

# DAILY SCIENCE LOG BOOK

MISSION  
NUMBER

2011 - 24

DATE:

From: APR 7/11 to: APR 13/11

VESSEL:

VECTOR

PROJECT(S):

MEAD - BAYNES SOUND

Water Properties Group  
Fisheries and Oceans Canada  
Institute of Ocean Sciences  
Ocean Sciences Division  
North Saanich, BC, Canada

[WaterProperties.ca](http://WaterProperties.ca)



# DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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| Month <u>APRIL</u> |              |            |           | Year <u>2011</u> |               |              | Ship <u>VICTOR</u>     |           |              |           | Cruise ID <u>2011-24</u> |              |               |                |                         |
|--------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|-----------|--------------|-----------|--------------------------|--------------|---------------|----------------|-------------------------|
| Day                | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |           | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch Keepers | Trans. Cleaned | Comments                |
|                    |              |            |           |                  |               |              | Latitude               | Longitude |              |           |                          |              |               |                |                         |
| 8                  | ScI-R        | 1448       | BE        | ROS              | U.S.          | 001          | 49°49.14               | 123°54.94 | 78           |           | 1-6                      | 6            | H.M.          | ✓              |                         |
|                    |              | 1451       | BO        |                  |               |              | 49°45.13               | 123°54.94 |              | 74        |                          |              |               |                |                         |
|                    |              | 1459       | EN        |                  |               |              | 49°45.14               | 123°54.87 |              |           |                          |              |               |                |                         |
| 8                  | ScI-1        | 1642       | BE        | ROS              | U.S.          | 002          | 49°43.11               | 123°52.72 | 141          |           | 7-15                     | 9            | "             | ✓              |                         |
|                    |              | 1648       | BO        |                  |               |              | 49°43.07               | 123°52.70 |              | 141       |                          |              |               |                |                         |
|                    |              | 1658       | EN        |                  |               |              | 49°43.04               | 123°52.67 |              |           |                          |              |               |                |                         |
| 8                  | ScI-1        |            | BE        | GRAB             |               | 003          | 49°43.12               | 123°52.67 |              | 124       |                          |              | S.P.          |                | SMITH-MACK              |
| 8                  | ScI-2        | 1737       | BE        | ROS              | U.S.          | 004          | 49°41.23               | 123°48.29 | 68           |           | 17-22                    | 6            | H.M.          | ✓              |                         |
|                    |              | 1740       | BO        |                  |               |              | 49°41.23               | 123°48.31 |              | 64        |                          |              |               |                |                         |
|                    |              | 1747       | EN        |                  |               |              | 49°41.23               | 123°48.29 |              |           |                          |              |               |                |                         |
|                    | ScI-2        |            | BE        | GRAB             |               | 005          | 49°41.23               | 123°48.30 |              | 65        |                          |              | S.P.          |                | SMITH-MACK              |
| 8                  | ScI-2.5      | 1910       | BE        | ROS              |               | 006          | 49°43.87               | 123°44.33 | 84           |           | 24-29                    | 6            | "             | ✓              | SHOULD BE STA 2.5 NOT 3 |
|                    |              | 1913       | BO        |                  |               |              | 49°43.87               | 123°44.32 |              | 81        |                          |              |               |                |                         |
|                    |              | 1919       | EN        |                  |               |              | 49°43.90               | 123°44.27 |              |           |                          |              |               |                |                         |
| 8                  | ScI 2.5      |            | BE        | GRAB             |               | 007          | 49°43.87               | 123°44.33 | 81           |           |                          |              |               |                | SMITH-MACK              |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |                         |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |                         |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |                         |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |                         |

## Cast Type:

BOT = Bottle cast, no CTD  
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| Month <u>APR</u> |              |            |           | Year <u>2011</u> |               |              |                        | Ship <u>VECTOR</u> |              |           |                | Cruise ID <u>2011-24</u> |               |                |                |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|--------------------|--------------|-----------|----------------|--------------------------|---------------|----------------|----------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |                    | Bottom Depth | Max Depth | Sample Numbers | # of Bottles             | Watch Keepers | Trans. Cleaned | Comments       |
|                  |              |            |           |                  |               |              | Latitude               | Longitude          |              |           |                |                          |               |                |                |
| 8                | SCI 4.5      | 2139       | BC        | ROS              | U.S.          | 008          | 49° 40.03              | 123° 36.03         | 238          |           | 31-41          | 11                       | H.M.          | ✓              |                |
|                  |              | 2143       | BO        |                  |               |              | 49° 40.05              | 123° 36.04         |              | 235       |                |                          |               |                |                |
|                  |              | 2156       | EN        |                  |               |              | 49° 40.05              | 123° 36.06         |              |           |                |                          |               |                |                |
|                  | SCI 4.5      |            | BC        | GRAB             |               | 009          | 49° 40.05              | 123° 36.04         | 238          |           |                |                          | S.P.          |                | SMITH - MACK   |
| 8                | SCI 4        | 2251       | BC        | ROS              | U.S.          | 010          | 49° 38.07              | 123° 44.49         | 250          |           | 43-52          | 10                       | H.M.          | ✓              | CRASHED @ 176m |
|                  |              | 2256       | BO        |                  |               |              | 49° 38.07              | 123° 44.48         |              | 253       |                |                          |               |                | →              |
|                  | FROM 165 UP  |            | EN        |                  |               | 011          | 49° 38.03              | 123° 44.50         |              |           |                |                          |               |                |                |
| 8                | SCI 4        |            | BC        | GRAB             |               | 012          | 49° 38.07              | 123° 44.49         | 254          |           |                |                          | P.S.          |                | SMITH - MACK   |
| 9                | SCI 3        |            | BC        | GRAB             |               | 013          | 49° 38.80              | 123° 50.61         | 280          |           |                |                          | P.S.          |                | SMITH - MACK   |
| 9                | SCI 3        | 1509       | BC        | ROS              |               | 914          | 49° 38.77              | 123° 50.65         | 280          |           | 54-65          | 12                       | H.M.          | ✓              |                |
|                  |              | 1516       | BO        |                  |               |              | 49° 38.78              | 123° 50.64         |              | 275       |                |                          |               |                |                |
|                  |              | 1534       | EN        |                  |               |              | 49° 38.85              | 123° 50.66         |              |           |                |                          |               |                |                |
| 9                | SCI-5        | 1621       | BC        | ROS              |               | 015          | 49° 33.80              | 123° 47.63         | 227          |           | 67-78          | 12                       | H.M.          | ✓              |                |
|                  |              | 1626       | BO        |                  |               |              | 49° 33.82              | 123° 47.62         |              | 222       |                |                          |               |                |                |
|                  |              | 1639       | EN        |                  |               |              | 49° 33.85              | 123° 47.65         |              |           |                |                          |               |                |                |

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— BLUE SCREEN OF DEATH. 2ND TIME TODAY. 1ST TIME I RESTARTED CAST FROM SURFACE AND OVERWROTE CRASHED FILE - 2ND TIME I STARTED NEW FILE AFTER TRIGGERING 1ST BOTTLE @ DEPTH (WAS 0010.HER - WENT TO 0011.HER) I FORGOT TO TAKE IN THAT BOTTLE TRIP #1 WAS ON 0010.KEX THEREFORE MISSED 150' DEPTH (#1 ALREADY TRIPPED) SO ALL HISHKINS MOVED UP BY ONE.

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|--------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|--------------|--------------|--------------------------|----------------|--------------|---------------|----------------|------------|
| Day                | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |              | Bottom Depth | Max Depth                | Sample Numbers | # of Bottles | Watch Keepers | Trans. Cleaned | Comments   |
|                    |              |            |           |                  |               |              | Latitude               | Longitude    |              |                          |                |              |               |                |            |
| 9                  | ScI-5        | 1          | BE        | GRAB             |               | 016          | 49° 33. 81             | 123° 47. 64  | 242          |                          |                |              | S.P.          |                | SMITH MACK |
| 9                  | ScI-6        | 1719       | BE        | ROS              |               | 017          | 49° 31. 23             | 123° 47. 36  | 114          |                          | 80 - 86        | 7            |               | ✓              |            |
|                    |              | 17 24      | BO        |                  |               |              | 49° 31. 24             | 123° 47. 35  |              | 115                      |                |              |               |                |            |
|                    |              | 17 32      | EN        |                  |               |              | 49° 31. 27             | 123° 47. 32  |              |                          |                |              |               |                |            |
| 9                  | ScI 6        |            | BE        | GRAB             |               | 018          | 49° 31. 25             | 123° 47. 36  | 120          |                          |                |              | S.P.          |                | SMITH MACK |
| 9                  | ScI 6.5      | 1811       | BE        | CTD              |               | 019          | 49° 29. 93             | 123° 45. 29  | 24           |                          | —              | —            | H.M.          | ✓              |            |
|                    |              | 18 12      | BO        |                  |               |              | 49° 29. 94             | 123° 45. 29  |              | 24                       |                |              |               |                |            |
|                    |              | 18 13      | EN        |                  |               |              | 49° 29. 94             | 123° 45. 29  |              |                          |                |              |               |                |            |
| 9                  | ScI 6.5      |            |           | GRAB             |               | 020          | 49° 29. 939            | 123° 45. 295 | 23.3         |                          |                |              | S.P.          |                | SMITH MACK |
| 9                  | ScI 5.5      | 1900       | BE        | CTD              |               | 021          | 49° 32. 84             | 123° 46. 87  | 186          |                          | —              | —            | H.M.          | ✓              |            |
|                    |              | 19 04      | BO        |                  |               |              | 49° 32. 86             | 123° 46. 88  |              | 186                      |                |              |               |                |            |
|                    |              | 19 07      | EN        |                  |               |              | 49° 32. 86             | 123° 46. 89  |              |                          |                |              |               |                |            |
| 9                  | ScI 5.5      |            |           | GRAB             |               | 022          | 49° 32. 86             | 123° 46. 88  | 187.8        |                          |                |              |               |                |            |

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| Month APRIL |              |            |           | Year 2011 |               |              | Ship VECTOR            |             |              |           | Cruise ID 2011-24 |              |               |                |          |
|-------------|--------------|------------|-----------|-----------|---------------|--------------|------------------------|-------------|--------------|-----------|-------------------|--------------|---------------|----------------|----------|
| Day         | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Positional Information |             | Bottom Depth | Max Depth | Sample Numbers    | # of Bottles | Watch Keepers | Trans. Cleaned | Comments |
|             |              |            |           |           |               |              | Latitude               | Longitude   |              |           |                   |              |               |                |          |
| 9           | SCI 3.5      | 1952       | BC        | CTD       |               | 023          | 49° 36.49              | 123° 48.38  | 278          |           | -                 | -            | H.M.          | ✓              |          |
|             |              | 1957       | BO        |           |               |              | 49° 36.48              | 123° 48.39  |              | 265       |                   |              |               |                |          |
|             |              | 2002       | EN        |           |               |              | 49° 36.49              | 123° 48.40  |              |           |                   |              |               |                |          |
| 9           | SCI 3.5      |            |           | CRAB      |               | 024          | 49° 36.50              | 123° 48.39  | 278.6        |           |                   |              |               |                |          |
| 9           | K1-K         |            | MULTIPLE  | GRABS     |               | 025          | 49° 38.204             | 123° 46.667 |              |           |                   |              |               |                |          |
| 9           | K-A          | 2339       | BC        | ROS       |               | 026          | 49° 37.91              | 123° 47.51  | 105          |           | 88- 94            | 7            | H.M.          | ✓              |          |
|             |              | 2341       | BO        |           |               |              | 49° 37.91              | 123° 47.52  |              | 100       |                   |              |               |                |          |
|             |              | 2349       | EN        |           |               |              | 49° 37.90              | 123° 47.57  |              |           |                   |              |               |                |          |
| 10          | K-B          | 0045       | BC        | ROS       |               | 027          | 49° 38.22              | 123° 46.42  | 117          |           | 96- 102           | 7            | H.M.          | ✓              |          |
|             |              | 0048       | BO        |           |               |              | 49° 38.22              | 123° 46.42  |              | 125       |                   |              |               |                |          |
|             |              | 0056       | EN        |           |               |              | 49° 38.22              | 123° 46.43  |              |           |                   |              |               |                |          |
| 10          | SCI-1.5      | 0139       | BC        | ROS       |               | 028          | 49° 40.68              | 123° 50.98  | 270          |           | -                 | -            | H.M.          | ✓              |          |
|             |              | 0144       | BO        |           |               |              | 49° 40.71              | 123° 50.98  |              | 266       |                   |              |               |                |          |
|             |              | 0149       | EN        |           |               |              | 49° 40.75              | 123° 50.98  |              |           |                   |              |               |                |          |

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K1 through K15 taken along 50m & 100m contours upstream & downstream of farm

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|--------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|-----------|--------------|-----------|--------------------------|--------------|---------------|----------------|------------|
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|                    |              |            |           |                  |               |              | Latitude               | Longitude |              |           |                          |              |               |                |            |
| 10                 | ScI-1.5      |            | BC        | GRAB             |               | 029          | 49°40.77               | 123°50.97 |              |           |                          |              | S.P.          |                | SMITH MACH |
| 10                 | C1 to C16    |            | BC        | MULTIPLE GRABS   |               | 030          | 49°47.91               | 124°05.26 |              |           |                          |              | S.P.          |                | SMITH MACH |
| 10                 | C-A          | 1742       | BC        | ROS              | U.S.          | 031          | 49°47.74               | 124°05.30 | 96           |           | 104-110                  | 7            | H.M.          | ✓              |            |
|                    |              | 1746       | BO        |                  |               |              | 49°47.73               | 124°05.31 |              | 144       |                          |              |               |                |            |
|                    |              | 1753       | EN        |                  |               |              | 49°47.72               | 124°05.31 |              |           |                          |              |               |                |            |
| 10                 | C-B          | 2052       | BC        | ROS              | U.S.          | 032          | 49°47.56               | 124°06.34 | 110          |           | 112-118                  | 7            | H.M.          | ✓              |            |
|                    |              | 2056       | BO        |                  |               |              | 49°47.56               | 124°06.35 |              | 120       |                          |              |               |                |            |
|                    |              | 2103       | EN        |                  |               |              | 49°47.55               | 124°06.35 |              |           |                          |              |               |                |            |
| 11                 | B.S-1        | 1405       | BC        | CTD              |               | 033          | 49°38.89               | 124°52.79 | 20           |           | —                        | —            | H.M.          | ✓              |            |
|                    |              | 1406       | BO        |                  |               |              | 49°38.89               | 124°52.79 |              |           |                          |              |               |                |            |
|                    |              | 1407       | EN        |                  |               |              | 49°38.89               | 124°52.79 |              |           |                          |              |               |                |            |
|                    |              |            |           | GRAB             |               | 034          |                        |           |              |           |                          |              | S.P.          |                |            |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |            |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |            |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |            |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |            |
|                    |              |            |           |                  |               |              |                        |           |              |           |                          |              |               |                |            |

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|                  |              |            |           |                  |               |              | Latitude               | Longitude  |              |           |                          |              |               |                |               |
| 11               | BS 2         | 1434       | BC        | ROS              | U.S.          | 035          | 49° 38.41              | 124° 53.65 | 36           |           | 120-126                  | 7            | H.M.          | ✓              |               |
|                  |              | 1436       | BO        |                  |               |              | 49° 38.41              | 124° 53.65 | (36)         | 36        |                          |              |               |                |               |
|                  |              | 1442       | GN        |                  |               |              | 49° 38.40              | 124° 53.66 |              |           |                          |              |               |                |               |
|                  |              |            |           | GRAB             |               | 036          | 49° 38.40              | 124° 53.65 |              |           |                          |              | S.P.          |                | SMITH MACK    |
|                  |              |            |           | CORE             |               | 037          | 49° 38.42              | 124° 53.65 |              |           |                          |              | S.P.          |                | PEDERSON CORE |
| 11               | BS 3         | 1528       | BC        | CTD              |               | 038          | 49° 37.90              | 124° 54.54 | 20           |           | —                        | —            | H.M.          | ✓              |               |
|                  |              | 1530       | BO        |                  |               |              | 49° 37.90              | 124° 54.54 |              | 23        |                          |              |               |                |               |
|                  |              | 1531       | EN        |                  |               |              | 49° 37.90              | 124° 54.54 |              |           |                          |              |               |                |               |
|                  |              |            |           | GRAB             |               | 039          | 49° 37.89              | 124° 54.54 |              |           |                          |              | S.P.          |                | SMITH MACK    |
| 11               | BS 6         | 1610       | BC        | CTD              |               | 040          | 49° 35.61              | 124° 52.62 | 24           |           | —                        | —            | H.M.          | ✓              |               |
|                  |              | 1611       | BO        |                  |               |              | 49° 35.61              | 124° 52.62 |              | 24        |                          |              |               |                |               |
|                  |              | 1612       | GN        |                  |               |              | 49° 35.61              | 124° 52.62 |              |           |                          |              |               |                |               |
|                  |              |            |           | GRAB             |               | 041          | 49° 35.60              | 124° 52.63 |              |           |                          |              | S.P.          |                | SMITH MACK    |
| 11               | BS 5         | 1639       | BC        | ROS              |               | 042          | 49° 35.84              | 124° 51.59 | 44           |           | 128-134                  | 7            | H.M.          | ✓              |               |
|                  |              | 1640       | BO        |                  |               |              | 49° 35.84              | 124° 51.59 |              | 44        |                          |              |               |                |               |
|                  |              | 1648       | GN        |                  |               |              | 49° 35.85              | 124° 51.59 |              |           |                          |              |               |                |               |
|                  |              |            |           | GRAB             |               | 043          |                        |            |              |           |                          |              | S.P.          |                | SMITH MACK    |

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| Month <u>APRIL</u> |              |            | Year <u>2011</u> |           |               | Ship <u>VECTOR</u> |                        |            | Cruise ID <u>2011-24</u> |           |                |              |               |                |               |
|--------------------|--------------|------------|------------------|-----------|---------------|--------------------|------------------------|------------|--------------------------|-----------|----------------|--------------|---------------|----------------|---------------|
| Day                | Station Name | Time (UTC) | Time Code        | Cast Type | Firing Method | Event Number       | Positional Information |            | Bottom Depth             | Max Depth | Sample Numbers | # of Bottles | Watch Keepers | Trans. Cleaned | Comments      |
|                    |              |            |                  |           |               |                    | Latitude               | Longitude  |                          |           |                |              |               |                |               |
| 11                 | BS5          |            | BE               | CORE      |               | 044                |                        |            |                          |           |                |              | S.P.          |                | PEDERSON CORE |
| 11                 | BS4          | 1730       | BE               | CTD       |               | 045                | 49° 36.22              | 124° 50.36 | 21                       |           | —              | —            | H.M.          | ✓              |               |
|                    |              | 1739       | BO               |           |               |                    | 49° 36.22              | 124° 50.36 |                          | 24        |                |              |               |                |               |
|                    |              | 1741       | EN               |           |               |                    | 49° 36.22              | 124° 50.36 |                          |           |                |              |               |                |               |
|                    |              |            | BE               | GRAB      |               | 046                |                        |            |                          |           |                |              | S.A           |                | SMITH MACK    |
| 11                 | BS9          | 1803       | BE               | CTD       |               | 047                | 49° 34.20              | 124° 50.90 | 24                       |           | —              | —            | H.M.          | ✓              |               |
|                    |              | 1810       | BO               |           |               |                    | 49° 34.19              | 124° 50.90 |                          | 26        |                |              |               |                |               |
|                    |              | 1811       | EN               |           |               |                    | 49° 34.19              | 124° 50.89 |                          |           |                |              |               |                |               |
|                    |              |            | BE               | GRAB      |               | 048                |                        |            |                          |           |                |              |               |                | SMITH MACK    |
| 11                 | BS8          | 1903       | BE               | ROS       |               | 049                | 49° 34.14              | 124° 51.59 | 44                       |           | 136-142        | 7            | H.M.          | ✓              |               |
|                    |              | 1906       | BO               |           |               |                    | 49° 34.14              | 124° 51.59 |                          | 48        |                |              |               |                |               |
|                    |              | 1912       | EN               |           |               |                    | 49° 34.13              | 124° 51.57 |                          |           |                |              |               |                |               |
|                    |              |            | BE               | GRAB      |               | 050                |                        |            |                          |           |                |              | S.P.          |                | SMITH MACK    |
|                    |              |            | BE               | CORE      |               | 051                |                        |            |                          |           |                |              | S.P.          |                | PEDERSON CORE |

## Cast Type:

BOT = Bottle cast, no CTD  
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SET = Fish Set

## USW

= Sea Water Loop  
MOR = Mooring  
NET = Plankton Net Haul  
DRF = Drifter

## Bottle Firing Method:

US = Up / Stop  
UN = Up / No stop  
DN = Down / No stop

## Notes:

## Time Code:

BE = Beginning Time of Cast  
BO = Bottom Time of Cast  
EN = End Time of Cast  
DE = Deployment Time  
MR = Messenger Release Time  
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Transmissometer to be cleaned before each cast, do not use Ammonia products

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| Month <u>APRIL</u> |              |            |           | Year <u>2011</u> |               |              | Ship <u>VECTOR</u>     |            |              |           | Cruise ID <u>2011-24</u> |              |               |                |            |
|--------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|------------|--------------|-----------|--------------------------|--------------|---------------|----------------|------------|
| Day                | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |            | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch Keepers | Trans. Cleaned | Comments   |
|                    |              |            |           |                  |               |              | Latitude               | Longitude  |              |           |                          |              |               |                |            |
| 11                 | BS-7         | 2006       | BE        | CTD              |               | 052          | 49° 34.02              | 124° 52.37 | 18           |           | —                        | —            | H.M.          | ✓              |            |
|                    |              | 2008       | BO        |                  |               |              | 49° 34.01              | 124° 52.38 |              |           |                          |              |               |                |            |
|                    |              | 2009       | EN        |                  |               |              | 49° 34.00              | 124° 52.38 |              |           |                          |              |               |                |            |
|                    |              |            | BE        | GRAB             |               | 53           |                        |            |              |           |                          |              | S.P.          |                | SMITH MACK |
| 12                 | BS 10.5      | 0044       | BE        | CTD              |               | 054          | 49° 32.53              | 124° 51.15 | 36           |           | —                        | —            | H.M.          | ✓              |            |
|                    |              | 0045       | BO        |                  |               |              | 49° 32.53              | 124° 51.15 |              | 35        |                          |              |               |                |            |
|                    |              | 0046       | EN        |                  |               |              | 49° 32.53              | 124° 51.16 |              |           |                          |              |               |                |            |
|                    |              |            | BE        | GRAB             |               | 055          |                        |            |              |           |                          |              | S.P.          |                | SMITH MACK |
| 12                 | BS 11        | 0059       | BE        | ROS              |               | 056          | 49° 32.54              | 124° 50.56 | 47           |           | 144 - 156                | 7            | H.M.          | ✓              |            |
|                    |              | 0101       | BO        |                  |               |              | 49° 32.53              | 124° 50.57 |              | 50        |                          |              |               |                |            |
|                    |              | 0108       | EN        |                  |               |              | 49° 32.52              | 124° 50.60 |              |           |                          |              |               |                |            |
|                    |              |            | BE        | GRAB             |               | 057          |                        |            |              |           |                          |              | S.P.          |                | SMITH MACK |
| 12                 | BS 12        | 0131       | BE        | CTD              |               | 058          | 49° 32.54              | 124° 50.31 | 37           |           | —                        | —            | H.M.          | ✓              |            |
|                    |              | 0132       | BO        |                  |               |              | 49° 32.54              | 124° 50.30 |              | 28        |                          |              |               |                |            |
|                    |              | 0134       | EN        |                  |               |              | 49° 32.54              | 124° 50.30 |              |           |                          |              |               |                |            |

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| Month APRIL |              |            |           | Year 2011 |               |              | Ship VECTOR            |            |              |           | Cruise ID 2011-24 |              |               |                |               |
|-------------|--------------|------------|-----------|-----------|---------------|--------------|------------------------|------------|--------------|-----------|-------------------|--------------|---------------|----------------|---------------|
| Day         | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Positional Information |            | Bottom Depth | Max Depth | Sample Numbers    | # of Bottles | Watch Keepers | Trans. Cleaned | Comments      |
|             |              |            |           |           |               |              | Latitude               | Longitude  |              |           |                   |              |               |                |               |
| 12          | BS 12        |            |           | GRAB      |               | 059          |                        |            |              |           |                   |              | S.P.          |                | SMITH MACK    |
| 12          | BS 15        | 1356       | BC        | CTD       |               | 060          | 49° 30.58              | 124° 49.30 | 16           |           | —                 | —            | H.M.          | ✓              |               |
|             |              | 1358       | BO        |           |               |              | 49° 30.58              | 124° 49.30 |              | 23        |                   |              |               |                |               |
|             |              | 1400       | EN        |           |               |              | 49° 30.59              | 124° 49.30 |              |           |                   |              |               |                |               |
|             |              |            | BC        | GRAB      |               | 061          |                        |            |              |           |                   |              | S.P.          |                | SMITH MACK    |
| 12          | GS 11        |            | BC        | CORE      |               | 062          |                        |            |              |           |                   |              | S.P.          |                | PEDERSON CORE |
| 12          | GS 14        | 1452       | BC        | ROS       |               | 063          | 49° 31.05              | 124° 48.74 | 44           |           | 152-158           | 7            | H.M.          | ✓              |               |
|             |              | 1455       | BO        |           |               |              | 49° 31.05              | 124° 48.74 |              |           |                   |              |               |                |               |
|             |              | 1502       | EN        |           |               |              | 49° 31.06              | 124° 48.75 |              |           |                   |              |               |                |               |
|             |              |            | BC        | GRAB      |               | 064          |                        |            |              |           |                   |              | S.P.          |                | SMITH MACK    |
|             |              |            | BC        | CORE      |               | 065          |                        |            |              |           |                   |              | S.P.          |                | PEDERSON CORE |
| 12          | GS 13        | 1535       | BC        | CTD       |               | 066          | 49° 31.34              | 124° 48.42 | 42           |           | —                 | —            | H.M.          | ✓              |               |
|             |              | 1537       | BO        |           |               |              | 49° 31.35              | 124° 48.43 |              | 44        |                   |              |               |                |               |
|             |              | 1538       | EN        |           |               |              | 49° 31.35              | 124° 48.43 |              |           |                   |              |               |                |               |
|             |              |            | BC        | GRAB      |               | 067          |                        |            |              |           |                   |              | S.P.          |                | SMITH MACK    |

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| Month APRIL |              |            |           | Year 2011-24 |               |              | Ship VECTOR            |            |              | Cruise ID 2011-24 |                |              |               |                |                                   |
|-------------|--------------|------------|-----------|--------------|---------------|--------------|------------------------|------------|--------------|-------------------|----------------|--------------|---------------|----------------|-----------------------------------|
| Day         | Station Name | Time (UTC) | Time Code | Cast Type    | Firing Method | Event Number | Positional Information |            | Bottom Depth | Max Depth         | Sample Numbers | # of Bottles | Watch Keepers | Trans. Cleaned | Comments                          |
|             |              |            |           |              |               |              | Latitude               | Longitude  |              |                   |                |              |               |                |                                   |
| 12          | BS 16        | 1607       | BE        | CTD          |               | 068          | 49° 29.24              | 124° 45.74 | 41           |                   | —              | —            | H.M.          | ✓              | BLUE SCREEN OF DEATH → NO UPGRAST |
|             |              | 1609       | BO        |              |               |              | 49° 29.27              | 124° 45.73 |              | 45                |                |              |               |                |                                   |
|             |              | 16?        | EN        |              |               |              | 49° 29.?               | 124° 45.?  |              |                   |                |              |               |                |                                   |
|             |              |            | BE        | GRAB         |               | 069          |                        |            |              |                   |                |              | S.P.          |                | SMITH MACK                        |
| 12          | BS 17        | 1631       | BE        | ROS          |               | 070          | 49° 29.03              | 124° 46.19 | 51           |                   | 160 - 166      | 17           | H.M.          | ✓              |                                   |
|             |              | 1633       | BO        |              |               |              | 49° 29.03              | 124° 46.18 |              | 54                |                |              |               |                |                                   |
|             |              | 1640       | EN        |              |               |              | 49° 29.04              | 124° 46.16 |              |                   |                |              |               |                |                                   |
|             |              |            | BE        | GRAB         |               | 071          |                        |            |              |                   |                |              | S.P.          |                | SMITH MACK                        |
|             |              |            | BE        | CORE         |               | 072          |                        |            |              |                   |                |              | S.P.          |                | PEDERSON CORE                     |
| 12          | BS 18        | 1733       | BE        | CTD          |               | 073          | 49° 28.92              | 124° 46.52 | 24           |                   | —              | —            | H.M.          | ✓              |                                   |
|             |              | 1735       | BO        |              |               |              | 49° 28.93              | 124° 46.52 |              | 26                |                |              |               |                |                                   |
|             |              | 1737       | EN        |              |               |              | 49° 28.92              | 124° 46.52 |              |                   |                |              |               |                |                                   |
|             |              |            | BE        | GRAB         |               | 074          |                        |            |              |                   |                |              | S.P.          |                | SMITH MACK                        |
| 12          | BS 19        | 1759       | BE        | CTD          |               | 075          | 49° 28.03              | 124° 45.21 | 17           |                   | —              | —            | H.M.          |                |                                   |
|             |              | 1800       | BO        |              |               |              | 49° 28.03              | 124° 45.22 |              | 19                |                |              |               |                |                                   |
|             |              | 1801       | EN        |              |               |              | 49° 28.04              | 124° 45.22 |              |                   |                |              |               |                |                                   |
|             |              |            | BE        | GRAB         |               | 076          |                        |            |              |                   |                |              | S.P.          |                | SMITH MACK                        |

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| Month APRIL |                  |                 | Year 2011     |                 |               |                | Ship VECTOR            |                       |               |               | Cruise ID 2011-24    |              |                 |                |                                               |
|-------------|------------------|-----------------|---------------|-----------------|---------------|----------------|------------------------|-----------------------|---------------|---------------|----------------------|--------------|-----------------|----------------|-----------------------------------------------|
| Day         | Station Name     | Time (UTC)      | Time Code     | Cast Type       | Firing Method | Event Number   | Positional Information |                       | Bottom Depth  | Max Depth     | Sample Numbers       | # of Bottles | Watch Keepers   | Trans. Cleaned | Comments                                      |
|             |                  |                 |               |                 |               |                | Latitude               | Longitude             |               |               |                      |              |                 |                |                                               |
| 12          | BS 20            | 1815            | BE            | ROS             |               | 077            | 49° 28.34              | 124° 44.84            | 44            |               | 168 - 174            | 7            | H.M.            | ✓              |                                               |
|             |                  | 1818            | BO            |                 |               |                | 49° 28.34              | 124° 44.82            |               | 45            |                      |              |                 |                |                                               |
|             |                  | 1824            | EN            |                 |               |                | 49° 28.34              | 124° 44.86            |               |               |                      |              |                 |                |                                               |
|             |                  |                 | BE            | GRAB            |               | 078            |                        |                       |               |               |                      |              | S.P.            |                | SMITH MACK                                    |
|             |                  |                 | BE            | CORE            |               | 079            |                        |                       |               |               |                      |              | S.P.            |                | PEDERSON CORE                                 |
| 12          | BS 21            | 1940            | BE            | CTD             |               | 080            | 49° 28.58              | 124° 44.57            | 18            |               | —                    | —            | H.M.            | ✓              |                                               |
|             |                  | 1942            | BO            |                 |               |                | 49° 28.58              | 124° 44.56            |               | 22            |                      |              |                 |                |                                               |
|             |                  | 1943            | EN            |                 |               |                | 49° 28.59              | 124° 44.55            |               |               |                      |              |                 |                |                                               |
|             |                  |                 | BE            | GRAB            |               | 081            |                        |                       |               |               |                      |              |                 |                | SMITH MACK                                    |
| 12          | <del>BS 22</del> | <del>2007</del> | <del>BE</del> | <del>ROS</del>  |               | <del>082</del> | <del>49° 28.23</del>   | <del>124° 41.82</del> | <del>36</del> |               | <del>176 - 181</del> | <del>6</del> | <del>H.M.</del> |                | <del>BLUE SCREEN OF DEATH - CANCEL CAST</del> |
|             |                  | <del>20</del>   | <del>BO</del> |                 |               |                | <del>49° 28.</del>     | <del>124° 41.</del>   |               | <del>36</del> |                      |              |                 |                |                                               |
|             |                  | <del>20</del>   | <del>EN</del> |                 |               |                | <del>49° 28.</del>     | <del>124° 41.</del>   |               |               |                      |              |                 |                |                                               |
|             |                  |                 | <del>BE</del> | <del>GRAB</del> |               | <del>083</del> |                        |                       |               |               |                      |              |                 |                | <del>SMITH MACK</del>                         |
| 12          | BS 23            | 2031            | BE            | ROS             |               | 084/085        | 49° 27.72              | 124° 39.96            | 56            |               | 183-                 | 7            | H.M.            | ✓              |                                               |
|             |                  | 2034            | BO            |                 |               |                | 49° 27.73              | 124° 39.96            |               |               |                      |              |                 |                |                                               |
|             |                  | 2045            | EN            |                 |               |                | 49° 27.73              | 124° 39.96            |               |               |                      |              |                 |                |                                               |
|             |                  |                 | BE            | GRAB            |               | 087            |                        |                       |               |               |                      |              | S.P.            |                | SMITH MACK                                    |

COMPUTER CRASHED - 3<sup>RD</sup> TIME TODAY - SIMPLY DIED - NO EXPLANATION - 1<sup>ST</sup> TIME, STILL ON DECK - REBOOT  
2<sup>ND</sup> @ DEPTH ON CTD ONLY CAST

SO RECORDED DOWNCAST ONLY - 3<sup>RD</sup> ON ROSETTE CAST SO REBOOTED, ADVANCED DATAFILE # CONTINUED UP CAST (3 HISKINS ON FILE 84  
4 ON FILE 85)

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|-------------|--------------|------------|-----------|-----------|---------------|--------------|------------------------|------------|--------------|-----------|-------------------|--------------|---------------|----------------|------------|
| Day         | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Positional Information |            | Bottom Depth | Max Depth | Sample Numbers    | # of Bottles | Watch Keepers | Trans. Cleaned | Comments   |
|             |              |            |           |           |               |              | Latitude               | Longitude  |              |           |                   |              |               |                |            |
| 12          | BS 24        | 2222       | BE        | ROS       |               | 088          | 49° 39.80              | 124° 51.14 | 51           |           | 191-197           | 7            | H.M.          | ✓              |            |
|             |              | 2225       | BO        |           |               |              | 49° 39.80              | 124° 51.15 |              | 54        |                   |              |               |                |            |
|             |              | 2231       | EN        |           |               |              | 49° 39.80              | 124° 51.14 |              |           |                   |              |               |                |            |
|             |              |            | BE        | GRAB      |               | 089          |                        |            |              |           |                   |              | S.P.          |                | SMITH MACK |
| 12          | BS 25        | 2301       | BE        | ROS       |               | 090          | 49° 38.95              | 124° 50.68 | 53           |           | 199-205           | 7            | H.M.          | ✓              |            |
|             |              | 2304       | BO        |           |               |              | 49° 38.93              | 124° 50.66 |              |           |                   |              |               |                |            |
|             |              | 2311       | EN        |           |               |              | 49° 38.93              | 124° 50.70 |              |           |                   |              |               |                |            |
|             |              |            | BE        | GRAB      |               | 091          |                        |            |              |           |                   |              |               |                |            |
| 12          | BS 26        | 2337       | BE        | ROS       |               | 092          | 49° 38.08              | 124° 49.82 |              |           | 207-213           | 7            | H.M.          | ✓              |            |
|             |              | 2340       | BO        |           |               |              | 49° 38.08              | 124° 49.84 |              |           |                   |              |               |                |            |
|             |              | 2346       | EN        |           |               |              | 49° 38.08              | 124° 49.82 |              |           |                   |              |               |                |            |
|             |              |            | BE        | GRAB      |               | 093          |                        |            |              |           |                   |              |               |                |            |

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