

CRUISE  
NUMBER

99-28

Book 1/1

DAILY LOG  
INSTITUTE OF OCEAN SCIENCES  
OCEAN PHYSICS

DATE  
VESSEL  
PROJECT

June 28 - July 9 / 99

J.P. Tully

## MONITORING STATIONS

NUTRIENTS — Full Depth

Chlorophyll — 50m - 0m

Taxonomy — Surface only

Oxygen — Full Depth

Complete Monitoring Station Log Sheet

# Productivity Monitoring Stations

NUTRIENTS - bottles @ all depths

CHLOROPHYLL - (top 5 depths ~~to sfc~~) + one extra @ sfc  
= total of 6 bottles.

\* PRODUCTIVITY  
↳ (SEE BRAD)

- 6 light levels → 100%, 55, 30, 10, 3, 1%  
- labels = "inc  $\phi$ " to "inc 8" as (0, 1, 2, 4, 6, 8)  
+ one extra @ sfc "inc  $\phi$ -F".



JUNE 28/99

- OFF LOAD STATION P Equipment in Morning. D. Masson had the ship at the end of the "P" trip from Thursday afternoon to Sunday afternoon. No time to unload on weekend!
- Loading begins in afternoon.  
Bernard, Tim, Dave worked late trying to get XBT system operating. No luck.

JUNE 29 (Tuesday) Overcast/COLD!

- Departure @ 0800 PDT delayed. Engineers having problems with ventilation system. Schedule departure @ 1000.  
Still trying to get XBT system operating. Could not get XBT system working!
- Depart IOS @ 1230 PDT. Two engines!  
Proceed to GPS drifter station JFC3.

- Deploy GPS DRIFTER # 20311  
TIME IN WATER: 17:30 PDT  
5 m Noley Sock drague. (+7 UTC)

LAT 048° 16.458

Long 123 44.952

@ JFC3 off Soke  
Overcast; calm; swell from west

Lex DEI  
DMA level 1  
tntungl 7

Note: Thermosalinograph screen displays  
wrong time

|                 |       |
|-----------------|-------|
| The UTC time is | 06:44 |
| Display reading | 13:00 |

## DAILY LOG

## OCEAN PHYSICS

## INSTITUTE OF OCEAN SCIENCES

| YEAR                                                             |            |           | MONTH      |           |                    | SHIP       |             |               | CRUISE           |                        |                 | PAGE         |      | OF                |  |
|------------------------------------------------------------------|------------|-----------|------------|-----------|--------------------|------------|-------------|---------------|------------------|------------------------|-----------------|--------------|------|-------------------|--|
| 1999                                                             |            |           | JUNE       |           |                    | J.P. Tully |             |               | 99-28            |                        |                 | 1            |      |                   |  |
| DAY (UTC)                                                        | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE   | LONGITUDE   | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS          |  |
| 30                                                               | JFC3       | DRF       | 00:30      |           |                    | 48° 16.458 | 123° 44.952 |               |                  |                        |                 |              |      | Buoy 20311        |  |
|                                                                  | JFC4       | DRF       | 00:42      |           |                    | 48 14.934  | 123° 44.935 |               | 170              |                        |                 |              |      | Buoy 20306        |  |
|                                                                  | JFC5       | DRF       | 00:56      |           |                    | 48 12.336  | 123° 45.101 |               | 140              |                        |                 |              |      | Buoy 20307        |  |
|                                                                  | JF2E       | WBR       | 02:58      |           |                    | 48 15.076  | 124 09.811  |               | 150.2            |                        |                 |              |      | rems @ 30 and 90m |  |
|                                                                  | LBØ1       | Ros       | 07         | PE        | 1                  | 48 40 425  | 124 59 571  |               | 36 m             |                        |                 |              |      |                   |  |
|                                                                  |            |           |            | Bo        | 1                  |            |             |               |                  |                        |                 |              |      |                   |  |
|                                                                  | LBØ1       | Ros       | 0725       | EN        | 1                  | 48 40 442  | 124 59 452  |               |                  | 30                     | 1-4             |              |      |                   |  |
|                                                                  | LBØ2       | Ros       | 0759       | BE        | 2                  | 48 38 986  | 125 02 574  |               | 60               |                        | 5-9             |              |      |                   |  |
|                                                                  | LBØ2       | Ros       | 0801       | Bo        | 2                  | 48 39 014  | 125 02 363  |               |                  | 53                     |                 |              |      |                   |  |
|                                                                  | LBØ2       | Ros       | 0806       | EN        | 2                  | 48 39 03   | 125 02 35   |               |                  |                        |                 |              |      |                   |  |
|                                                                  | LBØ3       | CTD       | 0846       | BE        | 3                  | 48 37 337  | 125 05 556  |               | 96               |                        |                 |              |      |                   |  |
|                                                                  | LBØ3       | CTD       |            | Bo        | 3                  | 48 37      | 125 05      |               |                  | 92                     |                 |              |      |                   |  |
|                                                                  | LBØ3       | CTD       | 0850       | EN        | 3                  | 48 37 385  | 125 05 739  |               |                  |                        |                 |              |      |                   |  |
|                                                                  | LBØ4       | Ros       | 0921       | BE        | 4                  | 48 35 671  | 125 08 706  |               | 114.             |                        |                 |              |      |                   |  |
|                                                                  | LBØ4       | Ros       |            | Bo        | 4                  |            |             |               |                  |                        | 10-16           |              |      |                   |  |
|                                                                  | LBØ4       | Ros       | 0930       | EN        | 4                  | 48 35 800  | 125 08 761  |               |                  |                        |                 |              |      |                   |  |
| CAST TYPE - BOT - bottle cast ROS - rosette USW - sea water loop |            |           |            |           |                    |            |             |               |                  |                        |                 |              |      |                   |  |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
mooringROS -  
NET -  
DRF -rosette  
net haul  
drifter

USW - sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE -  
MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN

Deploy GPS Drifter #20306 @ Site JFC4

@ TIME: 1742 PD

LAT: 48 14.444

LONG: 123 44.944 (recorded a bit later)

Depth = 170m

Ship steaming @ 2 knots southward

Deploy GPS drifter #20307 @ site JFC5

@ TIME: 1756 PD

LAT: 48 12.336

LONG: 123 45.101

Depth = 140m

PROCEED TO MOORING JF2E-B-2

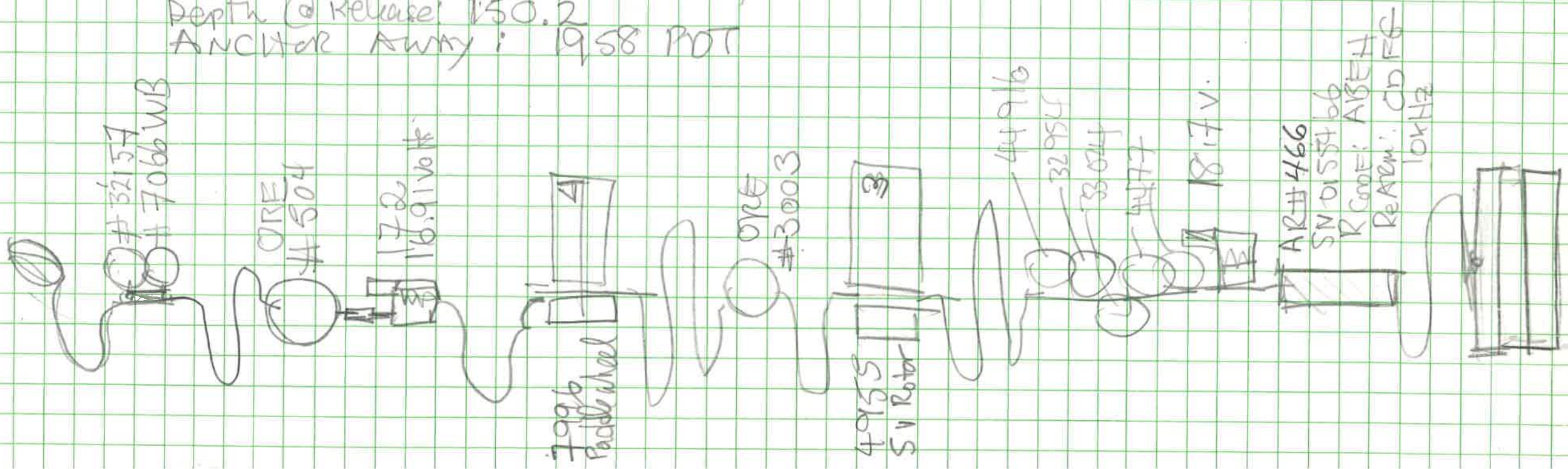
TOP CM IN WATER @ 1953 PDT; Bottom CM in water @ 1955 PDT.

LAT 48 15.076

LONG 124 09.811

Depth @ Release: 150.2

ANCHOR AWAY: 1958 PDT



## DAILY LOG

## OCEAN PHYSICS

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| YEAR<br>1999 |               |              | MONTH<br>June |              |                       | SHIP<br>Tully |            |                  | CRUISE<br>9928      |                           |                    |                 | PAGE<br>OF |          |
|--------------|---------------|--------------|---------------|--------------|-----------------------|---------------|------------|------------------|---------------------|---------------------------|--------------------|-----------------|------------|----------|
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE      | LONGITUDE  | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT       | COMMENTS |
| 30           | LB05          | CTD          | 10:07         | BE           | 5                     | 48 33 975     | 125 11 966 | GPS              |                     |                           | 3                  |                 |            |          |
| 30           | LB05          | CTD          | 10:10         | BO           | 5                     | 48 33 987     | 125 11 903 | GPS              | 105                 |                           |                    |                 |            |          |
| 30           | LB05          | CTD          | 10:12         | EN           | 5                     | 48 33 995     | 125 11 883 | GPS              |                     |                           |                    |                 |            |          |
| 30           | LB06          | ROS          | 10:47         | BE           | 6                     | 48 32 196     | 125 15 618 | GPS              |                     |                           | 17-24              |                 |            |          |
| 30           | LB06          | ROS          | 1051          | BO           | 6                     | 48 32 227     | 125 15 453 | GPS              | 116                 |                           |                    |                 |            |          |
| 30           | LB06          | ROS          | 1101          | EN           | 6                     | 48 32 292     | 125 15 370 | GPS              |                     |                           |                    |                 |            |          |
| 30           | LB07          | CTD          | 1148          | BE           | 7                     | 48 28 66      | 125 22 14  |                  | 157                 |                           |                    |                 |            |          |
| 30           | LB07          | CTD          | 1152          | BO           | 7                     | 48 29 66      | 125 22 13  |                  |                     | 150                       |                    |                 |            |          |
| 30           | LB07          | CTD          | 1155          | EN           | 7                     | 48 29 65      | 125 22 12  |                  |                     |                           |                    |                 |            |          |
| 30           | LB08          | ROS          | 1237          | BE           | 8                     | 48 25 21      | 125 28 84  |                  | 152                 |                           | 25-33              |                 |            |          |
| 30           | LB08          | ROS          | 1240          | BO           | 8                     | 48 25 20      | 125 28 86  |                  |                     | 144                       |                    |                 |            |          |
| 30           | LB08          | ROS          | 1250          | EN           | 8                     | 48 25 17      | 125 28 90  |                  |                     |                           |                    |                 |            |          |
| 30           | LB09          | ROS          | 1331          | BE           | 9                     | 48 22 03      | 125 34 86  |                  | 155                 |                           | 34-42              |                 |            |          |
| 30           | LB09          | ROS          | 1334          | BO           | 9                     | 48 22 05      | 125 34 87  |                  |                     | 146                       |                    |                 |            |          |
| 30           | LB09          | ROS          | 1346          | EN           | 9                     | 48 22 08      | 125 34 86  |                  |                     |                           |                    |                 |            |          |
| 30           | LB10          | CTD          | 1429          | BE           | 10                    | 48 18 49      | 125 41 38  |                  | 153                 |                           |                    |                 |            |          |
| 30           | LB10          | CTD          | 1432          | BO           | 10                    | 48 18 47      | 125 41 39  |                  |                     | 148                       |                    |                 |            |          |
| 30           | LB10          | CTD          | 1434          | EN           | 10                    | 48 18 46      | 125 41 36  |                  |                     |                           |                    |                 |            |          |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
mooring

ROS -

NET -  
DRF -rosette  
net haul  
drifter

USW -

sea water loop

TIME CODE -

BE -

BO -  
EN -beginning time of cast  
bottom time of cast  
end of cast

DE -

MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -

GPS -  
LOR -RADAR  
GLOBAL  
LORAN

NOTE

21:00 hrs Clock reset on Thermosalinograph  
To UTC

## DAILY LOG

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| YEAR         |               |              | MONTH         |              |                       | SHIP        |             |                  | CRUISE              |                           |                    |                 |      | PAGE                         |  | OF |  |
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| 1999         |               |              | June          |              |                       | Tully       |             |                  | 9928                |                           |                    |                 |      |                              |  |    |  |
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE    | LONGITUDE   | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                     |  |    |  |
| 30           | LB11          | ROS          | 1521          | BE           | 11                    |             |             |                  | 207                 | 197                       | 43-54              | 12              |      |                              |  |    |  |
| 30           | LB11          |              |               |              | 11                    |             |             |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB11          |              | 1539          | EN           | 11                    | 48°15.19' N | 125°47.54'W |                  |                     |                           | 55-69              |                 |      |                              |  |    |  |
| 30           | LB12          | ROS          | 1624          | BE           | 12                    | 48 12.96 N  | 125°51.91   |                  | 508                 | 497                       |                    | 15              |      | Wet labs Fluorometer Removed |  |    |  |
| 30           | LB12          |              | 1628          | BO           | 12                    | 12.97       | 51.85       |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB12          |              | 1650          | EN           | 12                    | 12.97       | 51.67       |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB13          | CTD          | 1725          | BE           | 13                    | 48°10.54'   | 125°55.97'  |                  | 900                 | 903                       |                    |                 |      |                              |  |    |  |
| 30           | LB13          |              | 1742          | BO           | 13                    | 10.50       | 55.74       |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB13          |              | 1754          | EN           | 13                    | 10.50       | 55.59       |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB14          | ROS          | 1856          | BE           | 14                    | 48 08.525   | 126 00 307  |                  | 1185                |                           | 70-88              |                 |      | Par-Sensor Removed           |  |    |  |
| 30           | LB14          | ROS          | 19:12         | BO           | 14                    | 48 08.477   | 126 00 222  |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB14          | ROS          | 19:58         | EN           | 14                    | 48 08.592   | 126 00 286  |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB15          | CTD          | 20:22         | BE           | 15                    | 48 04.452   | 126 08 704  |                  | 1573                |                           |                    |                 |      | Clock reset                  |  |    |  |
| 30           | LB15          | CTD          | 21:48         | BO           | 15                    | 48 04.682   | 126 08 634  |                  |                     |                           |                    |                 |      | Thermosalinograph            |  |    |  |
| 30           | LB15          | CTD          | 22:02         | EN           | 15                    | 48 04.785   | 126 08 683  |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB16          | CTD          | 22:58         | BE           | 16                    | 48 00.561   | 126 17.103  |                  |                     |                           |                    |                 |      |                              |  |    |  |
| 30           | LB16          | CTD          | 2330          | BO           | 16                    | 48 00.564   | 126 17.019  |                  | 1816                |                           |                    |                 |      | To BOTTOM (+7m)<br>Same Sun! |  |    |  |
| 30           | LB16          | CTD          |               | EN           | 16                    | 48 00.569   | 126 17.030  |                  |                     |                           |                    |                 |      |                              |  |    |  |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
mooringROS -  
NET -  
DRF -rosette  
net haul  
drifter

USW -

sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE -  
MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN

|     |      |       |          |
|-----|------|-------|----------|
| PAR | 3%   | 57.4m | 32.794‰  |
|     | 10%  | 43.7m | 32.75‰   |
|     | 30%  | 33 m  | 32.6825‰ |
|     | 55%  | 24.7m | 32.58‰   |
|     | 100% | 19.3m | 32.43‰   |

| YEAR         |               |              | MONTH         |               |                       | SHIP      |            |                  | CRUISE              |                           |                    | PAGE            |      |                                                             | OF |  |  |
|--------------|---------------|--------------|---------------|---------------|-----------------------|-----------|------------|------------------|---------------------|---------------------------|--------------------|-----------------|------|-------------------------------------------------------------|----|--|--|
| 1999         |               |              | JULY          |               |                       | Tully     |            |                  | 9928                |                           |                    |                 |      |                                                             |    |  |  |
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE  | STD/HYDRO<br>CONSEC # | LATITUDE  | LONGITUDE  | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                                                    |    |  |  |
| 01           | LB16          | ROS          | 0015          | BE            | 17                    | 48 00.66  | 126 17 05  |                  |                     |                           |                    |                 |      | Shallow Rosette.                                            |    |  |  |
| 01           | LB16          | "            | 0020          | BO            | 17                    | 48 00.    | 126 17.10  |                  |                     |                           | 89-94              |                 |      | IRRADIANCE @ 1.85%, 3%,<br>10%, 30%, 55%, 100%<br>3% @ 57m. |    |  |  |
| 01           | LB16          | "            | 0052          | EN            | 18                    | 48 00.683 | 126 17.305 |                  |                     |                           |                    |                 |      |                                                             |    |  |  |
| 01           | LW12          | CTD          | 0216          | BE            | 19                    | 47 59.94  | 126 00.02  |                  | 1455                |                           |                    |                 |      | NEW LINE LW                                                 |    |  |  |
| 01           | LW12          | CTD          | 0241          | BO            | 19                    | 47 59.964 | 126 00.062 |                  | 1465                |                           |                    |                 |      |                                                             |    |  |  |
| 01           | LW12          | CTD          | 0303          | EN            | 19                    | 44        | 126        |                  |                     |                           |                    |                 |      |                                                             |    |  |  |
| 01           | LW11          | ROS          | 0414          | BE            | 20                    | 48 00.02  | 125 45.019 |                  | 1035                |                           | 95-112             |                 |      | Stopped at 1000m PAR sensor on                              |    |  |  |
|              | LW11          | "            | 0427          | BOT           | 20                    | 48 00.03  | 125 44.96  |                  |                     |                           |                    |                 |      |                                                             |    |  |  |
|              | LW11          | "            | 0459          | END           | 20                    | 48 00.03  | 125 44.95  |                  |                     |                           |                    |                 |      |                                                             |    |  |  |
| 01           | LW10          | ROS          | 0620          | BE            | 21                    | 47 59.96  | 125 34.94  |                  | 195                 | 187                       | 113-123            |                 |      | No Sample Bottle #6                                         |    |  |  |
| 01           | LW10          |              | 0623          | BO            | 21                    | 47 59.97  | 125 34.98  |                  |                     |                           |                    |                 |      | Corrected problem.                                          |    |  |  |
| 01           | LW10          |              | 0637          | <del>BE</del> | 27                    | 47 59.97  | 125 35.04  |                  |                     |                           |                    |                 |      |                                                             |    |  |  |
| 01           | LW09          | ROS          | 0725          | BE            | 23                    | 47 59 960 | 125 25 964 |                  | 156                 |                           | 124-133            |                 |      | File 99280022 already                                       |    |  |  |
| 01           | LW09          | ROS          | 0733          | BO            | 23                    |           |            |                  |                     |                           |                    |                 |      | exists.                                                     |    |  |  |
| 01           | LW09          | ROS          | 0745          | EN            | 23                    | 47 59 983 | 125 25 911 |                  |                     |                           |                    |                 |      |                                                             |    |  |  |
| 01           | LW08          | CTD          | 0806          | BE            | 24                    | 47 59 970 | 125 23 960 |                  |                     |                           |                    |                 |      |                                                             |    |  |  |
| 01           | LW08          | CTD          | 0817          | BO            | 24                    | 48 00 006 | 125 23 997 |                  | 534                 |                           |                    |                 |      |                                                             |    |  |  |
| 01           | LW08          | CTD          |               | EN            | 24                    | 47        | 125        |                  |                     |                           |                    |                 |      |                                                             |    |  |  |

CAST TYPE - BOT - bottle cast  
CTD - ctd  
MOR - mooring

ROS - rosette  
NET - net haul  
DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast  
BO - bottom time of cast  
EN - end of cast

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

POSITION CODE - RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN

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OCEAN PHYSICS

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| YEAR 1999 |            |           | MONTH JULY |           |                    | SHIP Tully |            |               | CRUISE 9928      |                        |                 |              |      | PAGE               | OF |
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| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE   | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS           |    |
| 01        | LW07       | ROS       | 0850       | BE        | 25                 | 47 59 970  | 125 21 994 | GPS           | 643              |                        | 134-150         |              |      |                    |    |
| 01        | LW07       | ROS       | 0859       | BO        | 25                 | 48 00 003  | 125 21 990 | GPS           |                  |                        |                 |              |      |                    |    |
| 01        | LW07       | ROS       | 0930       | EN        | 25                 | 48 00 023  | 125 21 970 | GPS           |                  |                        |                 |              |      |                    |    |
| 01        | LW06       | CTD       | 10:03      | BE        | 26                 | 48 00 017  | 125 20 000 | GPS           |                  |                        |                 |              |      |                    |    |
| 01        | LW06       | CTD       | 10:12      | BO        | 26                 | 48 00 005  | 125 19 846 | GPS           | 414              |                        |                 |              |      | Wet Labs back on.  |    |
| 01        | LW06       | CTD       | 10:18      | EN        | 26                 | 48 00 46   | 125 19 045 | GPS           |                  |                        |                 |              |      |                    |    |
| 01        | LW05       | ROS       | 10:48      | BE        | 27                 | 47 59 981  | 125 14 892 | GPS           |                  |                        |                 |              |      |                    |    |
| 01        | LW05       | ROS       | 10:54      | BO        | 27                 | 48 00 013  | 125 15 024 | GPS           | 162              |                        | 151-159         |              |      |                    |    |
| 01        | LW05       | ROS       |            | EN        | 27                 | 48 00 054  | 125 14 985 | GPS           |                  |                        |                 |              |      |                    |    |
| 01        | LW04       | CTD       | 1158       | BE        | 28                 | 47 59 89   | 125 04 95  | GPS           | 132              |                        |                 |              |      |                    |    |
| 01        | LW04       | CTD       | 1200       | BO        | 28                 | 47 59 89   | 125 04 91  | GPS           |                  | 123                    |                 |              |      |                    |    |
| 01        | LW04       | CTD       | 1202       | EN        | 28                 | 47 59 89   | 125 04 92  | GPS           |                  |                        |                 |              |      |                    |    |
| 01        | LW03       | ROS       | 1251       | BE        | 29                 | 47 59 980  | 124 55.044 | GPS           |                  | 86                     |                 |              |      |                    |    |
| 01        | LW03       | ROS       | 1252       | BO        | 29                 | 47 59 97   | 124 55 08  | GPS           |                  |                        | 160-165         |              |      |                    |    |
| 01        | LW03       | ROS       | 1258       | EN        | 29                 | 47 59 95   | 124 55 06  | GPS           |                  |                        |                 |              |      |                    |    |
| 01        | LW02       | ROS       | 1329       | BE        | 30                 | 48 00 01   | 124 49 95  |               | 52               |                        |                 |              |      | SURROUNDED BY CRAB |    |
| 01        | LW02       | ROS       | 1330       | BO        | 30                 | 48 00 00   | 124 49 96  |               |                  |                        |                 |              |      | TRAPS              |    |
| 01        | LW02       | ROS       | 1335       | EN        | 30                 | 48 00 00   | 124 50 01  |               |                  |                        |                 |              |      |                    |    |

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

POSITION CODE - RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN

New Data File: Demo.Dat

Config File: 0437CTD.CON

Instr: C:\Seasoft\

DAILY LOG

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INSTITUTE OF OCEAN SCIENCES

| YEAR 1999 |            |           | MONTH July |           | SHIP TULLY         |           |            | CRUISE 9928   |                  |                        | PAGE            |              | OF   |                     |
|-----------|------------|-----------|------------|-----------|--------------------|-----------|------------|---------------|------------------|------------------------|-----------------|--------------|------|---------------------|
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS            |
| 01        | LW01       | ROS       | 1406       | BG        | 31                 | 47 59.951 | 124 45.030 |               | 33               |                        | 171-174         |              |      |                     |
| 01        | LW01       | ROS       | 1409       | BOT       | 31                 | 47 59.96  | 124 45.04  |               |                  |                        |                 |              |      |                     |
| 01        | LW01       | ROS       | 1411       | END       | 31                 | 47 59.97  | 124 45.05  |               |                  |                        |                 |              |      |                     |
| 01        | LA04       | ROS       | 1651       | BE        | 32                 | 49° 19.35 | 125° 4.20  |               | 191              |                        | 175-185         |              |      | Turbidity at bottom |
| 01        | LA04       | ROS       | 1654       | Bo        | 32                 | 19.33     | 4.16       |               |                  |                        |                 |              |      | ~30m                |
| 01        | LA04       | ROS       | 1708       | EN        | 32                 | 19.41     | 4.32       |               |                  |                        |                 |              |      |                     |
| 01        | LCO1       | ROS       | 2034       | BE        | 33                 | 48 50.480 | 125 27 813 |               | 98               |                        |                 |              |      |                     |
| 01        | LCO1       | "         | 2039       | Bo        | 33                 | 48 50.526 | 125 27.824 |               |                  |                        |                 |              |      |                     |
| 01        | LCO1       | "         | 2048       | END       | 33                 | 48 50.500 | 125 27 731 |               | 97               |                        | 186-192         |              |      |                     |
| 01        | LCO2       | ROS       | 2105       | BE        | 34                 | 48 48.716 | 125 30.951 |               |                  |                        |                 |              |      | Nutrients / Missed  |
| 01        | LCO2       | ROS       | 2110       | Bo        | 34                 | 48 48.717 | 125 30.958 |               | 110              |                        | 193-199         |              |      | Chlorophyll!        |
| 01        | LCO2       | ROS       | 2127       | EN        | 34                 | 48 48 704 | 125 30 971 |               |                  |                        |                 |              |      |                     |
| 01        | LC03       | CTD       | 2158       | BE        | 35                 | 48 46.947 | 125 34.243 |               |                  |                        |                 |              |      |                     |
| 01        | LC03       | CTD       |            | Bo        | 35                 | 48        | 125        |               | 138              |                        |                 |              |      |                     |
| 01        | LC03       | CTD       | 2208       | EN        | 35                 | 48 46.945 | 125 34.170 |               |                  |                        |                 |              |      |                     |
| 01        | LC04       | ROS       |            | BE        | 36                 | 48        | 125        |               |                  |                        |                 |              |      | PRODUCIVITY / NUT   |
| 01        | LC04       | "         | 2300       | Bo        | 36                 | 48 43.443 | 125 40.778 |               | 170              |                        |                 |              |      | Chlorophyll         |
| 01        | LC04       | "         | 2324       | EN        | 36                 | 48 43.406 | 125 40.767 |               |                  |                        |                 |              |      | BONGOS x 2 - Ruben  |

CAST TYPE - BOT - bottle cast  
CTD - ctd  
MOR - mooring

ROS - rosette  
NET - net haul  
DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast  
BO - bottom time of cast  
EN - end of cast

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

POSITION CODE - RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN

LINE C. 1330 PDT July 1/99

TRY TO RUN 0-100m NUTRIENTS AT ALL STATIONS ON THIS LINE

NUTRIENTS @ LCØ1 ✓  
LCØ2 ✓  

---

LCØ4 ✓  
LCØ5  
LCØ6  
LCØ7  
LCØ8  
LCØ9  

---

LC11

## DAILY LOG

## OCEAN PHYSICS

## INSTITUTE OF OCEAN SCIENCES

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| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE  | LONGITUDE  | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                    |    |
| 01           | LC04          | Net          |               |              | 37                    | 48 43.303 | 125 40.818 |                  |                     |                           |                    |                 |      | 150                         |    |
| 02           | LC05          | ROS          | 0101          | BE           | 38                    | 48 39.963 | 125 47.392 |                  | 65                  |                           |                    |                 |      |                             |    |
| 02           | LC05          | ROS          | 0103          | BO           | 38                    | 48 40.005 | 125 47.339 |                  |                     |                           | 214-219            |                 |      |                             |    |
| 02           | LC05          | ROS          | 0110          | EN           | 38                    | 48 40.000 | 125 47.21  |                  |                     |                           |                    |                 |      |                             |    |
| 02           | LC06          | ROS          | 0200          | BE           | 39                    | 48 36.40  | 125 53.98  |                  | 93                  |                           |                    |                 |      |                             |    |
| 02           | LC06          | ROS          | 0203          | BO           | 39                    | 48 36.48  | 125 53.94  |                  |                     |                           | 220-226            |                 |      |                             |    |
| 02           | LC06          | ROS          | 0210          | EN           | 39                    | 48 36.50  | 125 53.92  |                  |                     |                           |                    |                 |      |                             |    |
| 02           | LC07          | ROS          | 0259          | BE           | 40                    | 48 32.93  | 126 00.50  |                  |                     |                           |                    |                 |      |                             |    |
| 02           | LC07          | ROS          | 0301          | BO           | 40                    | 32.92     | 00 49      |                  |                     |                           | 227-234            |                 |      |                             |    |
| 02           | LC07          | ROS          | 0310          | EN           | 40                    | 32.93     | 00 55      |                  |                     |                           |                    |                 |      |                             |    |
| 02           | LC08          | ROS          |               | BE           | 41                    |           |            |                  | 200                 | 199                       | 235-245            |                 |      | Hit Bottom                  |    |
| 02           | LC08          |              | 0420          | BO           | 41                    | 48 29.42  | 126 07.12  |                  |                     |                           |                    |                 |      |                             |    |
| 02           | LC08          |              | 0414          | EN           | 41                    | 48 29.40  | 126 07.20  |                  |                     |                           |                    |                 |      |                             |    |
| 02           | LC09          | ROS          |               | BE           | 42                    |           |            |                  | 615                 | 612                       | 246-262            |                 |      | Wetlabs Fluorometer removed |    |
| 02           | LC09          |              | 0508          | BO           | 42                    | 48 25.93  | 126 13.70  |                  |                     |                           |                    |                 |      |                             |    |
| 02           | LC09          |              | 0535          | EN           | 42                    |           |            |                  |                     |                           |                    |                 |      |                             |    |
| 02           | LC09          | net          | 0545          |              | 43                    |           |            |                  |                     |                           | < 55°              |                 |      | 0-50 Bongo obl Reuben       |    |
| 02           | LC09          | net          | 0557          |              | 44                    |           |            |                  | 616                 |                           | < 40°              |                 |      | 0-50 Bongo VNH Dave H.      |    |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
mooringROS -  
NET -  
DRF -rosette  
net haul  
drifter

USW -

sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE -  
MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN

File #3 on Thermosalinograph. New file started at  
07:17 UTC 99/07/02 9928TS03 Clock now correct.

yl

Note Sample rate of TS is 15 seconds but I note that the  
clock updates 30 seconds every sample.  
This means the clock gains 1 Hour every Hour.

Seconds always read 57, 27 57, 27

YEAR1999

MONTHJuly

SHIPTully

CRUISE9928

PAGEOF

| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE  | LONGITUDE  | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                               |
|--------------|---------------|--------------|---------------|--------------|-----------------------|-----------|------------|------------------|---------------------|---------------------------|--------------------|-----------------|------|----------------------------------------|
| 02           | LC10          | CTD          | 0653          | BE           | 45                    | 48 22.38  | 126 20 21  |                  | 1253                |                           |                    |                 |      | PAR Sensor Removed                     |
| 02           | LC10          | CTD          | 0713          | BO           | 45                    | 48 22 382 | 126 20 205 |                  |                     |                           |                    |                 |      |                                        |
| 02           | LC10          | CTD          | 0734          | EN           | 45                    | 48 22 370 | 126 20 205 |                  |                     |                           |                    |                 |      |                                        |
| 02           | LC11          | ROS          | 08:19         | BE           | 46                    | 48 18 947 | 126 26 720 |                  |                     |                           |                    |                 |      |                                        |
| 02           | LC11          | ROS          | 08:43         | BO           | 46                    | 48 18 998 | 126 26 750 |                  | 1467                |                           | 263-282            |                 |      |                                        |
| 02           | LC11          | ROS          | 09:27         | EN           | 46                    | 48 19 019 | 126 26 618 |                  |                     |                           |                    |                 |      |                                        |
| 02           | LC12          | CTD          | 10:40         | BE           | 47                    | 48 14 990 | 126 39 981 |                  |                     |                           |                    |                 |      |                                        |
| 02           | LC12          | CTD          | 11:15         | BO           | 47                    | 48 15 03  | 126 39 97  |                  | 2545                | 2500                      |                    |                 |      | BONGO + Neuston tow                    |
| 02           | LC12          | CTD          | 1156          | EN           | 47                    | 48 15 00  | 126 40 02  |                  |                     |                           |                    |                 |      |                                        |
| 02           | LC12          | Net          | 1211          | BE           | 48                    | 48 14 983 | 126 40 026 |                  |                     |                           |                    |                 |      | Neuston (15 min)                       |
| 02           | LC12          | Net          | 1230          | BE           | 49                    | 48 15 233 | 126 40 458 |                  |                     |                           |                    |                 |      | Bongo 0-50 obl. Reuben                 |
| 02           | LC12          | Net          | 1245          | EN           | 49                    | 48 15.233 | 126 40 458 |                  |                     |                           |                    |                 |      | Bongo 0-150 UNH D. Hedges              |
| 02           | LE09          | CTD          | 1508          | BE           | 50                    | 48 35.99  | 126 44.03  |                  | 1472                | 1500                      |                    |                 |      | Temperature inflection @ 380m          |
|              | LE09          | "            | 1530          | BOT          | 50                    | 48 36.04  | 126 44.56  |                  |                     |                           |                    |                 |      |                                        |
|              | LE09          | "            | 1553          | END          | 50                    | 48 35.91  | 126 44.91  |                  |                     |                           |                    |                 |      |                                        |
| 02           | LE08          | ROS          | 1651          | BE           | 51                    | 48 40.328 | 126 38.159 |                  | 1311                |                           | 283-302            |                 |      |                                        |
|              | LE08          | "            | 1711          | BOT          | 51                    | 48 40.37  | 126 38.25  |                  |                     |                           |                    |                 |      | Turbidity layer @ 1900 to 1100 m depth |
|              | LE08          |              | 1750          | END          | 51                    | 48 40.40  | 126 38.24  |                  |                     |                           |                    |                 |      |                                        |

CAST TYPE - BOT - bottle cast  
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USW - sea water loop

TIME CODE - BE - beginning time of cast  
BO - bottom time of cast  
EN - end of cast

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

POSITION CODE - RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN

## Thermosalinograph Time Problem.

IF the config file is set to a different time than the sample rate of the instrument. The clock will update at the the config file setting, but the program samples at the instrument setting.

Example: Instrument set to 15 sec. Config set to 30 sec

Data will be sampled every 15 sec  
Clock will increment 30 sec  
Time will advance 1 Hour per hour.

## DAILY LOG

## OCEAN PHYSICS

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| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE  | LONGITUDE  | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS |
| 02           | LE07          | ROS          | 1840          | BE           | 52                    | 48 44 25  | 126 32 17  | GPS              |                     | 529                       | 303-318            |                 |      |          |
| 02           | LE07          | ROS          |               | BO           | 52                    |           |            | GPS              |                     |                           |                    |                 |      |          |
| 02           | LE07          | ROS          | 1912          | EN           | 52                    | 48 44 494 | 126 31 991 | GPS              |                     |                           |                    |                 |      |          |
| 02           | LE06          | ROS          | 1957          | BE           | 53                    | 48 48 484 | 126 26 192 | GPS              |                     |                           |                    |                 |      |          |
| 02           | LE06          | ROS          |               | BO           | 53                    |           |            |                  | 215                 |                           |                    |                 |      |          |
| 02           | LE06          | ROS          | 20:17         | EN           | 53                    | 48 48 421 | 126 26 172 | GPS              |                     |                           |                    |                 |      |          |
| 02           | LE05          | ROS          |               | BE           | 54                    |           |            |                  |                     |                           |                    |                 |      |          |
| 02           | LE05          | ROS          | 21:08         | BO           | 54                    | 48 52.825 | 126 20.325 |                  | 160                 | 143                       |                    |                 |      |          |
| 02           | LE05          | ROS          | 21:23         | EN           | 54                    | 48 52.83  | 126 20.34  |                  |                     |                           |                    |                 |      |          |
| 02           | LE04          | ROS          | 22:05         | BE           | 55                    | 48 56 500 | 126 15 033 |                  |                     |                           |                    |                 |      |          |
| 02           | LE04          | ROS          |               | BO           | 55                    |           |            |                  | 123                 |                           | 339-346            |                 |      |          |
| 02           | LE04          | ROS          | 22:17         | EN           | 55                    | 48 56 553 | 126 15 180 |                  |                     |                           |                    |                 |      |          |
| 02           | LE03          | ROS          | 2258          | BE           | 56                    | 49 00 53  | 126 10 60  |                  |                     |                           |                    |                 |      |          |
| 02           | LE03          | ROS          | 2300          | BO           | 56                    | 49 00 54  | 126 10 61  |                  |                     |                           | 347-352            |                 |      |          |
| 02           | LE03          | ROS          | 2306          | EN           | 56                    | 49 00 57  | 126 10 62  |                  |                     |                           |                    |                 |      |          |
| 02           | LE02          | ROS          | 2350          | BE           | 57                    | 49 04 34  | 126 04 44  |                  | 58                  |                           |                    |                 |      |          |
| 02           | LE02          | ROS          | 2352          | BO           | 57                    | 49 04 34  | 126 04 50  |                  |                     |                           | 353-357            |                 |      |          |
| 02           | LE02          | ROS          | 2357          | EN           | 57                    | 49 04 35  | 126 04 48  |                  |                     |                           |                    |                 |      |          |

CAST TYPE -

BOT -

bottle cast  
CTD -  
MOR - ctd  
mooring

ROS -

rosette  
NET -  
DRF - net haul  
drifter

USW -

sea water loop

TIME CODE -

BE -

BO -

EN -

beginning time of cast  
bottom time of cast  
end of cast

DE -

MR -

RE -

deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -

GPS -

LOR -

RADAR  
GLOBAL  
LORAN

0742 PDT 99/07/02

D. Flr 20307 on beach at Pillar Point  
retrieval by hovercraft or other vessel.

48°13.20' N 124°06.00' W. Contacted ROC to coordinate

# DAILY LOG

# OCEAN PHYSICS

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| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                |  |    |  |
| 03        | LE01       | ROS       | 0030       | BE        | 58                 | 49 07 03  | 126 00 95  |               | 46 n             |                        |                 |              |      |                         |  |    |  |
| 03        | LE01       | ROS       | 0032       | BO        | 58                 | 49 07 04  | 126 00 96  |               |                  |                        | 358-362         |              |      |                         |  |    |  |
| 03        | LE01       | ROS       | 0036       | EN        | 58                 | 49 07 04  | 126 00 96  |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LF02       | CTD       | 0203       | BE        | 59                 | 49 13 18  | 126 16 55  |               | 51 n             |                        |                 |              |      |                         |  |    |  |
| 03        | LF02       | CTD       | 0205       | BO        | 59                 | 49 13 21  | 126 16 55  |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LF02       | CTD       | 0207       | EN        | 59                 | 49 13 22  | 126 16 56  |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LG00       | CTD       | 0342       | BE        | 60                 | 49 21.80  | 126 34.07  |               | 30m              | 26                     |                 |              |      | Par Sensor & Wetlabs On |  |    |  |
| 03        | LG00       | CTD       | 343        | BO        | 60                 | 1         |            |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LG00       | CTD       | 344        | EN        | 60                 |           |            |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LG01       | ROS       | 0400       | BE        | 61                 | 49 20.51  | 126 35.03  |               | 53               | 50                     | 363-367         |              |      |                         |  |    |  |
| 03        | LG01       | ROS       | 0403       | BO        | 61                 | 49 20.506 | 126 35.026 |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LG01       | ROS       | 0408       | EN        | 61                 | 49 20.53  | 126 35.00  |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LG1A       | CTD       | 0429       | BE        | 62                 | 49 19.51  | 126 36.59  |               | 80               | 79                     |                 |              |      |                         |  |    |  |
| 03        | LG1A       | CTD       | 0431       | BO        | 62                 | 49 19.50  | 126 36.59  |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LG1A       | CTD       | 0432       | EN        | 62                 | 49 19.50  | 126 36.60  |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LG02       | ROS       | 0449       | BE        | 63                 | 49 18.67  | 126 38.14  |               | 100              | 92                     |                 |              |      |                         |  |    |  |
| 03        | LG02       | ROS       |            | BO        | 63                 |           |            |               |                  |                        |                 |              |      |                         |  |    |  |
| 03        | LG02       | ROS       | 0459       | EN        | 63                 | 49 18.68  | 126 38.10  |               |                  |                        |                 |              |      |                         |  |    |  |

CAST TYPE - BOT - bottle cast  
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MR - messenger release  
RE - recover mooring

POSITION CODE - RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN

## DAILY LOG

## OCEAN PHYSICS

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| 1999      | July       |           |            | Tully     |                   | 9928      |            |               |                  |                        |                      |              |      |                                                 |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE #      | # OF BOTTLES | INIT | COMMENTS                                        |
| 03        | LG2A       | CTD       | 0527       | BE        | 64                | 49 16.926 | 126 40.851 |               | 116              |                        | Par Sensor & Wetlabs | Removal      |      | Low salinity / TURBID water                     |
|           | "          | "         | 0531       | BOT       | 64                | 49 16.920 | 126 40.836 |               |                  |                        |                      |              |      | ALL sensors had spikes in upper 50m. (Downcast) |
|           | "          | "         |            | END       | 64                | 49        | 126        |               |                  |                        |                      |              |      |                                                 |
| 03        | LG03       | ROS       | 0604       | BE        | 65                | 49 15.02  | 126 43.68  |               | 126              | 124                    |                      |              |      |                                                 |
|           |            | ROS       | 0607       | Bo        | 65                | 49 15.038 | 126 43.672 |               |                  |                        |                      |              |      |                                                 |
|           |            | ROS       | 0616       | EN        | 65                | 49 15.02  | 126 43.69  |               |                  |                        |                      |              |      |                                                 |
| 3         | LG03       | Bongo     | 0634       |           | 66                | 49 14.813 | 126 43.836 |               | 124              |                        |                      |              |      | oblique 0-50m                                   |
|           | LG03       | Neust     |            |           | 67                |           |            |               |                  |                        | 375-382              |              |      | 15 min. surface tow                             |
| 03        | LG04       | ROS       | 0733       | BE        | 68                | 49 11 305 | 126 49 381 |               |                  |                        |                      |              |      |                                                 |
| 03        | LG04       | ROS       | 0736       | BO        | 68                | 49 11 32  | 126 49 38  |               | 147              |                        | 383-391              |              |      |                                                 |
| 03        | LG04       | ROS       | 0747       | EN        | 68                | 49 11 315 | 126 49 375 |               |                  |                        |                      |              |      |                                                 |
| 03        | LG05       | CTD       | 0830       | BE        | 69                | 49 07 371 | 126 55 283 |               | 278              |                        |                      |              |      |                                                 |
| 03        | LG05       | CTD       | 0835       | Bo        | 69                | 49 07 372 | 126 55 275 |               |                  |                        |                      |              |      |                                                 |
| 03        | LG05       | CTD       | 0840       | EN        | 69                | 49 07 392 | 126 55 314 |               |                  |                        |                      |              |      |                                                 |
| 03        | LG06       | ROS       | 0927       | BE        | 70                | 49 03 480 | 127 01 169 |               |                  |                        |                      |              |      |                                                 |
| 03        | LG06       | ROS       |            | Bo        | 70                | 49 03     | 127 01     |               | 800              | 959                    |                      |              |      |                                                 |
| 03        | LG06       | ROS       | 1014       | EN        | 70                | 49 03 502 | 127 01 192 |               |                  |                        |                      |              |      |                                                 |
|           |            |           |            |           |                   |           |            |               |                  |                        |                      |              |      |                                                 |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
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net haul  
drifter

USW - sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE -  
MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN

CAST # 75 @ ERØ1 was aborted after a few metres. We forgot to display transmissometer values on STATUS BAR, which would have made it difficult to detect plume.

( This note was written under the direction of John Love in order to incriminate me — Rick T )

| YEAR<br>1999 |               |              | MONTH<br>JULY |              |                       | SHIP<br>TULLY |            |           | CRUISE<br>9928 |                  |                     |                           | PAGE<br>OF         |                 |      |                                                           |
|--------------|---------------|--------------|---------------|--------------|-----------------------|---------------|------------|-----------|----------------|------------------|---------------------|---------------------------|--------------------|-----------------|------|-----------------------------------------------------------|
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE      |            | LONGITUDE |                | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                                                  |
| 03           | LG07          | ROS          | 1057          | BE           | 71                    | 48 59 397     | 127 07 173 | GPS       |                |                  |                     |                           |                    |                 |      | Productivity                                              |
| 03           | LG07          | ROS          | 1125          | BO           | 71                    | 48 59 415     | 127 07 181 | GPS       | 1776           |                  |                     | 408-429                   |                    |                 |      | cast.                                                     |
| 03           | LG07          | ROS          | 1213          | EN           | 71                    | 48 59 41      | 127 07 22  | GPS       |                |                  |                     |                           |                    |                 |      |                                                           |
| 03           | LG08          | CTD          | 1316          | BG           | 72                    | 48 55 29      | 127 13 39  | "         | 2078           |                  |                     |                           |                    |                 |      | LAST CAST on G LINE                                       |
| 03           | LG08          | CTD          | 1346          | BO           | 72                    | 48 55.308     | 127 13.289 |           | 2078           |                  |                     |                           |                    |                 |      | wind down                                                 |
| 03           | LG08          | CTD          | 1415          | EN           | 72                    | 48 55.175     | 127 13.330 |           |                |                  |                     |                           |                    |                 |      | 5m off bottom. lots of<br>Transmissivity spikes on record |
| 03           | LG10          | CTD          | 1543          | BG           | 73                    | 48 48.54      | 127 30.10  |           | 2085           | 1000m            |                     |                           |                    |                 |      |                                                           |
| 03           | LG10          | CTD          | 1557          | BO           | 73                    | 48 48.62      | 127 30.07  |           |                |                  |                     |                           |                    |                 |      |                                                           |
| 03           | LG10          | CTD          | 1610          | END          | 73                    | 48 48.64      | 127 30.02  |           |                |                  |                     |                           |                    |                 |      |                                                           |
| 03           | LG11          | CTD          | 1902          | BE           | 74                    | 48 32 374     | 127 00 058 |           | 2550           | 1000m            |                     |                           |                    |                 |      | Incorrect filename written                                |
| 03           | LG11          | CTD          | 1910          | BO           | 74                    | 48 32 408     | 128 00 031 |           |                |                  |                     |                           |                    |                 |      | as 99290074 instead of<br>99280074.                       |
| 03           | LG11          | CTD          | 1934          | EN           | 74                    | 48 32 416     | 127 59 983 |           |                |                  |                     |                           |                    |                 |      |                                                           |
|              |               |              |               |              |                       |               |            |           |                |                  |                     |                           |                    |                 |      |                                                           |
| 04           | ER01          | ROS          | 0327          | BE           | 75                    | 47 57.510     | 129 05.552 |           | ended @ 185m   |                  |                     |                           |                    |                 |      | Second part of data                                       |
| 04           | ER01          | ROS          | 0412          | BO           | 76                    | 47°57.514     | 129°05.563 |           |                |                  | 2180                | 430-                      |                    |                 |      | in 99280076.dat.                                          |
| 04           | ER01          | ROS          | 0516          | EN           | 76                    | 47°57.521     | 129°05.533 |           |                |                  |                     | 447                       |                    |                 |      | first in 99280075.dat                                     |
|              |               |              |               |              |                       |               |            |           |                |                  |                     |                           |                    |                 |      |                                                           |
|              |               |              |               |              |                       |               |            |           |                |                  |                     |                           |                    |                 |      |                                                           |
|              |               |              |               |              |                       |               |            |           |                |                  |                     |                           |                    |                 |      |                                                           |

Time PDT Date

1800 Jul. 3

- on station ER-WASP - 2  
- XPND - no response

- sent CDF - received 2216 m  
range  
- received 2212 m.  
2212 m.

- tried XT6000 received 1714-1719 response \*  
- moved to release position app  
3 cables off.

- XPND = 2300 m

- sending ADEH - did not receive  
a response.

- 2175 ranges.  
2166

- sending ADEH again no response.

- XT6000 range 1430 m.  
1344 m.

- moving to position app. 2 cables  
- stopped on position 2 cables off.

- XPND -

- XT6000 - 662 m. 623 m. 601 m.  
440 - 434 m. 412 m.  
359 m. 349 m. 319 m.  
313 m. 299 m. 294 m.  
274 m.

1845

- on surface VHF reporting on ship DF  
2771 " on Gonio.

1855

- all on board

- XF light checked and working.

\* - took 30 min to raise  
drifted app. 1 cable to S.E. during  
the rise.

- little signs of corrosion except on the  
aluminium of the VHF & HF mounts.

constant but off

ERG

Core of plume: 2000 m.

Total water depth = 2200m

18 BOTTLES  
SAMPLES FOR  
ALICE (DEMANN  
+ ROB MACDONALD  
(11 x 2 + Blanks)

Top of plume: 1835m

Care of plumbe: 1980 ha 2050 m

### Bottom of plane:

Total water depth = 217.0m

22 Bottles  
Samples for Alice  
+ Oxygen.

Ex 3 10 km @  $200^{\circ}$  from Ex 1

Top of plume: NO plume

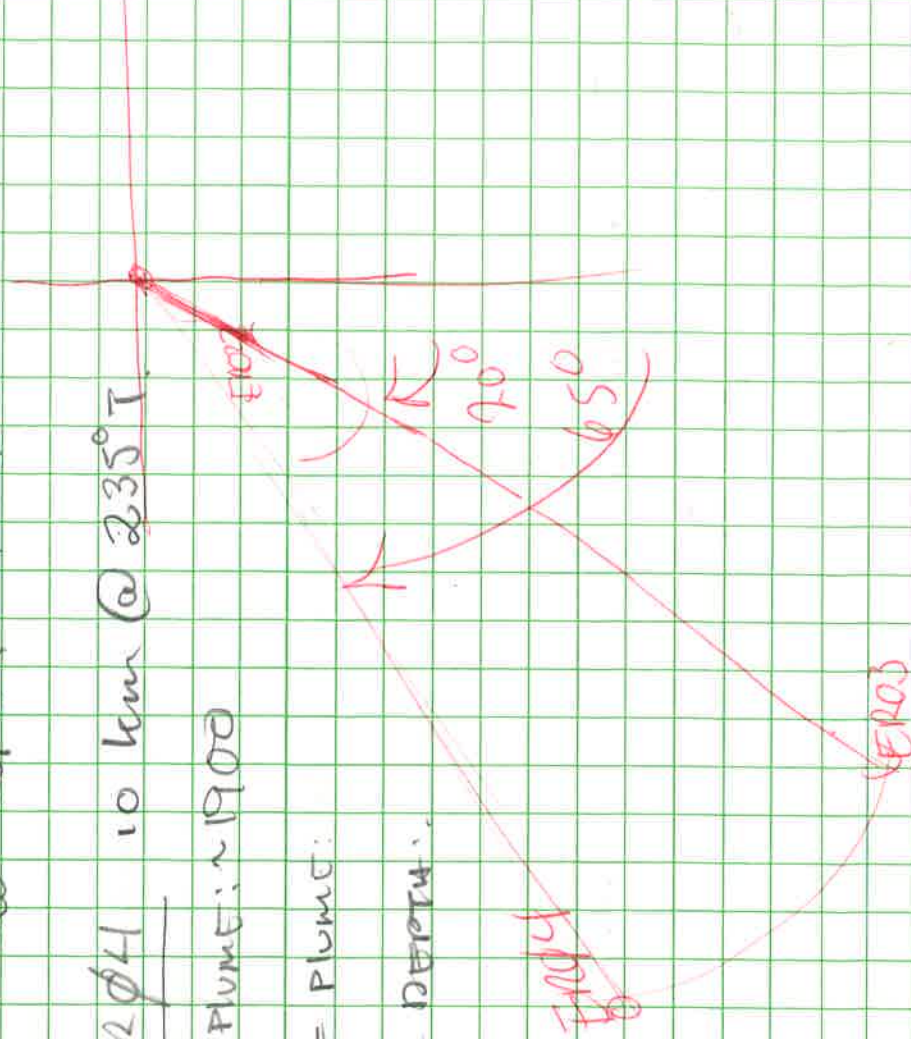
Core of pure water depth: 2400 m.

ER204H 10 bar @ 235°T

$$\text{top}_{\text{off}} = \text{Plume} \approx 1900$$

### Core of Plumet:

Midland Midium



WASP RECORD-9928 Endeavour Vent (ER-WASP-3)

Instrument Identification

|                         |                              |
|-------------------------|------------------------------|
| Wasp S/N                | 8                            |
| Transducer S/N          | 102 Model TS160/5 Transonics |
| Nominal Frequency (Khz) | 163 kHz                      |

Disk Drives

|                               |              |        |
|-------------------------------|--------------|--------|
| Make and Size of Hard Drive 0 | Quantum 514S | 512 MB |
| Make and Size of Hard Drive 1 | none         |        |
| Disk Space Required           | 260 MB       |        |
| Disk Space Used               | 251 MB       |        |

Battery Configuration

| Supply | Layers of Cell type | Capacity | Required Capacity | Deploy Voltage           | Recover Voltage |
|--------|---------------------|----------|-------------------|--------------------------|-----------------|
| +12    | 4 D                 | 40 Ah    | 25 Ah             | 12.79 (99/06/22 2000UTC) | 10.84           |
| -12    | 2 D                 | 20 Ah    | 6 Ah              | -12.78                   | -11.65          |
| Vtx    | 1 D                 | 10 Ah    | 0.6 Ah            | 19.20                    | 17.15           |

Connected 2015UTC

Setup

| Parameter                   | Units                              |       |         | Value    |
|-----------------------------|------------------------------------|-------|---------|----------|
| Ping Width                  | µSeconds                           |       |         | 500      |
| Ping Interval               | Seconds                            |       |         | 30       |
| Pings summed                | Sample Interval                    | Digit | Seconds | 2 60     |
| Lockout                     | Meters                             |       |         | 0        |
| Maximum range (at 1440 m/s) | Meters                             |       |         | 500      |
| Number of bins              | Digit                              |       |         | 250      |
| Sampling Interval           | µSeconds (50 normally)             |       |         | 50       |
| Bin size                    | Number of Sample intervals per Bin |       |         | 55       |
| Internal File Name          | 8 Characters                       |       |         | Vents 99 |
| Estimated Deployment Time   | Days                               | Hours |         | 365      |

Deployment

|                               |                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------|
| Cruise Identification         | 9928                                                                             |
| UTC Date and Time             | 4 July 2000 21:30:00 (Started 99/06/22 20:17, 20:19 end of 1 <sup>st</sup> ping) |
| Station Name                  | Vent99 @ ER01, or ER-WASP-3                                                      |
| Latitude                      | 47 57.572                                                                        |
| Longitude                     | 129 05.564                                                                       |
| Depth                         | 2196m                                                                            |
| Transducer Upward or Downward | up                                                                               |

Recovery

|                       |                          |                                |
|-----------------------|--------------------------|--------------------------------|
| Cruise Identification | 2000-06                  | Timing                         |
| UTC Date and Time     | 20 May 2000 15:23:00 UTC | Wasp 00/06/07 21:57:22 UTC     |
| Latitude              | 47 57.572                | Computer 00/06/07 22:09:00 UTC |
| Longitude             | 129 05.564               | Diff. -11:38                   |

Comments:

Maximum depth 3000m (extra deep case), UTC time set 99/06/22 20:16:30  
It appears that Y2K problems including the added leap year were not experienced by this wasp. However, care should be taken when examining the data.

Wasp Calibration Cast: 4 July 1999 at ER01 from 9828 log

CTD Consecutive Number 81

Beg: 1547 UTC 47 57.54N 129 05.77W in 2170m

Bot: 1631 UTC 47 57.??N 129 ?? ??W max. sampling 2020m, 3.2 cables off stm. @ 1400m, 1860m start of plume, 0-2000m at 1m/s, 1920m plume proper.

End: 1651 UTC 47 57.507N 129 05.535W

CTD Consecutive Number 82

Beg: 1655 UTC 47 57.517N 129 05.535W, Start at 1200m  
Bot: 1714 UTC 47 57.509N 129 05.559W, Start up at 1600m  
Top: 1731 UTC 47 57.557N 129 05.542W, Start down at 1200m  
Bot: 17?? UTC 47 57.488N 129 05.524W, Max sampling 1600m  
Top: 1759 UTC 47 57.499N 129 05.543W, Back down to 1600m  
Bot: 1815 UTC 47 57.489N 129 05.519W, 1600m

CTD Consecutive Number 83

Beg: 1815 UTC, 1600- Surface  
End: ???? UTC 47 ??:??? 129 ??:???

Data downloaded overnight 7-8 June 2000  
Wasp put to sleep 12:05:30 PDT 9 June 2000.

|  |
|--|
|  |
|  |
|  |
|  |
|  |

Y

WASP 2.44  
Institute of Ocean Sciences 1999

RAM.....OK

DRIVE 0: QUANTUM DAYTONA514S 5110

TIME : 00/06/07 22:17:30

MAIN MENU

- D - Directory of Hard Drive files
- E - Erase file(s)
- O - Operate as per current setup
- P - operating Parameters
- R - Read Data via SCSI connector
- S - Shutdown
- T - Time display/set
- V - View setup
- Y - system check

WASP> d

DIRECTORY:

ENTER DRIVE #: 0

Please

Y WASP 2.44  
Institute of Ocean Sciences 1999

Replace RTC battery  
RAM.....OK  
DRIVE 0: QUANTUM DAYTONA514S 5110  
\*\*\* Disk write error \*\*\*  
\*\*\* Disk write error \*\*\*  
Both Directories Corrupt

TIME : 00/06/07 21:41:19

MAIN MENU  
D - Directory of Hard Drive files  
E - Erase file(s)  
O - Operate as per current setup  
P - operating Parameters  
R - Read Data via SCSI connector  
S - Shutdown  
T - Time display/set  
V - View setup  
Y - system check

WASP> d

DIRECTORY:  
ENTER DRIVE #: 0

Please wait  
\*\*\* Disk write error \*\*\*  
\*\*\* Disk write error \*\*\*  
\*\*\* Disk write error \*\*\*  
\*\*\* Disk write error \*\*\*  
Both Directories Corrupt

Reformat directories? (Y or N)  
n

WASP> Y  
Replace RTC battery  
RAM.....OK  
DRIVE 0: QUANTUMs 5110  
Changed last Sector to: 000000  
WASP> v  
SET UP

Ping Width [00500 uS]  
Ping Interval [030 seconds]  
Lockout [00000 meters]  
Number of Bins [00250]  
Aprox. Max. Range [00500 meters]  
# of 50uS samples/Bin [055]  
# of Pings to integrate [002]

WASP> Y  
Replace RTC battery  
RAM.....OK  
QUANTUMs 5110  
WASP> d

DIRECTORY:  
ENTER DRIVE #: 0

```
Please wait
Both Directories Corrupt

Reformat directories? (Y or N)
n
WASP> Y
Replace RTC battery
RAM.....OK
QUANTUM DAYTONA514S      5110
Changed last Sector to: 0F57F7
WASP> d

DIRECTORY:
ENTER DRIVE #: 0

Please wait

001: vents99      #BLOCKS(hex):00FAA3 DRIVE 0 99/06/22 20:18
WASP> t

TIME : 00/06/07 21:54:40
Date/Time format: YY/MM/DD/HH/MM/SS
Enter new Date/Time :
*** Wrong number of entries ***

TIME : 00/06/07 21:56:36
WASP> t

TIME : 00/06/07 21:57:22
Date/Time format: YY/MM/DD/HH/MM/SS
Enter new Date/Time : d
*** Wrong number of entries ***

TIME : 00/06/07 21:59:26
Date/Time format: YY/MM/DD/HH/MM/SS
Enter new Date/Time :

TIME : 00/06/07 21:59:40
WASP> d

DIRECTORY:
ENTER DRIVE #: 0

Please wait

001: vents99      #BLOCKS(hex):00FAA3 DRIVE 0 99/06/22 20:18
WASP> r

Please wait

Press X when done.
```

?

```
MAIN MENU
D - Directory of Hard Drive files
E - Erase file(s)
O - Operate as per current setup
P - operating Parameters
R - Read Data via SCSI connector
S - Shutdown
T - Time display/set
V - View setup
Y - sYstem check
```

WASP> d

```
DIRECTORY:
ENTER DRIVE #: 0
```

Please wait

```
No files found
WASP> Y
RAM.....OK
DRIVE 0: QUANTUM DAYTONA514S      5110
WASP> V
SET UP
```

```
Ping Width [00500 uS]
Ping Interval [002 seconds]
Lockout [00000 meters]
Number of Bins [00250]
Aprox. Max. Range [00500 meters]
# of 50uS samples/Bin [055]
# of Pings to integrate [002]
```

WASP>

?

```
MAIN MENU
D - Directory of Hard Drive files
E - Erase file(s)
O - Operate as per current setup
P - operating Parameters
R - Read Data via SCSI connector
S - Shutdown
T - Time display/set
V - View setup
Y - sYstem check
```

WASP> p
SET UP

```
Ping Interval [002 seconds] 30
Ping Width [00500 uS]
Lockout [00000 meters]
Aprox. Max. Range [00500 meters]
Number of Bins [00250]
```

# of 50uS samples/Bin [055]  
# of Pings to integrate [002]

WASP> v  
SET UP

Ping Width [00500 uS]  
Ping Interval [030 seconds]  
Lockout [00000 meters]  
Number of Bins [00250]  
Approx. Max. Range [00500 meters]  
# of 50uS samples/Bin [055]  
# of Pings to integrate [002]

WASP> t

TIME : 00/00/00 80:17:32  
Date/Time format: YY/MM/DD/HH/MM/SS  
Enter new Date/Time : 99/06/22/20/16/30

TIME : 99/06/22 20:16:30  
WASP> t

TIME : 99/06/22 20:16:59  
Date/Time format: YY/MM/DD/HH/MM/SS  
Enter new Date/Time :

TIME : 99/06/22 20:17:03  
WASP> v  
SET UP

Ping Width [00500 uS]  
Ping Interval [030 seconds]  
Lockout [00000 meters]  
Number of Bins [00250]  
Approx. Max. Range [00500 meters]  
# of 50uS samples/Bin [055]  
# of Pings to integrate [002]

WASP>  
?

MAIN MENU  
D - Directory of Hard Drive files  
E - Erase file(s)  
O - Operate as per current setup  
P - operating Parameters  
R - Read Data via SCSI connector  
S - Shutdown  
T - Time display/set  
V - View setup  
Y - sYstem check

WASP> o

Enter deployment name (11 chars max) vents99

TIME : 99/06/22 20:17:45



| YEAR      |            | MONTH     |            | SHIP      |                    | CRUISE    |            | PAGE          |                  | OF                     |                           |              |      |                                    |
|-----------|------------|-----------|------------|-----------|--------------------|-----------|------------|---------------|------------------|------------------------|---------------------------|--------------|------|------------------------------------|
| 1999      |            | July      |            | Tully     |                    | 9928      |            |               |                  |                        |                           |              |      |                                    |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE #           | # OF BOTTLES | INIT | COMMENTS                           |
| 04        | ERØ2       | ROS       | 0608       | BE        | 77                 | 47 57.006 | 129 05.789 |               | 2170             |                        | 448 -                     |              |      | 1 km @ 200°T from ERØ1             |
| 04        | "          | ROS       | 0639       | BOT       | 77                 | 47 57.046 | 129 05.719 |               | 3                | 2223                   | 469                       |              |      | 10m off Bottom                     |
| 04        | "          | ROS       |            | END       | 77                 |           |            |               |                  |                        |                           |              |      | 22 BOTTLES THROUGH PLUME           |
| 04        | ERØ2       | Bougo     |            |           | 78                 | 47 57.05  | 129 05.72  |               |                  |                        |                           |              |      | VERTICAL 0-750 m                   |
| 04        | ERØ3       | ROS       | 08:55      | BE        | 79                 | 47°52.412 | 129°08.174 |               | 2440             |                        |                           |              |      | 10 km @ 200°T from ERØ1. 5m bottle |
|           | "          | "         | 0931       | BOT       | 79                 | 47°52.442 | 129°08.264 |               |                  |                        |                           |              |      | fore Ruben !                       |
|           | "          | "         | 1002       | END       | 79                 | 47°52.549 | 129 08.286 |               |                  |                        |                           |              |      |                                    |
| 04        | ERØ4       | ROS       | 1045       | BE        | 80                 | 47 54.402 | 129 12.101 |               | 2377             |                        |                           |              |      | 2nd try, far field plume           |
|           | "          | "         | 1114       | BOT       | 80                 | 47 54.440 | 129 12.12  |               | 2425             | 2344                   |                           |              |      | Hit Plume @ 1900 m.                |
|           | "          | "         | 1155       | EN        | 80                 | 47 55.43  | 129 12.13  |               |                  |                        |                           |              |      |                                    |
| 04        | ERØ1       | CTD       | 1547       | BE        | 81                 | 47 57.54  | 129 05.77  |               | 2170             |                        |                           |              |      | WASP Calibration Cast              |
| 04        | ERØ1       | CTD       | 1631       | BO        | 81                 | 47 57.    | 129        |               |                  | 2020                   | 3.2 cables off sh @ 1400m |              |      | 0-2000m at 1m/s                    |
| 04        | ERØ1       | CTD       | 1651       | EN        | 81                 | 47.57.507 | 129 05.535 |               |                  |                        | 1860 m start of plume     |              |      | 1920' plume Primer                 |
| 04        | ERØ1       | CTD       | 1655       | BE        | 82                 | 47 57.517 | 129 05.535 |               |                  |                        |                           |              |      | Start at 1200m                     |
| "         | "          | "         | 1714       | BOT       | "                  | 47 57.509 | 129 05.559 |               | 1600             |                        |                           |              |      | Start up at 1600 m                 |
|           |            |           | 1731       | TOP       | 82                 | 47 57.557 | 129 05.542 |               |                  | 1200                   |                           |              |      | Start down at 1200 m               |
|           |            |           | 17         | BOT       | 82                 | 47 57.488 | 129 05.524 |               |                  | 1600                   |                           |              |      |                                    |

July 3/99

Plume Sampling

X 1700

X 1750

1870 m

1910-1950

2175

Alice/Rob

1000 Rob

1600 Rob

1700 Rob

1750

1800 Rob

1850

1900 Rob

1925 Rob

1950 Rob

1975 Rob

2000 Rob

2025

2050 Rob

2075

2100 Rob

2125

2150

Alice

Station 1

1700

1750

1800

1900

1925

1950

2000

2050

2100

2150

7

21

Cast 81

99/07/04

Ship got >3.5 cables off station and did considerable manoeuvring to get back on station. On station at 2000m and backs up to 1200m. Hit plume better on upcast

Rob

1000

1600

1700

1800

1900

1925

1950

1975

2000

2050

2100

Aug 4/94

WASP MOORINGS WASP 99/00

at ERØ

Times off Ship  
(PST)

1416

NOTED:

aug #7361  
Pressure core = 3000m  
Pressure sensor

1416

5473 RCMS P  
#8557

#3251

1416

97901 RCMS #8729  
(was on previous mooring)

3m. 45133

1424

43243

45182

45055

1424

JO 10900 #452  
8 kHz

SN 00972452  
RCW CDEF  
RCW CDEF  
Double pos

Anchor  
1430

(Ship Bridge Log)  
47° 57.521' S  
129° 05.563' E

LAT 47° 57.572'

LONG 129° 05.564'

Depth 2196m.

\* Recorded by T.J.  
47° 57.522' on  
129° 05.564' mooring

NOTES

acoustic failure  
@ 1417

log

## NOTES

July 5. Ship had major electrical problems (which effected hydraulics and main engines).  
e.g. Could not get the crane back into its cradle. Engineers worked around the clock to isolate the problem — which now appears to have been a leak in fire line behind the radiator in the lab (the source of water on floor in lab).

We missed stations LL10, LL09 en route

Engineers: ① isolated crane electrical so that they could run the hydraulic pump to operate crane (which failed prior to ER01 mooring).  
② isolate UTD winch. Now operating. (AND 'A' FRAME)

5 humpback whales & Pacific White Sided Dolphins by ship en route from BPO8 to BPO7, 8-10 playing in the bow wave and others astern  $\sim 20$  in all?

## OCEAN PHYSICS

## DAILY LOG

| YEAR      |            | MONTH     |            | SHIP      |                    | CRUISE    |            | PAGE          |                  | OF                     |                 |              |      |                                                                           |
|-----------|------------|-----------|------------|-----------|--------------------|-----------|------------|---------------|------------------|------------------------|-----------------|--------------|------|---------------------------------------------------------------------------|
| 1999      |            | July      |            |           |                    |           |            |               |                  |                        |                 |              |      |                                                                           |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                                                                  |
| 04        | ER01       | CTD       | 1759       | TOP       | 82                 | 47 57.499 | 129 05.543 |               |                  |                        |                 |              |      | Back down to 1600                                                         |
| 04        | ER01       | CTD       | 1815       | BO        | 82                 | 47 57.489 | 129 05.519 |               |                  |                        |                 |              |      |                                                                           |
| 04        | "          | CTD       | 1815       | BE        | 83                 | "         | "          |               |                  |                        |                 |              |      | 1600-Surface                                                              |
| 04        | "          | CTD       |            | EN        | 83                 | 47        | 129        |               |                  |                        |                 |              |      |                                                                           |
| 05        | LL08       | CTD       |            | BO        | 84                 |           |            |               |                  |                        |                 |              |      |                                                                           |
| 05        | LL08       | CTD       |            | BO        | 84                 |           |            |               |                  |                        |                 |              |      | Couldn't find this book. Engineers stored it when working on leak in lab. |
| 05        | LL08       | CTD       |            | EN        | 84                 |           |            |               |                  |                        |                 |              |      |                                                                           |
|           |            |           |            |           |                    |           |            |               |                  |                        |                 |              |      |                                                                           |
|           |            |           |            |           |                    |           |            |               |                  |                        |                 |              |      | Start new book.                                                           |
|           |            |           |            |           |                    |           |            |               |                  |                        |                 |              |      | Found the Book Go back to Book 1!                                         |
| 05        | LL08       | ROS       | 1330       | BE        | 84                 | 49 36 616 | 128 22 716 |               |                  |                        |                 |              |      |                                                                           |
| 05        | LL08       | ROS       | 1413       | BO        | 84                 | 49 36 556 | 128 22 643 |               | 2325             |                        | 500-521         |              |      | High res Oxy samples<br>① Oxy minimum layer<br>② Deep Oxy grad            |
| 05        | LL08       | ROS       | 1521       | EN        | 84                 | 49 36 525 | 128 22 631 |               |                  |                        |                 |              |      |                                                                           |
| 05        | BP08       | CTD       | 1709       | BE        | 85                 | 49 48 57  | 128 16 82  |               |                  |                        |                 |              |      |                                                                           |
| 05        | BP08       | CTD       | 1738       | BO        | 85                 | 49 48 67  | 128 16 77  |               | 2191             |                        | 522-535         |              |      |                                                                           |
| 05        | BP08       | CTD       | 1810       | EN        | 85                 | 49 48 60  | 128 16 809 |               |                  |                        |                 |              |      |                                                                           |
| 05        | BP07       | ROS       | 1857       | BE        | 86                 | 49 52 39  | 128 11 34  |               |                  |                        |                 |              |      |                                                                           |
| 05        | BP07       | ROS       | 1944       | BO        | 86                 | 49 52 556 | 128 11 027 |               |                  |                        |                 |              |      |                                                                           |
| 05        | BP07       | ROS       | 2038       | EN        | 86                 | 49 52 538 | 128 11 007 |               |                  |                        |                 |              |      |                                                                           |

CAST TYPE -

BOT - bottle cast  
CTD - ctd  
MOR - mooringROS - rosette  
NET - net haul  
DRF - drifter

USW - sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE - deployment time  
MR - messenger release  
RE - recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN

| YEAR      |            | MONTH     |            | SHIP      |                    | CRUISE     |             | PAGE          |                  | OF                     |                 |               |      |                                                                             |
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| 1999      |            | July      |            | Tully     |                    | 9928       |             |               |                  |                        |                 |               |      |                                                                             |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE   | LONGITUDE   | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES  | INIT | COMMENTS                                                                    |
| 05        | BP07       | ROS       | 2122       | BE        | 87                 | 49 52.38   | 128 11.26   |               |                  |                        |                 |               |      |                                                                             |
| 05        | BP07       | ROS       |            | BO        | 87                 | 49 52 401  |             |               |                  |                        | 522-535         |               |      |                                                                             |
| 05        | BP07       | ROS       | 21:36      | EN        | 87                 | 49 52 4 01 | 128 11 045  |               |                  |                        |                 |               |      | PAR Sensor used                                                             |
| 05        | BP07       | NET       |            |           | 88                 |            |             |               |                  | 0-50                   |                 |               |      | oblique bongo (Ruben)                                                       |
| 05        | BP07       | NET       | 21.00      |           | 88                 | 49°52.33   | 128°10.93   |               | 2190             | 0-150                  |                 |               |      | Bongo, VNH (O. Machas)                                                      |
| 05        | BP06       | ROS       | 22:22      | BE        | 89                 | 49°56.142' | 128°05.435' |               |                  | 900                    |                 |               |      | PAR is OFF                                                                  |
| 05        | BP06       | ROS       | 2234       | BO        | 89                 | 49°56.07'  | 128°05.44'  |               |                  |                        | 544-560         |               |      |                                                                             |
| 05        | BP06       | ROS       | 2300       | EN        | 89                 | 49 56 175  | 128 05 447  |               |                  |                        |                 |               |      |                                                                             |
| 06        | BP04       | ROS       | 2350       | BE        | 90                 | 50 01.452  | 127 58.152  |               |                  |                        | 980 m           | 1080 MID-CAST |      | Surface water 30.8 ppt. Lots of medusa in water. Water depth was increasing |
| 06        | BP04       | ROS       | 0007       | BO        | 90                 | 50 01.399  | 127 58.180  |               |                  |                        | 561-579         |               |      |                                                                             |
| 06        | BP04       | ROS       | 0041       | EN        | 90                 | 50 01 39   | 127 58.16   |               |                  |                        |                 |               |      |                                                                             |
| 06        | BP03       | ROS       | 0136       | BE        | 91                 | 50 03 20   | 127 55 31   | GPS           | 169              |                        |                 |               |      |                                                                             |
| 06        | BP03       | ROS       | 0139       | BO        | 91                 | 50 03 19   | 127 55 30   |               |                  | 161                    | 580-589         |               |      |                                                                             |
| 06        | BP03       | ROS       | 0153       | EN        | 91                 | 50 03 20   | 127 55 27   |               |                  |                        |                 |               |      |                                                                             |
| 06        | BP02       | ROS       | 0234       | BE        | 92                 | 50 04.022  | 127 54.23   | GPS           | 100              |                        |                 |               |      | PROD. CAST                                                                  |
| 06        | BP02       | ROS       | 0236       | BO        | 92                 | 50 04 00   | 127 54 19   | 1             |                  |                        |                 |               |      |                                                                             |
| 06        | BP02       | ROS       | 0240       | EN        | 93                 | 50 04.014  | 127 54.192  | ✓             |                  |                        |                 |               |      | PAR 2 of this cast                                                          |
|           | BP02       | "         | 0245       |           | 93                 | 50 04.003  | 127 54.188  |               |                  |                        |                 |               |      | new file on upcast for irradiance display. A BOTT Bottle cast               |

Note Ship's GPS down  $\approx$  21:25 PDT will affect Thermo Salinograph & RDI?

| YEAR      |            |           | MONTH      |           |                    | SHIP       |             |               | CRUISE                  |                        |                 | PAGE         |      |                             | OF |
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| 1999      |            |           | July       |           |                    | TULLY      |             |               | 9928                    |                        |                 |              |      |                             |    |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD-HYDRO CONSEC # | LATITUDE   | LONGITUDE   | POSITION CODE | BOTTOM DEPTH (m)        | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                    |    |
| 06        | BP02       | ROS       | 0248       | BE        | 94                 | 50 03.986  | 127 54.172  |               | 100                     |                        | 590-600         |              |      | 2ND Try. RE-DO BOTTLES      |    |
| 06        | "          | "         | 0250       | BO        | 94                 | 50 03.991  | 127 54.17   |               |                         |                        |                 |              |      | CAST,                       |    |
| 06        | "          | "         | 0303       | EN        | 94                 | 50 03.997  | 127 54.191  |               | NET @ 0313 WIRE OUT 90M |                        |                 |              |      | Samples 599 & 600 not taken |    |
| 06        | BP01       | CTD       | 0354       | BE        | 95                 | 50 04.805  | 127 52.771  |               | 52                      | 48                     |                 |              |      | NO BOTTLES,                 |    |
| 06        | "          | CTD       | 0356       | BO        | 95                 |            |             |               |                         |                        |                 |              |      | Wind from NW, Cloud         |    |
| 06        | BP01       | CTD       | 0358       | EN        | 95                 | 50 04.831  | 127 52.907  |               |                         |                        |                 |              |      | cover over top of Brooks    |    |
| 06        | LL02       | CTD       | 0458       | BE        | 96                 | 49 59.26   | 127 44.09   |               | 139                     | 135                    |                 |              |      |                             |    |
| 06        | LL02       | "         | 0501       | BO        | 96                 | 49 59.328  | 127 44.086  |               |                         |                        |                 |              |      |                             |    |
| 06        | LL02       | "         | 0504       | EN        | 96                 | 49 59.331  | 127 44.068  |               |                         |                        |                 |              |      |                             |    |
| 06        | LL03       | CTD       | 0548       | BE        | 97                 | 49 55.75   | 127 50.20   |               | 600                     | 630                    |                 |              |      | Very poor bottom detection  |    |
| 06        | LL03       | "         | 0557       | BO        | 97                 | 49 55.74   | 12 50.20    |               |                         |                        |                 |              |      | stopped 10m off bottom      |    |
| 06        | LL03       | "         |            | END       | 97                 | 49 55.     | 12 50       |               |                         |                        |                 |              |      | turbid water at bottom      |    |
| 06        | LK01       | ROS       | 0817       | BE        | 98                 | 49 55 50.2 | 127 18 70.2 |               | 37                      |                        | 601-605         |              |      |                             |    |
| 06        | LK01       | ROS       | 0820       | BO        | 98                 | 49 55 51.1 | 127 18 71.6 |               |                         |                        |                 |              |      |                             |    |
| 06        | LK01       | ROS       | 0824       | EN        | 98                 | 49 55 51.7 | 127 18 74.2 |               | 56                      |                        |                 |              |      |                             |    |
| 06        | LK02       | ROS       | 0850       | BE        | 99                 | 49 53 94.7 | 127 21 61.0 |               | 67                      |                        | 606-611         |              |      |                             |    |
| 06        | LK02       | ROS       | 0853       | BO        | 99                 | 49 53 99.4 | 127 21 66.4 |               |                         |                        |                 |              |      |                             |    |
| 06        | LK02       | ROS       | 0857       | EN        | 99                 | 49 54 01.7 | 127 21 64.6 |               |                         |                        |                 |              |      |                             |    |

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| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE  |            | LONGITUDE |        | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                                                |  |
| 06           | LK03          | ROS          | 0938          | BE           | 100                   | 49 50.537 | 127 27.358 | GPS       | 78     |                  |                     |                           | 612-617            |                 |      | Cast spiking                                            |  |
| 06           | LK03          | ROS          |               | BO           | 100                   |           |            | GPS       |        |                  |                     |                           |                    |                 |      | cleaned connection                                      |  |
| 06           | LK03          | ROS          |               | EN           | 100                   | 49 50.537 | 127 27.358 | GPS       |        |                  |                     |                           |                    |                 |      |                                                         |  |
| 06           | LK04          | ROS          | 10:30         | BE           | 101                   | 49 46.851 | 127 33.606 | GPS       |        |                  |                     |                           |                    |                 |      | PAR Sensor Removed                                      |  |
| 06           | LK04          | ROS          | 1035          | BO           | 101                   | 49 46.900 | 127 33.600 | GPS       | 129    |                  |                     |                           |                    |                 |      |                                                         |  |
| 06           | LK04          | ROS          | 1042          | EN           | 101                   | 49 46.909 | 127 33.601 | GPS       |        |                  |                     |                           | 618-626            |                 |      | This cast looked OK                                     |  |
| 06           | LK05          | ROS          | 1126          | BE           | 102                   | 49 43.32  | 127 39.59  | GPS       | 691    |                  |                     |                           |                    |                 |      |                                                         |  |
| 06           | LK05          | ROS          | 1137          | BO           | 102                   | 49 43.29  | 127 39.54  |           |        |                  | 690                 |                           | 627-643            |                 |      |                                                         |  |
| 06           | LK05          | ROS          | 1202          | EN           | 102                   | 49 43.34  | 127 39.57  |           |        |                  |                     |                           |                    |                 |      |                                                         |  |
| 06           | LK06          | CTD          | 1245          | BE           | 103                   | 49 39.54  | 127 45.84  | GPS       | 1095   |                  |                     |                           |                    |                 |      |                                                         |  |
| 06           | LK06          | CTD          | 1302          | BO           | 103                   | 49 39.58  | 127 45.80  |           |        |                  | 1091                |                           |                    |                 |      |                                                         |  |
| 06           | LK06          | CTD          | 1318          | EN           | 103                   | 49 39.56  | 127 45.92  |           |        |                  |                     |                           |                    |                 |      |                                                         |  |
| 06           | LK07          | ROS          | 1406          | BE           | 104                   | 49 35.73  | 127 52.10  |           | 1750   |                  |                     |                           |                    |                 |      |                                                         |  |
| 06           | LK07          | ROS          | 1432          | BO           | 104                   | 49 35.74  | 127 52.24  |           |        |                  |                     |                           |                    |                 |      | Stopped for O2 sample in a sharp trans minimum at 1080m |  |
| 06           | LK07          | ROS          | 1526          | EN           | 104                   | 49 35.691 | 127 51.925 |           | 1732   |                  |                     |                           | 644-664            |                 |      |                                                         |  |
| 06           | LK08          | ROS          | 1628          | BE           | 105                   | 49 31.58  | 127 58.49  |           | 2360   |                  |                     |                           |                    |                 |      |                                                         |  |
| 06           | LK08          | ROS          | 1700          | BO           | 105                   | 49 31.631 | 127 58.581 |           |        |                  | 2368                |                           |                    |                 |      |                                                         |  |
| 06           | LK08          | ROS          | 1742          | EN           | 105                   | 49 31.814 | 127 58.642 |           |        |                  |                     |                           |                    |                 |      |                                                         |  |

CAST TYPE -

BOT -  
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bottle cast  
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sea water loop

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EN -

beginning time of cast  
bottom time of cast  
end of cast

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deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -

RADAR  
GLOBAL  
LORAN

| YEAR         |               |              | MONTH         |              |                       | SHIP     |     |           |     | CRUISE           |                     |                           |                    | PAGE            | OF   |                                               |
|--------------|---------------|--------------|---------------|--------------|-----------------------|----------|-----|-----------|-----|------------------|---------------------|---------------------------|--------------------|-----------------|------|-----------------------------------------------|
| 1999         |               |              | July          |              |                       |          |     |           |     | 9928             |                     |                           |                    |                 |      |                                               |
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE |     | LONGITUDE |     | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                                      |
| 06           | LJ08          | ROS          | 1940          | BE           | 106                   | 49 20    | 096 | 127 40    | 917 | GPS              |                     |                           |                    |                 |      |                                               |
| 06           | LJ08          | ROS          | 20:00         | BO           | 106                   | 49 20    | 118 | 127 40    | 948 | GPS              | 1744                |                           | 669-689            |                 |      | Oxygen in groups<br>of three at lower depths. |
| 06           | LJ08          | ROS          | 20:49         | EN           | 106                   | 49 20    | 128 | 127 40    | 991 | GPS              |                     |                           |                    |                 |      |                                               |
| 06           | LJ07          | CTD          | 21:34         | BE           | 107                   | 49 24    | 043 | 127 34    | 650 | GPS              |                     |                           |                    |                 |      |                                               |
| 06           | LJ07          | CTD          | 21:06         | BO           | 107                   | 49 24    | 019 | 127 34    | 050 | GPS              | 1816                |                           |                    |                 |      | CTD only. O <sub>2</sub> removed<br>from list |
| 06           | LJ07          | CTD          | 22:33         | EN           | 107                   | 49 24    | 050 | 127 34    | 728 |                  |                     |                           |                    |                 |      |                                               |
| 06           | LJ06          | ROS          | 2317          | BE           | 108                   | 49 27    | 90  | 127 28    | 58  |                  | 1030                |                           |                    |                 |      |                                               |
| 06           | LJ06          | ROS          | 2331          | BO           | 108                   | 49 27    | 88  | 127 28    | 64  |                  |                     |                           | 690-708            |                 |      |                                               |
| 07           | LJ06          | ROS          | 0001          | EN           | 108                   | 49 27    | 85  | 127 28    | 64  |                  |                     |                           |                    |                 |      |                                               |
| 07           | LJ05          | ROS          | 0046          | BE           | 109                   | 49 31    | 63  | 127 22    | 41  | GPS              | 1072                |                           |                    |                 |      |                                               |
| 07           | LJ05          | ROS          | 0059          | BO           | 109                   | 49 31    | 62  | 127 22    | 63  |                  |                     | 1075                      | 701-726            |                 |      |                                               |
| 07           | LJ05          | ROS          | 0132          | EN           | 109                   | 49 31    | 69  | 127 22    | 56  |                  |                     |                           |                    |                 |      |                                               |
| 07           | LJ04          | ROS          | 0221          | BE           | 110                   | 49 35    | 47  | 127 16    | 88  | GPS              | 165                 |                           |                    |                 |      |                                               |
| 07           | LJ04          | ROS          | 0224          | BO           | 110                   | 49 35    | 51  | 127 16    | 88  |                  |                     |                           | 727-735            |                 |      |                                               |
| 07           | LJ04          | ROS          | 0233          | EN           | 110                   | 49 35    | 46  | 127 16    | 90  |                  |                     |                           |                    |                 |      |                                               |
| 07           | LJ03          | ROS          | 0316          | BE           | 111                   | 49 39    | 159 | 127 11    | 121 |                  | 127                 | 120                       | 736-743            |                 |      | Sharp Tx min @ ~20m                           |
| 07           | LJ03          | ROS          | 0319          | BO           | 111                   | 49 39    | 12  | 127 11    | 19  |                  |                     |                           |                    |                 |      |                                               |
| 07           | LJ03          | ROS          | 0328          | EN           | 111                   | 49 39    | 041 | 127 11    | 134 |                  |                     |                           |                    |                 |      |                                               |

## DAILY LOG

## OCEAN PHYSICS

| YEAR      |            | MONTH     |            | SHIP      |                    | CRUISE    |            | PAGE          |                  | OF                     |                 | COMMENTS     |      |                                        |
|-----------|------------|-----------|------------|-----------|--------------------|-----------|------------|---------------|------------------|------------------------|-----------------|--------------|------|----------------------------------------|
| 1999      |            | July      |            | Tully     |                    | 9928      |            |               |                  |                        |                 |              |      |                                        |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                               |
| 07        | LJ02       | ROS       | 0412       | BE        | 112                | 49 42.629 | 127 05.297 | GPS           | 84               | 76                     | 744-749         |              |      | Spiking on Transmitter                 |
| 07        |            |           | 0415       | Bo        | 112                | 49 42.625 | 127 05.276 |               |                  |                        |                 |              |      | (Finger)                               |
| 07        |            |           | 0422       | EN        | 112                | 49 42.605 | 127 05.264 |               |                  |                        |                 |              |      | extrabottle fired at surface (trouble) |
| 07        | LJ01       | ROS       | 0449       | BE        | 113                | 49 44.30  | 127 02.50  |               | 61               | 52                     | 750-754         |              |      | Spiking on all Channels                |
| 07        |            |           | 0452       | Bo        | 113                | 49 44.30  | 127 02.50  |               |                  |                        |                 |              |      |                                        |
| 07        |            |           | 0457       | EN        | 113                | 49 44.27  | 127 02.50  |               |                  |                        |                 |              |      | Switched pylon latch Assembly          |
| 07        | MU07       | ROS       | 0718       | BE        | 114                | 49 32 459 | 126 39 989 |               |                  |                        |                 |              |      |                                        |
| 07        | MU07       | ROS       |            | Bo        | 114                | 49 32     | 126 39     |               | 57               |                        | 754-759         |              |      |                                        |
| 07        | MU07       | ROS       | 0725       | EN        | 114                | 49 32 376 | 126 39 999 |               |                  |                        |                 |              |      |                                        |
| 07        | MU06       | ROS       | 0803       | BE        | 115                | 49 35 854 | 126 35 714 |               | 117              |                        | 760-766A        |              |      |                                        |
| 07        | MU06       | ROS       | 0809       | Bo        | 115                | 49 35 823 | 126 35 666 |               |                  |                        |                 |              |      |                                        |
| 07        | MU06       | ROS       | 0817       | EN        | 115                | 49 35 811 | 126 35 703 |               |                  |                        |                 |              |      |                                        |
| 07        | MU05A      | ROS       | 0849       | BE        | 116                | 49 36 483 | 126 30 724 |               |                  |                        |                 |              |      |                                        |
| 07        | MU05A      | ROS       | 0851       | Bo        | 116                | 49 36 50  | 126 30.58  |               | 165              | 170                    | 767-776         |              |      |                                        |
| 07        | MU05A      | ROS       | 0903       | EN        | 116                | 49 36 51  | 126 30.64  |               |                  | 246                    |                 |              |      |                                        |
| 07        | MU05       | ROS       | 0934       | BE        | 117                | 49 39 209 | 126 28 448 |               |                  |                        | 777-788         |              |      |                                        |
| 07        | MU05       | ROS       | 0941       | Bo        | 117                | 49 39 16  | 126 28 52  |               |                  |                        |                 |              |      |                                        |
| 07        | MU05       | ROS       | 0955       | EN        | 117                | 49 39 086 | 126 28 540 |               |                  |                        |                 |              |      |                                        |

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DAILY LOG

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| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE  |            | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                                     |
| 07        | MU04       | ROS       | 10:38      | BE        | 118                | 49 38 49S | 126 20 718 | GPS       |               |                  |                        |                 |              |      |                                              |
| 07        | MU04       | ROS       | 1045       | BO        | 118                | 49 38 60  | 126 20 70  |           |               |                  | 289                    | 790 - 801       | 12           |      |                                              |
| 07        | MU04       | ROS       | 11:01      | EN        | 118                | 49 38 469 | 126 20 614 |           |               |                  |                        |                 |              |      |                                              |
| 07        | MU03       | ROS       | 11:38      | BE        | 119                | 49 39.20  | 126 14 49  |           |               | 281              |                        |                 |              |      |                                              |
| 07        | MU03       | ROS       | 1144       | BO        | 119                | 49 39 19  | 126 14 50  |           |               |                  | 358                    | 802-815         |              |      |                                              |
| 07        | MU03       | ROS       | 1201       | EN        | 119                | 49 39 19  | 126 14 48  |           |               |                  |                        | 815A 815B       |              |      |                                              |
| 07        | MU02       | ROS       | 1234       | BE        | 120                | 49 40 18  | 126 09 45  |           |               | 367              |                        |                 |              |      |                                              |
| 07        | MU02       | ROS       | 1240       | BO        | 120                | 49 40 19  | 126 09 41  |           |               |                  | 361                    | 816-829         |              |      |                                              |
| 07        | MU02       | ROS       | 1256       | EN        | 120                | 49 40 21  | 126 09 40  |           |               |                  |                        |                 |              |      |                                              |
| 07        | MU01A      | ROS       | 1329       | BE        | 121                | 49 39 01  | 126 05 52  |           |               | 173              |                        |                 |              |      | DOWN TO 20m TO START                         |
| 07        | MU01A      | ROS       | 1334       | BO        | 121                | 49 39 00  | 126 05 52  |           |               |                  | 155                    | 830-839         |              |      | PUMPS - TOO FRESH IN SURFACE                 |
| 07        | MU01A      | ROS       | 1341       | EN        | 121                | 49 38 99  | 126 05 52  |           |               |                  |                        |                 |              |      |                                              |
| 07        | MU01       | ROS       | 1407       | BE        | 122                | 49 37 50  | 126 03 62  |           |               | 131              |                        |                 |              |      |                                              |
| 07        | MU01       | ROS       | 1411       | BO        | 122                | 49 37 50  | 126 03 57  |           |               |                  | 122                    | 840-847         |              |      |                                              |
| 07        | MU01       | ROS       | 1416       | EN        | 122                | 49 37 49  | 126 03 54  |           |               |                  |                        |                 |              |      |                                              |
| 08        | DRIFTER RE |           | 0041       | BE        |                    | 48 31.621 | 125 43.900 |           |               |                  |                        |                 |              |      | RECOVER GPS DRIFTER # 20311, BARICLEY CANYON |
|           |            |           |            |           |                    |           |            |           |               |                  |                        |                 |              |      |                                              |
|           |            |           |            |           |                    |           |            |           |               |                  |                        |                 |              |      |                                              |

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GPS - GLOBAL  
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## UNNUMBERED EVENTS

## OCEAN PHYSICS

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## DAILY LOG

| YEAR      |            |           | MONTH      |           |                    | SHIP      |            |               | CRUISE           |                        |                 |              | PAGE |                               | OF |  |
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| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                      |    |  |
| 08        | BCB2       | CTD       | 0152       | BC        | 123                | 48 25.96  | 125 55.91  |               | 175              |                        |                 |              |      | BARLEY CANYON                 |    |  |
| 08        | BCB2       | CTD       | 0154       | BO        | 123                | 48 25.95  | 125 55.91  |               |                  | 171                    |                 |              |      |                               |    |  |
| 08        | BCB2       | CTD       | 0157       | EN        | 123                | 48 25.93  | 125 55.89  |               |                  |                        |                 |              |      |                               |    |  |
| 08        | BCB2       | NET       | 0209       | BC        |                    | 48 25.92  | 125 55.82  |               | 177              | 163                    |                 |              |      | Bongo VNH R. Vealind/S. Allen |    |  |
| 08        | BCD2       | CTD       | 0254       | BC        | 124                | 48 22.26  | 125 50.08  |               | 152              |                        |                 |              |      |                               |    |  |
| 08        | BCD2       | CTD       | 0256       | BO        | 124                | 48 22.27  | 125 50.08  |               |                  | 144                    |                 |              |      |                               |    |  |
| 08        | BCD2       | CTD       | 0259       | EN        | 124                | 48 22.27  | 125 50.06  |               |                  |                        |                 |              |      |                               |    |  |
| 08        | BCD2       | NET       | 0309       | BC        |                    | 48 22.29  | 125 50.07  |               |                  | 140                    |                 |              |      | Bongo VNH R. Vealind/S. Allen |    |  |
| 08        | BCC4       | CTD       | 0403       | BE        | 125                | 48 21.19  | 125 58.80  |               | 730              | 726                    |                 |              |      |                               |    |  |
| 08        | BCC4       | CTD       | 0417       | BO        | 125                | 48 21.12  | 125 58.82  |               |                  |                        |                 |              |      |                               |    |  |
| 08        | BCC4       | CTD       | 0427       | EN        | 125                | 48 21.14  | 125 58.82  |               |                  |                        |                 |              |      |                               |    |  |
| 08        | BCC4       | Net       | 0432       |           |                    | 48° 21.15 | 125° 58.84 |               |                  | 251                    |                 |              |      | Bongo VNH R. Vealind/S. Allen |    |  |
| 08        | EF13       | ROS       | 10:01      | BE        | 126                | 48 56 489 | 125 10 673 |               | 105              |                        |                 |              |      |                               |    |  |
| 08        | EF13       | ROS       | 10:05      | BO        | 126                | 48 56 500 | 125 10 818 |               |                  |                        | 848-854         |              |      |                               |    |  |
| 08        | EF13       | ROS       | 10:12      | EN        | 126                | 48 56 549 | 125 10 849 |               |                  |                        |                 |              |      |                               |    |  |
| 08        | EF12       | ROS       | 10:34      | BE        | 127                | 48 57 958 | 125 10 662 |               |                  |                        |                 |              |      | Some Mud See                  |    |  |
| 08        | EF12       | ROS       |            | BO        | 127                |           |            |               | 92               |                        | 855-861         |              |      | % Trace                       |    |  |
| 08        | EF12       | ROS       | 1043       | EN        | 127                | 48 57 962 | 125 10 674 |               |                  |                        |                 |              |      |                               |    |  |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
mooringROS -  
NET -  
DRF -rosette  
net haul  
drifter

USW - sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE -  
MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN

BCC 4 = White Sided Dolphins in area while doing cast # 125      Not Dahls porpoises as noted in header  
Humpback whales around area of recovering 20311 drifter

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

| YEAR         |               |              | MONTH         |              |                       | SHIP     |  |           | CRUISE           |                     |                           |                    |                 | PAGE | OF       |
|--------------|---------------|--------------|---------------|--------------|-----------------------|----------|--|-----------|------------------|---------------------|---------------------------|--------------------|-----------------|------|----------|
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE |  | LONGITUDE | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS |
| 08           | EF11          | ROS          | 1105          | BE           | 128                   | 48 59 15 |  | 125 11 04 |                  | 92                  |                           |                    |                 |      |          |
| 08           | EF11          | ROS          | 1108          | Bo           | 128                   | 48 59 15 |  | 125 11 05 |                  |                     | 80                        | 862 - 868          |                 |      |          |
| 08           | EF11          | ROS          | 1114          | EN           | 128                   | 48 59 15 |  | 125 11 08 |                  |                     |                           |                    |                 |      |          |
| 08           | EF10          | ROS          | 1134          | BE           | 129                   | 48 59 88 |  | 125 11 18 |                  | 86                  |                           |                    |                 |      |          |
| 08           | EF10          | ROS          | 1136          | Bo           | 129                   | 48 59 88 |  | 125 11 18 |                  |                     | 82                        | 869 - 875          | CASE<br>2       |      |          |
| 08           | EF10          | ROS          | 1143          | EN           | 129                   | 48 59 89 |  | 125 11 17 |                  |                     |                           |                    |                 |      |          |
| 08           | EF09          | ROS          | 1159          | BE           | 130                   | 49 00 11 |  | 125 10 86 |                  | 58                  |                           |                    |                 |      |          |
| 08           | EF09          | ROS          | 1202          | Bo           | 130                   | 49 00 11 |  | 125 10 84 |                  |                     | 53                        | 870 - 875          | CASE<br>2       |      |          |
| 08           | EF09          | ROS          | 1205          | EN           | 130                   | 49 00 11 |  | 125 10 84 |                  |                     |                           |                    |                 |      |          |
| 08           | EF08          | ROS          | 1217          | BE           | 131                   | 49 00 66 |  | 125 10 22 |                  | 07                  |                           |                    |                 |      |          |
| 08           | EF08          | ROS          | 1221          | Bo           | 131                   | 49 00 66 |  | 125 10 21 |                  |                     | 71                        | 876 - 881A         | CASE<br>2       |      |          |
| 08           | EF08          | ROS          | 1227          | EN           | 131                   | 49 00 67 |  | 125 10 21 |                  | 140                 |                           |                    |                 |      |          |
| 08           | EF07A         | ROS          | 1241          | BE           | 132                   | 49 00 90 |  | 125 09 78 |                  |                     | 130                       |                    |                 |      |          |
| 08           | EF07A         | ROS          | 1245          | Bo           | 132                   | 49 00 91 |  | 125 09 76 |                  |                     |                           | 882 - 891          |                 |      |          |
| 08           | EF07A         | ROS          | 1254          | EN           | 132                   | 49 00 92 |  | 125 09 75 |                  |                     |                           |                    |                 |      |          |
| 08           | EF07          | ROS          | 1308          | BE           | 133                   | 49 01 25 |  | 125 09 40 |                  | 120                 |                           |                    |                 |      |          |
| 08           | EF07          | ROS          | 1311          | Bo           | 133                   | 49 01 26 |  | 125 09 40 |                  |                     |                           | 892 - 900          |                 |      |          |
| 08           | EF07          | ROS          | 1320          | EN           | 133                   | 49 01 27 |  | 125 09 41 |                  |                     |                           |                    |                 |      |          |

CAST TYPE -

BOT -

CTD -

MOR -

bottle cast

ctd

mooring

ROS -

NET -

DRF -

rosette

net haul

drifter

USW -

sea water loop

TIME CODE -

BE -

BO -

EN -

beginning time of cast

bottom time of cast

end of cast

DE -

MR -

RE -

deployment time

messenger release

recover mooring

POSITION CODE -

RAD -

GPS -

LOR -

RADAR

GLOBAL

LORAN

Need to correct EFTINGHAM POSITIONS.

| YEAR      |       | MONTH      |           | SHIP       |           | CRUISE            |            |           |               |                  |                        |                 |              |  |  |
|-----------|-------|------------|-----------|------------|-----------|-------------------|------------|-----------|---------------|------------------|------------------------|-----------------|--------------|--|--|
| DAY (UTC) |       | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDR CONSEC # | LATITUDE   | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES |  |  |
| 08        | EF06  | ROS        | 1334      | BE         | 134       | 49 01.77          | 125 09.19  |           |               | 152              |                        |                 |              |  |  |
| 08        | EF06  | ROS        | 1337      | BO         | 134       | 49 01.78          | 125 09.19  |           |               |                  |                        | 901-911         |              |  |  |
| 08        | EF06  | ROS        | 1349      | END        | 134       | 49 01.80          | 125 09.17  |           |               |                  |                        |                 |              |  |  |
| 08        | EF05  | ROS        | 1516      | BE         | 135       | 49 02.814         | 125 09.141 |           |               | 199              |                        |                 |              |  |  |
| 08        | EF05  | "          | 1521      | BOT        | 135       | 49 02.827         | 125 09.145 |           |               |                  |                        | 912-925         |              |  |  |
| 08        | EF05  | "          | 1538      | END        | 135       | 49 02.818         | 125 09.160 |           |               |                  |                        |                 |              |  |  |
| 08        | EF05A | ROS        | 1605      | BE         | 136       | 49°02.448         | 125°09.165 |           |               |                  | 205                    |                 |              |  |  |
| 08        | EF05A | "          | 1610      | BOT        | 136       | 49 02.457         | 125°09.187 |           |               |                  |                        | 926-942         |              |  |  |
| 08        | EF05A | "          | 1625      | END        | 136       | 49 02.437         | 125 09.205 |           |               |                  |                        |                 |              |  |  |
| 08        | EF04  | ROS        | 1648      | BE         | 137       | 49 03.142         | 125 08.590 |           |               |                  |                        |                 |              |  |  |
| 08        | EF04  | "          | 1654      | BOT        | 137       | 49 03.149         | 125 08.579 |           |               |                  |                        | 943-949         |              |  |  |
| 08        | EF04  | "          | 1657      | END        | 137       | 49 03.145         | 125 08.574 |           |               |                  |                        |                 |              |  |  |
| 08        | EF01  | ROS        | 1732      | BE         | 138       | 49°05.531         | 125°11.653 |           |               |                  |                        |                 |              |  |  |
| 08        | EF01  | "          | 1744      | BOT        | 138       | 49 05.573         | 125 11.678 |           |               |                  | 300                    | 950-954         |              |  |  |
| 08        | EF01  | "          | 1752      | END        | 138       | 49 05.580         | 125 11.678 |           |               |                  |                        |                 |              |  |  |
| 09        | EF02  | ROS        | 1814      | BE         | 139       | 49 04.980         | 125 10.310 |           |               |                  | 72                     |                 |              |  |  |
| 09        | EF02  | "          | 1816      | BOT        | 139       | 49 05.975         | 10.304     |           |               |                  |                        | 955-962         |              |  |  |
| 09        | EF02  | "          | 1822      | END        | 139       | 49 04.971         | 10.300     |           |               |                  |                        |                 |              |  |  |

C7C3-A  
49°04.319'  
125°09.476'

Beautiful sunny & warm day

925, 925A, 925B

TUG + TOW in Narrows  
proceed to EF01.

CTC3-A 118m

49°04.319'

125°09.476'

Beautiful sunny & warm day

925, 925A, 925B

TUG + Tow in Harrows proceed to EF01.

## DAILY LOG

## OCEAN PHYSICS

## INSTITUTE OF OCEAN SCIENCES

| YEAR 1999 |            |           | MONTH July |           | SHIP Tully           |           |            |               | CRUISE 9928      |                        |                 |              | PAGE OF |          |
|-----------|------------|-----------|------------|-----------|----------------------|-----------|------------|---------------|------------------|------------------------|-----------------|--------------|---------|----------|
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STATION/DRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT    | COMMENTS |
| 09        | EF02A      | CTD       | 1840       | Be        | 140                  | 49 04.460 | 125 09.697 |               |                  | 110                    |                 |              |         |          |
| 09        | EF02A      | CTD       |            | Bo        | 140                  | 49        |            |               |                  | 110                    | 963-973         |              |         |          |
| 09        | EF02A      | CTD       |            | END       | 140                  | 49        |            |               |                  |                        |                 |              |         |          |
| 09        | EF02A      | ROS       | 1848       | Be        | 141                  | 49 04.437 | 125 09.693 |               |                  | 110                    |                 |              |         |          |
| 09        | EF02A      | "         | 1853       | Bo        | 141                  | 49 04.457 | 125 09.709 |               |                  |                        | 963-973         |              |         |          |
| 09        | EF02A      | "         | 1903       | END       | 141                  | 49 04.432 | 125 09.682 |               |                  |                        |                 |              |         |          |
| 09        | EF03       | ROS       | 1917       | BE        | 142                  | 49 04 25  | 125 09.40  |               |                  |                        | 979-986         |              |         |          |
| 09        | EF03       | ROS       | 1919       | Bo        | 142                  | 49 4.25   | 125 9 41   |               |                  | 120                    |                 |              |         |          |
| 09        | EF03       | ROS       | 1931       | END       | 142                  | 49 4 25   | 125 9 38   |               |                  |                        |                 |              |         |          |
| 09        | EF03B      | ROS       | 1940       | Be        | 143                  | 49 04 026 | 125 09 125 |               |                  |                        | 987-999         |              |         |          |
| 09        | EF03B      | ROS       | 1952       | Bo        | 143                  | 49 04 037 | 125 09 131 |               |                  | 120                    |                 |              |         |          |
| 09        | EF03B      | ROS       | 2005       | EN        | 143                  |           |            |               |                  |                        |                 |              |         |          |
| 09        | EF03A      | ROS       | 2019       | BE        | 144                  | 49 03 787 | 125 09 069 |               |                  |                        | 1000-1010       |              |         |          |
| 09        | EF03A      | ROS       |            | Bo        | 144                  |           |            |               |                  | 106                    |                 |              |         |          |
| 09        | EF03A      | ROS       | 2034       | EN        | 144                  | 49 03 787 | 125 09 069 |               |                  |                        |                 |              |         |          |
| 09        | JFG4       | CTD       | 0152       | Be        | 145                  | 48 29 38  | 124 40 09  | GPS           | 257              |                        |                 |              |         |          |
| 09        | JFG4       | CTD       | 0157       | Bo        | 145                  | 48 29 40  | 124 40 08  |               |                  |                        |                 |              |         |          |
| 09        | JFG4       | CTD       | 0201       | EN        | 145                  | 48 29 41  | 124 40 05  |               |                  |                        |                 |              |         |          |

CAST TYPE -

BOT - bottle cast  
CTD - ctd  
MOR - mooringROS - rosette  
NET - net haul  
DRF - drifter

USW - sea water loop

TIME CODE -

BE - beginning time of cast  
BO - bottom time of cast  
EN - end of castDE - deployment time  
MR - messenger release  
RE - recover mooring

POSITION CODE -

RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN

Orcas sighted at JFG4

should actually be JFF7

# DAILY LOG

## OCEAN PHYSICS

## INSTITUTE OF OCEAN SCIENCES

| YEAR      |            |           | MONTH      |           |                    | SHIP      |            |               | CRUISE           |                        |                 |              |      | PAGE                                            |  | OF |  |
|-----------|------------|-----------|------------|-----------|--------------------|-----------|------------|---------------|------------------|------------------------|-----------------|--------------|------|-------------------------------------------------|--|----|--|
| 1999      |            |           | July       |           |                    | Tully     |            |               |                  |                        |                 |              |      |                                                 |  |    |  |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE  | LONGITUDE  | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                                        |  |    |  |
| 09        | JFF1       | CTD       | 0312       | BE        | 146                | 48 21 03  | 124 29.98  |               | 32               |                        |                 |              |      | All station numbers are reversed for JFF1-JFF7. |  |    |  |
| 09        | JFF1       | CTD       | 0313       | BO        | 146                | 48 21 04  | 124 29.99  |               |                  | 29                     |                 |              |      |                                                 |  |    |  |
| 09        | JFF1       | CTD       | 0315       | EN        | 146                | 48 21 04  | 124 30.00  |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF2       | CTD       | 0333       | BE        | 147                | 48 22.575 | 124 29.994 |               | 114              | 109                    |                 |              |      | Salinities offset                               |  |    |  |
| 09        | JFF2       | CTD       | 0335       | BO        | 147                | 48 22.602 | 124 30.001 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF2       | CTD       | 0338       | EN        | 147                | 48 22.619 | 124 29.994 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF3       | CTD       | 0358       | BE        | 148                | 48 24.529 | 124 29.953 |               | 217              | 211                    |                 |              |      | Incorrectly called JFF2 in header file          |  |    |  |
| 09        | JFF3       | CTD       | 0402       | BO        | 148                | 48 24.533 | 124 29.919 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF3       | CTD       | 0406       | EN        | 148                | 48 24.536 | 124 29.905 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF4       | CTD       | 0431       | BE        | 149                | 48 26.539 | 124 29.958 |               | 236              | 227                    |                 |              |      |                                                 |  |    |  |
| 09        | JFF4       | CTD       | 0434       | BO        | 149                | 48 26.542 | 124 29.932 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF4       | CTD       | 0438       | EN        | 149                | 48 26.548 | 124 29.914 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF5       | CTD       | 0503       | BE        | 150                | 48 28.536 | 124 29.974 |               | 217              | 207                    |                 |              |      |                                                 |  |    |  |
| 09        | JFF5       | CTD       | 0508       | BO        | 150                | 48 28.517 | 124 29.932 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF5       | CTD       | 0511       | EN        | 150                | 48 28.509 | 124 29.928 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF6       | CTD       | 0536       | BE        | 151                | 48 30.471 | 124 29.959 |               | 144              | 139                    |                 |              |      | Interesting Tx Trace                            |  |    |  |
| 09        | JFF6       | CTD       | 0539       | BO        | 151                | 48 30.459 | 124 29.941 |               |                  |                        |                 |              |      |                                                 |  |    |  |
| 09        | JFF6       | CTD       | 0542       | EN        | 151                | 48 30.452 | 124 29.934 |               |                  |                        |                 |              |      |                                                 |  |    |  |

CAST TYPE -

BOT - bottle cast  
CTD - ctd  
MOR - mooring

ROS - rosette  
NET - net haul  
DRF - drifter

USW - sea water loop

TIME CODE -

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

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

POSITION CODE -

RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN

## DAILY LOG

## OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

[illegible]

CAST TYPE -

BOT -  
CTD -  
MOR -

bottle cast  
ctd  
mooring

|       |          |
|-------|----------|
| ROS - | rosette  |
| NET - | net haul |
| DRF - | drifter  |

USW - sea water loop

TIME CODE -

|      |                        |
|------|------------------------|
| BE - | beginning time of cast |
| BO - | bottom time of cast    |
| EN-  | end of cast            |

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

POSITION CODE -

|       |        |
|-------|--------|
| RAD - | RADAR  |
| GPS - | GLOBAL |
| LOR - | LORAN  |