

ROSETTE LOG

MISSION ID: 2002-03 STATION: SI CAST NUMBER: 1. UTC DATE (dd/mm/yyyy): 09/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |        |       |  |  |  |  |                           |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|--------|-------|--|--|--|--|---------------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |     | C13    |       |  |  |  |  |                           |
|            |            |            |           |                   |                    |               | OXY |     |  |     | ALK |        | CHL   |  |  |  |  | Recal O2                  |
| 1          | 1          | 84         | 1091      | 225               | ✓ 182              | ✓             | ✓   | ✓   |  |     |     |        |       |  |  |  |  |                           |
| 2          | 2          | 255        | 1093      | 200               | ✓ 182              | ✓             |     |     |  |     |     |        |       |  |  |  |  |                           |
| 3          | 3          | 364        | 103       | 175               | ✓ 175              | ✓             |     |     |  |     |     |        |       |  |  |  |  |                           |
| 4          | 4          | 392        | 1079      | 150               | ✓ 150              | ✓             |     |     |  |     |     |        |       |  |  |  |  | poor endpoint             |
| 5          | 5          | 443        | 1067      | 125               | ✓ 125              |               |     |     |  |     |     |        |       |  |  |  |  |                           |
| 6          | 6          | 534        | 1399      | 100               | ✓ 100              |               |     |     |  |     |     |        |       |  |  |  |  |                           |
| 7          | 7          | 535        | 3605      | 75                | ✓ 75               |               |     |     |  |     |     |        |       |  |  |  |  | changed colorimeter probe |
| 8          | 8          | 572        | 5031      | 50                | ✓ 50               |               |     |     |  |     |     |        |       |  |  |  |  |                           |
| 9          | 9          | 588        | 4709      | 40                | ✓ 40               | ✓             |     |     |  |     |     |        |       |  |  |  |  |                           |
| 10         | 10         | 632        | 4763      | 30                | ✓ 30               | ✓             |     |     |  |     |     |        |       |  |  |  |  |                           |
| 11         | 11         | 650        | 4828      | 20                | ✓ 20               | ✓             |     |     |  |     |     |        |       |  |  |  |  |                           |
| 12         | 12         | 657        |           | 10                | ✓ 10               | ✓             |     |     |  |     |     | 146.05 | 0.923 |  |  |  |  | air bubble on lens        |
| 13         | 13         | 695        |           | 5                 | ✓ 1.3              | ✓             |     |     |  |     |     | 141.06 | 1.305 |  |  |  |  | cloudy water              |
| 14         | 14         |            |           | 0                 | ✓ 1.3              | ✓             | ✓   | ✓   |  |     |     |        |       |  |  |  |  |                           |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  |                           |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  | Run time error 9          |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  | Subscript out of range    |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  |                           |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  |                           |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  |                           |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  | Sal 5-35                  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  | Temp 5-10                 |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  | Hum 10-60                 |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |        |       |  |  |  |  |                           |

Comments: 13 Bottles closed.

SHIP: Vector

ENTERED BY:

CHECKED BY:

Bottom Depth: 225

Cast # down:

Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     |      |
| Bottom: |     | 1940 |
| End:    |     | 1958 |

START POSITION (GPS)

LAT:

LONG:

BOTTOM POSITION (GPS)

LAT: 48 39.17

LONG: 123 30 38

END POSITION (GPS)

LAT:

LONG: V6 V2

|     |     |     |     |
|-----|-----|-----|-----|
| 006 | 008 | 019 | 023 |
| 009 | 009 | 026 | 02  |
| 002 | 003 | 023 |     |

# ROSETTE LOG

MISSION ID: 2002-03

STATION: 59

CAST NUMBER: 2

UTC DATE (dd/mm/yyyy): 09/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |   |     |  |     |  |  |  |  |  |                          |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|---|-----|--|-----|--|--|--|--|--|--------------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |   | TCO |  | C13 |  |  |  |  |  |                          |
| 1          | 14         | 697        | 5.281     |                   | ✓ 226              | ✓             | ✓ | ✓   |   |     |  |     |  |  |  |  |  | 140.59 .926              |
| 2          | 15         | 707        | 5.322     | 200               | ✓                  | ✓             |   |     |   |     |  |     |  |  |  |  |  | 135.79 .901              |
| 3          | 16         | 708        | 5.329     | 175               | ✓                  | ✓             |   |     |   |     |  |     |  |  |  |  |  | 139.94 .930              |
| 4          | 17         | 709        | 5.354     | 150               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 138.11 .922              |
| 5          | 18         | 712        | 5.421     | 125               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 137.74 .931              |
| 6          | 19         | 715        | 5.456     | 100               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 138.90 .945              |
| 7          | 20         | 727        | 5.481     | 75                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 136.12 low % trans. .930 |
| 8          | 21         | 730        | 5.434     | 50                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 139.18 .943              |
| 9          | 22         | 1105       | 5.458     | 40                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 127.64 .868              |
| 10         | 23         | 1110       | 5.454     | 30                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 127.30 .865              |
| 11         | 24         | 1137       | 5.472     | 20                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 128.33 .875              |
| 12         | 25         | 1130       | 5.460     | 10                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 129.92 .884              |
| 13         | 26         | 1128       | 5.481     | 5                 | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | 127.26 .869              |
| 14         | 27         | 1135       | 5.515     | 0                 | ✓                  |               |   | ✓   | ✓ |     |  |     |  |  |  |  |  | 127.64 .877              |
| 15         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                          |
| 16         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                          |
| 17         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                          |
| 18         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  | .01012953                |
| 19         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  | .0108                    |
| 20         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  | .004                     |
| 21         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  | .022                     |
| 22         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                          |
| 23         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                          |
| 24         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                          |

SHIP: VECTOR  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 233

Cast # down:  
Cast # up:

Time LOC UTC  
Begin:  
Bottom: 2214  
End:

START POSITION (GPS)  
LAT:  
LONG:

BOTTOM POSITION (GPS)  
LAT: 48 37.55  
LONG: 123 14.52

END POSITION (GPS)  
LAT:  
LONG:

Comments:

ROSETTE LOG

MISSION ID: 2002-03 STATION: 102 CAST NUMBER: 6 UTC DATE (dd/mm/yyyy): 10/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |     |     |     |  |  |  |  |                                    |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|-----|-----|-----|--|--|--|--|------------------------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |     | C13 |     |  |  |  |  |                                    |
|            |            |            |           |                   |                    |               | OXY |     |   |     | ALK |     | CHL |  |  |  |  |                                    |
| 1          | 28         | 1138       | 3.041     | 260               | ✓                  | 250           | ✓   | ✓   | ✓ |     |     |     |     |  |  |  |  | subscript error .487 cloudy 127.90 |
| 2          | 29         | 1141       | 3.138     | 250               | ✓                  | 250           | ✓   |     |   |     |     |     |     |  |  |  |  | .505 cloudy 128.57                 |
| 3          | 30         | 1142       | 3.412     | 200               | ✓                  |               | ✓   |     |   |     |     |     |     |  |  |  |  | 128.86                             |
| 4          | 31         | 1146       | 4.572     | 175               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 5          | 32         | 1148       | 4.733     | 150               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 6          | 33         | 1153       | 5.021     | 125               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 7          | 34         | 1158       | 5.213     | 100               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 8          | 35         | 1171       | 5.754     | 75                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 9          | 36         | 1174       | 5.962     | 50                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 10         | 37         | 1175       | 6.380     | 40                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 11         | 38         | 1176       | 6.443     | 30                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 12         | 39         | 1180       | 6.510     | 20                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 13         | 40         | 1188       | 6.584     | 10                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 14         | 41         | 1189       | 6.655     | 5                 | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 15         | 42         | 1191       | 6.627     | 0                 | ✓                  |               |     | ✓   | ✓ |     |     |     |     |  |  |  |  |                                    |
| 16         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 17         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 18         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 19         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 20         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 21         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 22         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 23         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |
| 24         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                    |

SHIP: Vector

ENTERED BY:

CHECKED BY:

Bottom Depth: 260

Cast # down: 8

Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 8:38 |
| Bottom: |     | 8:43 |
| End:    |     | 9:01 |

START POSITION (GPS)

LAT: 48 30 04

LONG: 124 43 88

BOTTOM POSITION (GPS)

LAT: 48 30.07

LONG: 124.43.83

END POSITION (GPS)

LAT: 48 30 18

LONG: 124 43 77

Comments: out samples were discarded

ROSETTE LOG

MISSION ID: 2002-03 STATION: 75 CAST NUMBER: 9 UTC DATE (dd/mm/yyyy): 10/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |   |     |  |     |  |  |  |  |  |                  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|---|-----|--|-----|--|--|--|--|--|------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |   | TCO |  | C13 |  |  |  |  |  |                  |
|            |            |            |           |                   |                    | OXY           |   |     |   | ALK |  | CHL |  |  |  |  |  |                  |
| 1          | 43         | 1192       | 3.589     | 230               | ✓                  | 215           | ✓ | ✓   | ✓ |     |  |     |  |  |  |  |  |                  |
| 2          | 44         | 1193       | 3.931     | 200               | ✓                  |               | ✓ |     |   |     |  |     |  |  |  |  |  |                  |
| 3          | 45         | 1194       | 4.569     | 175               | ✓                  |               | ✓ |     |   |     |  |     |  |  |  |  |  |                  |
| 4          | 46         | 1195       | 4.623     | 150               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 5          | 47         | 1198       | 4.967     | 125               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 6          | 48         | 1201       | 5.074     | 100               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  | large air bubble |
| 7          | 49         | 1203       | 5.246     | 75                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 8          | 50         | 1206       | 5.585     | 50                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 9          | 51         | 1210       | 6.049     | 40                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 10         | 52         | 1212       | 6.419     | 30                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 11         | 53         | 1209       | 6.439     | 20                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 12         | 54         | 1215       | 6.597     | 10                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 13         | 55         | 1216       | 6.614     | 5                 | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 14         | 56         | 1222       | 6.618     | 0                 | ✓                  |               | ✓ | ✓   |   |     |  |     |  |  |  |  |  |                  |
| 15         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 16         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 17         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 18         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 19         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 20         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 21         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 22         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 23         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |
| 24         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |                  |

Comments:

SHIP: Vector  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 224

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1135 |
| Bottom: |     | 1139 |
| End:    |     | 1156 |

START POSITION (GPS)  
LAT: 48 28 25  
LONG: 124 32 75

BOTTOM POSITION (GPS)  
LAT: 48 28 28  
LONG: 124 32 75

END POSITION (GPS)  
LAT: 48 28 40  
LONG: 124 32 76

ROSETTE LOG

MISSION ID: 2002-03 STATION: 72 CAST NUMBER: 12 UTC DATE (dd/mm/yyyy): 10/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |  |     |  |     |  |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|--|-----|--|-----|--|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |  | NUT |  | TCO |  | C13 |  |  |  |  |  |  |
|            |            |            |           |                   |                    | OXY           |  |     |  | ALK |  | CHL |  |  |  |  |  |  |
| 1          | 57         | 1224       | 2.934     | ~192              | ✓ 178              |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 2          | 58         | 1225       | 3.951     | 175               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 3          | 59         | 1228       | 4.649     | 150               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 4          | 60         | 1231       | 4.857     | 125               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 5          | 61         | 1233       | 4.931     | 100               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 6          | 62         | 1235       | 5.104     | 75                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 7          | 63         | 1237       | 5.372     | 50                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 8          | 64         | 1238       | 5.485     | 140               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 9          | 65         | 1241       | 5.800     | 130               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 10         | 66         | 1243       | 5.927     | 120               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 11         | 67         | 1244       | 6.038     | 10                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 12         | 68         | 1247       | 6.214     | 5                 | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 13         | 69         | 1248       | 6.502     | 0                 | ✓ 1.6              |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 14         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 15         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 16         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |  |

Comments:

SHIP: Vector  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 191

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     |      |
| Bottom: |     | 1621 |
| End:    |     | 1636 |

START POSITION (GPS)  
LAT:  
LONG:

BOTTOM POSITION (GPS)  
LAT: 48 18.66  
LONG: 124 03.98

END POSITION (GPS)  
LAT: 48 18.78  
LONG: 124 03.95

## ROSETTE LOG

MISSION ID: 2002-03

STATION: 69

CAST NUMBER: 15

UTC DATE (dd/mm/yyyy): 10/01/2002.

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           | OXY | NUT | TCO | ALK | C13 | CHL |  |  |  |  |  |  |
| 1          | 70         | 1249       | 4.166     | 174               | ✓ 173              | ✓             | ✓   | ✓   |     |     |     |     |  |  |  |  |  |  |
| 2          | 71         | 1251       | 4.200     | 150               | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 3          | 72         | 1252       | 4.949     | 125               | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 4          | 73         | 1254       | 5.384     | 100               | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 5          | 74         | 1256       | 5.762     | 75                | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 6          | 75         | 1258       | 6.130     | 50                | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 7          | 76         | 1260       | 6.426     | 40                | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 8          | 77         | 1261       | 6.459     | 30                | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 9          | 78         | 1264       | 6.536     | 20                | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 10         | 79         | 1267       | 6.452     | 10                | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 11         | 80         | 1268       | 6.513     | 5                 | ✓                  |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 12         | 81         | 1270       | 6.549     | 0                 | ✓ 1.5              |               |     | ✓   | ✓   |     |     |     |  |  |  |  |  |  |
| 13         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 14         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |

Comments:

SHIP:

ENTERED BY: 18m

CHECKED BY:

Bottom Depth: 181

Cast # down:

Cast # up:

Time

LOC

UTC

Begin:

Bottom:

1952

End:

2004

START POSITION (GPS)

LAT:

LONG:

BOTTOM POSITION (GPS)

LAT:

48 15.60

LONG:

123 43.26

END POSITION (GPS)

LAT:

48 15.57

LONG:

123 43.36

ROSETTE LOG

MISSION ID: 2002-03 STATION: A0CP CAST NUMBER: 18 UTC DATE (dd/mm/yyyy): 10/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |  |  |  |  |                         |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|--|--|--|--|-------------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |     | C13 |     |  |  |  |  |                         |
|            |            |            |           |                   |                    |               | OXY |     |  |     | ALK |     | CHL |  |  |  |  |                         |
| 1          | 82         | 1271       | 5.352     | 100               | ✓ 111              | ✓             |     | ✓   |  |     |     |     |     |  |  |  |  |                         |
| 2          | 83         | 1272       | 5.411     | 100               | ✓                  | ✓             |     |     |  |     |     |     |     |  |  |  |  | stagnant loose in flask |
| 3          | 84         | 1273       | 5.415     | 75                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 4          | 85         | 1274       | 5.515     | 58                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 5          | 86         | 1275       | 5.642     | 40                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 6          | 87         | 1138       | 5.555     | 30                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 7          | 88         | 1141       | 5.550     | 20                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 8          | 89         | 1142       | 5.656     | 10                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 9          | 90         | 1146       | 5.650     | 5                 | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 10         | 91         | 1148       | 5.948     | 0                 | 1.2                |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 11         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 12         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 13         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 14         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |                         |

Comments:

SHIP: Vector

ENTERED BY:

CHECKED BY:

Bottom Depth: 119

Cast # down:

Cast # up:

TimeLOCUTC

Begin:2325

Bottom:2827

End:2337

START POSITION (GPS)

LAT: 481403

LONG: 1231816

BOTTOM POSITION (GPS)

LAT: 481400

LONG: 1231825

END POSITION (GPS)

LAT: 481357

LONG: 1231860

ROSETTE LOG

MISSION ID: 2002-03 STATION: 65 CAST NUMBER: 22 UTC DATE (dd/mm/yyyy): 11/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |     |     |        |  |  |  |  |                                                   |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|-----|-----|--------|--|--|--|--|---------------------------------------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |     | C13 |        |  |  |  |  |                                                   |
|            |            |            |           |                   |                    |               | OXY |     |   |     | ALK |     | CHL    |  |  |  |  |                                                   |
| 1          | 92         | 1158       | 5.355     | 121               | 119                | ✓             | ✓   | ✓   |   |     |     |     |        |  |  |  |  | entered in computer on last stn. coordinates last |
| 2          | 93         | 1171       | 5.327     | 100               | 100                | ✓             |     |     |   |     |     |     |        |  |  |  |  | " stn. #                                          |
| 3          | 94         | 1174       | 5.273     | 75                | 100                | ✓             |     |     |   |     |     |     |        |  |  |  |  | right coordinates wrong stn. #                    |
| 4          | 95         | 1175       | 5.292     | 50                | 75                 |               |     |     |   |     |     |     |        |  |  |  |  | " and entered as #96                              |
| 5          | 96         | 1176       | 5.382     | 40                | 50                 |               |     |     |   |     |     |     | 143.49 |  |  |  |  | right coordinates right stn. #, entered as #95    |
| 6          | 97         | 1180       | 5.416     | 30                | 40                 |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 7          | 98         | 1188       | 5.400     | 20                | 30                 |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 8          | 99         | 1189       | 5.591     | 10                | 20                 |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 9          | 100        | 1191       | 5.666     | 5                 | 10                 |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 10         | 101        | 1192       | 5.812     | 0                 | 5.1                |               |     | ↓   | ↓ |     |     |     |        |  |  |  |  |                                                   |
| 11         | 103        |            |           |                   | 11                 |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 12         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 13         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 14         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 15         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 16         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 17         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 18         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 19         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 20         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 21         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 22         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 23         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |
| 24         |            |            |           |                   |                    |               |     |     |   |     |     |     |        |  |  |  |  |                                                   |

Comments:

SHIP: VECTOR

ENTERED BY:

CHECKED BY:

Bottom Depth: 121

Cast # down:

Cast # up:

Time

LOC

UTC

Begin: 0323

Bottom: 0326

End: 0340

START POSITION (GPS)

LAT: 48 15.85 N

LONG: 123 9.99 W

BOTTOM POSITION (GPS)

LAT: 48 15.84 N

LONG: 123 10.11 W

END POSITION (GPS)

LAT: 48 15.86 N

LONG: 123 10.67 W

ROSETTE LOG

MISSION ID: 2002-03 STATION: 62 CAST NUMBER: 215 UTC DATE (dd/mm/yyyy): 11/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |     |     |     |  |  |  |  |                  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|-----|-----|-----|--|--|--|--|------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |     | C13 |     |  |  |  |  |                  |
|            |            |            |           |                   |                    |               | OXY |     |   |     | ALK |     | CHL |  |  |  |  |                  |
| 1          | 102        | 1195       | 5.469     | 150               | ✓ 145              | ✓             |     | ✓   | ✓ |     |     |     |     |  |  |  |  |                  |
| 2          | 103        | 1198       | 5.408     | 125               | ✓                  | ✓             |     |     |   |     |     |     |     |  |  |  |  |                  |
| 3          | 104        | 1201       | 5.422     | 100               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 4          | 105        | 1203       | 5.454     | 75                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 5          | 106        | 1206       | 5.545     | 50                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 6          | 107        | 1210       | 5.558     | 40                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 7          | 108        | 1212       | 5.637     | 30                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 8          | 109        | 1209       | 5.629     | 20                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 9          | 110        | 1215       | 5.614     | 10                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 10         | 111        | 1216       | 5.652     | 5                 | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 11         | 112        | 1222       | 5.634     | 0                 | ✓                  |               |     | ✓   | ✓ |     |     |     |     |  |  |  |  | small air bubble |
| 12         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 13         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 14         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 15         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 16         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 17         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 18         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 19         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 20         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 21         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 22         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 23         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |
| 24         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                  |

Comments:

SHIP:  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 152

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1501 |
| Bottom: |     | 0639 |
| End:    |     | 0649 |

START POSITION (GPS)  
LAT:  
LONG:

BOTTOM POSITION (GPS)  
LAT: 48 22.81  
LONG: 123 02.60

END POSITION (GPS)  
LAT: 48 22.81  
LONG: 123 02.53

ROSETTE LOG

MISSION ID: 2002-03      STATION: 56      CAST NUMBER: 30      UTC DATE (dd/mm/yyyy): 11/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |  |     |  |  |  |  |  |                |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|--|-----|--|--|--|--|--|----------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |  | C13 |  |  |  |  |  |                |
|            |            |            |           |                   |                    |               | OXY |     |   | ALK |  | CHL |  |  |  |  |  |                |
| 1          | 113        | 1224       | 5.387     | 208               | 208                | ✓             | ✓   | ✓   |   |     |  |     |  |  |  |  |  |                |
| 2          | 114        | 1225       | 5.375     | 200               |                    | ✓             |     |     |   |     |  |     |  |  |  |  |  | poor mid-point |
| 3          | 115        | 1228       | 5.410     | 175               |                    | ✓             |     |     |   |     |  |     |  |  |  |  |  |                |
| 4          | 116        | 1231       | 5.430     | 150               |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 5          | 117        | 1233       | 5.414     | 125               |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 6          | 118        | 1235       | 5.343     | 100               |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 7          | 119        | 1237       | 5.338     | 75                |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 8          | 120        | 1238       | 5.357     | 50                |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 9          | 121        | 1241       | 5.352     | 40                |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 10         | 122        | 1243       | 5.340     | 30                |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 11         | 123        | 1244       | 5.361     | 20                |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 12         | 124        | 1247       | 5.405     | 10                |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 13         | 125        | 1248       | 5.355     | 5                 |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 14         | 126        | 1249       | 5.410     | 0                 | 1.4                |               |     | ✓   | ✓ |     |  |     |  |  |  |  |  |                |
| 15         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 16         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 17         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 18         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 19         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 20         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 21         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 22         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 23         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |
| 24         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                |

Comments:

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SHIP:

ENTERED BY: *AK*

CHECKED BY:

Bottom Depth: 214

Cast # down:

Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1205 |
| Bottom: |     | 1208 |
| End:    |     | 1227 |

START POSITION (GPS)

LAT: 48 46.65 N

LONG: 123 1.55 W

BOTTOM POSITION (GPS)

LAT: 48 46.51 N

LONG: 123 1.50 W

END POSITION (GPS)

LAT: 48 46.88 N

LONG: 123 1.19 W

ROSETTE LOG

MISSION ID: 2002-03 STATION: 46 CAST NUMBER: 36 UTC DATE (dd/mm/yyyy): 11/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |  |     |  |  |  |  |  |                 |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|--|-----|--|--|--|--|--|-----------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |  | C13 |  |  |  |  |  |                 |
|            |            |            |           |                   |                    |               | OXY |     |   | ALK |  | CHL |  |  |  |  |  |                 |
| 1          | 127        | 1224       | 4.283     | 175               | ✓ 184              | ✓             | ✓   | ✓   |   |     |  |     |  |  |  |  |  |                 |
| 2          | 128        | 1225       | 4.424     | 150               | ✓ 175              | ✓             |     | ✓   |   |     |  |     |  |  |  |  |  |                 |
| 3          | 129        | 1228       | 4.971     | 125               | ✓ 150              |               |     | ✓   |   |     |  |     |  |  |  |  |  |                 |
| 4          | 130        | 1231       | 5.046     | 100               | ✓ 125              |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 5          | 131        | 1233       | 5.198     | 75                | ✓ 100              |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 6          | 132        | 1235       | 5.387     | 50                | ✓ 75               |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 7          | 133        | 1237       | 5.653     | 40                | ✓ 50               |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 8          | 134        | 1238       | 5.680     | 30                | ✓ 40               |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 9          | 135        | 1241       | 5.817     | 20                | ✓ 30               |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 10         | 136        | 1243       | 5.794     | 10                | ✓ 20               |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 11         | 137        | 1244       | 5.904     | 5                 | ✓ 10               |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 12         | 138        | 1247       | 6.002     | 0                 | ✓ 5                |               |     | ✓   | ✓ |     |  |     |  |  |  |  |  |                 |
| 13         | 139        | 1248       | 6.220     |                   | ✓ 0                |               |     | ✓   | ✓ |     |  |     |  |  |  |  |  | tiny air bubble |
| 14         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 15         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 16         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 17         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 18         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 19         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 20         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 21         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 22         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 23         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |
| 24         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                 |

Comments: 13 closed

SHIP:

ENTERED BY:

CHECKED BY:

Bottom Depth: 185

Cast # down:

Cast # up:

TimeLOCUTC

Begin:

Bottom:

End: 1830

START POSITION (GPS)

LAT:

LONG:

BOTTOM POSITION (GPS)

LAT:

LONG:

END POSITION (GPS)

LAT: 48 51.27

LONG: 123 10.57

ROSETTE LOG

MISSION ID: 2002-03 STATION: 42 CAST NUMBER: 38 UTC DATE (dd/mm/yyyy): 11/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l  | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
|------------|------------|------------|------------|-------------------|--------------------|---------------|-----|-----|---|-----|-----|-----|-----|--|--|--|--|--------------------------------------------------------------------------------------|
|            |            |            |            | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |     | C13 |     |  |  |  |  |                                                                                      |
|            |            |            |            |                   |                    |               | OXY |     |   |     | ALK |     | CHL |  |  |  |  |                                                                                      |
| 1          | 140        | 1249       | check file | 326               | ✓                  | 316           | ✓   | ✓   | ✓ |     |     |     |     |  |  |  |  | ← since there was already a file saved under 1249.0, this file is renamed 1249.1-oxy |
| 2          | 141        | 1251       | 2.984      | 300               | ✓                  |               | ✓   |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 3          | 142        | 1252       | 3.101      | 250               | ✓                  |               | ✓   |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 4          | 143        | 1254       | 3.254      | 200               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  | ✓ had bubble, removed it early                                                       |
| 5          | 144        | 1256       | 3.524      | 175               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 6          | 145        | 1258       | 3.664      | 150               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 7          | 146        | 1260       | 4.193      | 125               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  | %T = 71.8, dosage = 0.833                                                            |
| 8          | 147        | 1261       | 4.532      | 100               | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 9          | 148        | 1264       | 4.818      | 75                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 10         | 149        | 1267       | 5.055      | 50                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 11         | 150        | 1268       | 5.274      | 40                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 12         | 151        | 1270       | 5.401      | 30                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 13         | 152        | 1271       | 5.389      | 20                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 14         | 153        | 1272       | 5.705      | 10                | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 15         | 154        | 1273       | 6.021      | 5                 | ✓                  |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 16         | 155        | 1274       | 7.552      | 0                 | ✓                  | 1.3           |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 17         |            |            |            |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 18         |            |            |            |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 19         |            |            |            |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 20         |            |            |            |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 21         |            |            |            |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 22         |            |            |            |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 23         |            |            |            |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |
| 24         |            |            |            |                   |                    |               |     |     |   |     |     |     |     |  |  |  |  |                                                                                      |

Comments:

SHIP: Vector  
ENTERED BY: MEch  
CHECKED BY:

Bottom Depth:

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 2057 |
| Bottom: |     | 2103 |
| End:    |     | 2122 |

START POSITION (GPS)  
LAT:  
LONG:

BOTTOM POSITION (GPS)  
LAT: 490150  
LONG: 1232633

END POSITION (GPS)  
LAT: 49177  
LONG: 1232641

# ROSETTE LOG

MISSION ID: 2002-03 STATION: 39 CAST NUMBER: 42 UTC DATE (dd/mm/yyyy): 12/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |  |     |  |     |  |     |  |  |  |  |  |                           |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|--|-----|--|-----|--|-----|--|--|--|--|--|---------------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |  | NUT |  | TCO |  | C13 |  |  |  |  |  |                           |
| 1          | 156        | 1276       | 2.797     | 377               | ✓ 377              | ✓             |  | ✓   |  |     |  |     |  |  |  |  |  |                           |
| 2          | 157        | 1277       | 2.806     | 350               | ✓                  | ✓             |  |     |  |     |  |     |  |  |  |  |  |                           |
| 3          | 158        | 1278       | 2.941     | 300               | ✓                  | ✓             |  |     |  |     |  |     |  |  |  |  |  |                           |
| 4          | 159        | 1279       | 2.945     | 250               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 5          | 160        | 1280       | 3.103     | 200               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 6          | 161        | 1281       | 3.270     | 175               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 7          | 162        | 1282       | 3.489     | 150               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 8          | 163        | 1283       | 4.034     | 125               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 9          | 164        | 1284       | 4.427     | 115               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  | EXTRA SAMPLE IN INTRUSION |
| 10         | 165        | 1285       | 4.032     | 100               | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 11         | 166        | 1286       | 4.189     | 75                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 12         | 167        | 1287       | 4.437     | 50                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  | ✓ check end-point         |
| 13         | 168        | 1288       | 4.614     | 40                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 14         | 169        | 1270       | 4.816     | 30                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 15         | 170        | 1291       | 5.405     | 20                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 16         | 171        | 1292       | 5.924     | 10                | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 17         | 172        | 1293       | 6.061     | 5                 | ✓                  |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 18         | 173        | 1294       | 6.727     | ~0                | ✓ 1.4              |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 19         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 20         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 21         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 22         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 23         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |                           |
| 24         |            |            |           |                   |                    |               |  |     |  |     |  |     |  |  |  |  |  |                           |

SHIP: Vector  
 ENTERED BY: AK + SV  
 CHECKED BY:

Bottom Depth: 380

Cast # down:  
 Cast # up:

| Time    | LOC | UTC         |
|---------|-----|-------------|
| Begin:  |     | <u>0053</u> |
| Bottom: |     | <u>0100</u> |
| End:    |     | <u>0129</u> |

START POSITION (GPS)  
 LAT: 49 9.81 N  
 LONG: 123.32.99 W

BOTTOM POSITION (GPS)  
 LAT: 49 9.87 N  
 LONG: 123 32.97 W

END POSITION (GPS)  
 LAT: 49 9.97 N  
 LONG: 123 32.79 W

Comments:

ROSETTE LOG

MISSION ID: 2002-03 STATION: 27 CAST NUMBER: 45 UTC DATE (dd/mm/yyyy): 12/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |                    |     |                |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|--------------------|-----|----------------|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |                    | C13 |                |  |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |   |     | ALK                |     | CHL            |  |  |  |  |  |
| 1          | 174        | 1295       | 2754      |                   | ✓ 334              | ✓             | ✓   | ✓   |   |     | Sediment in sample |     | near end-point |  |  |  |  |  |
| 2          | 175        | 97         | 2875      | 300               | ✓                  | ✓             |     |     |   |     |                    |     |                |  |  |  |  |  |
| 3          | 176        | 98         | 2956      | 250               | ✓                  | ✓             |     |     |   |     |                    |     |                |  |  |  |  |  |
| 4          | 177        | 1299       | 3078      | 200               | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 5          | 178        | 1300       | 3270      | 175               | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 6          | 179        | 1301       | 3566      | 150               | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 7          | 180        | 1302       | 4351      | 125               | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 8          | 181        | 1303       | 4604      | 100               | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 9          | 182        | 1304       | 5117      | 75                | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 10         | 183        | 1305       | 4953      | 50                | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 11         | 184        | 1306       | 4994      | 40                | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 12         | 185        | 1307       | 5154      | 30                | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 13         | 186        | 84         | 5958      | 20                | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 14         | 187        | 255        | 6996      | 10                | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 15         | 188        | 364        | 7062      | 5                 | ✓                  |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 16         | 189        | 392        | 7173      | 20                | ✓ 1.3              |               |     | ↓   | ↓ |     |                    |     |                |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |   |     |                    |     |                |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |   |     |                    |     |                |  |  |  |  |  |

Comments: Rosette did not hit bottom

SHIP: Vector

ENTERED BY:

CHECKED BY:

Bottom Depth: 347

Cast # down:

Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 0438 |
| Bottom: |     | 0447 |
| End:    |     | 0505 |

START POSITION (GPS)

LAT:

LONG:

BOTTOM POSITION (GPS)

LAT: 49 19.23

LONG: 123 48.37

END POSITION (GPS)

LAT: 49 19.49

LONG: 123 48.87

30° wire angle

ROSETTE LOG

MISSION ID: 2002-03 STATION: 2. CAST NUMBER: 48 UTC DATE (dd/mm/yyyy): 12/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |   |     |  |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|---|-----|--|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |   | TCO |  | C13 |  |  |  |  |  |  |
|            |            |            |           |                   |                    | OXY           |   |     |   | ALK |  | CHL |  |  |  |  |  |  |
| 1          | 190        | 535        | 3.023     | 289               | ✓ 268              | ✓             | ✓ | ✓   |   |     |  |     |  |  |  |  |  |  |
| 2          | 191        | 572        | 2.876     | 250               | ✓                  | ✓             |   |     |   |     |  |     |  |  |  |  |  |  |
| 3          | 192        | 588        | 3.103     | 200               | ✓                  | ✓             |   |     |   |     |  |     |  |  |  |  |  |  |
| 4          | 193        | 632        | 3.204     | 175               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 5          | 194        | 650        | 3.509     | 150               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 6          | 195        | 657        | 3.706     | 125               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 7          | 196        | 695        | 3.793     | 100               | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 8          | 197        | 697        | 4.150     | 75                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 9          | 198        | 707        | 5.875     | 50                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 10         | 199        | 708        | 6.038     | 40                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 11         | 200        | 709        | 6.254     | 30                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 12         | 201        | 712        | 6.429     | 20                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 13         | 202        | 715        | 6.607     | 10                | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 14         | 203        | 727        | 6.590     | 5                 | ✓                  |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 15         | 204        | 730        | N/A       | 0                 | ✓                  |               |   | ✓   | ✓ |     |  |     |  |  |  |  |  |  |
| 16         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |   |     |   |     |  |     |  |  |  |  |  |  |

SHIP: Vector  
ENTERED BY: MHR  
CHECKED BY:

Bottom Depth: 289

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 0830 |
| Bottom: |     | 0834 |
| End:    |     | 0852 |

START POSITION (GPS)  
LAT: 49 24 13  
LONG: 124 09 30

BOTTOM POSITION (GPS)  
LAT: 49 24 16  
LONG: 124 09 35

END POSITION (GPS)  
LAT: 49 24 18  
LONG: 124 09 52

Comments: Note. bottle 15 was never triggered.  
sample 204 lost.

ROSETTE LOG

MISSION ID: 2002-03 STATION: 3 CAST NUMBER: 51 UTC DATE (dd/mm/yyyy): 12/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |  |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|--|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |  | C13 |  |  |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |   | ALK |  | CHL |  |  |  |  |  |  |
| 1          | 205        | 1105       | 2.869     | 327               | ✓                  | 315           | ✓   | ✓   | ✓ |     |  |     |  |  |  |  |  |  |
| 2          | 206        | 1110       | 2.858     | 300               | ✓                  |               | ✓   |     |   |     |  |     |  |  |  |  |  |  |
| 3          | 207        | 1126       | 2.885     | 250               | ✓                  |               | ✓   |     |   |     |  |     |  |  |  |  |  |  |
| 4          | 208        | 1128       | 3.005     | 200               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 5          | 209        | 1130       | 3.172     | 175               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 6          | 210        | 1135       | 3.287     | 150               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 7          | 211        | 1137       | 3.678     | 125               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 8          | 212        | 1134       | 3.979     | 100               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 9          | 213        | 1136       | 4.315     | 75                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 10         | 214        | 1138       | 5.188     | 50                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 11         | 215        | 1141       | 6.002     | 40                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 12         | 216        | 1142       | 6.095     | 30                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 13         | 217        | 1146       | 6.284     | 20                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 14         | 218        | 1148       | 6.428     | 10                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 15         | 219        | 1153       | 6.531     | 5                 | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 16         | 220        | 1158       | N/A       | 0                 |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |

SHIP: Vector  
ENTERED BY: Muel  
CHECKED BY:

Bottom Depth: 325

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1112 |
| Bottom: |     | 1117 |
| End:    |     | 1137 |

START POSITION (GPS)  
LAT: 49 26 62  
LONG: 124 20 23

BOTTOM POSITION (GPS)  
LAT: 49 26 67  
LONG: 124 20 34

END POSITION (GPS)  
LAT: 49 26 88  
LONG: 124 20 66

Comments: Missed to fire on again!!  
Sample 220 lost

ROSETTE LOG

MISSION ID: 2002-03 STATION: 6 CAST NUMBER: 53 UTC DATE (dd/mm/yyyy): 12/01/2002

|            |            |            |           | ROSETTE OPERATION |                    | Samples taken |   |     |  |     |  |     |  |  |  |  |  |  |               |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|--|-----|--|-----|--|--|--|--|--|--|---------------|
| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | Sample Depth      | Confirmed pressure | SAL           |   | NUT |  | TCO |  | C13 |  |  |  |  |  |  |               |
|            |            |            |           |                   |                    | OXY           |   |     |  | ALK |  | CHL |  |  |  |  |  |  |               |
| 1          | 221        | 1171       | 3.239     | 195               | ✓ 195              | ✓             | ✓ | ✓   |  |     |  |     |  |  |  |  |  |  |               |
| 2          | 222        | 1174       | 3.038     | 175               | ✓ 176              | ✓             |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 3          | 223        | 1175       | 3.222     | 150               | ✓ 151              | ✓             |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 4          | 224        | 1176       | 3.329     | 125               | ✓ 151              |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 5          | 225        | 1180       | 3.726     | 100               | ✓ 125              |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 6          | 226        | 1188       | 4.407     | 75                | ✓ 100              |               |   |     |  |     |  |     |  |  |  |  |  |  | flask cracked |
| 7          | 227        | 1189       | 5.435     | 50                | ✓ 75               |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 8          | 228        | 1191       | 5.895     | 40                | ✓ 50               |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 9          | 229        | 1192       | 6.295     | 30                | ✓ 40               |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 10         | 230        | 1193       | 6.308     | 20                | ✓ 30               |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 11         | 231        | 1194       | 6.396     | 10                | ✓ 20               |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 12         | 232        | 1195       | 6.387     | 5                 | ✓ 10               |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 13         | 233        | 1206       | 6.387     | 0                 | ✓ 5.1              |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 14         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 15         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 16         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 17         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 18         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 19         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 20         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 21         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 22         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 23         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |
| 24         |            |            |           |                   |                    |               |   |     |  |     |  |     |  |  |  |  |  |  |               |

Comments: O2 samples not shaken enough

SHIP: Vector

ENTERED BY:

CHECKED BY:

Bottom Depth: 195

Cast # down:

Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1307 |
| Bottom: |     | 1311 |
| End:    |     |      |

START POSITION (GPS)

LAT: 49 30.67 N

LONG: 124 27.79 W

BOTTOM POSITION (GPS)

LAT: 49 30.77 N

LONG: 124 27.77 W

END POSITION (GPS)

LAT:

LONG:

ROSETTE LOG

MISSION ID: 2002-03 STATION: 9 CAST NUMBER: 56 UTC DATE (dd/mm/yyyy): 12/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |     | C13 |     |  |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |  |     | ALK |     | CHL |  |  |  |  |  |
| 1          | 234        | 84         | 3.047     | ~170              | ✓ 160              | ✓             | ✓   | ✓   |  |     |     |     |     |  |  |  |  |  |
| 2          | 235        | 255        | 2.981     | 150               | ✓                  | ✓             |     |     |  |     |     |     |     |  |  |  |  |  |
| 3          | 236        | 364        | 3.253     | 125               | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 4          | 237        | 392        | 3.320     | 100               | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 5          | 238        | 443        | 3.937     | 75                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 6          | 239        | 534        | 5.162     | 50                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 7          | 240        | 535        | 5.639     | 40                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 8          | 241        | 572        | 5.873     | 30                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 9          | 242        | 588        | 6.172     | 20                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 10         | 243        | 632        | 6.428     | 10                | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 11         | 244        | 650        | 6.370     | 5                 | ✓                  |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 12         | 245        | 657        | 6.455     | ~0                | 1.3                |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 13         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 14         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |  |  |  |  |  |

Comments: very good end-points for all O2 samples.

SHIP: Vector  
ENTERED BY: BSM  
CHECKED BY:

Bottom Depth: 170

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     |      |
| Bottom: |     | 1620 |
| End:    |     | 1632 |

START POSITION (GPS)  
LAT: 35.2  
LONG: 38.2

BOTTOM POSITION (GPS)  
LAT: 49 35.49  
LONG: 124 38.31

END POSITION (GPS)  
LAT: 35.43  
LONG: 38.25

ROSETTE LOG

MISSION ID: 2002-03      STATION: 12      CAST NUMBER: 59      UTC DATE (dd/mm/yyyy): 12/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |  |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|--|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |  | C13 |  |  |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |   | ALK |  | CHL |  |  |  |  |  |  |
| 1          | 246        | 695        | 2.821     | 357               | ✓ 350              | ✓             | ✓   | ✓   |   |     |  |     |  |  |  |  |  |  |
| 2          | 247        | 697        | 2.934     | 300               | ✓                  | ✓             |     |     |   |     |  |     |  |  |  |  |  |  |
| 3          | 248        | 707        | 2.974     | 250               | ✓                  | ✓             |     |     |   |     |  |     |  |  |  |  |  |  |
| 4          | 249        | 708        | 3.022     | 200               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 5          | 250        | 709        | 3.092     | 175               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 6          | 251        | 712        | 3.224     | 150               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 7          | 252        | 715        | 3.473     | 125               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 8          | 253        | 727        | 3.524     | 100               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 9          | 254        | 730        | 3.810     | 75                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 10         | 255        | 1105       | 5.521     | 50                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 11         | 256        | 1110       | 6.031     | 40                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 12         | 257        | 1126       | 6.381     | 30                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 13         | 258        | 1128       | 6.433     | 20                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 14         | 259        | 1130       | 6.467     | 10                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 15         | 260        | 1135       | 6.503     | 5                 | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 16         | 261        | 1137       | 6.517     | 0                 |                    |               |     | ✓   | ✓ |     |  |     |  |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |

Comments:

SHIP:  
ENTERED BY: B.M.  
CHECKED BY:

Bottom Depth: 358

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1839 |
| Bottom: |     | 1845 |
| End:    |     | 1904 |

START POSITION (GPS)  
LAT: 49 43.60  
LONG: 124 40.82

BOTTOM POSITION (GPS)  
LAT: 49 43.58  
LONG: 124 40.86

END POSITION (GPS)  
LAT: 49 43.57  
LONG: 124 40.95

ROSETTE LOG

MISSION ID: 2002-03 STATION: 14 CAST NUMBER: 61 UTC DATE (dd/mm/yyyy): 12/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |  |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|--|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |  | C13 |  |  |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |   | ALK |  | CHL |  |  |  |  |  |  |
| 1          | 262        | 1138       | 2.996     | 300               | ✓ 301              | ✓             |     | ✓   | ✓ |     |  |     |  |  |  |  |  |  |
| 2          | 263        | 1141       | 2.999     | 250               | ✓                  | ✓             |     | ✓   | ✓ |     |  |     |  |  |  |  |  |  |
| 3          | 264        | 1142       | 2.998     | 200               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 4          | 265        | 1146       | 3.177     | 175               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 5          | 266        | 1148       | 3.032     | 150               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 6          | 267        | 1153       | 3.077     | 125               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 7          | 268        | 1158       | 3.486     | 100               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 8          | 269        | 1171       | 4.268     | 75                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 9          | 270        | 1174       | 5.200     | 50                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 10         | 271        | 1175       | 5.371     | 40                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 11         | 272        | 1176       | 6.005     | 30                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 12         | 273        | 1188       | 6.090     | 20                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 13         | 274        | 1189       | 6.114     | 10                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 14         | 275        | 1191       | 6.169     | 5                 | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 15         | 276        | 1192       | 6.149     | ~0                | ✓ 1.4              |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |

Comments:

SHIP: VECTOR  
ENTERED BY: PC  
CHECKED BY:

Bottom Depth: 318

Cast # down:  
Cast # up:

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 21 24 |
| Bottom: |     | 21 29 |
| End:    |     | 21 46 |

START POSITION (GPS)  
LAT: 49 53 01  
LONG: 124 59 58

BOTTOM POSITION (GPS)  
LAT: 49 52 98  
LONG: 124 59 58

END POSITION (GPS)  
LAT: 49 52 85  
LONG: 124 59 52

ROSETTE LOG

MISSION ID: 2002-03 STATION: 16 CAST NUMBER: 66 UTC DATE (dd/mm/yyyy): 13/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |  |     |  |  |  |  |  |                    |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|--|-----|--|--|--|--|--|--------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |  | C13 |  |  |  |  |  |                    |
|            |            |            |           |                   |                    |               | OXY |     |   | ALK |  | CHL |  |  |  |  |  |                    |
| 1          | 277        | 1193       | 3.118     | ~146              | ✓ 143              | ✓             | ✓   | ✓   |   |     |  |     |  |  |  |  |  |                    |
| 2          | 278        | 1194       | 3.210     | 125               | ✓                  | ✓             |     |     |   |     |  |     |  |  |  |  |  |                    |
| 3          | 279        | 1195       | 3.440     | 100               | ✓                  | ✓             |     |     |   |     |  |     |  |  |  |  |  |                    |
| 4          | 280        | 1201       | 4.430     | 75                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 5          | 281        | 1203       | 5.195     | 50                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 6          | 282        | 1206       | 5.416     | 40                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 7          | 283        | 1209       | 5.535     | 30                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 8          | 284        | 1210       | 5.569     | 20                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 9          | 285        | 1212       | 6.145     | 10                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 10         | 286        | 1215       | 6.158     | 5                 | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  | an bubble in flask |
| 11         | 287        | 1216       | 6.518     | ~0                | ✓ 1.5              |               |     | ✓   | ✓ |     |  |     |  |  |  |  |  |                    |
| 12         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 13         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 14         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 15         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 16         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 17         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 18         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 19         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 20         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 21         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 22         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 23         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |
| 24         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |                    |

Comments: 02 samples not shaken correctly - Large precipitate particles

SHIP: Vector  
ENTERED BY: AK  
CHECKED BY:

Bottom Depth: 158

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 0139 |
| Bottom: |     | 0142 |
| End:    |     | 0156 |

START POSITION (GPS)  
LAT: 49 57.71 N  
LONG: 125 8.94 W

BOTTOM POSITION (GPS)  
LAT: 49 57.69 N  
LONG: 125 9.03 W

END POSITION (GPS)  
LAT: 49 57.69 N  
LONG: 125 9.21 W

ROSETTE LOG

MISSION ID: 2002-03 STATION: 23 CAST NUMBER: 68 UTC DATE (dd/mm/yyyy): 13/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |  |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|--|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |  | C13 |  |  |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |   | ALK |  | CHL |  |  |  |  |  |  |
| 1          | 288        | 1224       | 5.398     | ~240              | ✓                  | 232           | ✓   | ✓   | ✓ |     |  |     |  |  |  |  |  |  |
| 2          | 289        | 1225       | 5.257     | 200               | ✓                  |               | ✓   |     |   |     |  |     |  |  |  |  |  |  |
| 3          | 290        | 1228       | 5.303     | 175               | ✓                  |               | ✓   |     |   |     |  |     |  |  |  |  |  |  |
| 4          | 291        | 1231       | 5.269     | 150               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 5          | 292        | 1233       | 5.253     | 125               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 6          | 293        | 1235       | 5.260     | 100               | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 7          | 294        | 1237       | 5.237     | 75                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 8          | 295        | 1238       | 5.218     | 50                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 9          | 296        | 1241       | 5.224     | 40                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 10         | 297        | 1243       | 5.223     | 30                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 11         | 298        | 1244       | 5.228     | 20                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 12         | 299        | 1247       | 5.215     | 10                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 13         | 300        | 1248       | 5.228     | 5                 | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 14         | 301        | 1249       | 5.221     | ~0                | ✓                  |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |   |     |  |     |  |  |  |  |  |  |

Comments: nutrient tubes unfrozen from cast done earlier, rinsed with milli-Q water

SHIP: Vector  
ENTERED BY: RM  
CHECKED BY:

Bottom Depth:

Cast # down:  
Cast # up:

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 0648 |
| Bottom: |     | 0654 |
| End:    |     | 0706 |

START POSITION (GPS)  
LAT:  
LONG:

BOTTOM POSITION (GPS)  
LAT: 5015.83  
LONG: 125 22.95

END POSITION (GPS)  
LAT: 5015.81  
LONG: 125 22.85

ROSETTE LOG

MISSION ID: 2002-03 STATION: 39 CAST NUMBER: 72 UTC DATE (dd/mm/yyyy): 13/01/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |  |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|--|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |  | C13 |  |  |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |  | ALK |  | CHL |  |  |  |  |  |  |
| 1          | 302        | 1276       | 2.951     | 380               | ✓ 370              | x             | ✓   |     |  |     |  |     |  |  |  |  |  |  |
| 2          | 303        | 1277       | 2.824     | 350               | ✓                  | x             |     |     |  |     |  |     |  |  |  |  |  |  |
| 3          | 304        | 1278       | 2.910     | 300               | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 4          | 305        | 1279       | 2.963     | 250               | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 5          | 306        | 1280       | 3.091     | 200               | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 6          | 307        | 1281       | 3.319     | 175               | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 7          | 308        | 1282       | 3.713     | 150               | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 8          | 309        | 1283       | 3.860     | 125               | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 9          | 310        | 1284       | 4.203     | 100               | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 10         | 311        | 1285       | 4.678     | 75                | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 11         | 312        | 1286       | 4.766     | 50                | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 12         | 313        |            | 5.075     | 40                | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 13         | 314        |            | 5.192     | 30                | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 14         | 315        |            | 5.823     | 20                | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 15         | 316        |            | 6.152     | 10                | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 16         | 317        |            | 6.390     | 5                 | ✓                  |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 17         | 318        |            | 7.030     | 0                 | ✓                  |               | ✓   |     |  |     |  |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |  |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |  |     |  |  |  |  |  |  |

SHIP:

ENTERED BY:

CHECKED BY:

Bottom Depth: 380

Cast # down:

Cast # up:

Time

LOC

UTC

Begin:

Bottom: 1752

End: 1812

START POSITION (GPS)

LAT:

LONG:

BOTTOM POSITION (GPS)

LAT: 49 09.79

LONG: 123 33.03

END POSITION (GPS)

LAT: 49 09.81

LONG: 123 33.11

Comments: