

ROSETTE LOG

MISSION ID: 2006-21 STATION: SI CAST NUMBER: 1 UTC DATE (dd/mm/yyyy): 12/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |  |     |  |     |   |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|--|-----|--|-----|---|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |  | TCO |  | C13 |   |  |  |  |  |  |
| 1          | 1          | 1346       | 4.837     | 60                | ✓                  | ✓             | ✓ | ✓   |  |     |  |     |   |  |  |  |  |  |
| 2          | 2          | 1347       | 9.680     | surf              | ✓                  | ✓             | ✓ | ✓   |  |     |  | ✓   | ✓ |  |  |  |  |  |
| 3          |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 4          |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 5          |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 6          |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 7          |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 8          |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 9          |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 10         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 11         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 12         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 13         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 14         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 15         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 16         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |   |     |  |     |  |     |   |  |  |  |  |  |

SHIP: Vector

ENTERED BY:

CHECKED BY:

Bottom Depth: 60

Cast # down: 1

Cast # up: 1

| Time    | LOC  | UTC |
|---------|------|-----|
| Begin:  | 2207 |     |
| Bottom: | 2209 |     |
| End:    | 2211 |     |

START POSITION (GPS)

LAT: 4839233

LONG: 12330134

BOTTOM POSITION (GPS)

LAT: 4839230

LONG: 12330136

END POSITION (GPS)

LAT: 4839227

LONG: 12330134

ROSETTE LOG

MISSION ID: 2006-21 STATION: 59 CAST NUMBER: 2 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |      |      |     |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|------|------|-----|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | ICE | N+4 | C13 |     |      |      |     |  |  |
|            |            |            |           |                   |                    |               | OXY |     |  |     | ALK |     | CHL | SF20 | HPLC | DOM |  |  |
| 1          | 3          | 1349       | 3.475     | 307               | ✓ 233              | ✓             | ✓   | ✓✓  |  |     |     |     |     |      |      |     |  |  |
| 2          | 4          | 1351       | 3.584     | 200               | ✓                  | ✓             | ✓   | ✓✓  |  |     |     |     |     |      |      |     |  |  |
| 3          | 5          | 1353       | 3.937     | 175               | ✓                  |               | ✓   | ✓✓  |  |     |     |     |     |      |      |     |  |  |
| 4          | 6          | 1354       | 4.146     | 150               | ✓                  |               | ✓   | ✓✓  |  |     |     |     |     |      | ✓    |     |  |  |
| 5          | 7          | 1356       | 4.314     | 125               | ✓                  |               | ✓   | ✓✓  |  |     |     |     |     |      |      |     |  |  |
| 6          | 8          | 1358       | 4.364     | 100               | ✓                  |               | ✓   | ✓✓  |  |     | ✓✓  |     |     |      |      |     |  |  |
| 7          | 9          | 1360       | 4.379     | 75                | ✓                  |               | ✓   | ✓✓  |  |     | ✓✓  |     |     |      |      |     |  |  |
| 8          | 10         | 1361       | 4.377     | 50                | ✓                  |               | ✓   | ✓✓  |  |     | ✓✓  |     |     |      |      |     |  |  |
| 9          | 11         | 1362       | 4.401     | 40                | ✓                  |               | ✓   | ✓✓  |  |     |     |     | ✓✓  |      |      |     |  |  |
| 10         | 12         | 1364       | 4.435     | 30                | ✓                  |               | ✓   | ✓✓  |  |     | ✓✓  |     | ✓✓  |      |      |     |  |  |
| 11         | 13         | 1368       | 4.526     | 20                | ✓                  |               | ✓   | ✓✓  |  |     | ✓✓  |     | ✓✓  | ✓✓   | ✓✓   | ✓   |  |  |
| 12         | 14         | 1363       | 4.494     | 10                | ✓                  | ✓             | ✓   | ✓✓  |  |     | ✓✓  |     | ✓✓  | ✓✓   | ✓✓   | ✓   |  |  |
| 13         | 15         | 1367       | 4.509     | 5                 | ✓                  |               | ✓   | ✓✓  |  |     |     |     |     |      |      |     |  |  |
| 14         | 16         | 1371       | 4.712     | 0                 | ✓ 4.05             |               | ✓   | ✓✓  |  |     | ✓✓  |     | ✓✓  | ✓✓   | ✓✓   | ✓   |  |  |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |  |  |

Comments:

SHIP:  
ENTERED BY:  
CHECKED BY: M

Bottom Depth: 233

Cast # down: 2  
Cast # up: 2

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 108 |     |
| Bottom: | 114 |     |
| End:    | 116 |     |

START POSITION (GPS)  
LAT: 4838516  
LONG: 12315013

BOTTOM POSITION (GPS)  
LAT: 4838816  
LONG: 12315034

END POSITION (GPS)  
LAT: 4838930  
LONG: 12315060

ROSETTE LOG

MISSION ID: 2006-21 STATION: 102 CAST NUMBER: 7 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |    |     |     |     |     |      |      |     |      |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|----|-----|-----|-----|-----|------|------|-----|------|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |    | TD  |     | C13 |     |      |      |     |      |  |
|            |            |            |           |                   |                    |               | OXY |     |    | NH4 | ALK |     | CHL | HPLE | SiO2 | CO2 | Phyt |  |
| 1          | 17         | 1461       | 1.677     | BOT               | ✓ 250              |               |     | ✓   | vv |     |     |     |     |      |      |     |      |  |
| 2          | 18         | 1434       | 1.702     | 200               | ✓                  | ✓             |     |     | vv |     |     |     |     |      |      |     |      |  |
| 3          | 19         | 657        | 1.738     | 175               | ✓                  |               |     |     | vv |     |     |     |     |      |      |     |      |  |
| 4          | 20         | 708        | 1.993     | 150               | ✓                  |               |     |     | vv |     |     |     |     |      |      | ✓   |      |  |
| 5          | 21         | 709        | 2.072     | 125               | ✓                  |               |     |     | vv |     |     |     |     |      |      |     |      |  |
| 6          | 22         | 715        | 2.400     | 100               | ✓                  |               |     |     | ✓  | vv  | vv  |     |     |      |      |     |      |  |
| 7          | 23         | 1486       | 2.850     | 75                | ✓                  |               |     |     | ✓  | vv  |     |     |     |      |      |     |      |  |
| 8          | 24         | 1165       | 3.206     | 50                | ✓                  |               |     |     | vv | vv  |     |     |     |      |      |     |      |  |
| 9          | 25         | 1110       | 3.599     | 40                | ✓                  |               |     |     | vv |     |     | vv  |     |      |      |     |      |  |
| 10         | 26         | 1130       | 3.763     | 30                | ✓                  |               |     |     | vv | vv  |     | vv  |     |      |      |     |      |  |
| 11         | 27         | 1126       | 3.854     | 20                | ✓                  |               |     |     | ✓  | vv  |     | vv  | vv  | ✓    |      | ✓   |      |  |
| 12         | 28         | 1134       | 5.432     | 10                | ✓                  | ✓             |     |     | vv | vv  |     | vv  | vv  | vv   | ✓    | ✓   |      |  |
| 13         | 29         | 1128       | 5.208     | 5                 | ✓                  |               |     |     | vv |     |     |     |     |      |      |     |      |  |
| 14         | 30         | 1135       | 5.770     | 0                 | ✓                  |               |     | ✓   | ✓  | vv  |     | vv  | vv  | vv   | ✓    | vv  |      |  |
| 15         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 16         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 17         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 18         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 19         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 20         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 21         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 22         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 23         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 24         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |

Comments:

SHIP:  
ENTERED BY: *jt*  
CHECKED BY: *jt*

Bottom Depth: 250

Cast # down: 7  
Cast # up: 7

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 11  | 47  |
| Bottom: | 11  | 53  |
| End:    | 12  | 08  |

START POSITION (GPS)  
LAT: 48 30 040  
LONG: 124 44 221

BOTTOM POSITION (GPS)  
LAT: 48 30 034  
LONG: 124 44 543

END POSITION (GPS)  
LAT: 48 30 030  
LONG: 124 44 543

ROSETTE LOG

MISSION ID: 2006-21 STATION: 75 CAST NUMBER: 10 UTC DATE (dd/mm/yyyy): 13/08/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |    |                 |     |     |     |     |     |      |                 |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|----|-----------------|-----|-----|-----|-----|-----|------|-----------------|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |    | TCO             |     | CI3 |     |     |     |      |                 |  |
|            |            |            |           |                   |                    |               | OXY |     |    | NH <sub>4</sub> | ALK |     | CHL | HPL | SF2 | CDOM | ph <sub>7</sub> |  |
| 1          | 31         | 1138       | 1.676     | Bot               | ✓                  | 216           |     | ✓   | ✓✓ |                 |     |     |     |     |     |      |                 |  |
| 2          | 32         | 1136       | 1.646     | 200               | ✓                  |               | ✓   |     | ✓✓ |                 |     |     |     |     |     |      |                 |  |
| 3          | 33         | 1142       | 1.663     | 175               | ✓                  |               |     |     | ✓✓ |                 |     |     |     |     |     |      |                 |  |
| 4          | 34         | 1158       | 1.795     | 150               | ✓                  |               |     |     | ✓✓ |                 |     |     |     |     |     | ✓    |                 |  |
| 5          | 35         | 1175       | 1.809     | 125               | ✓                  |               |     |     | ✓✓ |                 |     |     |     |     |     |      |                 |  |
| 6          | 36         | 1176       | 2.155     | 100               | ✓                  |               |     |     | ✓✓ | ✓✓              |     |     |     |     |     |      |                 |  |
| 7          | 37         | 1385       | 2.558     | 75                | ✓                  |               |     |     | ✓✓ | ✓✓              |     |     |     |     |     |      |                 |  |
| 8          | 38         | 1389       | 3.178     | 50                | ✓                  |               |     |     | ✓✓ | ✓✓              |     |     |     |     |     |      |                 |  |
| 9          | 39         | 1386       | 3.881     | 40                | ✓                  |               |     |     | ✓✓ |                 |     |     | ✓✓  |     |     |      |                 |  |
| 10         | 40         | 1146       | 4.136     | 30                | ✓                  |               |     |     | ✓✓ | ✓✓              |     |     | ✓✓  |     |     |      |                 |  |
| 11         | 41         | 1397       | 4.318     | 20                | ✓                  |               |     |     | ✓✓ | ✓✓              |     |     | ✓✓  | ✓✓  |     | ✓    |                 |  |
| 12         | 42         | 1391       | 5.354     | 10                | ✓                  |               | ✓   |     | ✓✓ | ✓✓              |     |     | ✓✓  | ✓✓  | ✓✓  | ✓    | ✓✓              |  |
| 13         | 43         | 1394       | 5.467     | 5                 | ✓                  |               |     |     | ✓✓ |                 |     |     |     |     |     |      |                 |  |
| 14         | 44         | 1393       | 7.520     | 0                 | ✓                  |               |     | ✓   | ✓✓ | ✓✓              |     |     | ✓✓  | ✓✓  | ✓✓  | ✓    |                 |  |
| 15         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 16         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 17         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 18         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 19         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 20         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 21         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 22         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 23         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |
| 24         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |     |     |      |                 |  |

Comments:

SHIP: VECTOR  
ENTERED BY: KB  
CHECKED BY: DA

Bottom Depth: 220

Cast # down: 10  
Cast # up: 10

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1542 |
| Bottom: |     | 1349 |
| End:    |     | 1606 |

START POSITION (GPS)  
LAT: 48 28 14  
LONG: 124 33 00

BOTTOM POSITION (GPS)  
LAT: 48 28 23  
LONG: 124 33 01

END POSITION (GPS)  
LAT: 48 28 28  
LONG: 124 32 88

ROSETTE LOG

MISSION ID: 2006-21 STATION: 72 CAST NUMBER: 13 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |      |      |      |      |                  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|------|------|------|------|------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |     | C13 |     |      |      |      |      |                  |
|            |            |            |           |                   |                    |               | OXY |     |  | DO4 | ALK |     | CHL | SF20 | HPLC | CO2H | PH4D |                  |
| 1          | 45         | 1346       | 1.783     | 121               | ✓                  |               |     | vv  |  |     |     |     |     |      |      |      |      |                  |
| 2          | 46         | 1347       | 1.749     | 175               | ✓                  | v             |     | vv  |  |     |     |     |     |      |      |      |      |                  |
| 3          | 47         | 1349       | 1.719     | 150               | ✓                  |               |     | vv  |  |     |     |     |     |      |      | ✓    |      |                  |
| 4          | 48         | 1351       | 1.769     | 125               | ✓                  |               |     | vv  |  |     |     |     |     |      |      |      |      |                  |
| 5          | 49         | 1353       | 2.027     | 100               | ✓                  |               |     | vv  |  | vv  | vv  |     |     |      |      |      |      |                  |
| 6          | 50         | 1354       | 2.876     | 75                | ✓                  |               |     | vv  |  | vv  |     |     |     |      |      |      |      |                  |
| 7          | 51         | 1356       | 3.449     | 50                | ✓                  |               |     | vv  |  | vv  |     |     |     |      |      |      |      |                  |
| 8          | 52         | 1358       | 4.321     | 40                | ✓                  |               |     | vv  |  |     |     | vv  |     |      |      |      |      |                  |
| 9          | 53         | 1360       | 4.373     | 30                | ✓                  |               |     | vv  |  | vv  |     | vv  |     |      |      |      |      |                  |
| 10         | 54         | 1361       | 4.419     | 20                | ✓                  | v             |     | vv  |  | vv  |     | vv  |     | vv   | ✓    |      |      |                  |
| 11         | 55         | 1362       | 4.453     | 10                | ✓                  |               |     | vv  |  | vv  |     | vv  | vv  | vv   | ✓    |      |      | not enough water |
| 12         | 56         | 1364       | 4.660     | 5                 | ✓                  |               |     | vv  |  |     |     |     |     |      |      |      |      |                  |
| 13         | 57         | 1368       | 4.801     | 0                 | ✓                  |               |     | vv  |  | vv  |     | vv  | vv  | vv   | ✓    | vv   |      | not enough water |
| 14         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                  |

Comments:

SHIP:  
ENTERED BY: KB  
CHECKED BY:

Bottom Depth: 186

Cast # down: 13  
Cast # up: 13

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 20:08 |
| Bottom: |     | 20:12 |
| End:    |     | 20:26 |

START POSITION (GPS)  
LAT: 48 18.653  
LONG: 124 3.996

BOTTOM POSITION (GPS)  
LAT: 48 18.725  
LONG: 124 3.888

END POSITION (GPS)  
LAT: 48 18.912  
LONG: 124 3.786

ROSETTE LOG

MISSION ID: 2006-21 STATION: 71 CAST NUMBER: 15 16 15 UTC DATE (dd/mm/yyyy): 13 06 2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |      |      |    |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|------|------|----|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |     | C13 |     |      |      |    |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |  |     | ALK |     | CHL | HPIC | CDOM |    |  |  |  |
| 1          | 58         |            |           | 10                | ✓                  |               |     |     |  |     |     |     |     | ✓✓   | ✓✓   | ✓  |  |  |  |
| 2          | 59         |            |           | 0                 | ✓                  |               |     |     |  |     |     |     |     | ✓✓   | ✓✓   | ✓✓ |  |  |  |
| 3          |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 4          |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 5          |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 6          |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 7          |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 8          |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 9          |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 10         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 11         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 12         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 13         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 14         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |    |  |  |  |

Comments:

SHIP:  
ENTERED BY: EB  
CHECKED BY:

Bottom Depth: 108

Cast # down: 15  
Cast # up: 15

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 21:21 |
| Bottom: |     | 21:25 |
| End:    |     | 21:29 |

START POSITION (GPS)  
LAT: 48 22.177  
LONG: 123 59.376

BOTTOM POSITION (GPS)  
LAT: 48 22.181  
LONG: 123 59.364

END POSITION (GPS)  
LAT: 48 22.187  
LONG: 123 59.356

ROSETTE LOG

MISSION ID: 2006-21 STATION: 69 CAST NUMBER: 18 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    |     | Samples taken |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
|------------|------------|------------|-----------|-------------------|--------------------|-----|---------------|-----|-----|-----|-----|-----|-----|------|------|-----|------|---|--------------------------------------------|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL |               | NUT |     | TCO |     | G13 |     |      |      |     |      |   |                                            |  |
|            |            |            |           |                   |                    |     | OXY           |     | NH4 |     | ALK |     | CHL | COND | STOC | RLC | phlo |   |                                            |  |
| 1          | 60         | 1461       | 1.756     | 100               | ✓                  | 174 |               | ✓   | ✓   |     |     |     |     |      |      |     |      |   |                                            |  |
| 2          | 61         | 1434       | 1.708     | 150               | ✓                  |     | ✓             | ✓   | ✓   |     |     |     |     |      | ✓    |     |      |   |                                            |  |
| 3          | 62         | 657        | 1.843     | 125               | ✓                  |     |               | ✓   | ✓   |     |     |     |     |      |      |     |      |   |                                            |  |
| 4          | 63         | 708        | 2.800     | 100               | ✓                  |     |               | ✓   | ✓   | ✓   | ✓   |     |     |      |      |     |      |   |                                            |  |
| 5          | 64         | 709        | 3.162     | 75                | ✓                  |     |               | ✓   | ✓   | ✓   | ✓   |     |     |      |      |     |      |   |                                            |  |
| 6          | 65         | 715        | 3.744     | 50                | ✓                  |     |               | ✓   | ✓   | ✓   | ✓   |     |     |      |      |     |      |   |                                            |  |
| 7          | 66         | 1486       | 3.895     | 40                | ✓                  |     |               | ✓   | ✓   |     |     |     |     | ✓    |      |     |      |   |                                            |  |
| 8          | 67         | 1105       | 4.268     | 30                | ✓                  |     |               | ✓   | ✓   | ✓   | ✓   |     |     | ✓    |      |     |      |   |                                            |  |
| 9          | 68         | 1110       | 3.360     | 20                | ✓                  |     | ✓             | ✓   | ✓   | ✓   | ✓   |     |     | ✓    | ✓    |     |      |   | Problem with filtration don't trust value. |  |
| 10         | 69         | 1130       | 5.025     | 10                | ✓                  |     |               | ✓   | ✓   | ✓   | ✓   |     |     | ✓    | ✓    | ✓   | ✓    | ✓ |                                            |  |
| 11         | 70         | 1126       | 5.132     | 5                 | ✓                  |     |               | ✓   | ✓   | ✓   | ✓   |     |     |      |      |     |      |   |                                            |  |
| 12         | 71         | 1134       | 5.247     | 0                 | ✓                  |     |               | ✓   | ✓   | ✓   | ✓   |     |     | ✓    | ✓    | ✓   | ✓    |   |                                            |  |
| 13         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 14         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 15         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 16         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 17         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 18         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 19         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 20         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 21         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 22         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 23         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |
| 24         |            |            |           |                   |                    |     |               |     |     |     |     |     |     |      |      |     |      |   |                                            |  |

Comments:

SHIP:

ENTERED BY:

CHECKED BY: JB

Bottom Depth: 174

Cast # down: 19

Cast # up: 19

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 23  | 27  |
| Bottom: | 23  | 32  |
| End:    | 23  | 45  |

START POSITION (GPS)

LAT: 48-15604

LONG: 12343172

BOTTOM POSITION (GPS)

LAT: 48-15604

LONG: 12343056

END POSITION (GPS)

LAT: 48-15716

LONG: 12342449

ROSETTE LOG

MISSION ID: 2006-21 STATION: ADCP CAST NUMBER: 22 UTC DATE (dd/mm/yyyy): 14/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |      |      |      |      |                 |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|------|------|------|------|-----------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | FeO |     | C13 |     |      |      |      |      |                 |
|            |            |            |           |                   |                    |               | OXY |     |  | CH4 | ALK |     | CHL | SF20 | HOLC | PH20 | CD04 |                 |
| 1          | 72         |            |           | 807               | ✓                  |               |     | vv  |  |     |     |     |     |      |      |      |      | NO SAMPLE (Oxy) |
| 2          | 73         | 1142       | 2.211     | 100               | ✓                  | +             |     | vv  |  | vv  |     |     |     |      |      |      | ✓    |                 |
| 3          | 74         | 1136       | 2.229     | 75                | ✓                  |               |     | vv  |  | vv  |     |     |     |      |      |      |      |                 |
| 4          | 75         | 1138       | 2.269     | 50                | ✓                  |               |     | vv  |  | vv  |     |     |     |      |      |      |      |                 |
| 5          | 76         | 1135       | 2.973     | 40                | ✓                  |               |     | vv  |  |     |     |     | vv  |      |      |      |      |                 |
| 6          | 77         | 1128       | 3.272     | 30                | ✓                  |               |     | vv  |  | vv  |     |     | vv  |      |      |      |      |                 |
| 7          | 78         | 1146       | 3.664     | 20                | ✓                  | ✓             |     | vv  |  | vv  |     |     | vv  |      | vv   |      | ✓    |                 |
| 8          | 79         | 1386       | 3.773     | 10                | ✓                  |               |     | vv  |  | vv  |     |     | vv  | ✓    | vv   |      | ✓    |                 |
| 9          | 80         | 1389       | 3.903     | 5                 | ✓                  |               |     | vv  |  |     |     |     |     |      |      |      |      |                 |
| 10         | 81         | 1385       | 5.021     | 0                 | ✓                  |               | ✓   | vv  |  | vv  |     |     | vv  | ✓    | vv   | vv   | ✓    |                 |
| 11         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 12         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 13         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 14         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |

Comments: BOTTLE #1 didn't trigger

SHIP:  
ENTERED BY: *MM*  
CHECKED BY:

Bottom Depth: 18

Cast # down: 22  
Cast # up: 22

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 2   | 34  |
| Bottom: | 238 |     |
| End:    | 227 |     |

START POSITION (GPS)  
LAT: 48 14 014  
LONG: 123 17 897

BOTTOM POSITION (GPS)  
LAT: 48 14 006  
LONG: 123 17 887

END POSITION (GPS)  
LAT: 48 14 040  
LONG: 123 17 932

ROSETTE LOG

MISSION ID: 2006-21 STATION: 65 CAST NUMBER: 24 UTC DATE (dd/mm/yyyy): 14/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |                 |     |     |     |      |      |      |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----------------|-----|-----|-----|------|------|------|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO             |     | C13 |     |      |      |      |  |  |
|            |            |            |           |                   |                    |               | OXY |     |  | NH <sub>4</sub> | ALK |     | CHL | SP20 | HFCL | CDOM |  |  |
| 1          | 82         | 1346       | 2.481     | 80T               | ✓ 120              |               |     | ✓✓  |  |                 |     |     |     |      |      |      |  |  |
| 2          | 83         | 1347       | 2.874     | 100               | ✓                  | ✓             |     | ✓✓  |  | ✓✓              |     |     |     |      |      | ✓    |  |  |
| 3          | 84         | 1349       | 3.574     | 75                | ✓                  |               |     | ✓✓  |  | ✓✓              |     |     |     |      |      |      |  |  |
| 4          | 85         | 1351       | 3.852     | 50                | ✓                  |               |     | ✓✓  |  | ✓✓              |     |     |     |      |      |      |  |  |
| 5          | 86         | 1353       | 4.007     | 40                | ✓                  |               |     | ✓✓  |  |                 |     |     | ✓✓  |      |      |      |  |  |
| 6          | 87         | 1354       | 4.623     | 30                | ✓                  |               |     | ✓✓  |  | ✓✓              |     |     | ✓✓  |      |      |      |  |  |
| 7          | 88         | 1356       | 5.238     | 20                | ✓                  | ✓             |     | ✓✓  |  | ✓✓              |     |     | ✓✓  | ✓✓   | ✓    |      |  |  |
| 8          | 89         | 1358       | 5.012     | 10                | ✓                  |               |     | ✓✓  |  | ✓✓              |     |     | ✓✓  | ✓    | ✓    | ✓    |  |  |
| 9          | 90         | 1360       | 5.050     | 5                 | ✓                  |               |     | ✓✓  |  |                 |     |     |     |      |      |      |  |  |
| 10         | 91         | 1361       | 5.060     | 0                 | ✓                  |               | ✓   | ✓✓  |  | ✓✓              |     |     | ✓✓  | ✓✓   | ✓✓   | ✓    |  |  |
| 11         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 12         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 13         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 14         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 15         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 16         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 17         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 18         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 19         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 20         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 21         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 22         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 23         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |
| 24         |            |            |           |                   |                    |               |     |     |  |                 |     |     |     |      |      |      |  |  |

Comments:

SHIP: Vector

ENTERED BY:

CHECKED BY:

Bottom Depth: 125

Cast # down: 24

Cast # up: 24

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 0539 |
| Bottom: |     | 0443 |
| End:    |     | 0458 |

START POSITION (GPS)

LAT: 48 15 94

LONG: 123 99 05

BOTTOM POSITION (GPS)

LAT: 48 15 98

LONG: 123 99 97

END POSITION (GPS)

LAT: 48 16 06

LONG: 123 10 13

ROSETTE LOG

MISSION ID: 2006-21 STATION: 62 CAST NUMBER: 25 UTC DATE (dd/mm/yyyy): 11/06/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |  |     |     |      |      |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|--|-----|-----|------|------|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |  | C13 |     |      |      |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |  | ALK |  | CHL | 520 | 1100 | CO2H |  |  |  |
| 1          | 92         | 1362       | 2.995     | 167               | ✓ 140              |               |     | ✓   |  |     |  |     |     |      |      |  |  |  |
| 2          | 93         | 1364       | 3.083     | 125               | ✓                  | ✓             |     | ✓   |  |     |  |     |     |      |      |  |  |  |
| 3          | 94         | 1368       | 3.201     | 100               | ✓                  |               |     | ✓   |  | ✓   |  |     |     |      | ✓    |  |  |  |
| 4          | 95         | 1363       | 3.536     | 75                | ✓                  |               |     | ✓   |  | ✓   |  |     |     |      |      |  |  |  |
| 5          | 96         | 1367       | 4.150     | 50                | ✓                  |               |     | ✓   |  | ✓   |  |     |     |      |      |  |  |  |
| 6          | 97         | 1371       | 4.144     | 40                | ✓                  |               |     | ✓   |  |     |  | ✓   |     |      |      |  |  |  |
| 7          | 98         | 1373       | 4.244     | 30                | ✓                  |               |     | ✓   |  | ✓   |  | ✓   |     |      |      |  |  |  |
| 8          | 99         | 1375       | 4.607     | 20                | ✓                  | ✓             |     | ✓   |  | ✓   |  | ✓   |     | ✓    | ✓    |  |  |  |
| 9          | 100        | 1374       | 4.731     | 10                | ✓                  |               |     | ✓   |  | ✓   |  | ✓   | ✓   | ✓    | ✓    |  |  |  |
| 10         | 101        | 1378       | 4.477     | 5                 | ✓                  |               |     | ✓   |  |     |  |     |     |      |      |  |  |  |
| 11         | 102        | 1376       | 4.920     | 0                 | ✓                  |               |     | ✓   |  | ✓   |  | ✓   | ✓   | ✓    | ✓    |  |  |  |
| 12         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 13         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 14         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |      |      |  |  |  |

Comments:

SHIP: Vector  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 148

Cast # down: 25  
Cast # up: 25

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 0547 |
| Bottom: |     | 0551 |
| End:    |     | 0600 |

START POSITION (GPS)  
LAT: 48 22 85  
LONG: 123 26 23

BOTTOM POSITION (GPS)  
LAT: 48 22 84  
LONG: 123 26 08

END POSITION (GPS)  
LAT: 48 22 82  
LONG: 123 25 73

ROSETTE LOG

MISSION ID: 2006-21 STATION: 39 CAST NUMBER: 30 UTC DATE (dd/mm/yyyy): 14/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |                 |     |     |     |     |      |      |     |  |                |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----------------|-----|-----|-----|-----|------|------|-----|--|----------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |                 | TCO |     | C13 |     |      |      |     |  |                |
|            |            |            |           |                   |                    |               | OXY | G/P | NH <sub>4</sub> |     | ALK |     | CHL | PF20 | AP20 | CDM |  |                |
| 1          | 103        | 1346       | 3.306     | Bot. 5            | ✓ 370              |               |     | ✓   |                 |     |     |     |     |      |      |     |  |                |
| 2          | 104        | 1347       | 3.221     | 350               | ✓                  | ✓             |     |     |                 |     |     |     |     |      |      |     |  |                |
| 3          | 105        | 1349       | 3.132     | 300               | ✓                  |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 4          | 106        | 1351       | 2.691     | 250               | ✓                  |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 5          | 107        | 1353       | 2.262     | 200               | ✓                  |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 6          | 108        | 1354       | 3.591     | 175               | ✓                  |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 7          | 109        | 1356       | 4.255     | 150               | ✓                  |               |     |     |                 |     |     |     |     |      |      | ✓   |  |                |
| 8          | 110        | 1358       | 4.458     | 125               | ✓                  |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 9          | 111        | 1360       | 4.711     | 100               | ✓                  |               |     |     |                 | ✓   | ✓   |     |     |      |      |     |  |                |
| 10         | 112        | 1361       | 4.407     | 75                | ✓                  |               |     |     |                 | ✓   | ✓   |     |     |      |      |     |  |                |
| 11         | 113        | 1362       | 4.127     | 50                | ✓                  |               |     |     |                 | ✓   |     |     |     |      |      |     |  |                |
| 12         | 114        | 1364       | 4.338     | 40                | ✓                  |               |     |     |                 |     |     |     | ✓   |      |      |     |  |                |
| 13         | 115        | 1368       | 4.454     | 30                | ✓                  | ✓             |     |     |                 | ✓   |     |     | ✓   |      |      |     |  |                |
| 14         | 116        | 1363       | 4.963     | 20                | ✓                  |               |     |     |                 | ✓   |     |     | ✓   |      | ✓    | ✓   |  |                |
| 15         | 117        |            |           | 10                | ✓                  |               |     |     |                 | ✓   |     |     | ✓   | ✓    | ✓    | ✓   |  | did not close. |
| 16         | 118        | 1371       | 6.946     | 5                 | ✓                  |               |     |     |                 | ✓   |     |     | ✓   | ✓    | ✓    | ✓   |  |                |
| 17         | 119        | 1373       | 7.089     | 0                 | ✓                  |               |     | ✓   | ✓               | ✓   |     |     | ✓   | ✓    | ✓    | ✓   |  |                |
| 18         |            |            |           |                   |                    |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 19         |            |            |           |                   |                    |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 20         |            |            |           |                   |                    |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 21         |            |            |           |                   |                    |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 22         |            |            |           |                   |                    |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 23         |            |            |           |                   |                    |               |     |     |                 |     |     |     |     |      |      |     |  |                |
| 24         |            |            |           |                   |                    |               |     |     |                 |     |     |     |     |      |      |     |  |                |

Comments: Sampled out of bot 16 (5m) instead of bot 15 which did not close.

SHIP:  
ENTERED BY: KB  
CHECKED BY:

Bottom Depth: 375

Cast # down: 30  
Cast # up: 30

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 20:15 |
| Bottom: |     | 20:25 |
| End:    |     | 20:47 |

START POSITION (GPS)  
LAT: 499.815  
LONG: 123 33.016

BOTTOM POSITION (GPS)  
LAT: 419.812  
LONG: 123 33.001

END POSITION (GPS)  
LAT: 419.815  
LONG: 123 32.990

ROSETTE LOG

MISSION ID: 2006-21 STATION: 26 CAST NUMBER: 33 UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |  |     |      |    |      |   |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|--|-----|------|----|------|---|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |  | CI3 |      |    |      |   |  |  |
|            |            |            |           |                   |                    |               | OXY |     |  | ALK |  | CHL | HPLC |    | CDOM |   |  |  |
| 1          | 9120       |            |           | 10                | ✓                  |               |     |     |  |     |  |     | xx   | xx |      | x |  |  |
| 2          | 9121       |            |           | 0                 | ✓                  |               |     |     |  |     |  |     | xx   | xx |      | x |  |  |
| 3          |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 4          |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 5          |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 6          |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 7          |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 8          |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 9          |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 10         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 11         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 12         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 13         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 14         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 15         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 16         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 17         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |  |     |      |    |      |   |  |  |

Comments:

SHIP:  
ENTERED BY:  
CHECKED BY: TS

Bottom Depth:

Cast # down: 33  
Cast # up: 33

Time LOC UTC  
Begin: 00:01  
Bottom:  
End:

START POSITION (GPS)  
LAT: 4914271  
LONG: 12350789

BOTTOM POSITION (GPS)  
LAT:  
LONG:

END POSITION (GPS)  
LAT:  
LONG:

ROSETTE LOG

MISSION ID: 8006-21 STATION: 27 CAST NUMBER: 35 UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |  |     |      |      |      |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|--|-----|------|------|------|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |  | Cl3 |      |      |      |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     | WHH | ALK |  | CHL | SP2S | HP66 | CO2M |  |  |  |
| 1          | 120        | 1461       | 3.352     | 305               | ✓ 343              |               |     | vv  |     |     |  |     |      |      |      |  |  |  |
| 2          | 121        | 1434       | 3.144     | 300               | ✓                  | ✓             |     | vv  |     |     |  |     |      |      |      |  |  |  |
| 3          | 122        | 657        | 3.289     | 250               | ✓                  |               |     | vv  |     |     |  |     |      |      |      |  |  |  |
| 4          | 123        | 708        | 3.510     | 200               | ✓                  |               |     | vv  |     |     |  |     |      |      |      |  |  |  |
| 5          | 124        | 709        | 3.829     | 175               | ✓                  |               |     | vv  |     |     |  |     |      |      |      |  |  |  |
| 6          | 125        | 715        | 4.240     | 150               | ✓                  |               |     | vv  |     |     |  |     |      | ✓    | ✓    |  |  |  |
| 7          | 126        | 1486       | 4.320     | 125               | ✓                  |               |     | vv  |     |     |  |     |      |      |      |  |  |  |
| 8          | 127        | 1105       | 4.394     | 100               | ✓                  |               |     | vv  | vv  |     |  |     |      |      |      |  |  |  |
| 9          | 128        | 1110       | 4.179     | 75                | ✓                  |               |     | vv  | vv  |     |  |     |      |      |      |  |  |  |
| 10         | 129        | 1130       | 4.433     | 50                | ✓                  |               |     | vv  | vv  |     |  |     |      |      |      |  |  |  |
| 11         | 130        | 1126       | 4.668     | 40                | ✓                  |               |     | vv  |     |     |  | vv  |      |      |      |  |  |  |
| 12         | 131        | 1134       | 4.889     | 30                | ✓                  | ✓             |     | vv  | vv  |     |  | vv  |      |      |      |  |  |  |
| 13         | 132        | 1158       | 5.322     | 20                | ✓                  |               |     | vv  | vv  |     |  | vv  | vv   | vv   | ✓    |  |  |  |
| 14         | 133        | 1142       | 6.150     | 10                | ✓                  |               |     | vv  | vv  |     |  | vv  | vv   | vv   | ✓    |  |  |  |
| 15         | 134        | 1136       | 7.348     | 5                 | ✓                  |               |     | vv  | vv  |     |  |     |      |      |      |  |  |  |
| 16         | 135        | 1138       | 7.826     | 0                 |                    |               |     | vv  | vv  |     |  | vv  | vv   | vv   | ✓    |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |     |  |     |      |      |      |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |     |  |     |      |      |      |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |     |  |     |      |      |      |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |     |  |     |      |      |      |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |     |  |     |      |      |      |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |     |  |     |      |      |      |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |     |  |     |      |      |      |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |     |  |     |      |      |      |  |  |  |

Comments:

SHIP:  
ENTERED BY:  
CHECKED BY: *AD*

Bottom Depth: 343

Cast # down: 35  
Cast # up:

| Time    | LOC   | UTC |
|---------|-------|-----|
| Begin:  | 10:53 |     |
| Bottom: | 1:01  |     |
| End:    | 1:20  |     |

START POSITION (GPS)  
LAT: 49 19 138  
LONG: 123 50 789

BOTTOM POSITION (GPS)  
LAT: 49 19 126  
LONG: 123 48 025

END POSITION (GPS)  
LAT: 49 19 106  
LONG: 123 48 026

ROSETTE LOG

MISSION ID: 2006-21 STATION: 16 CAST NUMBER: 45 UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |    |     |     |     |      |      |      |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|----|-----|-----|-----|------|------|------|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | PO |     | er3 |     |      |      |      |  |  |
|            |            |            |           |                   |                    |               | OXY |     | NH4 |    | ALK |     | CHL | ST20 | HPLC | CDOM |  |  |
| 1          | 136        | 1461       | 3.925     | Bot-10            | ✓ 152              |               |     | 1   | 11  |    |     |     |     |      |      | ✓    |  |  |
| 2          | 137        | 1434       | 3.958     | 125               | ✓                  | ✓             |     |     |     |    |     |     |     |      |      |      |  |  |
| 3          | 138        | 657        | 3.942     | 100               | ✓                  |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 4          | 139        | 708        | 3.956     | 75                | ✓                  |               |     | ✓   | ✓   |    |     |     |     |      |      |      |  |  |
| 5          | 140        | 709        | 4.299     | 50                | ✓                  |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 6          | 141        | 715        | 4.315     | 40                | ✓                  |               |     |     |     |    |     |     | ✓   |      |      |      |  |  |
| 7          | 142        | 1486       | 4.532     | 30                | ✓                  |               |     |     |     |    |     |     | ✓   |      |      |      |  |  |
| 8          | 143        | 1105       | 4.689     | 20                | ✓                  |               |     |     |     |    |     |     | ✓   |      | ✓    | ✓    |  |  |
| 9          | 144        | 1110       | 5.395     | 10                | ✓                  | ✓             |     |     |     |    |     |     | ✓   | ✓    | ✓    | ✓    |  |  |
| 10         | 145        | 1130       | 6.074     | 5                 | ✓                  |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 11         | 146        | 1126       | 6.335     | 0                 | ✓                  |               |     | ✓   | ✓   | ✓  |     |     | ✓   | ✓    | ✓    | ✓    |  |  |
| 12         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 13         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 14         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 15         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 16         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |    |     |     |     |      |      |      |  |  |

Comments:

SHIP: ✓

ENTERED BY:

CHECKED BY: JB

Bottom Depth: 152

Cast # down: 45

Cast # up: 45

| Time    | LOC  | UTC |
|---------|------|-----|
| Begin:  | 1225 |     |
| Bottom: | 1230 |     |
| End:    | 1241 |     |

START POSITION (GPS)

LAT: 49 57 625

LONG: 125 8 837

BOTTOM POSITION (GPS)

LAT: 49 57 565

LONG: 125 8 742

END POSITION (GPS)

LAT: 49 57 392

LONG: 125 8 684

ROSETTE LOG

MISSION ID: 2006-21 STATION: 14 CAST NUMBER: 48 UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |     |     |     |      |      |      |       |                      |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|-----|-----|-----|------|------|------|-------|----------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |     | CI3 |     |      |      |      |       |                      |
|            |            |            |           |                   |                    |               | OXY |     |   | PH4 | ALK | TKL | CHL | SP20 | SP22 | CORR | PH4TC |                      |
| 1          | 147        | 1134       | 2.973     | BOT               | ✓                  | 310           |     |     | ✓ |     |     |     |     |      |      |      |       |                      |
| 2          | 148        | 1158       | 2.944     | 300               | ✓                  |               | ✓   |     | ✓ |     |     |     |     |      |      |      |       |                      |
| 3          | 149        | 1142       | 3.200     | 250               | ✓                  |               |     |     | ✓ |     |     |     |     |      |      |      |       |                      |
| 4          | 150        | 1136       | 3.402     | 200               | ✓                  |               |     |     | ✓ |     |     |     |     |      |      |      |       |                      |
| 5          | 151        | 1138       | 3.413     | 175               | ✓                  |               |     |     | ✓ |     |     |     |     |      |      |      |       |                      |
| 6          | 152        | 1135       | 3.621     | 150               | ✓                  |               |     |     | ✓ |     |     |     |     |      |      | ✓    | ✓     |                      |
| 7          | 153        | 1128       | 3.682     | 125               | ✓                  |               |     |     | ✓ |     |     |     |     |      |      |      |       |                      |
| 8          | 154        | 1146       | 3.871     | 100               | ✓                  |               |     |     | ✓ | ✓   | ✓   |     |     |      |      |      |       |                      |
| 9          | 155        |            |           | 75                | ✓                  |               |     |     | ✓ | ✓   | ✓   |     |     |      |      |      |       | BOT 9 did not close  |
| 10         | 156        | 1389       | 4.149     | 50                | ✓                  |               |     |     |   | ✓   |     |     |     |      |      |      |       |                      |
| 11         | 157        | 1385       | 4.311     | 40                | ✓                  |               |     |     |   |     |     | ✓   | ✓   |      |      |      |       |                      |
| 12         | 158        | 1175       | 4.379     | 30                | ✓                  |               |     |     |   | ✓   |     | ✓   | ✓   |      |      |      |       |                      |
| 13         | 159        | 1176       | 4.627     | 20                | ✓                  |               |     |     |   | ✓   |     | ✓   | ✓   |      | ✓    | ✓    |       |                      |
| 14         | 160        | 1397       | 5.197     | 10                | ✓                  |               | ✓   |     |   | ✓   |     | ✓   | ✓   | ✓    | ✓    | ✓    |       |                      |
| 15         | 161        |            |           | 5                 | ✓                  |               |     |     |   |     |     |     |     |      |      |      |       | BOT 15 did not close |
| 16         | 162        | 1394       | 6.629     | 0                 |                    |               |     | ✓   |   | ✓   |     | ✓   | ✓   | ✓    | ✓    | ✓    | ✓     |                      |
| 17         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |      |      |      |       |                      |
| 18         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |      |      |      |       |                      |
| 19         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |      |      |      |       |                      |
| 20         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |      |      |      |       |                      |
| 21         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |      |      |      |       |                      |
| 22         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |      |      |      |       |                      |
| 23         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |      |      |      |       |                      |
| 24         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |      |      |      |       |                      |

Comments: BOTTLES 9 & 15 did not close.

SHIP:  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 315

Cast # down: 48  
Cast # up: 48

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1539 |
| Bottom: |     | 1545 |
| End:    |     | 1601 |

START POSITION (GPS)  
LAT: 49 52 96  
LONG: 124 59 59

BOTTOM POSITION (GPS)  
LAT: 49 52 94  
LONG: 124 59 58

END POSITION (GPS)  
LAT: 49 52 94  
LONG: 124 59 45

ROSETTE LOG

MISSION ID: 2006-21      STATION: 12      CAST NUMBER: 51      UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |                 |     |     |     |    |      |                   |       |            |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----------------|-----|-----|-----|----|------|-------------------|-------|------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO             |     | C13 |     |    |      |                   |       |            |
|            |            |            |           |                   |                    |               | OXY |     |   | NH <sub>4</sub> | ALK |     | CHL | SF | HPLC | CO <sub>2</sub> H | Phy'd |            |
| 1          | 163        | 1346       | 2.649     | ROT               | ✓ 350              |               |     | ✓   | ✓ |                 |     |     |     |    |      |                   |       | duplicates |
| 2          | 164        | 1347       | 2.479     | 350               | ✓                  |               | ✓   |     |   |                 |     |     |     |    |      |                   |       |            |
| 3          | 165        | 1349       | 3.497     | 300               | ✓                  |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 4          | 166        | 1351       | 3.257     | 250               | ✓                  |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 5          | 167        | 1353       | 3.899     | 200               | ✓                  |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 6          | 168        | 1354       | 3.949     | 175               | ✓                  |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 7          | 169        | 1356       | 4.083     | 150               | ✓                  |               |     |     |   |                 |     |     |     |    |      | ✓                 |       |            |
| 8          | 170        | 1358       | 4.109     | 125               | ✓                  |               |     |     | ✓ |                 |     |     |     |    |      |                   |       |            |
| 9          | 171        | 1360       | 4.174     | 100               | ✓                  |               |     |     |   | ✓               |     |     |     |    |      |                   |       |            |
| 10         | 172        | 1361       | 4.048     | 75                | ✓                  |               |     |     |   | ✓               |     |     |     |    |      |                   |       |            |
| 11         | 173        | 1362       | 4.047     | 50                | ✓                  |               |     |     |   | ✓               |     |     |     |    |      |                   |       |            |
| 12         | 174        | 1364       | 4.265     | 40                | ✓                  |               |     |     |   |                 |     |     | ✓   |    |      |                   |       |            |
| 13         | 175        | 1368       | 4.448     | 30                | ✓                  |               |     |     |   | ✓               |     |     | ✓   |    |      |                   |       |            |
| 14         | 176        | 1363       | 4.840     | 20                | ✓                  |               |     |     |   | ✓               |     |     | ✓   |    | ✓    | ✓                 |       |            |
| 15         | 177        | 1367       | 6.404     | 10                | ✓                  |               | ✓   |     |   | ✓               |     |     | ✓   | ✓  | ✓    | ✓                 |       |            |
| 16         | 178        | 1371       | 6.627     | 5                 | ✓                  |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 17         | 179        | 1373       | 6.473     | 0                 | ✓                  |               |     | ✓   | ✓ | ✓               |     |     | ✓   | ✓  | ✓    | ✓                 | ✓     |            |
| 18         |            |            |           |                   |                    |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 19         |            |            |           |                   |                    |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 20         |            |            |           |                   |                    |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 21         |            |            |           |                   |                    |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 22         |            |            |           |                   |                    |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 23         |            |            |           |                   |                    |               |     |     |   |                 |     |     |     |    |      |                   |       |            |
| 24         |            |            |           |                   |                    |               |     |     |   |                 |     |     |     |    |      |                   |       |            |

Comments:

SHIP:  
ENTERED BY: KB  
CHECKED BY:

Bottom Depth: 357

Cast # down: 51  
Cast # up: 51

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 20:33 |
| Bottom: |     | 20:42 |
| End:    |     | 21:01 |

START POSITION (GPS)  
LAT: 4943.629  
LONG: 12440.858

BOTTOM POSITION (GPS)  
LAT: 4943.628  
LONG: 12440.866

END POSITION (GPS)  
LAT: 4943.614  
LONG: 12440.830

ROSETTE LOG

MISSION ID: 2006-21 STATION: 11 CAST NUMBER: 53 UTC DATE (dd/mm/yyyy): 15/06/2006

|            |            | ROSETTE OPERATION |           | Samples taken |                    |     |     |     |  |     |     |     |     |  |          |   |  |
|------------|------------|-------------------|-----------|---------------|--------------------|-----|-----|-----|--|-----|-----|-----|-----|--|----------|---|--|
| Niskin No. | Sample No. | OXY. Flask        | OXY. ml/l | Sample Depth  | Confirmed pressure | SAL |     | NUT |  | TCO |     | C13 |     |  |          |   |  |
|            |            |                   |           |               |                    |     | OXY |     |  |     | ALK |     | CHL |  | HPLC/CDM |   |  |
| 1          | 180        |                   |           | 10            | ✓                  |     |     |     |  |     |     |     | XX  |  | XX       | * |  |
| 2          | 181        |                   |           | 0             | ✓                  |     |     |     |  |     |     |     | XX  |  | XX       | X |  |
| 3          |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 4          |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 5          |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 6          |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 7          |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 8          |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 9          |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 10         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 11         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 12         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 13         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 14         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 15         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 16         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 17         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 18         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 19         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 20         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 21         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 22         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 23         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |
| 24         |            |                   |           |               |                    |     |     |     |  |     |     |     |     |  |          |   |  |

Comments:

bgm 2001 rosette.xls

SHIP:  
ENTERED BY: KB.  
CHECKED BY:

Bottom Depth: 298

Cast # down: 53  
Cast # up: 53

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 21:51 |
| Bottom: |     | 21:59 |
| End:    |     | 22:07 |

START POSITION (GPS)  
LAT: 49 42.408  
LONG: 124 43.398

BOTTOM POSITION (GPS)  
LAT: 49 42.410  
LONG: 124 43.388

END POSITION (GPS)  
LAT: 49 42.430  
LONG: 124 43.357

ROSETTE LOG

MISSION ID: 2006-21 STATION: 9 CAST NUMBER: 56 UTC DATE (dd/mm/yyyy): 15-16/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |     |     |     |    |      |     |   |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|-----|-----|-----|----|------|-----|---|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |     | C13 |     |    |      |     |   |  |
|            |            |            |           |                   |                    |               | OXY |     |   | NH4 | ALK |     | CHL | SF | HPLE | CDP |   |  |
| 1          | 182        | 1461       | 2.731     | BOT               | ✓ 162              |               |     | ✓   | ✓ |     |     |     |     |    |      |     |   |  |
| 2          | 183        | 1434       | 2.879     | 150               | ✓                  | ✓             |     | ✓   | ✓ |     |     |     |     |    |      |     | ✓ |  |
| 3          | 184        | 657        | 3.793     | 125               | ✓                  |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 4          | 185        | 708        | 4.133     | 100               | ✓                  |               |     |     |   | ✓   | ✓   |     |     |    |      |     |   |  |
| 5          | 186        | 709        | 4.021     | 75                | ✓                  |               |     |     |   | ✓   | ✓   |     |     |    |      |     |   |  |
| 6          | 187        | 715        | 4.309     | 50                | ✓                  |               |     |     |   | ✓   | ✓   |     |     |    |      |     |   |  |
| 7          | 188        | 1486       | 4.487     | 40                | ✓                  |               |     |     | ✓ |     |     |     | ✓   | ✓  |      |     |   |  |
| 8          | 189        | 1105       | 4.588     | 30                | ✓                  |               |     |     |   | ✓   | ✓   |     | ✓   | ✓  |      |     |   |  |
| 9          | 190        | 1110       | 4.834     | 20                | ✓                  |               |     |     |   | ✓   | ✓   |     | ✓   | ✓  | ✓    | ✓   |   |  |
| 10         | 191        | 1130       | 5.402     | 10                | ✓                  | ✓             |     |     |   | ✓   | ✓   |     | ✓   | ✓  | ✓    | ✓   | ✓ |  |
| 11         | 192        | 1126       | 7.043     | 5                 | ✓                  |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 12         | 193        | 1134       | 7.323     | 0                 | ✓                  |               |     | ✓   | ✓ | ✓   | ✓   |     | ✓   | ✓  | ✓    | ✓   | ✓ |  |
| 13         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 14         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 15         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 16         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 17         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 18         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 19         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 20         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 21         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 22         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 23         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |
| 24         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |    |      |     |   |  |

SHIP:  
ENTERED BY: *FF*  
CHECKED BY: *FF*

Bottom Depth: 162

Cast # down: 56  
Cast # up:

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 23  | 59  |
| Bottom: | 00  | 05  |
| End:    | 00  | 16  |

START POSITION (GPS)  
LAT: 49 35 512  
LONG: 124 38 278

BOTTOM POSITION (GPS)  
LAT: 49 35 423  
LONG: 124 38 168

END POSITION (GPS)  
LAT: 49 35 404  
LONG: 124 38 143

Comments:

ROSETTE LOG

MISSION ID: 2006-21 STATION: 6 CAST NUMBER: 59 UTC DATE (dd/mm/yyyy): 16-6-2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |     |     |     |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |     | C13 |     |     |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     | NH4 | ALK | HRL | CHL | LF2 | CBM |  |  |  |  |
| 1          | 194        | 1158       | 3.817     | Bot               | ✓                  | 187           |     | ✓   | ✓   |     |     |     |     |     |  |  |  |  |
| 2          | 195        | 1142       | 3.810     | 175               | ✓                  |               | ✓   | ✓   |     |     |     |     |     |     |  |  |  |  |
| 3          | 196        | 1136       | 4.004     | 150               | ✓                  |               |     | ✓   |     |     |     |     |     | ✓   |  |  |  |  |
| 4          | 197        | 1138       | 3.990     | 125               | ✓                  |               |     | ✓   |     |     |     |     |     |     |  |  |  |  |
| 5          | 198        | 1135       | 3.948     | 100               | ✓                  |               |     | ✓   | ✓   |     |     |     |     |     |  |  |  |  |
| 6          | 199        | 1128       | 4.086     | 75                | ✓                  |               |     | ✓   | ✓   |     |     |     |     |     |  |  |  |  |
| 7          | 200        | 1146       | 4.173     | 50                | ✓                  |               |     | ✓   | ✓   |     |     |     |     |     |  |  |  |  |
| 8          | 201        | 1386       | 4.280     | 40                | ✓                  |               |     | ✓   |     |     |     | ✓   |     |     |  |  |  |  |
| 9          | 202        | 1389       | 4.523     | 30                | ✓                  |               |     | ✓   | ✓   |     |     | ✓   |     |     |  |  |  |  |
| 10         | 203        | 1385       | 5.044     | 20                | ✓                  |               | ✓   | ✓   | ✓   |     | ✓   | ✓   |     | ✓   |  |  |  |  |
| 11         | 204        | 1175       | 6.608     | 10                | ✓                  |               |     | ✓   | ✓   |     | ✓   | ✓   | ✓   | ✓   |  |  |  |  |
| 12         | 205        | 1176       | 6.630     | 5                 | ✓                  |               |     | ✓   |     |     |     |     |     |     |  |  |  |  |
| 13         | 206        | 1397       | 6.586     | 0                 | ✓                  |               |     | ✓   | ✓   |     | ✓   | ✓   | ✓   | ✓   |  |  |  |  |
| 14         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |     |  |  |  |  |

Comments:

SHIP: VECTOR  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 192

Cast # down: 195 59  
Cast # up: 130 59

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 3:15 |
| Bottom: |     | 3:19 |
| End:    |     | 3:30 |

START POSITION (GPS)  
LAT: 49 30 625  
LONG: 124 27 81

BOTTOM POSITION (GPS)  
LAT: 49 30 649  
LONG: 124 27 82

END POSITION (GPS)  
LAT: 49 30 623  
LONG: 124 27 763

ROSETTE LOG

MISSION ID: 2006-21 : STATION: 3 CAST NUMBER: 62 UTC DATE (dd/mm/yyyy): 16 06 06.

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |     |     |      |     |     |      |  |  |  |   |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|-----|-----|------|-----|-----|------|--|--|--|---|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |     | TCO |      | C13 |     |      |  |  |  |   |
|            |            |            |           |                   |                    | OXY           |   | NH4 | CHL | ALK | SF20 | CHL | HDL | COOH |  |  |  |   |
| 1          | 207        | 1346       | 2.487     | BOT               | ✓ 321              |               |   | ✓✓  |     |     |      |     |     |      |  |  |  |   |
| 2          | 208        | 1347       | 2.491     | 300               | ✓                  | ✓             |   | ✓✓  |     |     |      |     |     |      |  |  |  |   |
| 3          | 209        | 1349       | 2.967     | 250               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |  |  |  |   |
| 4          | 210        | 1351       | 3.929     | 200               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |  |  |  |   |
| 5          | 211        | 1353       | 4.036     | 175               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |  |  |  |   |
| 6          | 212        | 1354       | 4.271     | 150               | ✓                  |               |   | ✓✓  |     |     |      |     |     | ✓    |  |  |  |   |
| 7          | 213        | 1356       | 6.625     | 125               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |  |  |  | ? |
| 8          | 214        | 1358       | 4.420     | 100               | ✓                  |               |   | ✓✓  | ✓✓  |     |      |     |     |      |  |  |  |   |
| 9          | 215        | 1360       | 4.265     | 75                | ✓                  |               |   | ✓✓  | ✓✓  |     |      |     |     |      |  |  |  |   |
| 10         | 216        | 1361       | 4.230     | 50                | ✓                  |               |   | ✓✓  | ✓✓  |     |      |     |     |      |  |  |  |   |
| 11         | 217        | 1362       | 4.264     | 40                | ✓                  |               |   | ✓✓  |     | ✓✓  |      |     |     |      |  |  |  |   |
| 12         | 218        | 1364       | 4.453     | 30                | ✓                  |               |   | ✓✓  | ✓✓  | ✓✓  |      |     |     |      |  |  |  |   |
| 13         | 219        | 1368       | 4.634     | 20                | ✓                  | ✓             |   | ✓✓  | ✓✓  | ✓✓  |      |     | ✓✓  | ✓✓   |  |  |  |   |
| 14         | 220        | 1363       | 5.991     | 10                | ✓                  |               |   | ✓✓  | ✓✓  | ✓✓  | ✓✓   |     | ✓✓  | ✓    |  |  |  |   |
| 15         | 221        | 1367       | 6.534     | 5                 | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |  |  |  |   |
| 16         | 222        | 1371       | 6.656     | 0                 |                    |               | ✓ | ✓✓  | ✓✓  | ✓✓  | ✓✓   |     | ✓✓  | ✓    |  |  |  |   |
| 17         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |  |  |  |   |
| 18         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |  |  |  |   |
| 19         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |  |  |  |   |
| 20         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |  |  |  |   |
| 21         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |  |  |  |   |
| 22         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |  |  |  |   |
| 23         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |  |  |  |   |
| 24         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |  |  |  |   |

ROSETTE LOG

MISSION ID: 2006-06 STATION: 2 CAST NUMBER: 63 UTC DATE (dd/mm/yyyy): 16 06 06

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |      |      |      |       |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|------|------|------|-------|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |     | C13  | HPLC |      |       |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     | NH4 | CH  | ALK | SF20 | CHL  | CDOM | PHYTO |  |  |  |
| 1          | 232        | 1270       | 2.890     | 807               | ✓ 280              |               |     | ✓   |     |     |     |      |      |      |       |  |  |  |
| 2          | 233        | 1479       | 2.935     | 250               | ✓                  | ✓             |     | ✓   |     |     |     |      |      |      |       |  |  |  |
| 3          | 234        | 1481       | 3.792     | 200               | ✓                  |               |     | ✓   |     |     |     |      |      |      |       |  |  |  |
| 4          | 235        | 1482       | 4.159     | 175               | ✓                  |               |     | ✓   |     |     |     |      |      |      |       |  |  |  |
| 5          | 236        | 1483       | 4.299     | 150               | ✓                  |               |     | ✓   |     |     |     |      |      | ✓    |       |  |  |  |
| 6          | 237        | 1484       | 4.446     | 125               | ✓                  |               |     | ✓   |     |     |     |      |      |      |       |  |  |  |
| 7          | 238        | 1485       | 4.444     | 100               | ✓                  |               |     | ✓   | ✓   |     |     |      |      |      |       |  |  |  |
| 8          | 239        | 1342       | 4.295     | 75                | ✓                  |               |     | ✓   | ✓   |     |     |      |      |      |       |  |  |  |
| 9          | 240        | 1284       | 4.166     | 50                | ✓                  |               |     | ✓   | ✓   |     |     |      |      |      |       |  |  |  |
| 10         | 241        | 1295       | 4.199     | 40                | ✓                  |               |     | ✓   |     | ✓   |     |      |      |      |       |  |  |  |
| 11         | 242        | 1332       | 4.232     | 30                | ✓                  |               |     | ✓   | ✓   | ✓   |     |      |      | ✓    |       |  |  |  |
| 12         | 243        | 1465       | 4.657     | 20                | ✓                  | ✓             |     | ✓   | ✓   | ✓   |     |      | ✓    | ✓    |       |  |  |  |
| 13         | 244        | 1336       | 5.982     | 10                | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓    | ✓    |       |  |  |  |
| 14         | 245        | 1476       | 6.719     | 5                 | ✓                  |               |     | ✓   |     |     |     |      |      |      |       |  |  |  |
| 15         | 246        | 1464       | 6.713     | 0                 | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓    | ✓    | ✓     |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |  |  |  |

SHIP:

ENTERED BY: KB

CHECKED BY:

Bottom Depth: 278

Cast # down: 63

Cast # up: 63

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 07:27 |
| Bottom: |     | 07:39 |
| End:    |     | 07:57 |

START POSITION (GPS)

LAT: 49 24.107

LONG: 124 9.391

BOTTOM POSITION (GPS)

LAT: 49 23.983

LONG: 124 9.263

END POSITION (GPS)

LAT: 49 23.809

LONG: 124 9.158

ROSETTE LOG

MISSION ID: 2006-21 STATION: 42 CAST NUMBER: 66 UTC DATE (dd/mm/yyyy): 16/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |   |     |   |     |   |  |   |   |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|---|-----|---|-----|---|--|---|---|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |   | TCO |   | CI3 |   |  |   |   |  |  |
| 1          | 247        | 1346       | 3.257     | 300               | ✓                  | 315           |   |     | ✓ |     |   |     |   |  |   |   |  |  |
| 2          | 248        | 1347       | 3.179     | 300               | ✓                  |               | ✓ |     | ✓ |     |   |     |   |  |   |   |  |  |
| 3          | 249        | 1349       | 3.519     | 250               | ✓                  |               |   |     | ✓ |     |   |     |   |  |   |   |  |  |
| 4          | 250        | 1351       | 3.572     | 200               | ✓                  |               |   |     | ✓ |     |   |     |   |  |   |   |  |  |
| 5          | 251        | 1353       | 3.861     | 175               | ✓                  |               |   |     | ✓ |     |   |     |   |  |   |   |  |  |
| 6          | 252        | 1354       | 4.259     | 150               | ✓                  |               |   |     | ✓ |     |   |     |   |  | ✓ |   |  |  |
| 7          | 253        | 1356       | 4.433     | 125               | ✓                  |               |   |     | ✓ |     |   |     |   |  |   |   |  |  |
| 8          | 254        | 1358       | 4.557     | 100               | ✓                  |               |   |     | ✓ | ✓   |   |     |   |  |   |   |  |  |
| 9          | 255        | 1360       | 4.807     | 75                | ✓                  |               |   |     | ✓ | ✓   |   |     |   |  |   |   |  |  |
| 10         | 256        | 1361       | 4.895     | 50                | ✓                  |               |   |     | ✓ | ✓   |   |     |   |  |   |   |  |  |
| 11         | 257        | 1362       | 4.915     | 40                | ✓                  |               |   |     | ✓ |     | ✓ |     |   |  |   |   |  |  |
| 12         | 258        | 1364       | 4.793     | 30                | ✓                  |               |   |     | ✓ | ✓   | ✓ |     |   |  |   |   |  |  |
| 13         | 259        | 1368       | 5.167     | 20                | ✓                  |               | ✓ |     | ✓ | ✓   | ✓ |     | ✓ |  | ✓ |   |  |  |
| 14         | 260        | 1363       | 5.363     | 10                | ✓                  |               |   |     | ✓ | ✓   | ✓ | ✓   | ✓ |  | ✓ |   |  |  |
| 15         | 261        | 1367       | 6.298     | 5                 | ✓                  |               |   |     | ✓ |     |   |     |   |  |   | ✓ |  |  |
| 16         | 262        | 1371       | 6.633     | 0                 | ✓                  |               |   |     | ✓ | ✓   | ✓ | ✓   | ✓ |  | ✓ |   |  |  |
| 17         |            |            |           |                   |                    |               |   |     |   |     |   |     |   |  |   |   |  |  |
| 18         |            |            |           |                   |                    |               |   |     |   |     |   |     |   |  |   |   |  |  |
| 19         |            |            |           |                   |                    |               |   |     |   |     |   |     |   |  |   |   |  |  |
| 20         |            |            |           |                   |                    |               |   |     |   |     |   |     |   |  |   |   |  |  |
| 21         |            |            |           |                   |                    |               |   |     |   |     |   |     |   |  |   |   |  |  |
| 22         |            |            |           |                   |                    |               |   |     |   |     |   |     |   |  |   |   |  |  |
| 23         |            |            |           |                   |                    |               |   |     |   |     |   |     |   |  |   |   |  |  |
| 24         |            |            |           |                   |                    |               |   |     |   |     |   |     |   |  |   |   |  |  |

Comments: No water left in bottle 16 for photo samples, took from box 10/15

SHIP:  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 315

Cast # down: 66  
Cast # up: 66

| Time    | LOC    | UTC    |
|---------|--------|--------|
| Begin:  | 491834 | 142812 |
| Bottom: | 491832 | 143612 |
| End:    | 491810 | 145613 |

START POSITION (GPS)  
LAT: 491834  
LONG: 12326172

BOTTOM POSITION (GPS)  
LAT: 491832  
LONG: 12326172

END POSITION (GPS)  
LAT: 491810  
LONG: 12326183

ROSETTE LOG

MISSION ID: 2006-21 STATION: 46 CAST NUMBER: 69 UTC DATE (dd/mm/yyyy): 16-06-2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |      |     |     |      |       |  |                |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|------|-----|-----|------|-------|--|----------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |     | C13  |     |     |      |       |  |                |
|            |            |            |           |                   |                    |               | OXY |     | NH4 | TCO | ALK | SF20 | CHL | H2C | CO2H | PH/TP |  |                |
| 1          | 263        | 1461       | 4.236     | 80T               | ✓ 169              | ✓             |     | ✓   |     |     |     |      |     |     |      |       |  | In wrong file. |
| 2          | 264        | 1434       | 4.190     | 150               | ✓                  |               |     | ✓   |     |     |     |      |     |     | ✓    |       |  | In sta 42.     |
| 3          | 265        | 1373       | 4.203     | 125               | ✓                  |               |     | ✓   |     |     |     |      |     |     |      |       |  |                |
| 4          | 266        | 1378       | 3.928     | 100               | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |      |       |  |                |
| 5          | 267        | 1376       | 4.362     | 75                | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |      |       |  |                |
| 6          | 268        | 1380       | 4.492     | 50                | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |      |       |  |                |
| 7          | 269        | 1381       | 4.534     | 40                | ✓                  |               |     | ✓   |     | ✓   |     |      |     |     |      |       |  |                |
| 8          | 270        | 1382       | 4.536     | 30                | ✓                  |               |     | ✓   | ✓   | ✓   |     |      |     |     |      |       |  |                |
| 9          | 271        | 1381       | 4.838     | 20                | ✓                  | ✓             |     | ✓   | ✓   | ✓   |     |      | ✓   |     | ✓    |       |  |                |
| 10         | 272        | 1366       | 5.312     | 10                | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓   |     | ✓    |       |  |                |
| 11         | 273        | 1326       | 5.637     | 5                 | ✓                  |               |     | ✓   |     |     |     |      |     |     |      |       |  |                |
| 12         | 274        | 1374       | 6.054     | 0                 | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓   |     | ✓    | ✓     |  |                |
| 13         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 14         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 15         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 16         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |      |       |  |                |

SHIP:  
ENTERED BY: KB  
CHECKED BY:

Bottom Depth: 128

Cast # down: 69  
Cast # up: 69

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 18:47 |
| Bottom: |     | 18:53 |
| End:    |     | 19:06 |

START POSITION (GPS)  
LAT: 48 51.354  
LONG: 123 10.738

BOTTOM POSITION (GPS)  
LAT: 48 51.331  
LONG: 123 10.666

END POSITION (GPS)  
LAT: 48 51.248  
LONG: 123 10.519

ROSETTE LOG

MISSION ID: 2006-21 STATION: 45 CAST NUMBER: 71 UTC DATE (dd/mm/yyyy): 16/06/06

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |     |  |  |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           | WPC | NUT | TCO | C13 | ALK | CHL |  |  |  |  |  |  |
| 1          | 9275       |            |           | 10                | ✓                  | ✓             | ✓   | ✓   |     |     |     |     |  |  |  |  |  |  |
| 2          | 9276       |            |           | 0                 | ✓                  | ✓             | ✓   | ✓   |     |     |     |     |  |  |  |  |  |  |
| 3          |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 4          |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 5          |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 6          |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 7          |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 8          |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 9          |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 10         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 11         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 12         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 13         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 14         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |     |  |  |  |  |  |  |

SHIP:

ENTERED BY: CB

CHECKED BY:

Bottom Depth: 126

Cast # down: 71

Cast # up: 71

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1951 |
| Bottom: |     | 1957 |
| End:    |     | 2001 |

START POSITION (GPS)

LAT: 48 53.903

LONG: 123 8.388

BOTTOM POSITION (GPS)

LAT: 48 53.906

LONG: 123 8.376

END POSITION (GPS)

LAT: 48 53.915

LONG: 123 8.388

Comments:

ROSETTE LOG

MISSION ID: 2006-21 STATION: 48 CAST NUMBER: 76 77 UTC DATE (dd/mm/yyyy): 16 23 25

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |  |     |     |     |   |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|--|-----|-----|-----|---|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |  | C13 |     |     |   |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     |  | ALK |  | CHL | HP4 | CDM |   |  |  |  |
| 1          | 9277       |            |           | 10                | ✓ 10               |               |     |     |  |     |  |     | XY  | XX  | X |  |  |  |
| 2          | 9278       |            |           | 0                 | ✓                  |               |     |     |  |     |  |     | XX  | XX  | X |  |  |  |
| 3          |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 4          |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 5          |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 6          |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 7          |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 8          |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 9          |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 10         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 11         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 12         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 13         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 14         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |  |     |     |     |   |  |  |  |

Comments:

SHIP:

ENTERED BY:

CHECKED BY: *JP*

Bottom Depth: 220

Cast # down: 77

Cast # up:

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 23  | 25  |
| Bottom: |     |     |
| End:    |     |     |

START POSITION (GPS)

LAT: 48 51 74

LONG: 123 03 267

BOTTOM POSITION (GPS)

LAT:

LONG:

END POSITION (GPS)

LAT:

LONG:

ROSETTE LOG

MISSION ID: 2006-21 STATION: 47 CAST NUMBER: 78 UTC DATE (dd/mm/yyyy): 17/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |  |     |  |     |  |     |      |      |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|--|-----|--|-----|--|-----|------|------|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |  | NUT |  | TCO |  | C13 |      |      |  |  |  |  |
|            |            |            |           |                   |                    | OXY           |  |     |  | ALK |  | CHL | HPLC | CDOM |  |  |  |  |
| 1          | 9279       |            |           | 10                | ✓                  |               |  |     |  |     |  | XX  | XX   | X    |  |  |  |  |
| 2          | 9280       |            |           | 0                 | ✓                  |               |  |     |  |     |  | XX  | XX   | X    |  |  |  |  |
| 3          |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 4          |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 5          |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 6          |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 7          |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 8          |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 9          |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 10         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 11         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 12         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 13         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 14         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 15         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 16         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 17         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 18         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 19         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 20         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 21         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 22         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 23         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |
| 24         |            |            |           |                   |                    |               |  |     |  |     |  |     |      |      |  |  |  |  |

SHIP: Vector  
ENTERED BY:  
CHECKED BY: ✓

Bottom Depth: 179

Cast # down: 78  
Cast # up:

| Time    | LOC  | UTC |
|---------|------|-----|
| Begin:  | 2032 |     |
| Bottom: |      |     |
| End:    |      |     |

START POSITION (GPS)  
LAT: 4849430  
LONG: 1236093

BOTTOM POSITION (GPS)  
LAT:  
LONG:

END POSITION (GPS)  
LAT:  
LONG:

ROSETTE LOG

MISSION ID: 2006-21

STATION: 56

CAST NUMBER: 80

UTC DATE (dd/mm/yyyy):

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |      |     |      |      |   |  |  |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|------|-----|------|------|---|--|--|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TEO  | SE  | CB   | COOH |   |  |  |  |  |
|            |            |            |           |                   |                    |               | OXY |     | NH4 | TEHL | ATK | HPLO | CHL  |   |  |  |  |  |
| 1          | 275        |            |           | Bot               |                    | ✓             | ✓   | ✓   |     |      |     |      |      |   |  |  |  |  |
| 2          | 276        |            |           | 175               |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 3          | 277        |            |           | 150               |                    |               |     |     |     |      |     |      | ✓    |   |  |  |  |  |
| 4          | 278        |            |           | 125               |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 5          | 279        |            |           | 100               |                    |               |     |     | ✓   |      |     |      |      |   |  |  |  |  |
| 6          | 280        |            |           | 75                |                    |               |     |     | ✓   |      |     |      |      |   |  |  |  |  |
| 7          | 281        |            |           | 50                |                    |               |     |     | ✓   |      |     |      |      |   |  |  |  |  |
| 8          | 282        |            |           | 40                |                    |               |     | ✓   |     | ✓    |     |      |      |   |  |  |  |  |
| 9          | 283        |            |           | 30                |                    |               |     |     | ✓   | ✓    |     |      |      |   |  |  |  |  |
| 10         | 284        |            |           | 20                |                    | ✓             |     |     | ✓   | ✓    |     | ✓    | ✓    |   |  |  |  |  |
| 11         | 285        |            |           | 10                |                    |               |     |     | ✓   | ✓    | ✓   | ✓    | ✓    | ✓ |  |  |  |  |
| 12         | 286        |            |           | 5                 |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 13         | 287        |            |           | 0                 |                    |               | ✓   | ✓   | ✓   | ✓    | ✓   | ✓    | ✓    | ✓ |  |  |  |  |
| 14         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 15         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 16         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |      |     |      |      |   |  |  |  |  |

Comments: Stn did not get done

SHIP:

ENTERED BY:

CHECKED BY:

Bottom Depth:

Cast # down:

Cast # up:

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

START POSITION (GPS)

LAT:

LONG:

BOTTOM POSITION (GPS)

LAT:

LONG:

END POSITION (GPS)

LAT:

LONG:

ROSETTE LOG

MISSION ID: 2006-21 STATION: 59 CAST NUMBER: 2 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |      |      |     |   |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|------|------|-----|---|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TEO | NH4 | C13 |     |      |      |     |   |  |
|            |            |            |           |                   |                    |               | OXY |     |  | PH  | ALK |     | CHL | SP20 | HPLC | DOM |   |  |
| 1          | 3          | 1349       | 3.475     | 307               | ✓ 233              | ✓             | ✓   | ✓   |  |     |     |     |     |      |      |     |   |  |
| 2          | 4          | 1351       | 3.584     | 200               | ✓                  | ✓             | ✓   | ✓   |  |     |     |     |     |      |      |     |   |  |
| 3          | 5          | 1353       | 3.937     | 175               | ✓                  |               | ✓   | ✓   |  |     |     |     |     |      |      |     |   |  |
| 4          | 6          | 1354       | 4.146     | 150               | ✓                  |               | ✓   | ✓   |  |     |     |     |     |      | ✓    |     |   |  |
| 5          | 7          | 1356       | 4.314     | 125               | ✓                  |               | ✓   | ✓   |  |     |     |     |     |      |      |     |   |  |
| 6          | 8          | 1358       | 4.364     | 100               | ✓                  |               | ✓   | ✓   |  |     | ✓   |     |     |      |      |     |   |  |
| 7          | 9          | 1360       | 4.379     | 75                | ✓                  |               | ✓   | ✓   |  |     | ✓   |     |     |      |      |     |   |  |
| 8          | 10         | 1361       | 4.377     | 50                | ✓                  |               | ✓   | ✓   |  |     | ✓   |     |     |      |      |     |   |  |
| 9          | 11         | 1362       | 4.401     | 40                | ✓                  |               | ✓   | ✓   |  |     |     |     | ✓   | ✓    |      |     |   |  |
| 10         | 12         | 1364       | 4.435     | 30                | ✓                  |               | ✓   | ✓   |  |     | ✓   |     | ✓   |      |      |     |   |  |
| 11         | 13         | 1368       | 4.526     | 20                | ✓                  |               | ✓   | ✓   |  |     | ✓   |     | ✓   | ✓    | ✓    | ✓   |   |  |
| 12         | 14         | 1363       | 4.494     | 10                | ✓                  | ✓             | ✓   | ✓   |  |     | ✓   |     | ✓   | ✓    | ✓    | ✓   | ✓ |  |
| 13         | 15         | 1367       | 4.509     | 5                 | ✓                  |               | ✓   | ✓   |  |     |     |     |     |      |      |     |   |  |
| 14         | 16         | 1371       | 4.712     | 0                 | ✓ 1705             |               | ✓   | ✓   |  |     | ✓   |     | ✓   | ✓    | ✓    | ✓   | ✓ |  |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |     |   |  |

Comments:

SHIP:

ENTERED BY:

CHECKED BY: 

Bottom Depth: 233

Cast # down: 2

Cast # up: 2

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 108 |     |
| Bottom: | 114 |     |
| End:    | 116 |     |

START POSITION (GPS)

LAT: 4838516

LONG: 12315013

BOTTOM POSITION (GPS)

LAT: 4838816

LONG: 12315034

END POSITION (GPS)

LAT: 4838930

LONG: 12315060

ROSETTE LOG

MISSION ID: 2006-21 STATION: 102 CAST NUMBER: 7 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |  |     |     |     |     |     |    |     |      |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|--|-----|-----|-----|-----|-----|----|-----|------|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |  | TDO |     | CI3 |     |     |    |     |      |  |
|            |            |            |           |                   |                    | OXY           |   |     |  | PH4 | ALK |     | CHL | PHL | SE | CO2 | Phyt |  |
| 1          | 17         | 1461       | 1.677     | BOT               | ✓                  |               | ✓ | vv  |  |     |     |     |     |     |    |     |      |  |
| 2          | 18         | 1434       | 1.702     | 200               | ✓                  | ✓             |   | vv  |  |     |     |     |     |     |    |     |      |  |
| 3          | 19         | 657        | 1.738     | 175               | ✓                  |               |   | vv  |  |     |     |     |     |     |    |     |      |  |
| 4          | 20         | 708        | 1.993     | 150               | ✓                  |               |   | vv  |  |     |     |     |     |     |    | ✓   |      |  |
| 5          | 21         | 709        | 2.072     | 125               | ✓                  |               |   | vv  |  |     |     |     |     |     |    |     |      |  |
| 6          | 22         | 715        | 2.400     | 100               | ✓                  |               |   | ✓   |  | vv  |     |     |     |     |    |     |      |  |
| 7          | 23         | 1486       | 2.850     | 75                | ✓                  |               |   | ✓   |  | vv  |     |     |     |     |    |     |      |  |
| 8          | 24         | 1165       | 3.206     | 50                | ✓                  |               |   | vv  |  | vv  |     |     |     |     |    |     |      |  |
| 9          | 25         | 1110       | 3.599     | 40                | ✓                  |               |   | vv  |  |     |     |     | vv  |     |    |     |      |  |
| 10         | 26         | 1130       | 3.763     | 30                | ✓                  |               |   | vv  |  | vv  |     |     | vv  |     |    |     |      |  |
| 11         | 27         | 1126       | 3.854     | 20                | ✓                  |               |   | ✓   |  | vv  |     |     | vv  | vv  |    | ✓   |      |  |
| 12         | 28         | 1134       | 5.482     | 10                | ✓                  | ✓             |   | vv  |  | vv  |     |     | vv  | vv  | vv | ✓   |      |  |
| 13         | 29         | 1128       | 5.208     | 5                 | ✓                  |               |   | vv  |  |     |     |     |     |     |    |     |      |  |
| 14         | 30         | 1135       | 5.770     | 0                 | ✓                  |               | ✓ | ✓   |  | vv  |     |     | vv  | vv  | vv | ✓   | vv   |  |
| 15         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 16         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 17         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 18         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 19         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 20         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 21         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 22         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 23         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |
| 24         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |     |    |     |      |  |

Comments:

SHIP:  
ENTERED BY: yt  
CHECKED BY: JD

Bottom Depth: 250

Cast # down: 7  
Cast # up: 7

| Time    | LOC   | UTC |
|---------|-------|-----|
| Begin:  | 11 47 |     |
| Bottom: | 11 53 |     |
| End:    | 12 08 |     |

START POSITION (GPS)  
LAT: 48 30 040  
LONG: 124 44 221

BOTTOM POSITION (GPS)  
LAT: 48 30 034  
LONG: 124 44 547

END POSITION (GPS)  
LAT: 48 30 030  
LONG: 124 44 543

ROSETTE LOG

MISSION ID: 2006-21 STATION: 75 CAST NUMBER: 10 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |    |     |     |     |     |      |      |     |      |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|----|-----|-----|-----|-----|------|------|-----|------|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |    | TCO |     | CI3 |     |      |      |     |      |  |
|            |            |            |           |                   |                    |               | OXY |     |    | NH4 | ALK |     | CHL | HPL4 | SF24 | CDM | pyro |  |
| 1          | 31         | 1138       | 1.676     | Bot               | ✓                  | 216           |     | ✓   | ✓✓ |     |     |     |     |      |      |     |      |  |
| 2          | 32         | 1136       | 1.646     | 200               | ✓                  |               | ✓   |     | ✓✓ |     |     |     |     |      |      |     |      |  |
| 3          | 33         | 1142       | 1.663     | 175               | ✓                  |               |     |     | ✓✓ |     |     |     |     |      |      |     |      |  |
| 4          | 34         | 1158       | 1.795     | 150               | ✓                  |               |     |     | ✓✓ |     |     |     |     |      |      | ✓   |      |  |
| 5          | 35         | 1175       | 1.809     | 125               | ✓                  |               |     |     | ✓✓ |     |     |     |     |      |      |     |      |  |
| 6          | 36         | 1176       | 2.155     | 100               | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     |     |      |      |     |      |  |
| 7          | 37         | 1385       | 2.558     | 75                | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     |     |      |      |     |      |  |
| 8          | 38         | 1389       | 3.178     | 50                | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     |     |      |      |     |      |  |
| 9          | 39         | 1386       | 3.881     | 40                | ✓                  |               |     |     | ✓✓ |     |     |     | ✓✓  |      |      |     |      |  |
| 10         | 40         | 1146       | 4.136     | 30                | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     | ✓✓  |      |      |     |      |  |
| 11         | 41         | 1397       | 4.318     | 20                | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     | ✓✓  | ✓✓   |      | ✓   |      |  |
| 12         | 42         | 1391       | 5.354     | 10                | ✓                  |               | ✓   |     | ✓✓ | ✓✓  |     |     | ✓✓  | ✓✓   | ✓✓   | ✓   | ✓✓   |  |
| 13         | 43         | 1394       | 5.467     | 5                 | ✓                  |               |     |     | ✓✓ |     |     |     |     |      |      |     |      |  |
| 14         | 44         | 1393       | 5.520     | 0                 | ✓                  |               |     | ✓   | ✓✓ | ✓✓  |     |     | ✓✓  | ✓✓   | ✓✓   | ✓   |      |  |
| 15         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 16         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 17         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 18         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 19         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 20         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 21         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 22         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 23         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |
| 24         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |     |      |  |

Comments:

SHIP: VECTOR

ENTERED BY: KB

CHECKED BY: DA

Bottom Depth: 220

Cast # down: 10

Cast # up: 10

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1542 |
| Bottom: |     | 1549 |
| End:    |     | 1606 |

START POSITION (GPS)

LAT: 48 28 14

LONG: 124 33 00

BOTTOM POSITION (GPS)

LAT: 48 28 23

LONG: 124 33 01

END POSITION (GPS)

LAT: 48 28 28

LONG: 124 32 58

ROSETTE LOG

MISSION ID: 2006-21 STATION: 12 CAST NUMBER: 13 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |    |     |     |     |     |      |      |      |       |  |                  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|----|-----|-----|-----|-----|------|------|------|-------|--|------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |    | TCO |     | C13 |     |      |      |      |       |  |                  |
|            |            |            |           |                   |                    |               | OXY |     |    | DPH | ALK |     | CHL | SF20 | H PL | CDPH | PHATD |  |                  |
| 1          | 45         | 1346       | 1.783     | 181               | ✓                  | 181           |     |     | VV |     |     |     |     |      |      |      |       |  |                  |
| 2          | 46         | 1347       | 1.749     | 175               | ✓                  |               | V   |     | VV |     |     |     |     |      |      |      |       |  |                  |
| 3          | 47         | 1349       | 1.719     | 150               | ✓                  |               |     |     | VV |     |     |     |     |      |      |      | ✓     |  |                  |
| 4          | 48         | 1351       | 1.769     | 125               | ✓                  |               |     |     | VV |     |     |     |     |      |      |      |       |  |                  |
| 5          | 49         | 1353       | 2.027     | 100               | ✓                  |               |     |     | VV |     | VV  |     |     |      |      |      |       |  |                  |
| 6          | 50         | 1354       | 2.876     | 75                | ✓                  |               |     |     | VV |     | VV  |     |     |      |      |      |       |  |                  |
| 7          | 51         | 1356       | 3.449     | 50                | ✓                  |               |     |     | VV |     | VV  |     |     |      |      |      |       |  |                  |
| 8          | 52         | 1358       | 4.321     | 40                | ✓                  |               |     |     | VV |     |     |     | VV  |      |      |      |       |  |                  |
| 9          | 53         | 1360       | 4.373     | 30                | ✓                  |               |     |     | VV |     | VV  |     | VV  |      |      |      |       |  |                  |
| 10         | 54         | 1361       | 4.419     | 20                | ✓                  |               | V   |     | VV |     | VV  |     | VV  |      | VV   | ✓    |       |  |                  |
| 11         | 55         | 1362       | 4.453     | 10                | ✓                  |               |     |     | VV |     | VV  |     | VV  | VV   | VV   | ✓    |       |  | not enough water |
| 12         | 56         | 1364       | 4.660     | 5                 | ✓                  |               |     |     | VV |     |     |     |     |      |      |      |       |  |                  |
| 13         | 57         | 1368       | 4.801     | 0                 | ✓                  |               |     | ✓   | VV |     | VV  |     | VV  | VV   | VV   | V    | VV    |  | not enough water |
| 14         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 15         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 16         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 17         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 18         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 19         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 20         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 21         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 22         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 23         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |
| 24         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |       |  |                  |

Comments:

SHIP:

ENTERED BY: KB

CHECKED BY:

Bottom Depth: 186

Cast # down: 13

Cast # up: 13

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 20:08 |
| Bottom: |     | 20:12 |
| End:    |     | 20:26 |

START POSITION (GPS)

LAT: 48 18.653

LONG: 124 3.996

BOTTOM POSITION (GPS)

LAT: 48 18.725

LONG: 124 3.888

END POSITION (GPS)

LAT: 48 18.912

LONG: 124 3.786

ROSETTE LOG

MISSION ID: 2006-21 STATION: 69 CAST NUMBER: 18 UTC DATE (dd/mm/yyyy): 13/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |   |     |     |      |      |      |  |                                          |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|---|-----|-----|------|------|------|--|------------------------------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |   | Q13 |     |      |      |      |  |                                          |
|            |            |            |           |                   |                    |               | OXY |     | NH4 | ALK |   | CHL | CO2 | ST20 | PP10 | ph10 |  |                                          |
| 1          | 60         | 1461       | 1.756     | 130               | ✓                  |               |     | ✓   | ✓   |     |   |     |     |      |      |      |  |                                          |
| 2          | 61         | 1434       | 1.708     | 150               | ✓                  | ✓             |     | ✓   | ✓   |     |   |     |     | ✓    |      |      |  |                                          |
| 3          | 62         | 657        | 1.843     | 125               | ✓                  |               |     | ✓   | ✓   |     |   |     |     |      |      |      |  |                                          |
| 4          | 63         | 708        | 2.800     | 100               | ✓                  |               |     | ✓   | ✓   | ✓   | ✓ |     |     |      |      |      |  |                                          |
| 5          | 64         | 709        | 3.162     | 75                | ✓                  |               |     | ✓   | ✓   | ✓   | ✓ |     |     |      |      |      |  |                                          |
| 6          | 65         | 715        | 3.744     | 50                | ✓                  |               |     | ✓   | ✓   | ✓   | ✓ |     |     |      |      |      |  |                                          |
| 7          | 66         | 1486       | 3.895     | 40                | ✓                  |               |     | ✓   | ✓   |     |   |     | ✓   |      |      |      |  |                                          |
| 8          | 67         | 1105       | 4.268     | 30                | ✓                  |               |     | ✓   | ✓   | ✓   | ✓ |     | ✓   |      |      |      |  |                                          |
| 9          | 68         | 1110       | 3.860     | 20                | ✓                  | ✓             |     | ✓   | ✓   | ✓   | ✓ |     | ✓   | ✓    |      |      |  |                                          |
| 10         | 69         | 1130       | 5.025     | 10                | ✓                  |               |     | ✓   | ✓   | ✓   | ✓ |     | ✓   | ✓    | ✓    | ✓    |  | Problem with titration don't trust value |
| 11         | 70         | 1126       | 5.182     | 5                 | ✓                  |               |     | ✓   | ✓   | ✓   | ✓ |     |     |      |      |      |  |                                          |
| 12         | 71         | 1134       | 5.247     | 0                 | ✓                  |               |     | ✓   | ✓   | ✓   | ✓ |     | ✓   | ✓    | ✓    | ✓    |  |                                          |
| 13         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 14         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 15         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 16         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 17         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 18         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 19         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 20         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 21         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 22         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 23         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |
| 24         |            |            |           |                   |                    |               |     |     |     |     |   |     |     |      |      |      |  |                                          |

Comments:

SHIP:

ENTERED BY:

CHECKED BY: *LB*

Bottom Depth: 74

Cast # down: 19

Cast # up: 19

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 23  | 27  |
| Bottom: | 23  | 32  |
| End:    | 23  | 45  |

START POSITION (GPS)

LAT: 48-15604

LONG: 12343172

BOTTOM POSITION (GPS)

LAT: 48156041

LONG: 12343056

END POSITION (GPS)

LAT: 4815716

LONG: 12342449

ROSETTE LOG

MISSION ID: 2006-21 STATION: ADCP CAST NUMBER: 22 UTC DATE (dd/mm/yyyy): 14/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |      |      |      |      |                 |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|------|------|------|------|-----------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | FeO |     | C13 |     |      |      |      |      |                 |
|            |            |            |           |                   |                    |               | OXY |     |  | OH4 | ALK |     | CHL | SF20 | HOLC | PH20 | CD6H |                 |
| 1          | 72         |            |           | 80T               | ✓                  |               |     | vv  |  |     |     |     |     |      |      |      |      | NO SAMPLE (Oxy) |
| 2          | 73         | 1142       | 2.211     | 100               | ✓                  | +             |     | vv  |  | vv  |     |     |     |      |      |      | ✓    |                 |
| 3          | 74         | 1136       | 2.229     | 75                | ✓                  |               |     | vv  |  | vv  |     |     |     |      |      |      |      |                 |
| 4          | 75         | 1138       | 2.269     | 50                | ✓                  |               |     | vv  |  | vv  |     |     |     |      |      |      |      |                 |
| 5          | 76         | 1135       | 2.973     | 40                | ✓                  |               |     | vv  |  |     |     | vv  |     |      |      |      |      |                 |
| 6          | 77         | 1128       | 3.272     | 30                | ✓                  |               |     | vv  |  | vv  |     | vv  |     |      |      |      |      |                 |
| 7          | 78         | 1146       | 3.664     | 20                | ✓                  | ✓             |     | vv  |  | vv  |     | vv  |     | vv   |      |      | ✓    |                 |
| 8          | 79         | 1386       | 3.773     | 10                | ✓                  |               |     | vv  |  | vv  |     | vv  | vv  | vv   |      |      | ✓    |                 |
| 9          | 80         | 1389       | 3.903     | 5                 | ✓                  |               |     | vv  |  |     |     |     |     |      |      |      |      |                 |
| 10         | 81         | 1385       | 5.021     | 0                 | ✓                  |               | 2   | vv  |  | vv  |     | vv  | vv  | vv   | vv   | vv   | ✓    |                 |
| 11         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 12         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 13         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 14         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 15         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 16         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |      |      |      |                 |

Comments: BOTTLE #1 didn't trigger

SHIP:

ENTERED BY: *MM*

CHECKED BY:

Bottom Depth: 18

Cast # down: 22  
Cast # up: 22

| Time    | LOC | UTC |
|---------|-----|-----|
| Begin:  | 2   | 34  |
| Bottom: | 238 |     |
| End:    | 227 |     |

START POSITION (GPS)

LAT: 48 14 014

LONG: 123 17 897

BOTTOM POSITION (GPS)

LAT: 48 14 006

LONG: 123 17 887

END POSITION (GPS)

LAT: 48 14 040

LONG: 123 17 932

ROSETTE LOG

MISSION ID: 2006-21 STATION: 65 CAST NUMBER: 24 UTC DATE (dd/mm/yyyy): 14/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |    |     |     |     |     |      |      |      |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|----|-----|-----|-----|-----|------|------|------|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |    | TCO |     | CI3 |     |      |      |      |  |  |
|            |            |            |           |                   |                    |               | OXY |     |    | DPH | ALK |     | CHL | SF20 | HPLC | CDOM |  |  |
| 1          | 82         | 1346       | 2.481     | BOT               | ✓                  | 120           |     |     | ✓✓ |     |     |     |     |      |      |      |  |  |
| 2          | 83         | 1347       | 2.874     | 100               | ✓                  |               | ✓   |     | ✓✓ | ✓✓  |     |     |     |      |      | ✓    |  |  |
| 3          | 84         | 1349       | 3.574     | 75                | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     |     |      |      |      |  |  |
| 4          | 85         | 1351       | 3.852     | 50                | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     |     |      |      |      |  |  |
| 5          | 86         | 1353       | 4.007     | 40                | ✓                  |               |     |     | ✓✓ |     |     |     | ✓✓  |      |      |      |  |  |
| 6          | 87         | 1354       | 4.623     | 30                | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     | ✓✓  |      |      |      |  |  |
| 7          | 88         | 1356       | 5.238     | 20                | ✓                  |               | ✓   |     | ✓✓ | ✓✓  |     |     | ✓✓  |      | ✓✓   | ✓    |  |  |
| 8          | 89         | 1358       | 5.012     | 10                | ✓                  |               |     |     | ✓✓ | ✓✓  |     |     | ✓✓  | ✓    | ✓✓   | ✓    |  |  |
| 9          | 90         | 1360       | 5.050     | 5                 | ✓                  |               |     |     | ✓✓ |     |     |     |     |      |      |      |  |  |
| 10         | 91         | 1361       | 5.060     | 0                 | ✓                  |               | ✓   |     | ✓✓ | ✓✓  |     |     | ✓✓  | ✓✓   | ✓✓   | ✓    |  |  |
| 11         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 12         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 13         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 14         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 15         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 16         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 17         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 18         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 19         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 20         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 21         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 22         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 23         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |
| 24         |            |            |           |                   |                    |               |     |     |    |     |     |     |     |      |      |      |  |  |

Comments:

SHIP: Vector  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 125

Cast # down: 24

Cast # up: 24

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 0539 |
| Bottom: |     | 0443 |
| End:    |     | 0458 |

START POSITION (GPS)  
LAT: 48 15 94  
LONG: 123 99 05

BOTTOM POSITION (GPS)  
LAT: 48 15 98  
LONG: 123 99 97

END POSITION (GPS)  
LAT: 48 16 06  
LONG: 123 10 13

ROSETTE LOG

MISSION ID: 2006-21 STATION: 62 CAST NUMBER: 25 UTC DATE (dd/mm/yyyy): 14/06/2002

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |   |     |     |     |     |     |     |                   |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|---|-----|-----|-----|-----|-----|-----|-------------------|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |   | TCO |     | CI3 |     |     |     |                   |  |  |
|            |            |            |           |                   |                    |               | OXY |     |   | UHA | ALK |     | CHL | STO | HAC | CO <sub>2</sub> H |  |  |
| 1          | 92         | 1362       | 2.995     | 126               | ✓                  | 140           |     |     | ✓ |     |     |     |     |     |     |                   |  |  |
| 2          | 93         | 1364       | 3.083     | 125               | ✓                  |               | ✓   |     | ✓ |     |     |     |     |     |     |                   |  |  |
| 3          | 94         | 1368       | 3.201     | 100               | ✓                  |               |     | ✓   |   | ✓   |     |     |     |     |     | ✓                 |  |  |
| 4          | 95         | 1363       | 3.536     | 75                | ✓                  |               |     | ✓   |   | ✓   |     |     |     |     |     |                   |  |  |
| 5          | 96         | 1367       | 4.150     | 50                | ✓                  |               |     | ✓   |   | ✓   |     |     |     |     |     |                   |  |  |
| 6          | 97         | 1371       | 4.144     | 40                | ✓                  |               |     | ✓   |   |     |     |     | ✓   |     |     |                   |  |  |
| 7          | 98         | 1373       | 4.244     | 30                | ✓                  |               |     | ✓   |   | ✓   |     |     | ✓   |     |     |                   |  |  |
| 8          | 99         | 1375       | 4.607     | 20                | ✓                  |               | ✓   | ✓   |   | ✓   |     |     | ✓   |     | ✓   | ✓                 |  |  |
| 9          | 100        | 1374       | 4.731     | 10                | ✓                  |               |     | ✓   |   | ✓   |     |     | ✓   | ✓   | ✓   | ✓                 |  |  |
| 10         | 101        | 1378       | 4.477     | 5                 | ✓                  |               |     | ✓   |   |     |     |     |     |     |     |                   |  |  |
| 11         | 102        | 1376       | 4.920     | 0                 | ✓                  |               |     | ✓   |   | ✓   |     |     | ✓   | ✓   | ✓   | ✓                 |  |  |
| 12         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 13         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 14         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 15         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 16         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 17         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 18         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 19         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 20         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 21         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 22         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 23         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |
| 24         |            |            |           |                   |                    |               |     |     |   |     |     |     |     |     |     |                   |  |  |

Comments:

SHIP: Vector

ENTERED BY:

CHECKED BY:

Bottom Depth: 148

Cast # down: 25

Cast # up: 25

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 0547 |
| Bottom: |     | 0551 |
| End:    |     | 0600 |

START POSITION (GPS)

LAT: 48 22 55

LONG: 123 26 23

BOTTOM POSITION (GPS)

LAT: 48 22 84

LONG: 123 26 08

END POSITION (GPS)

LAT: 48 22 82

LONG: 123 25 73

ROSETTE LOG

MISSION ID: 2006-21 STATION: 39 CAST NUMBER: 30 UTC DATE (dd/mm/yyyy): 14/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |                 |     |  |     |      |      |     |  |  |               |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----------------|-----|--|-----|------|------|-----|--|--|---------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |                 | TCO |  | C13 |      |      |     |  |  |               |
|            |            |            |           |                   |                    |               | OXY | G/P | NH <sub>4</sub> | ALK |  | CHL | SF20 | AP20 | CDM |  |  |               |
| 1          | 103        | 1346       | 3.306     | BOT. 5            | ✓ 370              |               |     | ✓   |                 |     |  |     |      |      |     |  |  |               |
| 2          | 104        | 1347       | 3.221     | 350               | ✓                  | ✓             |     |     |                 |     |  |     |      |      |     |  |  |               |
| 3          | 105        | 1349       | 3.132     | 300               | ✓                  |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 4          | 106        | 1351       | 2.691     | 250               | ✓                  |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 5          | 107        | 1353       | 3.262     | 200               | ✓                  |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 6          | 108        | 1354       | 3.591     | 175               | ✓                  |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 7          | 109        | 1356       | 4.255     | 150               | ✓                  |               |     |     |                 |     |  |     |      |      | ✓   |  |  |               |
| 8          | 110        | 1358       | 4.458     | 125               | ✓                  |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 9          | 111        | 1360       | 4.711     | 100               | ✓                  |               |     |     | ✓✓              |     |  |     |      |      |     |  |  |               |
| 10         | 112        | 1361       | 4.407     | 75                | ✓                  |               |     | ✓✓  | ✓✓              |     |  |     |      |      |     |  |  |               |
| 11         | 113        | 1362       | 4.127     | 50                | ✓                  |               |     | ✓✓  | ✓✓              |     |  |     |      |      |     |  |  |               |
| 12         | 114        | 1364       | 4.338     | 40                | ✓                  |               |     |     |                 |     |  | ✓✓  |      |      |     |  |  |               |
| 13         | 115        | 1368       | 4.454     | 30                | ✓                  | ✓             |     |     | ✓✓              |     |  | ✓✓  |      |      |     |  |  |               |
| 14         | 116        | 1363       | 4.963     | 20                | ✓                  |               |     |     | ✓✓              |     |  | ✓✓  |      | ✓✓   | ✓✓  |  |  |               |
| 15         | 117        |            |           | 10                | ✓                  |               |     |     | ✓✓              |     |  | ✓✓  | ✓✓   | ✓✓   | ✓✓  |  |  | did not close |
| 16         | 118        | 1371       | 6.946     | 5                 | ✓                  |               |     |     | ✓✓              |     |  | ✓✓  | ✓✓   | ✓✓   | ✓✓  |  |  |               |
| 17         | 119        | 1373       | 7.089     | 0                 | ✓                  |               | ✓   | ✓   | ✓✓              |     |  | ✓✓  | ✓✓   | ✓✓   | ✓   |  |  |               |
| 18         |            |            |           |                   |                    |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 19         |            |            |           |                   |                    |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 20         |            |            |           |                   |                    |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 21         |            |            |           |                   |                    |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 22         |            |            |           |                   |                    |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 23         |            |            |           |                   |                    |               |     |     |                 |     |  |     |      |      |     |  |  |               |
| 24         |            |            |           |                   |                    |               |     |     |                 |     |  |     |      |      |     |  |  |               |

Comments: Sampled out of bot 16 (5m) instead of bot 15 which did not close.

SHIP:  
ENTERED BY: KB  
CHECKED BY:

Bottom Depth: 375

Cast # down: 30  
Cast # up: 30

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 20:15 |
| Bottom: |     | 20:25 |
| End:    |     | 20:47 |

START POSITION (GPS)  
LAT: 49 9.815  
LONG: 123 33.016

BOTTOM POSITION (GPS)  
LAT: 41 9.817  
LONG: 123 33.001

END POSITION (GPS)  
LAT: 49 9.815  
LONG: 123 32.990

ROSETTE LOG

MISSION ID: 2006-21 STATION: 27 CAST NUMBER: 35 UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |  |     |     |     |  |     |      |      |      |   |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|--|-----|-----|-----|--|-----|------|------|------|---|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |  | NUT |     | TCO |  | CI3 |      |      |      |   |  |  |
|            |            |            |           |                   |                    | OXY           |  |     | PHH | ALK |  | CHL | SF20 | HTL6 | CD6H |   |  |  |
| 1          | 120        | 1461       | 3.352     | BOT               | ✓                  |               |  | ✓   |     |     |  |     |      |      |      |   |  |  |
| 2          | 121        | 1434       | 3.144     | 300               | ✓                  | ✓             |  | ✓   |     |     |  |     |      |      |      |   |  |  |
| 3          | 122        | 657        | 3.289     | 250               | ✓                  |               |  | ✓   |     |     |  |     |      |      |      |   |  |  |
| 4          | 123        | 708        | 3.510     | 200               | ✓                  |               |  | ✓   |     |     |  |     |      |      |      |   |  |  |
| 5          | 124        | 709        | 3.829     | 175               | ✓                  |               |  | ✓   |     |     |  |     |      |      |      |   |  |  |
| 6          | 125        | 715        | 4.240     | 150               | ✓                  |               |  | ✓   |     |     |  |     |      |      | ✓    | ✓ |  |  |
| 7          | 126        | 1486       | 4.320     | 125               | ✓                  |               |  | ✓   |     |     |  |     |      |      |      |   |  |  |
| 8          | 127        | 1105       | 4.394     | 100               | ✓                  |               |  | ✓   | ✓   |     |  |     |      |      |      |   |  |  |
| 9          | 128        | 1110       | 4.179     | 75                | ✓                  |               |  | ✓   | ✓   |     |  |     |      |      |      |   |  |  |
| 10         | 129        | 1130       | 4.433     | 50                | ✓                  |               |  | ✓   | ✓   |     |  |     |      |      |      |   |  |  |
| 11         | 130        | 1126       | 4.668     | 40                | ✓                  |               |  | ✓   |     |     |  | ✓   |      |      |      |   |  |  |
| 12         | 131        | 1134       | 4.889     | 30                | ✓                  | ✓             |  | ✓   | ✓   |     |  | ✓   |      |      |      |   |  |  |
| 13         | 132        | 1158       | 5.322     | 20                | ✓                  |               |  | ✓   | ✓   |     |  | ✓   |      | ✓    | ✓    | ✓ |  |  |
| 14         | 133        | 1142       | 6.150     | 10                | ✓                  |               |  | ✓   | ✓   |     |  | ✓   | ✓    | ✓    | ✓    | ✓ |  |  |
| 15         | 134        | 1136       | 7.848     | 5                 | ✓                  |               |  | ✓   | ✓   |     |  |     |      |      |      |   |  |  |
| 16         | 135        | 1138       | 7.826     | 0                 |                    |               |  | ✓   | ✓   | ✓   |  | ✓   | ✓    | ✓    | ✓    | ✓ |  |  |
| 17         |            |            |           |                   |                    |               |  |     |     |     |  |     |      |      |      |   |  |  |
| 18         |            |            |           |                   |                    |               |  |     |     |     |  |     |      |      |      |   |  |  |
| 19         |            |            |           |                   |                    |               |  |     |     |     |  |     |      |      |      |   |  |  |
| 20         |            |            |           |                   |                    |               |  |     |     |     |  |     |      |      |      |   |  |  |
| 21         |            |            |           |                   |                    |               |  |     |     |     |  |     |      |      |      |   |  |  |
| 22         |            |            |           |                   |                    |               |  |     |     |     |  |     |      |      |      |   |  |  |
| 23         |            |            |           |                   |                    |               |  |     |     |     |  |     |      |      |      |   |  |  |
| 24         |            |            |           |                   |                    |               |  |     |     |     |  |     |      |      |      |   |  |  |

Comments:

SHIP:

ENTERED BY:

CHECKED BY:

Bottom Depth: 343

Cast # down: 35

Cast # up:

| Time    | LOC   | UTC |
|---------|-------|-----|
| Begin:  | 00.53 |     |
| Bottom: | 1.01  |     |
| End:    | 1.20  |     |

START POSITION (GPS)

LAT: 49 19 138

LONG: 123 50 789

BOTTOM POSITION (GPS)

LAT: 49 19 126

LONG: 123 48 025

END POSITION (GPS)

LAT: 49 19 106

LONG: 123 48 026

ROSETTE LOG

MISSION ID: 2006-21 STATION: 16 CAST NUMBER: 45 UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |     |     |      |      |      |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |     | et3 |     |      |      |      |  |  |
|            |            |            |           |                   |                    |               | OXY |     | NAH |     | ALK |     | CHL | SF20 | HPLC | CDOM |  |  |
| 1          | 136        | 1461       | 3.925     | Bot-10            | ✓                  | 152           |     | 1   | 11  |     |     |     |     |      |      | ✓    |  |  |
| 2          | 137        | 1434       | 3.958     | 125               | ✓                  |               | ✓   | 1   | 11  |     |     |     |     |      |      |      |  |  |
| 3          | 138        | 657        | 3.942     | 100               | ✓                  |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 4          | 139        | 708        | 3.956     | 75                | ✓                  |               |     | ✓   | ✓   |     |     |     |     |      |      |      |  |  |
| 5          | 140        | 709        | 4.299     | 50                | ✓                  |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 6          | 141        | 715        | 4.315     | 40                | ✓                  |               |     |     |     |     |     |     | ✓   |      |      |      |  |  |
| 7          | 142        | 1486       | 4.532     | 30                | ✓                  |               |     |     |     |     |     |     | ✓   |      |      |      |  |  |
| 8          | 143        | 1105       | 4.689     | 20                | ✓                  |               |     |     |     |     |     |     | ✓   |      | ✓    | ✓    |  |  |
| 9          | 144        | 1110       | 5.895     | 10                | ✓                  |               | ✓   |     |     |     |     |     | ✓   |      | ✓    | ✓    |  |  |
| 10         | 145        | 1130       | 6.074     | 5                 | ✓                  |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 11         | 146        | 1126       | 6.335     | 0                 | ✓                  |               |     | ✓   | ✓   |     |     |     | ✓   | ✓    | ✓    | ✓    |  |  |
| 12         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 13         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 14         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 15         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 16         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |     |     |      |      |      |  |  |

Comments:

SHIP: ✓

ENTERED BY:

CHECKED BY: 19

Bottom Depth: 152

Cast # down: 45

Cast # up: 45

| Time    | LOC   | UTC |
|---------|-------|-----|
| Begin:  | 12 25 |     |
| Bottom: | 12 30 |     |
| End:    | 12 41 |     |

START POSITION (GPS)

LAT: 49 57 62.5

LONG: 125 8 83.7

BOTTOM POSITION (GPS)

LAT: 49 57 56.5

LONG: 125 8 74.2

END POSITION (GPS)

LAT: 49 57 39.2

LONG: 125 8 68.4

ROSETTE LOG

MISSION ID: 2006-2/ STATION: 14 CAST NUMBER: 48 UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |  |     |     |     |     |      |     |      |      |                      |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|--|-----|-----|-----|-----|------|-----|------|------|----------------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |  | TCO |     | C13 |     |      |     |      |      |                      |
|            |            |            |           |                   |                    |               | OXY |     |  | pH4 | ALK | TKL | CHL | Si20 | NO3 | CO3H | pH10 |                      |
| 1          | 147        | 1134       | 2.973     | ROT               | ✓                  | 310           |     | ✓   |  |     |     |     |     |      |     |      |      |                      |
| 2          | 148        | 1158       | 2.944     | 300               | ✓                  |               | ✓   | ✓   |  |     |     |     |     |      |     |      |      |                      |
| 3          | 149        | 1142       | 3.200     | 250               | ✓                  |               |     | ✓   |  |     |     |     |     |      |     |      |      |                      |
| 4          | 150        | 1136       | 3.402     | 200               | ✓                  |               |     | ✓   |  |     |     |     |     |      |     |      |      |                      |
| 5          | 151        | 1138       | 3.413     | 175               | ✓                  |               |     | ✓   |  |     |     |     |     |      |     |      |      |                      |
| 6          | 152        | 1135       | 3.621     | 150               | ✓                  |               |     | ✓   |  |     |     |     |     |      |     | ✓    | ✓    |                      |
| 7          | 153        | 1128       | 3.682     | 125               | ✓                  |               |     | ✓   |  |     |     |     |     |      |     |      |      |                      |
| 8          | 154        | 1146       | 3.871     | 100               | ✓                  |               |     | ✓   |  | ✓   | ✓   |     |     |      |     |      |      |                      |
| 9          | 155        |            |           | 75                | ✓                  |               |     | ✓   |  | ✓   | ✓   |     |     |      |     |      |      | ROT 9 did not close  |
| 10         | 156        | 1389       | 4.149     | 50                | ✓                  |               |     |     |  | ✓   |     |     |     |      |     |      |      |                      |
| 11         | 157        | 1385       | 4.311     | 40                | ✓                  |               |     |     |  |     | ✓   | ✓   |     |      |     |      |      |                      |
| 12         | 158        | 1175       | 4.379     | 30                | ✓                  |               |     |     |  | ✓   | ✓   | ✓   |     |      |     |      |      |                      |
| 13         | 159        | 1176       | 4.627     | 20                | ✓                  |               |     |     |  | ✓   | ✓   | ✓   |     | ✓    | ✓   |      |      |                      |
| 14         | 160        | 1397       | 5.197     | 10                | ✓                  |               | ✓   |     |  | ✓   | ✓   | ✓   |     | ✓    | ✓   | ✓    |      |                      |
| 15         | 161        |            |           | 5                 | ✓                  |               |     |     |  |     |     |     |     |      |     |      |      | ROT 15 did not close |
| 16         | 162        | 1394       | 6.629     | 0                 |                    |               |     | ✓   |  | ✓   | ✓   | ✓   | ✓   | ✓    | ✓   | ✓    | ✓    |                      |
| 17         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |     |      |      |                      |
| 18         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |     |      |      |                      |
| 19         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |     |      |      |                      |
| 20         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |     |      |      |                      |
| 21         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |     |      |      |                      |
| 22         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |     |      |      |                      |
| 23         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |     |      |      |                      |
| 24         |            |            |           |                   |                    |               |     |     |  |     |     |     |     |      |     |      |      |                      |

Comments: Bottles 9 & 15 did not close

SHIP:  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 315

Cast # down: 48  
Cast # up: 48

| Time    | LOC | UTC  |
|---------|-----|------|
| Begin:  |     | 1339 |
| Bottom: |     | 1545 |
| End:    |     | 1601 |

START POSITION (GPS)  
LAT: 49 32 96  
LONG: 124 39 59

BOTTOM POSITION (GPS)  
LAT: 49 32 94  
LONG: 124 39 58

END POSITION (GPS)  
LAT: 49 32 94  
LONG: 124 39 45

ROSETTE LOG

MISSION ID: 2006-21 STATION: 12 CAST NUMBER: 51 UTC DATE (dd/mm/yyyy): 15/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |    |                 |     |     |     |    |      |                   |       |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|----|-----------------|-----|-----|-----|----|------|-------------------|-------|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |    | TCO             |     | C13 |     |    |      |                   |       |  |
|            |            |            |           |                   |                    |               | OXY |     |    | NH <sub>4</sub> | ALK |     | CHL | SF | HPLC | CO <sub>2</sub> H | Phyle |  |
| 1          | 163        | 1346       | 2.649     | 80T               | ✓                  | 350           |     | ✓   | VV |                 |     |     |     |    |      |                   |       |  |
| 2          | 164        | 1347       | 2.479     | 350               | ✓                  |               | ✓   |     |    |                 |     |     |     |    |      |                   |       |  |
| 3          | 165        | 1349       | 3.497     | 300               | ✓                  |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 4          | 166        | 1351       | 3.257     | 250               | ✓                  |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 5          | 167        | 1353       | 3.599     | 200               | ✓                  |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 6          | 168        | 1354       | 3.949     | 175               | ✓                  |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 7          | 169        | 1356       | 4.083     | 150               | ✓                  |               |     |     |    |                 |     |     |     |    |      | ✓                 |       |  |
| 8          | 170        | 1358       | 4.109     | 125               | ✓                  |               |     |     | W  |                 |     |     |     |    |      |                   |       |  |
| 9          | 171        | 1360       | 4.174     | 100               | ✓                  |               |     |     |    | W               |     |     |     |    |      |                   |       |  |
| 10         | 172        | 1361       | 4.048     | 75                | ✓                  |               |     |     |    | W               |     |     |     |    |      |                   |       |  |
| 11         | 173        | 1362       | 4.047     | 50                | ✓                  |               |     |     |    | W               |     |     |     |    |      |                   |       |  |
| 12         | 174        | 1364       | 4.265     | 40                | ✓                  |               |     |     |    |                 |     |     | VV  |    |      |                   |       |  |
| 13         | 175        | 1368       | 4.448     | 30                | ✓                  |               |     |     |    | VV              |     |     | VV  |    |      |                   |       |  |
| 14         | 176        | 1363       | 4.840     | 20                | ✓                  |               |     |     |    | VV              |     |     | VV  |    | ✓V   | VV                |       |  |
| 15         | 177        | 1367       | 6.404     | 10                | ✓                  |               | ✓   |     |    | VV              |     |     | VV  | VV | VV   | ✓                 |       |  |
| 16         | 178        | 1371       | 6.627     | 5                 | ✓                  |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 17         | 179        | 1373       | 6.473     | 0                 | ✓                  |               |     | ✓   | ✓  | VV              |     |     | VV  | VV | VV   | ✓                 | VV    |  |
| 18         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 19         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 20         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 21         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 22         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 23         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |    |      |                   |       |  |
| 24         |            |            |           |                   |                    |               |     |     |    |                 |     |     |     |    |      |                   |       |  |

Comments:

SHIP:  
ENTERED BY: KB  
CHECKED BY:

Bottom Depth: 357

Cast # down: 51  
Cast # up: 51

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 20:33 |
| Bottom: |     | 20:42 |
| End:    |     | 21:01 |

START POSITION (GPS)  
LAT: 4943.629  
LONG: 12440.858

BOTTOM POSITION (GPS)  
LAT: 4943.628  
LONG: 12440.866

END POSITION (GPS)  
LAT: 4943.614  
LONG: 12440.830

ROSETTE LOG

MISSION ID: 2006-21 STATION: 9 CAST NUMBER: 56 UTC DATE (dd/mm/yyyy): 15/16/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |  |     |     |     |     |    |      |    |   |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|--|-----|-----|-----|-----|----|------|----|---|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |  | TCO |     | CI3 |     |    |      |    |   |  |
|            |            |            |           |                   |                    |               |   |     |  | NH4 | ALK |     | CHL | SF | HPLC |    |   |  |
| 1          | 182        | 1461       | 2.731     | BOT               | ✓ 1162             |               | ✓ | ✓✓  |  |     |     |     |     |    |      |    |   |  |
| 2          | 183        | 1434       | 2.879     | 150               | ✓                  | ✓             |   |     |  |     |     |     |     |    |      |    | ✓ |  |
| 3          | 184        | 657        | 3.793     | 125               | ✓                  |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 4          | 185        | 708        | 4.133     | 100               | ✓                  |               |   |     |  | ✓✓  |     |     |     |    |      |    |   |  |
| 5          | 186        | 709        | 4.021     | 75                | ✓                  |               |   |     |  | ✓✓  |     |     |     |    |      |    |   |  |
| 6          | 187        | 715        | 4.309     | 50                | ✓                  |               |   |     |  | ✓✓  |     |     |     |    |      |    |   |  |
| 7          | 188        | 1486       | 4.487     | 40                | ✓                  |               |   |     |  |     |     |     | ✓✓  |    |      |    |   |  |
| 8          | 189        | 1105       | 4.588     | 30                | ✓                  |               |   |     |  | ✓✓  |     |     | ✓✓  |    |      |    |   |  |
| 9          | 190        | 1110       | 4.834     | 20                | ✓                  |               |   |     |  | ✓✓  |     |     | ✓✓  |    | ✓✓   | ✓✓ |   |  |
| 10         | 191        | 1130       | 5.402     | 10                | ✓                  | ✓             |   |     |  | ✓✓  |     |     | ✓✓  | ✓✓ | ✓✓   | ✓  |   |  |
| 11         | 192        | 1126       | 7.043     | 5                 | ✓                  |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 12         | 193        | 1134       | 7.323     | 0                 | ✓                  |               |   |     |  | ✓✓  |     |     | ✓✓  | ✓✓ | ✓✓   | ✓  |   |  |
| 13         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 14         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 15         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 16         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 17         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 18         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 19         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 20         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 21         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 22         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 23         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |
| 24         |            |            |           |                   |                    |               |   |     |  |     |     |     |     |    |      |    |   |  |

Comments:

SHIP:

ENTERED BY: *AK*

CHECKED BY: *AK*

Bottom Depth: 1162

Cast # down: 56

Cast # up:

|         |     |     |
|---------|-----|-----|
| Time    | LOC | UTC |
| Begin:  | 23  | 59  |
| Bottom: | 00  | 05  |
| End:    | 00  | 16  |

START POSITION (GPS)

LAT: 49 35 512

LONG: 124 38 278

BOTTOM POSITION (GPS)

LAT: 49 35 423

LONG: 124 38 168

END POSITION (GPS)

LAT: 49 35 404

LONG: 124 38 143

# ROSETTE LOG

MISSION ID: 2006-21 STATION: 6 CAST NUMBER: 59 UTC DATE (dd/mm/yyyy): 16-6-2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |  |  |     |     |     |     |     |     |    |     |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|--|--|-----|-----|-----|-----|-----|-----|----|-----|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |  |  | NUT |     | TCO |     | C13 |     |    |     |  |  |
|            |            |            |           |                   |                    |               |  |  |     | NH4 |     | ALK | HRL | CHL | FX | COM |  |  |
| 1          | 194        | 1158       | 3.817     | 130               | ✓                  |               |  |  | ✓   |     |     |     |     |     |    |     |  |  |
| 2          | 195        | 1142       | 3.810     | 125               | ✓                  | ✓             |  |  | ✓   |     |     |     |     |     |    |     |  |  |
| 3          | 196        | 1136       | 4.004     | 120               | ✓                  |               |  |  | ✓   |     |     |     |     |     | ✓  |     |  |  |
| 4          | 197        | 1138       | 3.990     | 125               | ✓                  |               |  |  | ✓   |     |     |     |     |     |    |     |  |  |
| 5          | 198        | 1135       | 3.948     | 100               | ✓                  |               |  |  | ✓   | ✓   |     |     |     |     |    |     |  |  |
| 6          | 199        | 1128       | 4.086     | 75                | ✓                  |               |  |  | ✓   | ✓   |     |     |     |     |    |     |  |  |
| 7          | 200        | 1146       | 4.173     | 50                | ✓                  |               |  |  | ✓   | ✓   |     |     |     |     |    |     |  |  |
| 8          | 201        | 1386       | 4.280     | 40                | ✓                  |               |  |  | ✓   |     |     |     |     | ✓   |    |     |  |  |
| 9          | 202        | 1389       | 4.523     | 30                | ✓                  |               |  |  | ✓   | ✓   |     |     |     | ✓   |    |     |  |  |
| 10         | 203        | 1385       | 5.044     | 20                | ✓                  | ✓             |  |  | ✓   | ✓   |     |     | ✓   | ✓   |    | ✓   |  |  |
| 11         | 204        | 1175       | 6.608     | 10                | ✓                  |               |  |  | ✓   | ✓   |     |     | ✓   | ✓   | ✓  | ✓   |  |  |
| 12         | 205        | 1176       | 6.630     | 5                 | ✓                  |               |  |  | ✓   |     |     |     |     |     |    |     |  |  |
| 13         | 206        | 1397       | 6.586     | 0                 | ✓                  |               |  |  | ✓   | ✓   |     |     | ✓   | ✓   | ✓  | ✓   |  |  |
| 14         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 15         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 16         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 17         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 18         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 19         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 20         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 21         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 22         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 23         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |
| 24         |            |            |           |                   |                    |               |  |  |     |     |     |     |     |     |    |     |  |  |

Comments:

SHIP: VECTOR  
 ENTERED BY:  
 CHECKED BY:

Bottom Depth: 192

Cast # down: 15 59  
 Cast # up: 8 30 59

| Time    | LOC | UTC         |
|---------|-----|-------------|
| Begin:  |     | <u>3:15</u> |
| Bottom: |     | <u>3:19</u> |
| End:    |     | <u>3:30</u> |

START POSITION (GPS)  
 LAT: 49 30 625  
 LONG: 124 27 81

BOTTOM POSITION (GPS)  
 LAT: 49 30 649  
 LONG: 124 27 82

END POSITION (GPS)  
 LAT: 49 30 623  
 LONG: 124 27 763

ROSETTE LOG

MISSION ID: 2006-21 STATION: 3 CAST NUMBER: 62 UTC DATE (dd/mm/yyyy): 16 06 06.

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |   |     |     |     |      |     |     |      |    |    |  |   |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|---|-----|-----|-----|------|-----|-----|------|----|----|--|---|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |   | NUT |     | TCO |      | C13 |     |      |    |    |  |   |
|            |            |            |           |                   |                    | OXY           |   | NH4 | CHL | ALK | SiO2 | GH  | HOL | COOH |    |    |  |   |
| 1          | 207        | 1346       | 2.487     | BOT               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |    |    |  |   |
| 2          | 208        | 1347       | 2.491     | 300               | ✓                  | ✓             |   | ✓✓  |     |     |      |     |     |      |    |    |  |   |
| 3          | 209        | 1349       | 2.967     | 250               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |    |    |  |   |
| 4          | 210        | 1351       | 3.929     | 200               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |    |    |  |   |
| 5          | 211        | 1353       | 4.036     | 175               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |    |    |  |   |
| 6          | 212        | 1354       | 4.271     | 150               | ✓                  |               |   | ✓✓  |     |     |      |     |     | ✓    |    |    |  |   |
| 7          | 213        | 1356       | 6.625     | 125               | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |    |    |  | ? |
| 8          | 214        | 1358       | 4.420     | 100               | ✓                  |               |   | ✓✓  | ✓✓  |     |      |     |     |      |    |    |  |   |
| 9          | 215        | 1360       | 4.265     | 75                | ✓                  |               |   | ✓✓  | ✓✓  |     |      |     |     |      |    |    |  |   |
| 10         | 216        | 1361       | 4.230     | 50                | ✓                  |               |   | ✓✓  | ✓✓  |     |      |     |     |      |    |    |  |   |
| 11         | 217        | 1362       | 4.264     | 40                | ✓                  |               |   | ✓✓  |     | ✓✓  |      |     |     |      |    |    |  |   |
| 12         | 218        | 1364       | 4.453     | 30                | ✓                  |               |   | ✓✓  | ✓✓  | ✓✓  |      |     |     |      |    |    |  |   |
| 13         | 219        | 1368       | 4.634     | 20                | ✓                  | ✓             |   | ✓✓  | ✓✓  | ✓✓  |      |     |     | ✓✓   | ✓✓ |    |  |   |
| 14         | 220        | 1363       | 5.991     | 10                | ✓                  |               |   | ✓✓  | ✓✓  | ✓✓  | ✓✓   |     |     | ✓✓   | ✓✓ |    |  |   |
| 15         | 221        | 1367       | 6.534     | 5                 | ✓                  |               |   | ✓✓  |     |     |      |     |     |      |    |    |  |   |
| 16         | 222        | 1371       | 6.656     | 0                 |                    |               | ✓ | ✓✓  | ✓✓  | ✓✓  | ✓✓   |     |     | ✓✓   | ✓✓ | ✓✓ |  |   |
| 17         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |    |    |  |   |
| 18         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |    |    |  |   |
| 19         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |    |    |  |   |
| 20         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |    |    |  |   |
| 21         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |    |    |  |   |
| 22         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |    |    |  |   |
| 23         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |    |    |  |   |
| 24         |            |            |           |                   |                    |               |   |     |     |     |      |     |     |      |    |    |  |   |

Comments:

SHIP:  
ENTERED BY:  
CHECKED BY:

Bottom Depth: 325

Cast # down: 62  
Cast # up: 62

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 0608  |
| Bottom: |     | 06:12 |
| End:    |     | 06:30 |

START POSITION (GPS)  
LAT: 49 26.608  
LONG: 124 20.288

BOTTOM POSITION (GPS)  
LAT: 49 26.604  
LONG: 124 20.220

END POSITION (GPS)  
LAT: 49 26.576  
LONG: 124 13.510

# ROSETTE LOG

MISSION ID: 2006-06 STATION: 2 CAST NUMBER: 63 UTC DATE (dd/mm/yyyy): 16 06 06

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |      |      |      |       |   |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|------|------|------|-------|---|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |     | C13  | HPIL |      |       |   |  |  |
|            |            |            |           |                   |                    |               | OXY |     | NH4 | CH  | ALK | SF20 | CHL  | CDOM | Phyto |   |  |  |
| 1          | 232        | 1270       | 2.890     | 807               | ✓ 280              |               |     | ✓   |     |     |     |      |      |      |       |   |  |  |
| 2          | 233        | 1479       | 2.935     | 250               | ✓                  | ✓             |     | ✓   |     |     |     |      |      |      |       |   |  |  |
| 3          | 234        | 1481       | 3.792     | 200               | ✓                  |               |     | ✓   |     |     |     |      |      |      |       |   |  |  |
| 4          | 235        | 1482       | 4.159     | 175               | ✓                  |               |     | ✓   |     |     |     |      |      |      |       |   |  |  |
| 5          | 236        | 1483       | 4.299     | 150               | ✓                  |               |     | ✓   |     |     |     |      |      | ✓    |       |   |  |  |
| 6          | 237        | 1484       | 4.446     | 125               | ✓                  |               |     | ✓   |     |     |     |      |      |      |       |   |  |  |
| 7          | 238        | 1485       | 4.444     | 100               | ✓                  |               |     | ✓   | ✓   |     |     |      |      |      |       |   |  |  |
| 8          | 239        | 1342       | 4.295     | 75                | ✓                  |               |     | ✓   | ✓   |     |     |      |      |      |       |   |  |  |
| 9          | 240        | 1284       | 4.166     | 50                | ✓                  |               |     | ✓   | ✓   |     |     |      |      |      |       |   |  |  |
| 10         | 241        | 1295       | 4.199     | 40                | ✓                  |               |     | ✓   |     | ✓   |     |      |      |      |       |   |  |  |
| 11         | 242        | 1332       | 4.232     | 30                | ✓                  |               |     | ✓   | ✓   | ✓   |     |      |      |      |       |   |  |  |
| 12         | 243        | 1465       | 4.657     | 20                | ✓                  | ✓             |     | ✓   | ✓   | ✓   |     |      | ✓    | ✓    |       |   |  |  |
| 13         | 244        | 1336       | 5.982     | 10                | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓    | ✓    |       |   |  |  |
| 14         | 245        | 1476       | 6.719     | 5                 | ✓                  |               |     | ✓   |     |     |     |      |      |      |       |   |  |  |
| 15         | 246        | 1464       | 6.713     | 0                 | ✓                  | ✓             |     | ✓   | ✓   | ✓   |     | ✓    | ✓    | ✓    | ✓     | ✓ |  |  |
| 16         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |      |      |      |       |   |  |  |

## SHIP:

ENTERED BY: K8

CHECKED BY:

Bottom Depth: 278

Cast # down: 63

Cast # up: 63

| Time    | LOC | UTC          |
|---------|-----|--------------|
| Begin:  |     | <u>07:27</u> |
| Bottom: |     | <u>07:39</u> |
| End:    |     | <u>07:57</u> |

## START POSITION (GPS)

LAT: 49 24.107

LONG: 124 9.291

## BOTTOM POSITION (GPS)

LAT: 49 23.983

LONG: 124 9.263

## END POSITION (GPS)

LAT: 49 23.809

LONG: 124 9.158

Comments:

ROSETTE LOG

MISSION ID: 2006-21 STATION: 42 CAST NUMBER: 66 UTC DATE (dd/mm/yyyy): 16/06/2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |      |     |     |     |      |  |  |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|------|-----|-----|-----|------|--|--|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |     | C13  |     |     |     |      |  |  |
|            |            |            |           |                   |                    |               | OXY |     | UHL | TKL | AZK | SF30 | GHL | HAL | LDH | PH10 |  |  |
| 1          | 247        | 1346       | 3.257     | BOT               | ✓                  | 315           |     | ✓   |     |     |     |      |     |     |     |      |  |  |
| 2          | 248        | 1347       | 3.179     | 300               | ✓                  |               | ✓   | ✓   |     |     |     |      |     |     |     |      |  |  |
| 3          | 249        | 1349       | 3.519     | 250               | ✓                  |               |     | ✓   |     |     |     |      |     |     |     |      |  |  |
| 4          | 250        | 1351       | 3.572     | 200               | ✓                  |               |     | ✓   |     |     |     |      |     |     |     |      |  |  |
| 5          | 251        | 1353       | 3.861     | 175               | ✓                  |               |     | ✓   |     |     |     |      |     |     |     |      |  |  |
| 6          | 252        | 1354       | 4.259     | 150               | ✓                  |               |     | ✓   |     |     |     |      |     |     | ✓   |      |  |  |
| 7          | 253        | 1356       | 4.433     | 125               | ✓                  |               |     | ✓   |     |     |     |      |     |     |     |      |  |  |
| 8          | 254        | 1358       | 4.557     | 100               | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |     |      |  |  |
| 9          | 255        | 1360       | 4.307     | 75                | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |     |      |  |  |
| 10         | 256        | 1361       | 4.395     | 50                | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |     |      |  |  |
| 11         | 257        | 1362       | 4.515     | 40                | ✓                  |               |     | ✓   |     | ✓   |     |      |     |     |     |      |  |  |
| 12         | 258        | 1364       | 4.793     | 30                | ✓                  |               |     | ✓   | ✓   | ✓   |     |      |     |     |     |      |  |  |
| 13         | 259        | 1368       | 5.167     | 20                | ✓                  |               | ✓   | ✓   | ✓   | ✓   |     | ✓    |     | ✓   |     |      |  |  |
| 14         | 260        | 1363       | 5.363     | 10                | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓   |     | ✓   |      |  |  |
| 15         | 261        | 1367       | 6.298     | 5                 | ✓                  |               |     | ✓   |     |     |     |      |     |     | ✓   | ✓    |  |  |
| 16         | 262        | 1371       | 6.633     | 0                 | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓   |     | ✓   |      |  |  |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |      |  |  |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |      |  |  |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |      |  |  |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |      |  |  |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |      |  |  |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |      |  |  |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |      |  |  |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |      |  |  |

Comments: No water left in bottle 16 for photo samples, took from box 1015

SHIP:  
ENTERED BY:  
CHECKED BY: R

Bottom Depth: 315

Cast # down: 66  
Cast # up: 66

| Time    | LOC    | UTC    |
|---------|--------|--------|
| Begin:  | 491834 | 142812 |
| Bottom: | 491832 | 143612 |
| End:    | 491810 | 145613 |

START POSITION (GPS)  
LAT: 491834  
LONG: 12326172

BOTTOM POSITION (GPS)  
LAT: 491832  
LONG: 12326177

END POSITION (GPS)  
LAT: 491810  
LONG: 12326183

ROSETTE LOG

MISSION ID: 2006-21 STATION: 46 CAST NUMBER: 69 UTC DATE (dd/mm/yyyy): 16-06-2006

| Niskin No. | Sample No. | OXY. Flask | OXY. ml/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |     |     |      |     |     |     |    |      |               |
|------------|------------|------------|-----------|-------------------|--------------------|---------------|-----|-----|-----|-----|-----|------|-----|-----|-----|----|------|---------------|
|            |            |            |           | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TCO |     | C13  |     |     |     |    |      |               |
|            |            |            |           |                   |                    |               | OXY |     | NH4 | TCO | AER | SF20 | CHL | H2C | CO2 | PH | TEMP |               |
| 1          | 263        | 1461       | 4.236     | 80T               | ✓ 169              | ✓             |     | ✓   |     |     |     |      |     |     |     |    |      | In wrong file |
| 2          | 264        | 1434       | 4.190     | 150               | ✓                  |               |     | ✓   |     |     |     |      |     |     | ✓   |    |      | In stu 72     |
| 3          | 265        | 1373       | 4.203     | 125               | ✓                  |               |     | ✓   |     |     |     |      |     |     |     |    |      |               |
| 4          | 266        | 1378       | 3.928     | 100               | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |     |    |      |               |
| 5          | 267        | 1376       | 4.862     | 75                | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |     |    |      |               |
| 6          | 268        | 1380       | 4.492     | 50                | ✓                  |               |     | ✓   | ✓   |     |     |      |     |     |     |    |      |               |
| 7          | 269        | 1381       | 4.534     | 40                | ✓                  |               |     | ✓   |     | ✓   |     |      |     |     |     |    |      |               |
| 8          | 270        | 1382       | 4.536     | 30                | ✓                  |               |     | ✓   | ✓   | ✓   |     |      |     |     |     |    |      |               |
| 9          | 271        | 1384       | 4.838     | 20                | ✓                  | ✓             |     | ✓   | ✓   | ✓   |     | ✓    |     | ✓   |     |    |      |               |
| 10         | 272        | 1366       | 5.312     | 10                | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓   |     | ✓   |    |      |               |
| 11         | 273        | 1326       | 5.637     | 5                 | ✓                  |               |     | ✓   |     |     |     |      |     |     |     |    |      |               |
| 12         | 274        | 1374       | 6.054     | 0                 | ✓                  |               |     | ✓   | ✓   | ✓   |     | ✓    | ✓   |     | ✓   | ✓  |      |               |
| 13         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 14         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 15         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 16         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 17         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 18         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 19         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 20         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 21         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 22         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 23         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |
| 24         |            |            |           |                   |                    |               |     |     |     |     |     |      |     |     |     |    |      |               |

Comments:

SHIP:  
ENTERED BY: KB  
CHECKED BY:

Bottom Depth: 178

Cast # down: 69  
Cast # up: 69

| Time    | LOC | UTC   |
|---------|-----|-------|
| Begin:  |     | 18:47 |
| Bottom: |     | 18:53 |
| End:    |     | 19:06 |

START POSITION (GPS)  
LAT: 48 51.354  
LONG: 123 10.738

BOTTOM POSITION (GPS)  
LAT: 48 51.331  
LONG: 123 10.666

END POSITION (GPS)  
LAT: 48 51.248  
LONG: 123 10.519

# ROSETTE LOG

MISSION ID: 2006-21

STATION: 56

CAST NUMBER:

UTC DATE (dd/mm/yyyy):

| Niskin No. | Sample No. | OXY. Flask | OXY. m/l | ROSETTE OPERATION |                    | Samples taken |     |     |     |      |     |      |      |  |  |  |  |  |  |
|------------|------------|------------|----------|-------------------|--------------------|---------------|-----|-----|-----|------|-----|------|------|--|--|--|--|--|--|
|            |            |            |          | Sample Depth      | Confirmed pressure | SAL           |     | NUT |     | TEQ  | SE  | CB   | COON |  |  |  |  |  |  |
|            |            |            |          |                   |                    |               | OXY |     | NH4 | Tchl | AMR | HPLC | CHL  |  |  |  |  |  |  |
| 1          | 275        |            |          | Bot               |                    | ✓             | ✓   | ✓✓  |     |      |     |      |      |  |  |  |  |  |  |
| 2          | 276        |            |          | 175               |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 3          | 277        |            |          | 150               |                    |               |     |     |     |      |     |      | ✓    |  |  |  |  |  |  |
| 4          | 278        |            |          | 125               |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 5          | 279        |            |          | 100               |                    |               |     |     | ✓✓  |      |     |      |      |  |  |  |  |  |  |
| 6          | 280        |            |          | 75                |                    |               |     |     | ✓✓  |      |     |      |      |  |  |  |  |  |  |
| 7          | 281        |            |          | 50                |                    |               |     |     | ✓✓  |      |     |      |      |  |  |  |  |  |  |
| 8          | 282        |            |          | 40                |                    |               |     | ✓   | ✓✓  |      |     |      |      |  |  |  |  |  |  |
| 9          | 283        |            |          | 30                |                    |               |     |     | ✓✓  | ✓✓   |     |      |      |  |  |  |  |  |  |
| 10         | 284        |            |          | 20                |                    | ✓             |     |     | ✓✓  | ✓✓   |     | ✓✓   | ✓    |  |  |  |  |  |  |
| 11         | 285        |            |          | 10                |                    |               |     |     | ✓✓  | ✓✓   | ✓✓  | ✓✓   | ✓✓   |  |  |  |  |  |  |
| 12         | 286        |            |          | 5                 |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 13         | 287        |            |          | 0                 |                    |               | ✓   | ✓   | ✓✓  | ✓✓   | ✓✓  | ✓✓   | ✓    |  |  |  |  |  |  |
| 14         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 15         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 16         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 17         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 18         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 19         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 20         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 21         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 22         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 23         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |
| 24         |            |            |          |                   |                    |               |     |     |     |      |     |      |      |  |  |  |  |  |  |

DID NOT  
HAPPEN

Comments: Stn did not get done

SHIP:

ENTERED BY:

CHECKED BY:

Bottom Depth:

Cast # down:

Cast # up:

Time LOC UTC

Begin:

Bottom:

End:

START POSITION (GPS)

LAT:

LONG:

BOTTOM POSITION (GPS)

LAT:

LONG:

END POSITION (GPS)

LAT:

LONG: