

# DAILY LOG BOOK

MISSION  
NUMBER

2004-09

DATE:

From: 24 MAY 2004

to: 1 JUNE 2004

VESSEL:

JOHN P TULLY

PROJECT:

LA PEROUSE

INSTITUTE OF OCEAN SCIENCES  
OCEAN SCIENCES AND PRODUCTIVITY DIVISION  
SIDNEY, BC, CANADA

## Cruise 2004-09: La Pérouse May 2004

### CTD/Rosette:

53 casts done, 0001 to 0122

24 'real rosette casts', 29 CTD casts (with 5m Niskin)

The first cast was done with the Arctic Rosette/CTD/Deck Unit package.

All the other casts were done with CTD 0585 and deck unit 0508; Mid-ship winch; CTD/rosette package. (no stand-alone CTDs were done, although some casts were called "CTD" in the log book)

Cast 0001: Arctic CTD/Rosette, UBC and UVic sampling, only P,T,S.

Cast 0002: OSAP CTD/Rosette. OSAP and UBC/UVic sampling.

Casts 0002 – 0011: Transmissometer, Oxygen, Fluorometer – NO PAR.

Casts 0013 – 0019: PAR sensor added.

Casts 0025 – 0032: NO PAR (but PAR channel), bad transmissometer signal.

Cast 0035: no PAR channel/data, negative oxygen values, something to do with config file (computer crashed prior to cast)

Casts 0038 – 0079: PAR sensor (0079 bad transmissometer signal)

Casts 0083 – 0122: NO PAR (but PAR channel)

Cast 0003: T and S spiky?

Cast 0008: weird trace, 1 spike in T, Trans spiky.

Cast 0011 is cast 0012 in logbook (station C1)

Cast 0040: note in logbook saying "saved at 0003, needs renaming". **Has been renamed already.** (0003 was fortunately backed-up).

Cast 0044: changed oxy/trans Y cable.

Cast 0115: BE latitude is 48 03, not 49 03

I only had time to check the data to cast 0091, but I don't think that the last

casts were really spiky.

The salinity, nutrient, and chlorophyll data should be available soon after the end of the cruise.

Marie Robert

|                    |             |       |            |                  |
|--------------------|-------------|-------|------------|------------------|
| Fluorometer: Model |             | _____ | s/n: _____ | P, S or NO pump? |
| Oxygen sensor:     | Cable gain: | _____ | s/n: _____ | P, S or NO pump? |
| PAR sensor:        | Model:      | _____ | s/n: _____ | P, S or NO pump? |
| Other sensors:     | Model:      | _____ | s/n: _____ | P, S or NO pump? |
| Other sensors:     |             | _____ | s/n: _____ | P, S or NO pump? |
| Other sensors:     |             | _____ | s/n: _____ | P, S or NO pump? |
| Other sensors:     |             | _____ | s/n: _____ | P, S or NO pump? |

CTD calibration bottle location (height above CTD in metres): \_\_\_\_\_

|                 |               |                |                |
|-----------------|---------------|----------------|----------------|
| Captain:        | Bill Noon     | First Officer: | Garry McDowell |
| Second Officer: | Shane Lowndes | Third Officer: | Tom Moxey      |

Mission Participants / Agencies: IOS

| Scientific Personnel: |       | Party Chief: |        |
|-----------------------|-------|--------------|--------|
| Name                  | Watch | Cabin        | Name   |
|                       |       | Mare         | Robert |

| Name             | Watch | Cabin | Name | Watch | Cabin |
|------------------|-------|-------|------|-------|-------|
| Stephanie King   | 12-4  | B     |      |       |       |
| Moira Galbraith  | 4-8   | C     |      |       |       |
| Doug Anderson    | 4-8   | D     |      |       |       |
| Wendy Richardson |       | E     |      |       |       |
| Doug Moore       | 8-12  | F     |      |       |       |
| Andrew MacDonald | 4-8   | G     |      |       |       |
| Julian Theriault | 8-12  | G     |      |       |       |
| Steve Romaine    | 12-4  | H     |      |       |       |
| Darren Tuels     | 8-12  | A     |      |       |       |
| Doug Yelland     | 12-4  | I     |      |       |       |

**Second leg of Mission:**

| Name | Watch | Cabin | Party Chief: |
|------|-------|-------|--------------|
|      |       |       |              |

[illegible]

Data logging computer: PC02328 / Shuttle Case

Data acquisition program: Seawave Ver 5.30a

CTD deck unit make: Seabird model: Model 11plus serial number: 0508

## Primary CTD

Make: Scabird model: 911 plus serial number: 0585

Primary temperature serial number: 2023\_20-Dec-03

Primary conductivity serial number: 1763, 19-Dec-03

Secondary temperature serial number: 2095, 05-5-p-03

Secondary conductivity serial number: 1764, 05-389-03

Transmissometer: Wetlabs Model: C-Star s/n: 333DR - 2-Jul-04

Fluorometer: Model Seapoint Cable gain: 10x s/n: 2229 P, S or NO pump? NO

Oxygen sensor: Seabird Model: 43 s/n: 0047 **P** S or NO pump?

PAR sensor: Biospherical Model: Underwater s/n: HK/K

Other sensors: Pentos Altimeter s/n: 1024 P, S or NO pump? NO

Other sensors: \_\_\_\_\_  
 P. S or NO pump? \_\_\_\_\_  
 s/n: \_\_\_\_\_

|                |       |            |                       |
|----------------|-------|------------|-----------------------|
| Other sensors: | _____ | s/n: _____ | P S or NO pump? _____ |
| Other sensors: | _____ | s/n: _____ | P S or NO pump? _____ |

Other sensors: \_\_\_\_\_ S/n: \_\_\_\_\_ P S or NO pump?

Other sensors: \_\_\_\_\_ S/n: \_\_\_\_\_ P S or NO pump?

## Secondary CTD

Make: \_\_\_\_\_ model: \_\_\_\_\_ serial number: \_\_\_\_\_

**Primary temperature serial number:** \_\_\_\_\_

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Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

| Transmissometer: | Model: | s/n: |
|------------------|--------|------|
|                  |        |      |

|                    |             |     |
|--------------------|-------------|-----|
| Fluorometer: Model | Cable gain: | s/n |
|                    |             |     |

Oxygen sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

PAR sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

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Other sensors: s/n

Other sensors: s/n:

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

CTD calibration bottle location (height above CTD in metres):

## DAILY LOG

## Ocean Sciences and Productivity Division

## INSTITUTE OF OCEAN SCIENCES

| Month MAY |               |                  |               | Year 2004            |               |                | Ship JOHN P TULLY |            |              | Cruise ID 2004-09 |                |              |               |                |                     |
|-----------|---------------|------------------|---------------|----------------------|---------------|----------------|-------------------|------------|--------------|-------------------|----------------|--------------|---------------|----------------|---------------------|
| Day       | Station Name  | Time (UTC)       | Time Code     | Cast Type            | Firing Method | Event Number   | Position          |            | Bottom Depth | Max Depth         | Sample Numbers | # of Bottles | Watch keepers | Trans. cleaned | Comments            |
|           |               |                  |               |                      |               |                | Latitude          | Longitude  |              |                   |                |              |               |                |                     |
| 25        | SI03          | 23:20            | BE            | ROS                  |               | 001            | 48 35.70          | 123 30.17  | 222          |                   |                |              |               |                |                     |
|           |               | 23:27            | BO            |                      |               |                | 48 35.62          | 123 29.98  |              | 218               | 1-24           | 24           | DA            |                |                     |
|           |               | 24:00            | EN            |                      |               |                | 48 35.58          | 123 30.08  |              |                   |                |              |               |                |                     |
| 26        | SI03          | 01:03            | BE            | ROS                  |               | 002            | 48 35.48          | 123 30.28  | 226          |                   |                |              |               |                |                     |
|           |               | 01:09            | BO            |                      |               |                | 48 35.41          | 123 30.24  |              | 215               | 25-38          | 14           | DA            |                |                     |
|           |               | 01:27            | EN            |                      |               |                | 48 35.46          | 123 30.38  |              |                   |                |              |               |                |                     |
| 26        | JF1           | 9:02             |               | 100P                 |               |                | 48 15.94          | 123 29.34  | 170          |                   |                |              | SK            |                | Nuts, Sal, chl      |
| 26        | JF2           | 10:48            |               | 100P                 |               |                | 48 18.06          | 124 00.02  | 189          |                   |                |              | SK/DA         |                | Nuts, Sal, chl.     |
| 26        | JF3           | 12:45            |               | 100P                 |               |                | 48 27.26          | 124 31.02  | 230          |                   |                |              | MC/PC         |                | Nuts, Sal, Chl      |
| 26        | JF4           | 14:30            |               | 100P                 |               |                | 48 32.24          | 124 59.76  | 56           |                   |                |              | MC/AM         |                | " " "               |
| 26        | E1            | 14:57            | BE            | ROS                  |               | 003            | 48 31.675         | 125 03.388 | 108          |                   | 39-45          | 7            |               |                |                     |
|           |               | 15:08            | BO            |                      |               |                | 48 31.692         | 125 03.426 |              | 99                |                |              |               |                |                     |
|           |               | 15:19            | EN            |                      |               |                | 48 31.709         | 125 03.536 |              |                   |                |              |               |                |                     |
| 26        | E1            | 15:40            | BE            | NET Bongo            |               | 004            | 48 31.686         | 125 03.772 |              | 100               |                |              |               |                | Surf 1602 To 95m    |
|           | <del>E1</del> | <del>15:40</del> | <del>BE</del> | <del>NET Bongo</del> |               | <del>005</del> |                   |            |              |                   |                |              |               |                | No hyd. hoses BONGO |
|           | C2            | 17:43            |               | NET                  |               | 005            | 48 25.584         | 125 07.835 | 156          | 145               |                |              |               |                | To                  |
|           | C2            | 17:58            | BE            | ROS                  |               | 006            | 48 25.463         | 125 08.007 | 159          | 150               | 46-52          |              |               |                |                     |
|           |               |                  | BO            |                      |               |                | 48 25.463         | 125 08.080 |              |                   |                |              |               |                |                     |
|           |               |                  | EN            |                      |               |                | 48 25.469         | 125 08.118 |              |                   |                |              |               |                |                     |

Cast type:

BOT = bottle cast, no CTD  
 CTD = CTD without Rosette  
 ROS = Rosette plus CTD

USW = sea water loop

MOR = mooring  
 NET = net haul  
 DRF = drifter

bottle firing method:

US = up / stop  
 UN = up / no stop  
 DN = down / no stop

Time Code

BE = beginning time of cast  
 BO = bottom time of cast  
 EN = end time of cast

DE = deployment time

MR = messenger release time  
 RE = recover mooring time

Transmissometer to be cleaned for each cast, do not use Ammonia products

28 May 2003

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First cast (0001) in Saanich Inlet is a test cast for the Archie Rosette.  
UBC + UVIC are sampling that rosette.

The 2nd cast (0002) in Saanich Inlet is done with OSAP Rosette

2000 PDT. 25 MAY - took CPR out of box, removed cassette from tow body, put 100 ml buffered 100% Formalin in sample tank

- noticed wire from fusee drum to take up drum was not very tight
- called Hugh at home - he suggested making sure wire does not 'spring' off fusee drum
- put cassette back into tow body
- but pear would not mesh properly; could not push cassette in to make cover flush with body.
- tightened bolts as much as could; cover very close to closed. *AM.*

0930 - PROCEED TO CZ WHILE CREW ATTACHES hydraulics to CPR winch, attaches block to A frame, prepares CPR for deployment at CZ



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| Month MAY |              |            |           | Year 2004 |               |              | Ship JOHN P TULLY |           |              |           | Cruise ID 2004-09 |              |               |                |                                     |
|-----------|--------------|------------|-----------|-----------|---------------|--------------|-------------------|-----------|--------------|-----------|-------------------|--------------|---------------|----------------|-------------------------------------|
| Day       | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position          |           | Bottom Depth | Max Depth | Sample Numbers    | # of Bottles | Watch keepers | Trans. cleaned | Comments                            |
|           |              |            |           |           |               |              | Latitude          | Longitude |              |           |                   |              |               |                |                                     |
| 26        | C2           | 1822       | BE        | CPR       |               | 007          | 48 25.27          | 125 8.54  | 158          | 7.0       |                   |              |               |                | 70m CABLE OUT. UNDERWAY TO NEXT ST. |
|           | C3           | 1910       | EN        | CPR       |               | 007          | 48 23.33          | 125 19.51 |              |           |                   |              |               |                |                                     |
| 26        | C3           | 1932       | BE        | ROS       |               | 008          | 48 23.42          | 125 20.69 | 120          |           | 53-60             | 8            |               |                |                                     |
| 1         | /            | 1935       | BO        | /         |               | /            | 48 23.44          | 125 20.71 |              | 115       |                   |              |               |                |                                     |
| 1         | /            | 1947       | EN        | /         |               | /            | 48 23.45          | 125 20.78 |              |           |                   |              |               |                |                                     |
|           | C3           | 2000       | BO        | NET       |               | 009          | 48 23.45          | 125 20.79 |              |           |                   |              |               |                |                                     |
| 26        | C3           | 2014       | BE        | CPR       |               | 010          | 48 23.79          | 125 20.36 |              | 7.0       |                   |              |               |                | 70m cable out 4/way to C1           |
|           |              | 2052       | EN        |           |               | 010          | 48 28.64          | 125 15.60 |              |           |                   |              |               |                |                                     |
| 26        | C1           | 2109       | BO        | NET       |               | 011          | 48 28.99          | 125 15.28 | 150          | 140       |                   |              |               |                |                                     |
| 26        | C1           | 2127       | BE        | ROS       |               | 012          | 48 29.06          | 125 15.27 | 152          |           |                   | 1            |               |                |                                     |
|           |              | 2130       | BO        | /         |               | /            | 48 29.07          | 125 15.28 |              | 145       | 61                |              |               |                |                                     |
|           |              | 2134       | EN        | /         |               | /            | 48 29.10          | 125 15.30 |              |           |                   |              |               |                |                                     |
| 26        | C1           | 2256       | BE        | CPR       |               | 012          | 48 29.21          | 125 15.46 |              | 7.0       |                   |              |               |                | 70m out 4/way TO B8.                |
|           |              | 2315       | EN        |           |               |              | 48 34.49          | 125 30.00 |              |           |                   |              |               |                |                                     |

Cast type:

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bottle firing method:

US = up / stop

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Time Code

BE = beginning time of cast

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CPR deployment - asked for ship to come up to min 5-7 KTS for deployment - let out 70m cable

- brought ship spd up to full - CPR seemed to be towing properly

CPR recovery

- as ship slowed, pulled CPR in - on deck, lowered CPR onto yellow box

- opened side panel, removed cassette, marked bottom of window screen with purple pencil

- advanced screen/silk by winding wire forward - wire tightened to proper 'twang'

SR. - marked top of silk in window with BLACK pencil

- replaced cassette in CPR for deployment.

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| Month <u>MAY</u> |              |            |           | Year <u>2004</u> |               |              | Ship <u>TULLY</u> |           |              | Cruise ID <u>2004-09</u> |                |              |               |                |                        |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|-------------------|-----------|--------------|--------------------------|----------------|--------------|---------------|----------------|------------------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Position          |           | Bottom Depth | Max Depth                | Sample Numbers | # of Bottles | Watch keepers | Trans. cleaned | Comments               |
|                  |              |            |           |                  |               |              | Latitude          | Longitude |              |                          |                |              |               |                |                        |
| 26               | B8           | 23:28      | BE        | ROS              |               | 13           | 48 35.50          | 125 29.99 | 119          |                          | 62             | 1            | MC/AM         | ✓              |                        |
|                  |              | 23:31      | BO        |                  |               |              | 48 34.48          | 125 29.97 |              | 109                      |                |              |               |                | Nisk 1 - Sal, CHL, NUT |
|                  |              | 23:34      | EN        |                  |               |              | 48 34.50          | 125 30.01 |              |                          |                |              |               |                |                        |
| 26               | B8           | 23:40      | BE        | NET              |               | 14           | 48 34.42          | 125 30.04 | 118          | 100                      |                |              |               |                |                        |
| 26               | B8           | 23:48      | BE        | CPR              |               | 15           | 48 34.00          | 125 30.71 |              |                          |                |              |               |                |                        |
|                  |              | 00:28      | EN        |                  |               |              | 48 32.28          | 125 34.63 |              |                          |                |              |               |                |                        |
| 26               | B7           | 00:54      | BE        | NET              |               | 16           | 48 31.94          | 125 34.49 | 80           | 70                       | 63             |              | MC/AM         | ✓              |                        |
| 27               | B7           | 01:06      | BE        | ROS              |               | 17           | 48 32.06          | 125 35.44 | 80           |                          |                |              |               |                |                        |
|                  |              | 01:08      | BO        |                  |               |              | 48 32.01          | 125 35.14 |              | 70                       | 63             | 1            | MC/AM         |                | NISK 1 - SAL, CHL, NUT |
|                  |              | 01:11      | EN        |                  |               |              | 48 31.99          | 125 35.43 |              |                          |                |              |               |                |                        |
| 27               | B7           | 01:22      | BE        | CPR              |               | 18           | 48 31.89          | 125 35.62 |              |                          |                |              |               |                |                        |
|                  |              | 03:12      | EN        |                  |               |              | 48 22.99          | 126 02.63 |              |                          |                |              |               |                |                        |
| 27               | A2           | 03:37      | BE        |                  |               | 19           | 48 22.74          | 126 03.88 | 346          |                          | 64             | 1            |               |                | Nisk @ 5m              |
|                  |              | 03:43      | BO        |                  |               |              | 48 22.75          | 126 03.86 |              |                          |                |              |               |                |                        |
|                  |              | 03:49      | EN        |                  |               |              | 48 22.68          | 126 03.82 |              |                          |                |              |               |                |                        |
| 27               |              | 04:08      | BO        | NET              |               | 20           | 48 22.71          | 126 03.84 | 346          | 250                      |                |              |               |                | BONGO TO 250m          |
| 27               |              | 04:25      | BE        | CPR              |               | 21           | 48 22.53          | 126 04.33 |              |                          |                |              |               |                |                        |
|                  |              | 05:24      | EN        |                  |               |              | 48 22.34          | 126 18.42 |              |                          |                |              |               |                |                        |

## Cast type:

BOT = bottle cast, no CTD  
CTD = CTD without Rosette  
ROS = Rosette plus CTD

USW = sea water loop  
MOR = mooring  
NET = net haul  
DRF = drifter

## bottle firing method:

US = up / stop  
UN = up / no stop  
DN = down / no stop

## Time Code

BE = beginning time of cast  
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Transmissometer to be cleaned for each cast, do not use Ammonia products

28 May 2003  
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← CAUGHT SMALL DOGFISH ON THE CRR FRAME, SHE WAS DRAPPED OVER FRONT RIGGING UNTIL A SURFACE WAVE FLOPPED HER INTO THE PROPELLER END, DON'T THINK IT INTERFERED WITH THE SAMPLING, SHE WAS RELEASED

→ samples didn't get taken.

## DAILY LOG

## Ocean Sciences and Productivity Division

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| Month MAY |              |            |           | Year 2004 |               |              |          | Ship JOHN A TULLY |              |           |                | Cruise ID 2004-09 |               |                |                                  |
|-----------|--------------|------------|-----------|-----------|---------------|--------------|----------|-------------------|--------------|-----------|----------------|-------------------|---------------|----------------|----------------------------------|
| Day       | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position |                   | Bottom Depth | Max Depth | Sample Numbers | # of Bottles      | Watch keepers | Trans. cleaned | Comments                         |
|           |              |            |           |           |               |              | Latitude | Longitude         |              |           |                |                   |               |                |                                  |
| 27        | LC10         | 0654       |           | NET       |               | 22           | 48 22.63 | 126 19.90         |              | 250       |                |                   |               |                | BIONESS.                         |
|           |              |            |           | /Bio      |               |              |          |                   |              |           |                |                   |               |                |                                  |
| 27        | LC10-12      | 0735       |           | CPR       | BE            | 23           | 48 23.90 | 126 21.61         |              |           |                |                   |               |                |                                  |
|           |              | 9:10       |           |           | EN            |              | 48 14.46 | 126 37.573        |              |           |                |                   |               |                |                                  |
|           |              |            |           |           |               |              |          |                   |              |           |                |                   |               |                |                                  |
| 27        | AA (C1)      | 0944       |           | NET       | BE            | 24           | 48 15.01 | 126 40.02         | 2533         | 250       | 64             |                   |               |                |                                  |
|           |              | 1027       |           | ROS       | BE            | 25           | 48 15.06 | 126 40.01         | 2540         | 250       | 64             |                   |               |                | delay starting due to (over)     |
|           |              | 1048       |           |           | BO            |              | 48 14.98 | 126 40.00         |              | 2600      |                |                   |               |                | C.D.M. 5m, Nisk 1, Sal, CHL, NUT |
|           |              | 1107       |           |           | EN            |              | 48 14.98 | 126 40.02         |              |           |                |                   | MG/DA         |                |                                  |
|           |              |            |           |           |               |              |          |                   |              |           |                |                   |               |                |                                  |
| 27        | AA           | 1118       |           | CPR       | BE            | 26           | 48 15.23 | 126 37.23         | 2555         |           |                |                   |               |                |                                  |
|           |              | 1215       |           |           | EN            |              | 48 18.94 | 126 26.72         |              |           |                |                   |               |                |                                  |
| 27        | LC11         | 1232       |           | ROS       | BE            | 27           | 48 18.93 | 126 26.74         | 1485<br>2525 |           |                |                   |               |                |                                  |
|           |              | 1256       |           |           | BO            |              | 48 18.99 | 126 26.71         |              | 1478      | 65-84          | 20                | MG/DA         |                | Trans cable failure.             |
|           |              | 1337       |           |           | EN            |              | 48 18.99 | 126 26.74         |              |           |                |                   |               |                |                                  |
| 27        | LC11         | 1346       |           | CPR       | BE            | 28           | 48 19.15 | 126 26.39         |              |           |                |                   |               |                |                                  |
|           |              |            |           |           |               |              |          |                   |              |           |                |                   |               |                |                                  |
|           |              |            |           |           |               |              |          |                   |              |           |                |                   |               |                |                                  |
|           |              |            |           |           |               |              |          |                   |              |           |                |                   |               |                |                                  |

Cast type:

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bottle firing method:

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Time Code

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May 27/04 - 0300 PDT

-delay beginning CTD @ LC12 (A4) due to ~~back~~ back of  
hydraulic pressure. Winch

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| Month MAY |              |            |           | Year 2004 |               |              | Ship TULLY |            |              |           | Cruise ID 2004-09 |              |               |                |                                                           |
|-----------|--------------|------------|-----------|-----------|---------------|--------------|------------|------------|--------------|-----------|-------------------|--------------|---------------|----------------|-----------------------------------------------------------|
| Day       | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position   |            | Bottom Depth | Max Depth | Sample Numbers    | # of Bottles | Watch keepers | Trans. cleaned | Comments                                                  |
|           |              |            |           |           |               |              | Latitude   | Longitude  |              |           |                   |              |               |                |                                                           |
| 27        | LC9          | 1504       |           | NET       |               | 29           | 48 25 997  | 126 13 784 | 619          | 250       |                   |              |               |                |                                                           |
| 27        | LC9          | 1528       | BE        | ROS       |               | 30           | 48 25 974  | 126 13 770 |              | 610       | 85-100            | 16           |               | ✓              |                                                           |
|           |              | 1537       | BO        |           |               |              | 48 25 932  | 126 13 789 |              |           |                   |              |               |                |                                                           |
|           |              | 1607       | EN        |           |               |              | 48 25 817  | 126 13 728 |              |           |                   |              |               |                |                                                           |
| 27        | CPR/LC9      | 1612       | BE        | CPR       |               | 031          | 48 25 75   | 126 14 03  |              | 7.0       |                   |              |               |                | 70m cable out                                             |
|           | LC10         | 1636       | EN        |           |               |              | 48 22 253  | 126 19 600 |              |           |                   |              |               |                | CPR recovered                                             |
| 27        | LC10         | 1655       | BE        | CTD       |               | 032          | 48 22 402  | 126 20 222 | 1150         |           |                   |              |               | ✓              |                                                           |
|           |              | 1708       | BO        |           |               |              | 48 22 394  | 126 20 239 |              | 1172      | 101               | 1            |               |                | Nisk. 25m                                                 |
|           |              |            | EN        |           |               |              |            |            |              |           |                   |              |               |                |                                                           |
| 27        | LC10         | 1757       | BE        | NET       |               | 33           | 48 22 35   | 126 19 90  |              | 250       |                   |              |               |                | Day BLOWESS                                               |
|           |              | 1819       | EN        |           |               |              | 48 20 98   | 126 19 86  |              |           |                   |              |               |                | SINC CLOCKS ? DRY                                         |
| 27        | LC10         | 1825       | BE        | CPR       |               | 34           | 48 21 19   | 126 19 56  |              | 7.0       |                   |              |               |                | 70m cable out                                             |
|           |              |            | EN        |           |               |              |            |            |              |           |                   |              |               |                |                                                           |
| 27        | LC08         | 1950       | BE        | ROS       |               | 35           | 48 29 51   | 126 6 98   | 198          |           |                   |              |               |                | Trans O <sub>2</sub> PAR probably not good (con file bad) |
| (         |              | 1955       | BO        |           |               |              | 48 29 47   | 126 7 03   |              |           | 102-112           | 11           |               |                |                                                           |
|           |              | 2008       | EN        |           |               |              | 48 29 43   | 126 7 10   |              |           |                   |              |               |                |                                                           |
| 27        | A1           | 2040       | BO        | NET       |               | 36           | 48 29 93   | 126 06 363 | 198          | 178       |                   |              |               |                | Boys VHN                                                  |

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LC9 - transmissometer below 450m full of spikes

LC10 - transmissometer below 550 all spikes



# DAILY LOG

## Ocean Sciences and Productivity Division

## INSTITUTE OF OCEAN SCIENCES

| Month <i>May</i> |              |            |           | Year <i>2004</i> |               |              | Ship <i>Tully</i> |            |              | Cruise ID <i>2004-09</i> |                |              |               |                |                        |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|-------------------|------------|--------------|--------------------------|----------------|--------------|---------------|----------------|------------------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Position          |            | Bottom Depth | Max Depth                | Sample Numbers | # of Bottles | Watch keepers | Trans. cleaned | Comments               |
|                  |              |            |           |                  |               |              | Latitude          | Longitude  |              |                          |                |              |               |                |                        |
| 27               | A1           | 2050       |           | CPR              | BE            | 37           | 48 30.04          | 126 06.19  |              |                          |                |              |               |                | Grey water pumping     |
|                  |              | 2120       |           |                  | EN            |              | 48 32.97          | 126 00.48  |              |                          |                |              |               |                | drying CPR             |
| 27               | LC07         | 2130       |           | ROS              | BE            | 38           | 48 33.04          | 126 0.44   | 130          |                          |                |              |               |                |                        |
|                  |              | 2134       |           |                  | BO            |              | 48 33.05          | 126 0.46   |              | 125                      | 113-120        | 8            |               |                |                        |
|                  |              | 2143       |           |                  | EN            |              | 48 32.94          | 126 0.42   |              |                          |                |              |               |                |                        |
| 27               | LC07         | 2150       |           | CPR              | BE            | 39           | 48 32.9           | 126 0.4    |              |                          |                |              |               |                |                        |
|                  |              | 2218       |           |                  | EN            |              | 48 36.15          | 125 54.47  |              |                          |                |              |               |                |                        |
| 27               | LC06         | 2236       |           | ROS              | BE            | 40           | 48 36.54          | 125 53.98  |              |                          |                |              |               |                | computer crash @ start |
|                  |              | 2238       |           |                  | BO            |              | 48 36.50          | 125 53.98  |              |                          | 121            | 1            |               |                | File saved as 003      |
|                  |              | 2241       |           |                  | EN            |              | 48 36.49          | 125 53.98  |              |                          |                |              |               |                | (needs renaming)       |
| 27               | LC06         | 2258       |           | NET              | BO            | 41           | 48 36.45          | 125 53.91  | 95           | 78                       |                |              | AFI<br>DA MGA |                | Bongo                  |
| 27               | LC06         | 2307       |           | CPR              | BE            | 42           | 48 36.42          | 125 53.89  |              |                          |                |              |               |                |                        |
|                  | 522          | 2345       |           |                  | EN            |              | 48 40.002         | 125 40.091 |              |                          |                |              |               |                |                        |

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# DAILY LOG

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## INSTITUTE OF OCEAN SCIENCES

| Month MAY |              |            |           | Year 2004 |               |              |           | Ship JOHN P TULLY |              |           |                | Cruise ID 2004-09 |               |                |                                |  |
|-----------|--------------|------------|-----------|-----------|---------------|--------------|-----------|-------------------|--------------|-----------|----------------|-------------------|---------------|----------------|--------------------------------|--|
| Day       | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position  |                   | Bottom Depth | Max Depth | Sample Numbers | # of Bottles      | Watch keepers | Trans. cleaned | Comments                       |  |
|           |              |            |           |           |               |              | Latitude  | Longitude         |              |           |                |                   |               |                |                                |  |
| 28        | LC05         | 0008       | BE        | BONGO     |               | 43           | 48 40.15  | 125 47.39         | 64           |           |                |                   |               |                |                                |  |
| 28        | LC05         | 0028       | BE        | ROS       |               | 44           | 48 39.94  | 125 47.38         | 65           | 57        | 122            | 1                 | MG/AM         |                | Charged oyr/Trans cable        |  |
|           |              | 0033       | BO        |           |               |              | 48 39.94  | 125 47.36         |              | 1         |                |                   |               |                | NISK 1, 5m, CHL, NUT-SAL, CDOM |  |
|           |              | 0036       | EN        |           |               |              | 48 39.94  | 125 47.40         |              |           |                |                   |               |                |                                |  |
| 28        | LC04         | 0153       | BE        | ROS       |               | 45           | 48 43.41  | 125 40.75         | 168          |           |                |                   |               |                |                                |  |
|           |              | 0157       | BO        |           |               |              | 48 43.46  | 125 40.75         |              |           | 123-131        | 9                 | MG/AM         |                |                                |  |
|           |              | 0208       | EN        |           |               |              | 48 43.38  | 125 40.74         |              |           |                |                   |               |                |                                |  |
| 28        | LC04         | 0245       | BE        | CPR       |               | 46           | 48 43.58  | 125 40.44         |              | 7.0       |                |                   |               |                | 70 m cable out                 |  |
|           |              | 0245       | EN        |           |               |              | 48 46.555 | 125 35.101        |              |           |                |                   |               |                |                                |  |
| 28        | LC03         | 0255       | BE        | CTD/ROS   |               | 47           | 48 46 823 | 125 34 166        |              |           |                |                   |               |                |                                |  |
|           |              | 0304       | BO        |           |               |              | 48 46 817 | 125 34 200        |              |           | 132            |                   |               |                | 5m Niskin                      |  |
|           |              | 0307       | EN        |           |               |              | 48 46 900 | 125 34 248        |              |           |                |                   |               |                |                                |  |
| 28        | LC02         | 0335       | BE        | ROS       |               | 48           | 48 48 732 | 125 30 859        | 100          |           |                |                   |               |                |                                |  |
|           |              |            | BO        |           |               |              | 48 48 714 | 125 30 874        |              | 90        |                |                   |               |                |                                |  |
|           |              | 0350       | EN        |           |               |              | 48 48 713 | 125 30 911        |              |           | 133-139        | 7                 |               |                |                                |  |
| 28        | LC01         | 0419       | BE        | ROS       |               | 49           | 48 50 438 | 125 27 666        | 97           |           |                |                   |               |                |                                |  |
|           |              | 0422       | BO        |           |               |              | 48 50 410 | 125 27 695        |              |           | 140-146        | 7                 |               |                |                                |  |
|           |              | 0431       | EN        |           |               |              | 48 50 453 | 125 27 728        |              |           |                |                   |               |                |                                |  |

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- CPR - one bolt holding side cover had stripped in brass CPR body - nut could not be threaded onto bolt.
- tried lock-tite on bolt to see if that would hold it tight - No CPR LC5 to LC4
  - after setting, bolt still loose
  - threaded two nuts (not ny-locks) onto bolt - locked one against other
  - deployed CPR at LC4
  - retrieved at LC3

NO CPR FROM LC05 → LC04, TRYING TO FIX BOLT

- did not deploy after LC3 because it seems repeated frequent removal of nut, and cover plate is hard on bolts threaded into brass tow body.

## DAILY LOG

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|-----------|--------------|------------|-----------|-----------|---------------|--------------|-----------|------------|--------------|-----------|----------------|-------------------|---------------|----------------|------------------|
| Day       | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position  |            | Bottom Depth | Max Depth | Sample Numbers | # of Bottles      | Watch keepers | Trans. cleaned | Comments         |
|           |              |            |           |           |               |              | Latitude  | Longitude  |              |           |                |                   |               |                |                  |
| 28        | B3           | 0529       | BE        | CTD       |               | 50           | 48 51 028 | 125 39 161 | 54           |           |                |                   |               |                |                  |
|           |              | 0533       | BO        |           |               |              | 48 51 059 | 125 39 186 |              | 41        | 147            | 1                 |               |                | 5m N skin        |
|           |              | 0536       | EN        |           |               |              | 48 51 085 | 125 39 182 |              |           |                |                   |               |                |                  |
| 28        | B3           | 0546       | BO        | NET       |               | 51           | 48 51 067 | 125 39 141 |              | 40        |                |                   |               |                | Bongo            |
|           |              | 0548       | EN        |           |               |              |           |            |              |           |                |                   |               |                |                  |
| 28        | B3           | 0536       | BE        | CPR       | in            | 52           | 48 51 199 | 125 39 271 |              |           |                |                   |               |                | TOW UP ISLAND TO |
| 29        | CS00         | 0112       | EN        |           | out           |              | 50 27.24  | 129 54.88  |              |           |                |                   |               |                | CS LINE          |
|           | ES00         | 0124       | BE        | NET       |               | 53           | 50 27.46  | 129 55.21  |              |           |                |                   |               |                | Day Bioness      |
|           |              | 0135       | EN        |           |               |              | 50 27.90  | 129 56.16  |              |           |                |                   |               |                |                  |
| 29        | CS00         | 0204       | BE        | CPR       | in            | 54           | 50 28.471 | 129 57.347 |              |           |                |                   |               |                |                  |
|           |              | 0918       | EN        |           |               |              | 51 16.402 | 128 20.432 |              |           |                |                   |               |                |                  |
|           |              |            |           |           |               |              |           |            |              |           |                |                   |               |                |                  |
|           | CS10         | 0930       | BE        | ROS       |               | 55           | 51 16.52  | 128 20.09  | 81           |           |                |                   |               |                |                  |
|           |              | 0933       | BO        |           |               | 1            | 51 16.51  | 128 20.10  |              | 78        | 148            | 1                 |               |                |                  |
|           |              | 0935       | EN        |           |               |              | 51 16.52  | 128 20.08  |              |           |                |                   |               |                |                  |
|           |              |            |           |           |               |              |           |            |              |           |                |                   |               |                |                  |
|           | CS10         | 0949       | BO        | NET       |               | 56           | 51 16.51  | 128 20.01  | 80           | 70        |                |                   |               |                | Bongo UNH        |
|           |              |            |           |           |               |              |           |            |              |           |                |                   |               |                |                  |
|           |              |            |           |           |               |              |           |            |              |           |                |                   |               |                |                  |

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|-----------|--------------|------------|-----------|-----------|---------------|--------------|------------|-----------|--------------|-------------------|----------------|--------------|---------------|----------------|-----------------------|
| Day       | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position   |           | Bottom Depth | Max Depth         | Sample Numbers | # of Bottles | Watch keepers | Trans. cleaned | Comments              |
|           |              |            |           |           |               |              | Latitude   | Longitude |              |                   |                |              |               |                |                       |
| 29        | CS10         | 0953       | BE        | CPR       |               | 57           | 51 16.51   | 128 20.01 |              |                   |                |              |               |                |                       |
|           | 1            | 11030      | EN        | L         |               |              | 51 12.44   | 128 27.96 |              |                   |                |              |               |                |                       |
| 29        | CS09         | 1042       | BO        | NET       |               | 58           | 51 12.44   | 128 27.96 | 190          | 170               |                |              |               |                | BDWD JN1+             |
| 29        | CS09         | 1102       | BE        | ROS       |               | 59           | 51 12 49   | 128 28.05 | 190          |                   |                |              |               |                |                       |
|           |              | 1109       | BO        | .         |               |              | 51 12 48   | 128 27 99 |              | 184               | 149-159        | 11           | AM/HG         |                |                       |
| 29        | CS09         | 1121       | EN        |           |               |              | 51 12 49   | 128 28 01 |              |                   |                |              |               |                |                       |
| 29        | CS09         | 1131       | BE        | CPR       |               | 60           | 51 12.49   | 128 28.01 |              |                   |                |              |               |                |                       |
|           |              | 1207       | EN        |           |               |              | 51 08 58   | 128 35 88 |              |                   |                |              |               |                |                       |
| 29        | CS08         | 1220       |           | ROS       |               | 61           | 51 08 49   | 128 36 04 | 144          |                   |                |              |               |                |                       |
|           |              | 1223       |           | "         |               |              | 51 08 49   | 128 35 95 |              | 137               | 160            | 1            | AM/HG         |                | Sample 160, 145K 1    |
|           |              | 1226       |           | "         |               |              | 51 08 49   | 128 35 97 |              |                   |                |              |               |                | CHL, SAL, NUT, CDM 5m |
| 29        | CS08         | 1246       | BO        | NET       |               | 62           | 51 08 50   | 128 35 96 | 144          | 130               |                |              |               |                |                       |
| 29        | CS08         | 1256       | BE        | CPR       |               | 63           | 51 08 31   | 128 36 31 | 140          |                   |                |              |               |                |                       |
|           |              | 1335       | EN        | CPR       |               |              | 51 04.53   | 128 43.94 |              |                   |                |              |               |                |                       |
| 29        | CS04         | 1341       | BO        | NET       |               | 64           | 51 04.53   | 128 43.95 | 65           | 50                |                |              |               |                |                       |

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| Month <u>MAY</u> |                   |            |           | Year <u>2004</u> |               |              | Ship <u>TULLY</u> |            |              |           | Cruise ID <u>2004-09</u> |              |               |                |                                   |
|------------------|-------------------|------------|-----------|------------------|---------------|--------------|-------------------|------------|--------------|-----------|--------------------------|--------------|---------------|----------------|-----------------------------------|
| Day              | Station Name      | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Position          |            | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch keepers | Trans. cleaned | Comments                          |
|                  |                   |            |           |                  |               |              | Latitude          | Longitude  |              |           |                          |              |               |                |                                   |
| 29               | CS07              | 1356       | BE        | ROS              |               | 65           | 51 04 50          | 128 44 .07 | 65           |           |                          |              |               |                |                                   |
|                  |                   | 1359       | BO        |                  |               |              | 51 04 51          | 128 44 .00 |              |           | 162                      |              | MC/AM         |                | NISK 1, 5m<br>SAL, CHL, NUT, CDOM |
|                  |                   | 1402       | EN        |                  |               |              | 51 04 52          | 128 43 .94 |              |           |                          |              |               |                |                                   |
| 29               | CS06 <sup>7</sup> | 1410       | BE        | CPR              |               | 66           | 51 04 16          | 128 44 .54 |              |           |                          |              |               |                |                                   |
|                  |                   | 1445       | EN        |                  |               |              | 51 00 196         | 128 49 843 |              |           |                          |              |               |                |                                   |
| 29               | CS06              | 1454       | BE        | ROS              |               | 67           | 51 00 029         | 128 49 996 | 67           |           |                          |              |               |                |                                   |
|                  |                   | 1457       | BO        | .                |               |              | 51 00 013         | 128 49 979 |              | 60        | 163-169                  | 7            | MC/AM         |                |                                   |
|                  |                   | 1511       | EN        |                  |               |              | 51 00 00          | 128 49 987 |              |           |                          |              |               |                |                                   |
| 29               | CS06              | 1521       | BE        | NET              |               | 68           | 50 59.9           | 128 50.2   |              | 50        |                          |              |               |                |                                   |
|                  |                   |            | EN        |                  |               |              | 50 59.9           | 128 50.2   |              |           |                          |              |               |                |                                   |
| 29               | CS06              | 1532       | BE        | CPR              |               | 69           | 50 59.92          | 128 50.22  |              |           |                          |              |               |                |                                   |
|                  |                   | 1616       | EN        |                  |               |              | 50 55 945         | 129 00 106 |              |           |                          |              |               |                |                                   |
| 29               | CS05              | 1625       | BO        | NET              |               | 70           | 50 56 010         | 129 59 999 |              |           |                          |              |               |                |                                   |
|                  |                   | 1627       | EN        |                  |               |              | 50 56 019         | 129 00 013 |              | 55        |                          |              |               |                | time 1625?                        |
| 29               | CS05              | 1644       | BE        | CTD/R            |               | 71           | 50 56 020         | 129 00 012 | 65.5         |           |                          |              |               |                |                                   |
|                  |                   | 1645       | BO        |                  |               |              | 50 56 017         | 129 00 008 |              | 55        | 170                      | 1            |               |                | NISK 2 5m                         |
|                  |                   | 1648       | EN        |                  |               |              | 50 56 028         | 129 00 980 |              |           |                          |              |               |                |                                   |
| 29               | CS05              | 1700       | BE        | CPR              |               | 72           | 50 56 238         | 129 00 383 |              |           |                          |              |               |                |                                   |
|                  | CS04              | 1753       | EN        |                  |               |              | 50 49 454         | 129 12 396 |              |           |                          |              |               |                |                                   |

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CS05 - Sounder screen color is changing

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|-----------|--------------|------------|-----------|-----------|---------------|--------------|------------|------------|--------------|-----------|-------------------|--------------|---------------|----------------|---------------|
| Day       | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position   |            | Bottom Depth | Max Depth | Sample Numbers    | # of Bottles | Watch keepers | Trans. cleaned | Comments      |
|           |              |            |           |           |               |              | Latitude   | Longitude  |              |           |                   |              |               |                |               |
| 29        | CS04         | 1814       | BE        | ROS       |               | 73           | 50 49 241  | 129 12 901 | 101          |           |                   |              |               |                |               |
|           |              | 1817       | BO        |           |               |              | 50 49 244  | 129 12 929 |              | 91        | 171-177           | 7            |               |                |               |
|           |              | 1825       | EN        |           |               |              | 50 49 236  | 129 13 018 |              |           |                   |              |               |                |               |
| 29        | CS04         | 1840       | BO        | NET       |               | 74           | 50 49 204  | 129 12 989 | 190          |           |                   |              |               |                |               |
|           |              | 1842       | EN        |           |               |              | 50 49 182  | 129 12 978 |              | 90        |                   |              |               |                |               |
| 29        | CS04         | 1848       | BE        | CPR       |               | 75           | 50 49 066  | 129 13 289 |              |           |                   |              |               |                | New Cartridge |
|           |              | 1927       | EN        |           |               |              | 50 45.506  | 129 19.664 |              |           |                   |              |               |                |               |
|           |              |            |           |           |               |              |            |            |              |           |                   |              |               |                |               |
| 29        | CS03         | 1948       | BO        | NET       |               | 76           | 50 45.676  | 129 20.013 | 236          | 220       |                   |              |               |                |               |
|           |              |            |           |           |               |              |            |            |              |           |                   |              |               |                |               |
| 29        | CS03         | 1958       | BE        | ROS       |               | 77           | 50 45.65   | 129 20.05  | 239          | 235       | 178               |              |               |                |               |
|           | 1            | 2002       | BO        | 1         |               | 1            | 50 45.65   | 129 20.05  |              |           |                   |              |               |                |               |
|           | 1            | 2005       | EN        | 1         |               | 1            | 50 45.64   | 129 20.04  |              |           |                   |              |               |                |               |
| 29        | CS02         |            | BE        | ROS       |               | 78           |            |            |              |           |                   |              |               |                |               |
|           | 1            |            | BO        | 1         |               | 1            |            |            |              |           | 179-              |              |               |                |               |
|           |              |            | EN        | 1         |               | 1            |            |            |              |           |                   |              |               |                |               |
| 29        | CS02         |            | BE        | CPR       |               | 79           | 50 45.25   | 129 20.34  |              | 7         |                   |              |               |                |               |
|           |              |            | EN        |           |               |              |            |            |              |           |                   |              |               |                |               |

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MAY 29

- 1840 - CPR New Cartridge installed @ Station CS04 - 1140 local time

# DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

| Month MAY |              |            |           | Year 2004 |               |              | Ship TULLY |           |              |           | Cruise ID 2004-09 |              |               |                |                                                     |
|-----------|--------------|------------|-----------|-----------|---------------|--------------|------------|-----------|--------------|-----------|-------------------|--------------|---------------|----------------|-----------------------------------------------------|
| Day       | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position   |           | Bottom Depth | Max Depth | Sample Numbers    | # of Bottles | Watch keepers | Trans. cleaned | Comments                                            |
|           |              |            |           |           |               |              | Latitude   | Longitude |              |           |                   |              |               |                |                                                     |
| 29        | CS03         | 2109       | BE        | CPR       |               | 78           | 50 45.25   | 129 20.34 |              | 7         |                   |              |               |                |                                                     |
|           |              | 2152       | EN        |           |               |              | 50 41.45   | 129 27.57 |              |           |                   |              |               |                |                                                     |
| 29        | CS02         | 2106       | BE        | ROS       |               | 79           | 50 41.29   | 129 28.04 | 1800         | 1000      | 179-196           |              |               |                | occasional Trans spikes & dropouts - esp near 1000m |
|           |              | 2118       | BO        |           |               |              | 50 41.23   | 129 28.05 |              |           |                   |              |               |                |                                                     |
|           |              | 2150       | EN        |           |               |              | 50 41.01   | 129 28.30 |              |           |                   |              |               |                |                                                     |
| 29        | CS02         | 2208       | BO        | NET       |               | 80           | 50 40.96   | 129 28.30 | 1800         | 250       |                   |              |               |                |                                                     |
| 29        | CS02         | 2214       | BE        | CPR       |               | 81           | 50 40.34   | 129 28.86 |              |           |                   |              |               |                |                                                     |
|           |              | 2320       | EN        |           |               |              | 50 34.76   | 129 41.61 |              |           |                   |              |               |                |                                                     |
| 29        | CS01         | 2333       | BO        | NET       |               | 82           | 50 34.74   | 129 41.58 | 2100         |           |                   |              |               |                |                                                     |
| 29        | CS01         | 2356       | BE        | CTD       |               | 83           | 50 34.91   | 129 41.55 | 2100 (orig)  |           | 197               |              |               |                | → PAK REMOVED                                       |
| 30        |              | 0007       | BO        |           |               |              | 50 34.83   | 129 41.49 |              | 1000      |                   | 1            | HC/AM         |                | Difficulty with rosette                             |
|           |              | 0020       | EN        |           |               |              | 50 34.84   | 129 41.45 |              |           |                   |              |               |                | wright handling time                                |
| 29        | CS01         | 0036       | BE        | CPR       |               | 84           | 50 34.47   | 129 41.80 |              | 7         |                   |              |               |                |                                                     |
|           |              | 0145       | EN        |           |               |              | 50 27.45   | 129 55.04 |              |           |                   |              |               |                |                                                     |

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- Rostka weight handling line: Snap hook securing the weight P/U line to the winch failed. Retrieved the weight and replaced the hook with 2LF's prised SS shackles & hook.

CTD Pirate

## DAILY LOG

## Ocean Sciences and Productivity Division

## INSTITUTE OF OCEAN SCIENCES

DAILY LOG

Ocean Sciences and Productivity Division

| Month <i>May</i> |              |             |           | Year <i>2004</i> |               |              | Ship <i>Tully</i> |                   |              | Cruise ID <i>2004-09</i> |                |              |               |                |                       |
|------------------|--------------|-------------|-----------|------------------|---------------|--------------|-------------------|-------------------|--------------|--------------------------|----------------|--------------|---------------|----------------|-----------------------|
| Day              | Station Name | Time (UTC)  | Time Code | Cast Type        | Firing Method | Event Number | Position          |                   | Bottom Depth | Max Depth                | Sample Numbers | # of Bottles | Watch keepers | Trans. cleaned | Comments              |
|                  |              |             |           |                  |               |              | Latitude          | Longitude         |              |                          |                |              |               |                |                       |
| <i>30</i>        | <i>CS00</i>  | <i>0154</i> | <i>BE</i> | <i>ROS</i>       |               | <i>85</i>    | <i>50 27.45</i>   | <i>129 55.08</i>  | <i>~2000</i> |                          |                |              |               |                |                       |
|                  |              | <i>0205</i> | <i>BO</i> |                  |               |              | <i>50 27.43</i>   | <i>129 55.12</i>  |              | <i>1000</i>              | <i>198</i>     | <i>1</i>     | <i>MG/AM</i>  |                |                       |
|                  |              | <i>0216</i> | <i>EN</i> |                  |               |              | <i>50 27.42</i>   | <i>129 55.12</i>  |              |                          |                |              |               |                |                       |
|                  | <i>CS00</i>  | <i>0248</i> | <i>BE</i> | <i>CPR</i>       |               | <i>87</i>    | <i>50 27.50</i>   | <i>129 54.71</i>  |              |                          |                |              |               |                |                       |
| <i>30</i>        | <i>J122</i>  | <i>0530</i> | <i>EN</i> |                  |               |              | <i>50°39.702</i>  | <i>129°17.662</i> |              |                          |                |              |               |                |                       |
|                  | <i>CS00</i>  | <i>0239</i> | <i>BC</i> | <i>NET</i>       |               | <i>86</i>    | <i>50 27.45</i>   | <i>129 54.91</i>  | <i>~2050</i> | <i>250</i>               |                |              |               |                | <i>BONGO TO 250m.</i> |
| <i>30</i>        | <i>J122</i>  | <i>0540</i> | <i>BO</i> | <i>NET</i>       |               | <i>88</i>    | <i>50°39.78</i>   | <i>129°17.74</i>  | <i>~1450</i> |                          |                |              |               |                |                       |
|                  |              |             | <i>EN</i> |                  |               |              | <i>50°39.78</i>   | <i>129°17.69</i>  |              |                          |                |              |               |                |                       |
| <i>30</i>        | <i>J122</i>  | <i>0558</i> | <i>BE</i> | <i>CTD/R</i>     |               | <i>89</i>    | <i>50°39.86</i>   | <i>129°17.57</i>  |              |                          |                |              |               |                |                       |
|                  |              | <i>0615</i> | <i>BO</i> |                  |               |              | <i>50°39.67</i>   | <i>129°17.50</i>  |              | <i>545</i>               | <i>199</i>     | <i>1</i>     |               |                | <i>5m Niskin</i>      |
|                  |              | <i>0632</i> | <i>EN</i> |                  |               |              | <i>50°39.730</i>  | <i>129°17.567</i> |              |                          |                |              |               |                |                       |
| <i>30</i>        | <i>J122</i>  | <i>0640</i> | <i>BE</i> | <i>CPR</i>       |               | <i>90</i>    | <i>50°39.841</i>  | <i>129°17.127</i> |              |                          |                |              |               |                |                       |
|                  |              | <i>0738</i> | <i>EN</i> |                  |               |              | <i>50 39.80</i>   | <i>129 01.65</i>  |              |                          |                |              |               |                |                       |
| <i>30</i>        | <i>LQ03</i>  | <i>0747</i> | <i>BE</i> | <i>CTD</i>       |               | <i>91</i>    | <i>50 39.78</i>   | <i>129 1.85</i>   | <i>1400</i>  |                          |                |              |               |                |                       |
| <i>1</i>         | <i>1</i>     | <i>0807</i> | <i>BO</i> | <i>1</i>         |               | <i>1</i>     | <i>50 39.77</i>   | <i>129 1.89</i>   |              | <i>1000</i>              | <i>200</i>     | <i>1</i>     |               |                |                       |
|                  |              | <i>0811</i> | <i>EN</i> | <i>1</i>         |               |              | <i>50 39.75</i>   | <i>129 1.85</i>   |              |                          |                |              |               |                |                       |
|                  |              |             |           |                  |               |              |                   |                   |              |                          |                |              |               |                |                       |
| <i>30</i>        | <i>LQ03</i>  | <i>0903</i> | <i>BO</i> | <i>NET</i>       |               | <i>92</i>    | <i>50 39.75</i>   | <i>129 1.85</i>   |              | <i>250</i>               |                |              |               |                | <i>Bongo To 250</i>   |
|                  |              |             |           |                  |               |              |                   |                   |              |                          |                |              |               |                |                       |

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# DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

| Month <i>May</i> |              |            |           | Year <i>2004</i> |               |              | Ship <i>Tully</i> |            |              | Cruise ID <i>2004-09</i> |                |              |               |                |                |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|-------------------|------------|--------------|--------------------------|----------------|--------------|---------------|----------------|----------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Position          |            | Bottom Depth | Max Depth                | Sample Numbers | # of Bottles | Watch keepers | Trans. cleaned | Comments       |
|                  |              |            |           |                  |               |              | Latitude          | Longitude  |              |                          |                |              |               |                |                |
| 30               | LQ 03        | 0835       | BE        | CPR              |               | 93           | 50 40.01          | 129 082    |              |                          |                |              |               |                |                |
|                  |              | 0954       | EN        |                  |               |              | 50 42.95          | 128 40.43  |              |                          |                |              |               |                |                |
|                  |              |            |           |                  |               |              |                   |            |              |                          |                |              |               |                |                |
| 30               | CPEZ         | 1007       | BO        | NET              |               | 94           | 50 42.90          | 128 40.17  |              | 110                      |                |              |               |                | Bongo to 110 m |
|                  |              |            |           |                  |               |              |                   |            |              |                          |                |              |               |                |                |
| 30               | CPEZ         | 1022       | BE        | ROS              |               | 95           | 50 42.98          | 128 39.96  | 125          |                          |                |              |               |                |                |
|                  |              | 1024       | BO        |                  |               | 1            | 50 42.96          | 128 40.01  |              | 121                      | 201            | 1            |               |                |                |
|                  |              | 1028       | EN        |                  |               |              | 50 42.95          | 128 40.05  |              |                          |                |              |               |                |                |
|                  |              |            |           |                  |               |              |                   |            |              |                          |                |              |               |                |                |
| 30               | CPEZ         | 1034       | BE        | CPR              |               | 96           | 50 42.56          | 128 39.70  |              | 7                        |                |              |               |                |                |
|                  | LBP1         | 1514       | EN        |                  |               |              | 50 04.813         | 127 52 073 |              |                          |                |              |               |                |                |
|                  |              |            |           |                  |               |              |                   |            |              |                          |                |              |               |                |                |
| 30               | LBP1         | 1532       | BE        | CTD/R            |               | 97           | 50 04.778         | 127 52.820 | 55           |                          |                |              |               |                |                |
|                  |              | 1535       | BO        |                  |               |              | 50 04.796         | 127 52.870 |              | 41                       | 202            | 1            |               |                | 5m Niskin      |
|                  |              | 1538       | EN        |                  |               |              | 50 04.806         | 127 52.874 |              |                          |                |              |               |                |                |
|                  |              |            |           |                  |               |              |                   |            |              |                          |                |              |               |                |                |
| 30               | LBP2         | 1554       | BE        | CTD/R            |               | 98           | 50 04.075         | 127 54.208 | 90           |                          |                |              |               |                |                |
|                  |              | 1556       | BO        |                  |               |              | 50 04.102         | 127 54.166 |              | 84                       | 203            | 1            |               |                | 5m Niskin      |
|                  |              | 1601       | EN        |                  |               |              | 50 04.103         | 127 54.143 |              |                          |                |              |               |                |                |

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MAY 30 2004

0815 local - LBPI recovery of CPR, Spring has sprung. No MORE CPR - non repairable

CPR TOWS ABORTED BECAUSE PULLEY WIRE ON FUSEE DRUM 'SPROINGED' WHEN SILK ADVANCED.

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| Month <u>MAY</u> |              |            |           | Year <u>2004</u> |               |              |           | Ship <u>Tully</u> |              |           |                | Cruise ID <u>2004 09</u> |               |                |          |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|-----------|-------------------|--------------|-----------|----------------|--------------------------|---------------|----------------|----------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Position  |                   | Bottom Depth | Max Depth | Sample Numbers | # of Bottles             | Watch keepers | Trans. cleaned | Comments |
|                  |              |            |           |                  |               |              | Latitude  | Longitude         |              |           |                |                          |               |                |          |
| 30               | LBP2         | 1606       | BO        | NET              |               | 99           | 50 04 034 | 127 54 212        | 99           |           |                |                          |               |                |          |
|                  |              | 1615       | EN        |                  |               |              | 50°04 038 | 127°54 228        |              | 90        |                |                          |               |                |          |
| 30               | LBP3         | 1638       | BO        | NET              |               | 100          | 50 03.202 | 127 55.315        | 170          |           |                |                          |               |                |          |
|                  |              | 1641       | EN        |                  |               |              | 50 03.210 | 127 55.314        |              | 150       |                |                          |               |                |          |
| 30               | LBP3         | 1654       | BE        | ROS              |               | 101          | 50 03 223 | 127 55 393        |              |           |                |                          |               |                |          |
|                  |              | 1657       | BO        |                  |               |              | 50 03 235 | 127 55 390        |              |           | 204-213        | 10                       |               |                |          |
|                  |              | 1712       | EN        |                  |               |              | 50 03 334 | 127 55 284        |              |           |                |                          |               |                |          |
| 30               | LBP4         | 1805       | BE        | ROS              |               | 102          | 50 01 387 | 127 58 124        | 1100         |           |                |                          |               |                |          |
|                  |              | 1816       | BO        |                  |               |              | 50 01 379 | 127 58 199        |              | 1000      | 214-231        | 18                       |               |                |          |
|                  |              | 1852       | EN        |                  |               |              | 50 01 495 | 127 58 525        |              |           |                |                          |               |                |          |
|                  | LBP5         | 1946       | BE        | ROS              |               | 103          | 50 0 00   | 128 0.22          | 1300         |           |                |                          |               |                |          |
|                  |              | 1958       | BO        |                  |               |              | 50 0.14   | 128 0.35          |              |           | 232            | 1                        |               |                |          |
|                  |              | 2012       | EN        |                  |               |              | 50 0.24   | 128 0.47          |              |           |                |                          |               |                |          |

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|------------------|--------------|------------|-----------|------------------|---------------|--------------|-------------------|------------|--------------|-----------|--------------------------|--------------|---------------|----------------|-----------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Position          |            | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch keepers | Trans. cleaned | Comments        |
|                  |              |            |           |                  |               |              | Latitude          | Longitude  |              |           |                          |              |               |                |                 |
|                  | LBP5         | 1927       | BO        | NET              |               | 104          | 49 59.85          | 128 00.19  | 1300         | 250       |                          |              |               |                | Bongo           |
|                  | LBP6         | 20:58      | BE        | ROS              |               | 105          | 49 56.128         | 128 5.600  |              |           |                          |              |               |                |                 |
|                  |              | 21:08      | BO        |                  |               |              | 49 56.08          | 128 5.647  |              |           | 233-250                  | 18           |               |                |                 |
|                  |              |            | EN        |                  |               |              |                   |            |              |           |                          |              |               |                |                 |
|                  | LBP7         | 22:22      | BE        | ROS              |               | 106          | 49 52.504         | 128 11.132 |              |           | 251                      |              |               |                |                 |
|                  |              | 22:34      | BO        |                  |               |              | 49 52.408         | 128 11.141 |              |           |                          |              |               |                |                 |
|                  |              | 22:47      | EN        |                  |               |              | 49 52.282         | 128 11.208 |              |           |                          |              |               |                |                 |
|                  | LPP7         | 22:52      | BO        | NET              |               | 107          | 49 52.24          | 128 11.21  | ~1800        | 250       |                          |              |               |                | Bongo VNH       |
| 30               | LPB8         | 23:59      | BE        | ROS              |               | 108          | 49 48.52          | 128 16.70  | ~1100        |           |                          |              |               |                |                 |
| 31               |              | 00:14      | BO        |                  |               |              | 49 48.65          | 128 16.74  |              | 1000      | 252-269                  | 18           | AM/HG         |                |                 |
|                  |              | 0052       | EN        |                  |               |              | 49 48.666         | 128 16.746 |              |           |                          |              |               |                |                 |
| 31               | LG09         | 0737       | BE        | NET              |               | 109          | 48 51.14          | 127 19.17  |              | 250       |                          |              |               |                | BIONESS - night |
|                  |              |            | EN        |                  |               |              |                   |            |              |           |                          |              |               |                |                 |

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|------------------|--------------|------------|-----------|------------------|---------------|--------------|-------------------|------------|--------------|-----------|--------------------------|--------------|---------------|----------------|-----------------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Position          |            | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch keepers | Trans. cleaned | Comments              |
|                  |              |            |           |                  |               |              | Latitude          | Longitude  |              |           |                          |              |               |                |                       |
| 31               | LG09         | 9:21       | BE        | ROS              |               | 110          | 48 51.084         | 127 19.494 | 2070         | 1005      | 251 270                  | 1            |               |                | sal, nits, chl, cdom. |
|                  |              | 9:36       | BO        |                  |               |              | 48 51.052         | 127 19.592 |              |           |                          |              |               |                |                       |
|                  |              | 9:53       | EN        |                  |               |              | 48 51.042         | 127 19.633 |              |           |                          |              |               |                |                       |
| 31               | LG09         | 1020       | EN        | NET              |               | 111          | 48 51.16          | 127 19.45  |              | 250       |                          |              |               |                | Bongo                 |
| 31               | LG08         | 11:15      | BE        | ROS              |               | 112          | 48 55.30          | 127 13.35  | 2070         |           |                          |              |               |                |                       |
|                  |              | 11:25      | BO        |                  |               |              | 48 55.32          | 127 13.24  |              | 1000      | 271                      | 1            | NG/AM         |                |                       |
|                  |              | 11:36      | EN        |                  |               |              | 48 55.31          | 127 13.22  |              |           |                          |              |               |                |                       |
| 31               | LG07         | 12:24      | BE        | ROS              |               | 113          | 48 59.41          | 127 07.32  | 1780         |           |                          |              |               |                |                       |
|                  |              | 12:37      | BO        |                  |               |              | 48 59.40          | 127 07.24  |              |           | 272                      | 1            | NG/AM         |                |                       |
|                  |              | 12:46      | EN        |                  |               |              | 48 59.44          | 127 07.21  |              |           |                          |              |               |                |                       |
| 31               | LG07         | 13:04      | EN        | NET              |               | 114          | 48 59.42          | 127 07.07  | 1780         | 250       |                          |              |               |                | Bongo                 |
| 31               | LG06         | 14:20      | BE        | ROS              |               | 115          | 48 03.44          | 127 01.27  | 996<br>866   |           |                          |              |               |                |                       |
|                  |              | 14:34      | BO        |                  |               |              | 49 03.43          | 127 01.26  |              | 986       | 273-290                  | 18           |               |                |                       |
|                  |              | 15:18      | EN        |                  |               |              | 49 03.43          | 127 01.43  |              |           |                          |              |               |                |                       |
|                  | LG5          | 1603       | BE        | CTD/R            |               | 116          | 49 07.367         | 126 55.378 | 280          |           |                          |              |               |                |                       |
|                  |              | 1608       | BO        |                  |               |              | 49 07.371         | 126 55.392 |              |           | 291                      | 1            |               |                | 5m Niskin             |
|                  |              | 1614       | EN        |                  |               |              | 49 07.378         | 126 55.412 |              |           |                          |              |               |                |                       |

Cast type: USW = sea water loop  
 BOT = bottle cast, no CTD  
 CTD = CTD without Rosette  
 ROS = Rosette plus CTD

bottle firing method:  
 US = up / stop  
 UN = up / no stop  
 DN = down / no stop

Time Code  
 BE = beginning time of cast  
 BO = bottom time of cast  
 EN = end time of cast

DE = deployment time  
 MR = messenger release time  
 RE = recover mooring time

Transmissometer to be cleaned for each cast, do not use Ammonia products

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# DAILY LOG

## Ocean Sciences and Productivity Division

## INSTITUTE OF OCEAN SCIENCES

| Month |              |            |           | Year      |               |              | Ship      |            |              |           | Cruise ID      |              |               |                |           |
|-------|--------------|------------|-----------|-----------|---------------|--------------|-----------|------------|--------------|-----------|----------------|--------------|---------------|----------------|-----------|
| Day   | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Position  |            | Bottom Depth | Max Depth | Sample Numbers | # of Bottles | Watch keepers | Trans. cleaned | Comments  |
|       |              |            |           |           |               |              | Latitude  | Longitude  |              |           |                |              |               |                |           |
| 31    | LG4          | 1700       | BE        | ROS       |               | 117          | 49 11 329 | 126 49 426 | 148          |           | 292-300        | 9            |               |                |           |
|       |              | 1702       | BO        |           |               |              | 49 11 345 | 126 49 477 |              | 137       |                |              |               |                |           |
|       |              | 1718       | EN        |           |               |              | 49 11 368 | 126 49 703 |              |           |                |              |               |                |           |
| 31    | LG4          | 1735       | BO        | NET       |               | 118          | 49 11.259 | 126 49.350 |              |           |                |              |               |                |           |
|       |              | 1739       | EN        |           |               |              | 49 11.290 | 126 49.340 |              |           |                |              |               |                |           |
|       |              |            |           |           |               |              | 49 11.368 | 126 49.703 |              |           |                |              |               |                |           |
| 31    | LG3          | 1825       | BE        | CTD/R     |               | 119          | 49 15.028 | 126 43.748 | 122          |           |                |              |               |                |           |
|       |              | 1827       | BO        |           |               |              | 49 15.034 | 126 43.807 |              | 113       | 301            | 1            |               |                | 5m Niskin |
|       |              | 1833       | EN        |           |               |              | 49 15.056 | 126 43.816 |              |           |                |              |               |                |           |
| 31    | LG2          | 19:16      | BE        | ROS       |               | 120          | 49 18.68  | 126 38.171 | 102          | 102       | 302-308        | 7            |               |                |           |
|       |              | 19:20      | BO        |           |               |              | 49 18.72  | 126 38.237 |              |           |                |              |               |                |           |
|       |              | 19:28      | EN        |           |               |              | 49 18.79  | 126 38.339 |              |           |                |              |               |                |           |
|       |              |            |           |           |               |              |           |            |              |           |                |              |               |                |           |
| 31    | LG2          | 1942       | BO        | NET       |               | 121          | 49 18.75  | 126 38.33  |              | 90        |                |              |               |                | Bongo VNH |
|       |              |            |           |           |               |              |           |            |              |           |                |              |               |                |           |
| 31    | LG1          | 2010       |           | ROS       |               | 122          | 49 20.546 | 126 35.078 | 54           |           | 309-313        | 5            |               |                |           |
|       |              | 20:14      |           |           |               |              | 49 20.537 | 126 35.008 |              | 50        |                |              |               |                |           |
|       |              | 20:21      |           |           |               |              | 49 20.546 | 126 34.919 |              |           |                |              |               |                |           |
|       |              |            |           |           |               |              |           |            |              |           |                |              |               |                |           |

Cast type:

BOT = bottle cast, no CTD  
CTD = CTD without Rosette  
ROS = Rosette plus CTD

USW = sea water loop

MOR = mooring  
NET = net haul  
DRF = drifter

bottle firing method:

US = up / stop  
UN = up / no stop  
DN = down / no stop

Time Code

BE = beginning time of cast  
BO = bottom time of cast  
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DE = deployment time  
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Transmissometer to be cleaned for each cast, do not use Ammonia products

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