83            | 107                      |          |          |            |     |
| 12                        | 2800            | 84            | 108                      |          |          |            |     |
| 13                        | 2600            | 85            | 109                      |          |          |            |     |
| 14                        | 2400            | 86            | 110                      |          |          |            |     |
| 15                        | 2200            | <del>87</del> | 111                      |          |          |            |     |
| 16                        | 2000            | 88            | 112                      |          |          |            |     |
| 17                        | 1800            | 89            | 113                      |          |          |            |     |
| 18                        | 1600            | 90            | 114                      |          |          |            |     |
| 19                        | 1400            | 91            | 115                      |          |          |            |     |
| 20                        | 1200            | 92            | 116                      |          |          |            |     |
| 21                        | 1000            | 93            | 117                      |          |          |            |     |
| 22                        | 750             | 94            | 118                      |          |          |            |     |
| 23                        | 500             | 95            | 119                      |          |          |            |     |
| 24                        | 5               | 96            | 120                      |          |          |            |     |
|                           |                 |               |                          |          |          |            |     |
|                           |                 |               |                          |          |          |            |     |
|                           |                 |               |                          |          |          |            |     |
|                           |                 |               |                          |          |          |            |     |
|                           |                 |               |                          |          |          |            |     |



## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G1000GRS  | 12L         | 27.19 | KT       |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

MLD 32  
 DCM 80  
 Smin 515

|                              |                               |
|------------------------------|-------------------------------|
| Station: 2                   | Cast: 3                       |
| Latitude start: 22° 45.0089  | Longitude start: 158° 00.0146 |
| end: 22° 45.0183             | end: 158° 00.0128             |
| Depth of water: 4742 meters  | Date (GMT): 9 1 10 1 18       |
| Pressure on Deck             | Time:                         |
| Begin: -0.54                 | Start Log: 21:05              |
| End: -0.43                   | In Water: 21:08               |
| Max cast pressure: 1081 dbar | Out of Water: 22:34           |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
|                 |                 |                    |          |                 |          |
| 2               | 36:00           | 36:20              | 965      | 965             |          |
| 3               | 38:50           | 39:10              | 912      | 912             |          |
| 4               | 41:50           | 42:10              | 858      | 858             |          |
| 5               | 45:05           | 45:25              | 781      | 780             |          |
| 6               |                 | 49:30              | 742      | 743             |          |
| 7               |                 | 52:15              | 690      | 692             |          |
| 8               |                 | 55:30              | 626      | 625             |          |
| 9               |                 | 58:15              | 576      | 575             |          |
| 10              |                 | 22:01:10           | 526      | 526             |          |
| 11              |                 | 03:20              | 494      | 493             |          |
| 12              |                 | 06:15              | 452      | 452             |          |
| 13              |                 | 09:00              | 408      | 410             |          |
| 14              |                 | 12:10              | 345      | 347             |          |
| 15              |                 | 15:10              | 294      | 294             |          |
| 16              |                 | 18:10              | 243      | 242             |          |
| 17              | 20:30           | 20:30              | 189      | 190             |          |
| 18              | 22:55           | 23:15              | 142      | 140             |          |
| 19              | 25:15           | 25:35              | 93       | 94              |          |
| 20              | 27:05           | 27:25              | 62       | 62              |          |
| 21              | 28:50           | 29:10              | 39       | 40              |          |
| 22              | 30:00           | 30:20              | 32       | 34              |          |
| 23              | 31:20           | 31:50              | 11       | 13              |          |
| 24              | 32:40           | 33:00              | 5        | 5               |          |

|           |                  |             |                   |
|-----------|------------------|-------------|-------------------|
| Station:  | <u>2</u>         | Cast:       | <u>3</u>          |
| Latitude: | <u>22° 45.01</u> | Longitude:  | <u>158° 00.02</u> |
| Date:     | <u>9/10/18</u>   | Time (GMT): | <u>21:08</u>      |
| Operator: | <u>KT</u>        |             |                   |

| $\delta\theta$ | $\sigma\theta$ | Depth      |
|----------------|----------------|------------|
| 700            | 20.76          |            |
| 650            | 21.28          |            |
| 600            | 21.80          | <u>2</u>   |
| 550            | 22.33          | <u>13</u>  |
| 500            | 22.85          | <u>34</u>  |
| 450            | 23.37          | <u>40</u>  |
| 400            | 23.90          | <u>62</u>  |
| 350            | 24.42          | <u>94</u>  |
| 300            | 24.95          | <u>140</u> |
| 250            | 25.47          | <u>190</u> |
| 200            | 26.00          | <u>294</u> |
| 180            | 26.21          | <u>347</u> |
| 160            | 26.42          | <u>410</u> |
| 140            | 26.63          | <u>493</u> |
| 130            | 26.73          | <u>526</u> |
| 120            | 26.84          | <u>575</u> |
| 110            | 26.94          | <u>625</u> |
| 100            | 27.05          | <u>692</u> |
| 90             | 27.16          | <u>743</u> |
| 80             | 27.26          | <u>858</u> |
| 70             | 27.37          | <u>966</u> |

|                  |            |
|------------------|------------|
| S <sub>max</sub> | <u>55</u>  |
| S <sub>min</sub> | <u>515</u> |
| S <sub>max</sub> |            |
| S <sub>min</sub> |            |

|                  |            |
|------------------|------------|
| O <sub>max</sub> | <u>50</u>  |
| O <sub>min</sub> | <u>780</u> |
| O <sub>max</sub> |            |
| O <sub>min</sub> |            |
| O <sub>max</sub> |            |

|                  |  |
|------------------|--|
| F <sub>max</sub> |  |
| F <sub>min</sub> |  |
| F <sub>max</sub> |  |
| F <sub>min</sub> |  |
| F <sub>max</sub> |  |

| Bottle | Depth       |
|--------|-------------|
| 1      | <u>1020</u> |
| 2      | <u>966</u>  |
| 3      | <u>912</u>  |
| 4      | <u>858</u>  |
| 5      | <u>780</u>  |
| 6      | <u>743</u>  |
| 7      | <u>692</u>  |
| 8      | <u>625</u>  |
| 9      | <u>575</u>  |
| 10     | <u>526</u>  |
| 11     | <u>493</u>  |
| 12     | <u>452</u>  |
| 13     | <u>410</u>  |
| 14     | <u>347</u>  |
| 15     | <u>294</u>  |
| 16     | <u>242</u>  |
| 17     | <u>190</u>  |
| 18     | <u>140</u>  |
| 19     | <u>94</u>   |
| 20     | <u>62</u>   |
| 21     | <u>40</u>   |
| 22     | <u>34</u>   |
| 23     | <u>13</u>   |
| 24     | <u>5</u>    |

758 again @ 27.16

Hawaii Ocean Time-Series CONSOLE LOG

|                       |                    |     |                   |
|-----------------------|--------------------|-----|-------------------|
| Cast type<br>G1000GPS | Bottle type<br>12L | SST | Operator<br>KT/SN |
|-----------------------|--------------------|-----|-------------------|

- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer
- 

MLD 19  
DCM 80, 100  
Smin 520

|   |  |
|---|--|
| Station: 2                                      | Cast: 4  |
| Latitude start: 22° 45.6189<br>end: 22° 45.5780 | Longitude start: 157° 59.5734<br>end: 157° 59.5139 |
| Depth of water: 4736 meters                     | Date (GMT): 9 11 18                                |
| Pressure on Deck                                | Time:  |
| Begin: -0.54                                    | Start Log: 00:17                                   |
| End: -0.30                                      | In Water: 00:19                                    |
| Max cast pressure: 1021 dbar                    | Out of Water: 01:21:59                             |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
| 1               | 00:42:20        | 00:42:40           | 1021     | 1020            |          |
| 2               |                 | :50:10             | 700      | 700             |          |
| 3               |                 | :56:30             | 519      | 520             | S-min    |
| 4               |                 | 01:01:05           | 350      | 350             |          |
| 5               |                 | :10                | 351      | 350             |          |
| 6               |                 | 04:40              | 250      | 250             |          |
| 7               |                 | 07:05              | 200      | 200             |          |
| 8               |                 | 08:35              | 175      | 175             |          |
| 9               |                 | 10:00              | 150      | 150             |          |
| 10              |                 | 11:40              | 125      | 125             |          |
| 11              |                 | 13:15              | 100      | 100             |          |
| 12              |                 | 15:00              | 76       | 75              |          |
| 13              |                 | 15:05              | 76       | 75              |          |
| 14              |                 | 17:00              | 46       | 45              |          |
| 15              |                 | 17:05              | 45       | 45              |          |
| 16              |                 | 18:35              | 24       | 25              |          |
| 17              |                 | :40                | 24       | 25              |          |
| 18              |                 | 20:55              | 4        | 5               |          |
| 19              |                 | 21:00              | 5        | 5               |          |
| 20              |                 |                    |          |                 |          |
| 21              |                 |                    |          |                 |          |
| 22              |                 |                    |          |                 |          |
| 23              |                 |                    |          |                 |          |
| 24              |                 |                    |          |                 |          |

| Hawaii Ocean Time Series  |       | Station #: | 2              | Cast #: | 4        | Box #:     | 7 |
|---------------------------|-------|------------|----------------|---------|----------|------------|---|
| Salinity Sample Log Sheet |       | Cruise #:  | HOT-305        |         | Sampler: | KT, JS, AM |   |
| Niskin #                  | Depth | Serial #   | Comments       |         |          |            |   |
| 1                         | 1020  | 145        |                |         |          |            |   |
| 2                         | 700   | 146        | (S-min)<br>↙ ↘ |         |          |            |   |
| 3                         | 520   | 147        |                |         |          |            |   |
| 4                         | [ 350 | 148        |                |         |          |            |   |
| 5                         | [ 350 | 149        |                |         |          |            |   |
| 6                         | 250   | 150        |                |         |          |            |   |
| 7                         | 200   | 151        |                |         |          |            |   |
| 8                         | 175   | 152        |                |         |          |            |   |
| 9                         | 150   | 153        |                |         |          |            |   |
| 10                        | 125   | 154        |                |         |          |            |   |
| 11                        | 100   | 155        |                |         |          |            |   |
| 12                        | [ 75  | 156        |                |         |          |            |   |
| 13                        | [ 75  | 157        |                |         |          |            |   |
| 14                        | [ 45  | 158        |                |         |          |            |   |
| 15                        | [ 45  | 159        |                |         |          |            |   |
| 16                        | [ 25  | 160        |                |         |          |            |   |
| 17                        | [ 25  | 161        |                |         |          |            |   |
| 18                        | [ 5   | 162        |                |         |          |            |   |
| 19                        | [ 5   | 163        |                |         |          |            |   |
| 20                        |       |            |                |         |          |            |   |
| 21                        |       |            |                |         |          |            |   |
| 22                        |       |            |                |         |          |            |   |
| 23                        |       |            |                |         |          |            |   |
| 24                        |       |            |                |         |          |            |   |
|                           |       |            |                |         |          |            |   |
|                           |       |            |                |         |          |            |   |
|                           |       |            |                |         |          |            |   |
|                           |       |            |                |         |          |            |   |
|                           |       |            |                |         |          |            |   |

Hawaii Ocean Time-Series CONSOLE LOG

|                       |                    |              |                |
|-----------------------|--------------------|--------------|----------------|
| Cast type<br>G1000GPS | Bottle type<br>12L | SST<br>27.65 | Operator<br>SN |
|-----------------------|--------------------|--------------|----------------|

|                              |                               |
|------------------------------|-------------------------------|
| Station: 2                   | Cast: 5                       |
| Latitude start: 22° 46.2445  | Longitude start: 157° 54.9616 |
| Latitude end: 22° 46.9053    | Longitude end: 157° 54.9967   |
| Depth of water: 4698 meters  | Date (GMT): 9 1 11 18         |
| Pressure on Deck             | Time:                         |
| Begin: -0.46                 | Start Log: 02:58              |
| End: -0.41                   | In Water: 03:05:36            |
| Max cast pressure: 1022 dbar | Out of Water: 04:13:06        |

- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer
- 

PP04

MLD: 18  
 S-min: 520  
 DCM: 110

| Trip/<br>Niskin | Time<br>stopped   | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|---|--------------------|----------|-----------------|----------|
| 1               | 3:33:30   | 3:34:00            | 1022     | 1020            |          |
| 2               | 44:20   | 44:50              | 520      | 520             | S-min    |
| 3               | 48:50   | 49:20              | 350      | 350             | ]        |
| 4               |   | 30                 | 350      | 350             |          |
| 5               |   | 52:20              | 249      | 250             |          |
| 6               |   | 54:55              | 201      | 200             |          |
| 7               |   | 56:55              | 125      | 175             |          |
| 8               |   | 58:40              | 150      | 150             |          |
| 9               |   | 04:00:20           | 124      | 125             |          |
| 10              |   | 02:05              | 101      | 100             |          |
| 11              |   | 03:45              | 74       | 75              |          |
| 12              |   | 05:45              | 45       | 45              |          |
| 13              |   | 07:10              | 26       | 25              | ]        |
| 14              |   | :15                | 25       | 25              |          |
| 15              |   | 08:35              | 14       | 15              |          |
| 16              |   | 11:10              | 6        | 5               | ]        |
| 17              |   | :15                | 7        | 5               |          |
| 18              | <del>XX</del> |                    |          |                 |          |
| 19              | <del>XX</del> |                    |          |                 |          |
| 20              | <del>XX</del> |                    |          |                 |          |
| 21              | <del>XX</del> |                    |          |                 |          |
| 22              |   |                    |          |                 |          |
| 23              |   |                    |          |                 |          |
| 24              |   |                    |          |                 |          |

x

x

| Hawaii Ocean Time Series  |       | Station #: 2      | Cast #: 5 | Box #: 38        |
|---------------------------|-------|-------------------|-----------|------------------|
| Salinity Sample Log Sheet |       | Cruise #: HOT-305 |           | Sampler: E, F, S |
| Niskin #                  | Depth | Serial #          | Comments  |                  |
| 1                         | 1020  | 164               |           |                  |
| 2                         | 520   | 165               | 5 min     |                  |
| 3                         | 350   | 166               |           |                  |
| 4                         | 350   | 167               |           |                  |
| 5                         | 250   | 168               |           |                  |
| 6                         | 200   | 169               |           |                  |
| 7                         | 175   | 170               |           |                  |
| 8                         | 150   | 171               |           |                  |
| 9                         | 125   | 172               |           |                  |
| 10                        | 100   | 173               |           |                  |
| 11                        | 75    | 174               |           |                  |
| 12                        | 45    | 175               |           |                  |
| 13                        | 25    | 176               |           |                  |
| 14                        | —     | —                 |           |                  |
| 15                        | 15    | 177               |           |                  |
| 16                        | 5     | 178               |           |                  |
| 17                        | —     | —                 |           |                  |
| 18                        |       |                   |           |                  |
| 19                        |       |                   |           |                  |
| 20                        |       |                   |           |                  |
| 21                        |       |                   |           |                  |
| 22                        |       |                   |           |                  |
| 23                        |       |                   |           |                  |
| 24                        |       |                   |           |                  |
|                           |       |                   |           |                  |
|                           |       |                   |           |                  |
|                           |       |                   |           |                  |
|                           |       |                   |           |                  |
|                           |       |                   |           |                  |

## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G1000 GPS | 12L         | 27.26 | SN       |

|  |   |
|--|---|
| Station: 2   | Cast: 6   |
| Latitude<br>start: 22° 46.9086<br>end: 22° 46.9894 | Longitude<br>start: 157° 56.8577<br>end: 157° 56.7654                     |
| Depth of water:<br>4706 meters                     | Date (GMT):<br>09/11/2018   |
| Pressure on Deck                                   | Time:   |
| Begin: -0.43<br>End: -0.40                         | Start Log:<br>06:04<br>In Water:<br>06:09:30<br>Out of Water:<br>07:21:40 |
| Max cast pressure:<br>1018 dbar                    |   |

- BEACH
- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 JSUS  
 PO Fluorometer  
 MLD: 18  
 S min: 570  
 PCM: 90, 110

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
| 1               |                 | 06:35:00           | 1018     | 1020            |          |
| 2               |                 |                    | 520      | 520             | S-min.   |
| 3               |                 |                    | 520      | 520             | S-min    |
| 4               |                 | 56:20              | 200      | 200             | ✓        |
| 5               |                 | 58:10              | 175      | 175             | ✓        |
| 6               |                 | 59:35              | 165      | 165             | ✓        |
| 7               |                 | 07:01:15           | 151      | 150             | ✓        |
| 8               |                 | 03:05              | 130      | 130             |          |
| 9               |                 | 04:20              | 124      | 125             |          |
| 10              |                 | 05:55              | 114      | 115             |          |
| 11              |                 | 07:00              | 109      | 110             |          |
| 12              |                 | 08:20              | 99       | 100             |          |
| 13              |                 | 09:40              | 90       | 90              |          |
| 14              |                 | 10:45              | 85       | 85              |          |
| 15              |                 | 11:55              | 74       | 75              |          |
| 16              |                 | 13:20              | 61       | 60              |          |
| 17              |                 | 14:50              | 46       | 45              |          |
| 18              |                 | 16:20              | 34       | 35              |          |
| 19              |                 | 17:45              | 24       | 25              |          |
| 20              |                 | :50                | 24       | 25              | ]        |
| 21              |                 | 19:10              | 21       | 15              |          |
| 22              |                 | 20:30              | 5        | 5               | ]        |
| 23              |                 | :35                | 5        | 5               |          |
| 24              |                 | :40                | 5        | 5               | ]        |

| Hawaii Ocean Time Series  |                 | Station #: 2    | Cast #: 6          | Box #: 8, 9      |
|---------------------------|-----------------|-----------------|--------------------|------------------|
| Salinity Sample Log Sheet |                 | Cruise #: HOT-  |                    | Sampler: E, S, F |
| Niskin #                  | Depth           | Serial #        | Comments           |                  |
| 1                         | 1020            | 179             |                    |                  |
| 2                         | 520             | 180             | O <sub>2</sub> min |                  |
| 3                         | 520             | 181             | S min              |                  |
| 4                         | 200             | 182             |                    |                  |
| 5                         | 175             | 183             |                    |                  |
| 6                         | 165             | 184             |                    |                  |
| 7                         | 150             | 185             |                    |                  |
| 8                         | 130             | 186             |                    |                  |
| 9                         | 125             | 187             |                    |                  |
| 10                        | 115             | 188             |                    |                  |
| 11                        | 110             | 189             |                    |                  |
| 12                        | 100             | 190             |                    |                  |
| 13                        | 90              | 191             |                    |                  |
| 14                        | 85              | 192             |                    |                  |
| 15                        | 75              | 193             |                    |                  |
| 16                        | 60              | 194             |                    |                  |
| 17                        | 45              | 195             |                    |                  |
| 18                        | 35              | 196             |                    |                  |
| 19                        | 25              | 197             |                    |                  |
| 20                        | <del>    </del> | <del>    </del> |                    |                  |
| 21                        | 15              | 198             |                    |                  |
| 22                        | 5               | 199             |                    |                  |
| 23                        | 5               | 200             |                    |                  |
| 24                        | <del>    </del> | <del>    </del> |                    |                  |
|                           |                 |                 |                    |                  |
|                           |                 |                 |                    |                  |
|                           |                 |                 |                    |                  |
|                           |                 |                 |                    |                  |
|                           |                 |                 |                    |                  |



## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G1000 GPS | 12 L        | 27-20 | SN       |

|                              |                               |
|------------------------------|-------------------------------|
| Station: 2                   | Cast: 7                       |
| Latitude start: 22° 48.0229  | Longitude start: 157° 56.8443 |
| end: 22° 48.0962             | end: 157° 56.4029             |
| Depth of water: 4697 meters  | Date (GMT): 09 11 12018       |
| Pressure on Deck             | Time:                         |
| Begin: -0.42                 | Start Log: 09:10:48           |
| End: -0.37                   | In Water: 09:20:00            |
| Max cast pressure: 1020 dbar | Out of Water: 10:17:55        |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

HPLC

MLD: 30  
 Smin: 530  
 DCM: 100

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
| 1               |                 | 09:43:25           | 1020     | 1020            |          |
| 2               |                 | 54:30              | 531      | 530             | 5 min    |
| 3               |                 | 10:02:30           | 174      | 175             |          |
| X 4             |                 | :35                | 174      | 175             |          |
| 5               |                 | 04:10              | 149      | 150             |          |
| X 6             |                 | :15                | 151      | 150             |          |
| 7               |                 | 05:30              | 136      | 135             |          |
| 8               |                 | 06:30              | 123      | 125             |          |
| X 9             |                 | :35                | 125      | 125             |          |
| 10              |                 | 07:30              | 115      | 115             |          |
| 11              |                 | 08:35              | 101      | 100             |          |
| X 12            |                 | :40                | 101      | 100             |          |
| 13              |                 | 09:55              | 85       | 85              |          |
| 14              |                 | 11:05              | 75       | 75              |          |
| 15              |                 | 12:10              | 58       | 60              |          |
| 16              |                 | 13:30              | 45       | 45              |          |
| 17              |                 | 14:55              | 26       | 25              |          |
| 18              |                 | 16:30              | 5        | 5               |          |
| 19              |                 |                    |          |                 |          |
| 20              |                 |                    |          |                 |          |
| 21              |                 |                    |          |                 |          |
| 22              |                 |                    |          |                 |          |
| 23              |                 |                    |          |                 |          |
| 24              |                 |                    |          |                 |          |



Hawaii Ocean Time-Series CONSOLE LOG

|                        |                    |              |                   |
|------------------------|--------------------|--------------|-------------------|
| Cast type<br>G1000 GPS | Bottle type<br>12L | SST<br>27.13 | Operator<br>SN/KT |
|------------------------|--------------------|--------------|-------------------|

|  |   |
|--|---|
| Station: 2                                     | Cast: 8   |
| Latitude start: 22° 45.009<br>end: 22° 45.0164 | Longitude start: 158° 00.028<br>end: 158° 00.0348                         |
| Depth of water:<br>4742 meters                 | Date (GMT):<br>09 11 12018  |
| Pressure on Deck<br>Begin: -0.44<br>End: -0.34 | Time:<br>Start Log: 11:56<br>In Water: 12:05:00<br>Out of Water: 13:05:00 |
| Max cast pressure:<br>1017 dbar                |   |

- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer
- 

PUR

MLD: 30  
S min: 515  
TCH: 95

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
| 1               |                 | 12:31:40           | 1017     | 1000            |          |
| 2               |                 | 47:10              | 250      | 250             |          |
| 3               |                 | 49:55              | 175      | 175             |          |
| 4               |                 | 52:00              | 149      | 150             |          |
| 5               |                 | 53:15              | 124      | 125             |          |
| 6               |                 | 56:15              | 100      | 100             |          |
| 7               |                 | 58:00              | 73       | 75              |          |
| 8               |                 | 59:45              | 45       | 45              |          |
| 9               |                 | 13:01:10           | 23       | 25              |          |
| X 10            |                 | 01:20              | 24       | 25              |          |
| 11              |                 | 02:50              | 5        | 5               |          |
| X 12            |                 | 03:00              | 6        | 5               |          |
| 13              |                 |                    |          |                 |          |
| 14              |                 |                    |          |                 |          |
| 15              |                 |                    |          |                 |          |
| 16              |                 |                    |          |                 |          |
| 17              |                 |                    |          |                 |          |
| 18              |                 |                    |          |                 |          |
| 19              |                 |                    |          |                 |          |
| 20              |                 |                    |          |                 |          |
| 21              |                 |                    |          |                 |          |
| 22              |                 |                    |          |                 |          |
| 23              |                 |                    |          |                 |          |
| 24              |                 |                    |          |                 |          |

| Hawaii Ocean Time Series  |       |          | Station #: 2      | Cast #: 8 | Box #: 9, 10     |
|---------------------------|-------|----------|-------------------|-----------|------------------|
| Salinity Sample Log Sheet |       |          | Cruise #: HOT-305 |           | Sampler: K, A, J |
| Niskin #                  | Depth | Serial # | Comments          |           |                  |
| 1                         | 1000  | 215      |                   |           |                  |
| 2                         | 250   | 216      |                   |           |                  |
| 3                         | 175   | 217      |                   |           |                  |
| 4                         | 150   | 218      |                   |           |                  |
| 5                         | 125   | 219      |                   |           |                  |
| 6                         | 100   | 220      |                   |           |                  |
| 7                         | 75    | 221      |                   |           |                  |
| 8                         | 45    | 222      |                   |           |                  |
| 9                         | 25    | 223      |                   |           |                  |
| 10                        |       |          |                   |           |                  |
| 11                        | 5     | 224      |                   |           |                  |
| 12                        |       |          |                   |           |                  |
| 13                        |       |          |                   |           |                  |
| 14                        |       |          |                   |           |                  |
| 15                        |       |          |                   |           |                  |
| 16                        |       |          |                   |           |                  |
| 17                        |       |          |                   |           |                  |
| 18                        |       |          |                   |           |                  |
| 19                        |       |          |                   |           |                  |
| 20                        |       |          |                   |           |                  |
| 21                        |       |          |                   |           |                  |
| 22                        |       |          |                   |           |                  |
| 23                        |       |          |                   |           |                  |
| 24                        |       |          |                   |           |                  |
|                           |       |          |                   |           |                  |
|                           |       |          |                   |           |                  |
|                           |       |          |                   |           |                  |
|                           |       |          |                   |           |                  |
|                           |       |          |                   |           |                  |
|                           |       |          |                   |           |                  |

## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G1000GAS  | 12 L        | 27.10 | KT       |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

MLD 35  
 DCM 120  
 Smin 540

|  |   |
|--|---|
| Station: 2   | Cast: 9   |
| Latitude<br>start: 22° 45.2815<br>end: 22° 45.3044 | Longitude<br>start: 158° 00.1135<br>end: 157° 59.9780 |
| Depth of water:<br>4741 meters                     | Date (GMT):<br>9 1 11 18                              |
| Pressure on Deck                                   | Time:   |
| Begin: -0.44                                       | Start Log: 15:13                                      |
| End: -0.36   | In Water: 15:16                                       |
| Max cast pressure:<br>1020 dbar                    | Out of Water: 16:18                                   |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
|                 |                 |                    |          |                 |          |
| 1               | 15:40:15        | 15:40:35           | 1014     | 1020            |          |
| 2               | 50:45           | 50:05              | 539      | 540             | S-min    |
| 3               | 57:30           | 57:50              | 273      | 275             |          |
| 4               | 59:05           | 59:25              | 249      | 250             |          |
| 5               | 16:01:05        | 16:01:25           | 224      | 225             |          |
| 6               | 02:25           | 02:45              | 199      | 200             |          |
| 7               | 03:35           | 03:55              | 174      | 175             |          |
| 8               | 04:50           | 05:10              | 149      | 150             |          |
| 9               | 06:05           | 06:25              | 124      | 125             |          |
| 10              | 07:35           | 07:55              | 100      | 100             |          |
| 11              | 09:00           | 09:20              | 75       | 75              |          |
| 12              | 12:40           | 13:00              | 48       | 45              |          |
| 13              | 14:00           | 14:20              | 23       | 25              |          |
| 14              |                 | 14:30              | 24       | 25              |          |
| 15              | 15:20           | 15:40              | 14       | 15              |          |
| 16              | 16:25           | 16:45              | 5        | 5               |          |
| 17              |                 | 16:55              | 4        | 5               |          |
| 18              |                 |                    |          |                 |          |
| 19              |                 |                    |          |                 |          |
| 20              |                 |                    |          |                 |          |
| 21              |                 |                    |          |                 |          |
| 22              |                 |                    |          |                 |          |
| 23              |                 |                    |          |                 |          |
| 24              |                 |                    |          |                 |          |

| Hawaii Ocean Time Series  |       |          | Station #: 2       | Cast #: 9 | Box #: 10           |
|---------------------------|-------|----------|--------------------|-----------|---------------------|
| Salinity Sample Log Sheet |       |          | Cruise #: HOT- 305 |           | Sampler: KT, JS, AM |
| Niskin #                  | Depth | Serial # | Comments           |           |                     |
| 1                         | 1020  | 225      |                    |           |                     |
| 2                         | 540   | 226      | Smin               |           |                     |
| 3                         | 275   | ---      |                    |           |                     |
| 4                         | 250   | ---      |                    |           |                     |
| 5                         | 225   | ---      |                    |           |                     |
| 6                         | 200   | ---      |                    |           |                     |
| 7                         | 175   | ---      |                    |           |                     |
| 8                         | 150   | ---      |                    |           |                     |
| 9                         | 125   | ---      |                    |           |                     |
| 10                        | 100   | ---      |                    |           |                     |
| 11                        | 75    | ---      |                    |           |                     |
| 12                        | 45    | ---      |                    |           |                     |
| 13                        | 25    | ---      |                    |           |                     |
| 14                        | 25    | ---      |                    |           |                     |
| 15                        | 15    | ---      |                    |           |                     |
| 16                        | 5     | 227      |                    |           |                     |
| 17                        | 5     | ---      |                    |           |                     |
| 18                        |       |          |                    |           |                     |
| 19                        |       |          |                    |           |                     |
| 20                        |       |          |                    |           |                     |
| 21                        |       |          |                    |           |                     |
| 22                        |       |          |                    |           |                     |
| 23                        |       |          |                    |           |                     |
| 24                        |       |          |                    |           |                     |
|                           |       |          |                    |           |                     |
|                           |       |          |                    |           |                     |
|                           |       |          |                    |           |                     |
|                           |       |          |                    |           |                     |
|                           |       |          |                    |           |                     |

## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G1000GPS  | 12L         | 27.10 | KT       |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

MLD 40  
 DCM 100  
 Smin 520

|                              |                               |
|------------------------------|-------------------------------|
| Station: 2                   | Cast: 10                      |
| Latitude start: 22° 46.2164  | Longitude start: 157° 54.8447 |
| end: 22° 46.1033             | end: 157° 54.3823             |
| Depth of water: 4700 meters  | Date (GMT): 9 1 11 18         |
| Pressure on Deck             | Time:                         |
| Begin: -0.47                 | Start Log: 17:50              |
| End: -0.83                   | In Water: 18:03               |
| Max cast pressure: 1021 dbar | Out of Water: 19:06           |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
| 1               | 18:27:50        | 18:28:10           | 1021     | 1020            |          |
| 2               | 40:10           | 40:30              | 520      | 520             | S-min    |
| 3               | 48:50           | 49:10              | 175      | 175             |          |
| 4               | 51:00           | 51:20              | 150      | 150             |          |
| 5               | 53:00           | 53:20              | 124      | 125             |          |
| 6               | 55:00           | 55:20              | 99       | 100             |          |
| 7               | 57:00           | 57:20              | 74       | 75              |          |
| 8               | 59:25           | 59:45              | 45       | 45              |          |
| 9               | 19:01:10        | 19:01:30           | 23       | 25              |          |
| 10              |                 | 01:40              | 24       | 25              |          |
| 11              | 02:20           | 03:40              | 5        | 5               |          |
| 12              |                 | 03:50              | 5        | 5               |          |
| 13              |                 |                    |          |                 |          |
| 14              |                 |                    |          |                 |          |
| 15              |                 |                    |          |                 |          |
| 16              |                 |                    |          |                 |          |
| 17              |                 |                    |          |                 |          |
| 18              |                 |                    |          |                 |          |
| 19              |                 |                    |          |                 |          |
| 20              |                 |                    |          |                 |          |
| 21              |                 |                    |          |                 |          |
| 22              |                 |                    |          |                 |          |
| 23              |                 |                    |          |                 |          |
| 24              |                 |                    |          |                 |          |

| Hawaii Ocean Time Series  |       |          | Station #: 2      | Cast #: 10          | Box #: 10 |
|---------------------------|-------|----------|-------------------|---------------------|-----------|
| Salinity Sample Log Sheet |       |          | Cruise #: HOT-305 | Sampler: KT, JS, AM |           |
| Niskin #                  | Depth | Serial # | Comments          |                     |           |
| 1                         | 1020  | 228      |                   |                     |           |
| 2                         | 520   | 229      | S-min             |                     |           |
| 3                         | 175   | —        |                   |                     |           |
| 4                         | 150   | —        |                   |                     |           |
| 5                         | 125   | —        |                   |                     |           |
| 6                         | 100   | —        |                   |                     |           |
| 7                         | 45    | —        |                   |                     |           |
| 8                         | 45    | —        |                   |                     |           |
| 9                         | 25    | —        |                   |                     |           |
| 10                        | 25    | —        |                   |                     |           |
| 11                        | 5     | 230      |                   |                     |           |
| 12                        | 5     | —        |                   |                     |           |
| 13                        |       |          |                   |                     |           |
| 14                        |       |          |                   |                     |           |
| 15                        |       |          |                   |                     |           |
| 16                        |       |          |                   |                     |           |
| 17                        |       |          |                   |                     |           |
| 18                        |       |          |                   |                     |           |
| 19                        |       |          |                   |                     |           |
| 20                        |       |          |                   |                     |           |
| 21                        |       |          |                   |                     |           |
| 22                        |       |          |                   |                     |           |
| 23                        |       |          |                   |                     |           |
| 24                        |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |



## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G1000GPS  | 12L         | 27.22 | KT       |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

MLD 18  
 DCM 95  
 Smin 505

|   |  |
|---|--|
| Station: 2                                      | Cast: 11   |
| Latitude start: 22° 47.1492<br>end: 22° 47.1785 | Longitude start: 157° 55.1376<br>end: 157° 55.0882 |
| Depth of water:<br>4694 meters                  | Date (GMT):<br>91 11 18                            |
| Pressure on Deck                                | Time:  |
| Begin: -0.88                                    | Start Log: 21:39                                   |
| End: -0.34                                      | In Water: 21:42                                    |
| Max cast pressure:<br>1031 dbar                 | Out of Water: 23:01                                |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
|                 |                 |                    |          |                 |          |
| 1               | 22:10:30        | 22:10:50           | 1020     | 1020            |          |
| 2               |                 | 11:00              | 1019     | 1020            |          |
| 3               |                 | 11:10              | 1019     | 1020            |          |
| 4               |                 | 11:20              | 1019     | 1020            |          |
| 5               |                 | 11:30              | 1019     | 1020            |          |
| 6               |                 | 11:40              | 1021     | 1020            |          |
| 7               |                 | 11:50              | 1019     | 1020            |          |
| 8               | 18:30           | 18:50              | 801      | 800             |          |
| 9               | 25:10           | 25:30              | 600      | 600             |          |
| 10              | 28:50           | 29:10              | 505      | 505             | S-min    |
| 11              | 33:55           | 34:15              | 399      | 400             |          |
| 12              | 37:00           | 37:20              | 301      | 300             |          |
| 13              | 39:25           | 39:45              | 249      | 250             |          |
| 14              | 42:50           | 43:10              | 175      | 175             |          |
| 15              | 45:40           | 46:00              | 149      | 150             |          |
| 16              | 47:40           | 48:00              | 124      | 125             |          |
| 17              | 49:50           | 50:10              | 100      | 100             |          |
| 18              | 51:40           | 52:00              | 73       | 75              |          |
| 19              | 53:50           | 54:10              | 45       | 45              |          |
| 20              | 55:20           | 55:40              | 26       | 25              |          |
| 21              |                 | 55:50              | 27       | 25              |          |
| 22              | 56:55           | 57:15              | 15       | 15              |          |
| 23              | 58:10           | 58:30              | 4        | 5               |          |
| 24              |                 | 58:40              | 5        | 5               |          |

| Hawaii Ocean Time Series  |       |          | Station #: 2      | Cast #: 11          | Box #: 10 |
|---------------------------|-------|----------|-------------------|---------------------|-----------|
| Salinity Sample Log Sheet |       |          | Cruise #: HOT-305 | Sampler: KT, JS, AM |           |
| Niskin #                  | Depth | Serial # | Comments          |                     |           |
| 1                         | 1020  | 231      |                   |                     |           |
| 2                         | 1020  | 232      |                   |                     |           |
| 3                         | 1020  | 233      |                   |                     |           |
| 4                         | 1020  | 234      |                   |                     |           |
| 5                         | 1020  | 235      |                   |                     |           |
| 6                         | 1020  | 236      |                   |                     |           |
| 7                         | 1020  | 237      |                   |                     |           |
| 8                         | 800   | ---      |                   |                     |           |
| 9                         | 600   | ---      |                   |                     |           |
| 10                        | 505   | 238      | S-min             |                     |           |
| 11                        | 400   | ---      |                   |                     |           |
| 12                        | 300   | ---      |                   |                     |           |
| 13                        | 250   | ---      |                   |                     |           |
| 14                        | 175   | ---      |                   |                     |           |
| 15                        | 150   | ---      |                   |                     |           |
| 16                        | 125   | ---      |                   |                     |           |
| 17                        | 100   | ---      |                   |                     |           |
| 18                        | 75    | 239      | Smax              |                     |           |
| 19                        | 45    | ---      |                   |                     |           |
| 20                        | 25    | ---      |                   |                     |           |
| 21                        | 25    | ---      |                   |                     |           |
| 22                        | 15    | ---      |                   |                     |           |
| 23                        | 5     | 240      |                   |                     |           |
| 24                        | 5     | ---      |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |
|                           |       |          |                   |                     |           |

## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type | Bottle type | SST   | Operator |
|-----------|-------------|-------|----------|
| G1000GPS  | 12L         | 27.41 | KT/SN    |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 ISUS  
 PO Fluorometer

ATP

- MLD: 10  
 S min: 500  
 DCM: 90? (90-100)

|                              |                               |
|------------------------------|-------------------------------|
| Station: 2                   | Cast: 12                      |
| Latitude start: 22° 47.2414  | Longitude start: 159° 55.3784 |
| end: 22° 47.1925             | end: 159° 55.3299             |
| Depth of water: 4695 meters  | Date (GMT): 9 1 12 1 18       |
| Pressure on Deck             | Time:                         |
| Begin: -0.44                 | Start Log: 00:32              |
| End: -0.39                   | In Water: 00:37               |
| Max cast pressure: 1020 dbar | Out of Water: 01:49:35        |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
|                 |                 |                    |          |                 |          |
| 1               | 01:07:00        | 01:07:20           | 1018     | 1020            |          |
| X 2             |                 | 01:10:50           | 1001     | 1000            |          |
| X 3             |                 | 16:35              | 770      | 770             |          |
| X 4             |                 | 24:30              | 501      | 500             |          |
| 5               |                 | :35                | 500      | 500             | S-min    |
| X 6             |                 | 28:30              | 400      | 400             |          |
| 7               |                 | 30:35              | 350      | 350             |          |
| X 8             |                 | 32:45              | 300      | 300             |          |
| 9               |                 | 35:10              | 250      | 250             |          |
| 10              |                 | 38:25              | 150      | 150             |          |
| 11              |                 | 39:40              | 126      | 125             |          |
| 12              |                 | 41:10              | 98       | 100             |          |
| 13              |                 | 42:40              | 75       | 75              |          |
| 14              |                 | 44:20              | 43       | 45              |          |
| 15              |                 | 45:40              | 24       | 25              |          |
| X 16            |                 | :45                | 25       | 25              |          |
| 17              |                 | 47:35              | 4        | 5               |          |
| X 18            |                 | :40                | 6        | 5               |          |
| 19              |                 |                    |          |                 |          |
| 20              |                 |                    |          |                 |          |
| 21              |                 |                    |          |                 |          |
| 22              |                 |                    |          |                 |          |
| 23              |                 |                    |          |                 |          |
| 24              |                 |                    |          |                 |          |

| Hawaii Ocean Time Series  |                       | Station #: 2          | Cast #: 12 | Box #: 11        |
|---------------------------|-----------------------|-----------------------|------------|------------------|
| Salinity Sample Log Sheet |                       | Cruise #: HOT-305     |            | Sampler: S, F, E |
| Niskin #                  | Depth                 | Serial #              | Comments   |                  |
| 1                         | 1020                  | 241                   |            |                  |
| 2                         | <del>          </del> | <del>          </del> |            |                  |
| 3                         | <del>          </del> | <del>          </del> |            |                  |
| 4                         | <del>          </del> | <del>          </del> |            |                  |
| 5                         |                       | 242                   | S min      |                  |
| 6                         | <del>          </del> | <del>          </del> |            |                  |
| 7                         | 350                   | 243                   |            |                  |
| 8                         | <del>          </del> | <del>          </del> |            |                  |
| 9                         | 250                   | 244                   |            |                  |
| 10                        | 150                   | 245                   |            |                  |
| 11                        | 125                   | 246                   |            |                  |
| 12                        | 100                   | 247                   |            |                  |
| 13                        | 75                    | 248                   |            |                  |
| 14                        | 45                    | 249                   |            |                  |
| 15                        | 25                    | 250                   |            |                  |
| 16                        | <del>5</del>          | <del>          </del> |            |                  |
| 17                        | 5                     | 251                   |            |                  |
| 18                        | <del>          </del> | <del>          </del> |            |                  |
| 19                        |                       |                       |            |                  |
| 20                        |                       |                       |            |                  |
| 21                        |                       |                       |            |                  |
| 22                        |                       |                       |            |                  |
| 23                        |                       |                       |            |                  |
| 24                        |                       |                       |            |                  |
|                           |                       |                       |            |                  |
|                           |                       |                       |            |                  |
|                           |                       |                       |            |                  |
|                           |                       |                       |            |                  |
|                           |                       |                       |            |                  |
|                           |                       |                       |            |                  |

## Hawaii Ocean Time-Series CONSOLE LOG

| Cast type        | Bottle type | SST   | Operator |
|------------------|-------------|-------|----------|
| 6200 GPS<br>8090 | 12L         | 23.34 | SN       |

- Pinger  
 Altimeter  
 Transmissometer  
 BEACH Sea Tech Fluorometer  
 OTG Seapoint Fluorometer  
 JSUS  
 PO Fluorometer

WHOTS

MLD: 20  
DCM: 125

|  |   |
|--|---|
| Station: 52  | Cast: 1   |
| Latitude<br>start: 22° 40.7413<br>end: 22° 40.0374 | Longitude<br>start: 157° 55.481<br>end: 157° 55.4874                      |
| Depth of water:<br>4754 meters                     | Date (GMT):<br>9 12 2008  |
| Pressure on Deck                                   | Time:   |
| Begin: -0.36<br>End: -0.40                         | Start Log:<br>03:42<br>In Water:<br>03:47:35<br>Out of Water:<br>04:48:30 |
| Max cast pressure:<br>200 dbar                     |   |

| Trip/<br>Niskin | Time<br>stopped | Confirm<br>tripped | Pressure | Target<br>Depth | Comments |
|-----------------|-----------------|--------------------|----------|-----------------|----------|
| 1               |                 | 04:44:35           | 24       | 25              | ]        |
| 2               |                 | 40                 | 23       | 25              | ]        |
| 3               |                 | 45:50              | 14       | 15              |          |
| 4               |                 | 46:45              | 5        | 5               |          |
| 5               |                 |                    |          |                 |          |
| 6               |                 |                    |          |                 |          |
| 7               |                 |                    |          |                 |          |
| 8               |                 |                    |          |                 |          |
| 9               |                 |                    |          |                 |          |
| 10              |                 |                    |          |                 |          |
| 11              |                 |                    |          |                 |          |
| 12              |                 |                    |          |                 |          |
| 13              |                 |                    |          |                 |          |
| 14              |                 |                    |          |                 |          |
| 15              |                 |                    |          |                 |          |
| 16              |                 |                    |          |                 |          |
| 17              |                 |                    |          |                 |          |
| 18              |                 |                    |          |                 |          |
| 19              |                 |                    |          |                 |          |
| 20              |                 |                    |          |                 |          |
| 21              |                 |                    |          |                 |          |
| 22              |                 |                    |          |                 |          |
| 23              |                 |                    |          |                 |          |
| 24              |                 |                    |          |                 |          |



HOT-305

KM 18-15

CTD configuration

CTD: 850

Deck Unit: 112060 (secondary)

Pressure: 1430

Carousel: 518

T<sub>1</sub>: 1416 T<sub>2</sub>: 5519C<sub>1</sub>: 3162 C<sub>2</sub>: 2218O<sub>1</sub>: 1601 O<sub>2</sub>: 43918Pump<sub>1</sub>: 968 Pump<sub>2</sub>: 494

Fluorometer: SCF 3831

Altimeter: ~~7769~~

Bucket Thermometer: 3622

Transmissometer: 1366 DR

Cruise Participants:

A. WHITE

Kendra Babcock

M. Burgos

T. Burrell

B. WATKINS

Evan Clement - Undergrad, Volunteer, UH

T. Clemente - Chief Sci

C. Funkey

J. Diehl - OTG

J. Koch - OTG

Alyssa Mincer - Undergrad, Volunteer, UH

S. Natarov

D. Sadler

F. Santiago-Mandujano

E. Shimabukuro

J. Snyder

R. Tabata

K. Trifonova

Cross loading 7 September 2018  
KM .322 WIRE HAS  
BEEN LOADED ONTO  
THE WINCH DRUM WITH  
THE ENDS SWITCHED  
WIRE LENGTH - 148 m  
CLEAR CONDUCTOR - 253 Ω

Rosette  
WEIGHT IN AIR - 1350 LBS  
WET WEIGHT IN AIR - 1430 LBS



HOT-305 9 September 2018

- 1850 Depart from Pier 35  
 19:00 Safety Briefing & Science Meeting  
 21:40 ARRIVE KAHE POINT  
 START WEIGHT CAST  
 22:13 End Weight Cast
- 23:10 Start Station 1 Cast 1 G1000 GAS  
 21° 20.64 N 158° 16.41 W  
10 September 2018
- 00:27 End Station 1 Cast 1 15 marker ok!  
 21° 20.68 N 158° 16.40 W
- 00:30 Start Transit to station ALOHA
- Needed to remove marks 16 to 29,  
 bottles fired for testing.
- 0800 ADCP currents show East, ESE  
 current down to 200 m.  
 WHOTS buoy is on the eastern  
 edge of its 2 nm radius  
 circle. will deploy sed traps  
 2 nm east from ALOHA.
- 0825 Arrived to ALOHA, 2 nm east from  
 center
- 0918 Deploying sed traps. Strong eastward  
 current, difficult to keep line  
 vertical. 0.5 Kt

The image shows a page from a ledger or account book. It features a grid of horizontal and vertical lines. The page is mostly blank, with some faint, illegible markings in the left margin. The page number '108' is printed at the top left. The grid consists of approximately 25 horizontal lines and a single vertical line on the left side, creating a series of rows and a narrow left margin. The page is otherwise empty of text or figures.

MOT-305 10 September 2018

- 09:35 Deployed sediment traps  
 $22^{\circ} 44.9652$   
 $157^{\circ} 57.8284$
- 10:08 Start optics.  
 $22^{\circ} 45.4271$   
 $157^{\circ} 57.4109$
- 11:31 End optics.  
 $22^{\circ} 45.2777$   
 $157^{\circ} 57.2754$
- 12:07 Start Station 2 cast 1 G1000 GPS.
- 12:37 End Station 2 cast 1.  
 24 marks OK.
- 14:07 Start PP Array Deployment  
 $22^{\circ} 47.0543$  N  $157^{\circ} 59.9442$  W
- 14:27 PP array deployed  
 $22^{\circ} 47.2460$  N  $157^{\circ} 59.8380$  W
- 15:42 Start Station 2 Cast 2 G5000 GPS  
 $22^{\circ} 44.9987$  N  $157^{\circ} 59.9469$  W
- 17:07 Reached <sup>max</sup> target depth at 4806 dbar - 7m off of bottom  
 $22^{\circ} 45.0195$  N  $157^{\circ} 59.9817$  W
- 19:15 End Station 2 Cast 2 24 marks OK  
 $22^{\circ} 45.0412$  N  $157^{\circ} 59.8746$  W



HOT-305 11 September 2018

21:03 Start Station 2 Cast 3 G1000GPS  
 $22^{\circ} 45.0089$  N  $158^{\circ} 00.0128$  W

21:23 Module Error @ 700 dbar, observed  $O_2$  spike  
 downcast

22:36 End Station 2 Cast 3 24 marks OK (\*)  
 $22^{\circ} 45.0183$  N  $158^{\circ} 00.0128$  W

22:53 Start Net Tow  
 $22^{\circ} 45.1192$  N  $157^{\circ} 59.9478$  W

23:21 End Net Tow  
 $22^{\circ} 45.5848$  N  $157^{\circ} 59.7427$  W

23:34 Start HyperPro  
 $22^{\circ} 45.6006$  N  $157^{\circ} 59.7620$  W

23:40 End HyperPro HOT-305 11 September 2018  
 $22^{\circ} 45.6234$   $157^{\circ} 59.5779$

00:17 Start Station 2 Cast 4 G1000GPS  
 $22^{\circ} 45.6189$   $157^{\circ} 59.5734$

01:22 End Station 2 Cast 4 G1000GPS.  
 ( $22^{\circ} 45.5780$   $157^{\circ} 59.5139$ ).  
 19 MARKS OK.

S2C3

(\*) Plotting program failed to plot data below  
 700 dbar. But data are good, as plotted w/ Matlab



HOT-305 11 September 2018

03:05 Begin Station 2 cast 5 G1000 GPS.  
 $22^{\circ} 46.7445$   $157^{\circ} 54.9616$

Low-salinity, low-oxygen intrusion  
 in the middle of the salinity maximum  
 at  $\sim 150$  dbar.

Secondary fluorescence maximum  
 below the DCM at  $\sim 180$  dbar.

04:09 Module error at 14 dbar upcast.  
 Pumps OFF, Stopped with hand and  
 waited until pumps went ON  
 before continuing

04:13 End Station 2 cast 5.  
 $22^{\circ} 46.9053$   $157^{\circ} 54.9967$   
 17 marks OK.

04:15 Transit to PP array

05:10 Recovering PP array  
 $22^{\circ} 49.175$  N,  $157^{\circ} 53.378$  W

06:09 Start Station 2 cast 6 G1000 GPS.  
 $22^{\circ} 46.9086$   $157^{\circ} 56.8599$

07:21 End Station 2 cast 6.  
 $22^{\circ} 46.9894$   $157^{\circ} 56.7654$   
 24 marks OK.

This image shows a page from a ledger or account book. The page is numbered '114' in the top-left corner. It features a grid of 2 columns and 25 rows. The left column is significantly narrower than the right column. The page is mostly blank, with some faint markings and a dark, textured vertical strip along the left edge, likely representing the binding of the book. There are no entries or text within the grid cells.



HOT-305 11 September 2018

08:03 Start NET TOW.

22° 47.0653

157° 56.7929

08:30 End net tow

08:35 Start net tow

09:02 End net tow

09:19

Start STATION 2 CAST 7 6,1000 G/PS

22° 48.0229

157° 56.3443

09:31

Modulo error on downcast @  
390 db. Pumps stayed on.

10:10

End Station 2 CAST 7

22° 48.0962

157° 56.4029.

18 marks OK.

10:23

Transit to pump tanks.

12:03

Start Station 2 CAST 8 6,1000 G/PS

22° 45.000

158° 00.028

12:26

Modulo error on downcast at 830db.  
Pumps went off.



HOT-305 11 September 2018

- 13:10 End Station 2 Cast 8 12 marks OK  
 $22^{\circ} 45.0164$   $158^{\circ} 00.0348$
- 15:13 Start Station 2 Cast 9 G1000GPS  
 $22^{\circ} 45.2783$  N  $158^{\circ} 00.1071$  W
- 16:18 Modulo error when tagging/retrieving rosette
- 16:20 End Station 2 Cast 9 17 marks OK  
 $22^{\circ} 45.3044$  N  $157^{\circ} 59.9780$  W
- 17:50 Start Station 2 Cast 10 G1000GPS  
 $22^{\circ} 46.2103$   $157^{\circ} 54.8447$
- 18:26 Modulo Error @ 1000 dbar downcast,  
 observed  $O_2$  spike
- 19:06 Modulo Error when tagging/retrieving rosette
- 19:07 End Station 2 Cast 10 11 marks OK (out of 12)  
 1 mark missing @ 5 dbar
- 20:22 Start Sediment Trap recovery  
 $22^{\circ} 49.6057$  N  $157^{\circ} 46.8728$  W
- 20:36 End ST recovery  
 $22^{\circ} 49.4190$  N  $157^{\circ} 46.5875$  W
- 21:39 Start Station 2 Cast 11 G1000GPS  
 $22^{\circ} 47.1492$  N  $157^{\circ} 55.1376$  W
- Collected 1000 m water for salinity  
 substandard.

X-missometer Calib:

dark: 0,02930

Light: 4,73870

HOT - 305 11 September 2018

23:03 End Station 2 Cast 11 24 marks OK  
 $22^{\circ} 47.1785$  N  $157^{\circ} 55.0882$  W

23:17 Start Net Tow 1  
 $22^{\circ} 47.1994$  N  $157^{\circ} 54.9252$  W

23:45 END TOW 1 START TOW 2  
12 September 2018

00:10 End Net Tow 2  
 $22^{\circ} 47.4652$  N  $157^{\circ} 53.8460$  W

00:32 Start Station 2 Cast 12 G1000 GPS  
 $22^{\circ} 47.2414$  N  $157^{\circ} 55.3784$  W

End Station 2 cast 12  
 01:50  $22^{\circ} 47.1925$   $157^{\circ} 55.3299$   
 18 marks OK.

01:50 Modulo error on recovery when  
 CTD was out of water

01:50 Second modulo error on recovery

02:15 Transit to off-station mooring  
 Sta 52

03:47 Start Station 52 cast 1 G200 GPS  
 (yoyo)  
 $22^{\circ} 40.7413$   
 $157^{\circ} 55.481$



HOT-305 12 September 2018

Cycle 1: 03:50:18 - 04:06:17

Cycle 2: 04:06:18 - 04:17:40

Cycle 3: 04:17:41 - 04:26:50

Cycle 4: 04:26:51 - 04:36:08

Cycle 5: 04:36:09 - 04:48:30

04:43 Light drizzle on station.

04:48 End station 52 cast 1  
G200 GPS (yoyo).

22° 40.0374

157° 55.4974

4 marks OK.

05:21 Deploy APEX float

22° 41.2326

157° 53.2809

0534 Transit north to stay away from  
tropical disturbance Olivia,  
forecasted to reach Hawaiian  
islands in about 12 hours.

07:30 Transit due south towards Oahu &amp; Snug harbor

This image shows a blank page from a ledger or account book. The page is ruled with horizontal lines for writing. A vertical line is drawn near the left edge, creating a narrow margin. The page number '122' is printed in the top left corner. The page is otherwise empty of any text or markings.

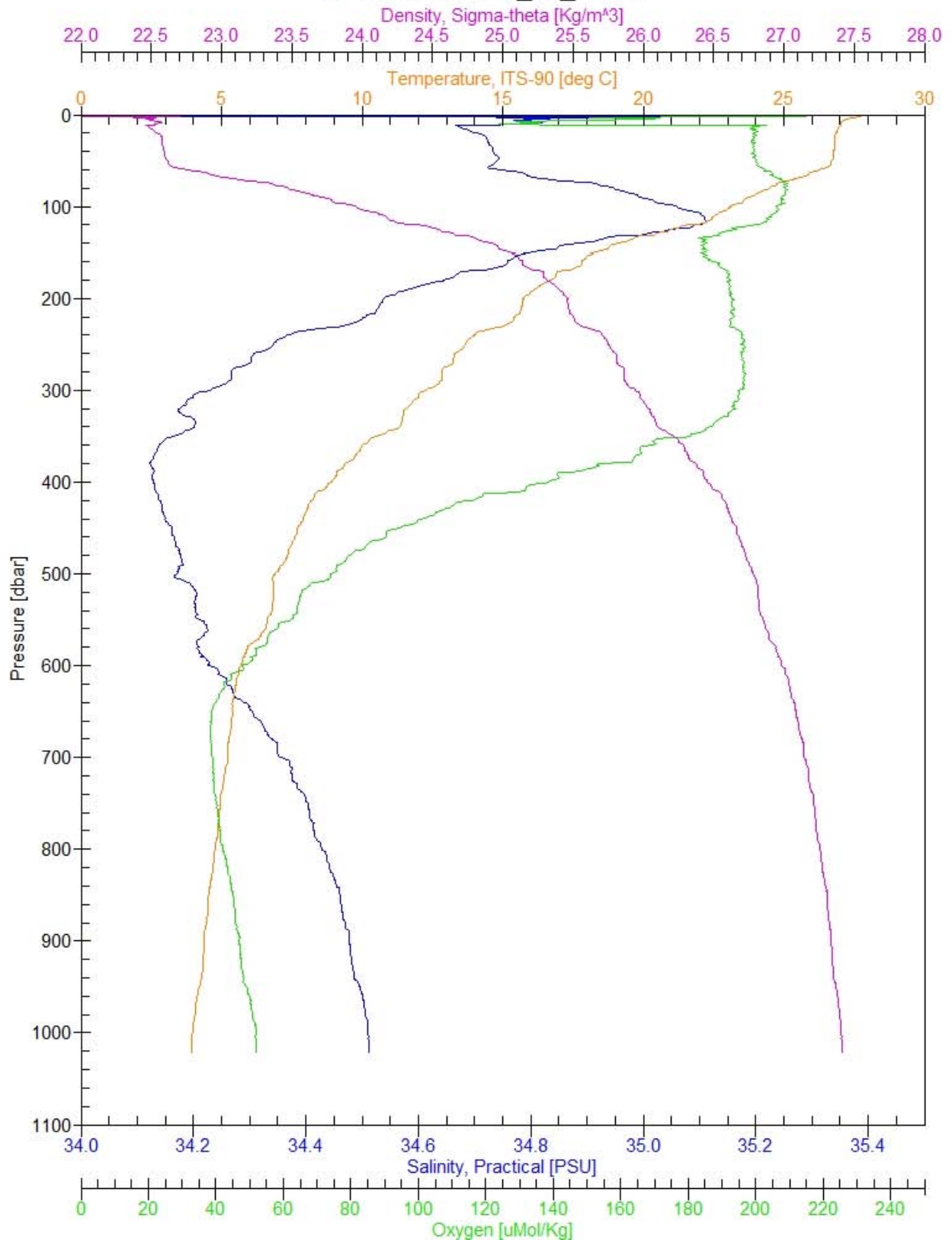


HOT-305 13 September 2018

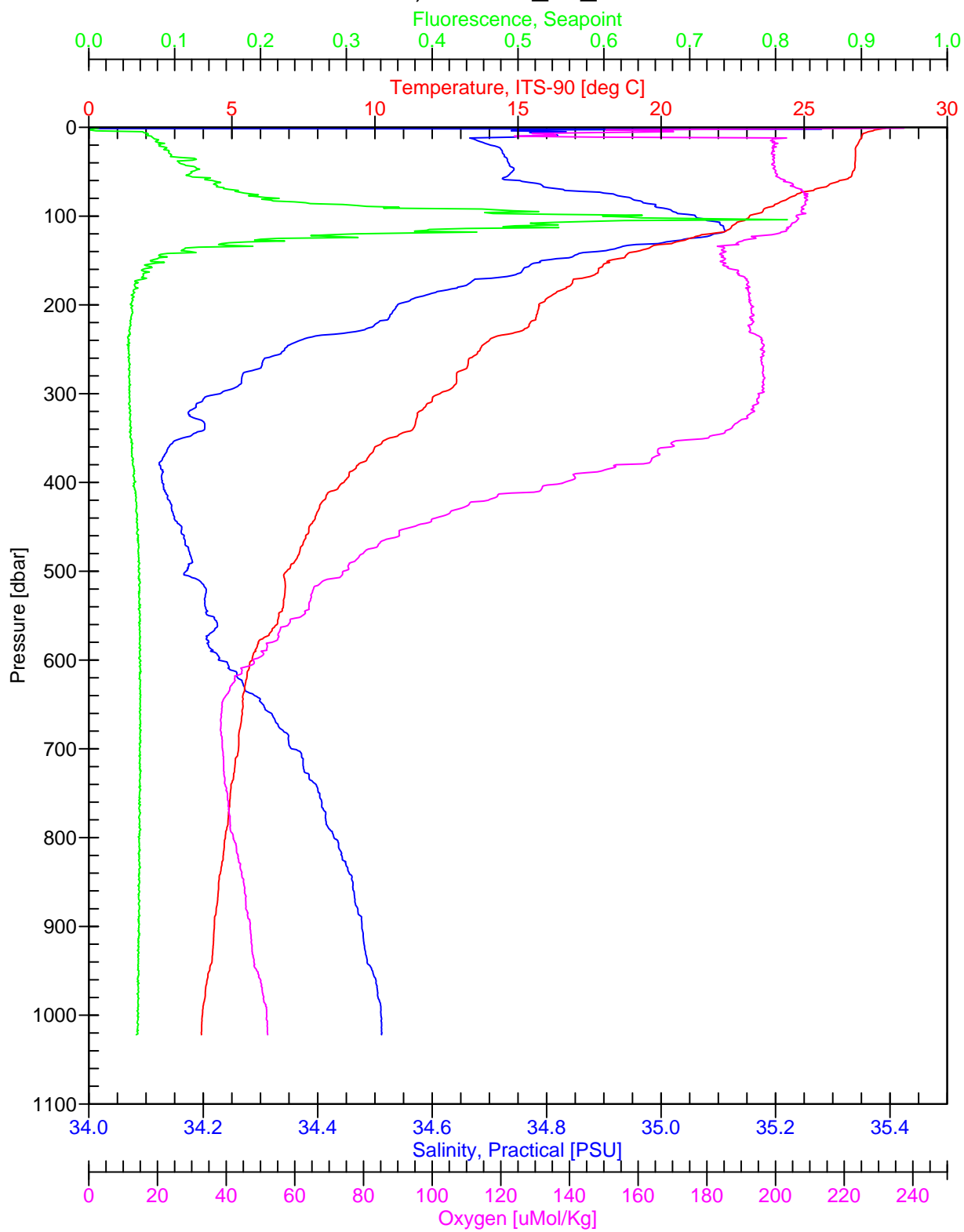
1830

Arrived at pier 35  
End of cruise

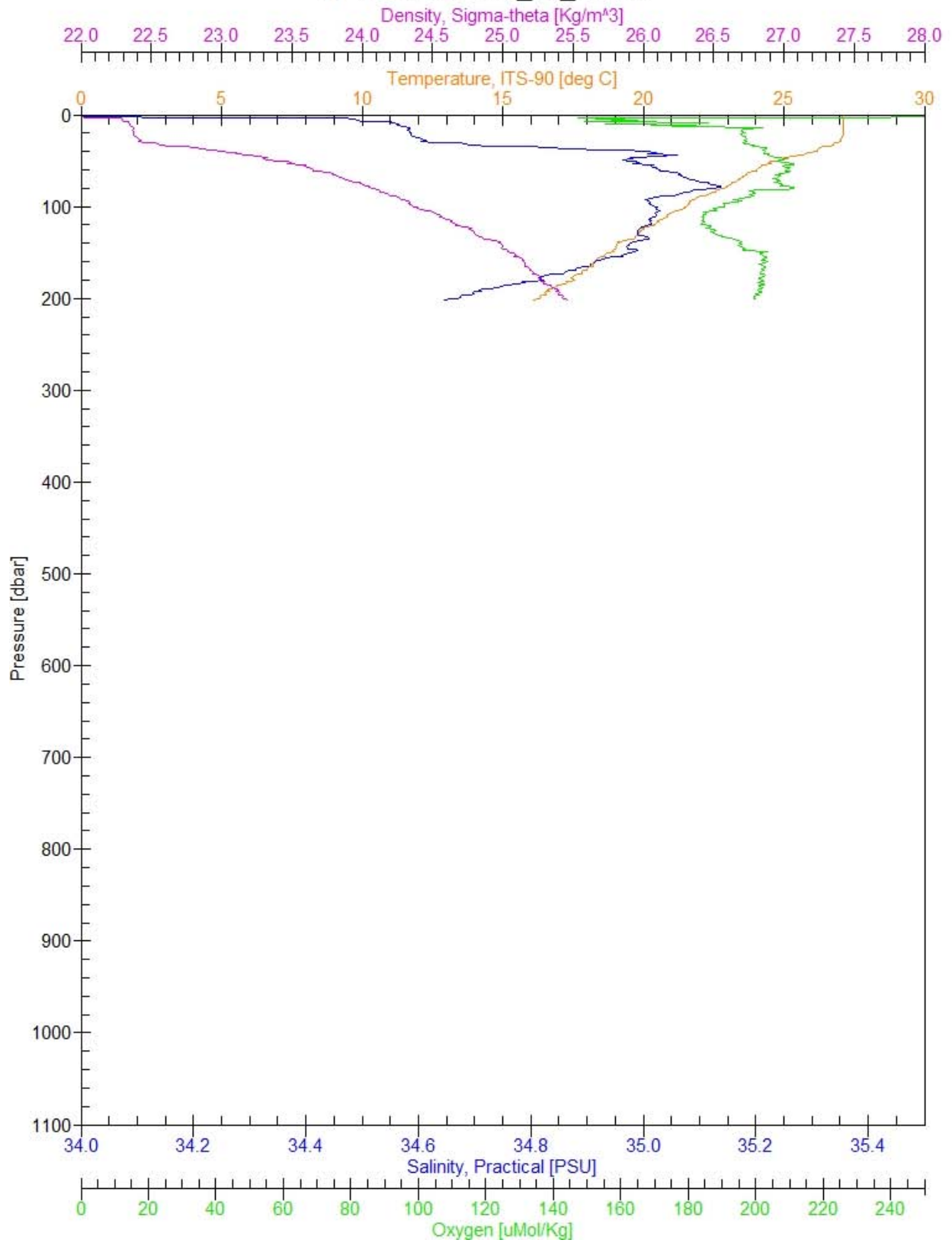
# W-1000, hot-305\_s1\_c1.cnv



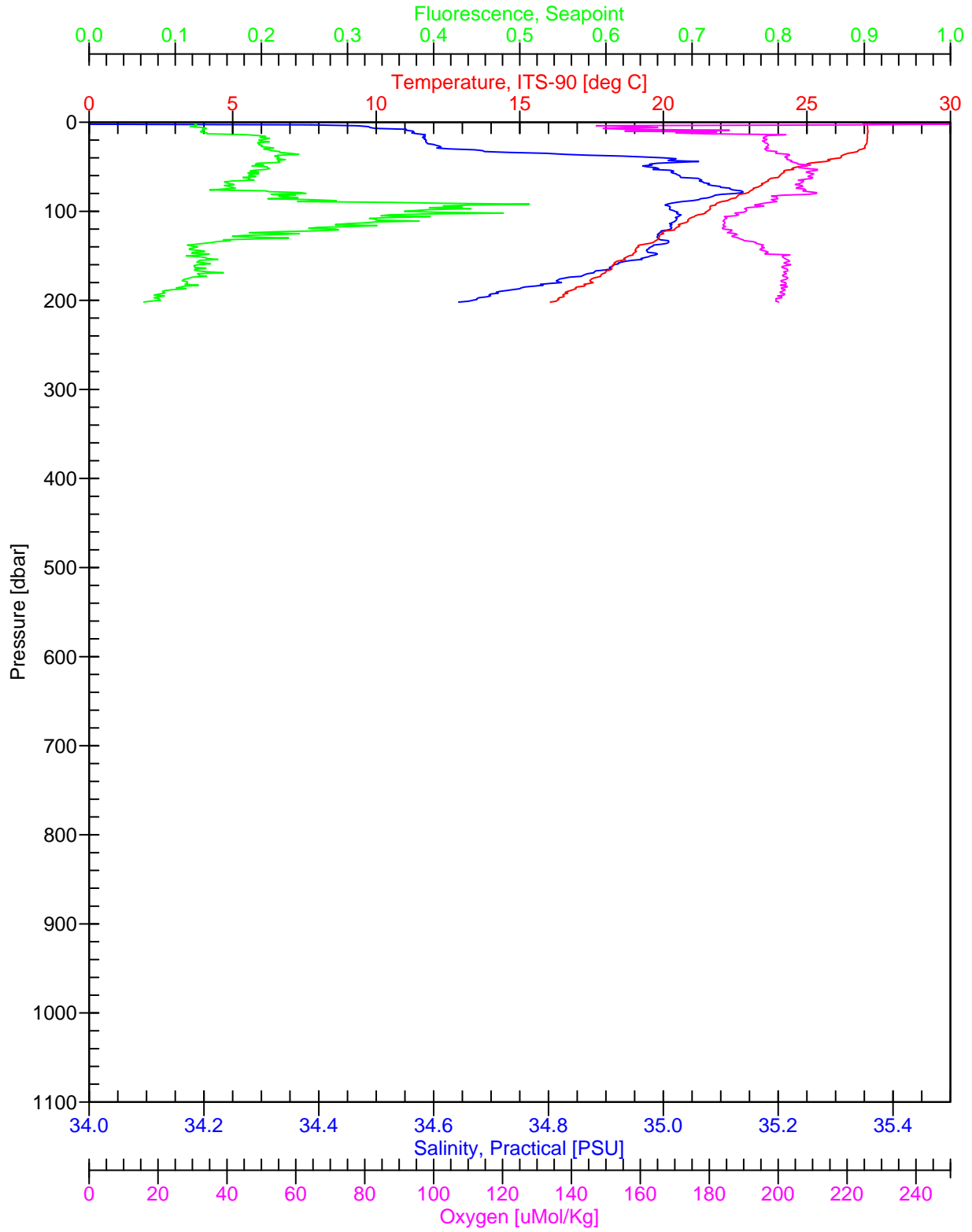
# G-1000, hot-305\_s1\_c1.cnv



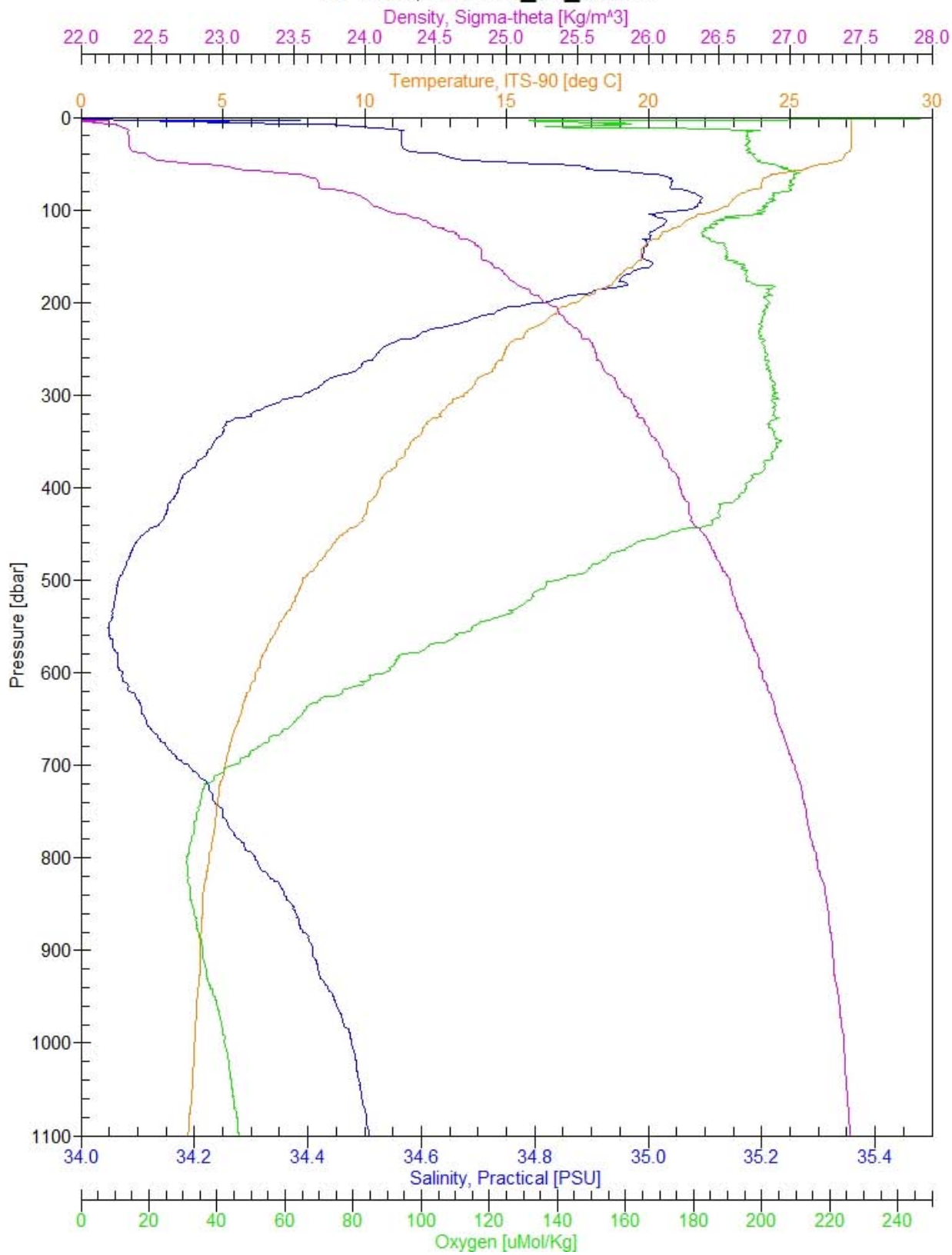
# W-1000, hot-305\_s2\_c1.cnv



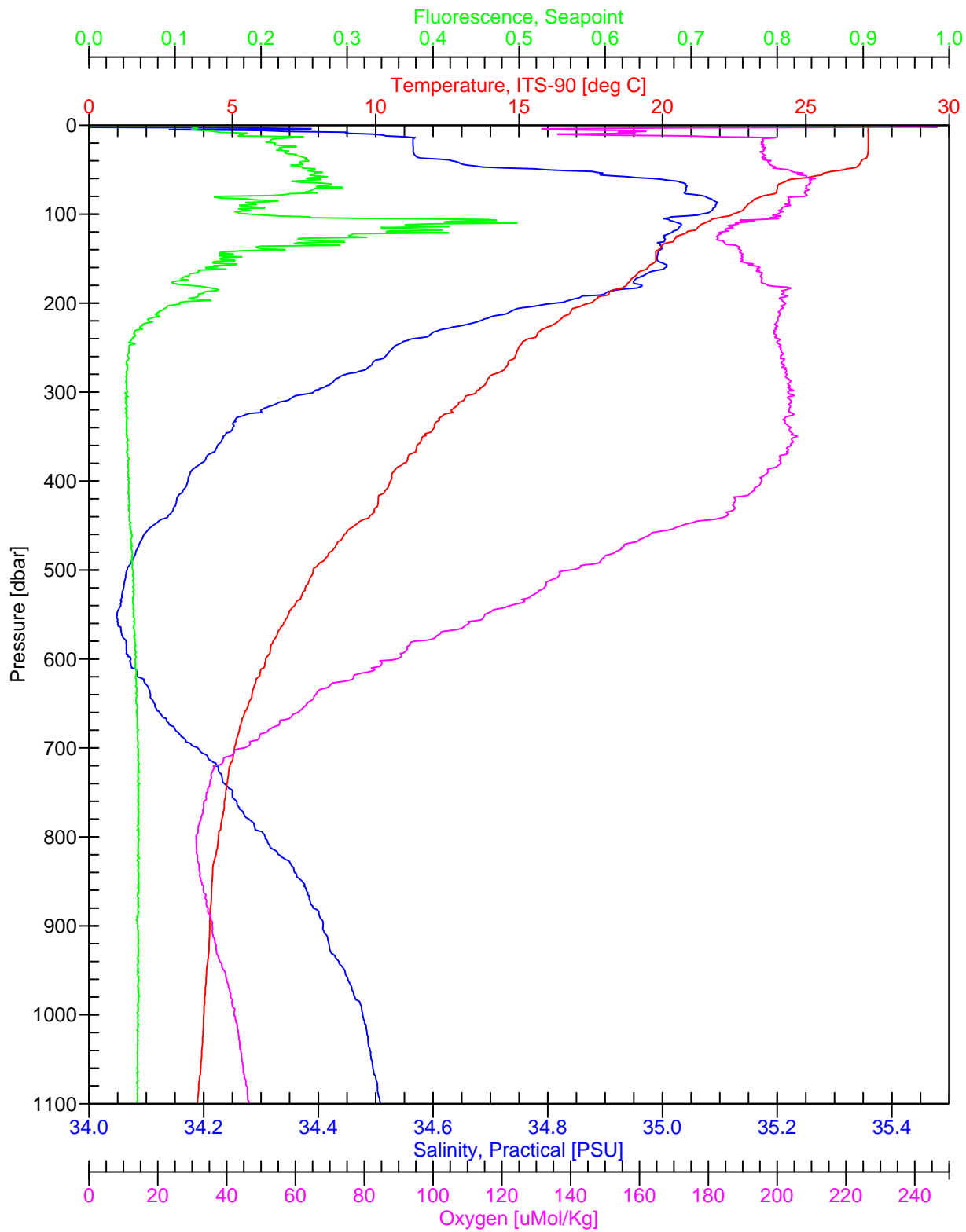
# G-1000, hot-305\_s2\_c1.cnv



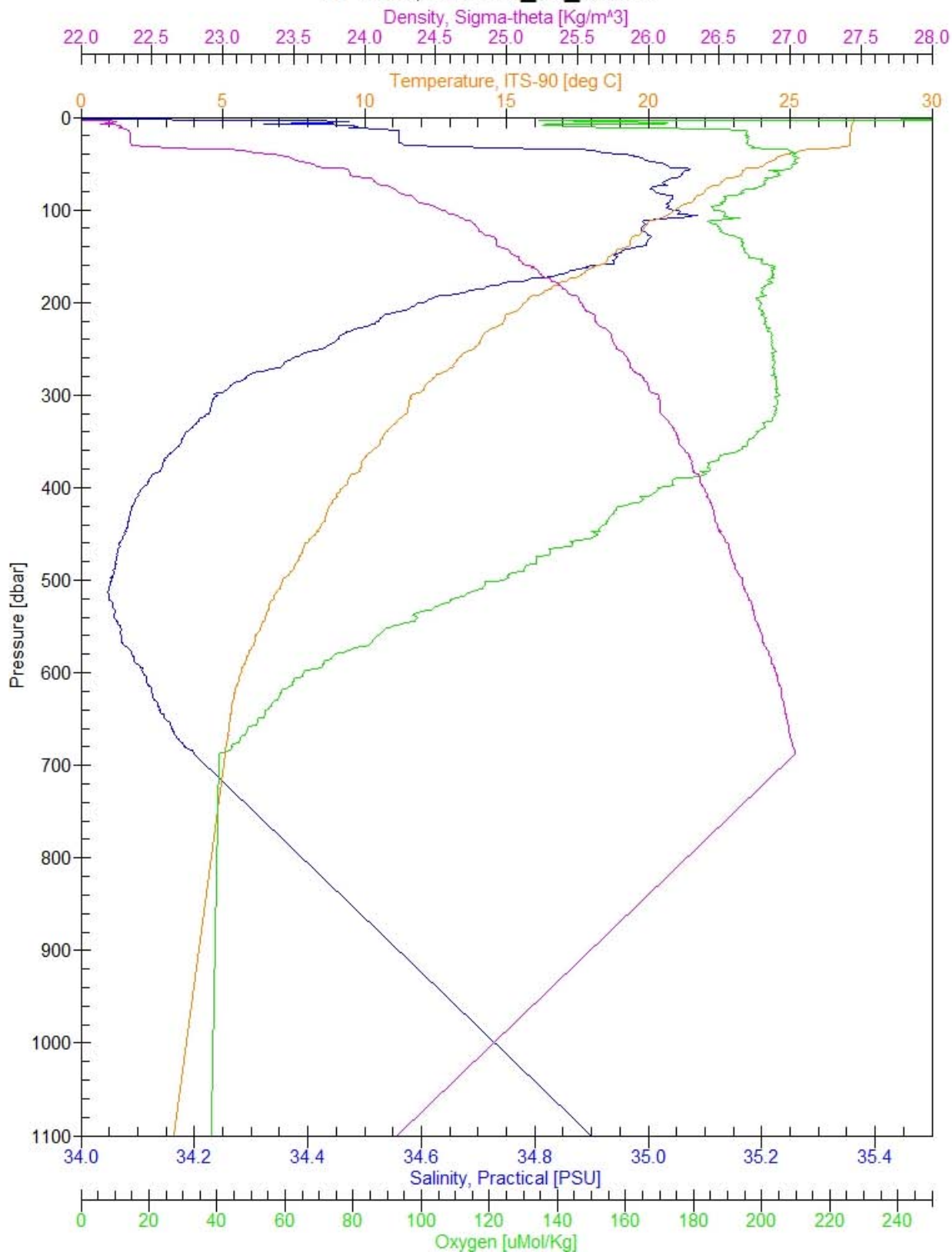
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# G-1000, hot-305\_s2\_c2.cnv

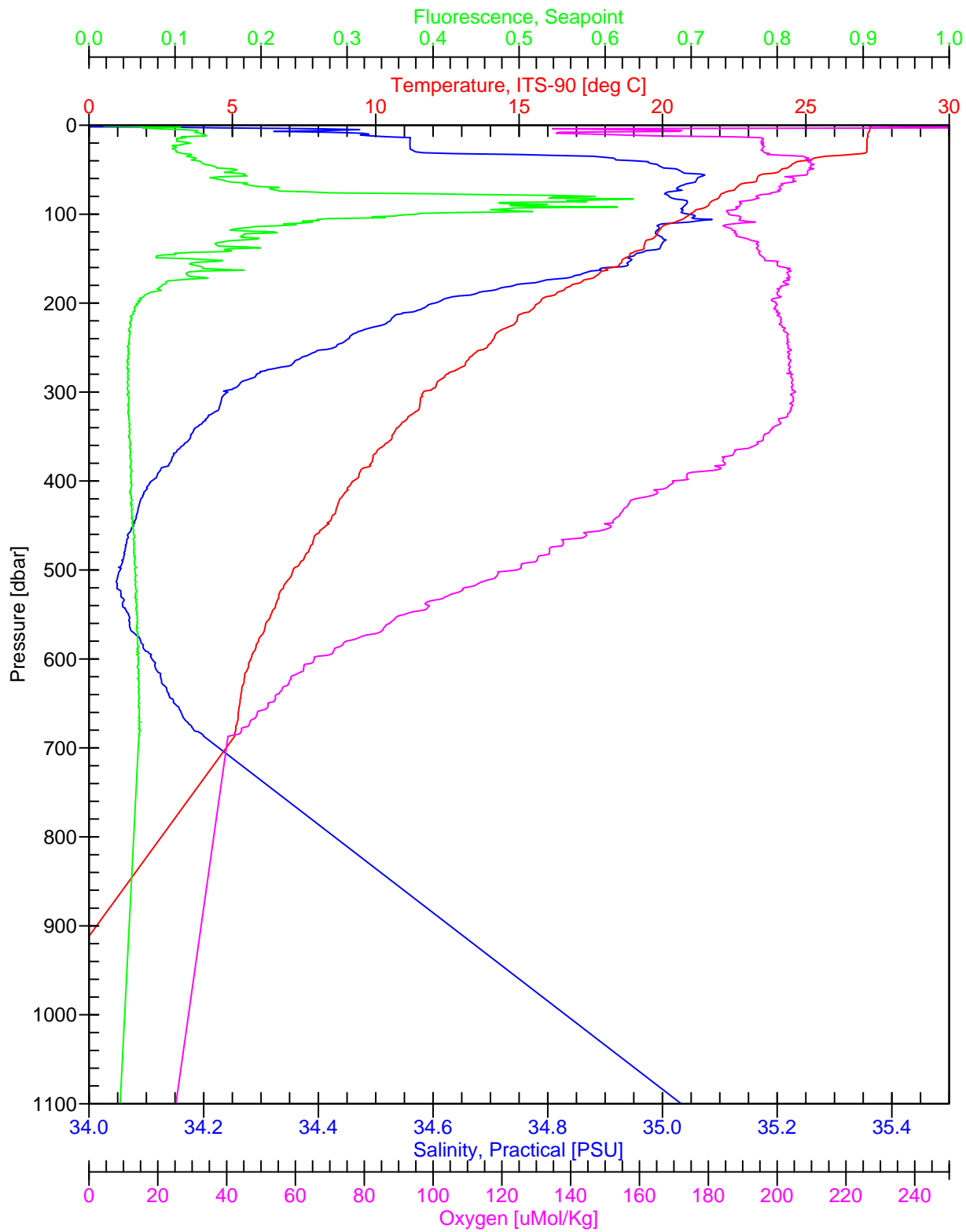


# W-1000, hot-305\_s2\_c3.cnv

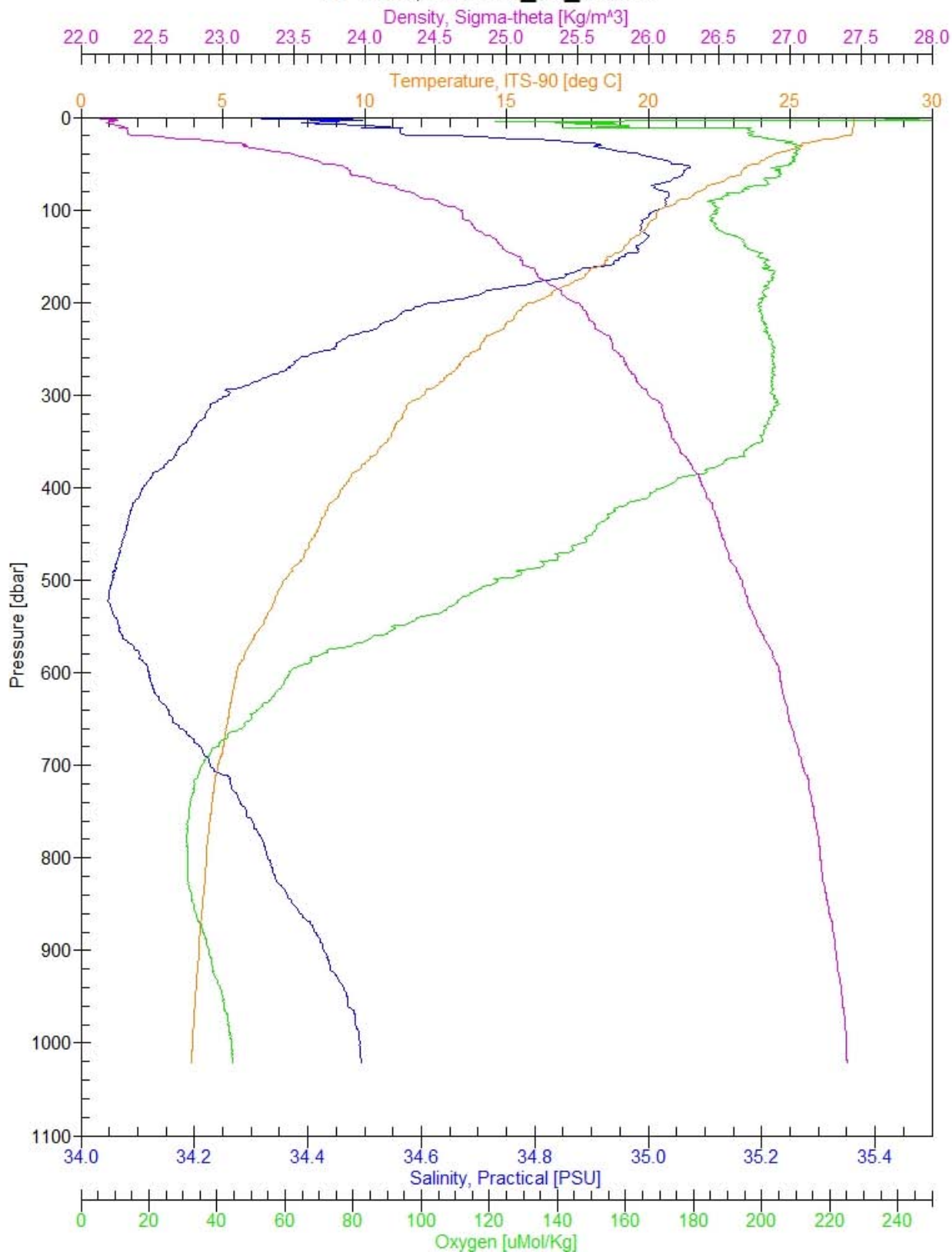




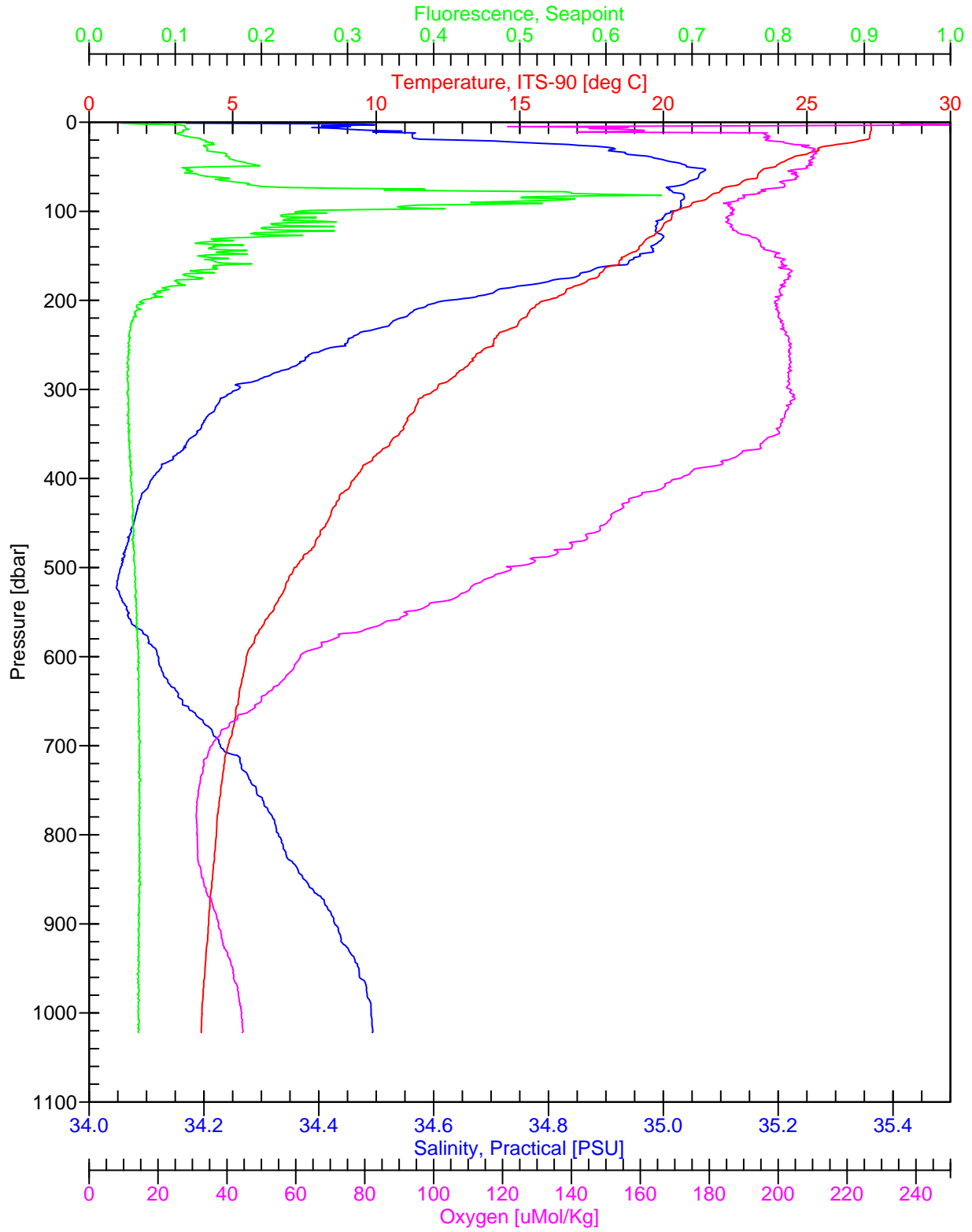
# G-1000, hot-305\_s2\_c3.cnv



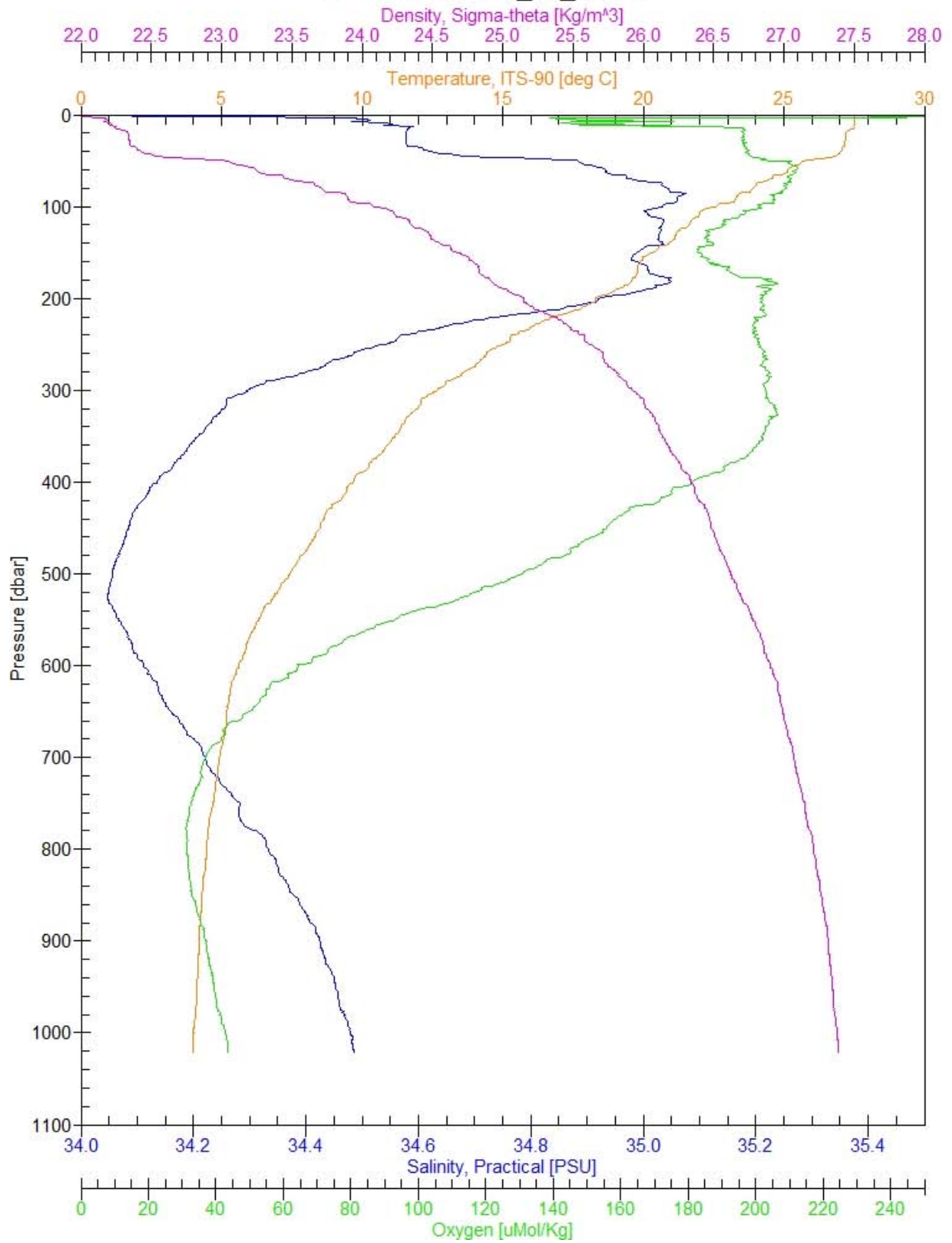
# W-1000, hot-305\_s2\_c4.cnv



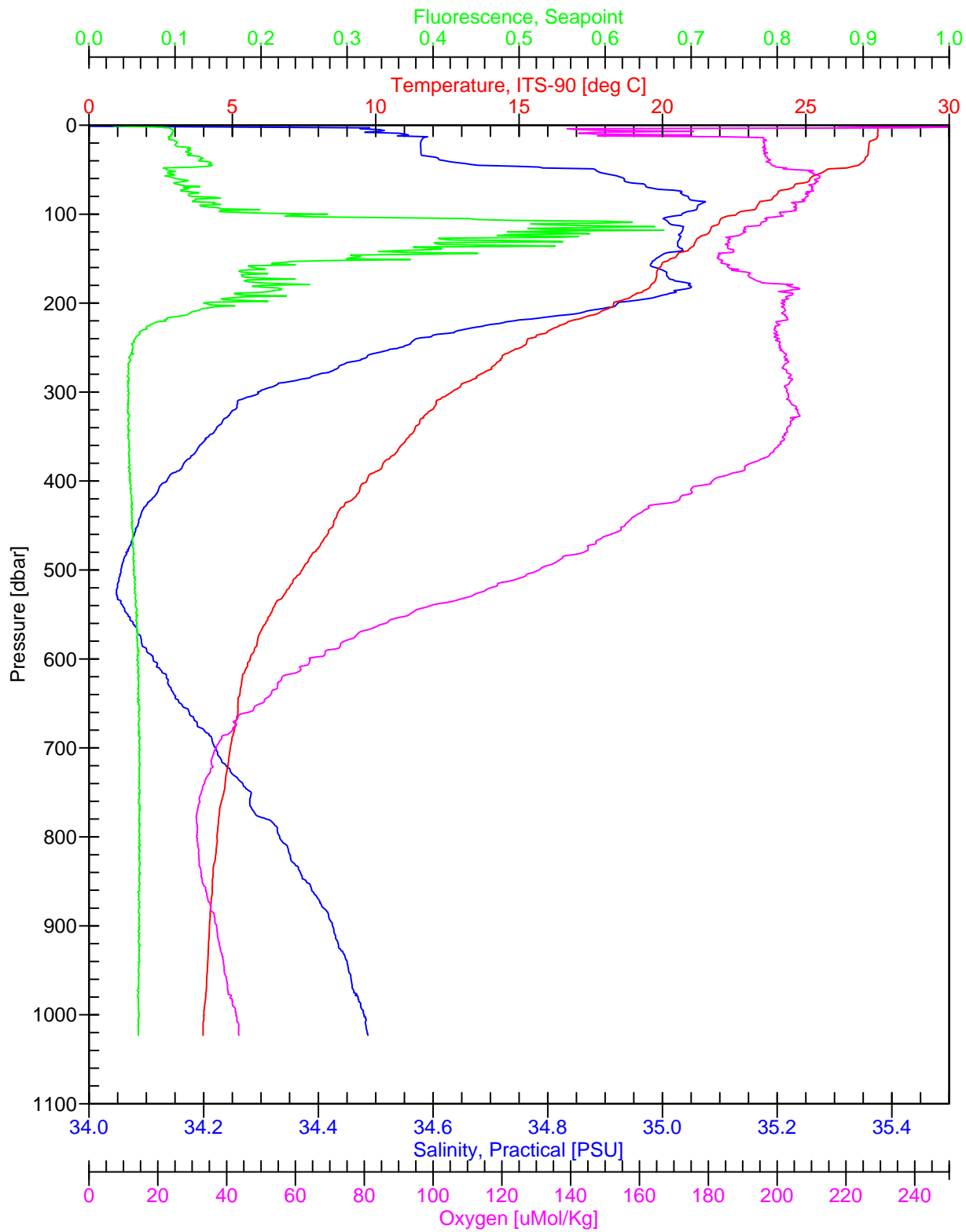
# G-1000, hot-305\_s2\_c4.cnv



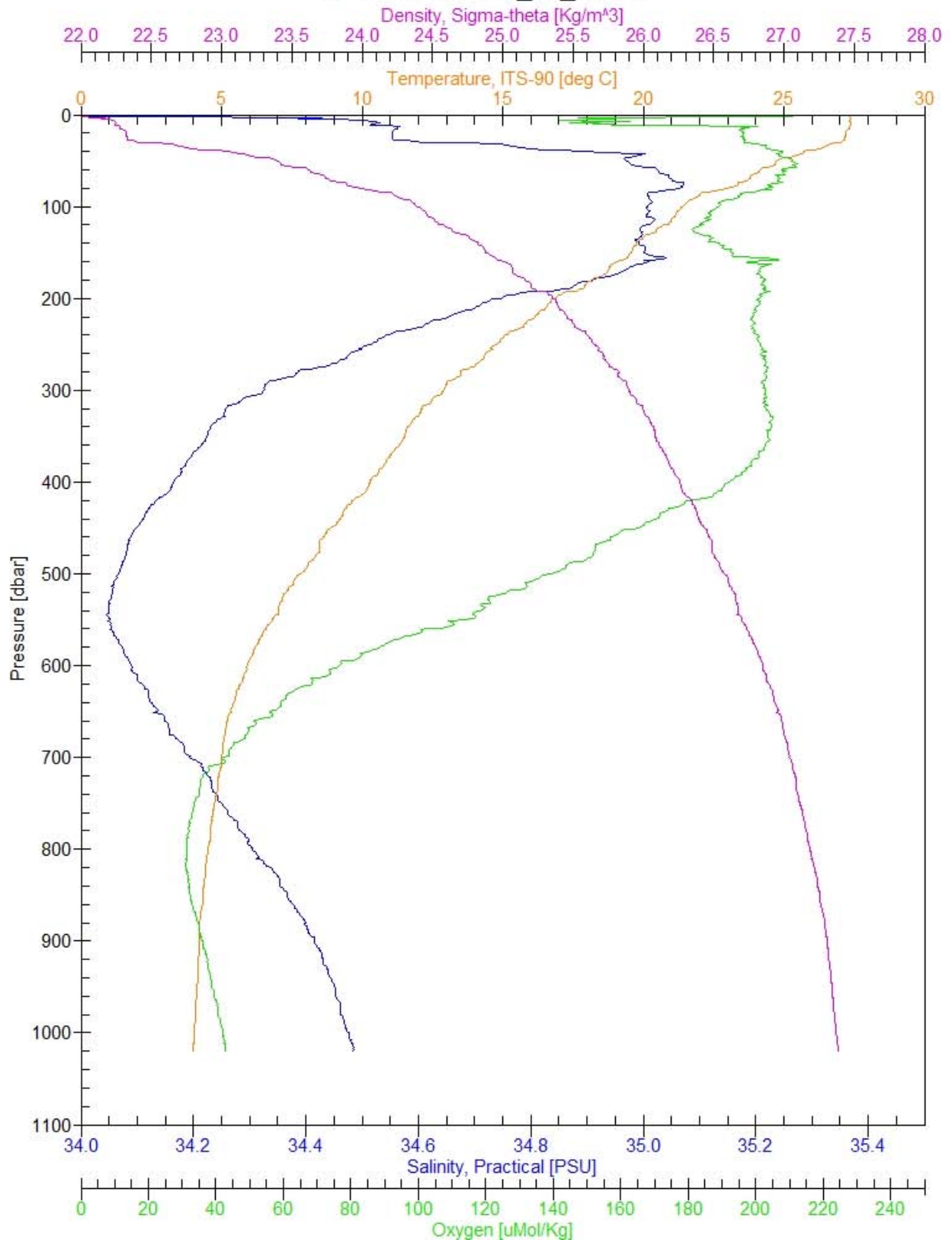
# W-1000, hot-305\_s2\_c5.cnv



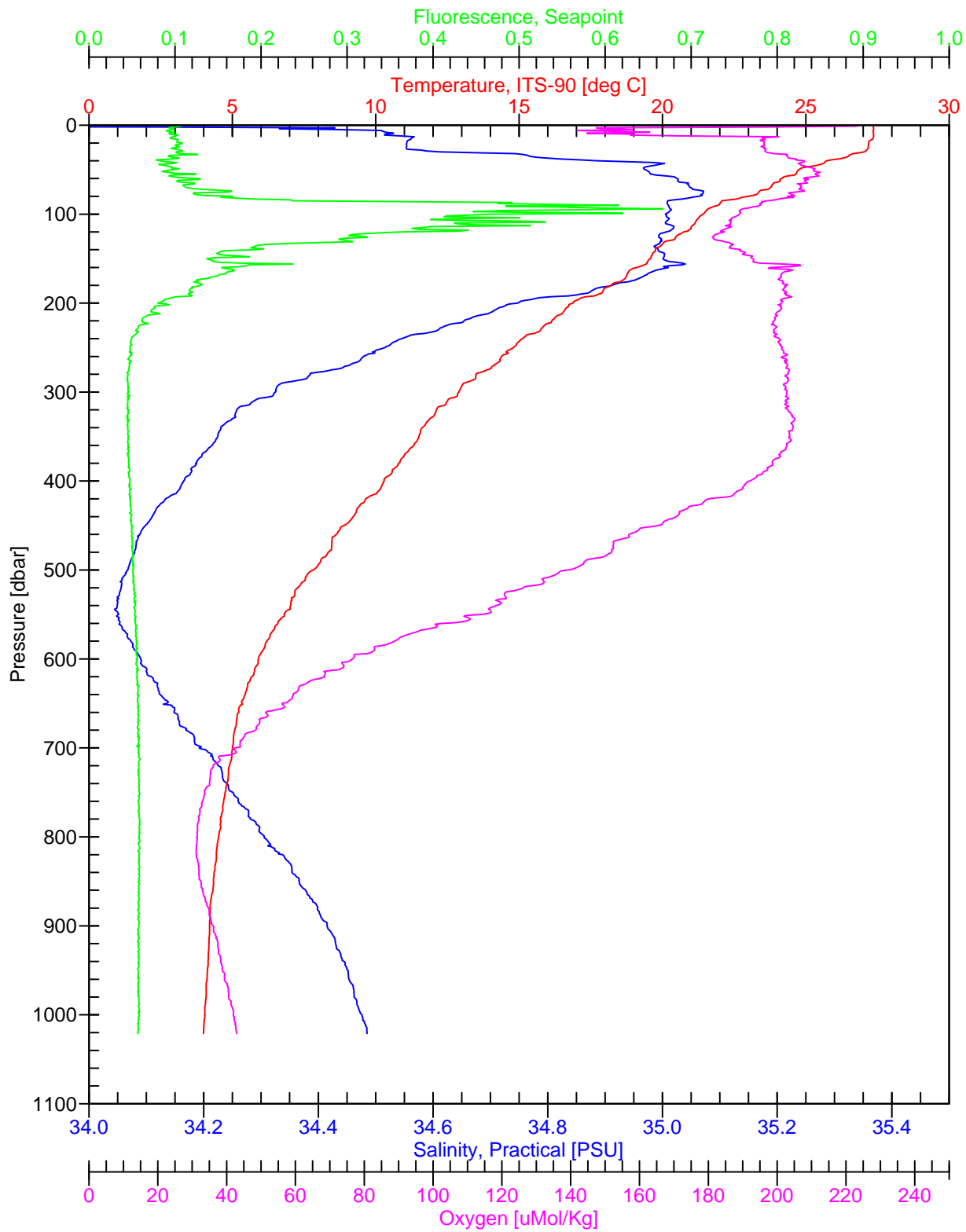
# G-1000, hot-305\_s2\_c5.cnv



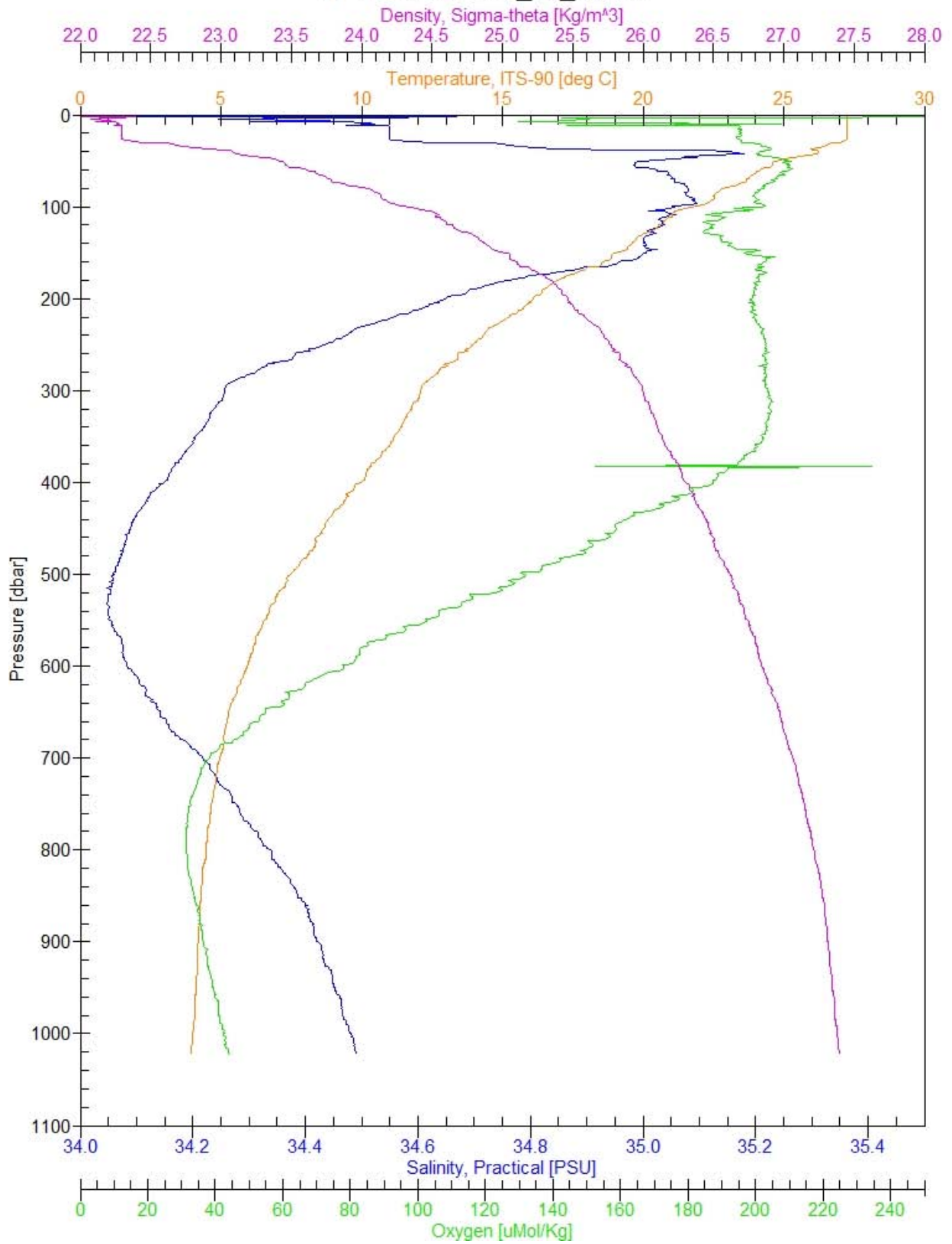
# W-1000, hot-305\_s2\_c6.cnv



# G-1000, hot-305\_s2\_c6.cnv

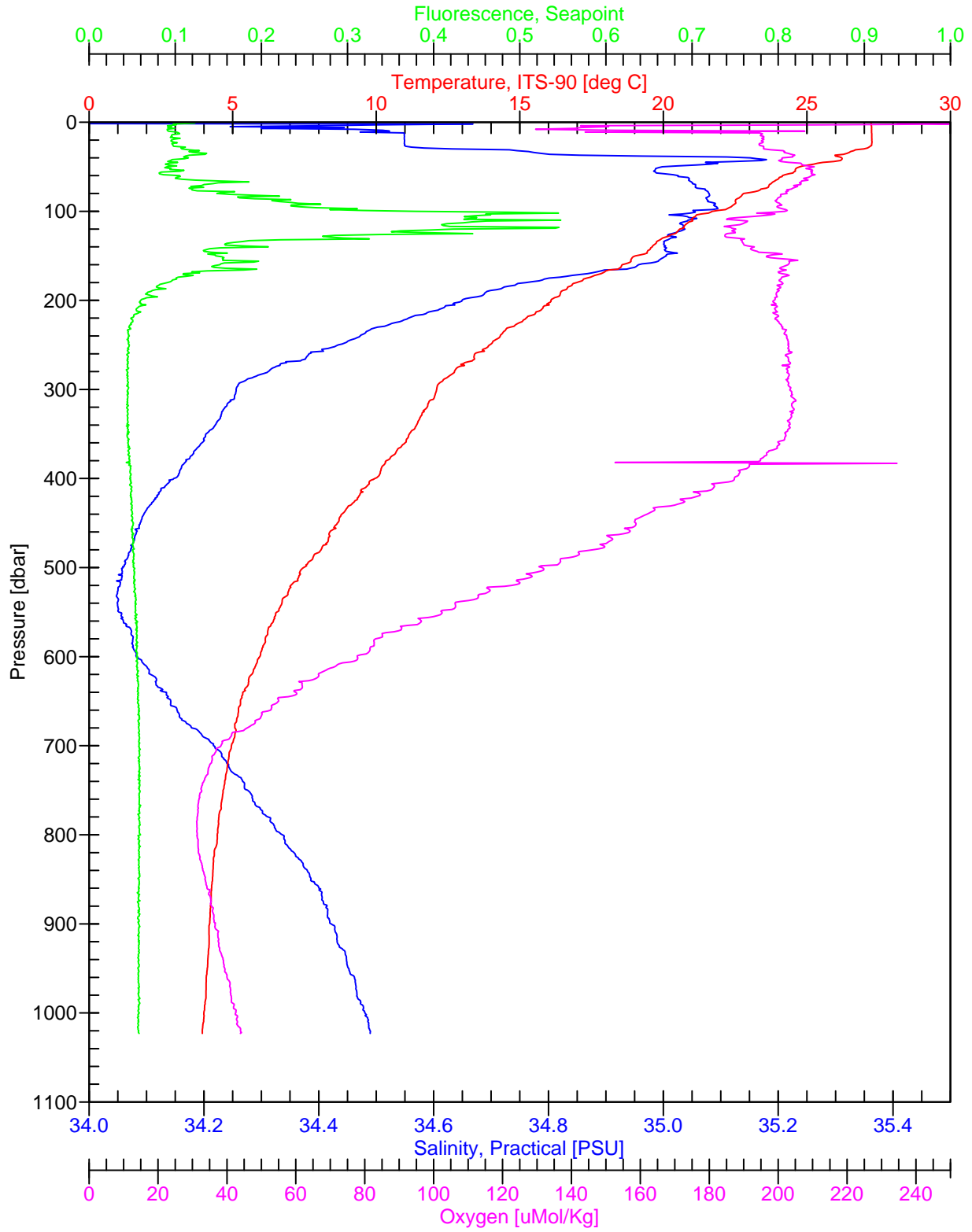


# W-1000, hot-305\_s2\_c7.cnv

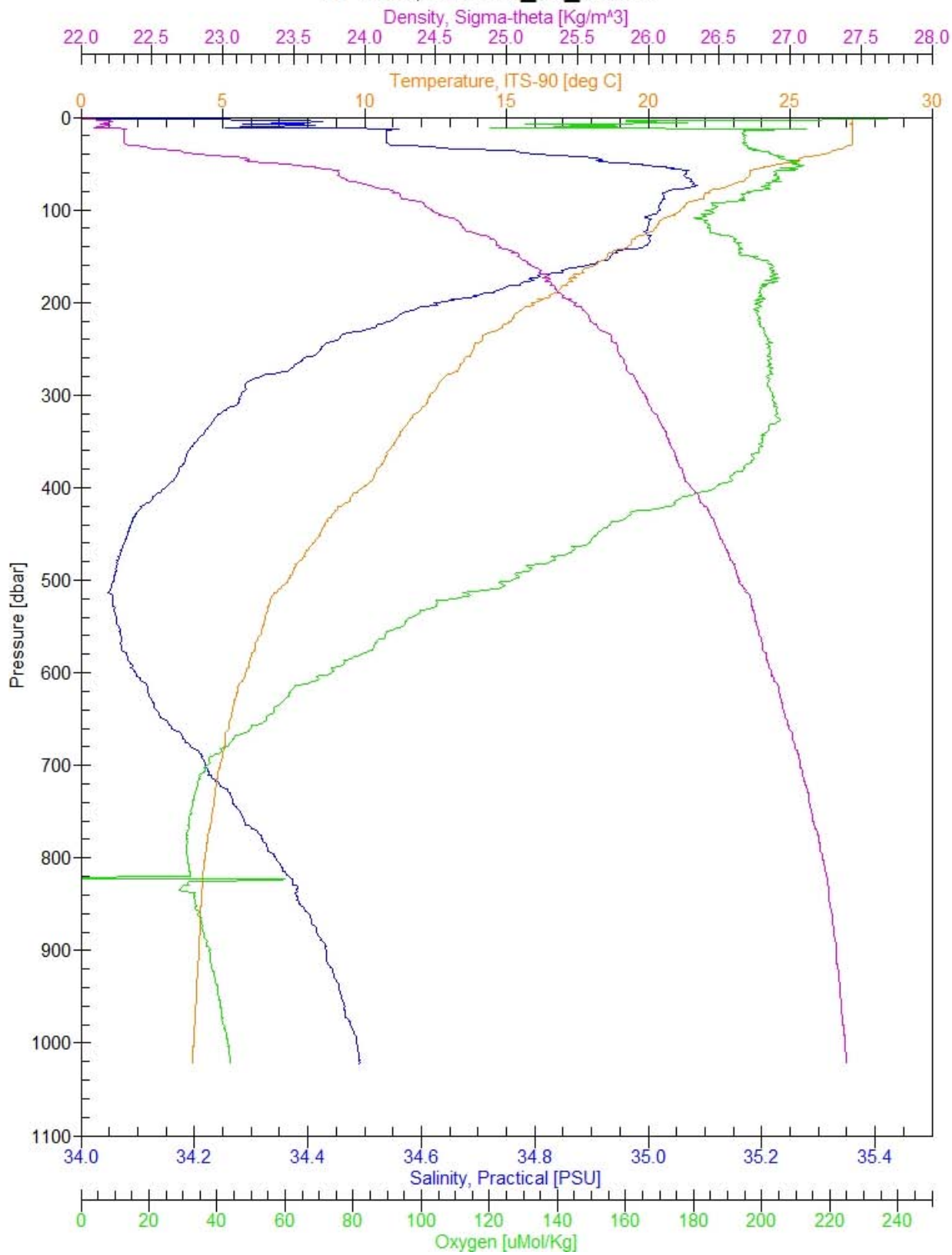




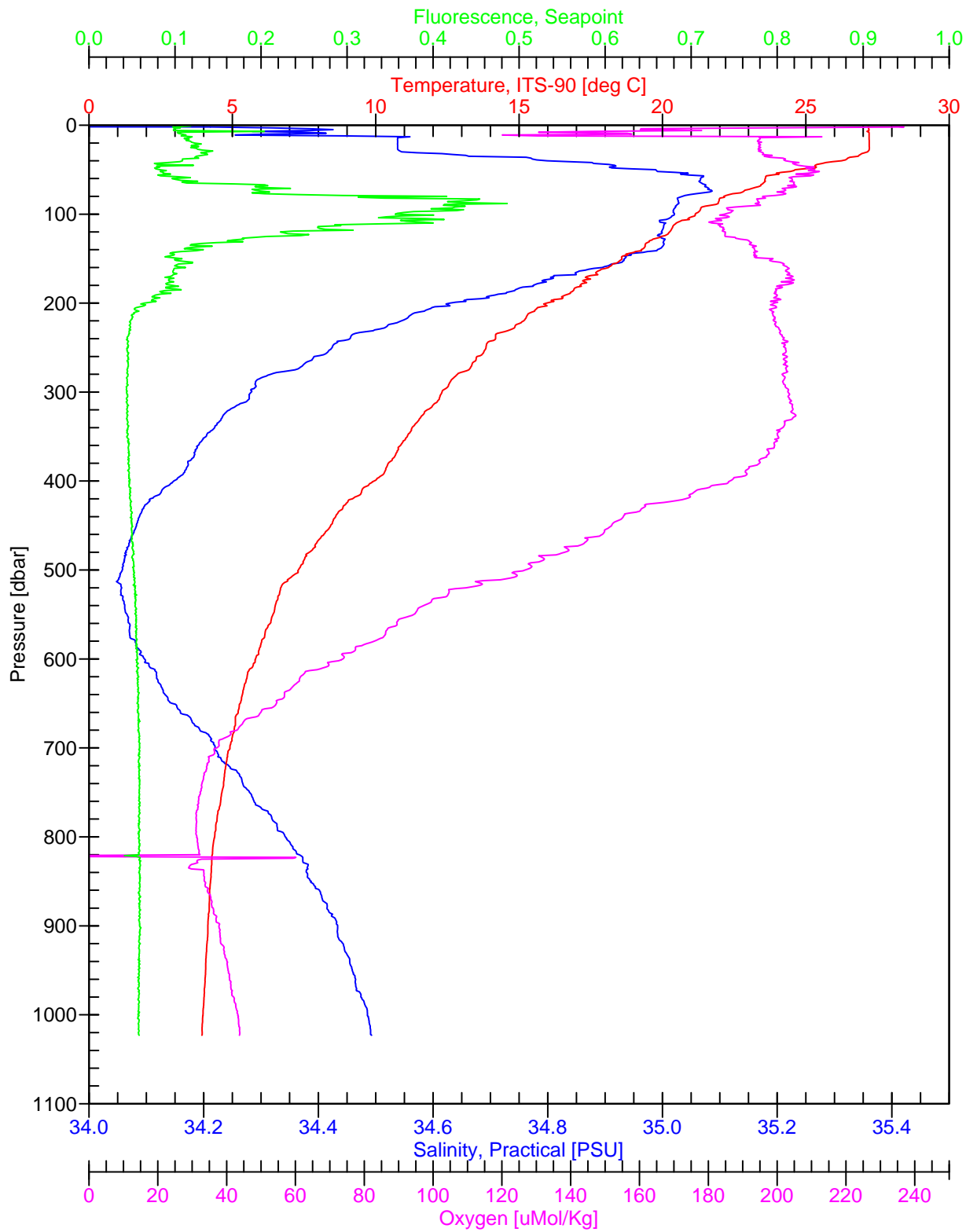
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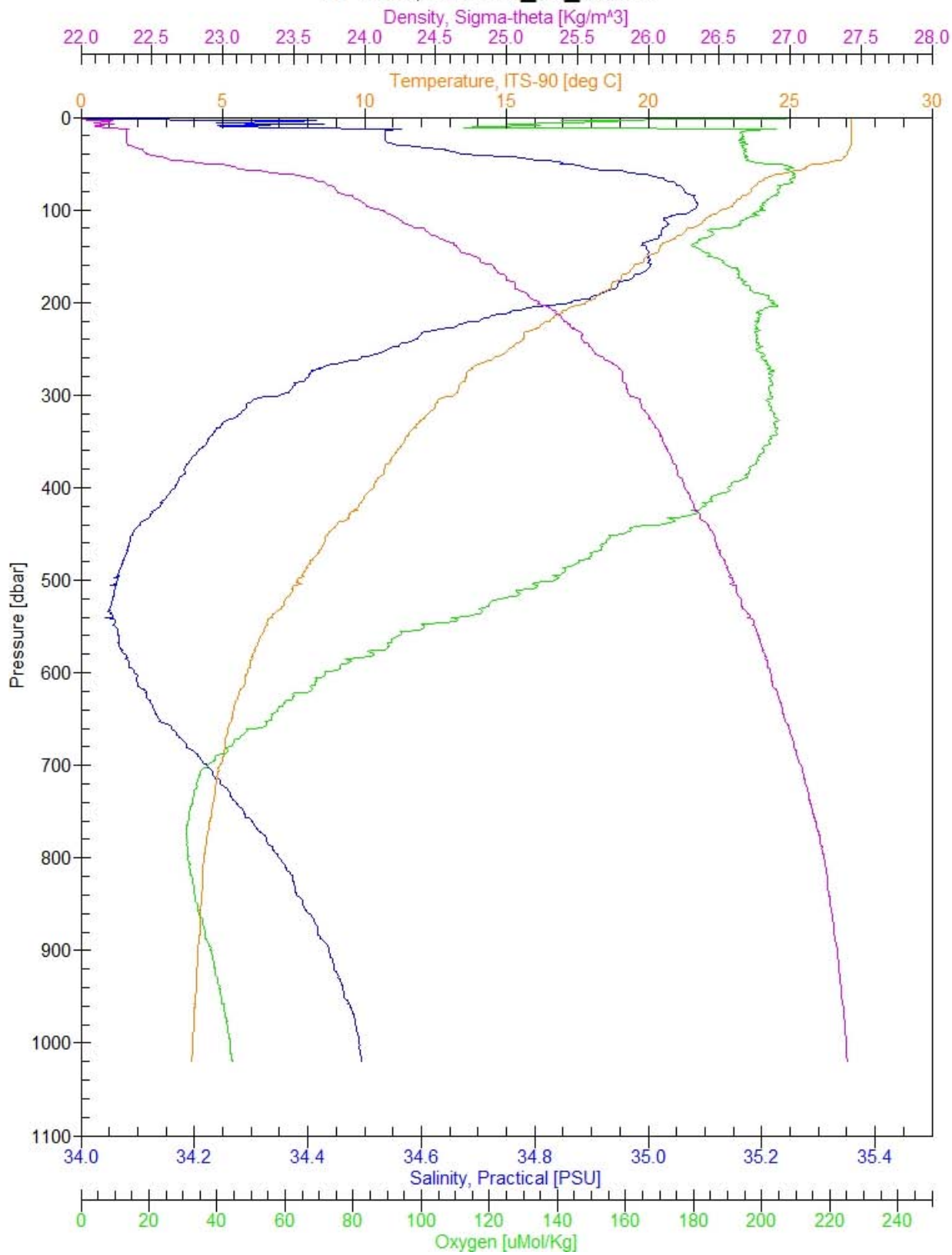
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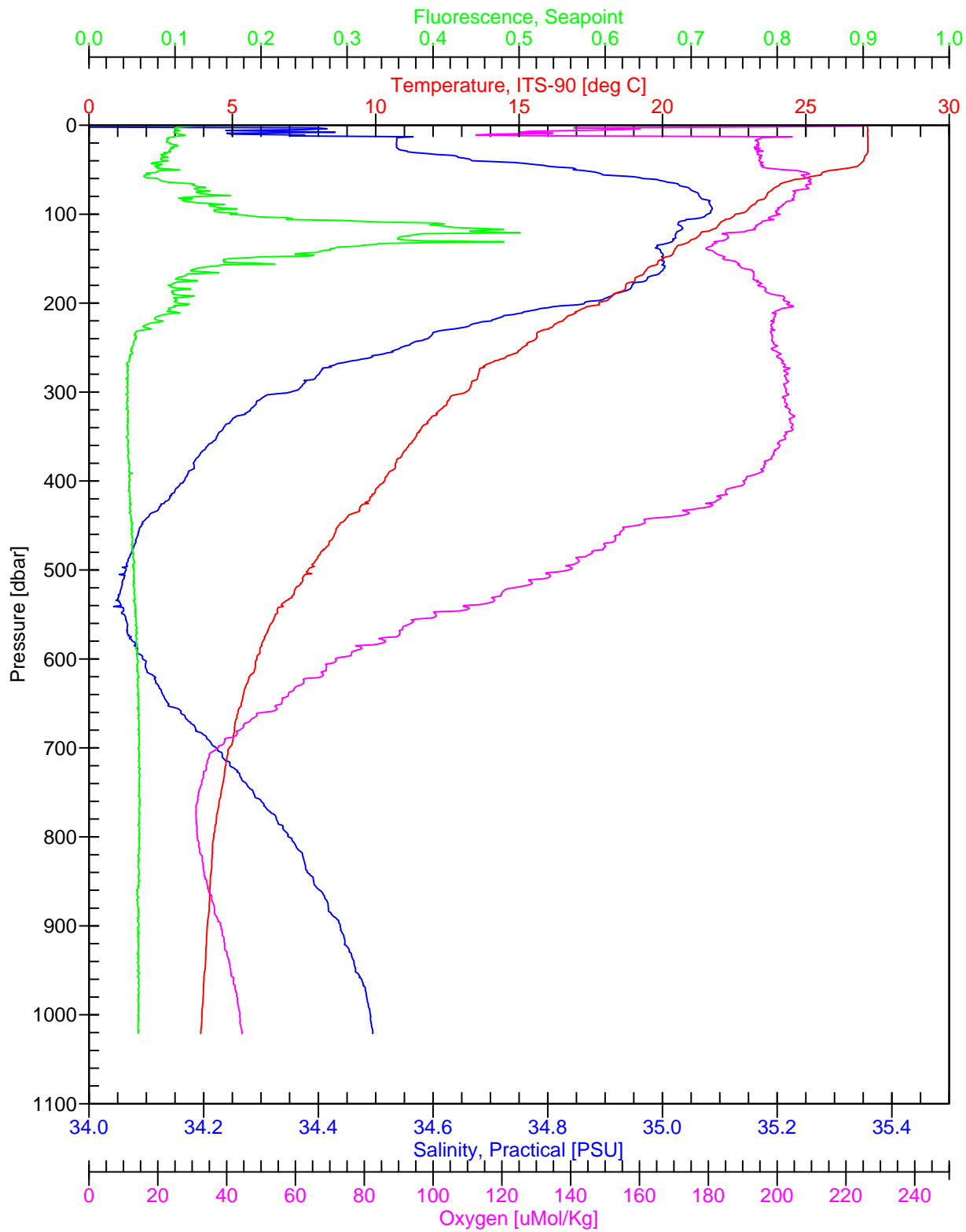
# G-1000, hot-305\_s2\_c8.cnv



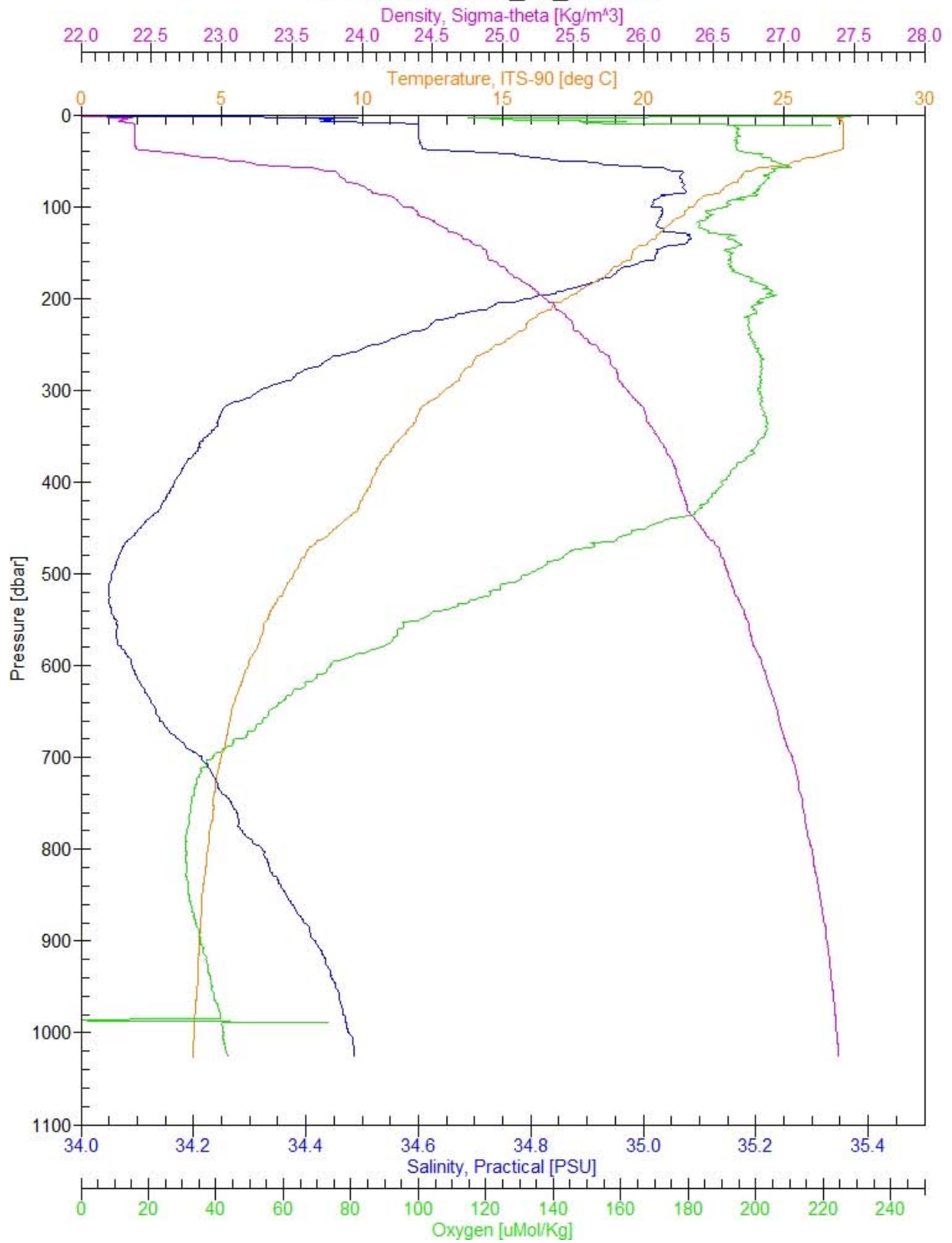
# W-1000, hot-305\_s2\_c9.cnv



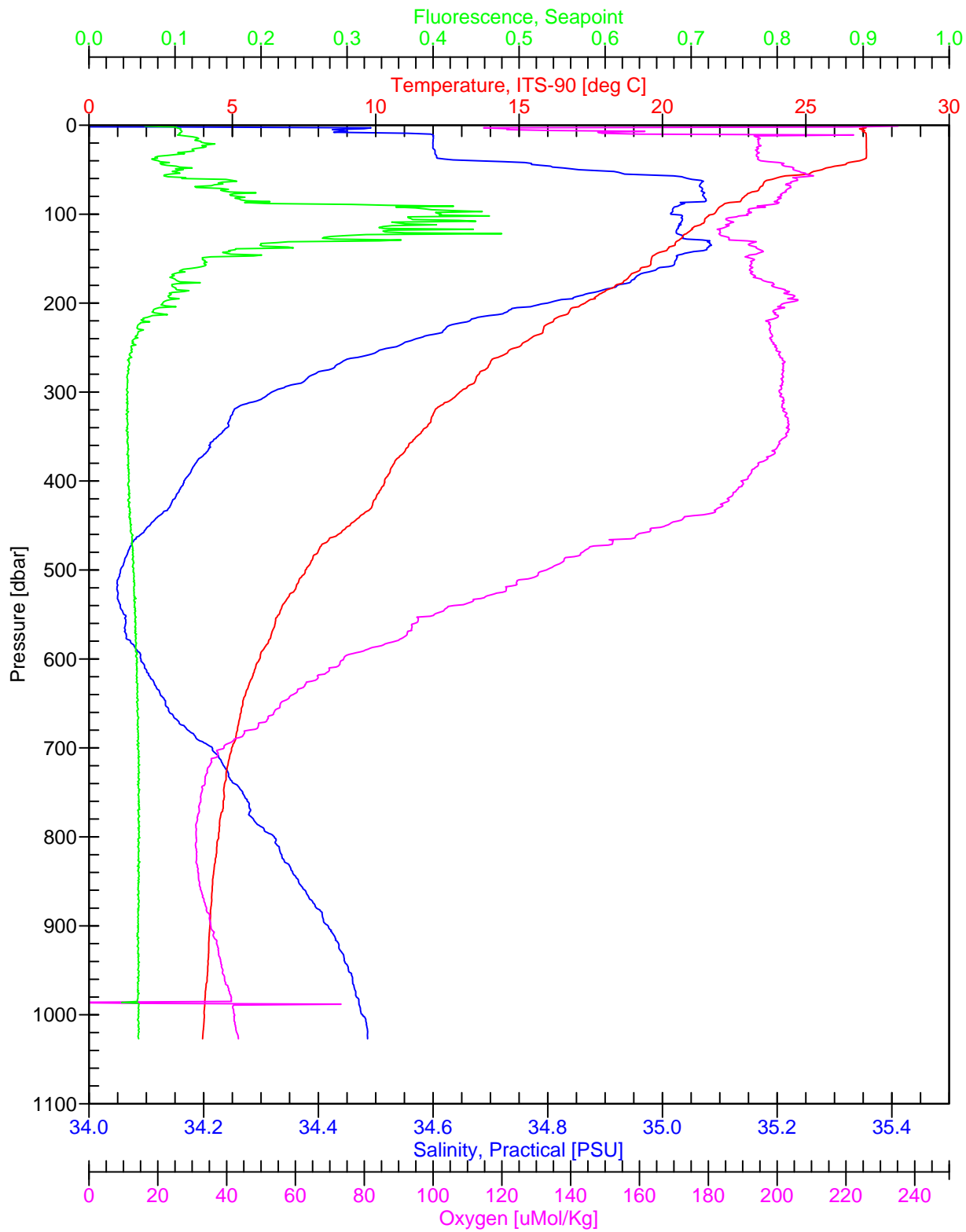
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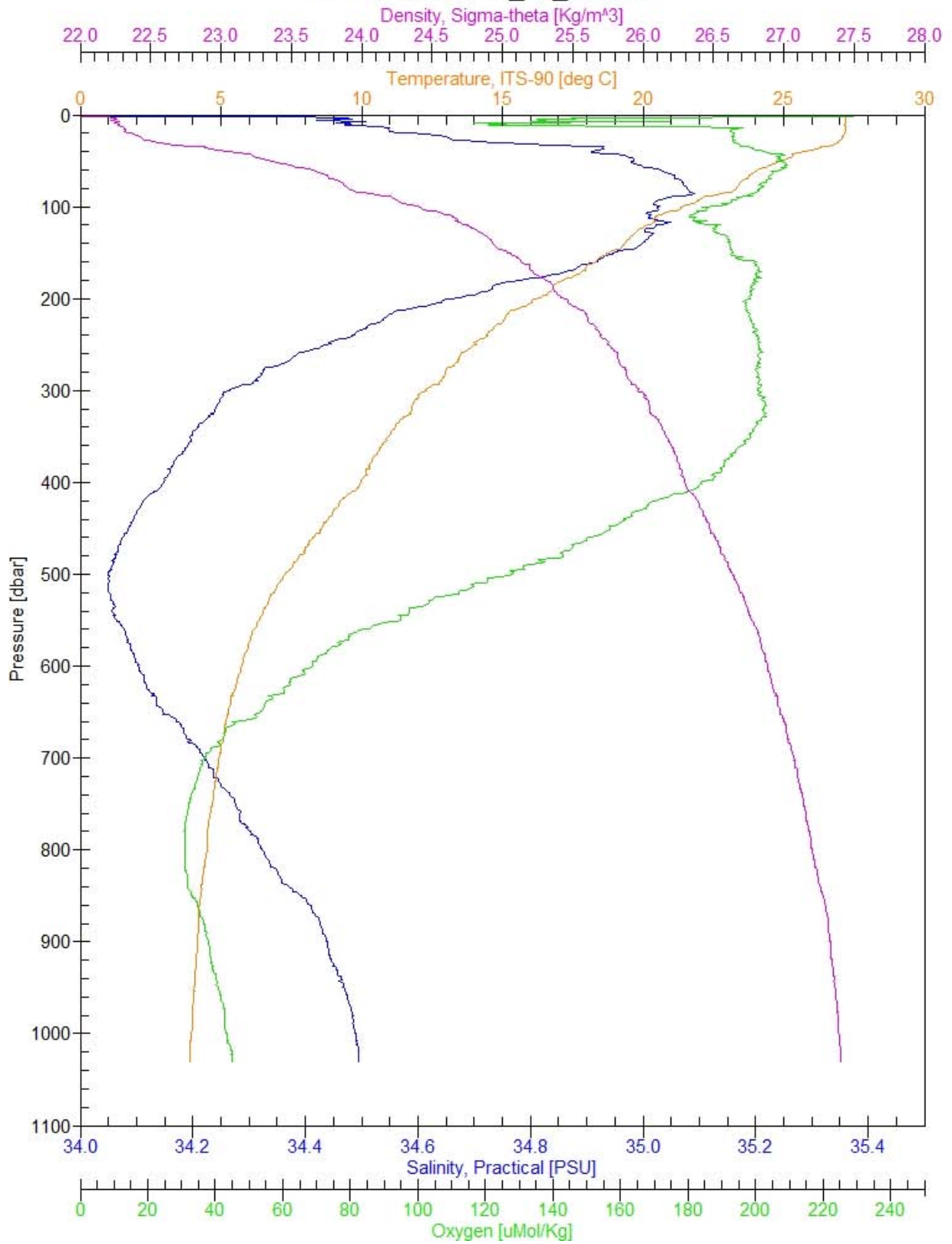
# W-1000, hot-305\_s2\_c10.cnv



# G-1000, hot-305\_s2\_c10.cnv

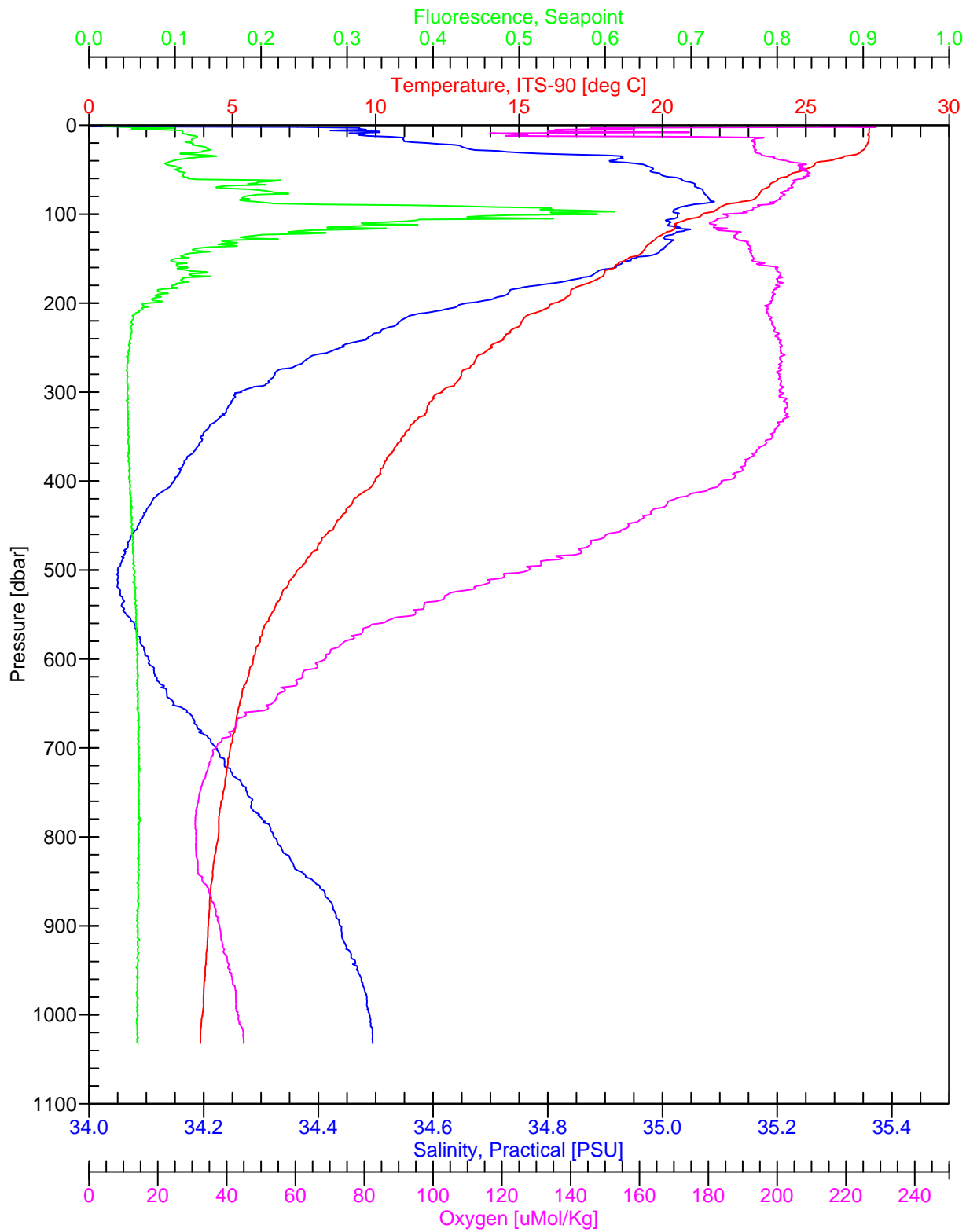


# W-1000, hot-305\_s2\_c11.cnv

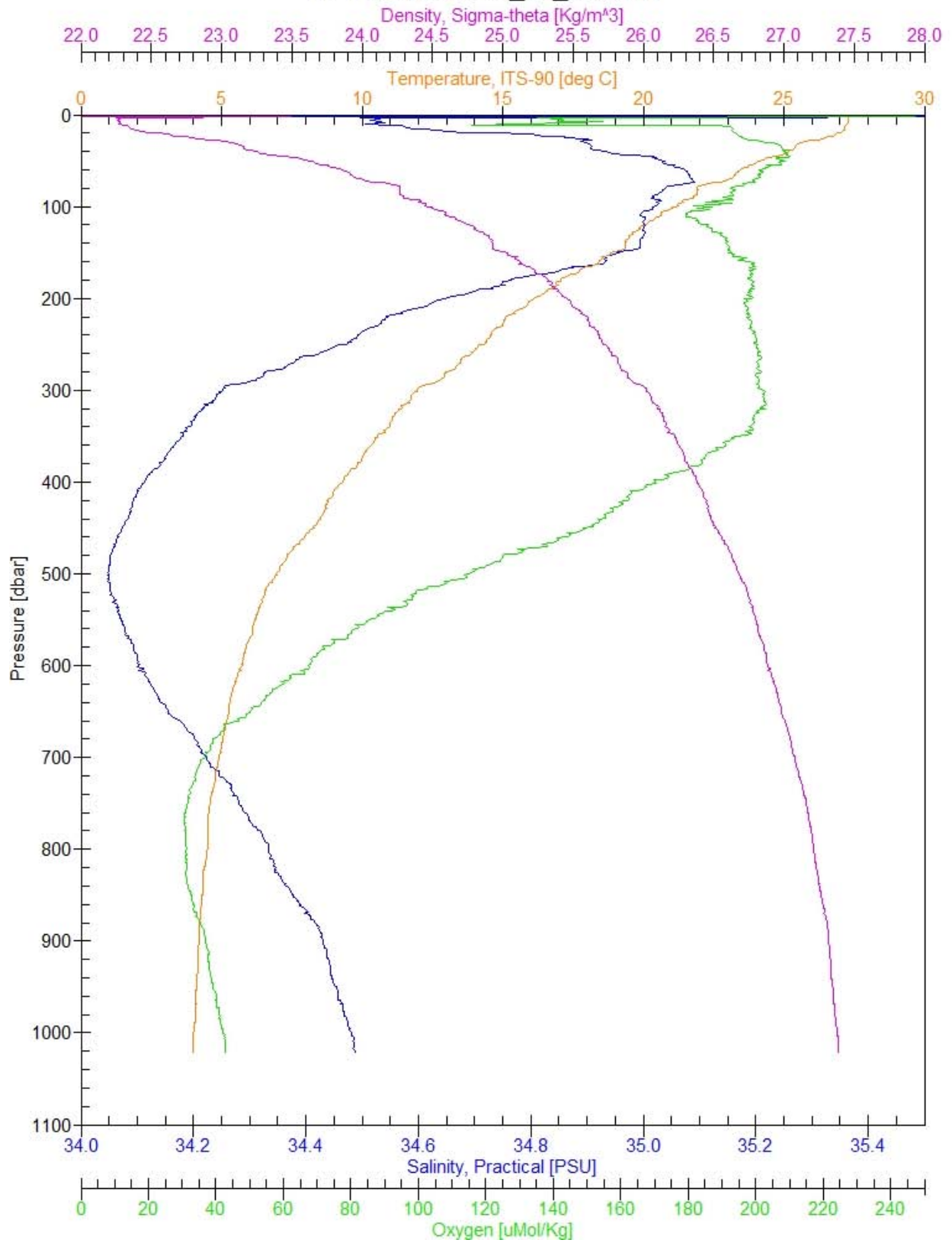




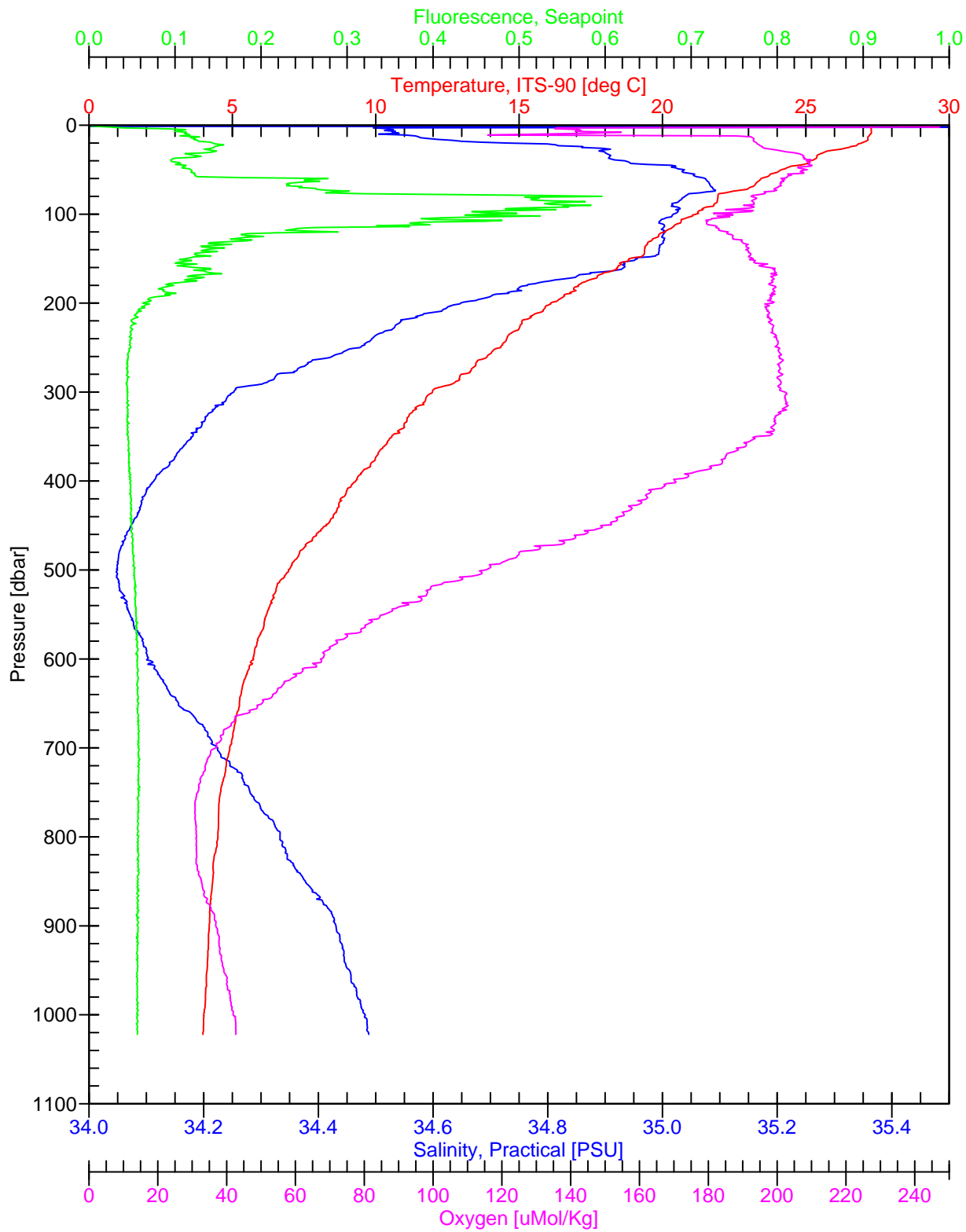
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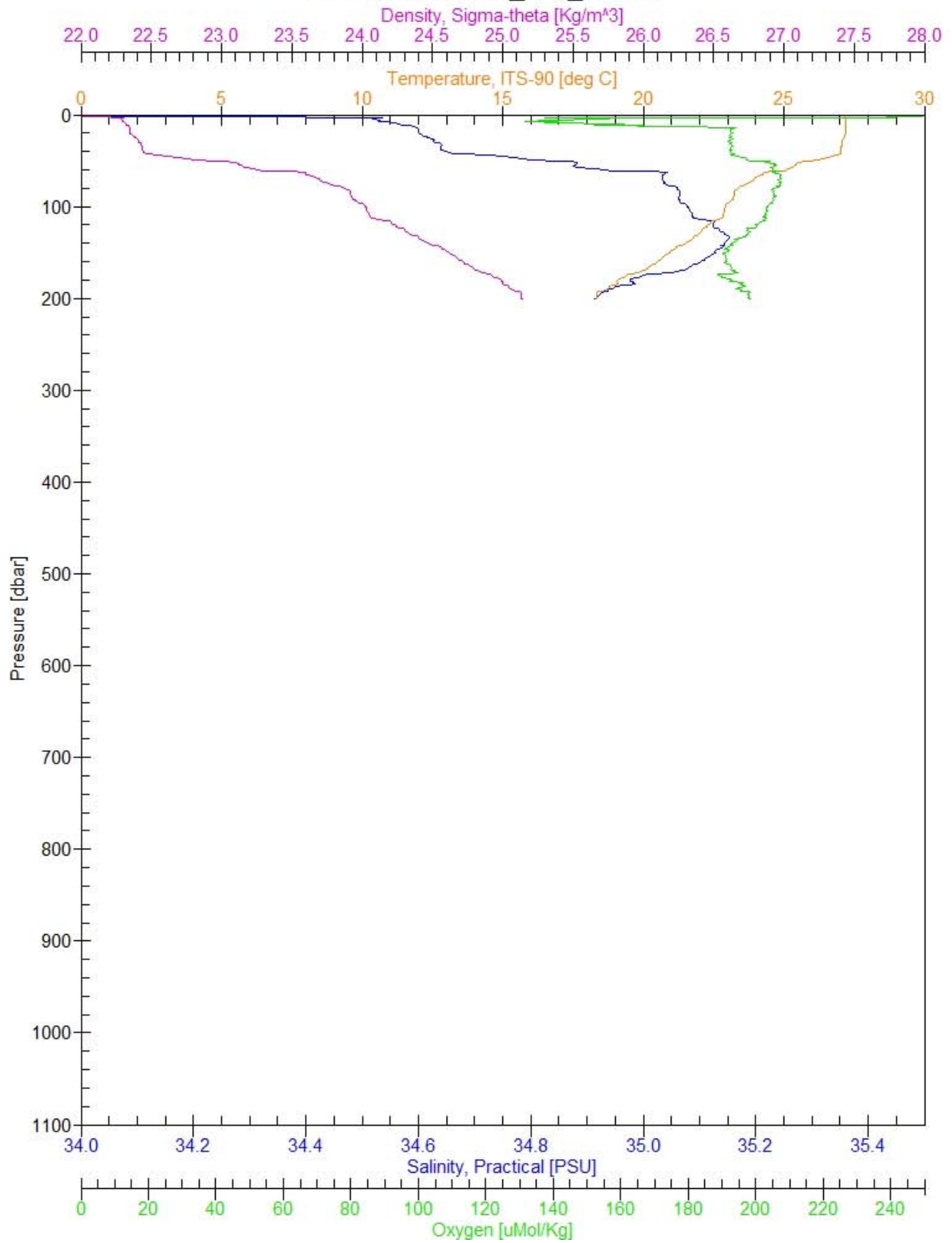
# W-1000, hot-305\_s2\_c12.cnv



# G-1000, hot-305\_s2\_c12.cnv



# W-1000, hot-305\_s52\_c1.cnv



# G-1000, hot-305\_s52\_c1.cnv

