

Initial Flow Meter : MOC1-FM1
used for Hauls 1-6

MOCNESS Data Sheet

HAUL #

Cruise CCE - P081D

Date 4 Oct 2008

CYCLE #

TOW #

Wind Speed

Direction

Sea State

Pre-deployment checks Flow Meter: ✓

Net Response: ✓

Stepping Motor: ✓

Fluorometer: ✓

Clean optical Surfaces:

Transmissometer: ✓

Fluorometer: ✓

File Name: Processed Haul1.PRO

Raw

Start Time 14:53 (software start)

End Time 17:38

GMT / Local

PDT

Lat 15:11 Net immersed

Lat 34.1411°

bottom 23521 fathoms

34.1271°

Long 120.9407°

= 952 m. Long 120.8676°

Event #: 90 (15:09)

Net Mesh 202 µm Frame Size 1 m²

Console Operator Ohman

Net Tow Information

Intended Depth

PDT

Max

your day line

Net	Time Open	Angle	Flow Counts	Volume Filtered	Max Depth Out	Cod End Number	Sample Jar Number	Fixative
0+	15:11		1,605 m ³	1780 m ³	823	278.924		95%
1	16:20		422	418	800			
2	16:35:25		253	287	700			
3	16:44		209	232	600			
4	16:52		214	237	498			
5	16:59		296	328	400			
6	17:09		245	272	300			
7	17:16		236	261	200			
8	17:25		112	124	99	279.0174		
9	17:29		245	286	46	279.0205		
Closed	17:38					279.0264		

SURFACE

Press.

Temp.

Salinity

O₂

Fluor.

Trans.

Battery

-1.7

17.64

33.33

10.00

0.0634

0.1795

20.0

NOTES:

corr. 6 May 09

MDO

O.K.

Only

Net 9

and "Nd10"

Sea. No. 127 4061 2665 430872-real 229 490
08/06 cc

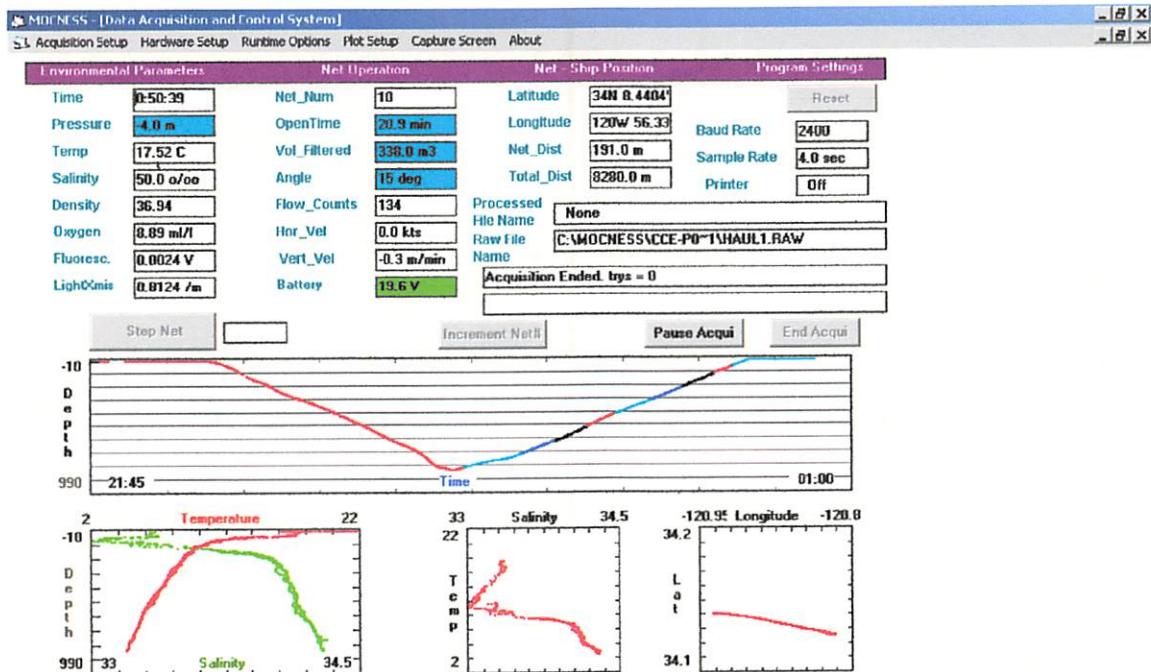
230884-temp.

cath used

[3?]

Flow calib: 4.68 ~ 2 yrs. ago

Haul 1



Set Plotting Parameters (Maximums & Minimums)

Set Plotting Parameters

Maximum Temperature	22	Maximum Latitude	34.2
Minimum Temperature	2	Minimum Latitude	34.1
Maximum Salinity	34.5	Maximum Long	-120.85
Minimum Salinity	33	Minimum Long	-120.95
Maximum Pressure	990	Maximum Time (hh:mm)	01:00
Minimum Pressure	-10	Minimum Time (hh:mm)	21:45

OK Cancel

Net Tow and Sensor Information

Tow Information	Altimeter Parameters	Select Maximum Baud Rate	
Ship/Cruise #: R/V Melville	Altimeter Present <input checked="" type="checkbox"/>	<input type="radio"/> 300 <input checked="" type="radio"/> 2400	
Date (dd/mm/yy) 04/10/2008	Blanking Width (ms) 20	<input type="radio"/> 600 <input checked="" type="radio"/> 4800	
Tow # (M>X>XX) le1_Tow1_Haul1	Pulse Width (ms) 2	<input type="radio"/> 1200 <input checked="" type="radio"/> 3600	
Net Size (m) <input type="checkbox"/> Double 1	Power (1-99%) 25	Ping Rate (sec) 4	
Flow Calibration (m/count) 4.68	Do Setup Cable to activate box		
Output to Printer <input type="checkbox"/>			
GPS Status	Optional Sensors Parameters		
Sail GPS Present <input checked="" type="checkbox"/>	Optional Sensors Present <input checked="" type="checkbox"/>		
Ship GPS Present <input checked="" type="checkbox"/>	Oxygen Present <input checked="" type="checkbox"/>	Do Setup Cable to activate box	
"9600,N,8,1" <input checked="" type="checkbox"/>	Transmissometer Present <input checked="" type="checkbox"/>		
"4800,N,8,1" <input checked="" type="checkbox"/>	Fluorometer Present <input checked="" type="checkbox"/>		

OK **Cancel**

Set Plotting Parameters (Maximums & Minimums)

Set Plotting Parameters

Maximum Temperature 22	Maximum Latitude 34.0
Minimum Temperature 2	Minimum Latitude 33.6
Maximum Salinity 34	Maximum Long -120.8
Minimum Salinity 33	Minimum Long -121.4
Maximum Pressure 1000	Maximum Time (hh:mm) 21:45
Minimum Pressure -10	Minimum Time (hh:mm) 23:59

OK **Cancel**

Cycle1_Tow1_Haul1

4/10/2008

R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin
0	-5.1	822.9	313.5	4.6	21.5	10.6	4.5
1	699.8	800	752.5	4.8	5.2	5	4.7
2	601.1	699.5	649.8	5.2	5.7	5.5	5.1
3	499.3	600.1	551.9	5.7	6.5	5.9	5.7
4	401.1	497.6	448.5	6.5	7.1	6.9	6.5
5	301.3	399.6	346.7	7.1	7.7	7.5	7.1
6	201.3	299.7	251.3	7.7	8.7	8.2	7.7
7	99.7	199.9	151.5	8.7	9.7	9.1	8.7
9	45.8	45.8	45.8	13.1	13.1	13.1	13.1
0	-5.1	822.9	313.5	4.6	21.5	10.6	4.5

net#	simin	simax	siavg	cmin	cmax	cavg	fmin
0	-1.89	36.96	28.31	-0.02	3.75	0.06	0
1	27.07	27.14	27.11	0.05	0.05	0.05	0.03
2	26.96	27.07	27.01	0.05	0.05	0.05	0.03
3	26.8	26.96	26.9	0.04	0.05	0.05	0.03
4	26.73	26.8	26.77	0.05	0.06	0.05	0.03
5	26.6	26.73	26.65	0.05	0.05	0.05	0.03
6	26.41	26.6	26.5	0.05	0.08	0.06	0.03
7	25.85	26.41	26.21	0.06	0.07	0.07	0.03
9	24.91	24.91	24.91	0.16	0.16	0.16	0.36
0	-1.89	36.96	28.31	-0.02	3.75	0.06	0

net#	amin	amax	aavg	spmin	spmax	spavg	armin
0	13	89	54.3	0	4.8	0.8	-41.8
1	50	57	54.1	1.1	1.7	1.4	2.1
2	50	57	54	1.4	1.7	1.6	9.3
3	51	58	55.5	1.4	1.7	1.6	9.3
4	49	57	54	1.4	2	1.6	11.3
5	49	55	52	1.4	4	1.8	9
6	51	56	53.8	1.4	1.7	1.7	9
7	50	57	53.7	1.4	2	1.6	9.5
9	53	53	53	1.7	1.7	1.7	16.6
0	13	89	54.3	0	4.8	0.8	-41.8

thmax	thavg	smin	smax	savg
21.5	10.5	0.01	50	37.11
5.1	4.9	34.25	34.28	34.27
5.7	5.4	34.19	34.25	34.23
6.5	5.9	34.12	34.2	34.15
7.1	6.8	34.13	34.15	34.14
7.7	7.5	34.09	34.14	34.11
8.7	8.1	34.03	34.09	34.04
9.7	9.1	33.52	34.03	33.86
13.1	13.1	33.1	33.1	33.1
21.5	10.5	0.01	50	37.11

fmax	favg	oxmin	oxmax	oxavg
0.98	0.04	-0.1	11.8	5.6
0.03	0.03	2.9	3.1	3
0.03	0.03	2.9	3	2.9
0.03	0.03	2.9	3.3	3.1
0.03	0.03	3.2	3.3	3.2
0.03	0.03	3.3	3.8	3.6
0.03	0.03	3.8	4.4	4.2
0.03	0.03	4.2	8.5	5.7
0.36	0.36	10.7	10.7	10.7
0.98	0.04	-0.1	11.8	5.6

aramax	aravg	#obs	vol
12	-9.5	1271	1780
12	6.8	221	468
13.6	11.2	132	287
16.5	12.9	117	232
15.4	13.3	110	237
26.9	11.9	125	328
14.4	12.3	121	272
16	12.6	119	261
16.6	16.6	1	3
12	-9.5	1271	1780

Haul 1

```
HAUL1.RAW - Notepad
File Edit Format Help
" Tow: Cycle1_Tow1_Haul1 R/V Melville"
" Date: 04/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 230884"
" Transmissometer # 490 Fluorometer # 229"
"278.903414"
"##MO- 4 +0.0002 +0.0000 +0.0002 +0.0000 "
"$GPGLA,214040,3407.7155,N,12052.3900,W,2,8,0.4,32,"
"##MN-00 00 14 0000 01845 5055 548652 865301 202"
"278.903461"
"##MO- 4 +0.0024 +0.0488 +2.8060 +0.0000 "
"$GPGLA,214046,3407.7090,N,12052.3702,W,2,8,0.4,32,"
"##MN-00 00 13 0000 01847 5055 528317 865380 202"
"278.903507"
"##MO- 4 +0.0026 +0.0542 +2.8072 +0.0002 "
"$GPGLA,214050,3407.7045,N,12052.3574,W,2,8,0.4,32,"
"##MN-00 00 14 0000 01850 5057 529925 865379 201"
"278.903553"
"##MO- 4 +0.0026 +0.0552 +2.8072 +0.0000 "
"$GPGLA,214054,3407.7002,N,12052.3453,W,2,8,0.4,32,"
"##MN-00 00 13 0000 01848 5058 533020 865378 201"
"278.903636"
"##MO- 4 +0.0026 +0.0558 +2.8074 +0.0002 "
"$GPGLA,214058,3407.6964,N,12052.3323,W,2,8,0.4,32,"
"##MN-00 00 14 0000 01848 5058 533944 865380 201"
"278.903646"
"##MO- 4 +0.0024 +0.0558 +2.8070 +0.0000 "
"$GPGLA,214102,3407.6915,N,12052.3210,W,2,8,0.4,32,"
"##MN-00 00 13 0000 01848 5060 534184 865379 201"
"278.903692"
"##MO- 4 +0.0024 +0.0560 +2.8074 +0.0002 "
"$GPGLA,214106,3407.6879,N,12052.3086,W,2,8,0.4,32,"
"##MN-00 00 14 0000 01851 5060 535870 865380 201"
"278.903738"
"##MO- 4 +0.0026 +0.0564 +2.8078 +0.0002 "
"$GPGLA,214110,3407.6833,N,12052.2971,W,2,7,0.4,32,"
"##MN-00 00 14 0000 01851 5061 535673 865379 201"
"278.903785"
"##MO- 4 +0.0026 +0.0564 +2.8082 +0.0002 "
"$GPGLA,214114,3407.6798,N,12052.2855,W,2,8,0.4,32,"
"##MN-00 00 13 0000 01852 5062 534690 865379 201"
"278.903831"
"##MO- 4 +0.0026 +0.0566 +2.8078 +0.0002 "
"$GPGLA,214118,3407.6754,N,12052.2746,W,2,8,0.4,32,"
"##MN-00 00 14 0000 01852 5062 534422 865379 201"
"278.903877"
```

MOCNESS Data Sheet

HAUL # 2Cruise CCE - POSIDDate 15 Oct 2008CYCLE # 1TOW # 2

Wind Speed _____ Direction _____ Sea State _____

Pre-deployment checks: Flow Meter: ✓ Net Response: ✓ Stepping Motor: ✓

Clean optical Surfaces: Transmissometer: Fluorometer:

File Name: Processed Haul 2 Tow 2 (none recorded)

Raw _____

Start Time 23:47 (start) End Time 01:13 GMT / Local PDTLat 34.101°Lat 34.115°Long 120.838°Long 120.888°Event #: 104 (23:46) - deployEvent #: 105 (01:23) - rec. No data files recorded for this tow.Net Mesh 202 μm Frame Size 1 m²Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Max Wire Depth m	Min Grid Depth Number	Sample Jar Number	Fixative
0+	23:47		1340 m ³	1486 m ³	236	0		5% Form.
1	00:27		205	227	221	200		5% Form.
2	00:32	(est.)	173	192 est.	200	177		
3	00:36	(est.)	259	287 est.	177	136		
4	00:42	46°	227	252	136	126		
5	00:47		281	3312	126	101		
6	00:53		186	3+206	101	77		
7	00:59	49°	181	201	77	52		
8	01:03		198	220	52	25		
9	01:08	49°	198	220 (m)	25	0		
Closed	01:13							

Corr. 6 Mar. 09

MDR

SURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery

-3.0 17.13 31.4 9.36 0.1362 0.2026 19.2V.

NOTES: wire not rolling correctly in sheave; had to descend very slowly
After Net 1 trip, manually advanced net # (but too early; net advanced to 2 on its own)

Vol. filtered for nets 2,3 est. from time of tow and rate of

filtration for nets 1,4. MDR

$$x \begin{array}{r} 50 \text{ min.} \\ \hline 350 \\ + 150 \\ \hline 500 \end{array}$$

$$(3v)(80) =$$

$$\frac{x}{7.5} \frac{\text{min}}{\text{min}} + \frac{x}{15} = 80$$

$$2x + x = 80(15)$$

$$3x = 1200$$

$$x = 400$$

$$5 \overline{)1200} \quad 240$$

$$9 \overline{)25} \quad 225$$

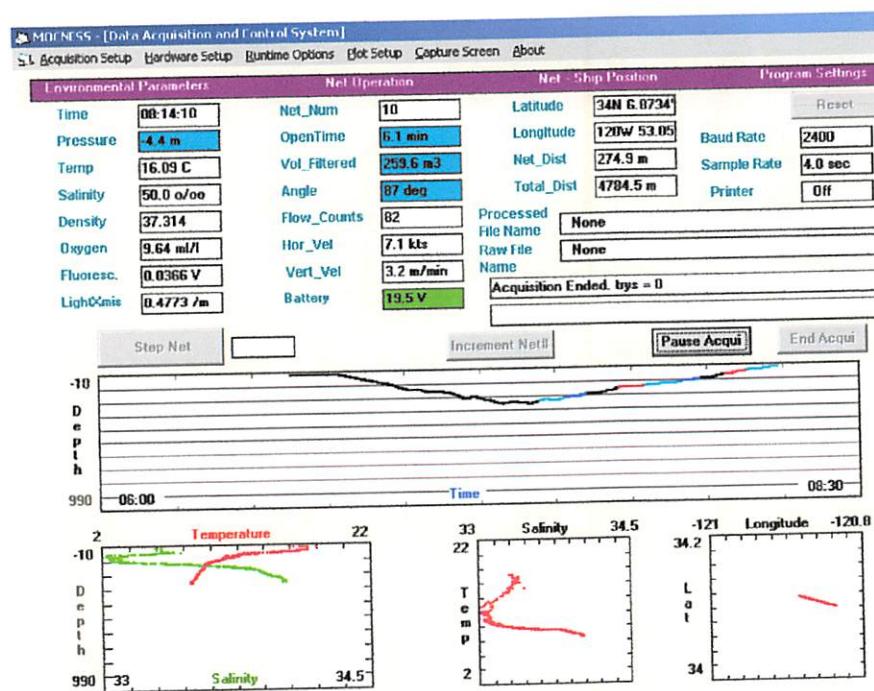
$$\begin{array}{r} 80 \\ 15 \\ \hline 400 \\ 80 \\ \hline 1200 \end{array}$$

$$5 \overline{)1200} \quad 240$$

00³

11 4

Haul 2
(no other data recorded)



HAUL 2 - no data files recorded

Net	Vol filtered (m3)	delta-t (min)	m/3 per min	Vol filtered m3 (est)
0	1486	40	37.2	
1	227	5	45.4	
2	-	4		191.6
3	-	6		287.4
4	252	5	50.4	
5	312	6	52.0	
6	206	6	34.3	
7	201	4	50.3	
8	220	5	44.0	
9	220	5	44.0	
AVERAGE: Nets 1,4			47.9	

MOCNESS Data Sheet

HAUL # 3Cruise CCE - P0810Date 5 Oct 2008 CYCLE # 1 TOW # 3Wind Speed 21 kts.Direction 315° Sea State white caps; clear, sunnyPre-deployment checks: Flow Meter: ✓ Net Response: ✓ Stepping Motor: ✓Clean optical Surfaces: ✓ Transmissometer: ✓ Fluorometer: ✓File Name: Processed Haul 3. PRO

Raw

Start Time 15:37 (softwre)End Time 17:33-GMT (Local PDT) $Z_{b,h} = 950 \text{ m}$, Lat 34.0244°Lat 34.0197°1.5 kts ship speed
up to 2 kts Long 120.7901°Long 120.8486°Event #: 126 (15:43) - deployEvent #: 127 (17:40) recov.Net Mesh 202 μm Frame Size 1 m²Console Operator Ohman

Net Tow Information

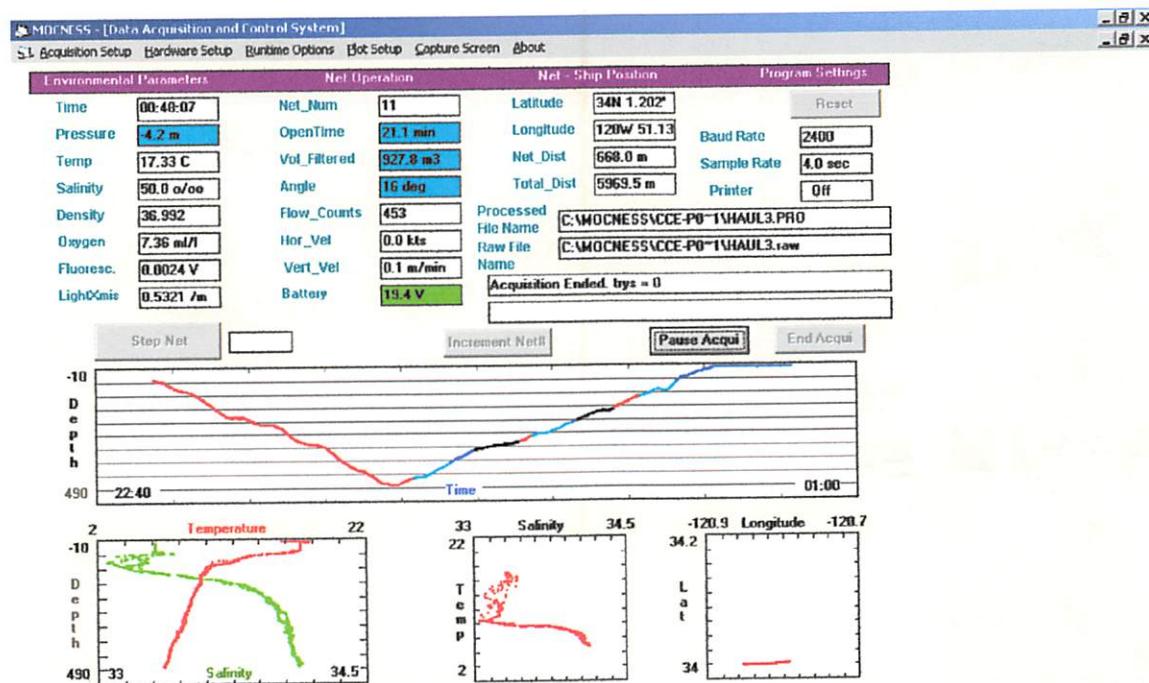
Net	Time Open	Angle	Flow Counts	Volume Filtered	Max Depth	Min Depth	End Number	Sample Jar Number	Fixative
0	<u>15:45</u>		<u>175</u>	<u>19A</u>	<u>16</u>	<u>0</u>		(tripped early on descent)	Form.
1	<u>15:47</u>		<u>1303</u>	<u>1445</u>	<u>428</u>	<u>16</u>			95% EtOH
2	<u>16:38</u>		<u>172</u>		<u>401</u>	<u>347</u>			5% Form
No net response incrementally in descent (max 14 min)									
3	<u>16:45</u>		<u>129</u>	<u>136</u>	<u>317</u>	<u>298</u>			
4	<u>16:49</u>		<u>427</u>		<u>298</u>	<u>248</u>			
5	<u>17:00</u>		<u>284</u>		<u>248</u>	<u>200</u>			
6	<u>17:07</u>		<u>314</u>		<u>200</u>	<u>148</u>			
7	<u>17:15</u>		<u>202</u>		<u>148</u>	<u>101</u>			
8	<u>17:20</u>		<u>248</u>		<u>101</u>	<u>46</u>			
9	<u>17:27</u>		<u>225</u>		<u>46</u>	<u>0</u>			
Closed	<u>17:33</u>								

Corr. by MnO₂
MDSSURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery
1.6 17.06 33.34 10.21 0.1416 0.2206 19.7

NOTES:

Haul 3

Haul 3



Set Plotting Parameters (Maximums & Minimums)

Set Plotting Parameters

Maximum Temperature	22	Maximum Latitude	34.2
Minimum Temperature	2	Minimum Latitude	34
Maximum Salinity	34.5	Maximum Long	-120.7
Minimum Salinity	33	Minimum Long	-120.9
Maximum Pressure	490	Maximum Time (hh:mm)	01:00
Minimum Pressure	-10	Minimum Time (hh:mm)	22:40

OK Cancel

HAUL3.TAB

Cycle1_Tow3_Haul3
 05/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.5	14.1	-01.0	16.5	18.8	17.6	16.5	18.8	17.6	00.28	50.00	44.25
1	14.8	429.0	229.1	06.9	17.0	09.3	06.8	17.0	09.3	33.10	34.14	33.83
3	296.9	340.4	319.3	07.6	08.2	07.9	07.6	08.2	07.9	34.07	34.09	34.08
4	266.4	295.9	281.4	08.2	08.5	08.4	08.2	08.5	08.3	34.06	34.09	34.07
0	-04.5	14.1	-01.0	16.5	18.8	17.6	16.5	18.8	17.6	00.28	50.00	44.25
6	199.0	245.7	226.1	08.6	09.0	08.7	08.5	08.9	08.7	33.97	34.06	34.01
7	188.6	198.1	193.8	09.0	09.0	09.0	08.9	09.0	08.9	33.95	33.97	33.96
0	-04.5	14.1	-01.0	16.5	18.8	17.6	16.5	18.8	17.6	00.28	50.00	44.25
9	101.6	146.4	123.4	09.5	09.8	09.6	09.5	09.8	09.6	33.36	33.82	33.60
0	-04.5	14.1	-01.0	16.5	18.8	17.6	16.5	18.8	17.6	00.28	50.00	44.25
10	48.5	101.2	80.9	09.8	13.0	10.4	09.8	13.0	10.4	33.05	33.36	33.20
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.28	37.06	32.50	00.13	09.22	00.36	00.00	00.19	00.04	05.3	15.5	09.4
1	24.23	26.76	26.12	00.05	00.33	00.08	00.03	00.92	00.07	03.3	11.4	05.9
3	26.52	26.61	26.57	00.05	00.06	00.05	00.03	00.03	00.03	03.9	04.1	04.0
4	26.46	26.52	26.49	00.06	00.12	00.06	00.03	00.03	00.03	04.1	04.3	04.2
0	-01.28	37.06	32.50	00.13	09.22	00.36	00.00	00.19	00.04	05.3	15.5	09.4
6	26.32	26.45	26.39	00.06	00.07	00.06	00.03	00.03	00.03	04.2	04.9	04.6
7	26.30	26.32	26.31	00.07	00.07	00.07	00.03	00.03	00.03	04.9	05.0	04.9
0	-01.28	37.06	32.50	00.13	09.22	00.36	00.00	00.19	00.04	05.3	15.5	09.4
9	25.70	26.12	25.92	00.06	00.07	00.06	00.03	00.04	00.03	06.0	09.1	07.8
0	-01.28	37.06	32.50	00.13	09.22	00.36	00.00	00.19	00.04	05.3	15.5	09.4
10	24.99	25.71	25.47	00.06	00.12	00.07	00.03	00.22	00.05	09.0	10.6	09.8
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	15.0	89.0	64.4	00.0	10.0	03.1	-13.4	08.1	-01.4	00141	00239	
1	29.0	67.0	52.7	00.3	02.0	01.0	-20.3	12.2	-07.8	00751	01445	
3	45.0	56.0	52.1	01.4	02.0	01.6	05.0	14.7	11.0	00062	00143	
4	39.0	51.0	47.1	01.4	01.7	01.6	-03.7	10.9	03.6	00124	00380	
0	15.0	89.0	64.4	00.0	10.0	03.1	-13.4	08.1	-01.4	00141	00239	
6	43.0	51.0	47.8	01.4	02.0	01.7	-00.6	14.4	06.6	00109	00315	
7	46.0	49.0	48.1	01.7	02.0	01.7	06.4	10.9	08.3	00016	00046	
0	15.0	89.0	64.4	00.0	10.0	03.1	-13.4	08.1	-01.4	00141	00239	
9	42.0	49.0	45.3	01.7	02.0	01.9	06.6	14.6	10.0	00069	00224	
0	15.0	89.0	64.4	00.0	10.0	03.1	-13.4	08.1	-01.4	00141	00239	
10	44.0	59.0	50.6	01.1	02.0	01.7	-08.7	22.0	07.3	00102	00275	

Haul 3

```
HAUL3.RAW - Notepad
File Edit Format Help
" Tow: Cyc1el_Tow3_Haul3  R/V Melville"
" Date: 05/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 230884"
" Transmissometer # 490 Fluorometer # 229"
"279.943368"
"##MO- 4 -0.0120 +0.5202 +1.3412 +0.0002 "
"$GPGGA,223810,3401.4892,N,12047.2855,W,2,5,0.8,38,"
"##MN-00 00 16 0000 01837 3874 615417 825147 198"
"279.943414"
"##MO- 4 +0.0026 +4.5336 +2.9882 +0.0000 "
"$GPGGA,223815,3401.4877,N,12047.2861,W,2,5,0.4,38,"
"##MN-00 00 17 0000 01836 3876 618695 844422 198"
"279.943461"
"##MO- 4 +0.0024 +4.4252 +2.9880 +0.0000 "
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"279.943507"
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"279.943552"
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"279.943738"
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"279.943785"
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"279.943831"
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MOCNESS Data Sheet

HAUL # 1

Cruise CCE-P0810 Date 5 Oct 2008 H A U L # 1

Wind Speed 21 kts Direction 334° Sea State

Pre-deployment checks: Flow Meter: ✓ Net Response: ✓ Stepping Motor: ✓
Clean optical Surfaces: ✓ Transmissometer: ✓ Fluorometer: ✓

File Name: Processed Haul4.PRO Raw

Start Time 06:00:56 time in End Time 00:33 GMT / Local PDT

Lat 33 57.214 33.9869 Lat 34.0003

Long 120 46.04 120.767 Long 120.805

Event #: 134 (22:59) - deploy Event #: 135 (00:51) - recover

Net Mesh 202 µm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Grid End Number	Sample Jar Number	Fixative
0:	23:00		458 m ³	508 m ³	465	451		95% Etch
acknow. 1	23:32		102	113	451	408		5% Form
✓ 2	23:37		255	283	408	351		
✓ 3	23:48		68	75	351	299		
✓ 4	23:51		245	264	299	245		
no accn. manually incl. 5 Net	00:00		191	206	245	202		
manually Rst [#]	00:08		145	155	202	151		
manually Net [#]	00:15		121	130	151	101		
manually Net [#]	00:20		169	164	101	50		
manually Net [#]	00:28		120		50	0		
Closed	00:33		Corr. 6 Min. 09 MDE					

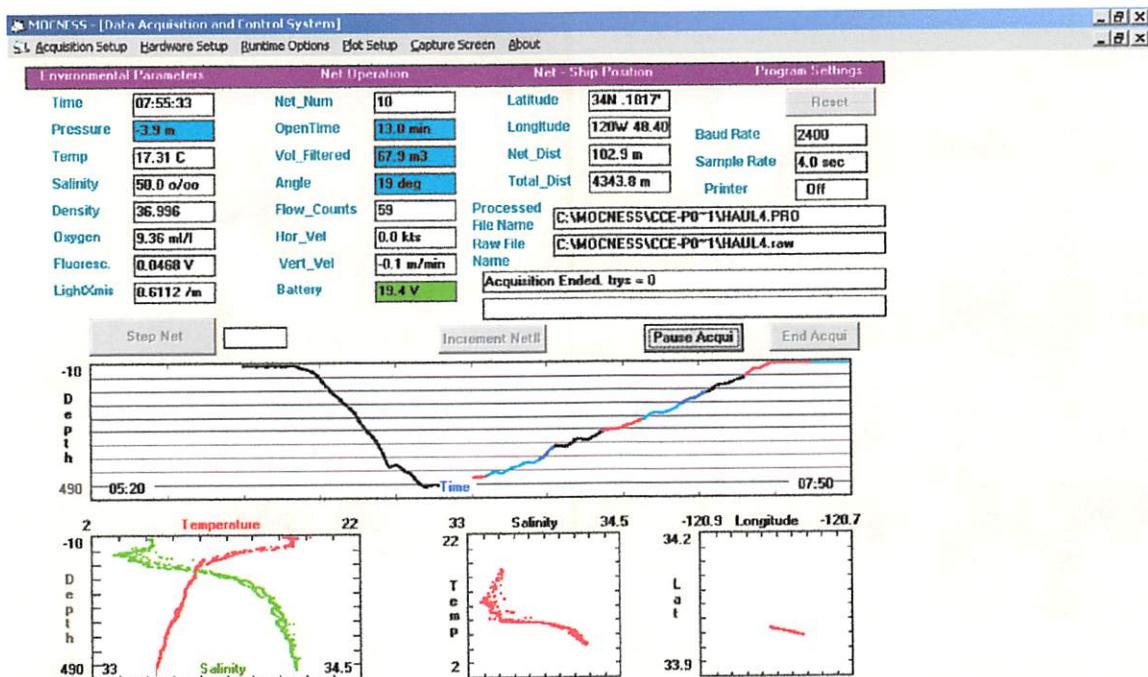
00:29:39 - Net finally advanced; after 39 m. no initial response and manual increment. Open at 50 m. or 39 m?

SURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery
3.4 16.93 33.34 9.08 0.12560 0.12252 19.5

NOTES: Jim flipped winch meter wheel clockwise; can now descend faster.

pre-deployment checks fine; when re-initiated software had: error 6.8, then unable to query u/w unit; then unable to query options module.

Haul 4



HAUL4.TAB

Cycle1_Tow4_Hau14
 05/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-05.1	469.9	198.5	06.6	18.3	11.1	06.6	18.3	11.1	00.01	50.00	37.28
1	408.1	448.3	422.7	06.7	07.0	06.9	06.7	07.0	06.9	34.12	34.14	34.13
2	349.3	407.7	377.8	07.0	07.4	07.2	07.0	07.3	07.2	34.09	34.12	34.11
3	300.2	348.0	324.1	07.3	07.8	07.6	07.3	07.8	07.5	34.05	34.09	34.07
5	200.2	243.3	226.1	08.6	08.9	08.7	08.5	08.8	08.6	33.99	34.04	34.02
6	148.6	198.3	174.0	08.9	09.2	09.0	08.9	09.2	09.0	33.87	33.98	33.94
7	100.1	147.3	122.4	09.3	09.8	09.6	09.2	09.8	09.6	33.44	33.87	33.69
8	41.0	100.4	69.8	09.8	14.0	11.4	09.8	14.0	11.4	33.12	33.44	33.25
9	-04.8	39.2	02.6	14.7	17.1	16.8	14.7	17.1	16.8	00.05	50.00	41.68
0	-05.1	469.9	198.5	06.6	18.3	11.1	06.6	18.3	11.1	00.01	50.00	37.28
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.45	37.13	28.42	-00.22	02.70	00.05	00.00	00.71	00.07	-00.2	14.2	06.4
1	26.73	26.78	26.75	00.05	00.06	00.05	00.03	00.03	00.03	03.3	03.5	03.4
2	26.66	26.73	26.70	00.05	00.08	00.05	00.03	00.04	00.03	03.5	03.8	03.6
3	26.56	26.66	26.61	00.05	00.06	00.05	00.03	00.03	00.03	03.8	04.3	04.0
5	26.36	26.44	26.41	00.06	00.20	00.06	00.03	00.03	00.03	04.3	04.8	04.6
6	26.20	26.34	26.29	00.06	00.07	00.07	00.03	00.03	00.03	04.7	05.5	05.0
7	25.77	26.19	26.00	00.06	00.08	00.06	00.03	00.04	00.03	05.5	08.7	07.0
8	24.83	25.77	25.33	00.06	00.17	00.08	00.03	00.34	00.09	08.6	10.7	09.8
9	-01.11	37.18	30.73	00.19	22.42	00.60	00.03	00.70	00.11	09.5	13.5	09.9
0	-01.45	37.13	28.42	-00.22	02.70	00.05	00.00	00.71	00.07	-00.2	14.2	06.4
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	07.0	89.0	57.5	00.0	07.1	00.8	-45.1	17.2	-10.6	00640	00508	
1	50.0	64.0	59.2	00.9	01.4	01.2	-02.6	15.1	08.3	00076	00113	
2	50.0	62.0	56.7	00.9	01.4	01.3	-11.9	13.2	05.4	00157	00283	
3	52.0	60.0	56.8	01.4	01.7	01.6	11.2	22.7	16.7	00044	00075	
5	52.0	62.0	57.9	00.9	01.4	01.3	-03.3	11.9	05.4	00121	00212	
6	56.0	66.0	60.6	00.9	01.7	01.2	-03.9	16.1	07.0	00106	00160	
7	52.0	63.0	58.5	01.1	01.7	01.4	02.1	14.6	09.3	00079	00134	
8	55.0	66.0	60.1	01.1	01.7	01.3	-01.0	15.0	07.6	00113	00187	
9	30.0	89.0	69.0	01.1	14.8	05.9	-00.7	18.1	03.6	00197	01046	
0	07.0	89.0	57.5	00.0	07.1	00.8	-45.1	17.2	-10.6	00640	00508	

Haul 4

```
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" Date: 05/10/2008"
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" Transmissometer # 490 Fluorometer # 229"
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"280.24331"
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MOCNESS Data Sheet

HAUL # 5Cruise CCE-P081DDate 6 Oct. 2008 CYCLE # 1 TOW # 5Wind Speed 10 kts Direction 341° Sea State 1-2' Clear, sunnyPre-deployment checks: Flow Meter: Net Response: Stepping Motor:
Clean optical Surfaces: Transmissometer: Fluorometer: File Name: Processed Haul5.PRO Raw _____Start Time 15:24 (start param) End Time 17:01 GMT / Local PDTbottom:
1185 fathLat 33.8633Lat 33.8823Long 120.745Long 120.789Event #: 159 (15:30) - deployEvent #: 160 (17:10) - recoverNet Mesh 202 μm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Max Z	Min Z	Cod End Number	Sample Jar Number	Fixative
0+	1530		739 m ³	819 m ³	474	0				95% Etch
1	1605		162	173	450	400				5% Formal.
(no confirm) manual incl.	1610		231	256	400	349				
(no confirm) manual incl.	1618		174	183	349	300				
(no confirm) manual incl.	1624		201	215	300	250				
(no confirm) manual incl.	1630		232	245	250	200				
(no confirm) manual incl.	1637		221	241	200	150				
(no confirm) manual incl.	1643		205	224	150	100				
(no confirm) manual incl.	1650		170	~185	100	51				
(no confirm) manual incl.	1655		192	~213	51	0				
Closed	1701									

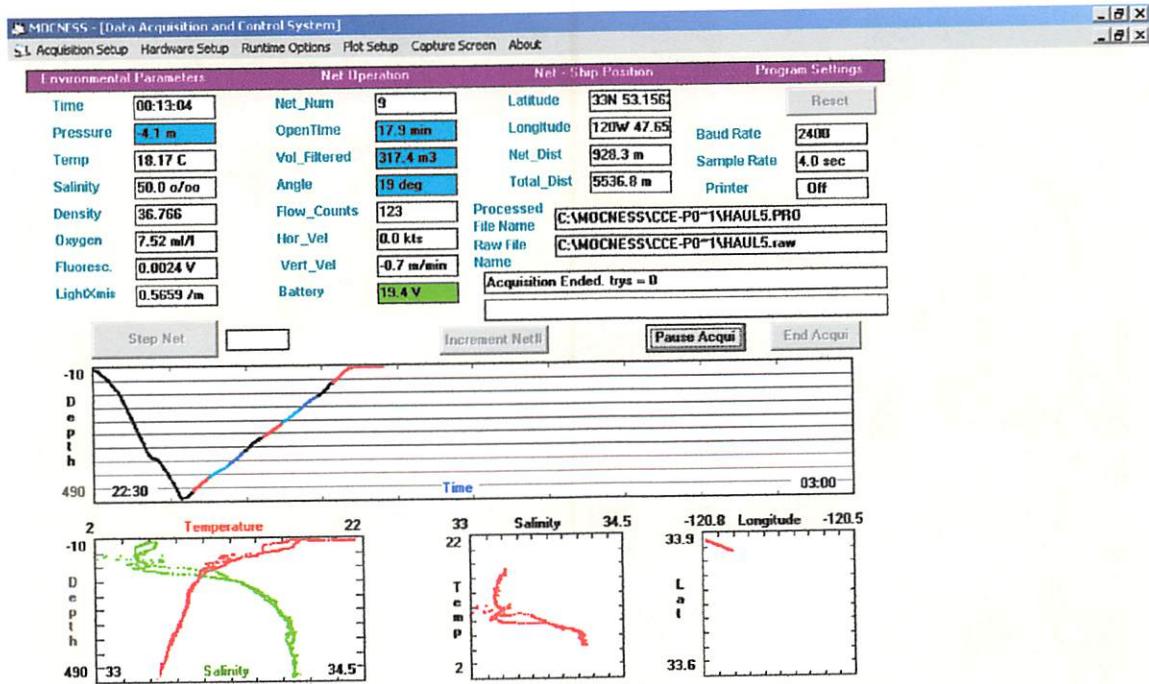
Corr. 6 Min. 09
MDRSURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery
(descending
water reading) 0.7 16.36° 33.29 10.74 0.408 0.3484 19.7

NOTES:

At the end of tow, found net response indicator deflected to the side.

08/06 cc 745m max wire out. 16:03 down

Haul 5



HAUL5.TAB

Cycle1_Tow5_Haul5
 06/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.3	475.7	215.3	06.5	21.4	10.7	06.5	21.4	10.7	00.01	50.00	35.10
2	350.8	398.2	374.6	07.2	07.7	07.4	07.2	07.6	07.3	34.09	34.11	34.10
0	-04.3	475.7	215.3	06.5	21.4	10.7	06.5	21.4	10.7	00.01	50.00	35.10
4	250.0	298.7	271.0	08.1	08.5	08.4	08.1	08.5	08.4	34.04	34.10	34.06
5	198.6	249.7	225.6	08.5	08.9	08.8	08.5	08.9	08.8	33.95	34.04	34.00
6	149.3	198.5	174.4	08.9	09.3	09.0	08.9	09.3	09.0	33.83	33.95	33.91
7	99.7	147.6	122.5	09.3	10.0	09.7	09.3	09.9	09.7	33.30	33.83	33.61
8	50.5	99.2	75.7	10.0	13.7	11.7	09.9	13.7	11.7	33.22	33.30	33.26
9	-05.0	49.8	1206.8	13.8	18.4	4536.2	13.8	18.4	4536.0	00.06	50.00	

11133.46

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-02.09	36.82	26.81	-00.03	01.94	00.09	00.00	01.93	00.14	-00.2	11.8	05.9
2	26.63	26.68	26.66	00.05	00.05	00.05	00.03	00.03	00.03	03.7	03.9	03.8
0	-02.09	36.82	26.81	-00.03	01.94	00.09	00.00	01.93	00.14	-00.2	11.8	05.9
4	26.44	26.53	26.48	00.06	00.07	00.06	00.03	00.03	00.03	04.0	04.4	04.2
5	26.31	26.44	26.37	00.06	00.07	00.06	00.03	00.03	00.03	04.4	05.2	04.7
6	26.16	26.31	26.26	00.06	00.07	00.06	00.03	00.03	00.03	05.1	06.1	05.5
7	25.63	26.15	25.92	00.06	00.08	00.07	00.03	00.05	00.03	06.0	09.3	07.5
8	24.88	25.63	25.30	00.06	00.12	00.08	00.03	00.19	00.07	09.3	10.3	09.9
9	-01.18	37.07	8189.4500.02	03.39	150.19	00.00	00.86	29.31	07.5	11.5	2323.4	

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	26.0	89.0	58.7	00.0	02.0	00.7	-26.5	11.4	-11.4	00596	00819
2	49.0	56.0	53.3	01.4	01.7	01.5	03.4	09.4	06.6	00109	00256-
0	26.0	89.0	58.7	00.0	02.0	00.7	-26.5	11.4	-11.4	00596	00819
4	48.0	56.0	52.1	00.9	01.7	01.5	03.5	10.5	07.7	00097	00223
5	45.0	54.0	52.2	01.1	01.7	01.6	04.3	09.7	07.4	00101	00257
6	47.0	54.0	51.6	01.1	02.0	01.6	05.0	09.7	07.8	00095	00245
7	49.0	55.0	52.2	01.1	02.0	01.6	05.6	10.5	08.0	00092	00227
8	47.0	58.0	54.1	01.1	02.0	01.6	04.9	13.6	09.2	00080	00189
9	16.0	89.0	17030.0000.0	06.8	283.4	-02.3	12.9	833.4	00266	00317	

Haul 5

```
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" Transmissometer # 490 Fluorometer # 229"
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"280.934421"
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"280.934653"
```

MOCNESS Data Sheet

HAUL # 6Cruise CCE - POSIDDate 7-6-08-2008CYCLE # 1TOW # 6Wind Speed 15 kts.Direction 340°

Sea State _____

Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
 Clean optical Surfaces: Transmissometer: Fluorometer:
 File Name: Processed Haul6.PRO Raw _____

Start Time 23:36End Time 01:24GMT / Local PDTLat. 33.5487Lat 33.5537Long 120.7234Long 120.7597Event #: 214 (23:34)Event #: 215 (01:28)Net Mesh 202 μmFrame Size 1 m²Console Operator Ohman

Net Tow Information

Max Z

Min Z

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Grid End Number	Sample Jar Number	Fixative
0+	23:36		656 m ³	728 m ³	485	0		95% Etch
1	00:21		76	85	450	399		5% Form.
2	00:25		131	145	399	351		
3	00:31		216	240	351	300		
4	00:41		109	120	300	248		
5	00:46		136	151	248	199		
6	00:51		213	236	199	150		
7	00:59		183	203	150	101		
8	01:07		158	175	101	50		
9	01:14		117	130	50	0		
Closed	01:24							

Confirmation
on all nets

Corr. 6 May. 09

MDE

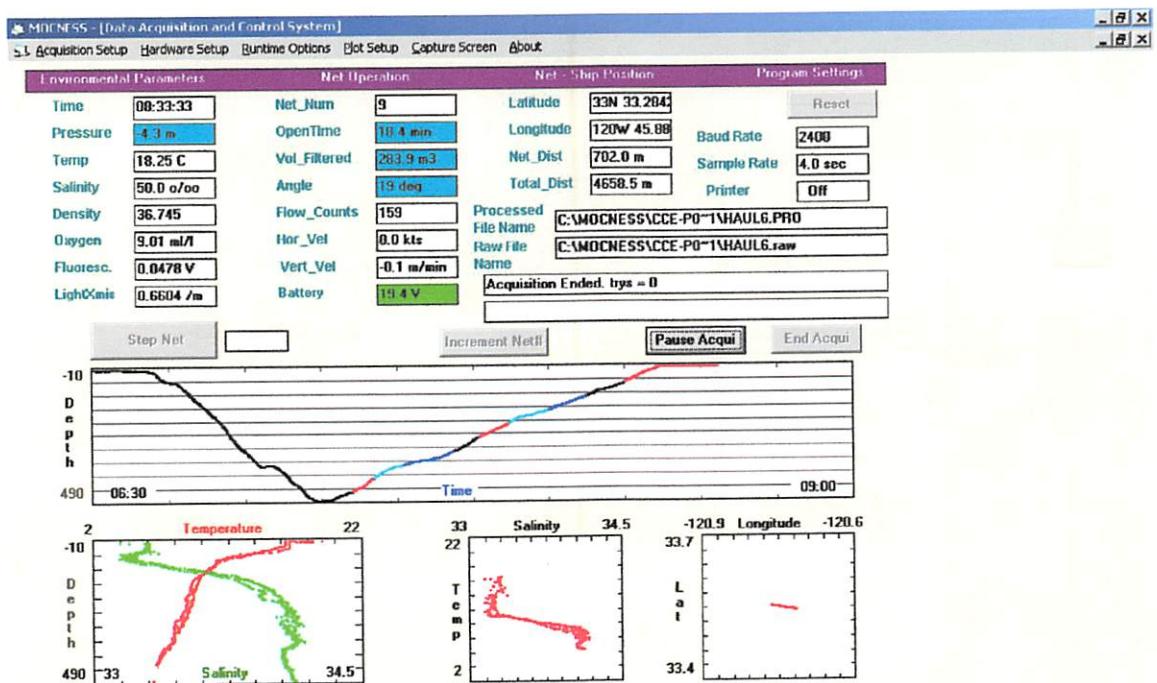
SURFACE	Press.	Temp.	Salinity	O ₂	Fluor.	Trans.	Battery
	-2.8	16.39	33.3	10.68	0.483	0.5147	19.7 V.

NOTES:

08/06 cc

Max wire out: ~680m.

Haul 6



Temperature/Salinity Sensor Selection

Select Environmental Sensor Probe Numbers

Temperature Sensor	Conductivity Sensor	Pressure Sensor	Oxygen Sensor	Xmissometer Sensor	Fluorometer Sensor
4061	2663	127	230884	490	229
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4061	3007	127	430872		
12345	3429	128	123456		
	3430				
	2659				

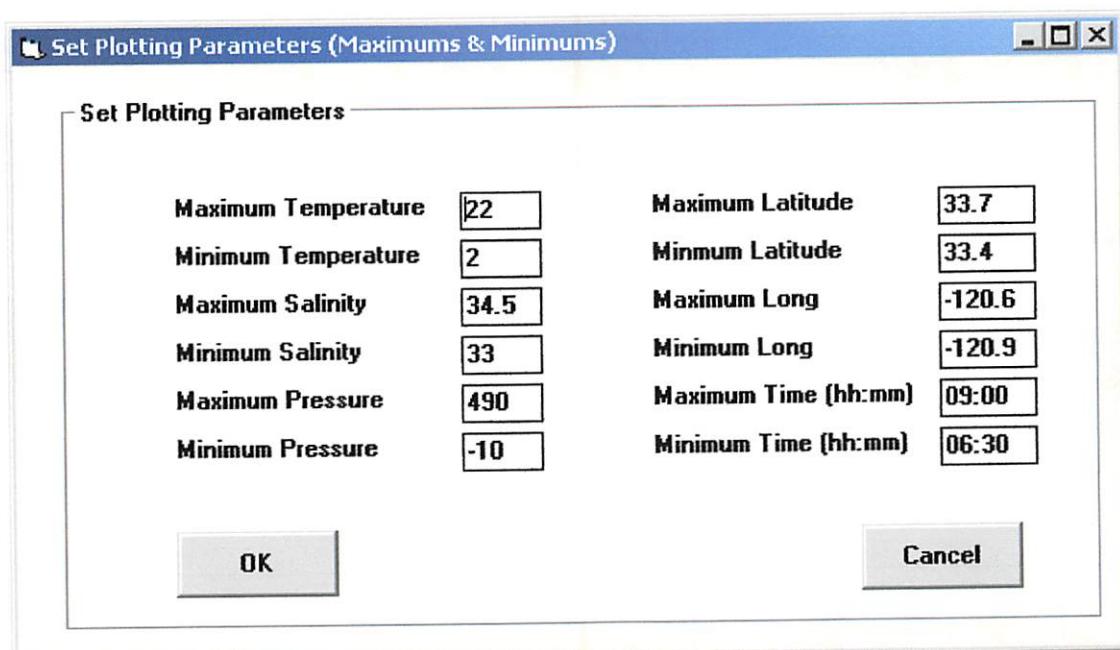
Sensors OK Select a Temperature, Conductivity, Pressure, Transmissometer, Fluorometer, or Oxygen Sensor

Add Environmental Sensor Calibration Constants

Temp Sensor #	Cond Sensor #	Press Sensor #	Oxy Sensor #	CStar Tran Sensor #	Fluor Sensor #
a	a	a0	m	Vdark	
b	b	a1	b	Vair	
c	c	b0	k	Vref	
d	d	b1	c		
fo	m	c0	Soc		
		c1	Boc		
			wl		

Sensor Add OK Enter Calibration Values from Sea Bird, Sea Tech, or Pressure Calibration Sheets.

Haul 6

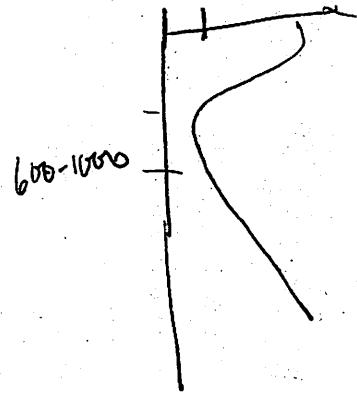


HAUL6.TAB

Cycle1_Tow6_Haul6
 07/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.7	485.1	183.8	06.4	19.1	11.8	06.3	19.1	11.8	00.01	50.00	36.86
1	399.7	449.3	427.4	06.5	06.9	06.7	06.5	06.9	06.6	34.06	34.10	34.07
2	351.0	398.1	369.5	06.9	07.7	07.4	06.9	07.7	07.4	34.05	34.12	34.09
3	301.2	350.4	330.0	07.7	08.3	07.9	07.7	08.3	07.9	34.07	34.14	34.12
4	248.3	300.1	275.8	08.3	08.9	08.6	08.3	08.9	08.6	34.12	34.16	34.13
5	200.1	247.8	224.6	08.9	09.3	09.1	08.9	09.3	09.1	34.04	34.12	34.09
6	151.1	198.5	170.7	09.3	09.6	09.5	09.3	09.6	09.5	33.95	34.05	34.00
7	101.3	150.2	124.9	09.6	10.2	09.9	09.6	10.2	09.9	33.66	33.95	33.83
8	50.6	100.3	75.2	10.3	12.0	11.0	10.3	12.0	11.0	33.15	33.63	33.39
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.60	36.88	27.95	-00.02	16.84	00.35	00.00	01.35	00.11	-00.2	13.0	06.8
1	26.70	26.78	26.74	00.05	00.05	00.05	00.03	00.03	00.03	03.6	04.0	03.8
2	26.63	26.69	26.65	00.05	00.05	00.05	00.03	00.03	00.03	03.8	04.2	03.9
3	26.54	26.63	26.60	00.05	00.06	00.05	00.03	00.03	00.03	03.7	04.3	03.9
4	26.45	26.55	26.50	00.06	00.09	00.06	00.03	00.03	00.03	03.7	04.1	03.9
5	26.32	26.45	26.39	00.06	00.06	00.06	00.03	00.03	00.03	04.1	04.9	04.4
6	26.20	26.32	26.26	00.06	00.07	00.07	00.03	00.03	00.03	04.7	05.4	05.0
7	25.87	26.20	26.06	00.06	00.08	00.07	00.03	00.03	00.03	05.4	07.3	06.1
8	25.17	25.84	25.53	00.06	00.08	00.06	00.03	00.11	00.05	07.5	10.3	09.2
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	16.0	89.0	53.6	00.0	05.1	00.6	-29.4	10.2	-07.5	00903	00728	
1	56.0	66.0	61.3	01.1	01.7	01.3	06.5	18.0	12.0	00061	00085	
2	54.0	63.0	59.3	01.1	01.4	01.3	01.9	13.9	08.4	00089	00145	
3	55.0	64.0	59.8	01.1	01.4	01.2	00.4	10.7	05.0	00146	00240	
4	55.0	63.0	60.1	01.1	01.4	01.3	05.4	15.2	10.3	00076	00120	
5	56.0	62.0	58.9	01.1	01.4	01.4	05.8	10.9	08.3	00085	00151	
6	52.0	60.0	56.2	01.1	01.7	01.4	00.2	13.8	06.3	00116	00236	
7	55.0	60.0	57.6	01.1	01.7	01.4	03.5	10.3	06.8	00110	00203	
8	55.0	68.0	61.5	00.9	01.7	01.2	00.6	10.9	06.5	00114	00175	



Haul 6

```
HAUL6.RAW - Notepad
File Edit Format Help
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" Date: 07/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 230884"
" Transmissometer # 490 Fluorometer # 229"
"282.264502"
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"##MN-00 00 18 0000 01822 3439 611428 864226 198"
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"282.264826"
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"282.264873"
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"$GPGGA,062103,3332.8068,N,12042.9333,W,2,7,0.9,38,"
"##MN-00 00 18 0000 01827 3447 623719 865390 197"
"282.264919"
"##MO- 4 +0.0478 +3.8418 +2.8396 +0.0002 "
"$GPGGA,062107,3332.8062,N,12042.9342,W,2,7,0.5,38,"
"##MN-00 00 18 0000 01825 3447 623588 865390 197"
"282.264965"
```

Changed Flow Meter beginning
this haul:

FM2

MOCNESS Data Sheet

HAUL # 7

Cruise CCE - PO810 Date 11 Oct 2008 CYCLE # 2 TOW # 1

Wind Speed 21 kts Direction 335° Sea State 8-10' seas

Pre-deployment checks: Flow Meter: REPLACED Net Response: ✓ Stepping Motor: ✓
Clean optical surfaces: ✓ Transmissometer: ✓ Fluorometer: ✓

File Name: Processed Haul7.PRO Raw _____

Start Time 15:23 (in water) End Time 17:05 ~~GMT~~ / Local PDT

Lat 32° 38.4' 32.6394

Lat 32.6543

Long 123° 39.7' 123.6612

Long 123.7072

Event #: 276 (15:22)

Event #: 277 (17:14)

Net Mesh 202 µm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow	Volume Filtered	Wire Out	Grid End Number	Sample Jar Number	Fixative
			Counts					
1	15:23		772	809 m ³	483	451		95% EtOH
2	15:57		136	142	451	399		5% Form.
3	16:03		149	156	399	349		
4	16:09		142	149	349	299		
5	16:15		238	249	299	250		
6	16:23		102	107	250	201		
7	16:26		411	430	201	151		
8	16:38		429	450	151	99		
9	16:49		197	207	99	49		
10	16:54		528	505	49	0		
Closed	17:05							

Corr. 6 Mar. 09

MDE

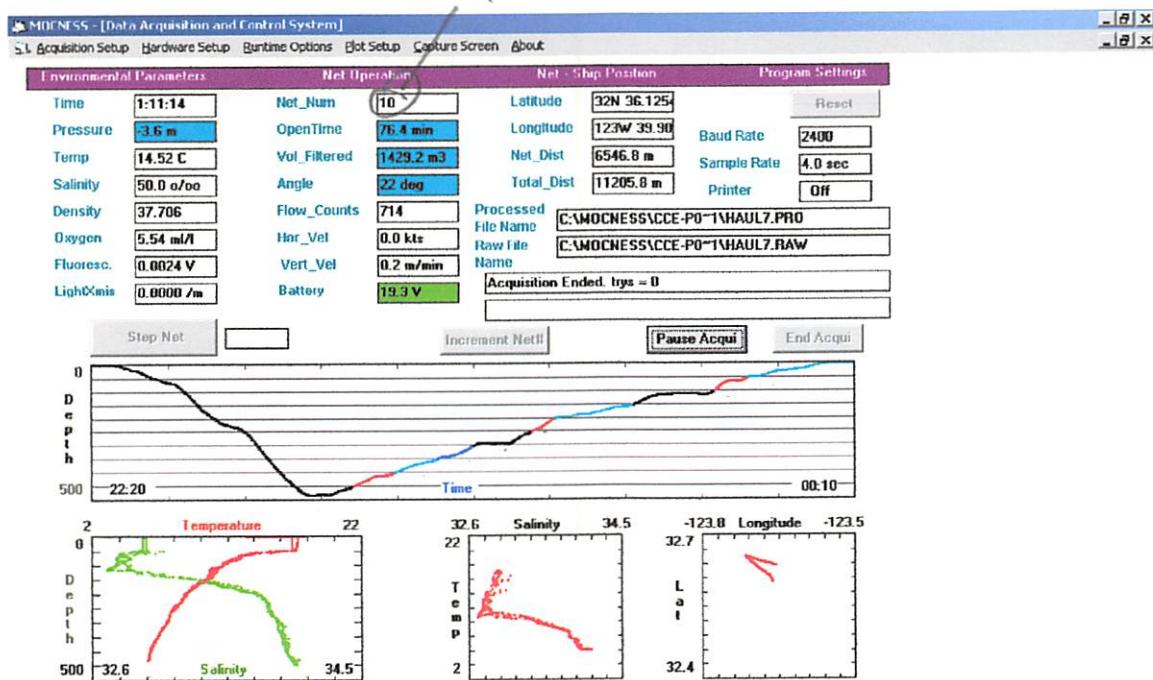
SURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery

0.2 16.93 32.98 5.80 0.0932 0.1502 19.4V

NOTES: Replaced FM at beginning of tow. All previous hauls: FM1. This haul: FM2.

08/06 cc 660 mwo; 22:51 down
483 m max

Haul 7



? appeared that net
tripped normally;
why missing summary?

HAUL7.TAB

Cycle2_Tow2_Haul7
10/10/2008
R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-03.9	484.4	149.4	06.1	17.5	12.4	06.0	17.5	12.4	00.01	50.00	39.85
1	400.8	449.5	421.5	06.1	06.2	06.2	06.0	06.2	06.1	33.97	34.06	34.00
2	349.1	398.9	371.6	06.3	06.8	06.5	06.2	06.8	06.5	33.94	33.97	33.95
3	300.6	348.4	329.6	06.8	07.5	07.1	06.8	07.4	07.0	33.91	33.94	33.93
4	250.0	298.4	282.9	07.5	08.1	07.7	07.5	08.0	07.7	33.84	33.92	33.89
5	201.8	248.8	226.8	08.1	08.8	08.5	08.1	08.8	08.5	33.79	33.86	33.83
6	151.1	200.4	176.9	08.8	10.3	09.5	08.8	10.3	09.5	33.37	33.77	33.58
7	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.00	00.00	00.00
8	99.4	149.9	116.3	10.3	11.6	10.9	10.3	11.6	10.9	32.70	33.37	32.83
9	50.3	96.8	68.4	11.6	15.1	13.0	11.6	15.1	12.9	32.76	32.87	32.82
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.22	37.54	30.14	-00.05	30.60	00.20	00.00	00.31	00.05	05.2	07.8	06.2
1	26.72	26.79	26.75	00.06	00.08	00.06	00.03	00.03	00.03	07.2	07.3	07.3
2	26.62	26.71	26.66	00.06	00.06	00.06	00.03	00.03	00.03	07.2	07.3	07.2
3	26.50	26.61	26.57	00.06	00.09	00.06	00.03	00.03	00.03	07.1	07.2	07.2
4	26.37	26.50	26.46	00.06	00.06	00.06	00.03	00.03	00.03	07.0	07.3	07.1
5	26.20	26.36	26.29	00.06	00.07	00.06	00.03	00.03	00.03	07.0	07.1	07.0
6	25.63	26.19	25.93	00.06	00.07	00.06	00.03	00.03	00.03	06.8	07.0	06.9
7	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	24.92	25.62	25.11	00.06	00.15	00.07	00.03	00.13	00.07	06.8	07.1	07.0
9	24.30	24.92	24.71	00.07	00.13	00.10	00.10	00.31	00.21	06.2	06.9	06.6
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	13.0	89.0	49.0	00.0	10.8	00.7	-38.0	15.8	-08.1	00842	00809	
1	48.0	65.0	59.5	01.1	01.7	01.3	-00.1	14.9	08.4	00089	00142	
2	48.0	64.0	58.9	01.1	01.7	01.4	01.5	13.7	08.3	00091	00156	
3	50.0	61.0	57.6	01.1	01.7	01.5	00.5	17.4	09.1	00078	00149	
4	39.0	62.0	56.1	00.9	01.7	01.4	-06.1	20.2	06.1	00123	00249	
5	50.0	59.0	56.2	01.4	02.0	01.7	07.0	19.6	14.2	00051	00107	
6	45.0	56.0	52.8	01.4	02.0	01.6	-02.3	12.6	04.5	00167	00430	
7	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00000	00000	
8	43.0	64.0	53.0	00.9	02.0	01.6	-09.3	15.6	04.2	00174	00446	
9	45.0	60.0	51.3	01.4	02.3	01.9	-04.6	22.2	10.2	00072	00207	

Haul 7

HAUL7-PR.RAW - Notepad

File Edit Format Help

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" Tow: Cycle2_Tow2_Haul7    R/V Melville"
" Date: 07/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 430872" New #
" Transmissometer # 490 Fluorometer # 229
"285.861748"
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"##MN-00 00 21 0000 01826 4365 617490 864217 199"
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"##MN-00 00 21 0000 01832 4370 630352 865390 198"
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"$GPGGA,204059,3241.1098,N,12340.9907,W,2,8,0.5,34,"
"##MN-00 00 20 0000 01833 4371 629665 797259 198"
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MOCNESS Data Sheet
HAUL # 8

Cruise CCE - P081D Date 11-12 Oct 2008 CYCLE # 2 TOW # 2

Wind Speed 21-25 kts Direction 355° Sea State 6-10'

Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
 Clean optical Surfaces: Transmissometer: Fluorometer:
 File Name: Processed Haul8.PRO Raw _____

Start Time 22:45 (in water) End Time 00:16 GMT / Local PDT

bottom depth 2263 fath. Lat 32° 29.97' 32.5000 Lat 32.5166
 Long 123° 42.05' 123.7039 Long 123.7597
Event #: 284 285 Event #: 285 286 - changed 1 Dec 08
 Net Mesh 202 μm Frame Size 1 m² Console Operator Ohman MSD

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Cod End Number	Sample Jar Number	Max Z		Min Z	
								Max	Min	Max	Min
0	22:45		1,781 m ³	1867 m ³	465	0					95% Etch
1	23:27		234	246	449	399					5% Form.
2	23:32		352	369	399	351					
3	23:38		300	311	351	299					
4	23:43		306	321	299	251					
5	23:49		380	398	251	200					
6	23:56		326	342	200	149					
7	00:03		196	205	149	99					
8	00:07		174	183	99	48					
9	00:12		121	178	48	0					
Closed	00:16										

Corr. 6 Mar. 09

MDE

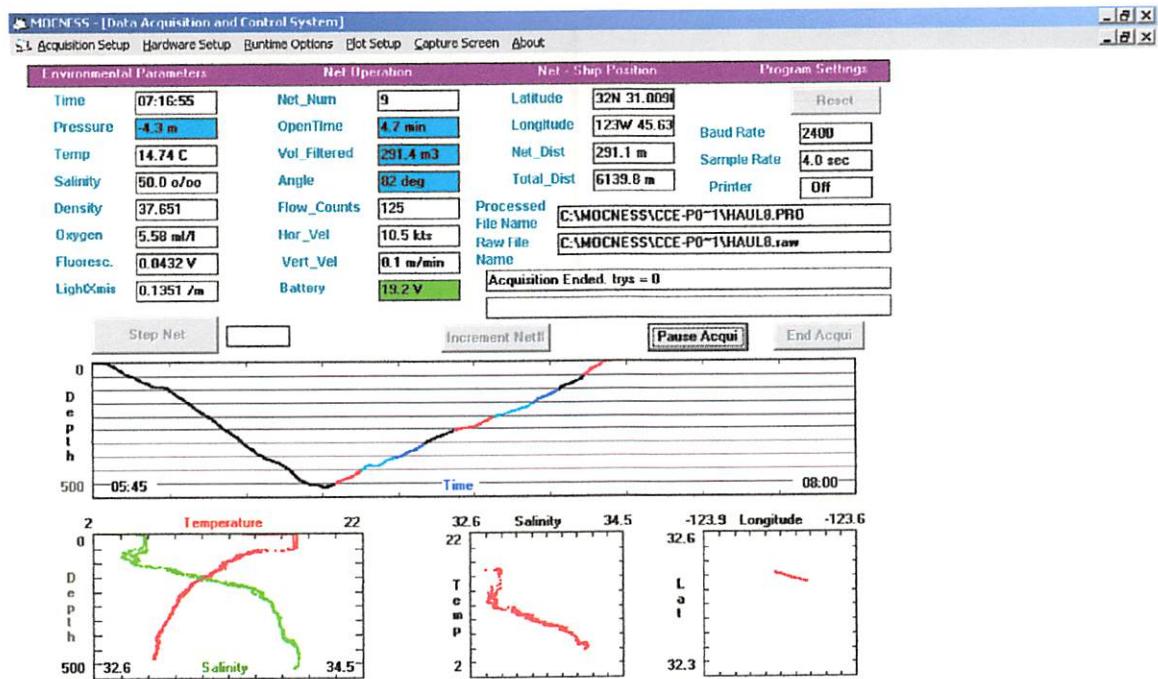
SURFACE	Press.	Temp.	Salinity	O ₂	Fluor.	Trans.	Battery
	-3.1	16.92	32.93	5.70	0.2526	0.131F	19.4V
	-0.8						

NOTES:

FM2

2325 - 911 m WO ~ 465 m.
 08/06 cc

Haul 8



HAUL8.TAB

Cycle2_Tow2_Haul8
 11/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.1	463.0	199.5	05.9	16.9	10.5	05.8	16.9	10.4	00.01	50.00	34.67
1	400.5	448.7	427.2	06.2	06.6	06.4	06.2	06.6	06.4	34.04	34.06	34.05
2	352.3	397.6	374.1	06.6	06.8	06.7	06.6	06.8	06.6	33.94	34.04	34.00
3	299.2	351.6	328.8	06.7	07.4	07.0	06.6	07.4	06.9	33.91	33.95	33.93
4	252.1	298.2	272.9	07.4	07.9	07.7	07.4	07.9	07.7	33.87	33.91	33.89
5	201.8	251.6	232.3	07.9	08.8	08.2	07.9	08.8	08.2	33.77	33.87	33.84
6	150.7	201.0	178.6	08.9	10.0	09.2	08.8	10.0	09.2	33.33	33.79	33.65
7	98.8	149.5	124.3	10.2	11.6	11.0	10.2	11.6	11.0	32.90	33.37	33.16
8	49.6	97.3	76.1	11.6	14.8	12.8	11.6	14.8	12.7	32.80	32.93	32.86
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.80	37.91	26.55	-00.08	11.63	00.18	00.00	00.49	00.08	04.3	08.2	06.7
1	26.72	26.78	26.75	00.04	00.05	00.05	00.03	00.03	00.03	07.1	07.3	07.2
2	26.64	26.72	26.68	00.05	00.08	00.05	00.03	00.03	00.03	07.1	07.2	07.1
3	26.51	26.64	26.59	00.05	00.05	00.05	00.03	00.03	00.03	07.1	07.2	07.2
4	26.40	26.50	26.45	00.05	00.05	00.05	00.03	00.03	00.03	07.1	07.2	07.1
5	26.20	26.40	26.33	00.05	00.05	00.05	00.03	00.03	00.03	07.0	07.2	07.1
6	25.65	26.19	26.03	00.05	00.05	00.05	00.03	00.03	00.03	06.9	07.0	06.9
7	25.04	25.63	25.34	00.05	00.06	00.05	00.03	00.09	00.05	06.8	06.9	06.8
8	24.40	25.04	24.78	00.06	00.13	00.08	00.08	00.35	00.17	06.3	06.8	06.6
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	21.0	89.0	54.0	00.0	13.4	01.7	-24.2	10.6	-09.4	00720	01867	
1	37.0	50.0	45.9	01.7	02.6	02.1	06.2	18.0	10.5	00068	00246	
2	38.0	47.0	43.5	01.4	02.8	02.2	-08.0	20.7	08.1	00092	00369	
3	38.0	46.0	43.8	02.0	02.6	02.3	01.5	17.1	09.8	00076	00314	
4	39.0	45.0	43.3	02.0	02.6	02.3	05.2	15.3	09.4	00077	00321	
5	39.0	47.0	44.5	01.7	02.3	02.1	00.0	15.0	07.2	00104	00398	
6	44.0	52.0	48.2	01.7	02.3	01.9	03.3	12.4	07.2	00104	00342	
7	47.0	52.0	49.5	01.7	02.3	02.0	05.8	17.1	11.2	00066	00205	
8	47.0	57.0	52.4	01.7	02.3	01.9	02.6	18.3	10.9	00067	00182	

Haul 8

HAUL8.RAW - Notepad

File Edit Format Help

```
"Tow: Cycle2_Tow2_Haul8    R/V Melville"
"Date: 11/10/2008"
"Temperature Probe # 4061 Conductivity Probe # 2663"
"Pressure Probe # 122 Oxygen Probe # 430872"
"Transmissometer # 490 Fluorometer # 229"
"286.235903"
"##MO- 4 -0.0002 +0.0000 +0.0000 +0.0000 "
"$GPGLL,053928,3229.9337,N,12341.9236,W,2,8,0.3,36,"
"##MN-00 00 85 0000 01824 2846 666141 865218 194"
"286.235949"
"##MO- 4 +0.0552 +4.7714 +2.7060 +0.0002 "
"$GPGLL,053934,3229.9348,N,12341.9288,W,2,8,0.3,36,"
"##MN-00 00 85 0000 01822 2847 665517 851740 194"
"286.235995"
"##MO- 4 +0.0544 +4.4896 +2.7036 +0.0000 "
"$GPGLL,053938,3229.9355,N,12341.9319,W,2,9,0.3,36,"
"##MN-00 00 86 0000 01822 2848 665240 856938 194"
"286.236042"
"##MO- 4 +0.0550 +4.5122 +2.7020 +0.0002 "
"$GPGLL,053942,3229.9359,N,12341.9347,W,2,8,0.3,36,"
"##MN-00 00 86 0000 01820 2848 665157 864965 194"
"286.236088"
"##MO- 4 +0.0556 +4.5140 +2.7010 +0.0002 "
"$GPGLL,053946,3229.9366,N,12341.9379,W,2,8,0.3,37,"
"##MN-00 00 86 0000 01820 2849 665297 865410 194"
"286.236134"
"##MO- 4 +0.0548 +4.5184 +2.6990 +0.0000 "
"$GPGLL,053950,3229.9381,N,12341.9400,W,2,9,0.3,38,"
"##MN-00 00 86 0000 01820 2850 665595 865411 194"
"286.236181"
"##MO- 4 +0.0556 +4.5150 +2.6962 +0.0000 "
"$GPGLL,053954,3229.9395,N,12341.9427,W,2,8,0.3,38,"
"##MN-00 00 85 0000 01821 2850 665615 865399 194"
"286.236227"
"##MO- 4 +0.0558 +4.5186 +2.6956 +0.0004 "
"$GPGLL,053958,3229.9413,N,12341.9454,W,2,8,0.3,38,"
"##MN-00 00 87 0000 01821 2850 665633 865401 194"
"286.236273"
"##MO- 4 +0.0556 +4.5118 +2.6926 +0.0002 "
```

MOCNESS Data Sheet
HAUL # 9

Cruise CCE - POSID Date 13 Oct. 2008 CYCLE # 2 TOW # 3

Wind Speed 13 kts. Direction 025° Sea State 1-2'

Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
 Clean optical Surfaces: Transmissometer: Fluorometer:
 File Name: Processed Haul9.PRC Raw Haul9 raw — Corrected Salinities
Haul9C.PRC Haul9C.RAW

Start Time 14:56 End Time 16:31 GMT / Local PDT

Lat 32.2006

Lat 32.2292

Long 123.8843

Long 123.8972

Event #: 339 (14:56)

Event #: 340 (16:32)

Net Mesh 202 μm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Max Z	Min Z	Sample Jar Number	Fixative
						Cod End Number			
0	14:56		463	486 m ³	480	0			95% Etch
1	15:29:09		48	50	450	400			5% Form.
2	15:34:06		77	80	400	349			
3	15:39:31		109	114	349	301			
4	15:45:53		133	139	301	249			
5	15:52:42		142	149	249	201			
6	15:59:12		242	253	201	150			
7	16:10:06		131	138	150	100			
8	16:16:39		206	216	100	49			
9	16:24:13		275	309	49	0			
Closed	16:31								

Corr. 8 Mon. 09

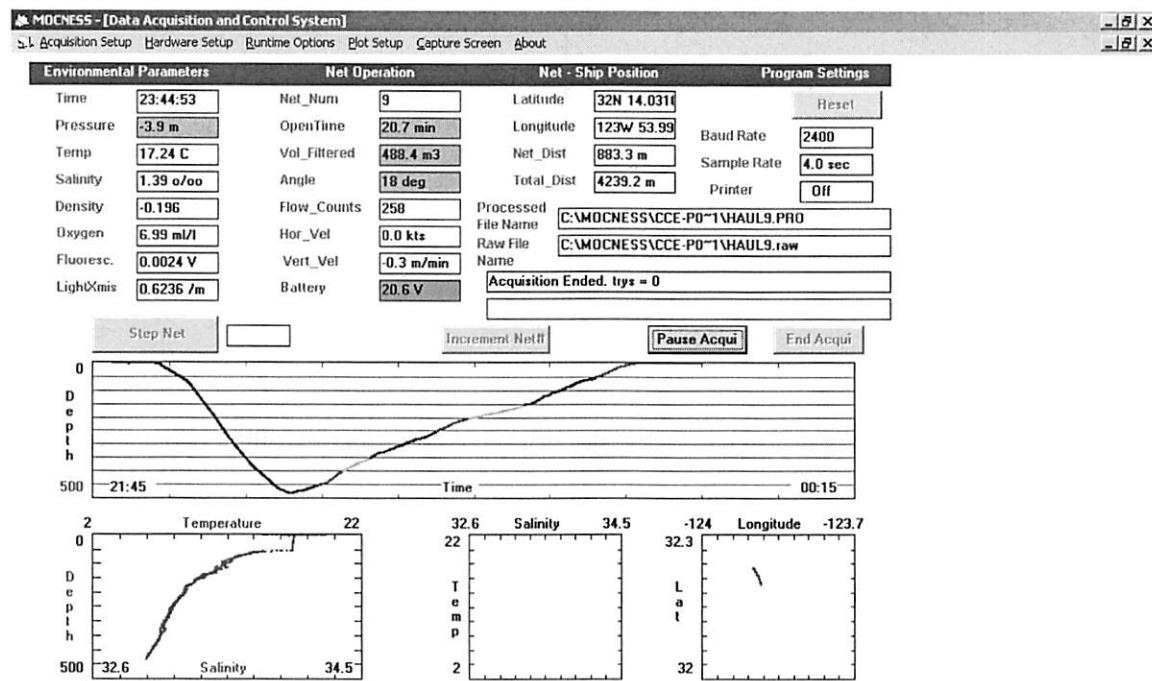
MDE

SURFACE	Press.	Temp.	Salinity	O ₂	Fluor.	Trans.	Battery
	12.2	16.98	45.0	5.38	0.1106	0.1384	21.4 V

NOTES: bad salinity [had selected wrong cond. sens., need to reproc file]
 Flow meter does not seem to be recording correctly; seems like counts are low(?)

534 mwo. 1523.
 08/06 cc

Haul 9



HAUL9.TAB

Cycle2_Tow3_Hau19
13/10/2008
R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
	bad salinities											
0	-04.1	479.8	217.3	05.6	19.3	11.0	05.5	19.3	11.0	01.32	50.00	39.53
1	400.2	450.9	429.6	05.8	06.4	06.0	05.7	06.3	06.0	50.00	50.00	50.00
2	350.4	398.6	373.8	06.4	07.0	06.7	06.3	06.9	06.7	50.00	50.00	50.00
3	301.2	348.6	322.8	07.0	07.3	07.1	06.9	07.2	07.1	50.00	50.00	50.00
4	250.5	300.4	276.2	07.3	07.9	07.6	07.2	07.8	07.5	50.00	50.00	50.00
5	201.6	249.0	222.4	07.9	08.7	08.3	07.8	08.7	08.3	50.00	50.00	50.00
6	150.9	201.2	178.3	08.8	10.1	09.1	08.7	10.1	09.1	50.00	50.00	50.00
7	101.7	150.4	126.8	10.1	12.1	11.0	10.1	12.0	11.0	50.00	50.00	50.00
8	50.5	100.7	72.6	11.7	16.9	13.2	11.6	16.9	13.2	44.94	50.00	48.03
9	o	49										
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.64	39.53	30.38	-00.03	07.51	00.08	00.00	00.57	00.05	05.0	07.3	06.4
1	39.40	39.49	39.46	00.06	00.06	00.06	00.03	00.03	00.03	06.6	06.7	06.7
2	39.29	39.39	39.34	00.06	00.06	00.06	00.03	00.03	00.03	06.4	06.6	06.5
3	39.24	39.29	39.27	00.06	00.06	00.06	00.03	00.03	00.03	06.4	06.5	06.5
4	39.13	39.24	39.18	00.06	00.06	00.06	00.03	00.03	00.03	06.3	06.5	06.4
5	38.96	39.13	39.04	00.06	00.06	00.06	00.03	00.03	00.03	06.3	06.4	06.3
6	38.70	38.96	38.89	00.06	00.07	00.06	00.03	00.04	00.03	06.3	06.3	06.3
7	38.28	38.69	38.51	00.06	00.07	00.06	00.03	00.11	00.06	06.0	06.3	06.2
8	33.22	38.37	36.47	00.07	00.15	00.09	00.09	00.29	00.17	05.4	06.2	06.0
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	20.0	89.0	65.5	00.0	06.3	00.5	-29.5	08.2	-11.3	00600	00486	
1	67.0	75.0	71.6	00.9	01.1	01.0	04.3	16.2	10.2	00074	00050	
2	64.0	71.0	67.3	00.9	01.4	01.1	06.1	12.9	09.4	00079	00080	
3	61.0	69.0	65.2	00.9	01.4	01.2	02.2	13.5	07.9	00094	00114	
4	61.0	66.0	63.3	01.1	01.4	01.2	03.2	10.5	07.3	00101	00139	
5	58.0	64.0	61.6	01.1	01.4	01.3	03.7	12.2	07.7	00096	00149	
6	57.0	66.0	62.6	01.1	01.4	01.2	00.6	09.5	04.6	00162	00253	
7	61.0	67.0	63.4	01.1	01.4	01.3	00.8	15.9	07.7	00097	00138	
8	55.0	65.0	59.3	01.1	01.7	01.4	-00.7	10.3	06.6	00112	00216	

309

Haul 9

HAUL9.RAW - Notepad

File Edit Format Help

```
" Tow: Cycle2_Tow3_Haul9 R/V Melville"
" Date: 13/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 3007"
" Pressure Probe # 127 Oxygen Probe # 430872"
" Transmissometer # 490 Fluorometer # 229"
"287.909028"
"##MO- 4 -0.2098 -0.0002 +0.0000 -0.0002 "
"$GPGLA, 214841,3211.9084,N,12353.0182,W,2,7,0.4,39,"
"##MN-00 00 22 0000 01874 5691 609360 863741 215"
"287.909074"
"##MO- 4 +0.0026 +4.7128 +2.9924 +0.0002 "
"$GPGLA, 214847,3211.9085,N,12353.0180,W,2,7,0.4,38,"
"##MN-00 00 22 0000 01873 5691 609560 865389 215"
"287.90912"
"##MO- 4 +0.0022 +4.7088 +2.9912 +0.0000 "
"$GPGLA, 214852,3211.9088,N,12353.0186,W,2,7,0.4,37,"
"##MN-00 00 21 0000 01873 5689 609439 865389 215"
"287.90916"
"##MO- 4 +0.0024 +4.7160 +2.9918 +0.0002 "
"$GPGLA, 214856,3211.9094,N,12353.0183,W,2,7,0.4,37,"
"##MN-00 00 21 0000 01876 5689 609333 865390 215"
"287.909213"
"##MO- 4 +0.0028 +4.7162 +2.9912 +0.0002 "
"$GPGLA, 214900,3211.9095,N,12353.0188,W,2,7,0.4,37,"
"##MN-00 00 21 0000 01874 5688 609911 865389 215"
"287.909259"
"##MO- 4 +0.0022 +4.7162 +2.9902 +0.0002 "
"$GPGLA, 214904,3211.9098,N,12353.0189,W,2,7,0.4,36,"
"##MN-00 00 21 0000 01875 5687 610238 865389 215"
"287.909306"
"##MO- 4 +0.0024 +4.7162 +2.9908 +0.0000 "
"$GPGLA, 214908,3211.9100,N,12353.0192,W,2,7,0.4,36,"
"##MN-00 00 22 0000 01874 5686 610609 865390 215"
"287.909363"
"##MO- 4 +0.0026 +4.7164 +2.9918 +0.0002 "
"$GPGLA, 214912,3211.9104,N,12353.0192,W,2,7,0.4,36,"
"##MN-00 00 20 0000 01873 5685 610496 865389 215"
"287.90941"
"##MO- 4 +0.0024 +4.7164 +2.9906 +0.0002 "
"$GPGLA, 214916,3211.9112,N,12353.0193,W,2,7,0.4,36,"
"##MN-00 00 22 0000 01874 5684 610495 865389 215"
"287.909456"
"##MO- 4 +0.0026 +4.7164 +2.9900 +0.0002 "
"$GPGLA, 214920,3211.9109,N,12353.0187,W,2,6,0.4,37,"
"##MN-00 00 20 0000 01873 5683 610680 865390 215"
"287.909502"
```

incorrect; should be 2663
o.k. for now

MOCNESS Data Sheet

HAUL # 10Cruise CCE - POSID Date 13-14 Oct 2008 CYCLE # 2 TOW # 4Wind Speed 11 kts. Direction 016° Sea State ~~3-4~~ 1Pre-deployment checks Flow Meter: Net Response: Stepping Motors:
Clean Optical Surfaces: Transmissometer: Fluorometer: File Name: Processed HAUL10.PRO Raw _____Start Time 23:05 (in) End Time 00:39 ~~GMT~~ / Local PDTLat 32.1213Lat 32.1563Long 123.9268Long 123.9692Event #: 351 (23:05)Event #: 352 (00:39)Net Mesh 202 μm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Max Z Min. Z

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Cod End Number	Sample Jar Number	Fixative
0+	23:05		1,173 m ³	+229	473	0		95% EtOH
actn.	23:43		118	+24	450	399		5% Form.
2	23:46		122	+28	399	350		
3	23:49		228	-238	350	300		
4	23:54		513	-538	300	250		
5	00:03		359	-376	250	200		
6	00:08		723	-758	200	151		
7	00:19		360	-378	151	101		
8	00:25		199	-208	101	48		
9	00:30		90	94	48	0		
Closed	00:39							

Corr. & May. 09

MDR

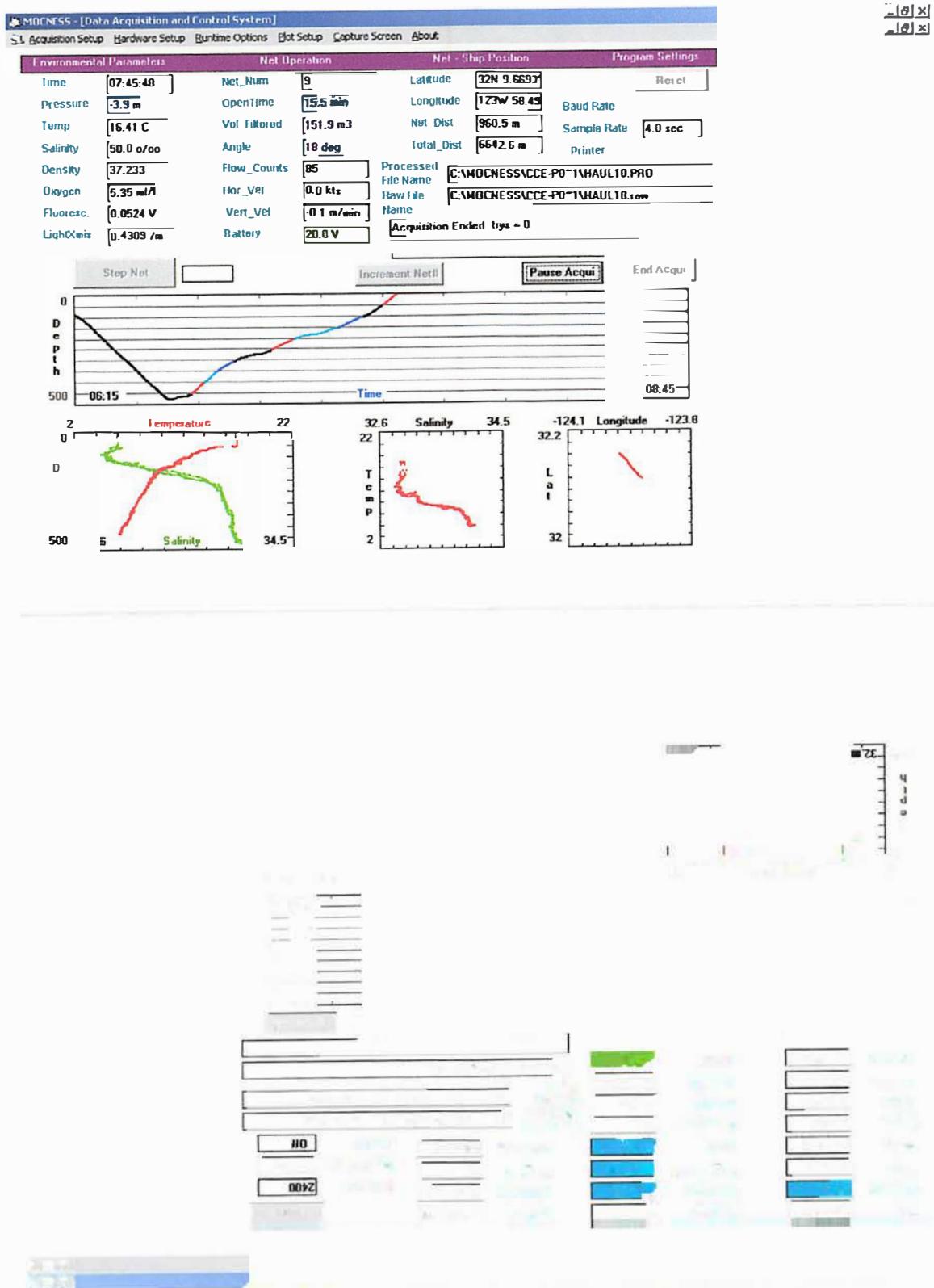
SURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery
9.6 16.9 32.97 5.79 0.2192 0.1498 20.3

NOTES:

horizontal velocity ≥ 2.0 kts for most of tow, although ship speed through water closer to 1.0 kt, must be subsurface flow.

08/06 cc 23:37 - 799 mwd 473 m max.

Haul 10



HAUL10.TAB

Cycle2_Tow4_Haul10
 13/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-05.6	474.6	221.4	05.7	17.0	10.3	05.6	17.0	10.3	00.02	34.06	29.14
1	399.9	449.1	424.3	05.8	06.2	06.0	05.7	06.2	06.0	33.95	34.00	33.97
2	350.8	398.1	374.7	06.2	07.0	06.7	06.2	06.9	06.6	33.95	33.97	33.97
3	300.9	349.0	323.6	06.9	07.5	07.2	06.9	07.5	07.2	33.90	33.96	33.92
4	251.4	299.6	274.2	07.5	08.3	07.9	07.5	08.2	07.8	33.87	33.91	33.88
5	201.5	250.1	225.0	08.3	09.0	08.6	08.2	09.0	08.6	33.71	33.87	33.81
6	151.2	200.6	176.6	08.8	10.1	09.4	08.8	10.1	09.3	33.23	33.69	33.48
7	101.2	150.5	125.3	10.2	12.0	11.2	10.1	12.0	11.2	32.86	33.23	33.05
8	49.0	100.4	77.5	12.0	16.9	13.6	12.0	16.9	13.6	32.83	32.96	32.89
9												
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.20	26.82	22.31	00.00	15.74	00.15	00.00	00.35	00.08	05.5	08.2	07.0
1	26.70	26.79	26.74	00.06	00.06	00.06	00.03	00.03	00.03	07.3	07.4	07.4
2	26.61	26.70	26.65	00.06	00.07	00.06	00.03	00.03	00.03	07.1	07.4	07.2
3	26.49	26.61	26.55	00.06	00.06	00.06	00.03	00.03	00.03	07.2	07.2	07.2
4	26.35	26.49	26.42	00.06	00.06	00.06	00.03	00.03	00.03	07.0	07.3	07.2
5	26.12	26.35	26.26	00.06	00.06	00.06	00.03	00.03	00.03	07.0	07.0	07.0
6	25.56	26.11	25.87	00.06	00.07	00.06	00.03	00.03	00.03	07.0	07.1	07.0
7	24.94	25.55	25.23	00.06	00.07	00.06	00.03	00.11	00.06	06.7	07.0	06.9
8	23.98	24.94	24.64	00.07	00.15	00.09	00.11	00.29	00.18	05.8	06.8	06.5
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	18.0	89.0	54.8	00.0	02.8	00.9	-20.7	12.4	-11.0	00620	01229	
1	50.0	55.0	52.9	01.7	02.3	02.0	11.4	19.0	15.5	00048	00124	
2	48.0	52.0	50.4	01.7	02.3	02.1	12.8	19.6	16.2	00044	00128	
3	45.0	49.0	46.8	02.0	02.3	02.2	09.3	14.5	11.6	00065	00239	
4	43.0	46.0	44.2	01.7	02.6	02.1	-00.2	11.0	05.5	00135	00538	
5	40.0	44.0	42.6	02.3	02.8	02.5	07.4	11.1	09.2	00081	00376	
6	39.0	45.0	41.1	02.0	02.6	02.4	01.0	09.1	04.8	00158	00758	
7	43.0	46.0	44.0	02.0	02.6	02.3	03.9	10.7	08.1	00091	00378	
8	47.0	56.0	51.3	01.7	02.3	02.0	04.9	16.0	10.7	00071	00208	

MOCNESS Data Sheet

HAUL # 11

Cruise CCE - POSID Date 15 Oct 2008 CYCLE # 3 TOW # 1

Wind Speed 12 kts. Direction 013° Sea State 3-4

Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
 Clean Optical Surfaces: Transmissometer: Fluorometer:

File Name: Processed HAUL11.PRO

Raw _____

Start Time ~14:07 End Time 15:45 CMT / Local PDT

1953 fathm

Lat 34.1271

Lat 34.1411

Long 120.8676

Long 120.9407

Event #: 391 (14:07)

Event #: 392 (15:50)

Net Mesh 202 µm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Min. Z	Sample Jar Number	Fixative
0	14:07		656 m ³	685	481	0		95% EtOH
1	14:40		218	228	449	480		5% Form.
2	14:50		174	182	400	350		
3	14:56		296	310	350	299		
4	15:06		190	200	299	250		
5	15:13		157	164	250	199		
6	15:19		184	192	199	150		
7	15:26		126	132	150	100		
8	15:32		144	151	100	51		
9	15:38		157	164	51	0		
Closed	15:45							

Corr. 8 Min. 09

MDE

SURFACE	Press.	Temp.	Salinity	O ₂	Fluor.	Trans.	Battery
	6.6	15.84	33.24	6.00	0.5486	0.3188	20.2

NOTES: _____

08/06 cc 481 max z 664 mwo @ 14:35

HAUL11.TAB

Cycle3_Tow1_Haul11
15/10/2008
R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.4	481.2	215.2	06.1	20.8	10.7	06.1	20.8	10.7	00.01	50.00	37.08
1	401.4	448.0	419.3	06.6	06.8	06.7	06.5	06.8	06.7	34.12	34.16	34.14
2	350.8	399.7	376.6	06.8	07.1	07.0	06.8	07.1	06.9	34.05	34.13	34.10
3	301.0	350.1	327.7	07.0	07.5	07.3	07.0	07.5	07.2	34.04	34.07	34.06
4	250.4	299.9	274.6	07.6	08.3	08.0	07.5	08.3	08.0	34.05	34.09	34.06
5	200.8	248.9	225.1	08.3	08.7	08.4	08.3	08.7	08.4	33.97	34.06	34.02
6	150.4	199.2	174.1	08.6	09.2	08.9	08.6	09.1	08.9	33.86	34.00	33.91
7	101.2	150.1	126.8	09.2	09.7	09.4	09.1	09.7	09.4	33.52	33.86	33.76
8	52.2	99.3	72.7	09.5	11.7	10.5	09.5	11.7	10.5	33.02	33.52	33.28
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.93	37.23	28.30	-00.05	02.10	00.07	00.00	00.83	00.06	04.7	07.2	06.4
1	26.76	26.81	26.78	00.06	00.09	00.06	00.03	00.03	00.03	07.0	07.1	07.1
2	26.68	26.76	26.72	00.06	00.07	00.06	00.03	00.03	00.03	07.0	07.0	07.0
3	26.60	26.67	26.64	00.06	00.14	00.06	00.03	00.03	00.03	06.9	07.0	06.9
4	26.49	26.60	26.54	00.06	00.08	00.07	00.03	00.03	00.03	06.7	06.9	06.8
5	26.38	26.49	26.44	00.07	00.09	00.07	00.03	00.03	00.03	06.6	06.7	06.7
6	26.20	26.38	26.28	00.07	00.08	00.07	00.03	00.03	00.03	06.6	06.7	06.7
7	25.88	26.20	26.08	00.07	00.08	00.07	00.03	00.03	00.03	06.6	06.8	06.7
8	25.14	25.88	25.52	00.07	00.10	00.08	00.03	00.12	00.05	06.6	06.9	06.8
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	18.0	89.0	58.5	00.0	03.1	00.7	-24.4	12.5	-11.2	00606	00688	
1	56.0	65.0	60.1	01.1	01.4	01.2	00.1	13.7	05.3	00140	00228	
2	55.0	63.0	58.7	01.1	01.7	01.4	04.6	09.8	07.3	00102	00182	
3	52.0	60.0	56.3	01.1	01.7	01.4	01.7	08.1	05.2	00144	00310	
4	54.0	61.0	57.5	01.1	01.7	01.4	04.6	10.1	07.3	00102	00199	
5	55.0	61.0	58.5	01.1	01.7	01.4	06.0	10.7	08.3	00089	00164	
6	54.0	63.0	59.1	01.1	01.7	01.4	05.0	11.3	07.2	00104	00192	
7	58.0	66.0	62.4	01.1	01.4	01.3	04.1	11.7	08.2	00089	00132	
8	54.0	64.0	58.9	01.1	01.7	01.5	02.7	11.9	09.1	00082	00151	

16A

" Tow: Cycle3_Tow1_Haul11 R/V Melville"
" Date: 15/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 430872"
" Transmissometer # 490 Fluorometer # 229"
"289.874988"
"##MO- 4 +0.0000 +0.0000 +0.0002 +0.0000 "
"\$GPGGA,205935,3356.0077,N,12145.2291,W,2,7,0.4,33,"
"##MN-00 00 20 0000 01861 5150 596070 864024 203"
"289.875035"
"##MO- 4 +0.0024 +4.7324 +2.9972 +0.0002 "
"\$GPGGA,205941,3356.0103,N,12145.2296,W,2,7,0.4,33,"
"##MN-00 00 20 0000 01860 5150 598017 865386 202"
"289.875081"
"##MO- 4 +0.0024 +4.6468 +2.9988 +0.0002 "
"\$GPGGA,205945,3356.0124,N,12145.2296,W,2,8,0.4,33,"
"##MN-00 00 18 0000 01861 5151 597127 865386 202"
"289.875127"
"##MO- 4 +0.0024 +4.6618 +2.9958 +0.0000 "
"\$GPGGA,205949,3356.0143,N,12145.2306,W,2,8,0.4,33,"
"##MN-00 00 19 0000 01861 5151 596374 865386 202"
"289.875174"
"##MO- 4 +0.0026 +4.6626 +2.9974 +0.0002 "
"\$GPGGA,205953,3356.0161,N,12145.2306,W,2,8,0.4,33,"
"##MN-00 00 20 0000 01861 5152 597015 865386 202"
"289.87522"
"##MO- 4 +0.0024 +4.6628 +2.9974 +0.0002 "
"\$GPGGA,205957,3356.0175,N,12145.2309,W,2,8,0.4,34,"
"##MN-00 00 19 0000 01860 5153 597462 865386 202"
"289.875266"
"##MO- 4 +0.0024 +4.6630 +2.9958 +0.0002 "
"\$GPGGA,210001,3356.0188,N,12145.2317,W,2,8,0.4,34,"
"##MN-00 00 18 0000 01861 5154 597188 865386 202"
"289.875312"
"##MO- 4 +0.0024 +4.6630 +2.9966 +0.0000 "
"\$GPGGA,210005,3356.0206,N,12145.2322,W,2,8,0.4,34,"
"##MN-00 00 19 0000 01861 5154 597157 865386 202"
"289.875359"
"##MO- 4 +0.0024 +4.6630 +2.9960 +0.0002 "
"\$GPGGA,210009,3356.0215,N,12145.2327,W,2,8,0.4,33,"
"##MN-00 00 18 0000 01861 5155 596234 865385 202"
"289.875405"
"##MO- 4 +0.0026 +4.6632 +2.9962 +0.0002 "
"\$GPGGA,210013,3356.0226,N,12145.2340,W,2,8,0.4,34,"
"##MN-00 00 20 0000 01859 5156 595311 865385 202"
"289.875451"

MOCNESS Data Sheet

HAUL # 12

Cruise CCE-PO81D

Date 15-¹⁶ Oct 2008 CYCLE # 3

Tow # 2

Wind Speed 12 kts.

Direction 355°

Sea State 3-4

Pre-deployment checks Flow Meter: ✓ Net Response: ✓ Stepping Motors: ✓

Clean optical Surfaces: ✓ Transmissometer: ✓ Fluorometer: ✓

File Name: Processed HAUL12.PRO

Raw

Start Time 22:42

End Time 00:12

GMT / Local PDT

Lat 33.9563

Lat 33.9916

Long 121.7695

Long 121.8073

Event #: 400-402 (22:40)

Event #: 401-403 (00:19)

Net Mesh 202 µm Frame Size 1 m²

Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Grid End Number	Sample Jar Number	Fixative
0+	22:42		1,060 m ³	1111 m ³	506	0		95% EtOH
1	23:15		149	156	448	402		5% Form.
2	23:19		336	352	402	350		
3	23:28		303	318	350	301		
4	23:36		323	339	301	252		
5	23:44		276	290	252	200		
6	23:51		166	174	200	150		
7	23:56		256	268	150	100		
8	00:02		163	171	100	49		
9	00:07		147	154	49	0		
Closed	00:12							

Corr. 8 Min. 09

MBF

SURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery

5.9 15.83° 33.22 5.91 0.8358 0.3245 19.8

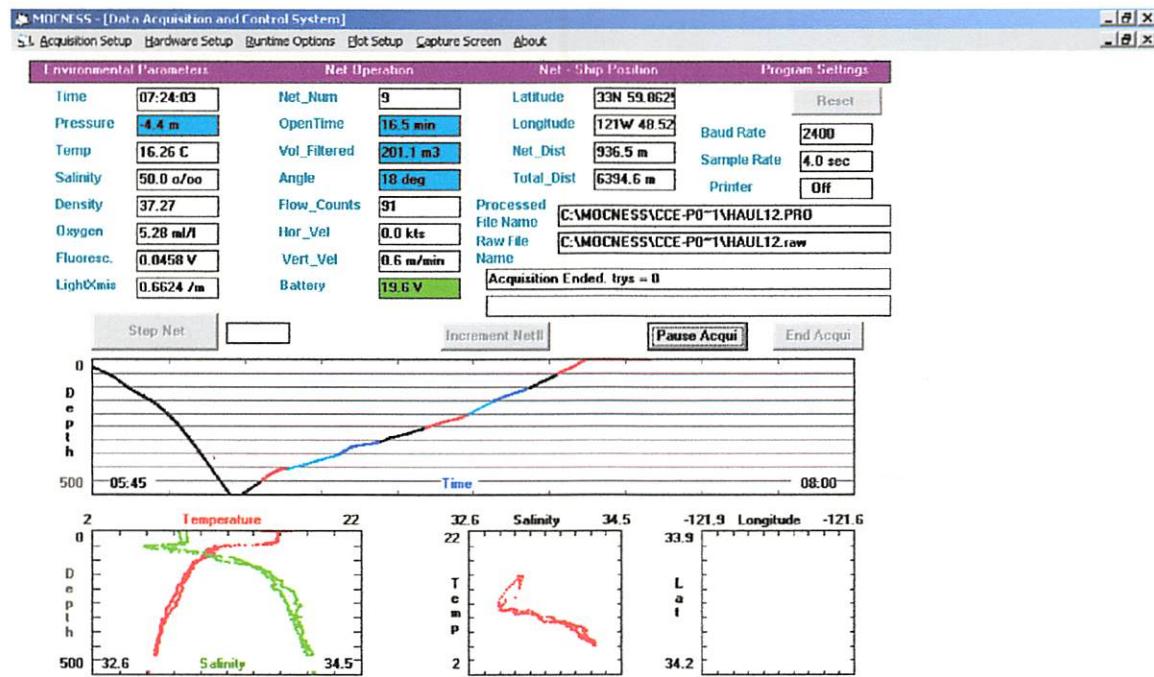
NOTES:

08/06 cc

761 mwo

230°
down506 m. = Z_{max}

Haul 12



Temperature/Salinity Sensor Selection

Select Environmental Sensor Probe Numbers

Temperature Sensor	Conductivity Sensor	Pressure Sensor	Oxygen Sensor	Xmissometer Sensor	Fluorometer Sensor
<input type="text" value="4061"/>	<input type="text" value="2663"/>	<input type="text" value="127"/>	<input type="text" value="430872"/>	<input type="text" value="490"/>	<input type="text" value="229"/>
<input type="text" value="4060"/>	<input type="text" value="2663"/>	<input type="text" value="124"/>	<input type="text" value="230884"/>	<input type="text" value="490"/>	<input type="text" value="229"/>
<input type="text" value="4061"/>	<input type="text" value="3007"/>	<input type="text" value="127"/>	<input type="text" value="430872"/>	<input type="text" value="490"/>	<input type="text" value="229"/>
<input type="text" value="12345"/>	<input type="text" value="3429"/>	<input type="text" value="128"/>	<input type="text" value="123456"/>		
<input type="text" value="3430"/>	<input type="text" value="2659"/>				
<input type="text" value="2659"/>					

Select a Temperature, Conductivity, Pressure, Transmissometer, Fluorometer, or Oxygen Sensor.

Add Environmental Sensor Calibration Constants

Temp Sensor #	Cond Sensor #	Press Sensor #	Oxy Sensor #	CStar Trans Sensor #	Fluor Sensor #
<input type="text" value="a"/>	<input type="text" value="a"/>	<input type="text" value="a0"/>	<input type="text" value="m"/>	<input type="text" value="Vdark"/>	<input type="text" value=""/>
<input type="text" value="b"/>	<input type="text" value="b"/>	<input type="text" value="a1"/>	<input type="text" value="b"/>	<input type="text" value="Vair"/>	<input type="text" value=""/>
<input type="text" value="c"/>	<input type="text" value="c"/>	<input type="text" value="b0"/>	<input type="text" value="k"/>	<input type="text" value="Vref"/>	<input type="text" value=""/>
<input type="text" value="d"/>	<input type="text" value="d"/>	<input type="text" value="b1"/>	<input type="text" value="c"/>	<input type="text" value=""/>	<input type="text" value=""/>
<input type="text" value="f0"/>	<input type="text" value="m"/>	<input type="text" value="c0"/>	<input type="text" value="Soc"/>	<input type="text" value=""/>	<input type="text" value=""/>
		<input type="text" value="c1"/>	<input type="text" value="Boc"/>	<input type="text" value=""/>	<input type="text" value=""/>
			<input type="text" value="wl"/>		

HAUL12.TAB

Cycle3_Tow2_Haul12
15/10/2008
R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.1	506.4	191.3	06.1	16.8	10.7	06.0	16.8	10.7	00.01	50.00	36.33
1	402.1	447.2	418.3	06.5	06.9	06.7	06.5	06.8	06.7	34.13	34.16	34.14
2	350.5	402.5	377.8	06.8	07.2	06.9	06.7	07.1	06.9	34.07	34.13	34.10
3	301.7	349.3	319.3	07.1	07.4	07.2	07.0	07.3	07.1	34.00	34.09	34.04
4	251.7	301.0	275.2	07.4	07.8	07.5	07.4	07.7	07.5	33.98	34.04	34.00
5	200.2	250.5	226.6	07.8	08.3	08.1	07.7	08.3	08.0	33.90	33.98	33.95
6	150.3	199.3	174.5	08.3	08.8	08.6	08.2	08.8	08.6	33.83	33.90	33.88
7	100.6	148.9	124.1	08.8	09.9	09.3	08.8	09.9	09.3	33.67	33.83	33.76
8	50.2	99.5	75.1	09.9	11.3	10.5	09.9	11.3	10.5	32.98	33.67	33.39
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.06	37.34	27.78	-00.17	28.21	00.14	00.00	01.24	00.14	04.1	07.3	06.5
1	26.76	26.83	26.79	00.06	00.12	00.07	00.03	00.03	00.03	07.0	07.1	07.0
2	26.69	26.76	26.72	00.06	00.08	00.06	00.03	00.03	00.03	06.9	07.0	07.0
3	26.61	26.68	26.64	00.06	00.07	00.06	00.03	00.03	00.03	06.9	07.0	07.0
4	26.51	26.61	26.56	00.06	00.09	00.06	00.03	00.05	00.03	06.9	06.9	06.9
5	26.37	26.51	26.45	00.06	00.07	00.07	00.03	00.03	00.03	06.8	06.9	06.9
6	26.23	26.37	26.30	00.07	00.07	00.07	00.03	00.03	00.03	06.7	06.9	06.8
7	25.93	26.23	26.09	00.07	00.09	00.08	00.03	00.04	00.03	06.6	06.8	06.7
8	25.19	25.93	25.61	00.07	00.09	00.08	00.03	00.12	00.05	06.6	06.8	06.7
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	18.0	89.0	54.1	00.0	03.4	00.9	-33.7	17.6	-11.1	00614	01111	
1	49.0	59.0	54.4	01.4	02.0	01.7	01.5	18.0	10.6	00069	00156	
2	48.0	55.0	51.9	01.4	01.7	01.6	00.9	09.3	05.6	00133	00352	
3	48.0	53.0	50.6	01.4	02.3	01.8	00.9	14.9	06.7	00110	00318	
4	46.0	53.0	51.0	01.4	02.0	01.7	03.7	09.9	06.3	00119	00339	
5	50.0	56.0	53.4	01.4	02.0	01.7	03.1	10.9	06.6	00113	00290	
6	50.0	55.0	52.2	01.7	02.0	01.8	08.9	13.4	11.3	00066	00174	
7	49.0	55.0	51.1	01.4	02.0	01.7	03.7	10.9	07.7	00096	00268	
8	53.0	57.0	55.2	01.4	02.0	01.7	06.8	13.4	10.2	00073	00171	

Tow: Cycle3_Tow2_Haul12 R/V Melville"
" Date: 15/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 430872"
" Transmissometer # 490 Fluorometer # 229"
"290.23184"
"##MO- 4 +0.0000 +0.0000 +0.0000 +0.0000 "
"\$GPGGA,053326,3357.2061,N,12145.9519,W,2,8,0.3,36,"
"##MN-00 00 19 0000 01823 3054 647237 865303 199"
"290.231887"
"##MO- 4 +0.0524 +4.8804 +2.9992 +0.0002 "
"\$GPGGA,053332,3357.2094,N,12145.9548,W,2,7,0.3,36,"
"##MN-00 00 19 0000 01823 3054 648574 865393 199"
"290.231933"
"##MO- 4 +0.0520 +4.6568 +2.9986 +0.0002 "
"\$GPGGA,053336,3357.2111,N,12145.9560,W,2,8,0.3,36,"
"##MN-00 00 19 0000 01821 3054 648523 865392 199"
"290.231979"
"##MO- 4 +0.0522 +4.6658 +2.9986 +0.0002 "
"\$GPGGA,053340,3357.2122,N,12145.9572,W,2,7,0.3,36,"
"##MN-00 00 19 0000 01823 3055 648593 865392 199"
"290.232025"
"##MO- 4 +0.0520 +4.6672 +2.9990 +0.0002 "
"\$GPGGA,053344,3357.2135,N,12145.9586,W,2,7,0.3,36,"
"##MN-00 00 18 0000 01824 3055 648543 865392 199"
"290.232072"
"##MO- 4 +0.0510 +4.6690 +2.9986 +0.0000 "
"\$GPGGA,053348,3357.2151,N,12145.9608,W,2,9,0.3,36,"
"##MN-00 00 19 0000 01823 3055 648549 865392 199"
"290.232118"
"##MO- 4 +0.0524 +4.6690 +2.9994 +0.0002 "
"\$GPGGA,053352,3357.2172,N,12145.9624,W,2,6,0.4,36,"
"##MN-00 00 19 0000 01825 3056 648403 865393 199"
"290.232164"
"##MO- 4 +0.0524 +4.6700 +2.9996 +0.0002 "
"\$GPGGA,053356,3357.2186,N,12145.9644,W,2,8,0.3,36,"
"##MN-00 00 19 0000 01823 3056 640109 865392 199"
"290.232211"
"##MO- 4 +0.0522 +4.6710 +2.9994 +0.0002 "
"\$GPGGA,053400,3357.2211,N,12145.9669,W,2,9,0.3,37,"
"##MN-00 00 18 0000 01823 3056 640575 865393 199"
"290.232257"

MOCNESS Data Sheet
HAUL # 13

Cruise CCE - POSID Date 17 Oct 2008 CYCLE # 3 TOW # 3

Wind Speed 10 kts Direction 220° Sea State 3-4'

Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
 Clean optical Surfaces: Transmissometer: Fluorometer:
 File Name: Processed HAUL13.PRO Raw _____

Start Time 14:31 End Time 16:10 GMT / Local PDT

Bottom
Depth
3581m

Lat 34° 11.341 34.1899 Lat 34.1529

Long 121° 38.246 121.6372 Long 121.6405

Event #: 463 (14:31) Event #: 464 (16:11)

Net Mesh 202 µm Frame Size 1 m² Console Operator Elaine Powell

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	End Number	Sample Jar Number	Fixative
0✓	14:31	59	654 ³	685	464	0		95% Etch
1✓	15:06	54	51 124	130	452	402		5% Form.
2✓	15:12	57	52 153	167	402	351		
3✓	15:18	62	63 180	188	351	301		
4✓	15:26	60	64 181	190	301	250		
5✓	15:33	63	73 210	220	250	201		
6✓	15:41	60	63 170	178	201	150		
7✓	15:48	61	66 191	200	150	100		
8	15:56	61	69 143	150	100	49		
9	16:03		269	282	49	0		
Closed	16:10							

Corr. B.Mn.09

MDG

SURFACE	Press.	Temp.	Salinity	O ₂	Fluor.	Trans.	Battery
	-2.8	16.13	33.24	5.95	.2018	.2362	19.9

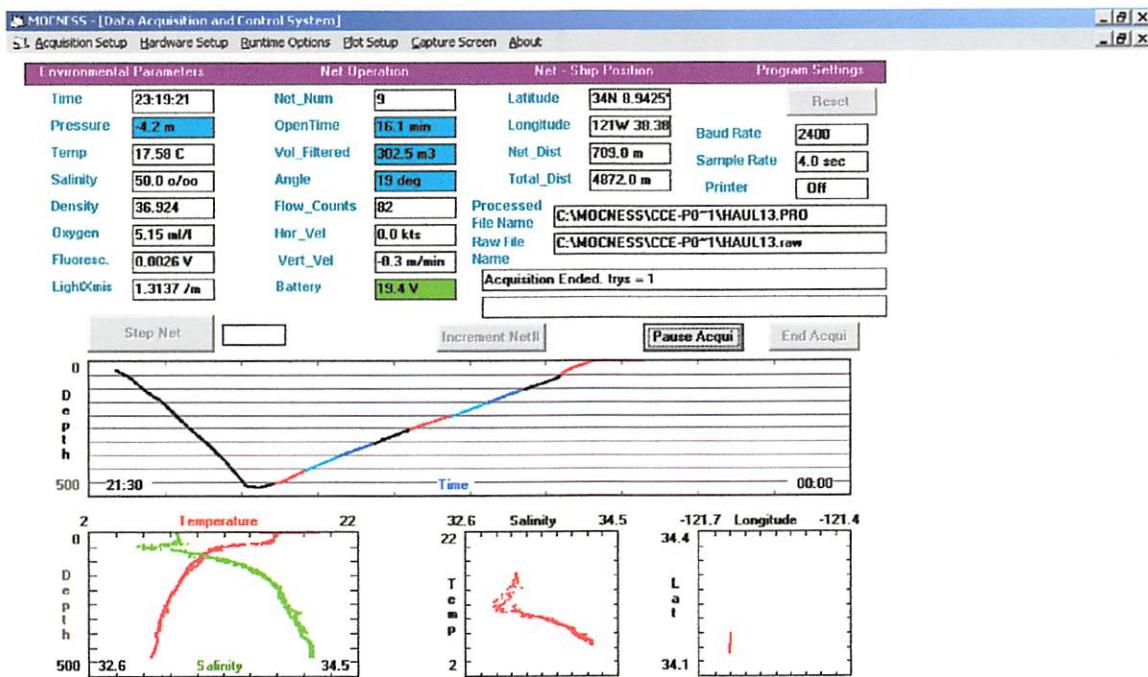
NOTES: -2.8 16.13 °C 33.24 5.95 .2018

08/06 cc MWD
600

Time Down
15:07

Zmax
464

Haul 13



HAUL13.TAB

Cycle3_Tow3_Haul13
17/10/2008
R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.9	466.1	202.4	06.5	16.7	10.1	06.4	16.7	10.1	00.69	50.00	36.12
1	402.2	451.4	430.1	06.5	06.9	06.7	06.5	06.8	06.6	34.16	34.17	34.17
2	350.6	401.4	375.9	06.9	07.1	07.0	06.8	07.1	07.0	34.10	34.17	34.15
3	301.0	349.6	325.1	07.0	07.4	07.2	07.0	07.3	07.1	34.05	34.10	34.09
4	250.5	300.7	274.7	07.3	07.7	07.5	07.3	07.7	07.5	33.98	34.05	34.02
5	200.8	250.1	224.8	07.7	08.4	08.0	07.7	08.4	08.0	33.94	33.98	33.96
6	150.2	199.9	175.9	08.4	08.9	08.7	08.4	08.9	08.7	33.86	33.95	33.90
7	100.7	149.1	124.2	08.9	09.8	09.3	08.9	09.7	09.3	33.64	33.86	33.76
8	48.9	100.2	77.6	09.8	11.5	10.5	09.8	11.5	10.5	33.03	33.63	33.42
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.43	37.63	27.72	-00.16	03.49	00.10	00.00	00.86	00.07	04.1	07.3	06.6
1	26.79	26.84	26.82	00.07	00.09	00.07	00.03	00.03	00.03	07.0	07.1	07.0
2	26.71	26.78	26.75	00.06	00.08	00.07	00.03	00.03	00.03	06.9	07.0	06.9
3	26.64	26.71	26.68	00.06	00.07	00.06	00.03	00.03	00.03	06.9	07.0	06.9
4	26.52	26.63	26.57	00.06	00.07	00.07	00.03	00.03	00.03	06.9	06.9	06.9
5	26.39	26.52	26.45	00.07	00.09	00.07	00.03	00.03	00.03	06.8	06.9	06.8
6	26.23	26.39	26.31	00.07	00.08	00.08	00.03	00.03	00.03	06.7	06.8	06.7
7	25.93	26.23	26.09	00.08	00.11	00.08	00.03	00.04	00.03	06.7	06.7	06.7
8	25.18	25.92	25.64	00.07	00.10	00.08	00.03	00.10	00.05	06.6	06.8	06.7
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	19.0	89.0	60.9	00.0	02.3	00.6	-23.6	09.1	-11.1	00612	00685	
1	56.0	67.0	62.2	00.9	01.4	01.3	00.5	11.8	07.9	00092	00131	
2	55.0	64.0	60.0	01.1	01.4	01.4	05.0	10.2	08.1	00095	00160	
3	55.0	63.0	59.1	01.1	01.4	01.4	05.0	09.7	07.1	00104	00189	
4	55.0	62.0	59.1	01.1	01.4	01.4	04.8	09.9	07.2	00105	00190	
5	55.0	63.0	59.4	01.1	01.4	01.4	04.1	09.1	06.1	00121	00220	
6	58.0	63.0	60.9	01.1	01.4	01.3	05.0	08.5	07.0	00107	00178	
7	56.0	61.0	58.5	01.1	01.7	01.4	04.5	09.1	06.9	00107	00201	
8	57.0	69.0	64.1	01.1	01.4	01.3	03.5	14.0	07.0	00107	00150	

282

" Tow: Cycle3_Tow3_Haul13 R/V Melville"
" Date: 17/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 430872"
" Transmissometer # 490 Fluorometer # 229"
"291.892211"
"##MO- 4 +0.0000 +0.0000 +0.0000 +0.0000 "
"\$GPGGA,212418,3411.5600,N,12138.1756,W,2,7,0.4,37,"
"##MN-00 00 19 0000 01821 3404 641177 865041 200"
"291.892257"
"##MO- 4 +0.0026 +4.8638 +2.9728 +0.0002 "
"\$GPGGA,212424,3411.5573,N,12138.1772,W,2,6,0.5,38,"
"##MN-00 00 19 0000 01820 3405 645435 865387 199"
"291.892303"
"##MO- 4 +0.0026 +4.8638 +2.9728 +0.0002 "
"
"##MN-00 00 19 0000 01820 3405 645435 865387 199"
"291.89272"
"##MO- 4 +0.0024 +4.6812 +2.9730 +0.0002 "
"
"##MN-00 00 19 0000 01823 3421 646188 865386 199"
"291.892766"
"##MO- 4 +0.0026 +4.6814 +2.9730 +0.0002 "
"\$GPGGA,212508,3411.5394,N,12138.1839,W,2,6,0.5,37,"
"##MN-00 00 19 0000 01825 3423 646149 865386 199"
"291.892812"
"##MO- 4 +0.0026 +4.6814 +2.9734 +0.0000 "
"\$GPGGA,212512,3411.5374,N,12138.1841,W,2,6,0.5,37,"
"##MN-00 00 19 0000 01824 3424 646254 865386 199"
"291.892859"
"##MO- 4 +0.0024 +4.6816 +2.9734 +0.0002 "
"\$GPGGA,212516,3411.5358,N,12138.1848,W,2,6,0.5,36,"
"##MN-00 00 19 0000 01825 3426 646016 865386 199"
"291.892905"
"##MO- 4 +0.0022 +4.6812 +2.9738 +0.0000 "
"\$GPGGA,212520,3411.5346,N,12138.1864,W,2,5,0.7,35,"
"##MN-00 00 19 0000 01826 3427 645729 865386 199"
"291.892951"
"##MO- 4 +0.0024 +4.6812 +2.9710 +0.0000 "
"\$GPGGA,212524,3411.5324,N,12138.1851,W,2,6,0.5,35,"
"##MN-00 00 19 0000 01825 3428 646033 865386 199"
"291.892998"
"##MO- 4 +0.0026 +4.6816 +2.9728 +0.0000 "
"\$GPGGA,212528,3411.5316,N,12138.1875,W,2,6,0.5,35,"
"##MN-00 00 19 0000 01826 3430 646529 865386 199"
"291.893044"

MOCNESS Data Sheet

HAUL # 14Cruise CCE-PO81D Date 17 Oct 2008 CYCLE # 3 TOW # 4Wind Speed 5 kts, Direction 253° Sea State 2-4' raining at end of towPre-deployment checks: Flow Meter: Net Response: Stepping Motor: Clean optical Surfaces: Transmissometer: Fluorometer: File Name: Processed HAUL14B.PRO Raw _____Start Time 22:30 (net in) End Time 00:22 GMT / Local PDT

bottom Z =

Lat 34.2191Lat 34.1782

3585 m°

Long 121.5760Long 121.5770Event #: 476 (22:30)Event #: 477 (00:26)Net Mesh 202 µm Frame Size 1 m² Console Operator Ohman

Net Tow Information

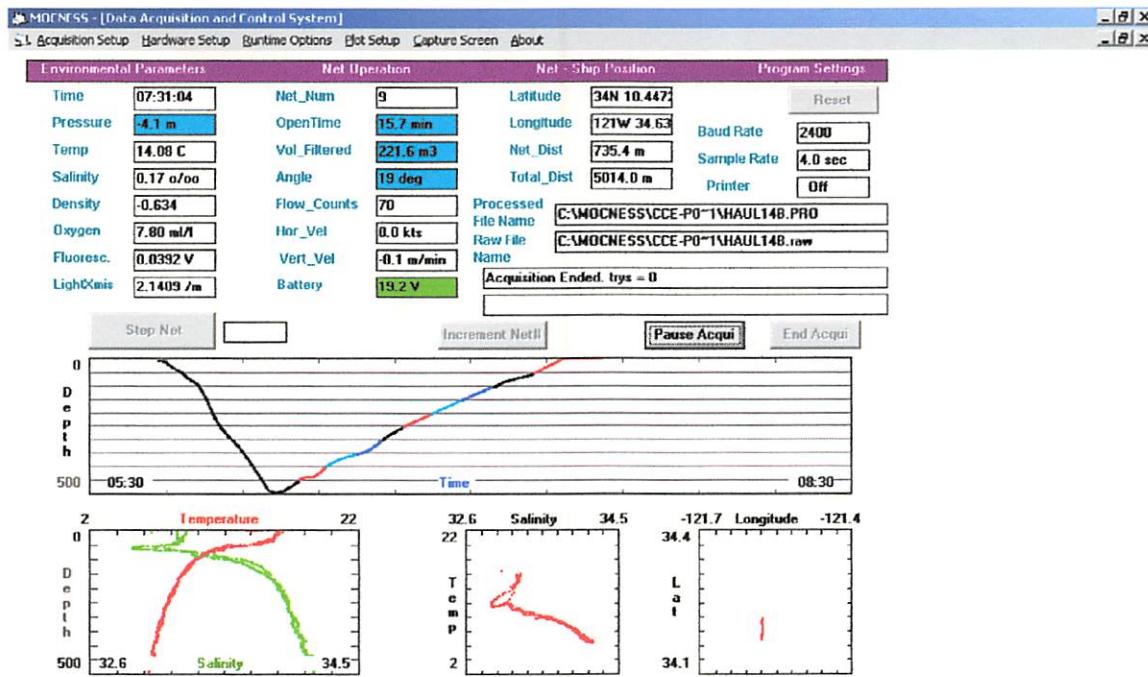
Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	End Number	Sample Jar Number	Fixative
0+	22:30		838 m ³	879 m ³	491	0		95% EtOH
1	23:19		178	186	449	398		5% Form.
2	23:26		230	241	398	351		
3	23:33		171	180	351	300		
4	23:39		184	192	300	250		
5	23:44		268	281	250	201		
6	23:51		303	317	201	150		
7	23:58		337	353	150	101		
8	00:05		436	457	101	51		
9	00:15		205	214	51	0		
Closed	00:22							

Corr. 8 Mar. 09
MDRSURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery
12 15.88 33.27 5.99 0.8558 0.2709 19.5V

NOTES: Net @ 5-10 m for ~ 10-15 min. when launched; had to re-set software several times.

08/06 cc A91 m. 740 mw0 2312

Haul 14



HAUL14B.TAB

Cycle3_Tow4_Haul14
17/10/2008
R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	04.3	495.0	266.8	06.3	16.4	09.0	06.3	16.4	09.0	33.04	34.19	33.85
1	398.5	448.3	429.6	06.6	06.7	06.6	06.5	06.7	06.6	34.09	34.14	34.12
2	351.3	396.3	369.3	06.7	07.1	07.0	06.7	07.1	07.0	34.06	34.12	34.09
3	299.8	350.9	330.7	07.0	07.4	07.1	07.0	07.4	07.1	34.03	34.07	34.05
4	250.9	298.5	272.9	07.4	07.8	07.6	07.4	07.8	07.5	34.01	34.05	34.02
5	201.3	250.0	225.8	07.8	08.2	08.0	07.8	08.2	08.0	33.94	34.02	33.98
6	150.9	200.5	175.3	08.2	08.9	08.6	08.2	08.9	08.5	33.84	33.96	33.91
7	101.2	149.8	125.4	09.0	09.8	09.4	09.0	09.8	09.4	33.61	33.85	33.74
8	50.6	100.1	74.0	09.9	13.1	11.1	09.8	13.1	11.0	32.90	33.61	33.24
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	24.14	26.87	26.17	00.00	00.53	00.10	00.00	00.84	00.11	04.6	07.2	06.8
1	26.75	26.81	26.79	00.06	00.07	00.06	00.03	00.03	00.03	07.1	07.1	07.1
2	26.68	26.75	26.71	00.06	00.08	00.06	00.03	00.03	00.03	06.9	07.1	07.0
3	26.61	26.68	26.66	00.06	00.06	00.06	00.03	00.03	00.03	06.9	07.0	07.0
4	26.53	26.62	26.57	00.06	00.07	00.06	00.03	00.03	00.03	06.8	06.9	06.9
5	26.42	26.53	26.48	00.06	00.09	00.07	00.03	00.03	00.03	06.8	06.9	06.8
6	26.23	26.41	26.33	00.07	00.08	00.07	00.03	00.03	00.03	06.7	06.8	06.8
7	25.90	26.22	26.07	00.07	00.08	00.07	00.03	00.03	00.03	06.7	06.7	06.7
8	24.85	25.89	25.40	00.07	00.12	00.09	00.03	00.19	00.08	06.5	06.8	06.7
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	30.0	72.0	55.6	00.0	05.4	00.9	-35.8	13.3	-13.7	00497	00879	
1	49.0	63.0	57.1	01.1	01.7	01.4	-00.5	15.5	07.8	00096	00186	
2	52.0	59.0	55.5	01.4	01.7	01.5	02.7	14.9	06.6	00110	00241	
3	52.0	60.0	56.7	01.4	01.7	01.5	03.1	13.4	08.6	00085	00180	
4	50.0	57.0	52.9	01.7	02.0	01.7	07.6	13.2	09.8	00076	00192	
5	48.0	53.0	51.1	01.7	02.0	01.8	05.2	09.1	07.4	00099	00281	
6	48.0	52.0	50.1	01.7	02.0	01.8	05.6	09.1	07.3	00104	00317	
7	46.0	51.0	48.8	01.7	02.0	01.9	04.5	08.4	06.7	00111	00353	
8	46.0	57.0	49.9	01.4	02.3	01.8	01.4	09.0	05.1	00146	00457	

No longer creating separate
"prop file" for deck check.

MOCNESS Data Sheet

HAUL # 15

Cruise CCE - POSID Date 19 Oct 2008 CYCLE # 4 TOW # 1

Wind Speed 14 kts. Direction 319° Sea State 1-3'

Pre-deployment checks: Flow Meter: ✓ Net Response: ✓ Stepping Motor: ✓

Clean Optical Surfaces: ✓ Transmissometer: ✓ Fluorometer: ✓

File Name: Processed HAUL15-P.PRO Raw _____

Start Time 14:42 End Time 16:12 ~~GMT~~ / Local PDT

Lat 33.5971

Lat 33.6030

Long 121.1466

Long 121.2029

Event #: 506 (14:42)

Event #: 507 (16:16)

Net Mesh 202 µm Frame Size 1 m²

Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Grid End Number	Sample Jar Number	Fixative
✓1 0+	14:42		1,020 m ³	1069	473	0		95% EtOH
✓2 +	15:13		165	173	450	400		5% Form.
✓3 2	15:18		231	242	400	350		
✓4 3	15:23		334	350	350	301		
✓5 4	15:30		497	521	301	250		
✓6 5	15:38		377	395	250	200		
✓7 6	15:44		386	404	200	151		
✓8 7	15:50		659	690	151	101		
✓9 8	16:01		256	268	101	50		
✓10 9	16:06		248	260	50	0		
Closed	16:12							

Corr. 8 Min. 09

MDO

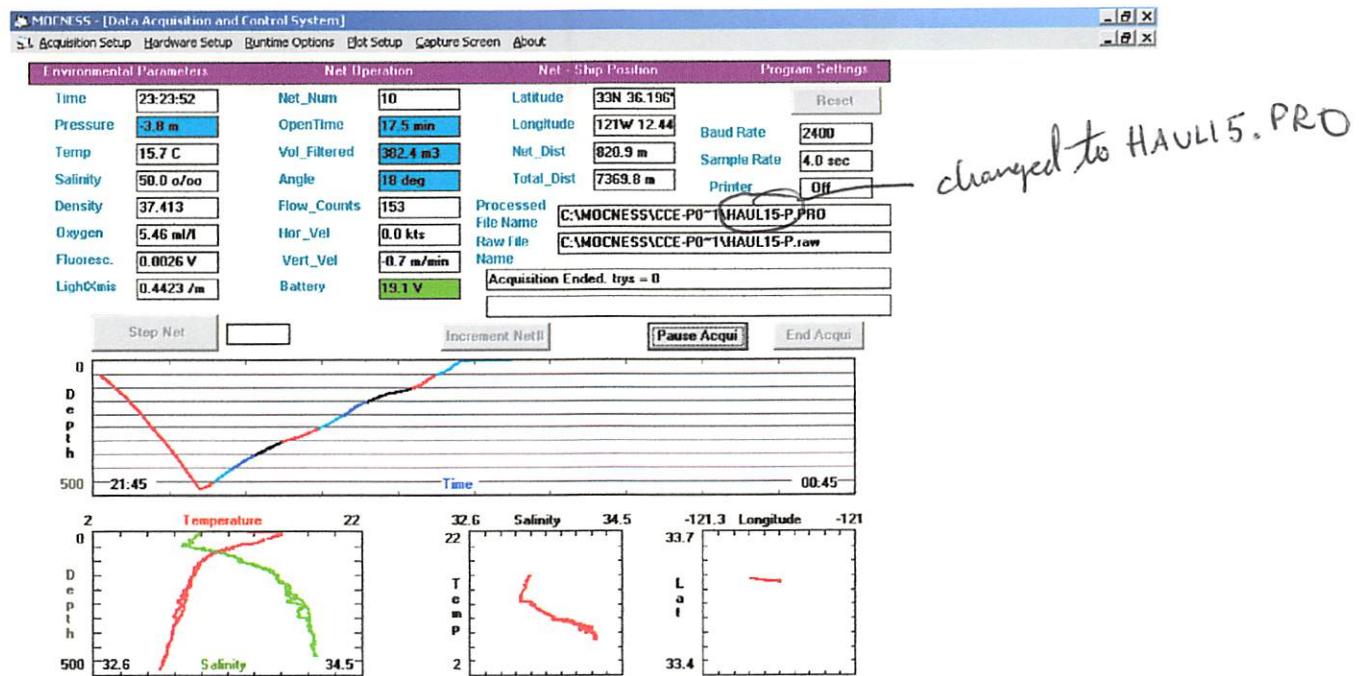
SURFACE	Press.	Temp.	Salinity	O ₂	Fluor.	Trans.	Battery
	3.7	16.08	33.35	5.99	0.5834	0.5575	19.5 V.

NOTES:

unable to query option module - error } prior to launch; had to reboot computer
 " " " U/W unit }

08/06 cc Maw Z: 473 m 827 mwo 15:11

Haul 15



Net #'s began with 1
 on descent
 (i.e., nets "1-10" are actually nets "0-9")
 MDS

Cycle4_Tow1_Haul15
 19/10/2008
 R/V Melville

HAUL15-P.TAB

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.6	-04.0	-04.2	13.6	17.3	15.1	13.6	17.3	15.1	00.01	50.00	41.51
1	-04.6	475.1	177.2	07.0	16.1	10.7	06.9	16.1	10.7	00.02	50.00	38.03
2	400.5	448.8	423.7	07.1	07.5	07.4	07.1	07.5	07.4	34.15	34.17	34.17
3	350.3	398.5	373.8	07.5	07.9	07.7	07.4	07.9	07.7	34.14	34.17	34.16
4	301.0	349.5	324.5	07.9	08.3	08.0	07.8	08.2	08.0	34.12	34.15	34.13
5	250.5	300.1	278.6	08.0	08.7	08.2	07.9	08.7	08.2	34.05	34.13	34.07
6	200.8	249.4	226.3	08.3	08.8	08.6	08.2	08.8	08.5	33.97	34.07	34.00
7	151.3	199.6	172.1	08.9	09.4	09.2	08.9	09.3	09.1	33.89	33.99	33.93
8	100.8	150.3	122.2	09.4	10.0	09.6	09.3	09.9	09.6	33.64	33.90	33.79
9	50.3	100.4	77.7	10.0	12.5	10.9	10.0	12.5	10.9	33.30	33.64	33.53
9												
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.86	37.93	31.02	-00.02	32.40	01.05	00.00	00.59	00.02	05.2	07.9	05.9
1	-00.69	37.97	29.12	-00.02	01.87	00.08	00.00	02.80	00.08	05.6	07.9	06.4
2	26.69	26.74	26.71	00.06	00.06	00.06	00.03	00.03	00.03	06.9	07.0	06.9
3	26.62	26.69	26.66	00.06	00.08	00.06	00.03	00.03	00.03	06.8	06.9	06.8
4	26.56	26.62	26.59	00.06	00.10	00.07	00.03	00.03	00.03	06.7	06.8	06.7
5	26.46	26.55	26.51	00.06	00.07	00.07	00.03	00.07	00.03	06.6	06.8	06.7
6	26.35	26.46	26.40	00.06	00.11	00.07	00.03	00.04	00.03	06.6	06.8	06.7
7	26.20	26.34	26.26	00.07	00.08	00.07	00.03	00.08	00.03	06.6	06.7	06.6
8	25.90	26.20	26.07	00.07	00.09	00.08	00.03	00.05	00.03	06.5	06.7	06.6
9	25.18	25.90	25.65	00.07	00.13	00.09	00.03	00.15	00.06	06.4	06.7	06.6
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	18.0	19.0	18.9	00.0	00.6	00.1	-00.8	08.3	01.5	00043	00014	
1	18.0	89.0	51.2	00.0	06.8	00.9	-24.0	12.9	-11.1	00617	01069	
2	49.0	57.0	52.3	01.4	02.0	01.8	09.0	15.8	11.4	00065	00173	
3	47.0	53.0	49.9	01.7	02.0	01.9	07.9	11.6	09.4	00079	00242	
4	44.0	51.0	46.8	01.7	02.3	02.1	05.6	10.0	07.8	00096	00350	
5	43.0	46.0	44.3	02.0	02.3	02.1	02.9	08.7	05.8	00128	00521	
6	42.0	45.0	43.4	02.3	02.6	02.4	05.6	10.7	08.2	00089	00395	
7	39.0	43.0	40.6	02.3	02.8	02.6	05.8	12.2	09.3	00080	00404	
8	40.0	48.0	42.8	01.7	02.6	02.2	01.7	07.8	04.7	00160	00690	
9	47.0	52.0	49.5	01.7	02.3	02.0	02.9	12.4	08.8	00085	00268	

Tow: Cycle4_Tow1_Haul15 R/V Melville"
" Date: 19/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 430872"
" Transmissometer # 490 Fluorometer # 229"
"293.895069"
"##MO- 4 +0.0022 +4.7028 +3.0012 +0.0002 "
"\$GPGGA,212819,3336.3066,N,12108.4288,W,2,7,0.4,40,"
"##MN-00 00 19 0000 01836 3984 633986 865393 196"
"293.895116"
"##MO- 4 +0.0026 +4.7032 +3.0020 +0.0002 "
"\$GPGGA,212825,3336.2962,N,12108.4122,W,2,7,0.4,41,"
"##MN-00 00 19 0000 01835 3985 645867 865393 196"
"293.895162"
"##MO- 4 +0.0026 +4.7028 +3.0014 +0.0002 "
"\$GPGGA,212829,3336.2890,N,12108.4005,W,2,7,0.4,42,"
"##MN-00 00 19 0000 01838 3986 646622 865392 196"
"293.895208"
"##MO- 4 +0.0024 +4.7030 +3.0004 +0.0000 "
"\$GPGGA,212833,3336.2814,N,12108.3891,W,2,6,0.6,42,"
"##MN-00 00 19 0000 01837 3986 647636 865393 196"
"293.895255"
"##MO- 4 +0.0022 +4.7030 +3.0020 +0.0000 "
"\$GPGGA,212837,3336.2748,N,12108.3780,W,2,7,0.4,42,"
"##MN-00 00 19 0000 01838 3987 647256 865392 196"
"293.895301"
"##MO- 4 +0.0022 +4.7030 +3.0024 +0.0000 "
"\$GPGGA,212841,3336.2672,N,12108.3665,W,2,6,0.4,42,"
"##MN-00 00 19 0000 01839 3988 646399 865393 196"
"293.895347"
"##MO- 4 +0.0024 +4.7032 +3.0010 +0.0000 "
"\$GPGGA,212845,3336.2600,N,12108.3549,W,2,7,0.6,42,"
"##MN-00 00 19 0000 01839 3989 645306 865393 196"
"293.895394"
"##MO- 4 +0.0024 +4.7032 +3.0026 +0.0002 "
"\$GPGGA,212849,3336.2527,N,12108.3434,W,2,6,0.4,42,"
"##MN-00 00 19 0000 01837 3990 645211 865393 196"
"293.89544"
"##MO- 4 +0.0026 +4.7032 +3.0010 +0.0002 "
"\$GPGGA,212853,3336.2471,N,12108.3349,W,2,7,0.4,42,"
"##MN-00 00 19 0000 01836 3990 644665 865392 196"
"293.895486"
"##MO- 4 +0.0026 +4.7032 +3.0024 +0.0002 "
"\$GPGGA,212857,3336.2397,N,12108.3236,W,2,6,0.6,42,"
"##MN-00 00 19 0000 01836 3991 643596 865392 196"
"293.895532"

MOCNESS Data Sheet

HAUL # 16Cruise CCE-POSIDDate 20 Oct. 2008 CYCLE # 4 TOW # 2Wind Speed 21 kts. Direction 330° Sea State 4-6'Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
Clean optical Surfaces: Transmissometer: Fluorometer: File Name: Processed HAUL16.PRO

Raw _____

bottom Z = Start Time 00:50 End Time 02:11 GMT / Local PDTLat 33°35.6' 33.5911Lat 33.5919Long 121°08.6' 121.1482Long 121.1949Event #: 519 (00:50)Event #: 520 (02:11)Net Mesh 202 μm Frame Size 1 m²Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Grid End Number	Sample Jar Number	Fixative
0+	00:50		995 m ³	1043	469	0		95% Ethoh
1	00:57		175	183	448	400		5% Form.
2	01:21		205	215	400	349		
3	01:26		292	306	349	300		
4	01:31		385	403	300	250		
5	01:37		324	340	250	199		
6	01:43		434	455	199	148		
7	01:50		210	218	148	100		
8	01:53		358	376	100	49		
9	01:59		182	191	49	0		
Closed	02:11							

Corr. 8 Mar. 09
MDRSURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery
~2.2 15.9 b 33.34 6.03 0.6524 0.5404 19.2 V

NOTES: Late launching because of earlier acoustic prob problem.

unable to query option module at launch

" " " " " " "

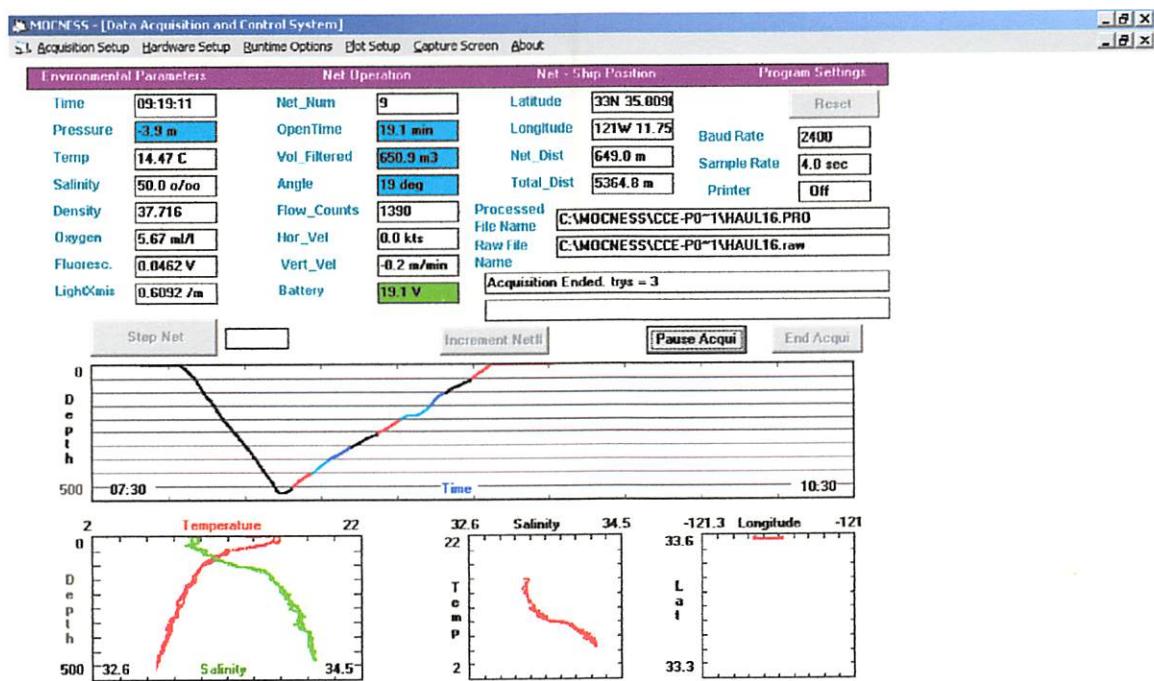
08/06 cc Max Z: 469 m. Time: 01:16 MWD: 860 mwd

N.B. All nets except Net 0 were twisted together upon recovery.

Apparently the twist occurred when nets were first at the surface.

Animals were often squashed upon picking, per Baptiste.

Haul 16



HAUL16.TAB

Cycle4_Tow2_Haul16
 20/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-03.9	472.5	195.7	06.6	16.0	10.2	06.5	16.0	10.2	01.10	50.00	37.14
1	401.2	447.7	421.4	06.7	07.0	06.9	06.6	07.0	06.8	34.15	34.18	34.17
2	350.2	399.8	374.9	07.0	07.5	07.3	07.0	07.4	07.2	34.13	34.16	34.14
3	301.0	348.3	325.7	07.4	07.8	07.6	07.4	07.8	07.6	34.06	34.14	34.11
4	251.5	299.6	275.0	07.7	08.4	08.1	07.7	08.3	08.0	34.05	34.09	34.07
5	200.0	249.9	227.5	08.3	08.8	08.4	08.2	08.8	08.4	33.97	34.06	34.01
6	148.9	199.2	179.0	08.7	09.4	09.0	08.7	09.4	08.9	33.88	33.98	33.94
7	101.4	146.2	118.5	09.4	10.1	09.8	09.4	10.1	09.8	33.64	33.88	33.79
8	50.0	100.4	74.4	10.1	11.9	10.9	10.1	11.9	10.9	33.37	33.62	33.48
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.04	37.89	28.52	00.00	08.56	00.14	00.00	01.13	00.10	04.4	07.6	06.5
1	26.75	26.82	26.78	00.06	00.07	00.06	00.03	00.04	00.03	07.0	07.1	07.0
2	26.68	26.75	26.71	00.06	00.08	00.07	00.03	00.09	00.03	06.9	07.0	06.9
3	26.59	26.67	26.64	00.06	00.09	00.07	00.03	00.56	00.04	06.8	06.9	06.8
4	26.48	26.59	26.54	00.06	00.11	00.07	00.03	00.06	00.03	06.7	06.8	06.7
5	26.37	26.48	26.43	00.07	00.12	00.07	00.03	00.16	00.03	06.6	06.8	06.7
6	26.18	26.37	26.30	00.07	00.11	00.08	00.03	00.06	00.03	06.6	06.7	06.7
7	25.87	26.18	26.04	00.08	00.10	00.09	00.03	00.05	00.04	06.5	06.6	06.5
8	25.34	25.86	25.61	00.08	00.14	00.10	00.03	00.21	00.07	06.5	06.7	06.6
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	30.0	89.0	58.1	00.0	08.8	01.4	-28.9	14.9	-13.1	00518	01043	
1	48.0	54.0	50.5	01.7	02.3	01.9	06.9	17.4	11.8	00063	00183	
2	44.0	50.0	47.4	01.7	02.3	02.2	07.5	14.7	12.1	00062	00215	
3	43.0	46.0	45.0	02.0	02.3	02.2	04.4	11.2	09.3	00078	00306	
4	42.0	45.0	43.5	02.3	02.6	02.3	04.4	12.0	07.8	00094	00403	
5	41.0	45.0	43.6	02.3	02.6	02.4	06.4	13.2	09.6	00078	00340	
6	41.0	47.0	43.7	02.0	02.6	02.3	-01.4	15.9	06.9	00107	00455	
7	41.0	46.0	43.0	02.3	02.8	02.5	06.2	22.1	14.7	00050	00220	
8	43.0	51.0	45.6	02.0	02.6	02.2	04.9	11.7	07.9	00095	00376	

MOCNESS Data Sheet
HAUL # 17

Cruise CCE - PO81D Date 22 Oct 2008 CYCLE # 5 TOW # 1

Wind Speed 2 kts. Direction 169° Sea State 1-2' clear sky, sunny

Pre-deployment checks: Flow Meter: ✓ Net Response: ✓ Stepping Motor: ✓
Clean Optical Surfaces: ✓ Transmissometer: ✓ Fluorometer: ✓

File Name: Processed HAUL17.PRO Raw _____

Start Time 14:14 End Time 15:43 ~~GMT~~ / Local PDT

Lat 32° 50.5' 32.8410

Lat 32.8561

Long 120° 53.8' 120.8959

Long 120.9384

Event #: 593 (14:11)

Event #: 594 (15:44)

Net Mesh 202 µm Frame Size 1 m² Console Operator Olman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	Max Z	Min. Z	Cod End Number	Sample Jar Number	Fixative
0+	14:14		✓ 289	3 m 303	483	0				95% Etch
✓	14:43		116	122	450	349				5% Form
✓	14:52		128	135	349	299				
3	14:57		290	304	299	250				
✓	15:06		161	169	250	199				
✓	15:12		200	209	199	150				
✓	15:19		144	151	150	99				
✓	15:25		259	271	99	50				
✓	15:32		160	167	50	25				
✓	15:36		286	300	25	0				
Closed	15:43									

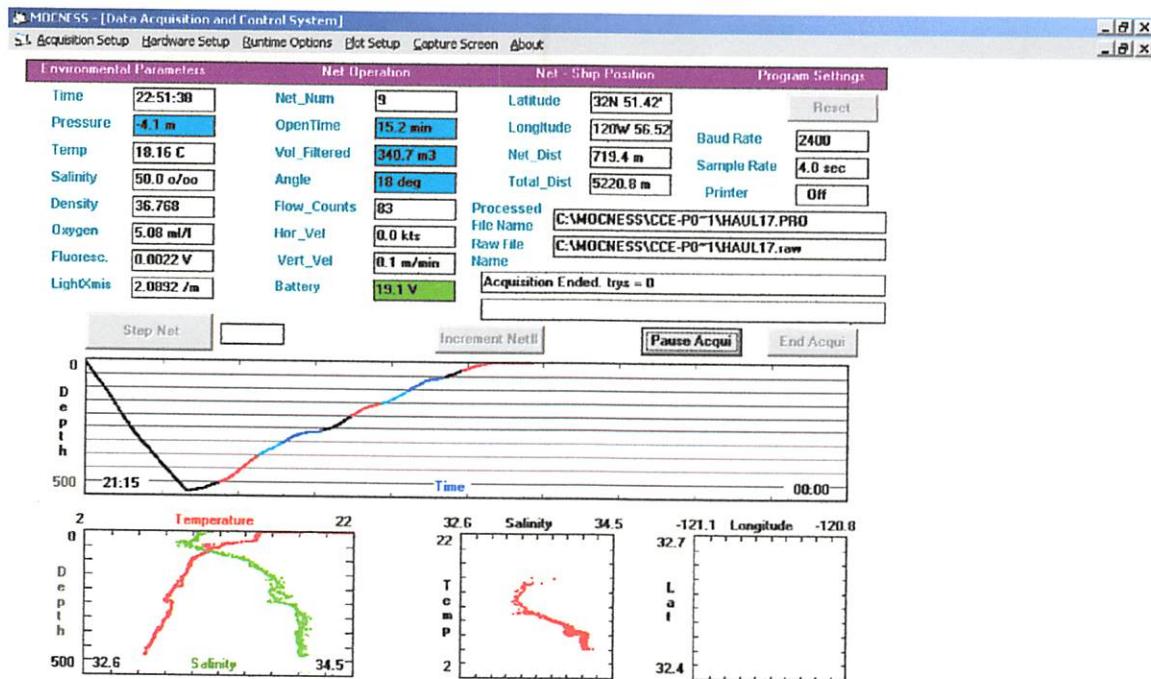
Corr. 8 Mar. 09
MDO

SURFACE Pressure Temp. Salinity O₂ Fluor. Trans. Battery
406 m. 6.84 34.12 7.02 0.0302 0.0623 19.3 v.

NOTES: steep descent.

08/06 cc Max W₀ 562 m. 483 m. 14:36

HAUL 17



HAUL17.TAB

Cycle5_Tow1_Haul17
 21/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-06.0	483.4	199.7	06.1	22.4	10.5	06.0	22.4	10.5	00.02	50.00	34.53
1	-04.3	450.3	396.4	06.4	20.2	06.8	06.4	20.2	06.8	00.01	50.00	33.47
2	300.1	348.5	324.0	07.5	08.1	07.8	07.4	08.1	07.8	34.10	34.14	34.12
3	250.9	298.9	269.4	08.1	08.5	08.4	08.1	08.5	08.4	34.10	34.12	34.10
4	200.2	250.5	229.6	07.9	08.6	08.3	07.9	08.6	08.3	33.91	34.11	33.97
5	151.9	198.8	171.4	08.6	09.5	09.3	08.6	09.4	09.2	33.91	34.01	33.96
6	100.8	151.1	128.9	09.5	09.9	09.7	09.4	09.9	09.7	33.77	33.91	33.85
7	50.2	99.3	69.7	10.0	12.0	11.0	09.9	12.0	11.0	33.38	33.77	33.52
8	25.8	49.3	37.4	12.1	14.7	13.2	12.1	14.7	13.2	33.27	33.40	33.35
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.82	37.13	26.16	00.00	04.68	00.09	00.00	01.20	00.06	03.5	07.3	05.7
1	-01.82	36.22	26.22	00.06	00.11	00.06	00.00	00.03	00.03	04.8	07.1	06.9
2	26.56	26.65	26.61	00.06	00.08	00.07	00.03	00.03	00.03	06.7	06.9	06.8
3	26.50	26.56	26.52	00.07	00.08	00.07	00.03	00.03	00.03	06.6	06.7	06.7
4	26.34	26.50	26.43	00.06	00.11	00.07	00.03	00.03	00.03	06.6	06.9	06.8
5	26.20	26.34	26.27	00.07	00.08	00.08	00.03	00.03	00.03	06.5	06.8	06.6
6	26.00	26.19	26.11	00.07	00.08	00.08	00.03	00.03	00.03	06.5	06.6	06.5
7	25.34	26.00	25.62	00.08	00.11	00.09	00.03	00.16	00.07	06.5	06.6	06.5
8	24.80	25.30	25.07	00.10	00.36	00.19	00.10	00.79	00.32	06.2	06.5	06.3
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	16.0	89.0	57.4	00.0	01.1	00.3	-29.6	11.2	-10.2	00669	00303	
1	18.0	74.0	66.2	00.0	01.4	01.1	-00.6	16.6	11.4	00130	00121	
2	54.0	65.0	60.3	01.1	01.7	01.4	07.1	12.9	09.4	00080	00135	
3	48.0	59.0	54.5	01.1	01.7	01.5	-01.4	12.2	05.7	00130	00304	
4	52.0	61.0	57.3	01.1	01.7	01.5	03.1	13.4	08.6	00086	00169	
5	51.0	58.0	56.1	01.4	01.7	01.5	03.7	11.6	07.5	00098	00209	
6	54.0	63.0	59.7	01.1	01.4	01.4	03.9	13.0	08.4	00088	00151	
7	48.0	63.0	54.3	01.1	02.0	01.6	00.8	12.0	06.7	00114	00271	
8	46.0	54.0	50.0	01.7	02.0	01.8	04.7	08.6	06.5	00055	00167	

MOCNESS Data Sheet

HAUL # 18

Cruise CCE-PO810 Date 22 Oct 2008 CYCLE # 5 TOW # 2

Wind Speed 5 kts. Direction 338° Sea State 1-3'

Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
 Clean optical Surfaces: Transmissometer: Fluorometer:
 File Name: Processed HAUL18.PRO Raw

Start Time 23:14 End Time 00:52 GMT/Local PDT

Lat 32° 49.8' 32.8299

Lat 32.8209

Long 120° 49.6' 120.8253

Long 120.8725

Event #: 609 (23:11) Event #: 610 (00:54)

Net Mesh 202 µm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Wire Out	End Number	Sample Jar Number	Fixative
0	23:14		510 m ³	535	480	0		95% Etch
1	23:44		63	66	450	349		5% Form
2	23:51		84	88	349	299		
3	23:57		156	163	299	251		
4	00:05		115	120	251	200		
5	00:10		251	263	200	151		
6	00:17		470	493	151	100		
7	00:30		107	112	100	49		
8	00:37		145	152	49	26		
9	00:42		147	154	26	0		
Closed	00:52							

Corr. 8 May 09
MDR

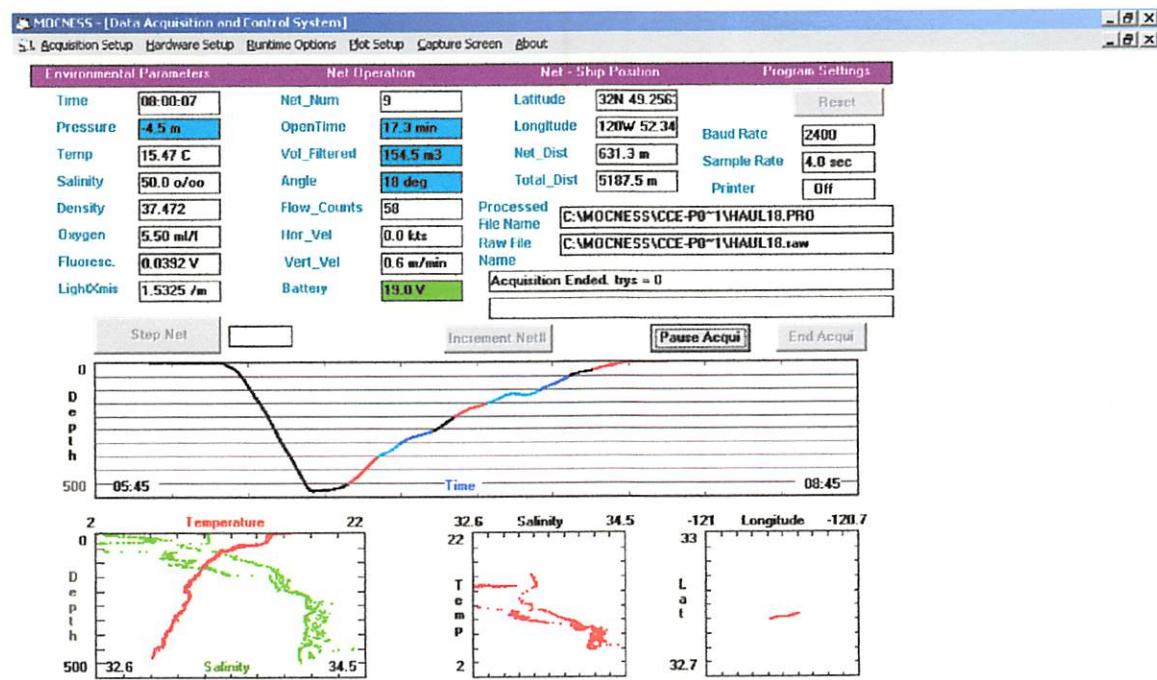
SURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery
 -1.4 15.24 33.39 6.17 0.7376 0.3892 19.1 V.

NOTES: Went down @ steep angle

Surface sample was extremely rich! (diatoms, euphausiids,
copepods, ctenophores)

08/06 cc Bottom: 506 mwo 23:36 480 m.

HAUL 18



HAUL18.TAB

Cycle5_Tow2_Haul18
 22/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-04.4	476.9	182.0	05.9	50.0	10.1	05.8	50.0	10.0	00.01	50.00	35.06
1	-03.9	448.9	380.2	06.1	16.2	06.3	06.0	16.2	06.3	34.04	50.00	32.69
2	299.3	348.5	326.2	07.1	07.8	07.5	07.1	07.7	07.5	34.07	34.10	34.09
3	251.8	298.5	272.2	07.7	08.6	08.2	07.7	08.6	08.2	34.08	34.15	34.11
4	200.2	250.8	225.7	08.6	09.0	08.8	08.6	09.0	08.8	33.97	34.11	34.08
5	151.2	198.7	172.3	08.5	09.3	09.0	08.5	09.3	09.0	33.83	33.96	33.87
6	100.8	150.2	122.5	09.4	10.3	09.8	09.4	10.3	09.8	33.11	33.84	33.42
7	49.8	100.0	76.4	10.3	12.3	10.9	10.3	12.3	10.9	32.36	33.30	33.06
8	26.0	48.7	35.1	12.5	14.7	14.0	12.5	14.7	14.0	32.00	33.00	32.44
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.08	37.38	26.78	00.00	14.78	00.32	00.00	00.98	00.10	01.7	07.3	06.0
1	26.67	37.29	25.65	00.06	00.92	00.07	00.03	00.05	00.03	05.4	07.3	06.8
2	26.60	26.68	26.64	00.06	00.10	00.06	00.03	00.07	00.03	06.8	07.0	06.9
3	26.48	26.59	26.55	00.06	00.08	00.07	00.03	00.03	00.03	06.6	06.8	06.7
4	26.37	26.48	26.43	00.06	00.07	00.07	00.03	00.03	00.03	06.5	06.7	06.6
5	26.15	26.37	26.24	00.06	00.07	00.07	00.03	00.03	00.03	06.7	06.8	06.7
6	25.44	26.15	25.75	00.07	00.08	00.08	00.03	00.05	00.03	06.5	06.6	06.5
7	24.49	25.57	25.27	00.08	00.11	00.09	00.04	00.13	00.07	06.4	06.7	06.5
8	23.88	24.51	24.20	00.12	00.36	00.24	00.13	00.86	00.42	06.2	06.5	06.3
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	17.0	89.0	58.0	00.0	01.7	00.4	-33.8	10.4	-10.0	00687	00535	
1	18.0	78.0	67.2	00.0	01.4	01.0	-00.4	18.2	13.2	00112	00066	
2	60.0	69.0	65.2	00.9	01.4	01.2	04.0	15.5	09.5	00079	00088	
3	58.0	66.0	62.9	00.9	01.4	01.2	02.1	12.6	06.2	00117	00163	
4	54.0	65.0	59.9	01.1	01.7	01.4	06.0	13.4	10.2	00074	00120	
5	50.0	58.0	53.7	01.4	01.7	01.6	02.3	10.5	06.8	00109	00263	
6	46.0	65.0	53.0	01.1	02.0	01.6	-04.8	09.3	03.9	00191	00493	
7	61.0	71.0	66.2	00.9	01.4	01.1	04.3	11.5	07.6	00100	00113	
8	56.0	63.0	59.3	01.1	01.4	01.3	01.4	09.5	04.3	00085	00152	

MOCNESS Data Sheet

HAUL # 19Cruise CCE - PO81D Date 25-26 Oct 2008 CYCLE # 6 TOW # 1Wind Speed 12 kts. Direction 321° Sea State 2-4'Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
Clean optical Surfaces: Transmissometer: Fluorometer:

File Name: Processed Raw

Start Time 23:11 End Time 00:41 ~~GMT~~ / Local PDTLat 32° 35.4' 32.5901Lat 32.5824Long 120° 33.0' 120.5499Long 120.5855Event #: 723 (23:08)Event #: 724 (00:44)Net Mesh 202 μm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Max Z	Min. Z	Sample Jar Number	Fixative
0+	23:11		637 \downarrow m ³	667	480	0		95% Etch
1	23:39		271	281	450	349		5% Form
2	23:52		162	170	349	301		
3	00:00		120	126	301	251		
4	00:06		118	124	251	200		
5	00:12		154	161	200	151		
6	00:20		138	141	151	100		
7	00:25		221	232	100	50		
8	00:34		84	88	50	25		
9	00:37		124	129	25	0		
Closed	00:41							

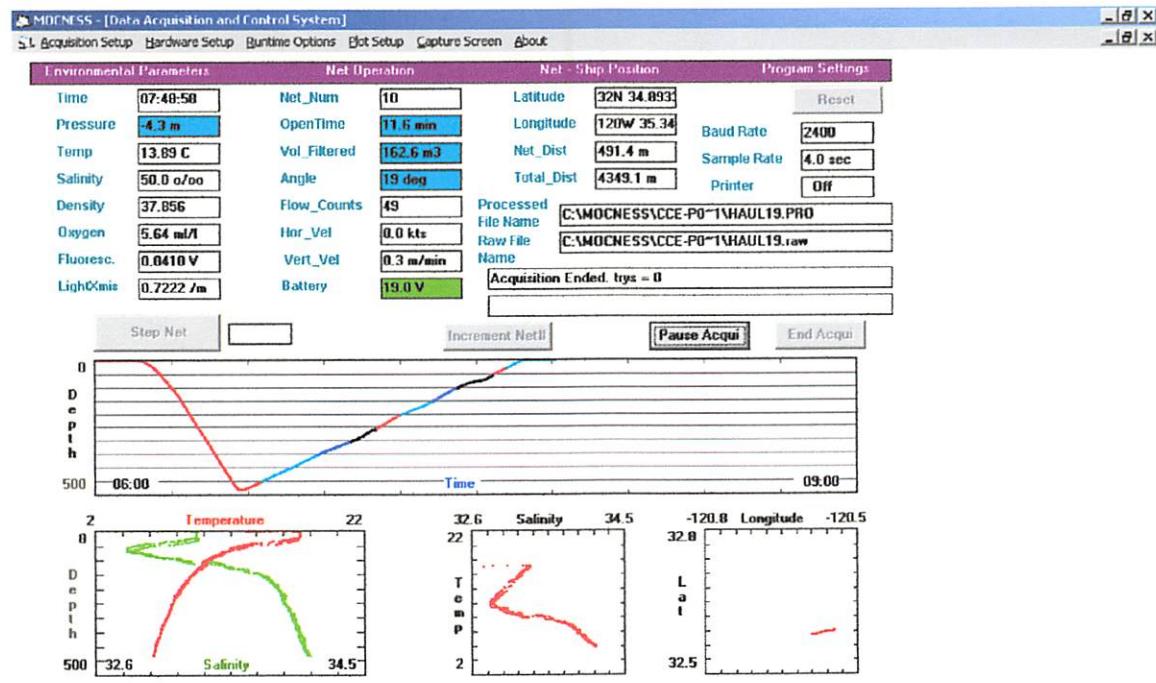
(Net # was left at "1" for net 0 after deck test, so each net is reported in file as 1 integer too high.)
*Corr. 8 May. 09*SURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery
1.0 17.22 33.31 5.73 0.1238 0.1475 19.3V

NOTES:

08/06 cc

Max: 480 m. 610 mwo 21:34

HAUL 19



HAUL19.TAB

Cycle6_Tow1_Haul19
25/10/2008
R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-05.1	-03.5	-04.1	14.1	15.0	14.3	14.1	15.0	14.3	00.01	50.00	40.61
1	-04.1	480.5	182.7	06.0	17.2	10.6	06.0	17.2	10.6	00.09	50.00	37.83
2	351.6	449.6	400.5	06.2	06.8	06.5	06.1	06.8	06.4	34.04	34.12	34.08
3	301.2	350.0	325.3	06.8	07.3	07.0	06.8	07.2	07.0	33.99	34.04	34.02
4	251.7	300.9	276.5	07.3	07.6	07.5	07.2	07.6	07.4	33.94	33.99	33.97
5	201.2	250.3	226.2	07.7	08.2	07.9	07.6	08.2	07.9	33.90	33.94	33.92
6	151.1	200.8	176.8	08.2	09.1	08.6	08.2	09.1	08.6	33.78	33.90	33.85
7	100.2	150.2	123.9	09.1	10.4	09.8	09.1	10.4	09.7	33.26	33.78	33.58
8	50.0	98.9	76.5	10.0	12.5	11.2	10.0	12.5	11.2	32.82	33.24	32.97
9	25.4	48.0	37.3	12.7	16.6	14.5	12.6	16.6	14.5	32.87	33.24	33.03
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.78	37.80	30.53	-00.12	31.87	00.96	00.00	04.89	00.14	05.6	07.8	06.1
1	-00.72	38.02	28.97	-00.11	17.93	00.14	00.02	00.53	00.06	05.7	07.8	06.5
2	26.70	26.84	26.77	00.06	00.07	00.06	00.03	00.05	00.03	07.1	07.2	07.1
3	26.59	26.69	26.65	00.06	00.09	00.06	00.03	00.04	00.03	07.0	07.1	07.0
4	26.50	26.59	26.55	00.06	00.07	00.06	00.03	00.04	00.03	06.9	07.0	07.0
5	26.38	26.50	26.44	00.06	00.07	00.06	00.03	00.06	00.03	06.9	07.0	07.0
6	26.15	26.38	26.28	00.06	00.08	00.06	00.03	00.04	00.03	06.7	07.0	06.9
7	25.59	26.15	25.89	00.07	00.08	00.07	00.03	00.04	00.03	06.7	06.9	06.8
8	24.82	25.58	25.17	00.07	00.09	00.08	00.03	00.18	00.09	06.6	06.9	06.8
9	24.26	24.81	24.56	00.09	00.20	00.14	00.15	00.58	00.37	05.9	06.6	06.2
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
0	18.0	19.0	18.5	00.0	00.3	00.0	-01.5	09.6	01.1	00051	00007	
1	18.0	89.0	55.3	00.0	04.0	00.6	-28.0	10.4	-11.3	00605	00667	
2	52.0	69.0	61.9	01.1	01.4	01.2	03.4	11.4	07.6	00196	00284	
3	55.0	68.0	62.1	01.1	01.4	01.2	03.8	10.6	06.5	00115	00169	
4	55.0	68.0	62.9	01.1	01.4	01.2	03.7	13.2	07.9	00093	00126	
5	57.0	66.0	62.1	01.1	01.4	01.3	05.0	11.7	08.8	00085	00124	
6	58.0	67.0	63.2	01.1	01.4	01.2	04.3	09.5	06.5	00112	00161	
7	55.0	65.0	60.5	01.1	01.7	01.4	05.7	11.5	08.9	00086	00144	
8	54.0	66.0	59.1	01.1	01.7	01.4	00.0	11.9	05.8	00128	00232	
9	55.0	61.0	57.8	01.4	01.7	01.5	06.3	10.9	08.3	00044	00088	

Tow: Cycle6_Tow1_Haul19 R/V Melville"
" Date: 25/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 430872"
" Transmissometer # 490 Fluorometer # 229"
"300.246817"
"##MO- 4 +0.0002 -0.0616 +3.5188 +0.0002 "
"\$GPGGA,055433,3235.4644,N,12032.6507,W,2,8,0.4,35,"
"##MN-00 00 19 0000 01805 2736 664001 865401 195"
"300.246863"
"##MO- 4 +0.0500 +3.8620 +3.0042 +0.0000 "
"\$GPGGA,055439,3235.4640,N,12032.6533,W,2,8,0.4,35,"
"##MN-00 00 18 0000 01805 2738 673223 865370 195"
"300.24691"
"##MO- 4 +0.0500 +3.7590 +3.0048 +0.0002 "
"\$GPGGA,055443,3235.4641,N,12032.6553,W,2,8,0.4,35,"
"##MN-00 00 19 0000 01805 2740 673099 865370 195"
"300.246956"
"##MO- 4 +0.0504 +3.7712 +3.0040 +0.0002 "
"\$GPGGA,055447,3235.4630,N,12032.6571,W,2,8,0.4,35,"
"##MN-00 00 19 0000 01808 2742 673006 865370 195"
"300.247002"
"##MO- 4 +0.0498 +3.7710 +3.0050 +0.0004 "
"\$GPGGA,055451,3235.4630,N,12032.6587,W,2,8,0.4,35,"
"##MN-00 00 18 0000 01808 2744 672861 865370 195"
"300.247049"
"##MO- 4 +0.0510 +3.7700 +3.0046 +0.0002 "
"\$GPGGA,055455,3235.4630,N,12032.6608,W,2,8,0.4,35,"
"##MN-00 00 19 0000 01811 2744 672680 865370 195"
"300.247095"

MOCNESS Data Sheet

HAUL # 20

Cruise CCE - P0810

Date 26 Oct 2008

CYCLE # 6

TOW # 2

Wind Speed 13 kts.

Direction 350°

Sea State 2-3'

Pre-deployment checks: Flow Meter: ✓ Net Response: ✓ Stepping Motor: ✓

Clean Optical Surfaces: ✓ Transmissometer: ✓ Fluorometer: ✓

File Name: Processed HAUL20.PRO

Raw

14:57

Start Time 32° 33.447'

End Time _____ GMT / Local PDT

Lat 120° 25.38'

Lat _____

Long _____

Long _____

Event #: 748 (21:56)

Event #: _____

Net Mesh 202 µm Frame Size 1 m²

Console Operator Ohman

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered	Max Z	Min Z	Sample Jar Number	Fixative
0	14:57		278 m ³	292	482	0		
1	15:23		201	211	450	351		
2	15:36 (est.)		277	953 reported reported 910	351	301	Software dropped port on ascent w/ unit unable to query v/w unit	
3 (1)	15:50		131	137	301	250		
4 (2)	15:58		122	128	250	200		
5 (3)	16:06		104	109	200	150		
6 (4)	16:13		98	102	150	99		
7 (5)	16:20 (est.)		217	183 + 1746 reported reported	99	49		
8 (1)	16:31		74	78	49	25	Software drop out unable to query v/w unit	
9 (2)	16:34		110		25	0		
Closed								

Error On ascent: unable to query v/w unit,

Corr. & Min. 0.09 est. from average rate of filtration, gap interval, + recorded Δ volume filtered outside gaps

SURFACE Press. Temp. MDO Salinity O₂ Fluor. Trans. Battery

1.5 17.2 33.32 5.71 0.0896 0.1489 19.2

NOTES: 1540 - lost rooms from MOCNESS - unable to query v/w unit

② 319m - 1544 - re-instated; New file HAUL20.B.PRO

1545 - stopped mouth; closed software

① Deepst pt, Net 0: 22:17 584 mwo 482 m.

08/06 cc

③ 305m. - 1549 - Re-started software

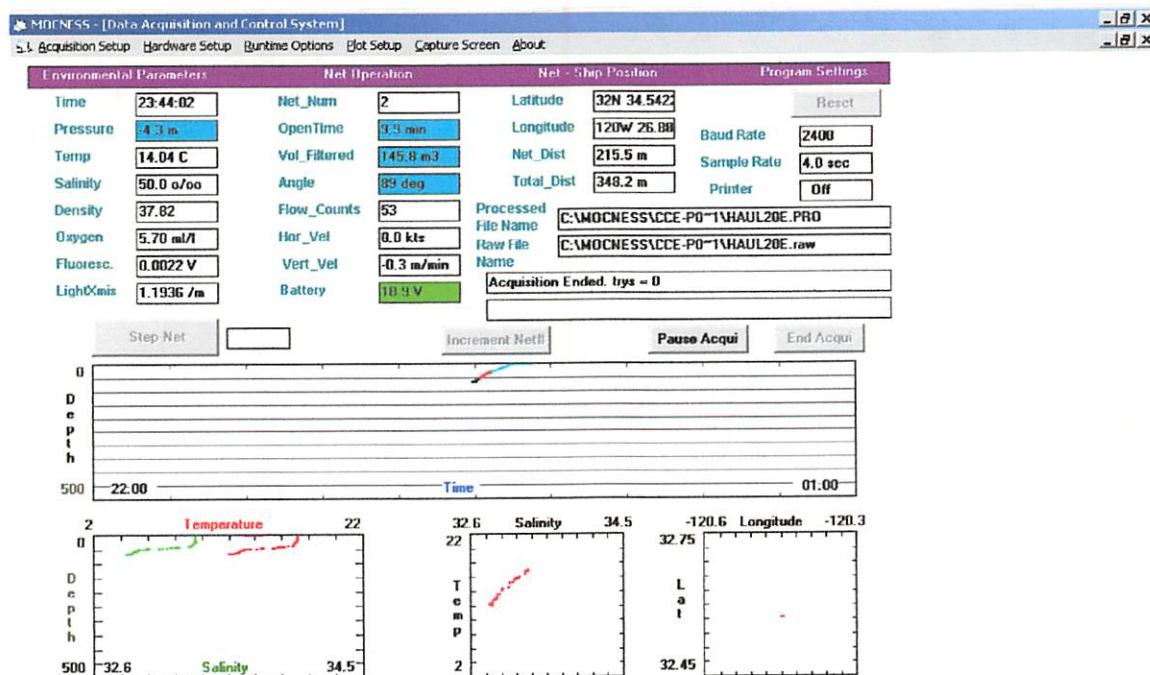
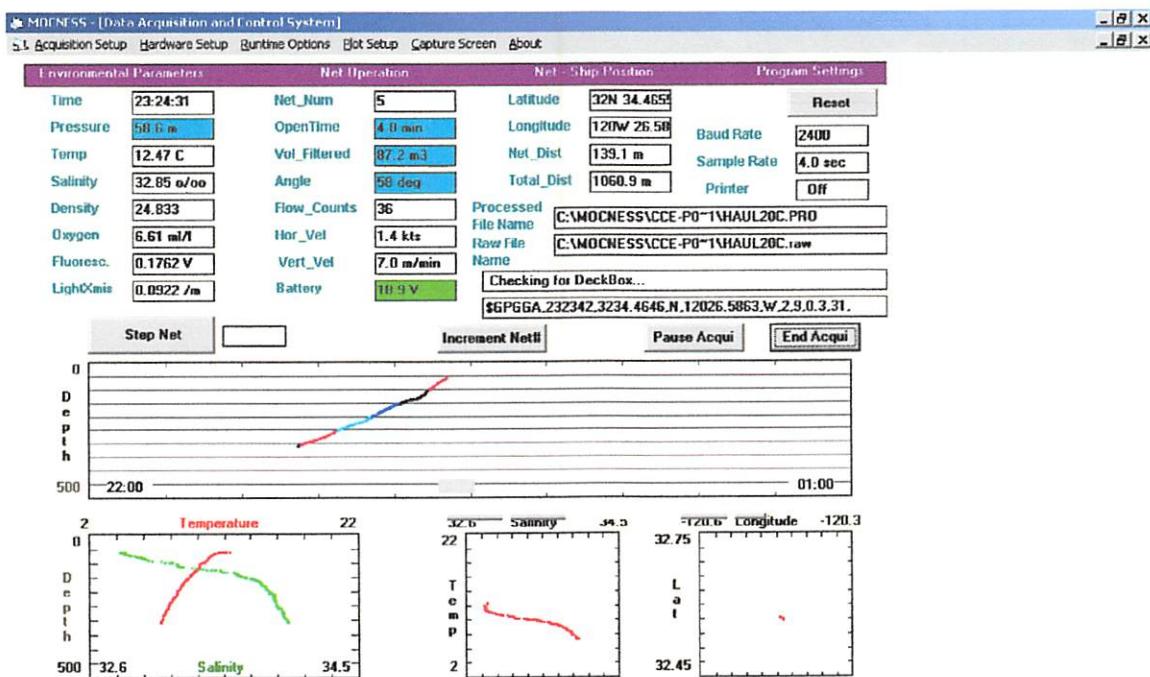
216.23 58.6 62.24m. - re-start

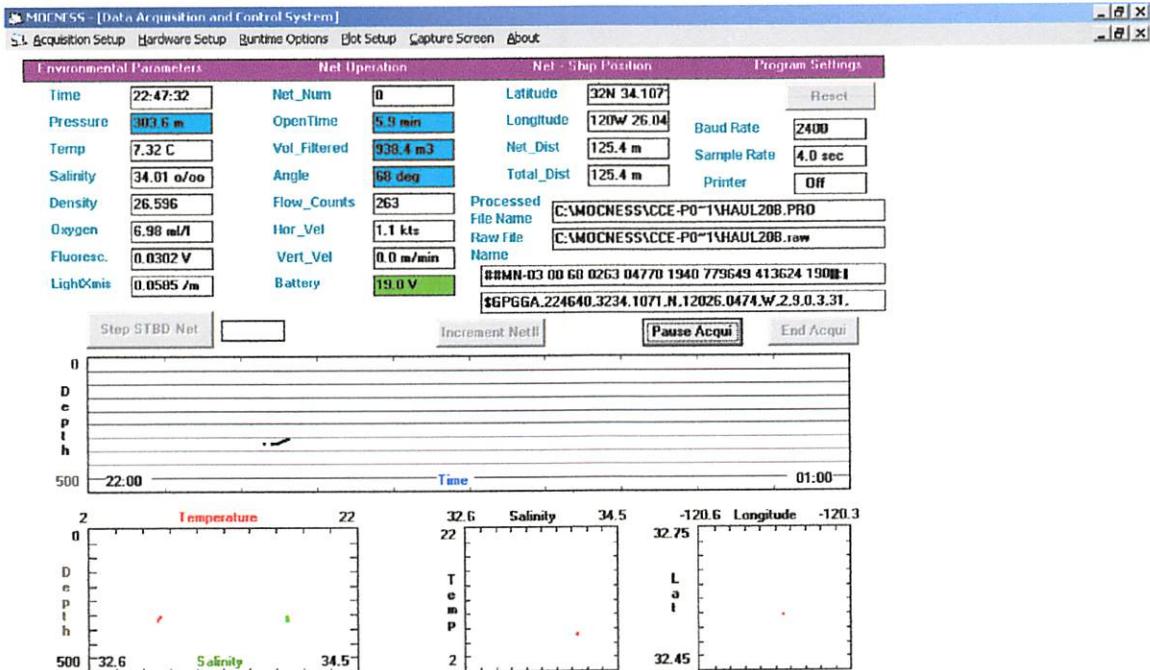
HAUL20.C.PRO

Lost recording from 1540 to 1549 = 9 min.
out of 14 min.

HAUL20.D.PRO thru HAUL20.E.PRO

Dropped from 58.6 m bale to 62.2 m.
while stopped.





HAUL20E.TAB

Cycle6_Tow2_Haul20
 26/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	50.4	62.5	58.0	12.0	13.1	12.6	12.0	13.1	12.6	32.83	32.90	32.87
1	25.3	49.1	36.7	13.1	17.0	15.9	13.1	17.0	15.9	32.91	33.31	33.18
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	24.75	24.91	24.83	00.09	00.11	00.09	00.13	00.25	00.19	06.5	06.7	06.6
1	24.22	24.75	24.36	00.11	00.19	00.15	00.17	00.58	00.31	05.8	06.5	06.0
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs		vol
0	62.0	67.0	64.8	00.9	161.8	52.5	-99.0	12.5	-26.2	00025		01831
1	55.0	63.0	58.6	01.1	01.7	01.5	06.1	10.9	09.3	00040		00077

MOCNESS Data Sheet

HAUL # 21Cruise CCE - PO810 Date 28 Oct 2008 CYCLE # 6 TOW # 3Wind Speed 17 kts Direction 324° Sea State 2-3'

Pre-deployment checks: Flow Meter: Net Response: Stepping Motor:
 Clean optical Surfaces: Transmissometer: Fluorometer:
 File Name: Processed HAUL21.PRO Raw _____

Start Time 01:30 End Time 03:45 GMT / Local PDT

bottom
1451 m - start Lat 32.4929
1899 m - 02:45 Long 120.1123

Lat 32.4997
Long 120.1697
Event #: 795 (01:28) Event #: 796 (03:46)

Net Mesh 202 μm Frame Size 1 m² Console Operator Ohman

Net Tow Information

Max Z Min. Z

Net	Time Open	Angle	Flow Counts	Volume Filtered			Sample Jar Number	Fixative
0*	01:30		464 m ³	1115	0			95% Etch
* no ack manu.incr.net	02:14		189 * (est. from time [1 min] * flow [min] from 900-200 m [2.1 m/min])	101,899			No ackn. of trip 02:16 - man. net	
v2	02:31		375	393	899	700		
v3	02:47		294	308	700	598		
v4	02:58		202	212	598	500		
v5	03:06		170	178	500	400		
v6	03:12		276	290	400	300		
v7	03:21		252	264	300	199		
v8	03:30		249	261	199	99		
v9	03:38		255	267	99	0		
Closed	03:45							

Corr. 8 May 2009

MWD

SURFACE Press. Temp. Salinity O₂ Fluor. Trans. Battery

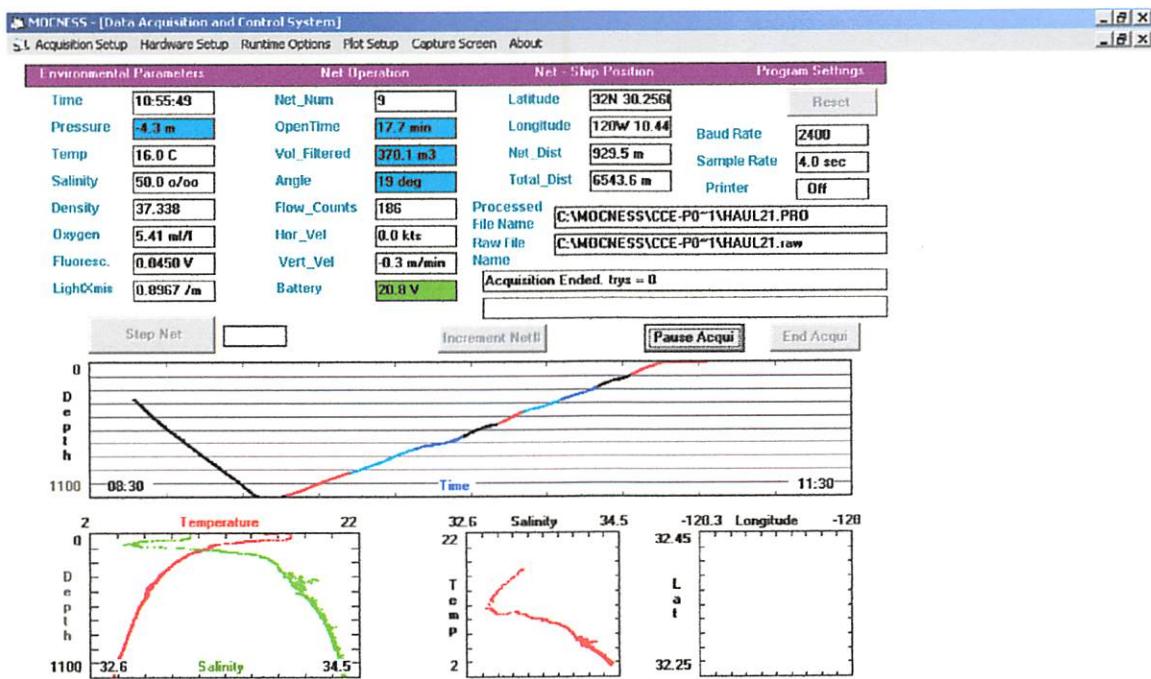
24.8 16.83 33.27 5.80 D.210 Del516 21.6

NOTES: { 02:14 - trip command
02:15 - trip - no ack
02:16 - incremented net manually
After manual increment, no flow meter response

NOTES: 2 - Net response O.K.; flow meter restarted

08/06 cc Zmax: 1115 m mwo: 1532 time: 02:12

HAUL 21



HAUL21.TAB

Cycle6_Tow3_Haul21
 28/10/2008
 R/V Melville

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
1	-04.0	1087.9	976.9	03.7	16.0	04.0	03.6	16.0	03.9	34.35	50.00	33.99
1	-04.0	1087.9	976.9	03.7	16.0	04.0	03.6	16.0	03.9	34.35	50.00	33.99
2	700.4	899.1	802.2	04.3	05.0	04.7	04.3	05.0	04.6	34.27	34.35	34.31
3	599.3	699.6	656.4	05.0	05.5	05.2	05.0	05.4	05.2	34.21	34.27	34.25
4	501.1	596.7	540.1	05.5	05.9	05.7	05.4	05.9	05.7	34.15	34.21	34.18
5	400.3	500.3	450.3	05.9	06.4	06.1	05.9	06.3	06.1	34.05	34.15	34.10
6	301.6	399.4	354.0	06.4	07.3	06.9	06.4	07.3	06.9	33.98	34.05	34.02
7	199.8	300.0	252.3	07.4	08.6	07.9	07.3	08.6	07.9	33.88	33.98	33.93
8	99.8	197.3	145.2	08.7	11.1	09.7	08.6	11.0	09.7	33.13	33.88	33.63
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
1	27.24	37.34	26.98	00.04	00.06	00.06	00.03	00.05	00.03	05.4	08.6	08.3
1	27.24	37.34	26.98	00.04	00.06	00.06	00.03	00.05	00.03	05.4	08.6	08.3
2	27.10	27.24	27.17	00.06	00.06	00.06	00.03	00.03	00.03	07.7	08.2	07.9
3	27.01	27.10	27.06	00.06	00.06	00.06	00.03	00.03	00.03	07.5	07.7	07.6
4	26.90	27.00	26.94	00.05	00.06	00.06	00.03	00.03	00.03	07.3	07.5	07.4
5	26.76	26.89	26.83	00.05	00.06	00.06	00.03	00.03	00.03	07.2	07.3	07.2
6	26.57	26.75	26.66	00.06	00.07	00.06	00.03	00.07	00.03	07.0	07.2	07.1
7	26.31	26.57	26.45	00.06	00.07	00.06	00.03	00.04	00.03	06.9	07.0	07.0
8	25.34	26.30	25.93	00.06	00.07	00.06	00.03	00.05	00.03	06.7	06.9	06.8
net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol	
1	18.0	70.0	62.7	00.0	00.3	00.0	-00.4	17.7	12.3	00229	00003	
1	18.0	70.0	62.7	00.0	00.3	00.0	-00.4	17.7	12.3	00229	00003	
2	54.0	63.0	59.1	00.6	01.7	01.5	08.9	18.5	12.7	00234	00393	
3	55.0	62.0	58.7	01.1	01.7	01.4	02.9	17.5	08.8	00169	00308	
4	52.0	62.0	57.8	01.4	01.7	01.6	04.7	21.4	12.7	00116	00212	
5	54.0	60.0	57.5	01.4	02.0	01.7	09.4	21.4	16.1	00093	00178	
6	52.0	59.0	55.8	01.4	01.7	01.7	06.4	15.6	11.1	00133	00290	
7	54.0	58.0	56.3	01.4	02.0	01.6	08.8	16.6	11.8	00127	00264	
8	53.0	58.0	55.5	01.4	02.0	01.8	06.4	18.7	12.7	00117	00261	

No net response on Net #1 trip

" Tow: Cycle6_Tow3_Haul21 R/V Melville"
" Date: 28/10/2008"
" Temperature Probe # 4061 Conductivity Probe # 2663"
" Pressure Probe # 127 Oxygen Probe # 430872"
" Transmissometer # 490 Fluorometer # 229"
"302.336632"
"##MO- 4 +0.0000 +0.0000 +0.8238 -0.0002 "
"\$GPGGA,080348,3229.5248,N,12007.3393,W,2,6,0.6,32,"
"##MN-00 00 19 0000 01805 3028 635132 863784 219"
"302.336678"
"##MO- 4 +0.0450 +4.9250 +3.0062 +0.0000 "
"\$GPGGA,080353,3229.5143,N,12007.3240,W,2,6,0.6,31,"
"##MN-00 00 19 0000 01808 3030 651531 865377 219"
"302.336725"
"##MO- 4 +0.0460 +4.6446 +3.0064 +0.0002 "
"\$GPGGA,080357,3229.5056,N,12007.3118,W,2,6,0.6,31,"
"##MN-00 00 19 0000 01809 3032 651690 865377 219"
"302.336771"
"##MO- 4 +0.0448 +4.6498 +3.0072 +0.0004 "
"\$GPGGA,080401,3229.4973,N,12007.3002,W,2,7,0.6,30,"
"##MN-00 00 19 0000 01809 3035 651706 865377 219"
"302.336817"
"##MO- 4 +0.0450 +4.6454 +3.0066 +0.0002 "
"\$GPGGA,080405,3229.4891,N,12007.2889,W,2,6,0.6,30,"
"##MN-00 00 19 0000 01813 3036 651806 865377 219"
"302.336863"
"##MO- 4 +0.0452 +4.6424 +3.0062 +0.0002 "
"\$GPGGA,080409,3229.4804,N,12007.2772,W,2,6,0.6,29,"
"##MN-00 00 18 0000 01811 3038 651641 865376 219"
"302.33691"
"##MO- 4 +0.0454 +4.6416 +3.0064 +0.0004 "
"\$GPGGA,080413,3229.4715,N,12007.2646,W,2,6,0.6,29,"
"##MN-00 00 19 0000 01813 3040 651416 865376 219"
"302.336956"
"##MO- 4 +0.0452 +4.6444 +3.0070 +0.0004 "
"\$GPGGA,080417,3229.4630,N,12007.2526,W,2,6,0.6,29,"
"##MN-00 00 19 0000 01811 3042 651457 865377 219"
"302.337002"