Hawaii Ocean Time-series Program

HOT 275
Hawaii Ocean Time-Series  
HOT-275  
KAHE Station Data Sheet

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Notes: Niskin 15 vent was not all the way closed
Hawaii Ocean Time-series
HOT-275
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Date: 08-12-15 (HST)  
Time: 0200 (HST)  

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Notes: chl 18 had a leak during filtration, lost ~30 mL
Hawaii Ocean Time-series  
**HOT-275**  
WOCE Deep Data Sheet

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**Notes:**
Hawaii Ocean Time-series  
HOT-275  
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Notes: Extra Quay Samples need to be taken from ~500, 750, 1000 m. Extra Quay Samples taken from 1 (1020), 5 (764), and 10 (512).
Hawaii Ocean Time-series
HOT- 275
PC/PN Data Sheet

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Blank #'s: ___B1___  ___B2___  ___B3___

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Notes: Samples from carboy 3 and 4 have black stuff on filter.
Filter #17 was dropped on bench.
Hawaii Ocean Time-series  
HOT- 275  
Particulate Phosphorus Data Sheet

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Notes: Sample #15, filter torn.
## Hawaii Ocean Time-series
### HOT-275
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**Notes:**
Extra Quay Samples taken from 5, 25, 60, 75, 100, 150 m.
Keeling 23A = R10829 @ 2122
Keeling 23B = R10830 @ 2124
## Hawaii Ocean Time-series
### HOT-275
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Notes:
Hawaii Ocean Time-series
HOT-275
PUR Data Sheet

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Notes:
Hawaii Ocean Time-series
HOT- 275
Gas Array Experiment Data Sheet

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Cast # | 8 | Time: | 0200 (HST)
Operator(s): TC, JB, AN, BM, LF

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Notes:
Hawaii Ocean Time-series
HOT-275
OPEN CAST Data Sheet

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Notes:
Hawaii Ocean Time-series
HOT- 275
Particulate Silica Data Sheet

Station # 2  Date: 08/13/15 (HST)
Cast # 10  Time: 0800 (HST)
Operator(s): AN TC LF BM JB  Pre-screen mesh size: none
Blank # B1, B2, B3

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Notes:
10B had a leaky filter holder and lost about 700 mL while trying to swap them out.
15 A filter was sucked up into filter holder, possibly inefficient filtration
## Hawaii Ocean Time-series
### HOT- 275
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Notes:
## Hawaii Ocean Time-series

**HOT- 275**

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Notes: Tube #12 fell over, sample/tris lost.
Hawaii Ocean Time-series  
HOT-275  
OPEN CAST Data Sheet

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Notes:
Hawaii Ocean Time-series
HOT-275
HPLC & Chl a. Bottle Data Sheet

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Notes: DO NOT PRE-SCREEN
Extra HPLC’s taken at 25, 45, 75, 125, and 150 m for lab intercomparison.

Chlorophyll bottle #12 is missing, sample #18 taken with bottle 15.
Sample #20 in bottle #14, Sample #24 in bottle 13.
# Hawaii Ocean Time-series
## HOT-275
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Notes:
**Hawaii Ocean Time-series**  
**HOT- 275**  
**STATION 52 Data Sheet**

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Notes:
Hawaii Ocean Time-series  
HOT- 275  
STATION Kaena Data Sheet

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<td>0107-Traps in water; 0116-array released</td>
</tr>
<tr>
<td>(HST)</td>
<td>X</td>
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<tr>
<td>Operator(s):</td>
<td>AN LF TC BW</td>
<td>Date:</td>
<td>8/14/15</td>
</tr>
<tr>
<td>Position out:</td>
<td>22°43.713’N 158°13.743’W</td>
<td>Wind:</td>
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<tr>
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<td></td>
<td>Sea state:</td>
<td>8-10’</td>
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<tr>
<td>Time Out:</td>
<td>150 m</td>
<td>Notes:</td>
<td>0748 buoy out of water, 0800 traps out</td>
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<tr>
<td>(HST)</td>
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Data Sheet for Sediment Trap Volumes

Cruise #: 275
Analyst: AN BM RB LF

Directions: 1) Mark the traps with 2 lines
   a) Line #1 is at the interface
   b) Line #2 is 2" (5 cm) above the interface
2) Siphon off the top of the trap to Line #2 - 2" above the interface
3) Measure the distance from the bottom of the trap to Line #2
   2" above the interface and record the result in this table.

<table>
<thead>
<tr>
<th>Trap Name</th>
<th>Depth (m)</th>
<th>Height (cm) at Line #2 (Top Line)</th>
<th>Volume (L) at top line = (Height in cm x 0.038)</th>
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<tbody>
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</tr>
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<td>C</td>
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<td>D</td>
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<td>H</td>
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Hawaii Ocean Time-series
HOT-275
In Situ Primary Production Data Sheet

Operators: AN TC LF BW BM JB
Date in: 08/12/15 Time in: 0405 (HST)
Date out: 08-12-15 Time out: 1917 (HST)

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Position in: 22º 45.237' N 158º 01.148' W
Position out: 22 º46.081’N 158º4.782’W

Average weather condition during incubation:

Average sea state during incubation:

Begin Inoculation 0328 End Inoculation
Filtration time

--------------------------
Hawaii Ocean Time-series
HOT-275
In Situ Gas Array Data Sheet

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<td>Date Recovered: 8/14/15</td>
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<td>Time (HST): 0420</td>
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Nitrogen Fixation Sample Processing Sheet

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Are samples also spiked with C13?  ___ Yes   ___ No
Hawaii Ocean Time-series  
HOT 275  
Chlorophyll Grab Sample Sheet

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G-1000, hot-275_s2_c11.cnv

- Pressure [dbar]
- Salinity, Practical [PSU]
- Oxygen [uMol/Kg]
- ISUS [voltage]
- Fluorescence, SeaPoint
**Hawaii Ocean Time-Series CONSOLE LOG**

- **Cast type**: 1
- **Bottle type**: 12L
- **SST**: 19.46
- **Operator**: DM

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<th>Time (stopped)</th>
<th>Confirm tripped</th>
<th>Pressure</th>
<th>Target Depth</th>
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**Station:** 1  
**Cast:** 1

**Latitude**  
- Start: 21°20.423  
- End: 21°20.507  

**Longitude**  
- Start: 158°16.973  
- End: 158°17.036  

**Depth of water:** N/A meters  

**Pressure on Deck**  
- Begin: -0.14  
- End: -0.01  

**Date (GMT):** 8/11/15  

**Time:**  
- Start Log: 23:21  
- In Water: 23:30  
- Out of Water: 8/12  
- Max cast pressure: 1021 dbar  
- Comments: 0035
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Hawaii Ocean Time-Series CONSOLE LOG

- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer
- Mixed: 18 dbar
  Salmin: 480 & 530 dbar

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<tr>
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Station: 2
Cast: 1

Latitude
start: 22° 45.0
end: 22 45.590
Longitude
start: 158° 0.0
end: 158 0.790

Depth of water: N/A meters
Date (GMT): 8/12/15

Pressure on Deck
Begin: -0.17
End: -0.05

Start Log: 11:50
In Water: 12:02

Max cast pressure: 1021 dbar
Out of Water: 12.58 dbar
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**Station:**
- Latitude start: 22 45.036
- Latitude end: 22 48.105
- Depth of water: N/A meters
- Pressure on Deck Begin: -0.14
- Pressure on Deck End: -0.30
- Max cast pressure: 47.75 dbar

**Trip/ Niskin** | **Time stopped** | **Confirm tripped** | **Pressure** | **Target Depth** | **Comments**
---|---|---|---|---|---
1 | 16:35:40 | 16:35:40 | 4772 | 4800 | Altimeter trace not working.
2 | 16:40:00 | 16:40:00 | 4601 | 4600 | 2 wire angle.
3 | 42:35 | 4494 | 4500 | Winch slowly drifting up.
4 | 46:40 | 4398 | 4400 | 4 wire angle.
5 | 51:40 | 4196 | 4200 | 4 wire angle.
6 | 56:15 | 3993 | 4000 | 4 wire angle.
7 | 17:01:00 | 3801 | 3800 | 4 wire angle.
8 | 05:45 | 3593 | 3600 | Big wire angle.
9 | 10:05 | 3396 | 3400 | 1 wire angle.
10 | 16:10 | 3199 | 3200 | 1 wire angle.
11 | 22:00 | 3003 | 3000 | 1 wire angle.
12 | 23:30 | 2803 | 2800 | 1 wire angle.
13 | 36:00 | 2599 | 2600 | 1 wire angle.
14 | 41:20 | 2398 | 2400 | 1 wire angle.
15 | 46:30 | 2197 | 2200 | 1 wire angle.
16 | 51:40 | 2006 | 2000 | Big wire angle.
17 | 59:10 | 1805 | 1800 | 1 wire angle.
18 | 18:06:25 | 1605 | 1600 | 1 wire angle.
19 | 13:10 | 1403 | 1400 | 1 wire angle.
20 | 19:10 | 1202 | 1200 | 1 wire angle.
21 | 25:20 | 999 | 1000 | 1 wire angle.
22 | 31:10 | 750 | 750 | 1 wire angle.
23 | 37:20 | 500 | 500 | 1 wire angle.
24 | 48:15 | 5 | 5 | 1 wire angle.
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## Hawaii Ocean Time-Series CONSOLE LOG

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- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer
- Mixed: 38
  - Min: 440

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**Depth of water:** N/A meters

**Pressure on Deck**

- **Start Log:** 20:56
- **In Water:** 2:03
- **Out of Water:** 22:18

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Console Log Sheet - Rev 10 (21).doc
Hawaii Ocean Time-Series

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| Latitude: | 22.449860 |
| Date: | 8/12/15 |
| Operator: | DM |

| Cast: | 2 |
| Longitude: | 158.0388 |
| Time (GMT): | 2056 |

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WOCE - Shallow Cast Sheet - Rev 2
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**Hawaii Ocean Time-Series CONSOLE LOG**

- **Cast type**: 12L
- **Bottle type**: 27.34
- **SST**: DM
- **Operator**: 4

**Station**: 2

- **Latitude start**: 12 45.445
- **Longitude start**: 158 0.405
- **Date (GMT)**: 8 13 15
- **Max cast pressure**: 1021 dbar

**Depth of water**:

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**Conclude Log Sheet - Rev 10 (21).doc**
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Hawaii Ocean Time-Series CONSOLE LOG

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- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer

**mixed:** 35 dbar

**Salmin:** 440 & 505

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Station: 2  Cast: 5

- Latitude start: 22° 4 6.011 N
- end: 22° 46.329 N
- Longitude start: 158° 03.989 W
- end: 158° 04.010 W
- Depth of water: N/A meters
- Date (GMT): 8/13/15
- Pressure on Deck
  - Begin: -0.17
  - End: -0.04
- Time:
  - Start Log: 2:55
  - In Water: 3:01
  - Out of Water: 4:03
- Max cast pressure: 1020 dbar

Console Log Sheet - Rev 10 (21).doc
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Hawaii Ocean Time-Series CONSOLE LOG

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- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer

Mixed: 20 dbar
Salmon: 425 & 500 dbar

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Max cast pressure: 102.0 dbar
Out of Water: 7.08

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Console Log Sheet - Rev 10 (21).doc
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Hawaii Ocean Time-Series CONSOLE LOG

- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer

Station: 2  Cast: 7

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<tr>
<th>Latitude</th>
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<tbody>
<tr>
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Depth of water: N/A meters

Date (GMT): 8/13/15

Pressure on Deck

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## Hawaii Ocean Time-Series CONSOLE LOG

### Operator Station:

- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer

### Mixed: 40

### Salinity: 440 & 500

### Station: 2

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### Station Log Sheet - Rev 10 (21).doc

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<thead>
<tr>
<th>Depth of water:</th>
<th>Date (GMT):</th>
<th>Pressure on Deck:</th>
<th>Time:</th>
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<tbody>
<tr>
<td>N/A meters</td>
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### Time:

- Start Log: 11:56
- End: 12:01

### Depth of Water:

- In Water: 12:01
- Out of Water: 12:01

### Max Cast Pressure: 1254 dbar
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**Hawaii Ocean Time-Series CONSOLE LOG**

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- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer
- mixed: 40
  - 5-min: 455 + 545

---

**Station:** 2  
**Cast:** 9

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**Pressure on Deck**

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## Hawaii Ocean Time-Series CONSOLE LOG

### Station: 2  Cast: 10

- **Latitude**
  - Start: 27° 45.041′
  - End: 27° 45.771′
- **Longitude**
  - Start: 158° 0.052′
  - End: 157° 59.882′
- **Depth of water:**
  - Start: 8 / 13 / 15
- **Pressure on Deck**
  - Begin: -0.14
  - End: -0.07
- **Date (GMT):**
  - 8 / 13 / 15
- **Time:**
  - Start Log: 17:53
  - In Water: 18:00
  - Out of Water: 18:58

### Mixed: 40
- **S-min:** 435

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Console Log Sheet - Rev 10 (21).doc
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### Hawaii Ocean Time-Series CONSOLE LOG

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- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ASUS
- PO Fluorometer
- Mixed: 30
  - s-min: 430

### Station: 2  Cast: 11

**Latitude**
- start: 22°45.022
- end: 22°45.035

**Longitude**
- start: 158°0.072
- end: 158°0.057

**Depth of water:** N/A meters

**Date (GMT):** 8/13/15

**Pressure on Deck**

**Start Log:**
- Begin: -0.16
- End: -0.06

**Time:**
- Start Log:
  - 21:28
- In Water:
  - 21:32
- Out of Water:
  - 22:27

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Hawaii Ocean Time-Series CONSOLE LOG

Station: 2  Cast: 13

Latitude start: 22°44.995'N  Longitude start: 157°59.904'W
end: 22°44.992'N  end: 157°59.970'W

Depth of water: N/A meters  Date (GMT): 8/14/15

Pressure on Deck

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Max cast pressure: 1021 dbar

Comments

Console Log Sheet - Rev 10 (21).doc
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- √ Pinger
- √ Altimeter
- √ Transmissometer
- √ BEACH Sea Tech Fluorometer
- □ OTG Seapoint Fluorometer
- □ ISUS
- □ PO Fluorometer
- □ **MIXED: 25**
  - **SAL MIN: 450**

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| Max cast pressure: 1021 dbar |

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Hawaii Ocean Time-Series CONSOLE LOG

Station: 2  Cast: 15
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start: 22°45.006'N
end: 22°44.689'N
Longitude
start: 158°0.035'W
end: 158°0.053'W
Depth of water: N/A meters
Date (GMT): 8/1/14

Pressure on Deck
Begin: -0.14
End: -0.28
Out of Water: 12:18

Max cast pressure: 4806 dbar

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Sal min
Sal min
O₂ max
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Console Log Sheet - Rev 10 (21).doc
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Station: 52  Cast: 1
Latitude start: 22 40 37.7  
end: 22 40 36.9  
Longitude start: 157 58.109  
end: 157 58.194  
Depth of water: 8114115  
Pressure on Deck: 201 dbar  
Time: 2235  
Start Log: 2235  
Out of Water: 2239  
Begin: -0.16  
End: -0.08  
Max cast pressure: 2327  

HOT-275
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Hawaii Ocean Time-Series CONSOLE LOG

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- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer
- mixed: 20
  Sal min: 4/60

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Longitude start: 158°21.795'W  end: 158°20.790'W
Depth of water: N/A meters
Presssure on Deck: Date (GMT): Start Log: 7:08
Begin: -0.11  End: -0.06  In Water: 7:15
Max cast pressure: 2494 dbar  Out of Water: 9:09

Console Log Sheet - Rev 10 (21).doc
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<tr>
<td>24</td>
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</tbody>
</table>
HOT-275

CTD Configuration
CTD: 850
Deck Unit: 111361
Pressure: 1430
Cable: 518
Ti: 1416  T2: 5519
C1: 3984  C2: 2959
D1: 43982  D2: 1601
Pump 1: 968  Pump 2: 494
Fluorimeter: 3602
Altimeter: 9769
Bucket Thermometer: 201002
Transmissometer: 1431

Cruise Participants
Fernando Santiago - Manuljano - Chief Sci.
Tara Clemente
Lance Fujitsuki
Brie Maillet
Danny McCoy
Jeffrey Snyder
Susan Curless
Brenner Wai
Eric Shimabukuro
Walt Deppe
Greyson Adams
Roman Batisoti
Blake Watkins
William McGuiston
Emma Nuss - UH P.O. grad
Matthew Duoper - HPN undergrad
Jim Burkitt
<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800</td>
<td>Depart SWU G Harbor, transit Kahe Stn.</td>
</tr>
<tr>
<td>0900</td>
<td>Fire and safety drills</td>
</tr>
<tr>
<td>1000</td>
<td>Arrive Kahe Station</td>
</tr>
<tr>
<td>1016</td>
<td>Start weight cast to 1000 m</td>
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<tr>
<td></td>
<td>All stop at 127 m were out to troubleshoot tensionometer issues. Five minute delay to wash off the shv with fresh water.</td>
</tr>
<tr>
<td>1158</td>
<td>End weight cast</td>
</tr>
<tr>
<td>1210</td>
<td>Hyperpro @ 21°36.76'N 158°15.80'W</td>
</tr>
<tr>
<td>1255</td>
<td>Hyperpro recovered, transit Kahe Stn</td>
</tr>
<tr>
<td>1321</td>
<td>Start station 1 cast 1 - G1000 GPS</td>
</tr>
<tr>
<td>1436</td>
<td>End station 1 cast 1 - 24 marks OK</td>
</tr>
<tr>
<td>1745</td>
<td>Transit station ALOHA</td>
</tr>
<tr>
<td>1845</td>
<td>Arrived station ALOHA</td>
</tr>
<tr>
<td>1918</td>
<td>Deployed Sediment Traps @ 22°44.863'N 158°2.826'W</td>
</tr>
<tr>
<td>1953</td>
<td>Raining on station</td>
</tr>
<tr>
<td>2050</td>
<td>Start station 2 cast 1 - G1000 GPS</td>
</tr>
</tbody>
</table>
Loading Aug 7, 2015
wire length = 8400.5 m
306 sq. RED conductor

Weight Cast
On deck: Tensionometer not working correctly
In air 2350 lbs
In water:

Test Cast
On deck (empty) N/A
In air (empty): 1280 lbs
In air (full): 2500 lbs

In air (empty): 1050 lbs (sadc)
4 very low tensions, ~200 lbs lighter
in-air weight then during test cast.

Boom SPEEDS
Out 2:55 sec
In 1:24 sec

Jeffrey,
we need to log
the altimeter
SN. in the cruise log.
HoT - 225  August 12, 2015

Speed jumping between 42 and 50 m/min in tensionometer display

No bottom depth available, Knodsen is not available and Sea Beam computer does not respond.

1259  End station 2 cast 1 - 22 marks OK

1345  START RP. ARRAY DEPLOYMENT

22°45.1 158°01.0

1405  PP array deployed

1437  Start station 2 cast 2 - 65000 GPS

Standby altimeter reading is only 88 m, down from the typical 99 m.

1635  At near bottom, altimeter not responding, firing bottle at 4792 dbar.

1850  End station 2 cast 2 - Big wire angles led to ~4 bottles to be 5 dbar or more offset from target depth. All marks OK

1855  Transit pump tanks

2056  Start station 2 cast 3 - 61000 GPS

2218  End station 2 cast 3 - 24 marks OK
HOT-275
August 12, 2015

2230  Net tow 22°45.17′ N 158°00.23′ W

2300  End net tow

2330  Hyperpro cast @ 22°45.42′ N 158°0.089′ W

August 13, 2015

0015  Hyperpro recovered

0017  Start Station 2 cast 4 - GL1000GPS

0125  End Station 2 Cast 4 - 18 marks OK

0255  Start Station 2 Cast 5 - GL1000GPS

0405  End Station 2 Cast 5 - 16 marks OK

0504  Begin PP Array recovery @ 22°46.081′ N 158°4.782′ W

0517  PP Array on deck

0533  Raining on Station

0556  Start Station 2 Cast 6 - GL1000GPS

0711  End Station 2 Cast 6 - 24 marks OK

0802  Net Tow @ 22° 45.473′ N 158° 2.919′ W

0831  End Net Tow

0833  Net Tow @ 22° 45.324′ N 158° 2.506′ W

0902  End Net Tow
0914 Start Station 2 Cast 7 - 61000 GPS
1017 End Station 2 Cast 7 - 16 marks OK
1156 Start Station 2 Cast 8 - 61000 GPS
1255 End Station 2 cast 8 - 22 marks OK
1359 Deploying G.A. 22°44.95 'N 158°1.11 'W
14:20 G.A. DEPLOYED - TRANSIT TO CENTER
1453 Start station 2 cast 9 - 61000 GPS
1558 End station 2 cast 9 - 8 marks OK
1753 Start Station 2 Cast 10 - 61000 GPS
1858 End Station 2 cast 10 - 20 marks OK
Collected 1000 ml water in cardbox for salinity
20:00 START NET TOU
  22°45 02 158°02.80
20:30 Net recovered
2045 ATE deployed 22°45.160 'N 158°1.603 'W
21:10 ATE recovered, transit to center
21:28 Start station 2 cast 11 - 61000 GPS
22:30 End station 2 cast 11 - 20 marks OK
2235  Net tow 22°45.087'N  158°0.083'W
2303  Net recovered
2349  Start Station 2 Cast 12 - G1000 GPS  

August 14, 2015

0104  End Station 2 Cast 12 - 21 marks OK
0150  Replaced altimeter & tested with good results
       Altimeter SN 7769 had water inside
0255  Start Station 2 Cast 13 - G1000 GPS

0403  End Station 2 Cast 13 - 13 marks OK
0601  Start Station 2 Cast 14 - G1000 GPS

0637  Stopped @ 8 63.3 m (wire out) to investigate problem
       with winch guide rollers
0642  Winch said OTG suggests to continue, resuming upcast
0714  End Station 2 Cast 14 - 24 marks OK

0805  Net Tow @ 22°44.973'N 158°0.884'W
0822  Removed W Sus
0837  End Net Tow
0857  Start Station 2 Cast 15 - G5000 GPS

1044  7 m off bottom @ 22°44.970'N 158°0.024'W
Transmissometer Calibration
SN 1431 DR

Dark Offset: 0.02076 volts
Light Offset: 4.76679 volts

1220
1301
1356
1400
1453
1500
1619
1630
1803
1810
2045
2135
2137
2223
2235
2241
12:20  End Station 2 Cast 15 - 17 marks OK

30:1  Deploying AC9  22°45.011'N  158°0.028'W

13:55  AC9 recovered

14:00  AC9 deployed  22°45.015'N  158°0.014'W

14:53  AC9 recovered

15:00  Transit G.A.

16:19  Recovering G.A.  22°47.774'N  158°9.947'W

16:30  G.A. recovered, transit S.T.

18:03  Recovering S.T.  22°43.691'N  158°13.725'W

18:10  S.T. recovered, transit WHOTS buoy

20:45  AC9 deployed  22°40.337'N  157°57.973'W

21:35  AC9 recovered

21:37  AC9 deployed  22°40.419'N  157°57.931'W

22:23  AC9 recovered

22:35  start station 52 Cast 1 - 6200 GPS

22:41  start cycle #1
WHICH SHUT OFF DURING
CTD DEPLOYMENT OPERATOR
RESET WHICH TO CONTINUE

THERMOSALINOGRAPH STOPPED
LOGGING AT 10:00:30.

0024
0708 S.
0813 N.
0911 E.
0915 T.
1700
1840
Start cycle #2
Start cycle #3
Start cycle #4 - firing bottles
End Station 52 cast 1 - 5 marks OK
Hyperpro @ 22°40.424'N 157°58.058'W
End Hyperpro, transit Kaena Stn.
Start Station 6 Cast 1 - G500G PS
Winch shut off during deployment
11 m off bottom @ 21°50.946'N 159°21.022'W
End Station 6 Cast 1 - 13 marks OK
Transit Snug
Problems w/telemetral system
Logger stopped at 1000:30
Arrived to Snug Harbor