The Multiple Opening/Closing Net and Environmental Sensing System (MOCNESS) is a main stay in the sampling on this Ocean Acidification cruise (Figure 1). The system carries nine nets and a suite of environmental sensors that measure pressure, temperature, conductivity, frame angle, and water flow past the net. The frame angle and water flow are used to calculate the volume of water filtered by each sequentially opened net. The flow meter is mechanical and has a propellor driving a gear shaft that rotates a cylinder with an embedded magnet that moves past a underwater reed switch. With each 360 degrees the magnet passes by the switch causing it to close for a moment, which is recorded as a flow count. Each flow count represents a distance traveled by the flow meter. Quantifying this distance requires calibrating the flow meter. On each cruise, this is done by deploying MOCNESS to a shallow depth and then towing it horizontally back and forth on a trackline over a prescribe distance. This was done on 11 August, at a station where all of the instruments to be used over the side of the ship were tested to make sure they were operational. To calibrate the flowmeter, the MOCNESS was towed at a depth of approximately 50 m for a distance of about one half a nautical mile from southeast to northwest (340 degrees) and then in the reverse direction (160 degrees) about the same distance in order to eliminate any effect of differential current flow on the calibration (Figure 2). During the tow, the MOCNESS software logged the data coming from the underwater unit and the GPS latitude and longitude positions. A Matlab program (mfile) was written to compute the distance for each run and to make a plot of the tow segments superimposed on the total tow (Figure 2). The calibration coefficient determined on this cruise of 6.3425 m/count (Table 1) closely matches the coefficients determined on two earlier cruises of 6.425 and 6.397 m/count. The average of the tow calibrations is = 6.3882 m/count. This is calibration coefficient that will be used on the MOCNESS tows taken this cruise i.e. NH1208.

Table1. Measured half-mile runs in the North Pacific west of Oregon a days steam were carried out on 11 August 2012 as part of MOCNESS tow M_01_001. The MATLAB mfile SW_DIST.m from the SEAWATER toolkit of MATLAB routines for calculating the properties of sea water was used to compute the distances based on latitude and longitude.

	Time	Latitude	Longitude	FC	Distance (m)
End of Run#1	224.732049	45.4448	-127.8701	271	918.5
Start of Run#1	224.720625	45.4370	-127.8662	103	
			Run #1 FC	168	
End of Run#2	224.749109	45.4368	-127.8578	539	931.6
Start of Run#2	224.740417	45.4447	-127.8618	409	
			Run #2 FC	130	
		Run # 1 = 918.5/168=5.4673 Run # 2 = 931.6/130 = 7.1662 14.1364/2=6.3167 m/fc			

MOCNESS DATA SHEET

Cruise NH 1208 Location North Pacific Tow # MOC-1-001

Date 11 Aug 2012 Wind Speed 21.8 Direction 348

Year/Day 224 Sea State Moderate

Local Time 1400 to 1522 Start Lat 45 26.045 Long 127 51.922

GMT Time 2100 to 2222 End Lat 45 26.103 Long 127 51.831

computer clock set to EST + fast 50 1706 for it

Net Size 150 µm Net Condition Good No cod-end on Net 0 or 4-8

Net Mesh 1-m²

Processed Filename MOC-0 NH1208M1.pro Raw Filename NH1208M1.Raw

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start Net 0 Down	~1400	0 / 50m			5211 ~~4895~~	75	based on new flow calibration
Net 1	1510	24m			590		
Net 2	1515	0			~~417~~		copepods
Net 3	1521				445		juv. fish, decapods, amphipods
Net 4							
Net 5							
Net 6							
Net 7							
Net 8							
Closed							

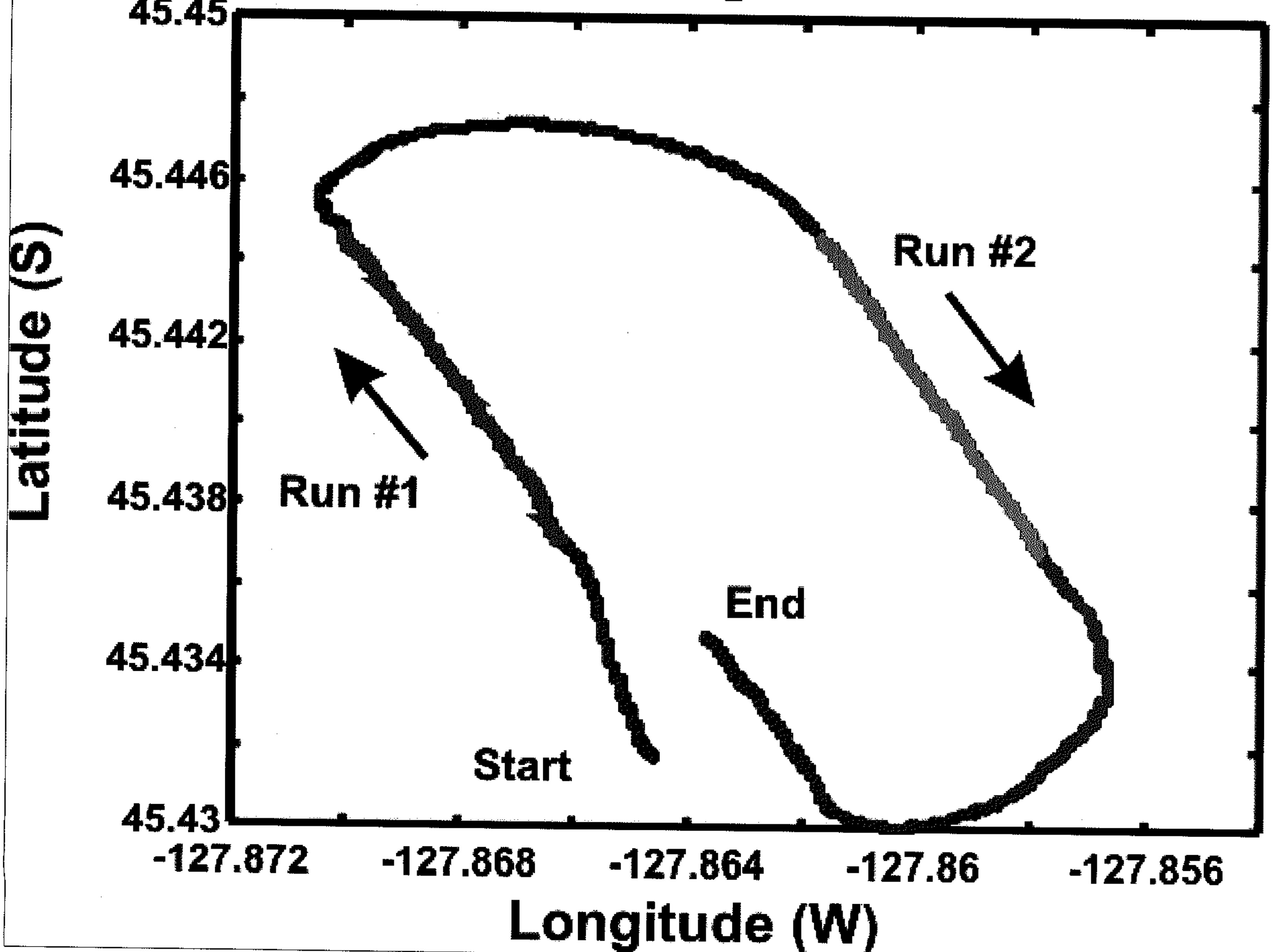
COMMENTS: Flowmeter Cal start count 103

1/2 nm ① Course 340 end count 271

1/2 nm ② Course 160 start count 409

end count 539

MOCNESS Flow Meter Calibration Runs
11 August 2012



Tow: M-01-001 RV/New Horizon
Date: 11 August 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

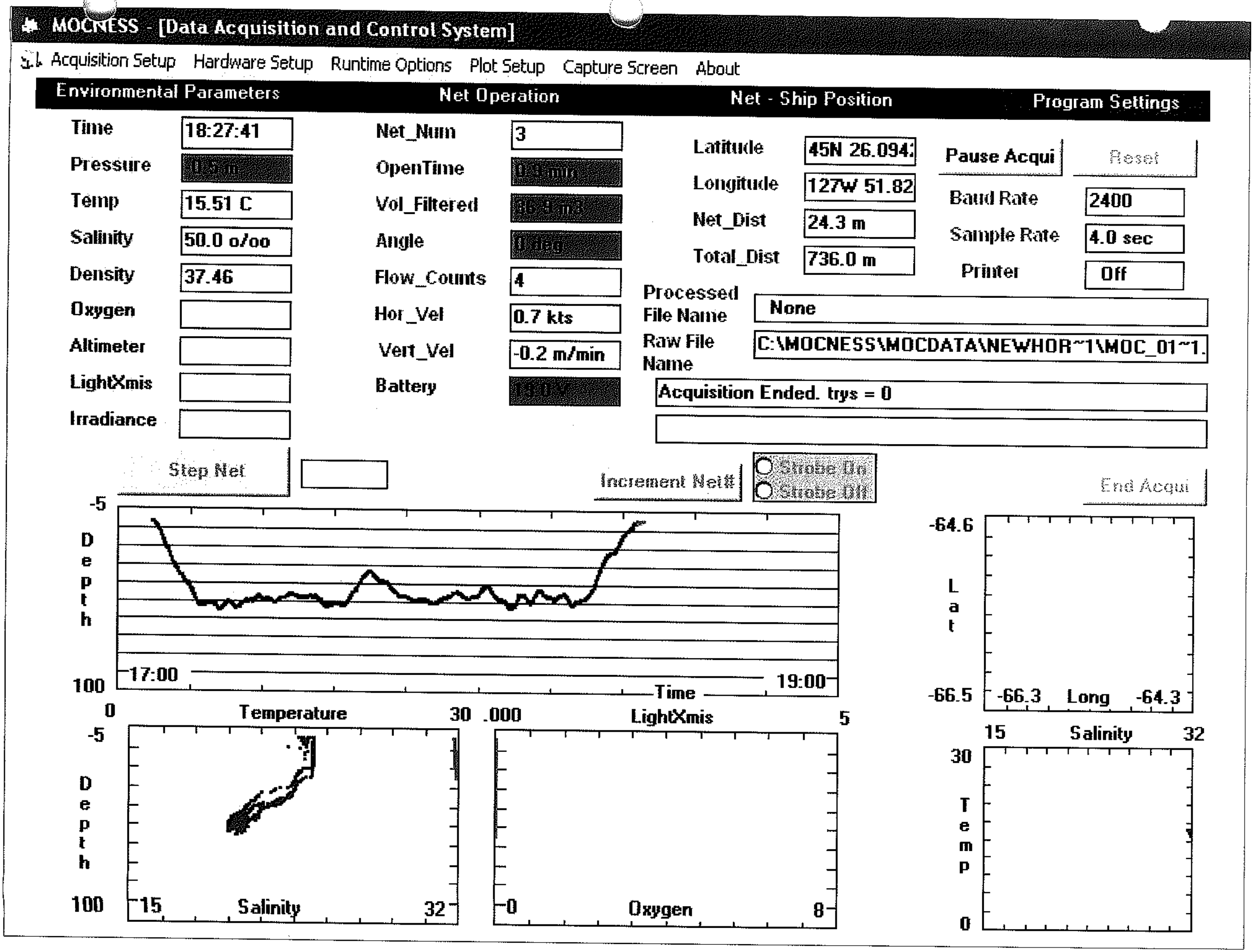
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-000.3	052.3	038.5	09.0	16.8	11.4	09.0	16.8	11.4	00.01	50.00	32.36
1	023.9	048.8	040.9	09.1	14.9	10.3	09.1	14.9	10.3	32.20	32.59	32.52
2	-000.4	022.9	011.0	15.1	16.9	16.3	15.1	16.9	16.3	31.82	32.24	31.97

net#	simin	simax	siavg	cmin	cmax	cavg	atmmin	atmmax	atmavg	oxmin	oxmax	oxavg
0	-01.08	37.37	24.63	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	23.86	25.21	24.95	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	23.11	23.80	23.35	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	00.0	89.0	35.1	00.0	08.9	02.0	-15.3	14.9	-00.6	01140	05211
1	23.0	44.0	29.3	01.6	02.3	02.0	-05.8	12.4	03.9	00079	00390
2	26.0	46.0	34.5	01.9	02.7	02.2	-00.2	08.9	04.4	00086	00445

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	224.703160	16:52:33	-000.3	052.3	038.5	01140	05211
1	224.760856	18:15:37	023.9	048.8	040.9	00079	00390
2	224.764572	18:20:59	-000.4	022.9	011.0	00086	00445
3	224.768623	18:26:49					


MOCNESS - [Data Acquisition and Control System]
Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
18:27:41
Pressure
Temp
15.51 C
Salinity
50.0 o/oo
Density
37.46
Oxygen
Altimeter
LightXmis
Irradiance
Net_Num
3
OpenTime
Vol_Filtered
Angle
Flow_Counts
4
Hor_Vel
0.7 kts
Vert_Vel
-0.2 m/min
Battery
Latitude
45N 26.094
Longitude
127W 51.82
Net_Dist
24.3 m
Total_Dist
736.0 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
None
Raw File Name
C:\MOCNESS\MOCDATA\NEWHOR~1\MOC_01~1.
Acquisition Ended. trys = 0
Step Net
Increment Net#
Strobe On
Strobe Off
End Acqui
-5
Depth
100
17:00
Time
19:00
-64.6
Lat
-66.5
-66.3
Long
-64.3
0
Temperature
30
.000
LightXmis
5
-5
Depth
100
15
Salinity
32
0
Oxygen
8
15
Salinity
32
30
Temp
0

MOCNESS Plankton Observations

Cruise: NH1208	Station: Test Sta. 1	Cast #: 1
Date: 11 AUG 12	Latitude:	Longitude:
Local time start: 1900		Local time end:

Net 0 by [illegible]

Net 1 50 - 24 m
- juv. fish
- gelatinous [illegible]
- amphipods
- lg. copepod ([illegible])

1 krill

Net 2 24 - 0 m
9 Atlantid heteropods [illegible]
put into 95% etoh

Net 3 0 - 0 m
not saved

1 Limacina → 95% etoh

Net 4

Net 5

Net 6

Net 7

Net 8

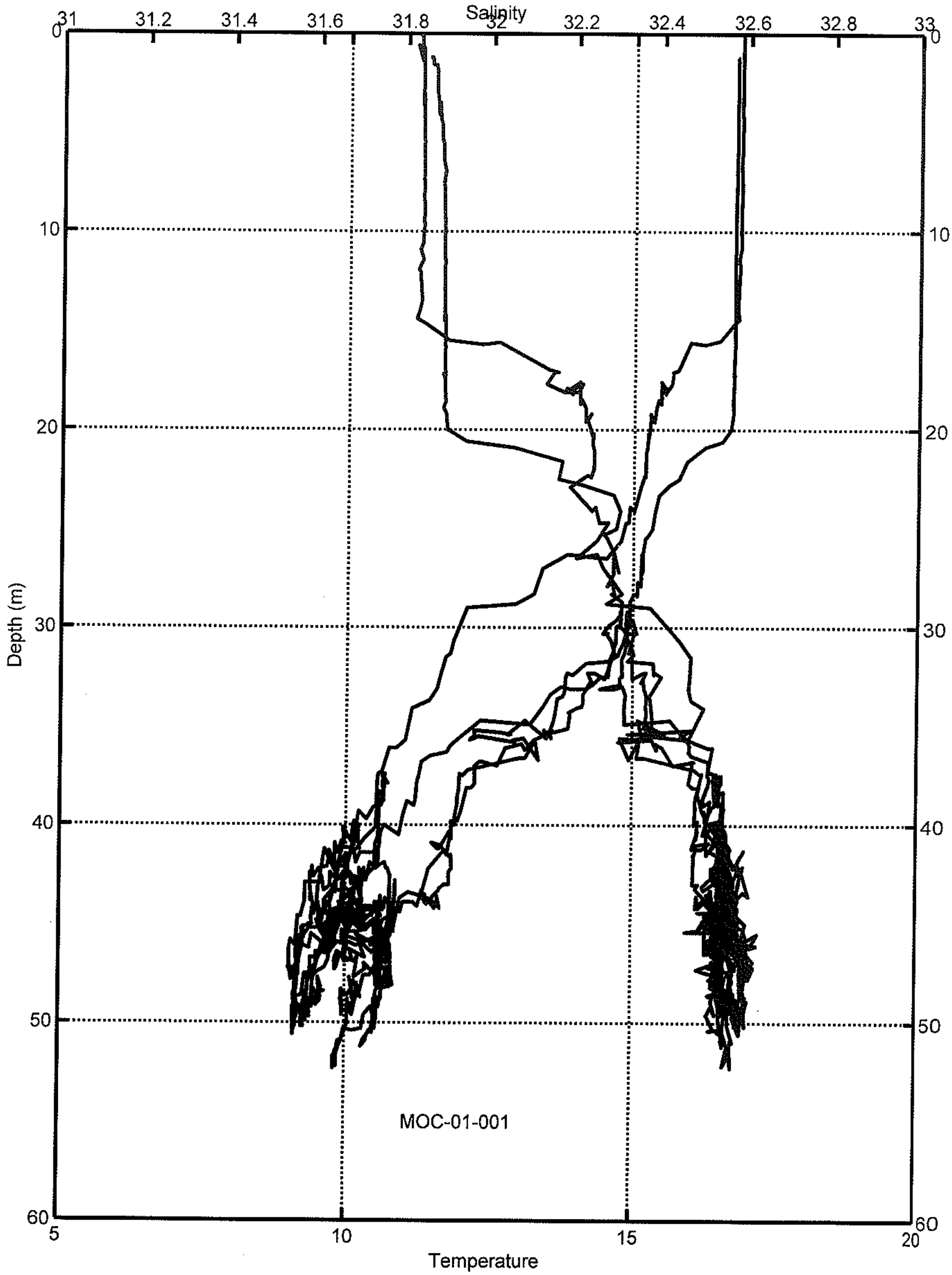
Specimens Removed from MOCNESS tows

cruise: ~~OC473~~ NH1208   time tow ended: __________

date: 11AUG 12

tow: station

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
3	limacina	1	16:44	95% etoh	Amy


Salinity
31
31.2
31.4
31.6
31.8
32
32.2
32.4
32.6
32.8
33
Depth (m)
0
10
20
30
40
50
60
Temperature
5
10
15
20
MOC-01-001

MOCNESS DATA SHEET

Note time changed to local time on the ship on the MOCNESS laptop - PHW on previous tow time set to East coast DST

Cruise New Horizon 1208 Location Gulf of Alaska North Pacific Tow # M_01_002

Date 16 August 2012 Wind Speed 11 kts Direction 122.5°

Year/Day 228 Sea State Moderate Ship course - 243°

Local Time 0057 to ______ Start Lat 49° 51.94' Long 149° 25.651'

GMT Time 0857 to ______ End Lat ______ Long ______

Net Size 1-m² Net Condition Good
Net Mesh 150 µm Net 0 = 333 µm

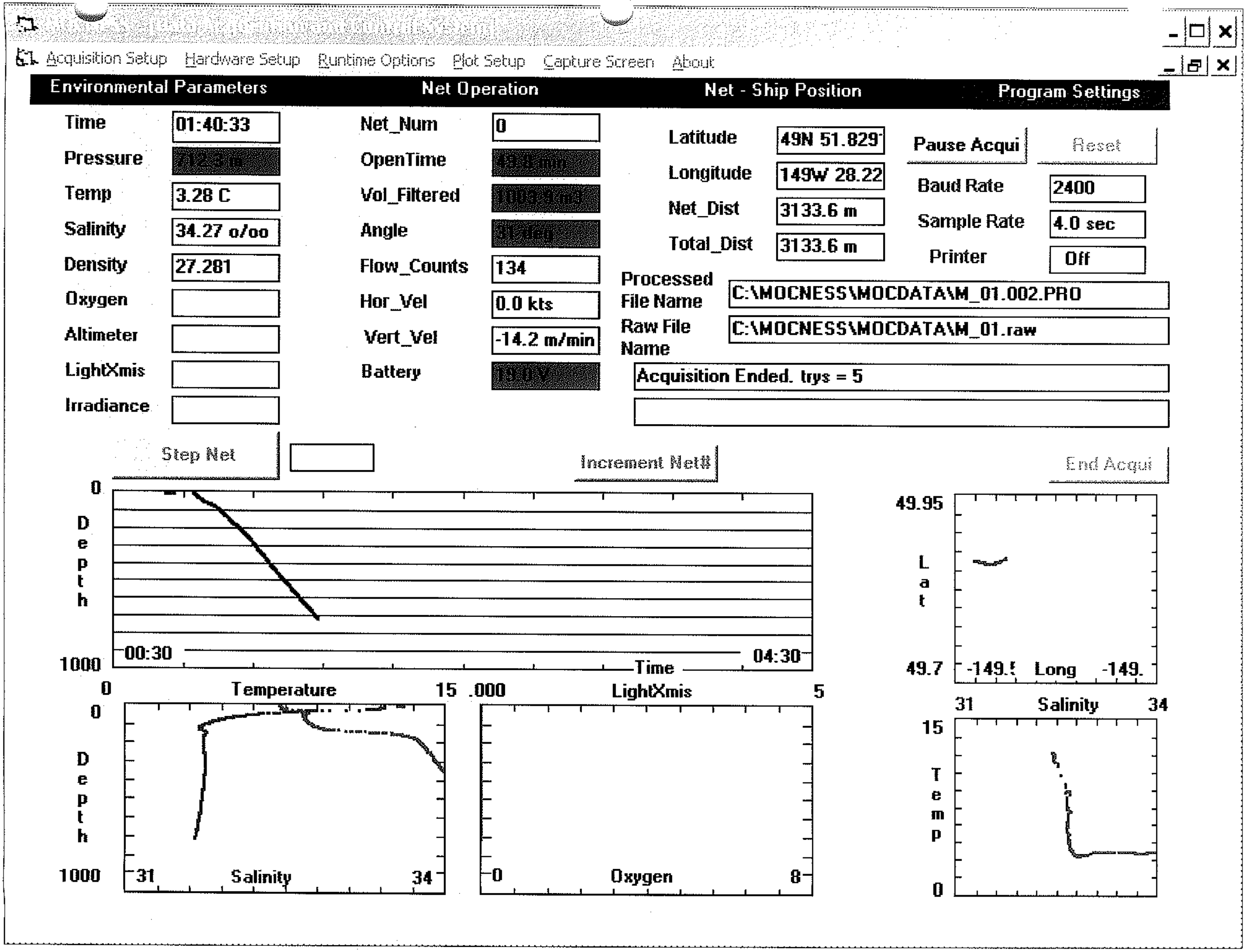
Processed Filename M_01_002.pro Raw Filename M_01_002.raw

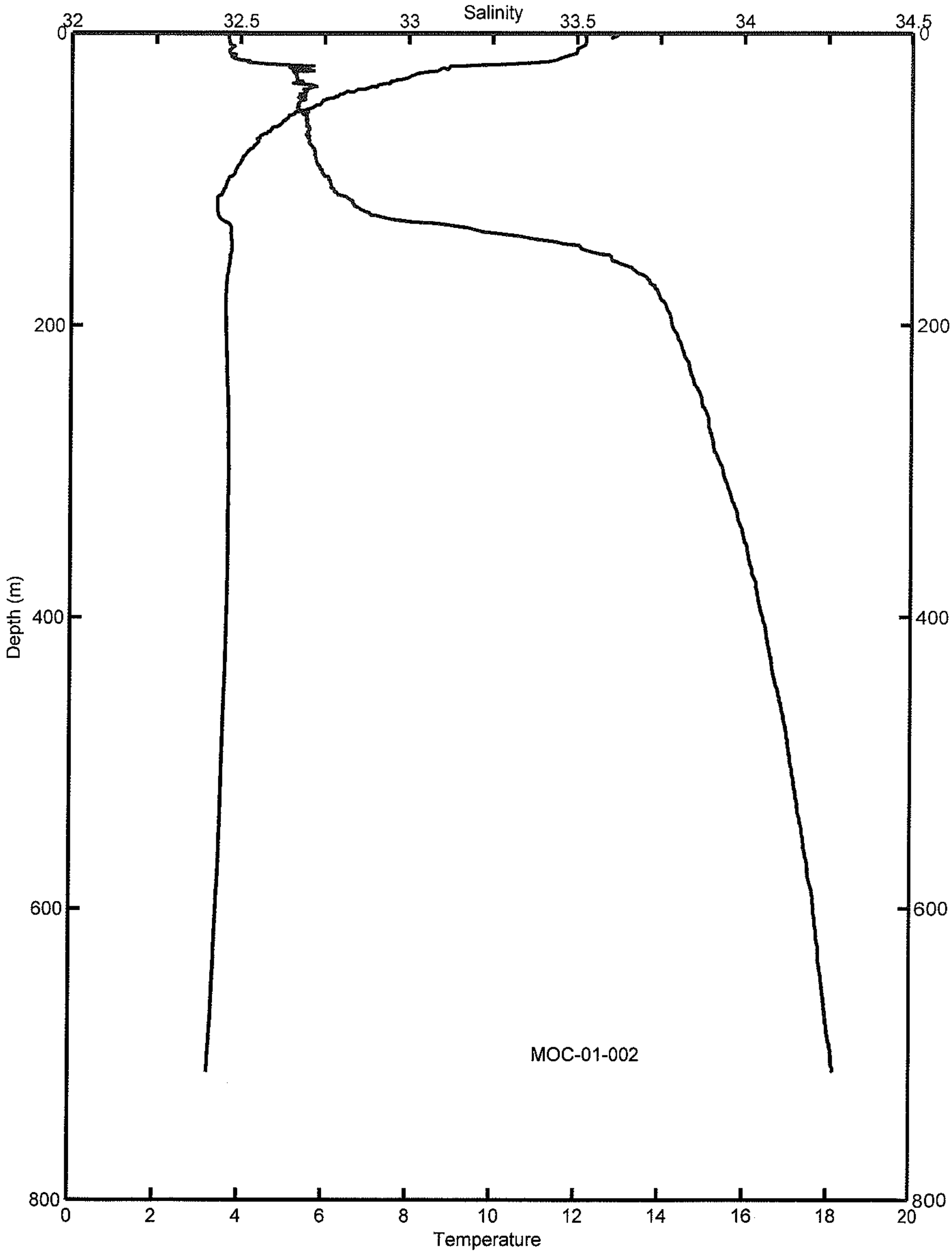
NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	0057	0					
Net 0 Down		1000					- at 1425 m + 712 m depth
Net 1		1000					- the underwater unit failed
Net 2		800					lost signal. But # MCA said
Net 3		600					all was OK, no "short" or "open"
Net 4		400					- Bringing system back up to the surface
Net 5		200					- Flowmeter failed while going down
Net 6		100					- Could be the modem board went bad
Net 7		50					- No fuse blown on mother board
Net 8		25					
Closed		0					

MWO m/min
163 increase to 25
244 increase to 30
445 increase 35

COMMENTS: Turned off strobe 650 mwo battery volts 18.2 v
All sample in net 0


Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
01:40:33
Pressure
Temp
3.28 C
Salinity
34.27 o/oo
Density
27.281
Oxygen
Altimeter
LightXmis
Irradiance
Net_Num
0
OpenTime
Vol_Filtered
Angle
Flow_Counts
134
Hor_Vel
0.0 kts
Vert_Vel
-14.2 m/min
Battery
Latitude
49N 51.829
Longitude
149W 28.22
Net_Dist
3133.6 m
Total_Dist
3133.6 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\M_01.002.PRO
Raw File Name
C:\MOCNESS\MOCDATA\M_01.raw
Acquisition Ended. trys = 5
Step Net
Increment Net#
End Acqui
0
Depth
1000
00:30
Time
04:30
49.95
Lat
49.7
-149.5
Long
-149.
0
Temperature
15
.000
LightXmis
5
0
Depth
1000
31
Salinity
34
0
Oxygen
8
31
Salinity
34
15
Temp
0


Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
Depth (m)
Depth (m)
0
2
4
6
8
10
12
14
16
18
20
Temperature
MOC-01-002

Specimens Removed from MOCNESS tows

cruise: ~~OC-473~~ N[illegible]

date: 8/16

tow: # 2

time tow ended: ? early morning (3:00 AM?)

49.860 & -149.438

net ∅: ∅ to 700 meters

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	
∅	Limacina helicina	1		95%	AEM	Ga 56.13
∅	Euphausia pacifica	3		95%	LBB	Eu 27.6
∅	Thysanoessa longipes	5		95%	LBB	Eu 15.6
∅	Tessarabrachion oculatus	2		95%	LBB	Eu 24.4
∅	Stylochieron maximum	1		95%	LBB	Eu 39.6
∅	Neocalanus cristatus	3		95%	LBB	Co 227.7
∅	Paraeuchaeta sp.	11		95%	LBB	Co 319.2
∅	Euchirella sp.	2		95%	LBB	Co 442.1
∅	Nemertean worm	2		95%	LBB	Ne 04.2

MOCNESS DATA SHEET

Cruise New Horizon 1208 Location N Pacific Gulf of Alaska Tow # M_01_003

Date 16 August 2012 Wind Speed 13 kt Direction 177

Year/Day 228 Sea State relatively calm

Local Time 9:26 to ______ Start Lat 49 29.38 Long 149 10

GMT Time ______ to ______ End Lat ______ Long ______

Net Size 1 m² Net Condition Good
Net Mesh 150 µm net 0 = 333 µm

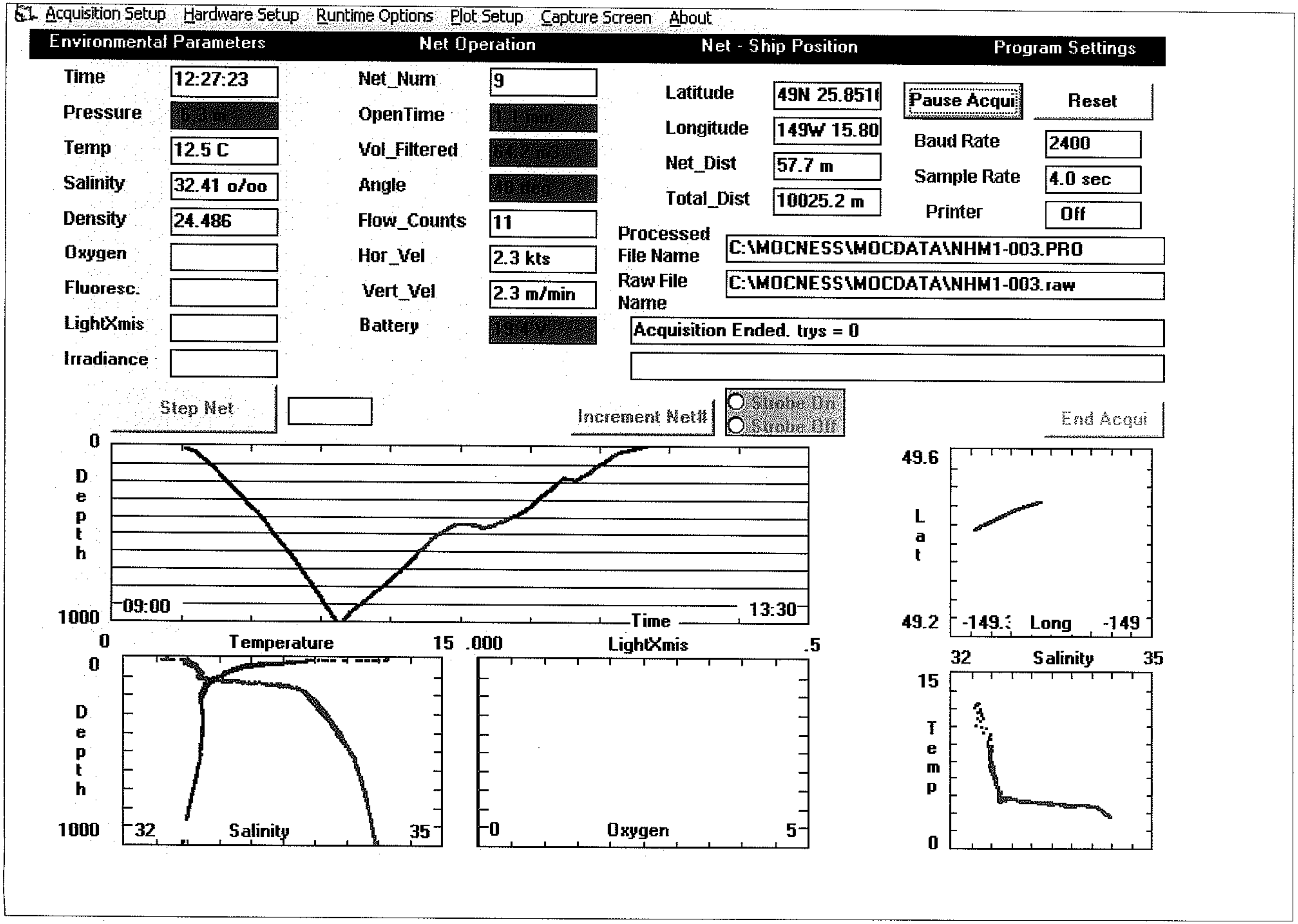
Processed Filename M_01_003.pro Raw Filename M_01_003.raw

Start @ 10 m/min
~100 mwo ↑ 20 m/min
220 mwo ↑ 30 m/min

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	926	-6.4					strobe off at deployment
Net 0 Down	1029	1010	42°		2381		955 strobe on 370 m Wire 19.7 m/min
Net 1	1029	1000			?	1614	1015 stopped getting flow counts
Net 2	1044	800			?	1319	1029 Haul in @ 20 m/min (714)
Net 3	1059	593			2127	1025	1050 Flow counts again z = 715 m
Net 4	1135	396			1090	2127	1106 slowed to 15 m/min
Net 5	1153	195			919	1090	1114 Bad wrap, stopped winch 1121 Paying out to correct wraps
Net 6	1209	96			326		1124 Hauling back in
Net 7	1214	46			169		1126 stopped again 1128 Hauling in 13-15 m/min 1140 up to 20 m/min
Net 8	1217	23			523		1156 Paying out bad wrap 1201 Back up 15 m/min
Closed	1226	-6.4					

COMMENTS: 0818 - 0826 Aborted first cast → no angle (0°)
Changed to U/W unit 124 Pressure offset -6.4 m at surface
Lo-forgot to reset on this [illegible]


Acquisition Setup Hardware Setup Runtime Options Plot Setup Capture Screen About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time 12:27:23
Pressure
Temp 12.5 C
Salinity 32.41 o/oo
Density 24.486
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num 9
OpenTime
Vol_Filtered
Angle
Flow_Counts 11
Hor_Vel 2.3 kts
Vert_Vel 2.3 m/min
Battery
Latitude 49N 25.851
Longitude 149W 15.80
Net_Dist 57.7 m
Total_Dist 10025.2 m
Pause Acqui
Reset
Baud Rate 2400
Sample Rate 4.0 sec
Printer Off
Processed File Name C:\MOCNESS\MOCDATA\NHM1-003.PRO
Raw File Name C:\MOCNESS\MOCDATA\NHM1-003.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
Strobe On
Strobe Off
End Acqui
0
Depth
1000
09:00
Time
13:30
49.6
Lat
49.2
-149.
Long
-149
0
Temperature
15
.000
LightXmis
.5
32
Salinity
35
15
Temp
0
Depth
1000
32
Salinity
35
0
Oxygen
5

Tow: M-01-003 RV/New Horizon
Date: 16 August 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-004.8	1017.8	397.1	02.8	13.6	03.7	02.7	13.6	03.7	00.01	34.39	30.07
1	800 ~~-001.0~~	1004.1	877.4	02.8	13.5	02.9	02.7	13.5	02.9	00.01	34.38	33.59
2	598.1	805.4	706.9	03.1	03.5	03.3	03.0	03.5	03.2	34.21	34.31	34.27
3	401.1	596.9	467.7	03.5	03.7	03.7	03.5	03.7	03.6	34.01	34.21	34.10
4	199.4	401.3	309.1	03.7	03.8	03.7	03.6	03.8	03.7	33.73	34.01	33.89
5	100.9	197.7	162.5	03.8	04.5	03.9	03.8	04.5	03.9	32.70	33.73	33.48
6	050.5	099.7	076.9	04.6	05.8	05.0	04.6	05.8	05.0	32.66	32.72	32.70
7	028.0	049.4	037.5	05.9	07.8	06.9	05.9	07.8	06.9	32.58	32.66	32.61
8	-002.5	027.0	012.3	07.8	12.5	10.5	07.8	12.5	10.5	32.36	32.59	32.49

net#	simin	simax	siavg	cmin	cmax	cavg	atmmin	atmmax	atmavg	oxmin	oxmax	oxavg
0	-00.69	27.42	23.84	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.68	27.41	26.77	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.22	27.33	27.28	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	27.03	27.21	27.10	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.80	27.03	26.93	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.91	26.80	26.59	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.73	25.91	25.85	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	25.40	25.72	25.55	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	24.49	25.40	24.88	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	00.0	85.0	47.4	00.0	06.6	01.2	-68.8	67.8	-14.4	01054	02382
1	38.0	61.0	44.5	00.0	04.3	00.0	-01.4	21.1	13.0	00229	~~00050~~ NG
2	44.0	50.0	45.7	00.0	02.7	01.4	10.7	18.5	14.1	00220	~~00550~~ NG
3	45.0	56.0	49.3	01.6	02.7	02.3	-13.6	17.3	05.5	00536	02127
4	43.0	50.0	46.9	01.9	02.7	02.3	00.0	16.2	11.0	00273	01090
5	42.0	50.0	46.0	01.6	02.7	02.1	-13.2	16.1	06.4	00231	00919
6	47.0	54.0	49.8	02.3	02.7	02.4	06.4	12.1	09.3	00079	00326
7	51.0	58.0	53.6	02.3	02.7	02.6	05.3	11.5	08.6	00041	00167
8	46.0	62.0	51.8	01.9	02.7	02.3	-03.7	08.4	03.5	00132	00523

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	229.382049	9:10:9	-004.8	1017.8	397.1	01054	02382
1	229.387523	9:18:1	800 ~~-001.0~~	1004.1	877.4	00229	00050
2	229.447685	10:44:39	598.1	805.4	706.9	00220	00550
3	229.457963	10:59:28	401.1	596.9	467.7	00536	02127
4	229.482905	11:35:22	199.4	401.3	309.1	00273	01090
5	229.495637	11:53:43	100.9	197.7	162.5	00231	00919
6	229.506424	12:9:15	050.5	099.7	076.9	00079	00326
7	229.510139	12:14:36	028.0	049.4	037.5	00041	00167
8	229.512083	12:17:23	-002.5	027.0	012.3	00132	00523
9	229.518264	12:26:18					

Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
Depth (m)
0
2
4
6
8
10
12
14
16
18
20
Temperature
MOC-01-003

MOCNESS TOW#: [illegible]
Date: 8/16/17
Station: 2
People Processing Sample: NC

NET	DEPTH	Taxonomic Composition	
0 Net	0-1010	caridean shrimp jellies [illegible] another deep [illegible] [illegible]	
1 Net Ø	800-1000	[illegible] 2 legs 6 sm 1 - cyclothone 2 jellyism lophogastrids cephalopod - 1 lots of [illegible]	1/2 95% - quart 1/4 70%, 1/4 form pints
2	593-800	2 myctophid (big in 95%) jellies orange "worms" [illegible] amphipods deep sea copepods	
3	396-593	Small fish - [illegible] decapods 4+ Chaetognaths copes	
4	195-396	Stegoman fish Myctophids copepods (LOTS) krill chaetognaths	
5	96-195	ost amph euph - 1 [illegible] chaet Neocal. cr? Corolla [illegible]? forams	Collar partially off
6	46-96	Neocal! amph euph - very small ost.	
7	23-46	Neocal! forams tiny squid [illegible] Limacina? (s) → [illegible] fridge	
8	6.4-23	1 tiny squid amphs Neocals small larval fish - 11 [illegible] copepods -	all splits in quarts: 1/2 etoh 95% 1/4 70% 1/4 form

Dry

Specimens Removed from MOCNESS tows

cruise: ~~OC 473~~ NH12CS

time tow ended: 9:30 to 12:30

date: 16 Aug2012

tow: 3

Station 2

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
25-40m 4	Limacina helicina	5		freeze N2	
4	fish	1		frozen	AEM

MOCNESS DATA SHEET

Cruise New Horizon Location NE Pacific Tow # M_01_004

Date 31 Aug 2012 Wind Speed 17 kt Direction 162

Year/Day 244 Sea State 2-3' some swell ship course: 73

Local Time 1103 to ______ Start Lat 48 59.73 Long 148 13.075 W

GMT Time 19:03 to ______ End Lat ______ Long ______

Net Size 1 m² Net Condition Good

Net Mesh 150 µm Net 0 = 333 µm

Processed Filename M-01-004.pro Raw Filename M-01-004.pro

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	1103	0	1129	1297	MWO		Strobe off; started at 40 m depth and 110 m
Net 0							
Down		1000					and 419.9 m depth ↑30 m/min
Net 1		1000					couldn't query + strobe no mea?
Net 2		800					O/M unit. Tried terminal @
Net 3		600					300 and said ok, but nothing
Net 4		400					in MOC software. Swapped out
Net 5		200					deck box, nothing. Very similar symptoms to
Net 6		100					last failure. Some flakiness
Net 7		50					internal with baud rate seeming
Net 8		25					to change → set to 300 but
Closed		0					then gobbledygook characters

ABORTED

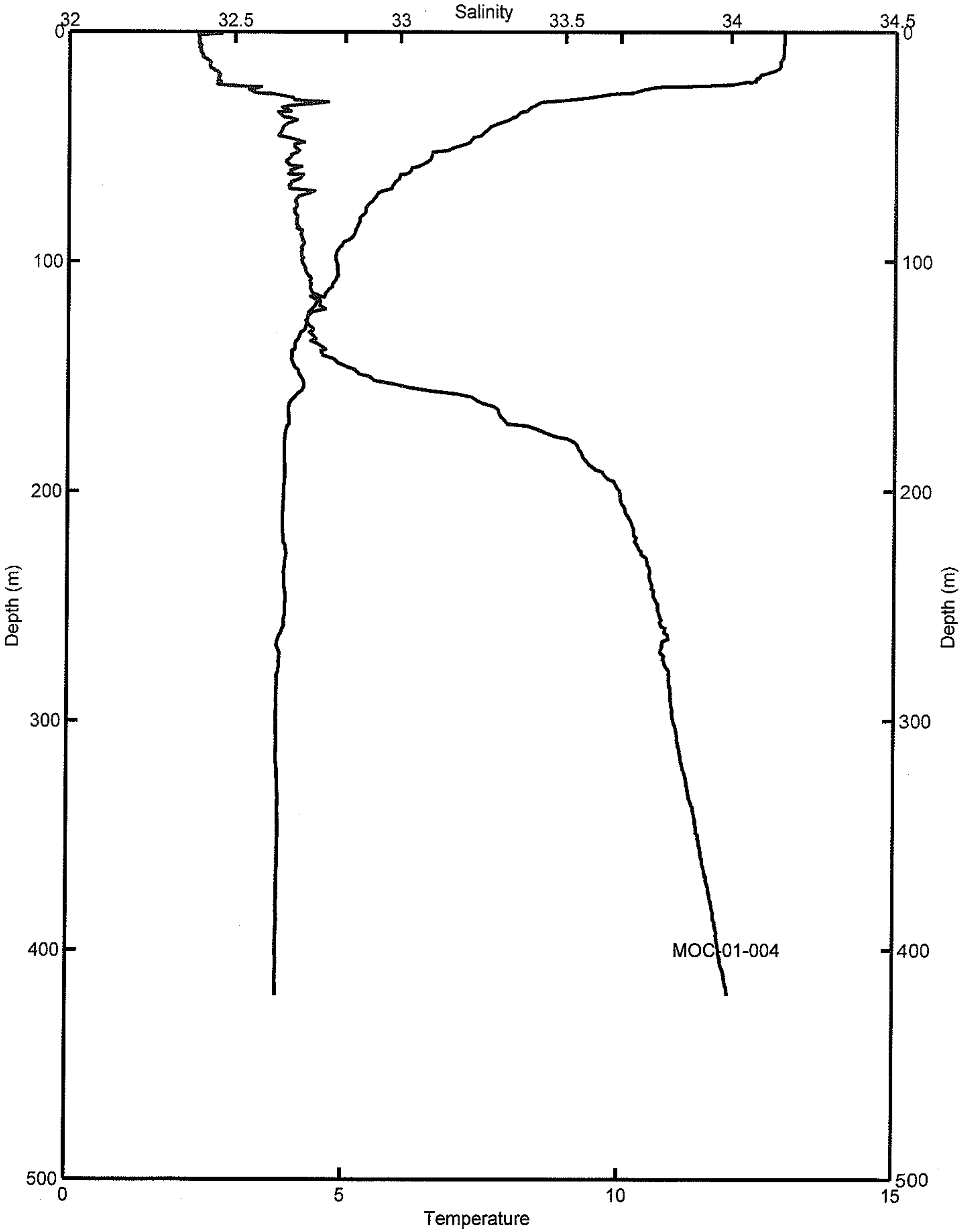
At ca 1400 MWO aborted cast

870 MWO stopped for level wind correction

COMMENTS: Paid out to 1064 for correction

1256 still fiddling with level wind

1318 Capt. gave up of smooth wind


Salinity
32
32.5
33
33.5
34
34.5
0
100
200
300
400
500
Depth (m)
Depth (m)
MOC-01-004
0
5
10
15
Temperature

MOCNESS TOW#: 4
Date: 8/31/12
Station: 3
People Processing Sample: NC, AM

ABORTED

NET	DEPTH	Taxonomic Composition
0	~0-1000	lg purple jelly fish ~25 viperfish 1 large purple jelly 4 triangle purple jellies, other jellies dominated by neocalanus, small amphipods, red shrimp Limacina helicina chocolate ostracods
~~1~~		
~~2~~		
~~3~~		
~~4~~		
~~5~~		
~~6~~		
~~7~~		
~~8~~		

Station 5

MOCNESS DATA SHEET

Cruise NH1208 Location NE Pacific Tow # M-01-005

Date 21 Aug 2012 Wind Speed 15 Direction 225

Year/Day 244 Sea State 3'

Local Time 1537 to ____ Start Lat 48 56.78 N Long 145 11.6972 W

GMT Time 2337 to ____ End Lat ____ Long ____

Net Size 1 m^2 Net Condition good ship's course: 54

Net Mesh 150 μm Net 0 - 333

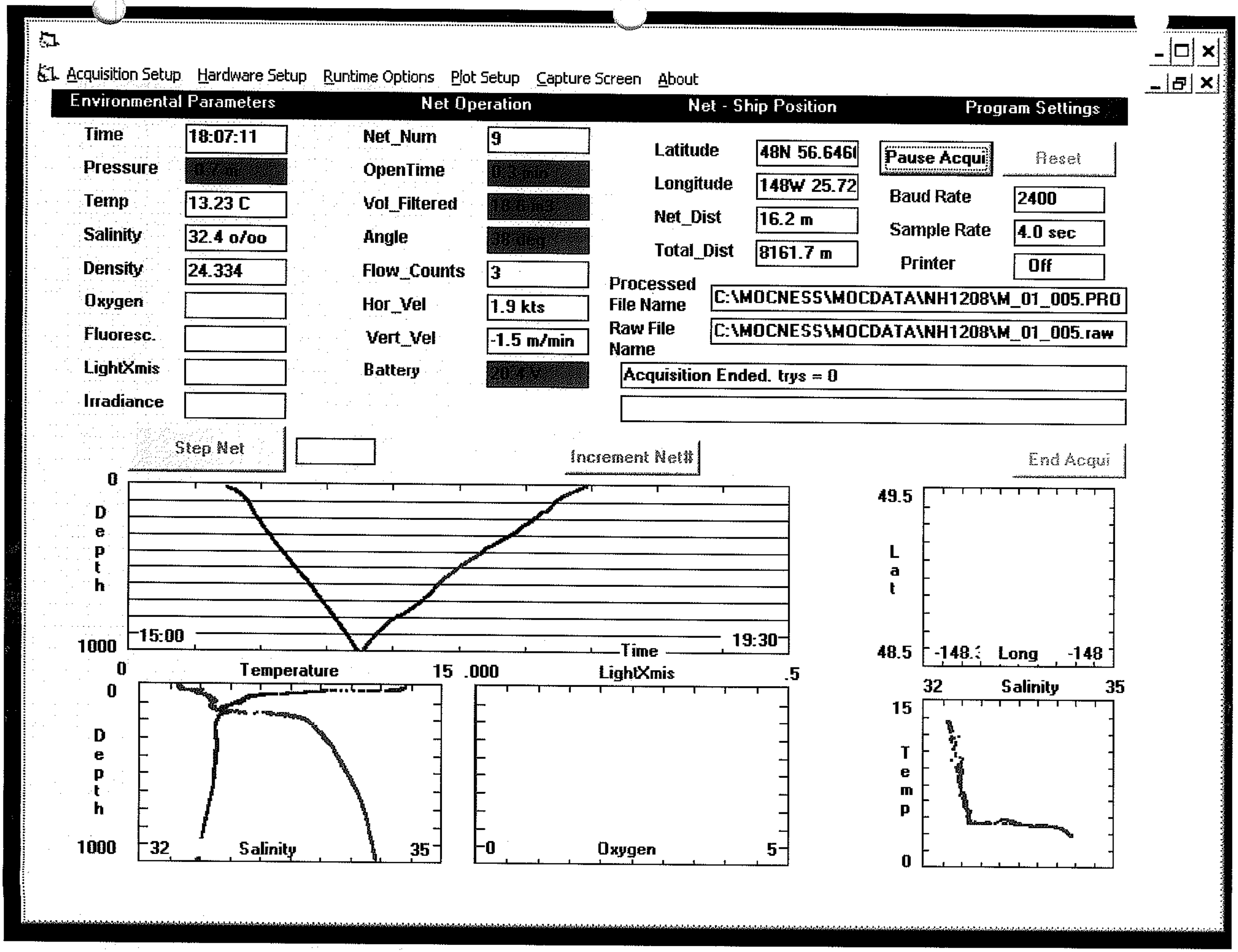
Processed Filename M.01.005.PRO Raw Filename M_01_005.raw

NET TOW INFORMATION + Flowmeter stopped at 400m so bad #

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	1537	0			1041+		start at 10 m/min
Net 0							50 MWO ↑ to 20 m/min
Down		1007					140 MWO ↑ to 30 m/min
Net 1	1636	1000			724		390m - No flow counts
Net 2	1648	801.5			1109		999 m - Flow counts back
Net 3	1706	598			1155		Haul in 20 m/min 950m ↓ to 15 m/min
Net 4	1724	400			1383		777 m ↑ to 20 m/min
Net 5	1745	200			530		~600m ↓ to 15 m/min ~368 slow to 15 m/min was 20
Net 6	1754	98			304		~309 up to 20 m/min
Net 7	1759	51			228		
Net 8	1802	26			268		
Closed	1806	0			-		

COMMENTS: No strobe on this tow — all depths sampled

no strobe for rest of cruise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Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
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Pressure
Temp
13.23 C
Salinity
32.4 o/oo
Density
24.334
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
3
Hor_Vel
1.9 kts
Vert_Vel
-1.5 m/min
Battery
Latitude
48N 56.646
Longitude
148W 25.72
Net_Dist
16.2 m
Total_Dist
8161.7 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_005.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_005.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
Depth
0
1000
15:00
Time
19:30
49.5
Lat
48.5
Long
-148
Temperature
0
15
.000
LightXmis
.5
Salinity
32
35
Oxygen
0
5
Temp

Tow: M-01-005 New Horizon 1208
Date: 31 Aug 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

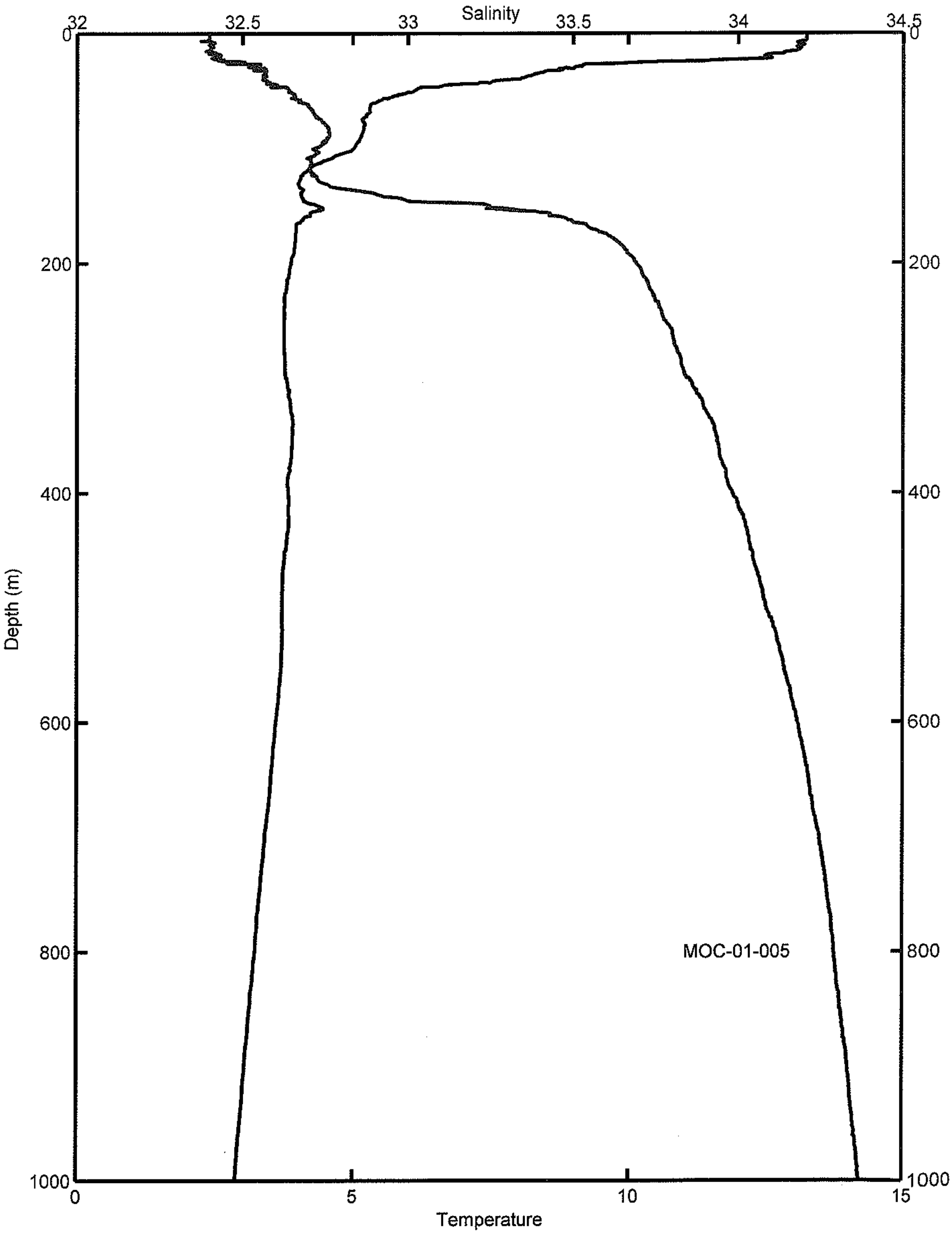
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-000.4	1007.8	466.5	02.9	14.2	04.6	02.8	14.2	04.6	00.12	50.00	33.54
1	000.1	998.4	844.4	02.9	14.1	03.0	02.8	14.1	02.9	00.18	50.00	32.75
2	599.5	801.5	715.3	03.2	03.6	03.4	03.2	03.6	03.3	34.18	34.29	34.25
3	400.5	597.7	492.1	03.6	03.8	03.7	03.6	03.8	03.7	33.98	34.18	34.08
4	201.1	398.5	301.5	03.8	03.9	03.8	03.7	03.9	03.8	33.69	33.98	33.85
5	098.5	198.9	154.2	03.9	05.0	04.2	03.9	05.0	04.2	32.69	33.69	33.26
6	052.3	095.8	071.3	05.1	05.9	05.3	05.1	05.9	05.3	32.65	32.76	32.71
7	026.6	050.9	037.6	06.0	09.2	07.9	06.0	09.2	07.9	32.52	32.64	32.58
8	-001.5	026.2	012.4	09.7	13.2	12.7	09.7	13.2	12.7	32.38	32.51	32.41

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.68	37.84	26.52	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.61	37.84	26.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.17	27.30	27.25	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	27.00	27.17	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.76	27.00	26.89	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.86	26.76	26.38	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.71	25.89	25.83	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	25.17	25.69	25.38	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	24.31	25.01	24.44	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	27.0	78.0	46.8	00.0	08.5	00.6	-34.2	08.0	-17.2	00871	01041
1	31.0	51.0	38.7	00.0	08.5	02.0	-02.2	27.5	15.1	00196	00724
2	40.0	50.0	43.6	01.9	02.7	02.3	01.6	19.1	11.3	00266	01109
3	42.0	51.0	46.7	02.3	02.7	02.5	06.4	18.5	11.1	00268	01155
4	42.0	51.0	46.5	01.9	02.7	02.5	03.7	16.2	09.4	00317	01383
5	32.0	47.0	40.2	01.6	02.7	02.1	-04.5	23.1	11.7	00127	00530
6	37.0	46.0	40.8	01.9	02.3	02.2	04.9	23.3	10.4	00071	00304
7	39.0	49.0	45.1	01.9	02.7	02.3	02.9	10.9	07.2	00052	00228
8	30.0	67.0	41.6	01.6	02.7	02.1	02.9	12.7	06.6	00064	00268

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	244.643403	15:26:29	-000.4	1007.8	466.5	00871	01041
1	244.643831	15:27:6	000.1	998.4	844.4	00196	00724
2	244.700347	16:48:29	599.5	801.5	715.3	00266	01109
3	244.712755	17:6:22	400.5	597.7	492.1	00268	01155
4	244.725255	17:24:21	201.1	398.5	301.5	00317	01383
5	244.740023	17:45:37	098.5	198.9	154.2	00127	00530
6	244.745972	17:54:12	052.3	095.8	071.3	00071	00304
7	244.749317	17:59:1	026.6	050.9	037.6	00052	00228
8	244.751782	18:2:34	-001.5	026.2	012.4	00064	00268
9	244.754803	18:6:55					


Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
MOC-01-005
0
5
10
15
Temperature

MOCNESS TOW#: 5
Date: 31 Aug 12
Station: 3
People Processing Sample: NCopley

poor (green) condition [illegible]

NET	DEPTH	Taxonomic Composition
0	0-1000m	3 large clear jellies 1 lg. fish 8 sm. fish
1	800-1000	1 clear jelly, shrimp . small sample ↳ into formalin
2	600-800	3 shrimp small sample
3	400-600	Shrimp - 2 juv. Clione lim. fish - 1 sm. jelly
4	200-400	neocalanus amphipod fish - 4
5	200-98	chaetognaths 5 [illegible] ostracods?
6	98-51	neocalanus 1 pteropod → Limacina helicina radiolarium amphipod
7	51-26	Neocalanus amphipods rads 1 Limacina
8	26-0	neocalanus - lots! amphipods some radio

MOCNESS DATA SHEET

Cruise [illegible] Location [illegible] Tow # 01_01_006 PHW

Date ~~[illegible]~~ 1 Sept 2012 Wind Speed [illegible] Direction 290°

Year/Day [illegible] Sea State [illegible]

Local Time [illegible]43 to ____ Start Lat [illegible] Long [illegible]9°

GMT Time ____ to ____ End Lat ____ Long ____

Net Size 1 m² Net Condition Good
Net Mesh 150 µm Net 0 = 335 µm

Processed Filename [illegible].pro Raw Filename [illegible]_01_006.raw

- No funnels in buckets discovered after tow

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments	
Start	0043	0						Start down @ 10 m/min
Net 0 Down	0157	1000			3838			0053 increase to 20 m/min; 0107 increase to 25 m/min
Net 1	0159	1000			1007m 1780		~~NR~~ late Response	0119 increase to 30 m/min
Net 2	0216	800			2296		Response	0159 up at 10 m/min
Net 3	0235	~~600~~ 400			1222 1178		~~Response~~ NR	0201 up at 15 m/min; 0207 up at 20 m/min
Net 4	0255	~~400~~ 190			792	732	~~NR~~ late Response	0231 up at 20 m/min
Net 5	0316/0321 late response	100			626	326	late No response gate Increment	0243 up at 25 m/min; 0250 Slow to 20 m/min; Slow to 15 m/min
Net 6	0329 / 0331 increment	50			309	149	No Net Res 0331 increment	0300 up at 20 m/min
Net 7	0340	~~30~~ 25			421	71.2	No Response	0317 Slow to 10 m/min; 0322 up to 15 m/min
Net 8	0345	~~X~~ 0			→	43	increment No Response	0330 slow to 10 m/min; 0331 slow to 5 m/min
Closed	0353	∅		Close instead	1.7		Net 8 came up open	

0352 – Bar dropped?
Net 9 = Net 6 but partially open with net 5; Net 7 = Net 10; Net 8 = Net 11

COMMENTS: Lots of movement of fantail & block line – Buckets taped in pairs to reduce tangling – Gave Net 1 2 extra steps (No Res)
0203 – Got a net response (Net 2 = Net 1) (950 m) Net 2 went on 1 step
NET 4 – late response after increment Res Net 6 = Net 4 Net 8 = Net 5

Tow: M-01-006 New Horizon 1208
Date: 1 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

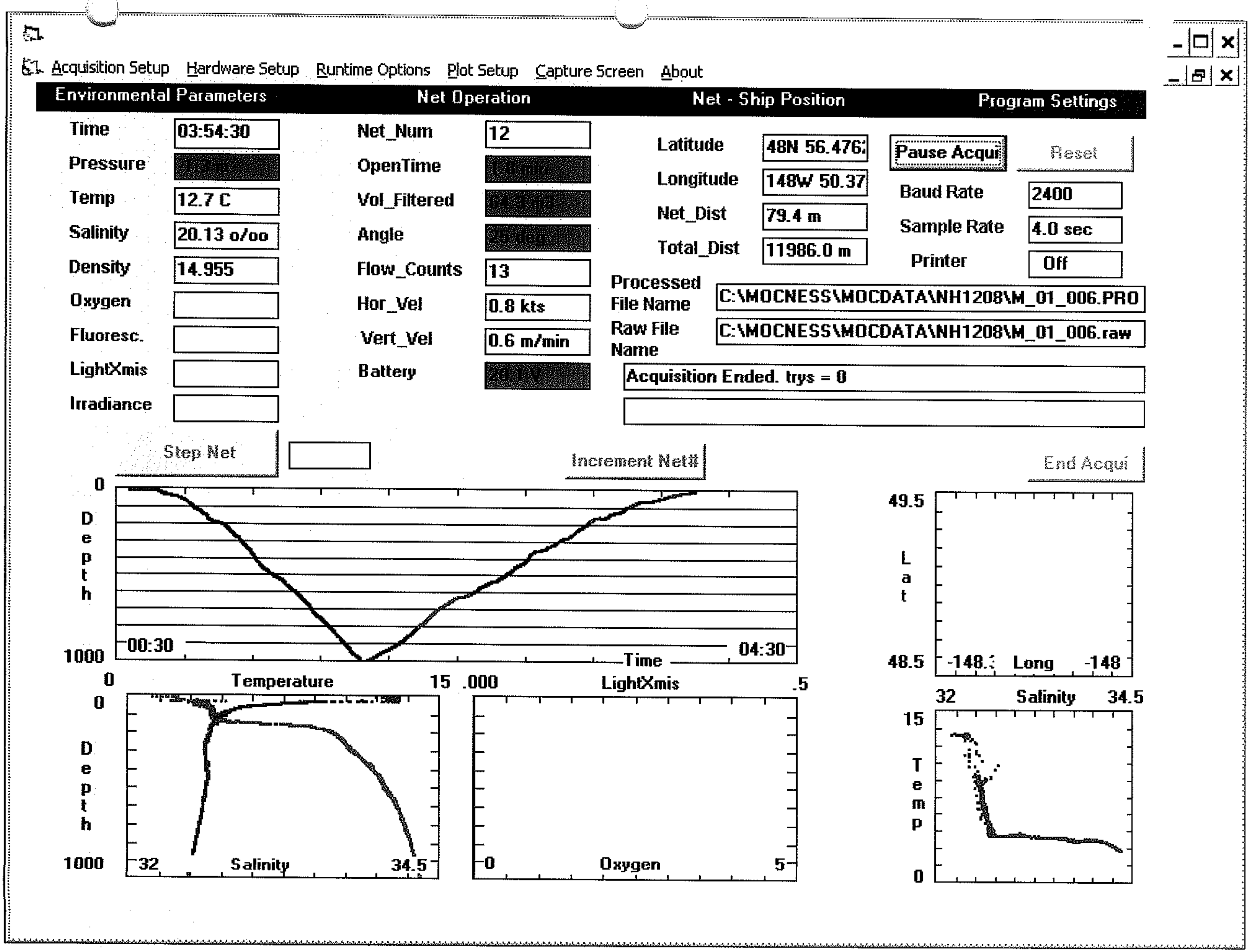
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-000.5	1007.5	440.0	02.9	13.1	04.4	02.8	13.1	04.4	32.37	50.00	33.36
1	-000.3	995.6	358.9	02.9	13.1	01.1	02.8	13.1	01.1	00.07	50.00	12.90
2	801.8	952.0	887.9	03.0	03.2	03.1	02.9	03.2	03.0	34.28	34.34	34.32
3	602.4	800.6	683.6	03.2	03.6	03.5	03.2	03.6	03.4	34.18	34.28	34.22
4	373.3	600.6	501.5	03.6	03.9	03.8	03.6	03.9	03.7	33.94	34.17	34.08
5	369.9	372.8	371.1	03.8	03.8	03.8	03.8	03.8	03.8	33.93	33.94	33.94
6	177.0	367.6	285.9	03.7	04.0	03.8	03.7	04.0	03.8	33.58	33.93	33.80
7	155.4	176.4	162.2	04.0	04.1	04.0	04.0	04.1	04.0	33.34	33.57	33.47
8	089.7	157.9	129.2	04.0	04.6	04.2	04.0	04.6	04.2	32.66	33.42	32.88
9	048.2	089.8	064.6	04.6	06.0	05.3	04.6	06.0	05.3	32.58	32.68	32.67
10	024.3	049.3	037.7	06.0	09.2	07.3	06.0	09.2	07.3	32.49	32.65	32.59
11	001.6	024.7	012.8	09.3	13.0	12.7	09.3	13.0	12.7	32.26	32.55	32.41

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	24.34	38.28	26.41	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.51	38.19	10.28	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.29	27.37	27.34	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	27.17	27.29	27.22	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.97	27.17	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	26.96	26.96	26.96	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	26.66	26.96	26.86	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	26.46	26.65	26.57	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	25.87	26.53	26.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
9	25.67	25.88	25.80	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
10	25.17	25.69	25.47	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
11	24.29	25.13	24.45	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000
9	0.000000000	0.000000000	0.000000000
10	0.000000000	0.000000000	0.000000000
11	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	31.0	89.0	51.7	00.8	08.9	01.7	-30.3	09.9	-13.2	01132	03838
1	00.0	58.0	17.6	00.0	05.0	00.8	-02.7	13.9	03.3	00190	00273
2	46.0	65.0	52.0	01.9	03.1	02.5	04.9	22.6	11.5	00193	00734
3	47.0	67.0	53.5	02.3	03.1	02.7	-05.6	19.1	10.8	00278	01105
4	47.0	69.0	53.0	02.3	03.1	02.6	01.0	24.0	10.7	00317	01265
5	50.0	52.0	51.0	02.7	02.7	02.7	16.4	17.5	16.8	00004	00014
6	45.0	61.0	52.0	01.9	02.7	02.5	00.6	17.9	09.3	00312	01214
7	45.0	57.0	50.0	01.9	02.7	02.4	-01.6	14.4	06.6	00053	00214
8	39.0	56.0	46.5	01.9	02.7	02.2	-03.3	17.5	06.7	00147	00590
9	36.0	51.0	42.7	01.6	02.3	01.9	-03.3	12.4	04.2	00145	00560
10	35.0	51.0	40.9	01.6	02.3	01.9	00.4	07.6	04.7	00078	00302
11	30.0	51.0	44.8	01.6	02.7	02.1	-01.7	06.6	03.4	00100	00421

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol	
0	245.024120	0:34:44	-000.5	1007.5	440.0	01132	03838	
1	245.024850	0:35:46	-000.3	995.6	358.9	00190	00273	→1007 Net1
2	245.085810	2:3:33	801.8	952.0	887.9	00193	00734	
3	245.094826	2:16:33	602.4	800.6	683.6	00278	01105	Net 2
4	245.107789	2:35:12	373.3	600.6	501.5	00317	01265	Net 3
5	245.122523	2:56:26	369.9	372.8	371.1	00004	00014	→1228 Net4
6	245.122755	2:56:46	177.0	367.6	285.9	00312	01214	
7	245.137245	3:17:37	155.4	176.4	162.2	00053	00214	
8	245.139757	3:21:15	089.7	157.9	129.2	00147	00590	
9	245.146586	3:31:4	048.2	089.8	064.6	00145	00560	
10	245.153322	3:40:47	024.3	049.3	037.7	00078	00302	
11	245.156944	3:45:59	001.6	024.7	012.8	00100	00421	
12	245.161644	3:52:45						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Hardware Setup
Runtime Options
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Environmental Parameters
Net Operation
Net - Ship Position
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LightXmis
Irradiance
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OpenTime
Vol_Filtered
Angle
Flow_Counts
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Hor_Vel
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Vert_Vel
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Battery
Latitude
48N 56.476
Longitude
148W 50.37
Net_Dist
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Total_Dist
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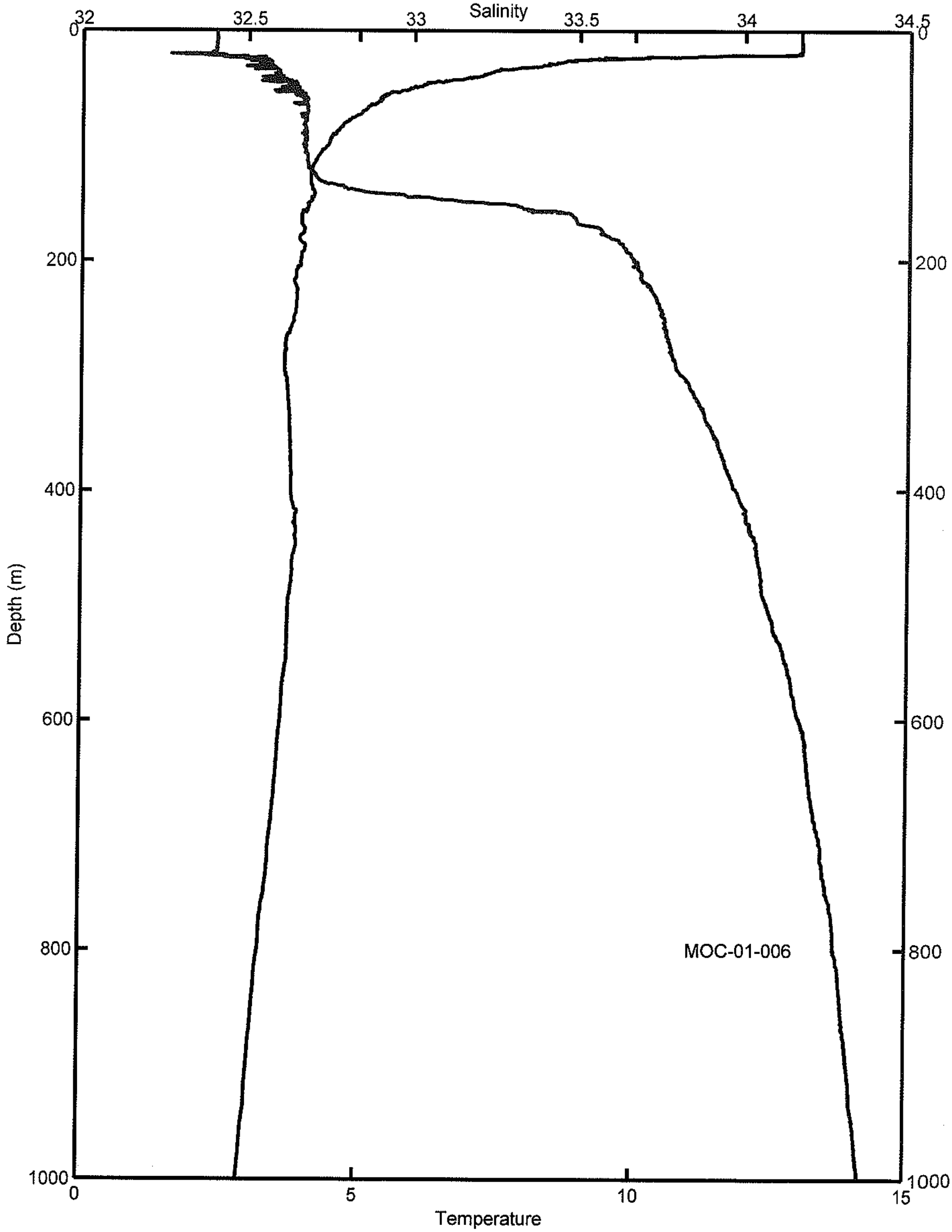
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_006.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_006.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
Depth
0
1000
00:30
Time
04:30
Temperature
0
15
Salinity
32
34.5
LightXmis
.000
.5
Oxygen
0
5
Lat
49.5
48.5
Long
-148
Salinity
32
34.5
Temp
15
0



Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
0
5
10
15
Temperature
MOC-01-006

#1

MOCNESS TOW#: 6
Date: 09/01/2012
Station: 3
People Processing Sample: Zoo, Liza, Tom

Net 8 open???

NET	DEPTH	Taxonomic Composition
0	0 - 1000	Atola Jelly fish 3 Jelly Amphipods ? Mictosid Euphosids
1	1000 - 800	~~Egg~~ Atola Jellyfish Shrimps Valdiviella Paraeuchaeta
2	800 ~~600~~ 400	1g mictofid 3 shrimp 10 small Lamburg. frozen little Squid
3	~~600~~ 400 190	1 Jelly Fish Amphipods Neo calanus Cristatus 1 shrimp Sm Chaetognaths
4	~~100~~ 190 100	Squid (many) Euphosids 1 fish N. Cristatus Sergestid *Limacina helicina*
5	~~50~~ 100 50	N Cristatus Squid L. helicina Thysanoessa 1g ~~Cool~~ Chaetognaths
6	~~50~~ 25	Euphosids Neo calanus Crist. L. helicina Squid
7	25 ~~25~~ 0	Amphipods Euphosids Chaetognaths Neocalanus crist. Lg Jelly
8	Surface only	Lg Jelly (95%) Chaetognaths Amphipods Neocalanus Crist

L. helicina 190 - 25

pteropods

See notes on Moc sheet

Specimens Removed from MOCNESS tows

cruise: ~~OC473~~ NH1208 time tow ended: ____________

date: 1 Sept 12

tow: 6 sta 3

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/free ze	Collector's name
4	Limacina helicina	1		?	Amy
	? She has no record of it so				
	? maybe she just looked at				
	it + returned it to sample?				
				-MC	

MOCNESS DATA SHEET

Cruise NH1208 Location NE Pacific Tow # M-01-007

Date 2 Sept 2012 Wind Speed 9 Direction 236

Year/Day local 246 Sea State calm 1-3' seas water depth 4699m

Local Time 0900 to ______ Start Lat 46 59.932 N Long 144 44.245 W

GMT Time 1700 to ______ End Lat ______ Long ______

Net Size 1 m² Net Condition good ship's course 185

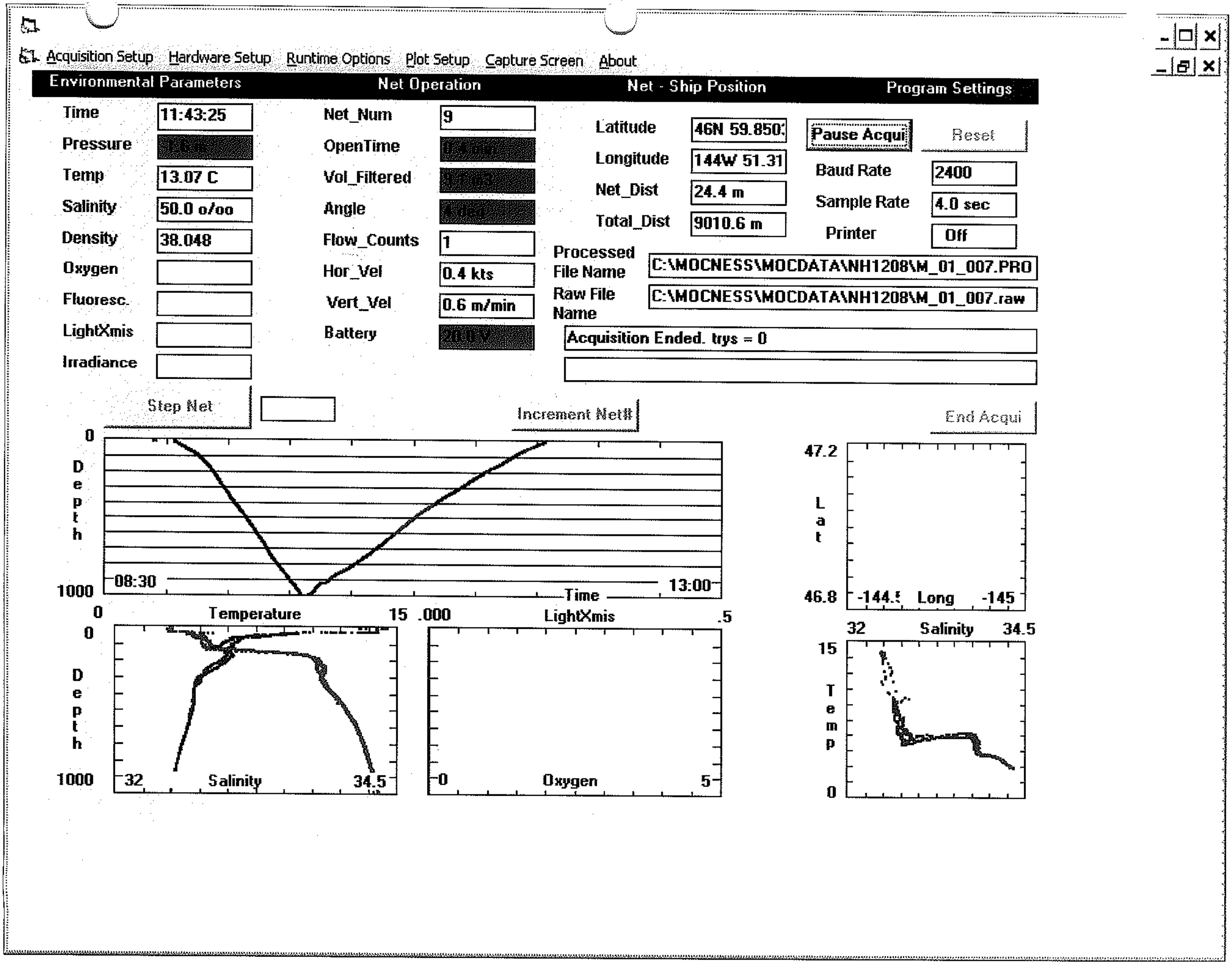
Net Mesh 150 µm Net 0 = 333 µm

Processed Filename M_01_007.pro Raw Filename M-01-007.raw

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
							Deploy @ 10 m/min
Start	0900	0				100 MWO	↑ to 20 m/min
Net 0					0915	208 MWO	↑ to 25 m/min
Down	0958	1010		NR	2373 0918	300 MWO	↑ to 30 m/min
Net 1	0958	1001		NR	1796 0955 0959	1466 MWO	→ bottom of tow start in at 10 m/min
Net 2	1019	796		NR	1047 1003		↓ ship speed slightly
Net 3	1036	600		NR	1095 1007	1409 MWO	↑ to 15 m/min.
Net 4	1054	400		NR	1333		
Net 5	1116	200		NR	772		
Net 6	1128	101		NR	411		
Net 7	1134	50		NR	260		50m to surface 10 m/min
Net 8	1138	25		NR	273		
Closed	1143	0		NR			

COMMENTS: Tow + deploy w/ only 1 screw to minimize tangle. Also set frame far aft for bucket toss, filled buckets w/ seawater + paid out at 10 m/min as soon as lines cast. Looked like streaming ok at deployment. →


Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
11:43:25
Pressure
Temp
13.07 C
Salinity
50.0 o/oo
Density
38.048
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
1
Hor_Vel
0.4 kts
Vert_Vel
0.6 m/min
Battery
Latitude
46N 59.850
Longitude
144W 51.31
Net_Dist
24.4 m
Total_Dist
9010.6 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_007.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_007.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
08:30
Time
13:00
47.2
Lat
46.8
-144.5
Long
-145
0
Temperature
15
.000
LightXmis
.5
0
Depth
1000
32
Salinity
34.5
0
Oxygen
5
32
Salinity
34.5
15
Temp
0

Tow: M-01-007 New Horizon 1208
Date: 2 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-001.0	1012.6	462.6	02.9	14.5	05.0	02.9	14.5	05.0	00.02	50.00	33.47
1	-000.4	1000.3	874.9	03.0	14.5	03.2	02.9	14.5	03.1	01.05	50.00	33.78
2	600.9	795.7	701.3	03.4	03.9	03.6	03.3	03.8	03.6	34.15	34.26	34.21
3	400.7	599.2	494.0	03.9	04.3	04.1	03.8	04.2	04.1	33.95	34.15	34.06
4	201.5	400.1	299.1	04.2	05.7	04.7	04.1	05.7	04.6	33.79	33.95	33.85
5	101.4	200.0	152.0	05.2	06.0	05.8	05.2	06.0	05.7	32.78	33.80	33.42
6	051.7	100.5	075.7	05.7	06.8	06.1	05.7	06.8	06.1	32.70	32.79	32.76
7	026.8	051.0	038.5	07.0	10.0	08.4	07.0	10.0	08.4	32.60	32.72	32.67
8	-001.4	026.2	011.2	11.0	14.1	13.7	11.0	14.1	13.7	32.48	32.54	32.51

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.80	37.78	26.43	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.01	37.73	26.89	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.13	27.26	27.20	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.93	27.13	27.03	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.66	26.93	26.80	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.85	26.66	26.33	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.64	25.84	25.77	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	25.07	25.62	25.38	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	24.25	24.83	24.32	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	25.0	70.0	40.9	00.0	03.9	01.1	-28.5	09.2	-17.2	00875	02373
1	31.0	51.0	40.4	00.0	02.3	01.9	-06.1	21.5	09.7	00315	01196
2	38.0	50.0	42.2	01.9	02.3	02.1	08.0	16.0	11.2	00262	01047
3	40.0	52.0	44.9	01.9	02.7	02.3	06.2	15.2	11.2	00266	01095
4	44.0	51.0	46.9	01.9	02.7	02.4	05.8	13.4	09.5	00316	01333
5	44.0	54.0	48.3	02.3	02.7	02.5	04.3	10.7	08.3	00180	00772
6	44.0	51.0	47.1	02.3	02.7	02.5	06.0	09.5	08.0	00093	00411
7	42.0	50.0	45.1	01.9	02.7	02.3	04.3	08.6	06.2	00060	00260
8	42.0	51.0	44.6	01.6	02.7	02.2	03.3	08.6	06.4	00066	00273

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	246.369005	8:51:22	-001.0	1012.6	462.6	00875	02373
1	246.369468	8:52:1	-000.4	1000.3	874.9	00315	01196
2	246.430162	10:19:25	600.9	795.7	701.3	00262	01047
3	246.442384	10:37:1	400.7	599.2	494.0	00266	01095
4	246.454792	10:54:53	201.5	400.1	299.1	00316	01333
5	246.469525	11:16:6	101.4	200.0	152.0	00180	00772
6	246.477928	11:28:13	051.7	100.5	075.7	00093	00411
7	246.482303	11:34:30	026.8	051.0	038.5	00060	00260
8	246.485139	11:38:36	-001.4	026.2	011.2	00066	00273
9	246.488241	11:43:4					

Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
Depth (m)
MOC-01-007
0
5
10
15
Temperature

MOCNESS TOW#: 7
Date: 8 Sept 12
Station: 7
People Processing Sample: N Copley, Alex Bergan

NET	DEPTH	Taxonomic Composition
0	0-1010	5 fish, decapods, rad's; ostrocods, triangle jelly, some neocalanus; helacina, 3 orange jelly?, maybe a couple pterod
1	1000-796	squid ~ 12", shrimp = 4 lg, fish - 1; Candacia colum, medusae
2	996-600	1 giant shrimp, small medusi, 1 snipe eel
3	600-400	euphousids, triangle medusa, long thin fish/eel?; all jellies* into formalin; clear medusa (good catch), little fish, decapods/shrimp, copepod - neocalanus?
4	400-200	1 fish, krill, Neocal.?; tiny amphipods, very small jellies, chaet
5	100-200	spilled some on table - retrieved most; *rads*, orange ostracods, krill; chaetog, sm. amph.; Limacina* small
6	50-100	*rads*** , Neocal.; amphipod, lg. orange ostracods, juv. clione, a few sm. krill; IIII Limacina, Clio - IIII
7	25-50	Neocal, rads, siphonophore; krill - II, sm fish, Clione lim; bunch Limacina*, some clio pyr.
8	0-25	~~Neocal~~, Limacina**, Clione; *large Clios sp - 20+ mm - striated - photos; ~9 L. helicina, ~1 Clio pyr. > liquid N_2; ~1 L. helicina 70% EtOH

Specimens Removed from MOCNESS tows

cruise: ~~OC-473~~ NH 1201
date: 25 Sept 2012
tow: 7, Sta. 7

time tow ended:

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
(3)	all jellies into formalin	nd		formalin	NC, AB
	∓ in general, jellies were put into formalin split because they dissolve in ethanol + make a mess of the sample.				
8	Limacina helicina	9	~2 hrs. later	N2	Amy M.
8	L. helicina	1	"	70%	Alex B.
8	Clio pyramidata	1	"	N2	AM

MOCNESS DATA SHEET

PHW

Cruise WH1208 Location North Pacific Tow # M-01-008

Date 25 Sept 2012 Wind Speed 10-12 Kts Direction 195 degrees

local Year/Day 246 Sea State 3-5' swells some white caps

Local Time 2038 to ______ Start Lat ______ Long ______

GMT Time ______ to ______ End Lat ______ Long ______

Net Size 1-m² Net Condition Good rips sewed up

Net Mesh 150μm Net 0 = 333μm

Processed Filename M-01-008.pro Raw Filename M-01-008.raw

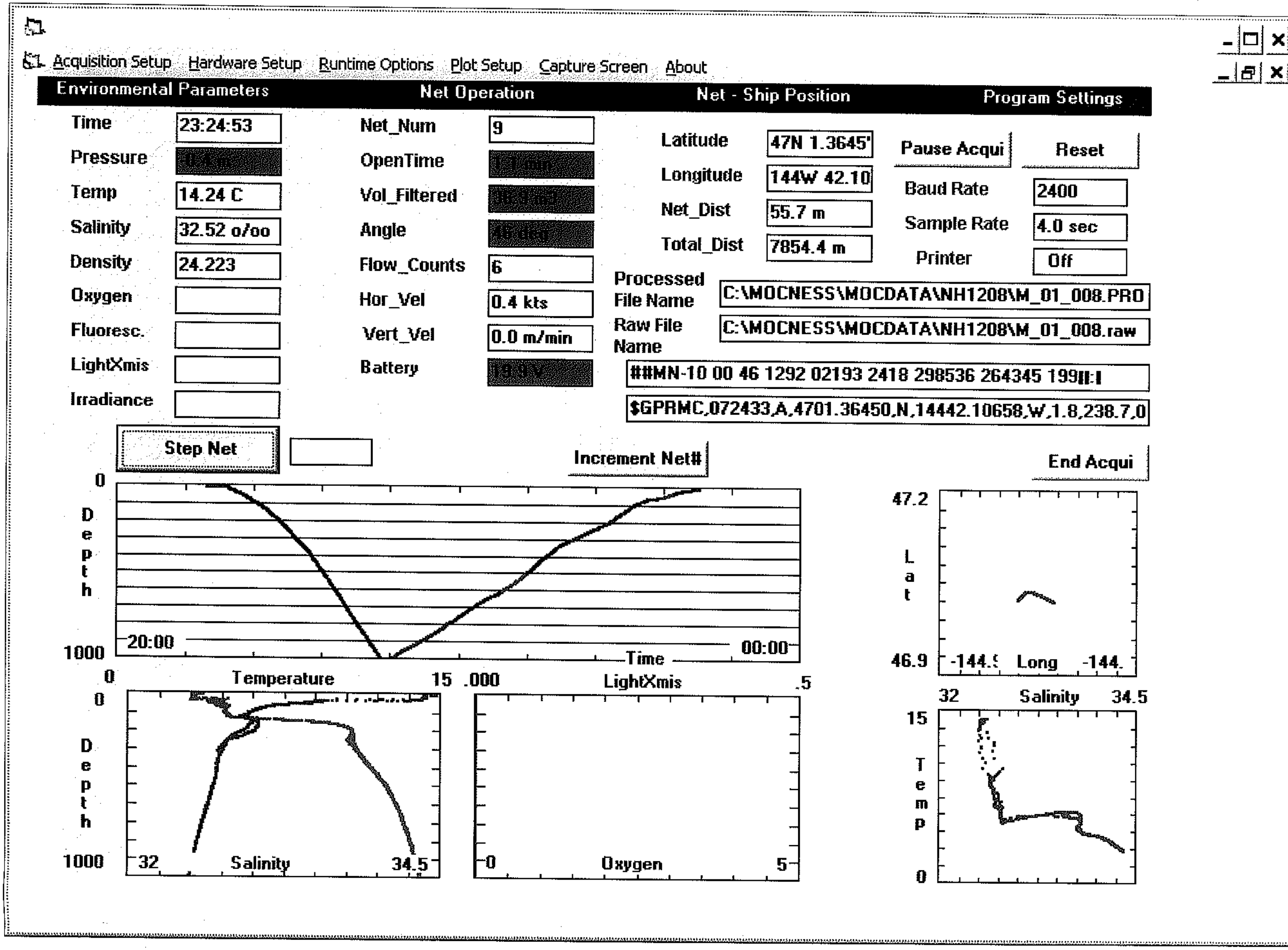
Bat Volt @ start = 20.3V

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	2038	0					Start down at 10m/min
Net 0 Down	2136	1000			2455	1327 m	2044 out at 15m/min
Net 1	2136	1000			1137	1315	2051 out at 20m/min; 2056 out at 25m/min
Net 2	2157	785			1076	1093	2107 out at 30m/min
Net 3	2215	600			501	821	2133 stop at 0m/min
Net 4	2224	495			944	640	2135 up at 10m/min; 2153 up at 15m/min
Net 5	2240	300			1298	399	2213 up at 20m/min; 2230 slow to 15m/min
Net 6	2301	100			610	140	2235 slow to 10m/min
Net 7	2311	50			302	66	2252 up to 15m/min; 2301 slow to 10m/min
Net 8	2316	25			469	39	2305 slow to 5m/min
Closed	2323	0				3.0	

COMMENTS: Net opened/closed at 495m by mistake so net 4 will fish to 300m

This was very good tow except for mistakes opening at right depths



Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time 23:24:53
Pressure
Temp 14.24 C
Salinity 32.52 o/oo
Density 24.223
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num 9
OpenTime
Vol_Filtered
Angle
Flow_Counts 6
Hor_Vel 0.4 kts
Vert_Vel 0.0 m/min
Battery
Latitude 47N 1.3645'
Longitude 144W 42.10
Net_Dist 55.7 m
Total_Dist 7854.4 m
Pause Acqui
Reset
Baud Rate 2400
Sample Rate 4.0 sec
Printer Off
Processed File Name C:\MOCNESS\MOCDATA\NH1208\M_01_008.PRO
Raw File Name C:\MOCNESS\MOCDATA\NH1208\M_01_008.raw
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$GPRMC,072433,A,4701.36450,N,14442.10658,W,1.8,238.7,0
Step Net
Increment Net#
End Acqui
Depth
0
1000
20:00
Time
00:00
Temperature
0
15
Salinity
32
34.5
.000
LightXmis
.5
Oxygen
0
5
Lat
47.2
46.9
Long
Salinity
32
34.5
Temp
15
0

Tow: M-01-008   New Horizon 1208
Date: 2 Sept 2012
Temperature Probe # 535   Conductivity Probe # 120   Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

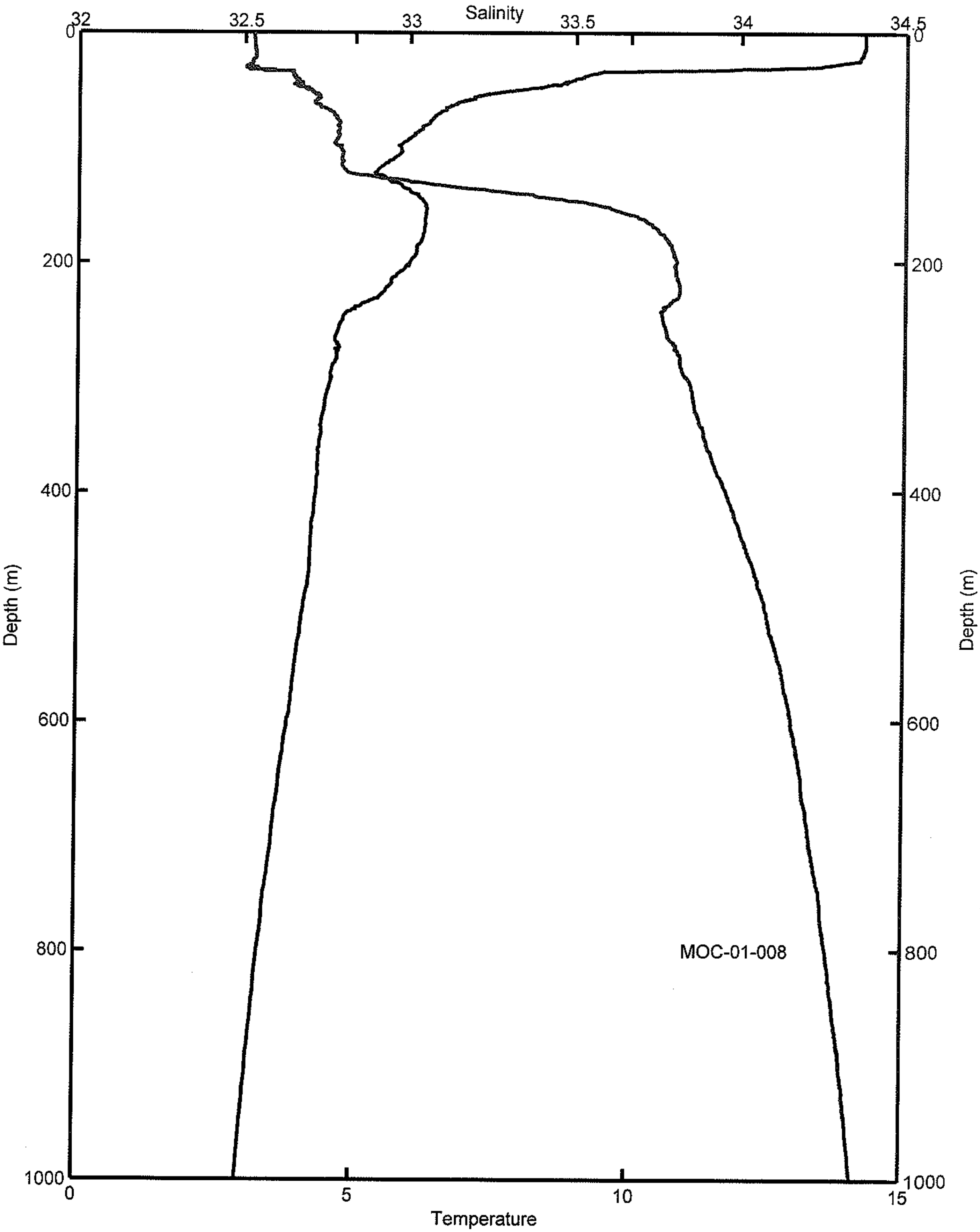
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-000.4	1019.3	436.9	02.9	14.9	05.1	02.9	14.9	05.1	00.31	50.00	33.41
1	890 ~~000.0~~	998.0	~~697.2~~	03.0	14.9	02.5	02.9	14.9	02.4	00.06	50.00	26.87
2	600.9	785.3	688.3	03.4	03.8	03.6	03.3	03.8	03.5	34.16	34.26	34.21
3	494.6	599.0	550.7	03.8	04.1	04.0	03.8	04.1	03.9	34.07	34.16	34.12
4	300.6	492.4	385.7	04.1	04.6	04.3	04.1	04.6	04.3	33.84	34.07	33.94
5	100.2	299.5	209.0	04.6	06.3	05.4	04.6	06.3	05.4	32.79	33.83	33.63
6	051.1	098.4	068.5	05.8	07.7	06.7	05.8	07.7	06.7	32.70	32.79	32.74
7	024.5	050.7	039.2	07.8	14.1	09.8	07.8	14.1	09.8	32.50	32.70	32.63
8	-000.3	023.6	009.8	14.1	14.2	14.2	14.1	14.2	14.2	32.52	32.53	32.53

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.64	37.64	26.36	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.83	37.68	21.40	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.14	27.27	27.20	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	27.04	27.14	27.09	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.80	27.04	26.91	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.83	26.80	26.54	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.51	25.82	25.68	00.00	00.00	00.00	00.00	00.00	00.00	00..0	00.0	00.0
7	24.26	25.50	25.12	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	24.23	24.25	24.23	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	20.0	60.0	40.7	00.0	02.7	01.1	-30.4	15.2	-17.0	00883	02455
1	00.0	44.0	26.2	00.0	01.9	01.3	-02.9	16.4	08.2	00395	01137
2	32.0	44.0	37.9	01.6	02.3	01.9	00.0	15.0	10.0	00272	01076
3	31.0	40.0	34.4	01.6	01.9	01.8	08.6	17.1	12.3	00128	00501
4	28.0	36.0	32.0	01.6	01.9	01.8	06.0	17.5	12.3	00237	00944
5	32.0	41.0	35.2	01.6	02.3	01.9	05.5	13.8	09.3	00320	01298
6	33.0	42.0	37.7	01.6	02.3	01.9	-00.4	11.7	05.1	00146	00610
7	30.0	42.0	33.8	01.6	02.3	01.8	02.3	08.2	05.2	00072	00302
8	42.0	58.0	46.9	01.9	02.7	02.3	-00.8	08.4	03.5	00110	00469

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	246.855243	20:31:32	-000.4	1019.3	436.9	00883	02455
1	246.855775	20:32:18	800.0	998.0	~~697.2~~	00395	01137
2	246.914838	21:57:22	600.9	785.3	688.3	00272	01076
3	246.927523	22:15:37	494.6	599.0	550.7	00128	00501
4	246.933518	22:24:15	300.6	492.4	385.7	00237	00944
5	246.944572	22:40:10	100.2	299.5	209.0	00320	01298
6	246.959491	23:1:40	051.1	098.4	068.5	00146	00610
7	246.966319	23:11:30	024.5	050.7	039.2	00072	00302
8	246.969711	23:16:23	-000.3	023.6	009.8	00110	00469
9	246.974873	23:23:48					



Salinity
32
32.5
33
33.5
34
34.5
Depth (m)
0
200
400
600
800
1000
Temperature
0
5
10
15
MOC-01-008

MOCNESS TOW#: 8
Date: 2 Sept 2012
Station: 7
People Processing Sample: [illegible]

NET	DEPTH	Taxonomic Composition
0	0 1000	[illegible]
1	1000 725	Shrimp, small medusa, [illegible] [illegible] [illegible] [illegible]
2	725 600	More medusa, 1 myctophid, [illegible] shrimp [illegible] [illegible] [illegible] * Poeobius *
3	600 495	[illegible], 2 fish
4	495 300	Medusa ? fish Many N. cristatus [illegible]
5	300 100	[illegible] fish [illegible] fish Large (dead) [illegible] Sergestid Clione Limacina helicina
6	100 50	Big myctophid, [illegible] Clione limacina, [illegible], little squid [illegible] juv. fish Ostracods, [illegible], [illegible] Clio pyramid	[illegible] amph
7	50 25	Neocal [illegible], radiolarians, ostracods, amph few jelly, fish larvae, Clione Limacina → BIG & little little squid, Clio pyramidata	L. helicina
8	25 0	[illegible] L. helicina Clione limacina amph. Neocal. phytoplankton gunk

Specimens Removed from MOCNESS tows

cruise: OC-473 [illegible] time tow ended: ____________

date: 2Sept

tow: Moc 8 [illegible]

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	
2	poeobius	1		95%	AEM	Po 11. 1

PHW

MOCNESS DATA SHEET

Cruise NH1208 Location North Pacific Tow # M-01-009

Date 3 Sept 2012 Wind Speed 7 Kts Direction 222°

Year/Day [illegible] Sea State Moderate Nice towing weather

Local Time 2340 to 0234 Start Lat 45 02' Long 141 26.8

GMT Time [illegible] to [illegible] End Lat 41.9614 Long -141.3243

Net Size 1-m² Net Condition Good

Net Mesh 150µm (333µm = Net 0)

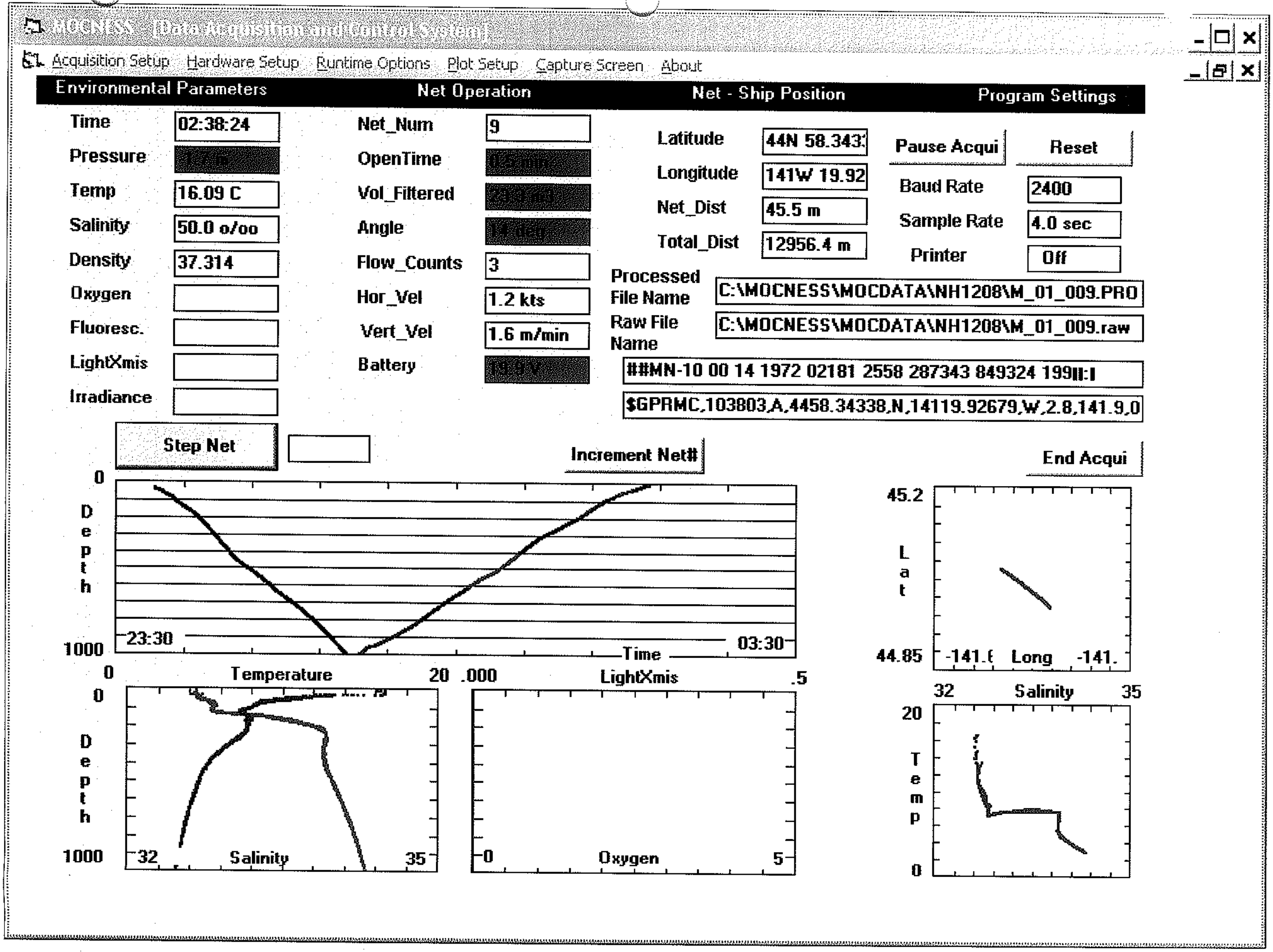
Processed Filename M-01-006.pro Raw Filename M-01-009.raw

Bat Volts = 20.2 at start

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	2340	0					start down at 10 m/min
Net 0 Down	0052	1000			4204	1931	2345 increase to 15 m/min; 2348 increase to 20 m/min
Net 1	0055	1000			1362	1923	2356 increase to 25 m/min
Net 2	0117	800			1127	1547	0001 increase to 30 m/min
Net 3	0135	600			1158	1189	0054 up at 10 m/min; 0101 up at 15 m/min
Net 4	0152	400			1288	792	0102 up at 20 m/min
Net 5	0212	200			625	386	0144 up at 25 m/min; 0154 slow to 20 m/min
Net 6	0222	100			416	198	0222 slow to 15 m/min; 0228 slow to 10 m/min
Net 7	0228	50			321	7	
Net 8	0233	25			317	50	
Closed	0237	0				0	

COMMENTS: Nice launch. Good tow


MOCNESS [Data Acquisition and Control System]
Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time 02:38:24
Pressure
Temp 16.09 C
Salinity 50.0 o/oo
Density 37.314
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num 9
OpenTime
Vol_Filtered
Angle
Flow_Counts 3
Hor_Vel 1.2 kts
Vert_Vel 1.6 m/min
Battery
Latitude 44N 58.343
Longitude 141W 19.92
Net_Dist 45.5 m
Total_Dist 12956.4 m
Pause Acqui
Reset
Baud Rate 2400
Sample Rate 4.0 sec
Printer Off
Processed File Name C:\MOCNESS\MOCDATA\NH1208\M_01_009.PRO
Raw File Name C:\MOCNESS\MOCDATA\NH1208\M_01_009.raw
##MN-10 00 14 1972 02181 2558 287343 849324 199
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Step Net
Increment Net#
End Acqui
0
Depth
1000
23:30
Time
03:30
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
32
Salinity
35
0
Oxygen
5
45.2
Lat
44.85
Long
32
Salinity
35
20
Temp
0

Tow: M-01-009 New Horizon 1208
Date: 3 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

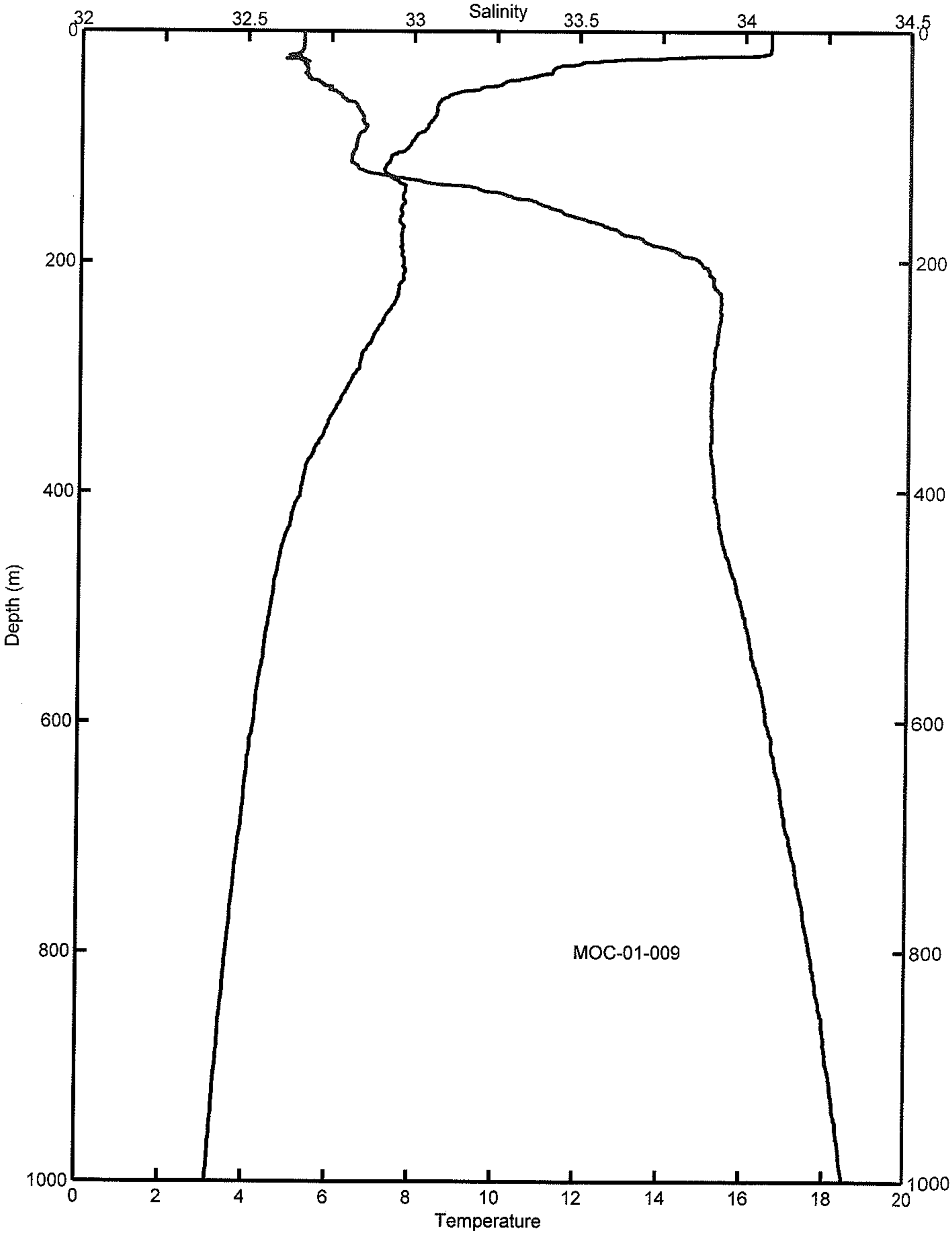
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.6	1014.3	447.7	03.1	16.6	06.7	03.0	16.6	06.7	00.01	50.00	34.72
1	800 ~~-001.4~~	999.1	898.8	03.2	16.0	03.4	03.1	16.0	03.3	34.21	50.00	34.31
2	598.8	797.0	696.1	03.6	04.2	03.9	03.6	04.2	03.9	34.07	34.21	34.14
3	398.7	598.0	504.5	04.2	05.3	04.6	04.2	05.3	04.6	33.91	34.07	34.00
4	199.9	396.7	289.5	05.3	07.8	06.7	05.3	07.8	06.7	33.86	33.93	33.91
5	099.6	198.5	149.3	07.3	07.9	07.7	07.3	07.9	07.6	32.81	33.86	33.31
6	050.8	098.4	074.0	07.9	09.6	08.5	07.9	09.6	08.5	32.74	32.86	32.82
7	025.3	049.4	037.6	09.6	12.7	11.0	09.6	12.7	11.0	32.67	32.75	32.69
8	-001.2	024.4	011.4	13.0	16.6	16.2	13.0	16.6	16.2	32.61	32.67	32.66

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.02	37.42	27.13	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	27.20	37.34	27.30	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.03	27.20	27.12	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.78	27.03	26.93	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.42	26.78	26.60	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.58	26.42	26.00	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.27	25.58	25.49	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	24.64	25.26	24.98	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.81	24.59	23.89	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	00.0	64.0	45.6	00.0	02.7	01.5	-20.8	08.4	-12.0	01251	04204
1	44.0	62.0	51.2	01.2	03.1	02.6	-00.6	14.6	09.2	00326	01362
2	49.0	55.0	51.9	02.7	03.1	02.8	09.4	14.2	11.5	00260	01127
3	50.0	56.0	52.5	02.7	03.1	02.8	07.0	15.8	11.2	00266	01158
4	50.0	55.0	52.2	02.7	03.1	02.8	06.4	15.2	10.1	00295	01288
5	48.0	55.0	50.5	02.3	03.1	02.8	08.2	12.6	10.6	00140	00625
6	50.0	54.0	51.4	02.7	03.1	02.8	06.4	10.5	08.1	00091	00416
7	49.0	54.0	51.4	02.3	03.1	02.7	03.5	07.6	05.3	00071	00321
8	45.0	55.0	49.4	01.9	03.1	02.6	02.2	07.2	05.7	00070	00317

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	247.980231	23:31:31	000.6	1014.3	447.7	01251	04204
1	247.980937	23:32:32	~~-001.4~~ 800	999.1	898.8	00326	01362
2	248.053924	1:17:39	598.8	797.0	696.1	00260	01127
3	248.066053	1:35:7	398.7	598.0	504.5	00266	01158
4	248.078461	1:52:59	199.9	396.7	289.5	00295	01288
5	248.092211	2:12:47	099.6	198.5	149.3	00140	00625
6	248.098762	2:22:13	050.8	098.4	074.0	00091	00416
7	248.103032	2:28:22	025.3	049.4	037.6	00071	00321
8	248.106377	2:33:10	-001.2	024.4	011.4	00070	00317
9	248.109676	2:37:55					



Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
MOC-01-009
0
2
4
6
8
10
12
14
16
18
20
Temperature

MOCNESS TOW#: M-01-009
Date: 2 Sept 2012
Station: 11 (night)
People Processing Sample:

NET	DEPTH	Taxonomic Composition
0	0-1000	large shrimp [illegible]
1	800-1000	[illegible] (4) big shrimp (1) 8 shrimps [illegible] 2 [illegible] huge [illegible] 4 [illegible] (large) [illegible] * [illegible]pneu[illegible] * Krill - Thysanoessa
2	600-800	2 big fish *(1 removed)* 3 small fish 6 big [illegible] [illegible] amphipods *(2) megacalanus* [illegible] shrimp 1 Big [illegible] 1 med shrimp. *poeobius* (1) [illegible] Neo[illegible]
3	400-600	big shrimp, 4 small fish, squid, small copepods (plenty) jellies, euphausia pacifica. *Leo took 1 copepod Megacalanus*
4.	200-400	pneumoderma hatchetfish BIG shrimp huge!! [illegible] E pacifica Tessarabrachion oculatus jelly Clione limacina [illegible]
5	100-200	Lots of krill amphipods 1 myctophid Sergestids (three!) Limacina [illegible] Lots of Krill
6	50-100	Krill (little ones) 1 bigger fish amphipods few [illegible] Ostracods Limacina [illegible] sergestids
7	25-50	pneumoderm (3) BIG limacina helicina (acuta) Big Clio pyramidata (?) [illegible] mostly amphipods three fish
8	0-25	large limacina helicina [illegible] large [illegible]

sparse

Net 2	Poeobius	Po 11.2	
Net 1	pneumoderma	Ga 113.12	
Net 2	megacalanus	C 439.3	2 males
Net 3	megacalanus	C 439.4	1 female

Specimens Removed from MOCNESS tows

cruise: OC-473
date: 2 Sept 2012
tow: 9 sta. 11 Night

time tow ended:

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
~~3~~	~~Megacalanus~~	~~1~~		P	~~Leo~~
1	Pneumoderma sp.	1		95%	AMY. Ga113.12
2	Poeobius	2		95%	AM. Po11.2
2	Megacalanus	2♂		95%	LB Co439.3
3	Megacalanus	1♀		95%	LB Co439.4
1	fish for Stegemant	1		Frozen, RNAlater	AEM

GLL

MOCNESS DATA SHEET

Cruise NH1208 Location NE Pacific Tow # M-01-010

Date 4 Sept 2012 Wind Speed 6 Direction 253

Year/Day 248 Sea State calm 1-3'

Local Time 0913 to 1158 Start Lat [illegible] Long 14[illegible]W

GMT Time 1713 to 1958 End Lat ______ Long ______

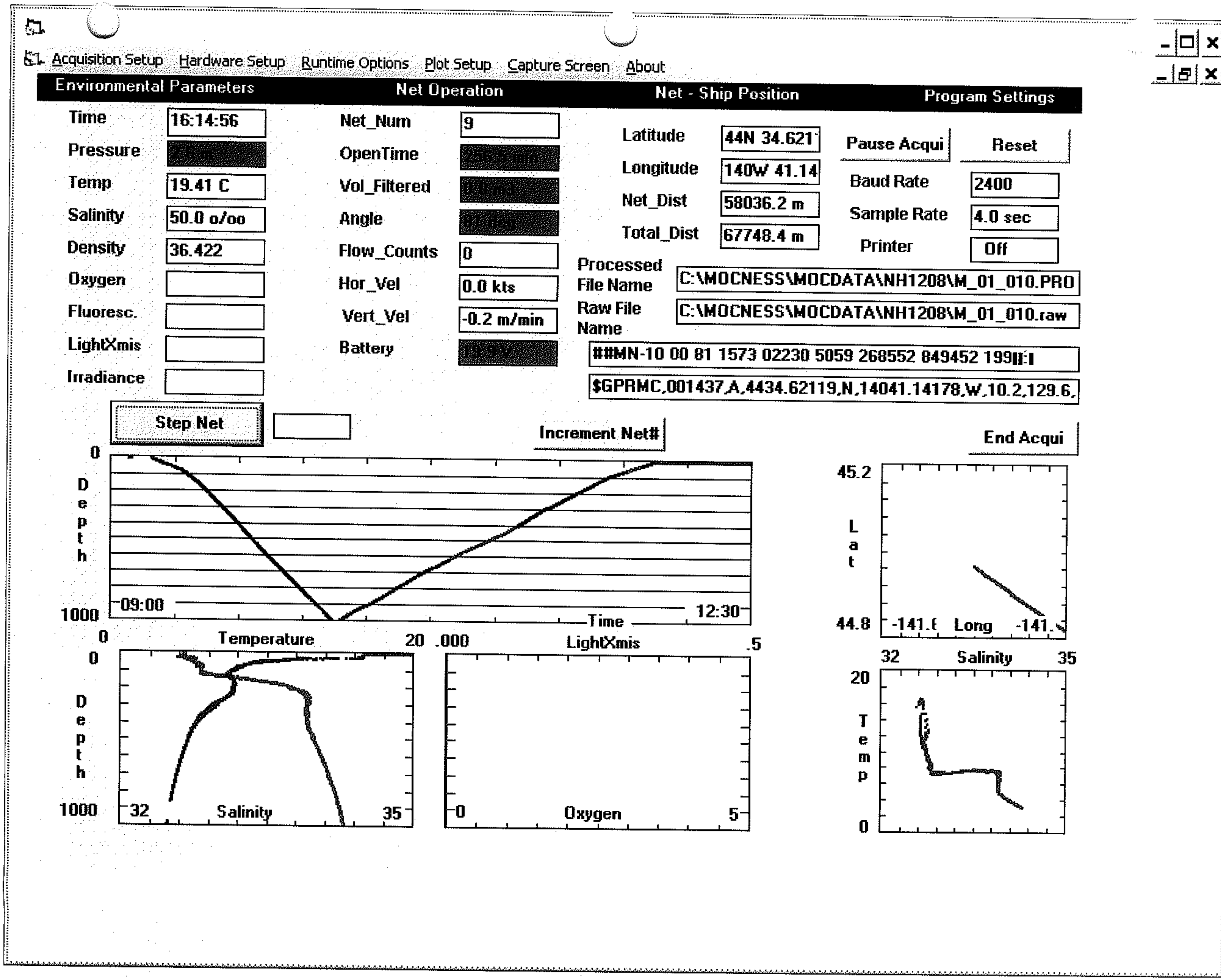
Net Size 1 m^2 Net Condition good ship's course [illegible]
Net Mesh 150 µm Net 0 = 333 µm

Processed Filename M-01-010.pro Raw Filename M-01-010.pro

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	0913	0					start down at 10 m/min
Net 0 Down	1014	1010		2990	1550	0922	100 MWO ↑ to 20 m/min
Net 1	1014	1000		1112	1550	0927	200 MWO ↑ to 25 m/min
Net 2	1033	800		1195	1324	0931	300 MWO ↑ to 30 m/min
Net 3	1052	600		1340	1035	~~1004~~ ~~Angle a little~~ steep 35-40; 1015 in at 10 m/min. Angle still steep [illegible] ~37°	
Net 4	1113	400		1231	696	1020	angle better 40-45
Net 5	1132	201		665	348	1024	900 m depth ↑ to 15 m/min [illegible]
Net 6	1142	100		476	162	1108	454 m z ↑ to 20 m/min
Net 7	1149	51		272	85	1117	546 m z ↓ to 15 m/min; ~~1121 ship spd 2.2 kt~~
Net 8	1154	25		285	41		next? requested slow
Closed	1158	0				1129	276 m ↑ to 20 m/min
						1138	141 m ↓ to 15 m/min
						1143	97 m ↓ to 10 m/min

COMMENTS: Deployed again w/ only 1 screen (STBD). Nice launch. 19.8 V at end.


Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
16:14:56
Pressure
Temp
19.41 C
Salinity
50.0 o/oo
Density
36.422
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
0
Hor_Vel
0.0 kts
Vert_Vel
-0.2 m/min
Battery
Latitude
44N 34.621
Longitude
140W 41.14
Net_Dist
58036.2 m
Total_Dist
67748.4 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_010.PRO
Raw File Name
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Step Net
Increment Net#
End Acqui
Depth
0
1000
09:00
Time
12:30
Temperature
20
Salinity
32
35
.000
LightXmis
.5
Oxygen
5
45.2
Lat
44.8
-141.
Long
Temp

Tow: M-01-010 New Horizon 1208
Date: 4 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

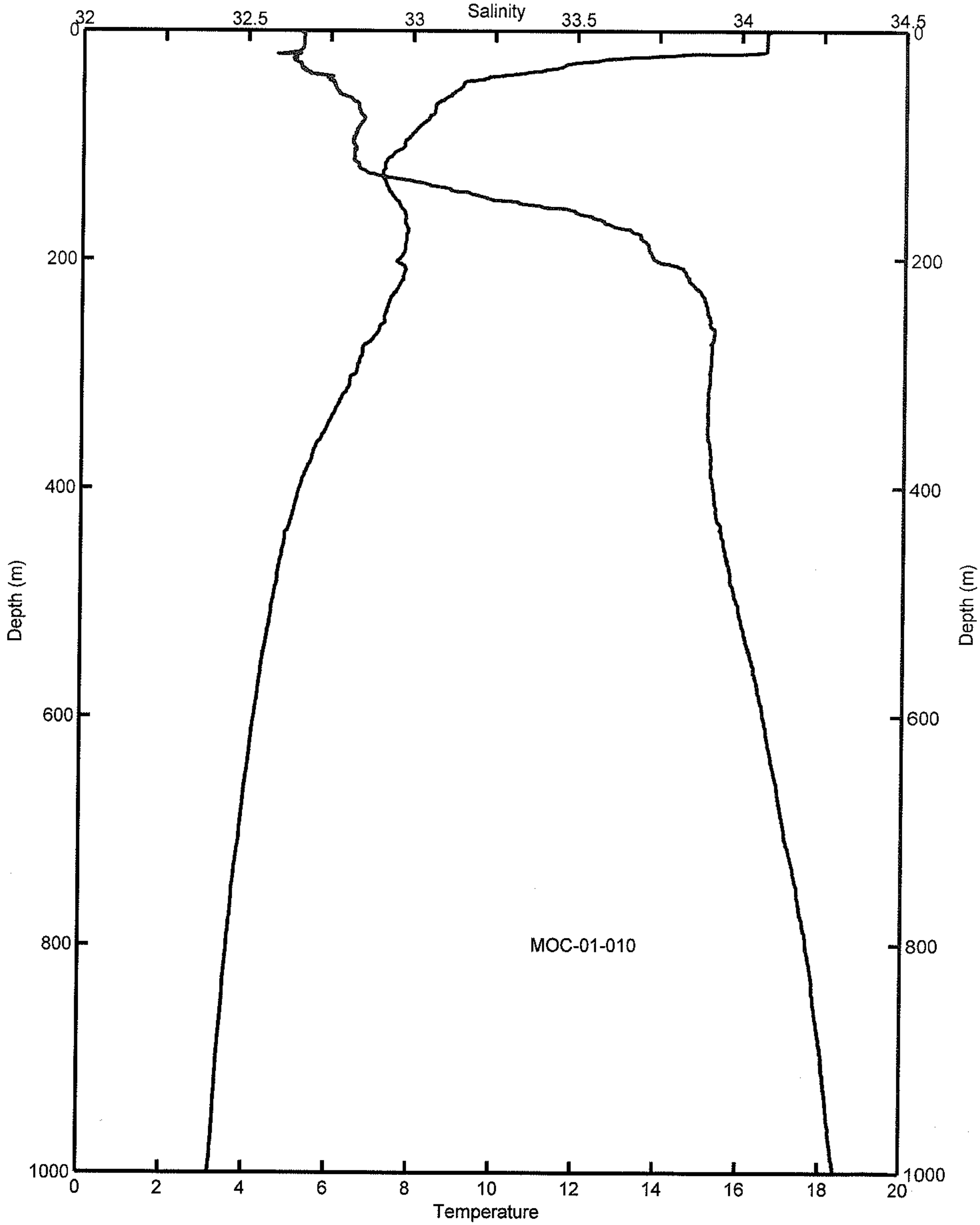
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.0	1011.7	463.4	03.2	17.2	06.0	03.1	17.2	06.0	00.01	50.00	33.44
1	820 ~~000.6~~	999.2	845.8	03.2	17.2	03.2	03.1	17.2	03.2	00.14	50.00	32.30
2	601.1	799.9	697.1	03.6	04.2	03.9	03.5	04.2	03.9	34.07	34.21	34.14
3	401.5	599.6	503.1	04.2	05.3	04.7	04.2	05.2	04.6	33.92	34.07	34.00
4	201.8	400.0	297.0	05.3	07.8	06.6	05.3	07.8	06.6	33.75	33.92	33.90
5	100.7	200.9	151.7	07.3	07.9	07.6	07.3	07.9	07.6	32.82	33.74	33.31
6	052.1	099.2	075.1	07.8	09.1	08.4	07.8	09.1	08.4	32.77	32.85	32.83
7	026.1	051.0	038.6	09.1	12.5	10.4	09.1	12.5	10.4	32.64	32.77	32.71
8	-001.4	024.6	011.1	12.7	16.7	16.1	12.7	16.7	16.1	32.59	32.67	32.66

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.23	37.03	26.26	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.15	37.04	25.69	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.03	27.20	27.12	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.79	27.03	26.92	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.35	26.79	26.60	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.60	26.34	26.00	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.36	25.59	25.51	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	24.66	25.35	25.09	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.79	24.63	23.91	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	26.0	56.0	41.6	00.0	01.9	01.3	-22.6	09.4	-16.3	00917	02990
1	20.0	49.0	40.5	00.0	02.3	02.0	-06.4	15.2	10.0	00296	01112
2	43.0	48.0	44.9	01.9	02.7	02.3	05.8	13.1	10.6	00282	01195
3	43.0	50.0	46.9	01.9	02.7	02.4	06.6	12.9	09.5	00313	01340
4	45.0	50.0	47.0	02.3	02.7	02.5	06.2	13.2	10.6	00282	01231
5	41.0	50.0	45.2	01.9	02.7	02.4	08.2	11.7	09.9	00152	00665
6	42.0	46.0	44.3	01.9	02.7	02.3	04.5	10.7	06.8	00107	00476
7	43.0	48.0	45.0	01.9	02.7	02.3	03.3	08.7	06.1	00062	00272
8	38.0	47.0	44.5	01.9	02.7	02.3	04.3	09.1	06.5	00064	00285

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	248.378889	9:5:35	000.0	1011.7	463.4	00917	02990
1	248.379433	9:6:23	820 ~~000.6~~	999.2	845.8	00296	01112
2	248.440023	10:33:37	601.1	799.9	697.1	00282	01195
3	248.453171	10:52:33	401.5	599.6	503.1	00313	01340
4	248.467755	11:13:34	201.8	400.0	297.0	00282	01231
5	248.480903	11:32:30	100.7	200.9	151.7	00152	00665
6	248.488021	11:42:44	052.1	099.2	075.1	00107	00476
7	248.493032	11:49:58	026.1	051.0	038.6	00062	00272
8	248.495961	11:54:10	-001.4	024.6	011.1	00064	00285
9	248.498981	11:58:31					



Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
Depth (m)
MOC-01-010
0
2
4
6
8
10
12
14
16
18
20
Temperature

NH2012

MOCNESS TOW#: 10

Date: 4 Sept 2012

Station: 11

People Processing Sample: Copley, Iler

NET	DEPTH	Taxonomic Composition	
0	0-1000	4 fish mystery blob - green algae? shrimp amphipods pteropod chaetognath big red jelly larval skinny fish krill copepod - neocalanus siphon jelly clear, one clear, round red, one red	
1	800-1000	Many medusas - lg. purple, 4 large shrimp + more small 3 fish neocalanus all jellies → form split	jellies → form
2	600-800	corona 2 clear jelly (jellies into own form) 1 LG jelly 5 sm fish neocalanus sm jelly (red) amphipods 1 ostracod giant mom shrimp shrimp chaet, cst	jellies → form
3	400-600	1 lg clear jelly + ~3 smaller + 11 jelly - clear triangle - 4 HT gymnosome siphon decapod orange purple amphipods (2 for photos) sm. fish - lots	- all these jellies into formalin
4	200-400	(some sample spilled onto deck) rads * chaet empty L.h. shell orange ost Neocal IIII - krill - Thysanoessa smallish sample	
5	100-200	(very small sample) ~~radiolarians~~ *Limacina - 3 → 2 for flash freezer, 1 to 70% *T9 amphipods - brown	
6	50-100	very small sample brown amphipods rads sm. krill - Thysanoessa, Stylocheiron	
7	25-50	V.sm. sample *krill - Thysanoessa siphon. nectophores + bracts brown amph. rads	
8	0-25	V.sm sample ~20 pteropods - 9 into N2 #10 - 5 L.hel #11 - 4 L.hel copepod 1 or 2 amphipods rads 3 krill	

↳ *Mesh had come unglued at top of cod end

Dry

Specimens Removed from MOCNESS tows

cruise: ~~OC473~~ NH1208
time tow ended: 11:58
date: 4 Sept 2012
tow: 10 Sta. 11

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	vial #
5	Limacina helicina	2	~1400??	Freeze N2	Copley, Lawson	T9
5	" "	1	"	70%	" "	
8	" "	5	"	Freeze N2	" "	T10
8	" "	4	"	"	" "	T11

MOCNESS DATA SHEET

Cruise NH1208 Location NE Pacific Station 15 Tow # M-01-011

Date 5 Sept 2012 Wind Speed 14 Direction 11

Year/Day 249 Sea State Calm 2-4'

Local Time 1257 to 1602 Start Lat 43 00.176 Long 138 8.049W

GMT Time 2057 to 0002 End Lat 43 6.124 Long 138 6.058

Course 340, into wind

Net Size 1m² Net Condition good

Net Mesh 150µm, net 0 = 333µm

Processed Filename M-01-011.pro Raw Filename M-01-011.raw

15-45

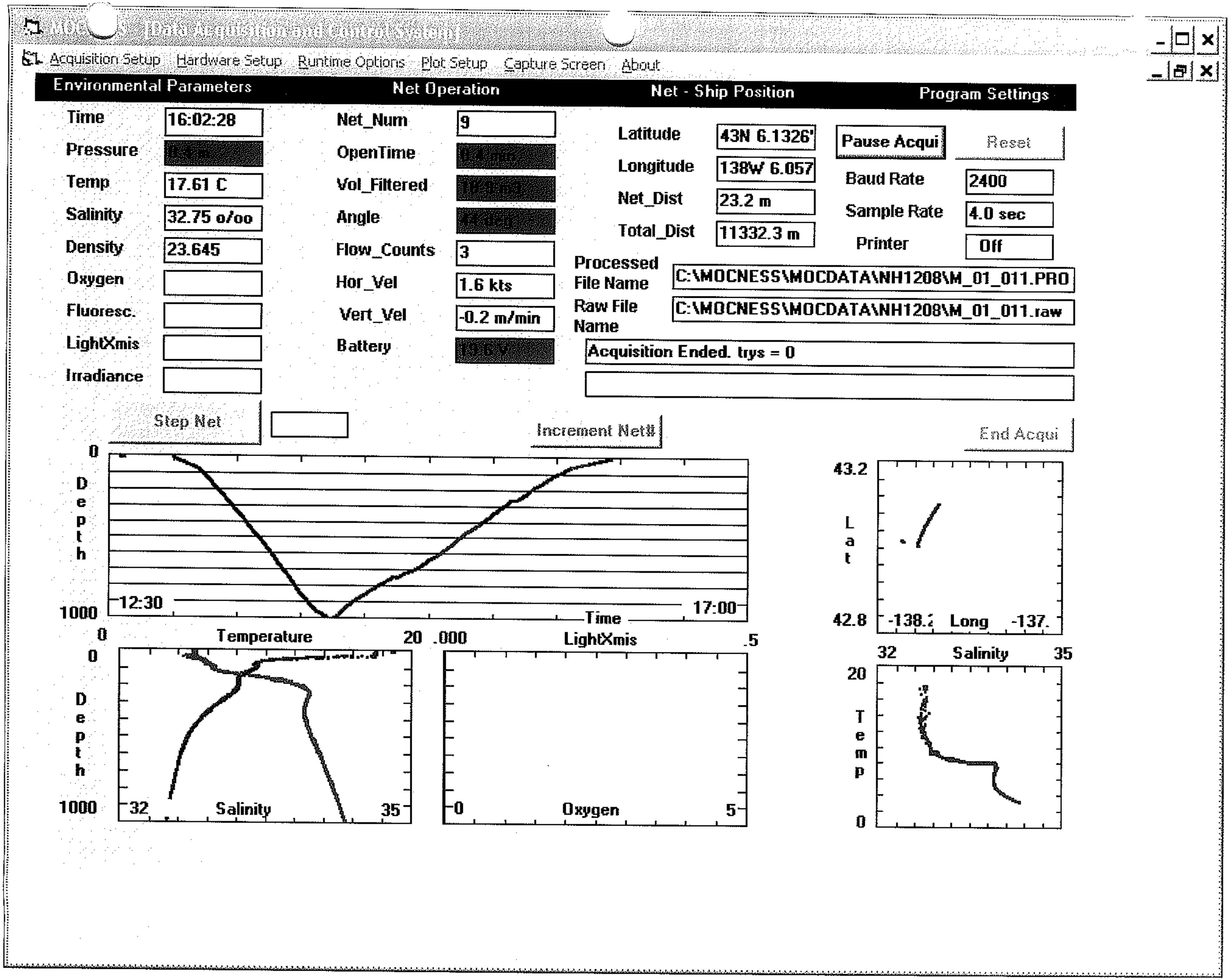
NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	1257	0					Start down at 10 m/min
Net 0 Down	1404	1000.4		9333		1712	1306 100 MWO ↑ to 20 m/min; 1311 200 MWO ↑ to 25 m/min
Net 1	1404	1000		1117		1712	1315 300 MWO ↑ to 30 m/min; 1350 Net speed was
Net 2	1423	800		1645		1575	dropping to .8-1.2 so picked up ship speed
Net 3	1449	600		1127		1080	1357 speed ↑ 2.4 kt to 2.2
Net 4	1507	400		1308		714	1405 988 m z haul in 10 m/min; 1409 933 z ↓ to 5 m/min
Net 5	1528	200		699		347	1415 869 m z ↑ to 10 m/min
Net 6	1539	100		460		182	1424 782 m z ↑ to 15 m/min; 1429 ↓ ship speed 2.2 kt
Net 7	1546	50		484		89	1430 ↑ to 20 m/min haul in; 1439 ↑ to 25 m/min
Net 8	1553	25		534		46	1442 ↓ to 20 m/min; 1458 ↓ ship speed a little
Closed	1602	0		—			1513 ↓ to 15 m/min; 1520 ↑ to 20 m/min; 1527 ↓ to 15 m/min; 1543 ↓ to 10 m/min

COMMENTS: 19.9V at start. Launch smooth. One bucket looped under frame but resolved itself.

19.6V at end

1546 ↓ to 5 m/min


MOCNESS [Data Acquisition and Control System]
Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
16:02:28
Pressure
Temp
17.61 C
Salinity
32.75 o/oo
Density
23.645
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
3
Hor_Vel
1.6 kts
Vert_Vel
-0.2 m/min
Battery
Latitude
43N 6.1326'
Longitude
138W 6.057
Net_Dist
23.2 m
Total_Dist
11332.3 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
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Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_011.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
12:30
Time
17:00
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
32
Salinity
35
0
Oxygen
5
43.2
Lat
42.8
-138.2
Long
-137.
32
Salinity
35
20
Temp
0

Tow: M-01-011 New Horizon 1208
Date: 5 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

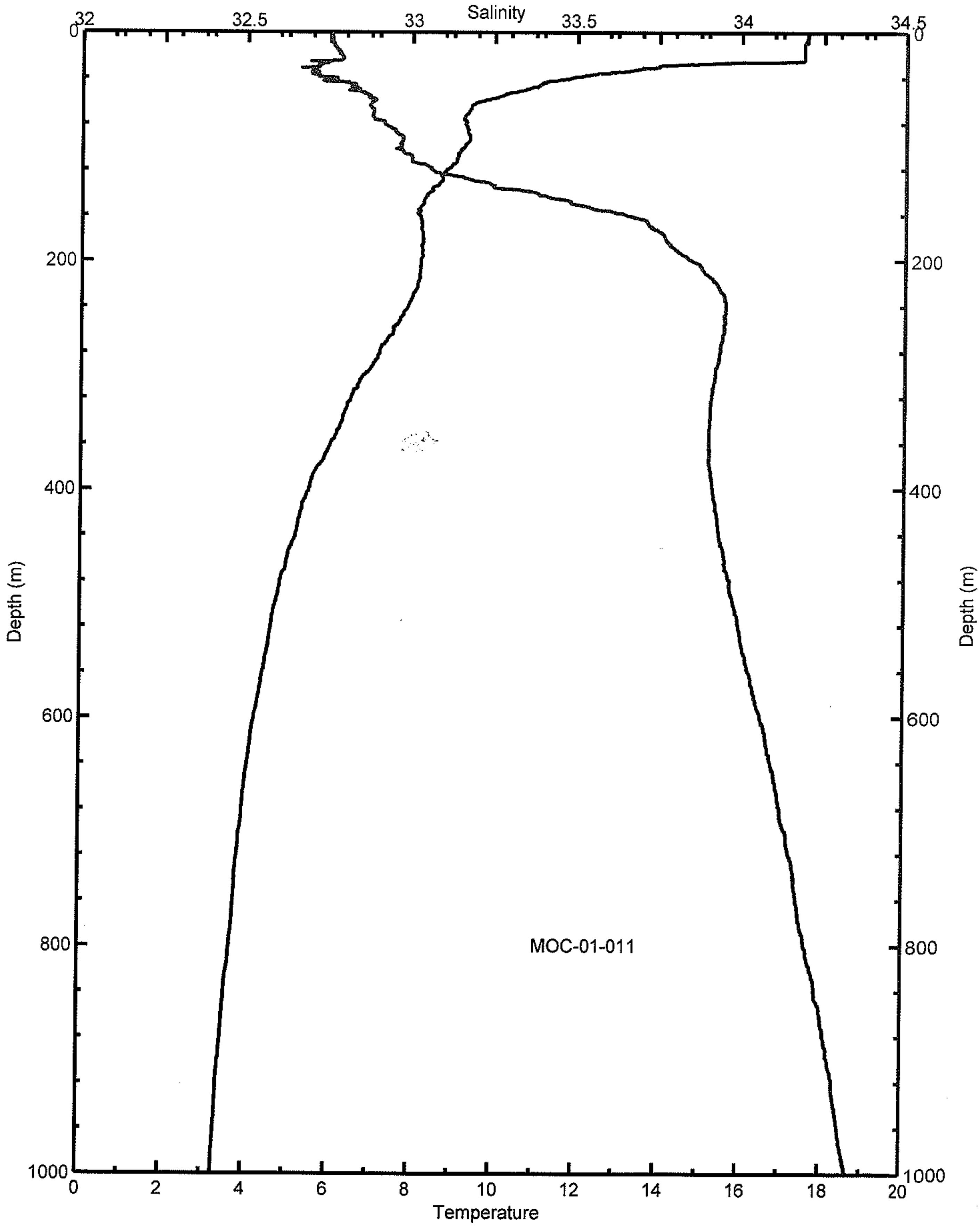
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	001.3	1011.3	467.6	03.3	18.9	06.5	03.2	18.9	06.5	00.01	50.00	33.31
1	001.8	1000.2	874.6	03.3	50.0	03.5	03.2	50.0	03.4	00.19	50.00	33.58
2	601.5	800.1	706.5	03.7	04.2	03.9	03.6	04.2	03.9	34.07	34.20	34.14
3	400.8	600.2	498.0	04.2	05.5	04.8	04.2	05.5	04.8	33.92	34.06	33.98
4	201.4	399.5	294.6	05.5	08.2	07.0	05.5	08.2	07.0	33.86	33.95	33.93
5	102.6	199.7	149.6	08.1	09.2	08.5	08.1	09.2	08.5	32.96	33.85	33.44
6	052.2	101.9	076.3	09.2	10.5	09.5	09.2	10.5	09.5	32.84	32.97	32.91
7	025.8	051.0	038.3	10.6	16.7	12.5	10.6	16.7	12.5	32.66	32.84	32.75
8	000.3	025.7	012.4	17.3	17.6	17.5	17.3	17.6	17.5	32.69	32.79	32.77

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.52	36.60	26.07	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-11.80	36.60	26.70	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.02	27.19	27.12	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.76	27.02	26.89	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.35	26.76	26.57	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.50	26.34	25.98	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.18	25.49	25.40	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.84	25.14	24.75	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.65	23.71	23.67	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

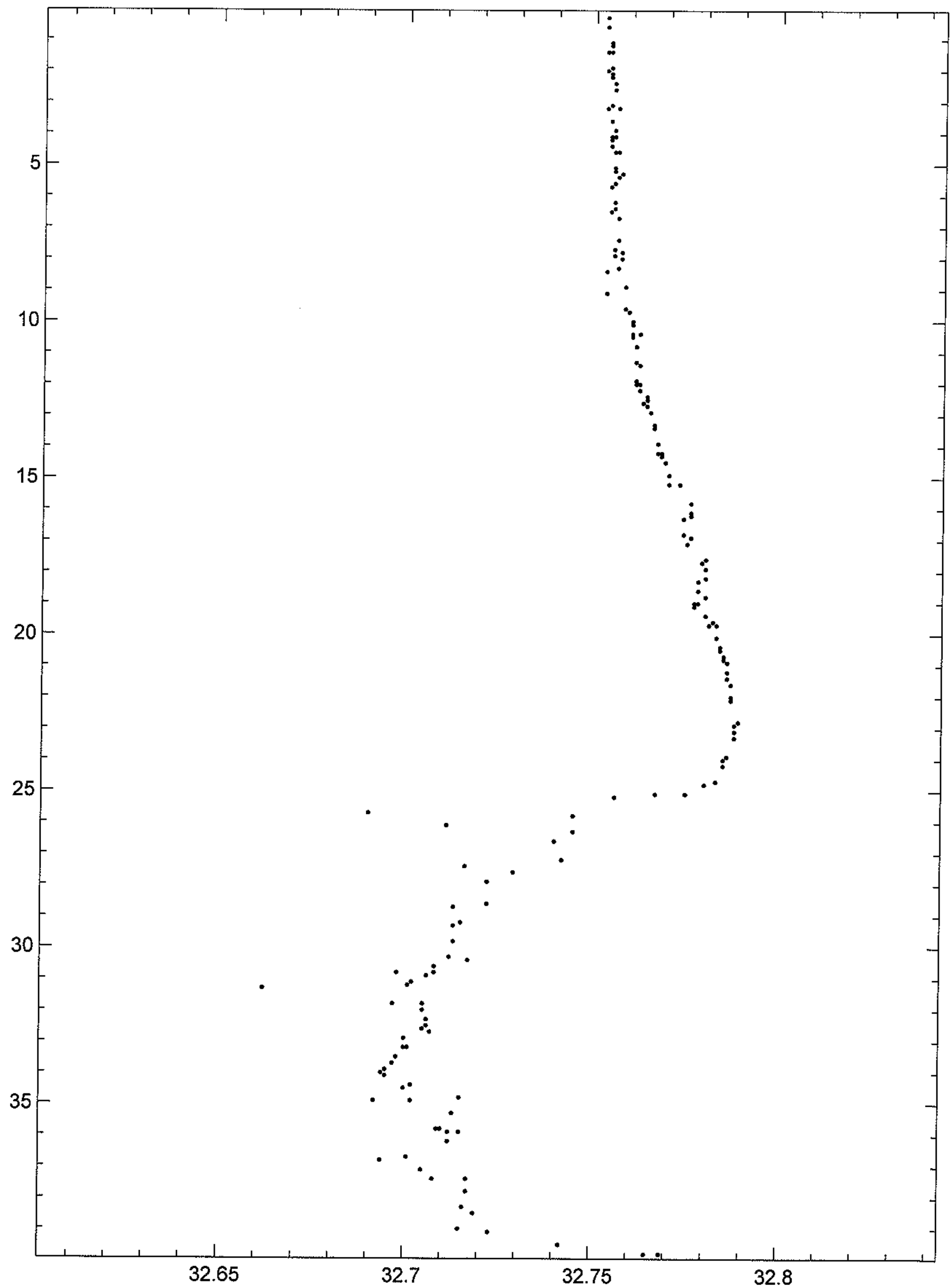
net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	30.0	68.0	45.7	00.0	04.7	01.5	-25.4	10.7	-14.8	01017	03333
1	38.0	51.0	44.4	00.4	03.9	02.2	-01.7	20.3	10.4	00287	01117
2	45.0	56.0	50.3	01.9	02.7	02.5	-06.2	12.5	07.6	00393	01645
3	45.0	51.0	47.9	02.3	02.7	02.5	07.6	14.8	11.1	00270	01127
4	44.0	51.0	47.2	01.9	02.7	02.4	00.0	14.6	09.7	00308	01308
5	43.0	51.0	46.5	01.9	02.7	02.4	05.6	12.8	09.2	00161	00699
6	44.0	50.0	46.5	02.3	02.7	02.4	03.9	10.7	07.2	00105	00460
7	45.0	52.0	46.6	01.9	02.7	02.3	00.6	06.4	03.5	00110	00484
8	41.0	51.0	46.1	01.6	02.7	02.2	00.0	04.7	03.1	00124	00534

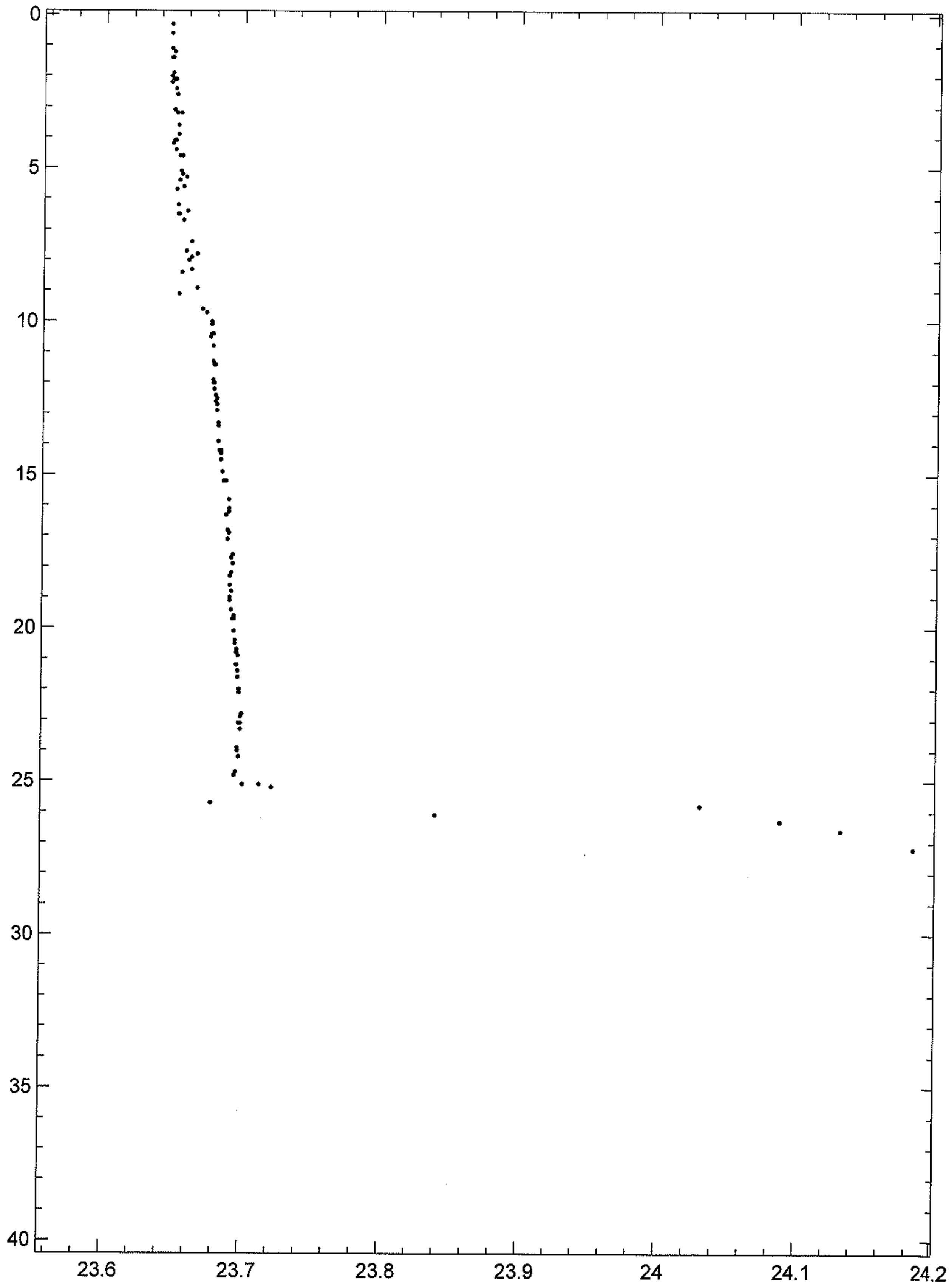
net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	249.524074	12:34:40	001.3	1011.3	467.6	01017	03333
1	249.524884	12:35:50	001.8	1000.2	874.6	00287	01117
2	249.599468	14:23:14	601.5	800.1	706.5	00393	01645
3	249.617778	14:49:36	400.8	600.2	498.0	00270	01127
4	249.630370	15:7:44	201.4	399.5	294.6	00308	01308
5	249.644722	15:28:24	102.6	199.7	149.6	00161	00699
6	249.652257	15:39:14	052.2	101.9	076.3	00105	00460
7	249.657176	15:46:20	025.8	051.0	038.3	00110	00484
8	249.662338	15:53:46	000.3	025.7	012.4	00124	00534
9	249.668137	16:2:7					


Salinity
32
32.5
33
33.5
34
34.5
Depth (m)
0
200
400
600
800
1000
Temperature
0
2
4
6
8
10
12
14
16
18
20
MOC-01-011

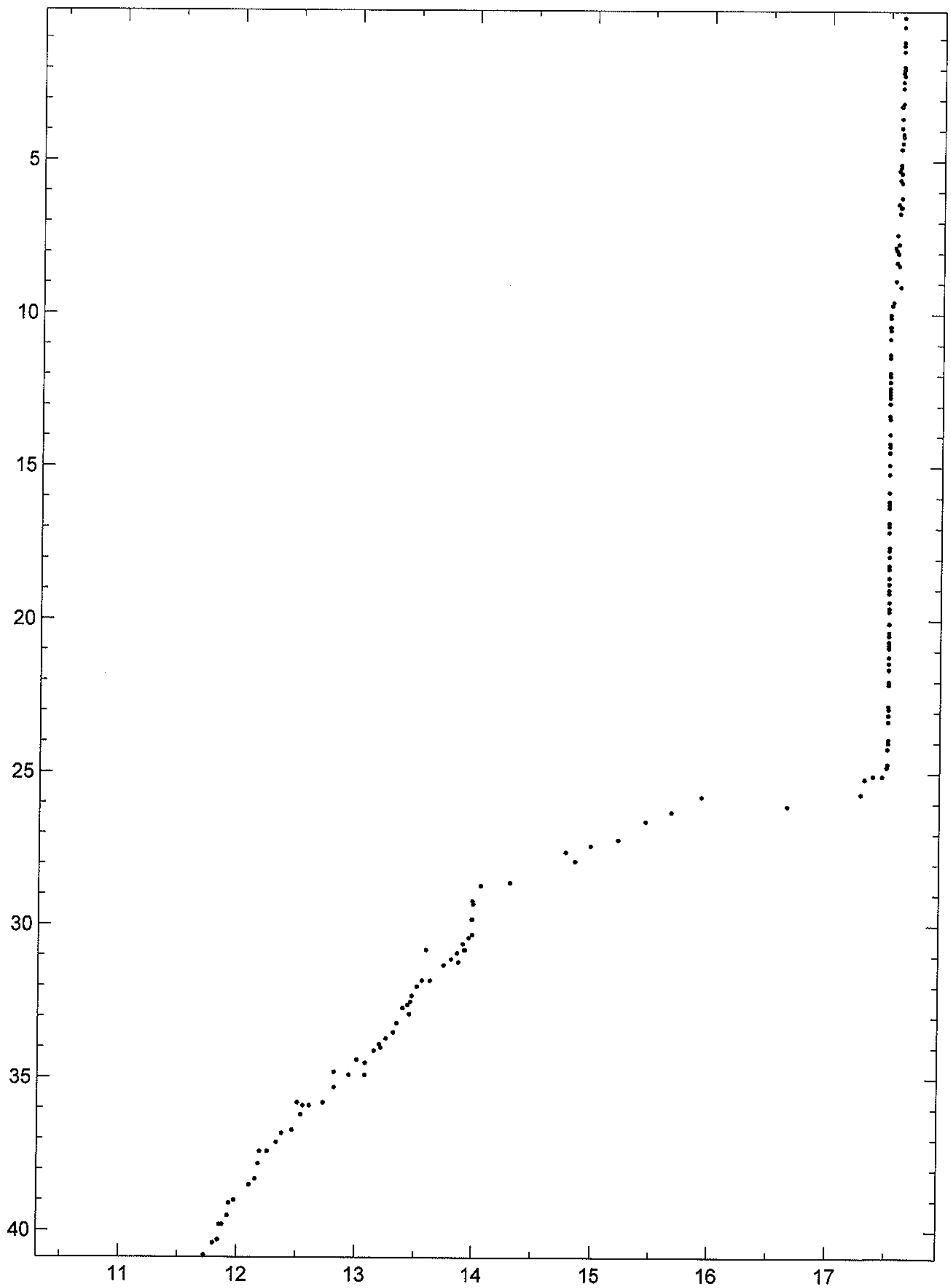
Salinity MOS-01-011



Density MOC_01-011



TEMP MOC_01_011



MOCNESS TOW#: 11
Date: 5 Sept
Station: 15
People Processing Sample: Cody, Bergan, Amy

NET	DEPTH	Taxonomic Composition
0	0-1000	large orange shrimp; red orange shrimp; 4 deep fish misc types; 3 medusa (purple); REMOVED: Limacina helicina (2)*, Cliopsis kroni (2), Clio pyramidata (1); corolla; jellies (few); euphausiids; amphipods; Neocal; paraeuchaeta; ostracods — Amy
1	1000 - 800	3 fish; decapod; Neocal + Paraeuch.; jellies - 1; fat amph. w/eggs; krill; gymnasome
2	- 600	vampire squid! - black tentacles; jellies - 3 clear; shrimp; 5 fish; Neocal, Paraeucheata; krill (Thyso); gymno;
3	- 400	6 small fish; 2 shrimp; gymnosome; chaetognaths; clear jellies; Paraeucheata; red amphipods
4	- 200	3 lg. clear jellies; gymnosome → Clione?; 1 polychaete; rads; chaet
5	- 100	1 small cephalopod; Krill (bilobed - Nematoscelis?); amphipod; ostracod; TONS of chaetognaths; radiolarians
6	- 50	3 corolla (BIG); couple chaetognaths; siphonophore; euphausiids; amphipods
7	- 25	corolla; siphon***; *large, clear gymno; rads; Cliopsis kroni 3*; ~15 krill; amphipods; lg. salp; lg. Atlanta heteropod; removed - Amy/Leo
8	- 0	6 atlanta; tons of radiolarians; krill; 6 corolla; *4 gymnosomes removed*; cliopsis kroni

Specimens Removed from MOCNESS tows

cruise: ~~OC-473~~ NH1208 time tow ended: [illegible]

date: [illegible]

tow: [illegible] 9[illegible]15

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
0	Limacina helicina	2	17:00	70%	[illegible]
0	Cliopsis kroni (gymnos)	2	17:00		"
0	Clio pyramidata	1	17:00	70%	"
7	Cliopsis kroni	3	163[illegible]	[illegible]	"
8	Cliopsis kroni	4	163[illegible]	95%	"

MOCNESS DATA SHEET

Cruise [illegible] Location [illegible] Tow # [illegible]

Date 5 Sept 2012 Wind Speed [illegible] Direction 160°

Year/Day 249 Sea State [illegible] 3-4 [illegible]

Local Time 2215 to 0108 Start Lat 43 05.55 Long -138 07.490

GMT Time 0615 to 0908 End Lat 43° 11.26 Long -138 9.661

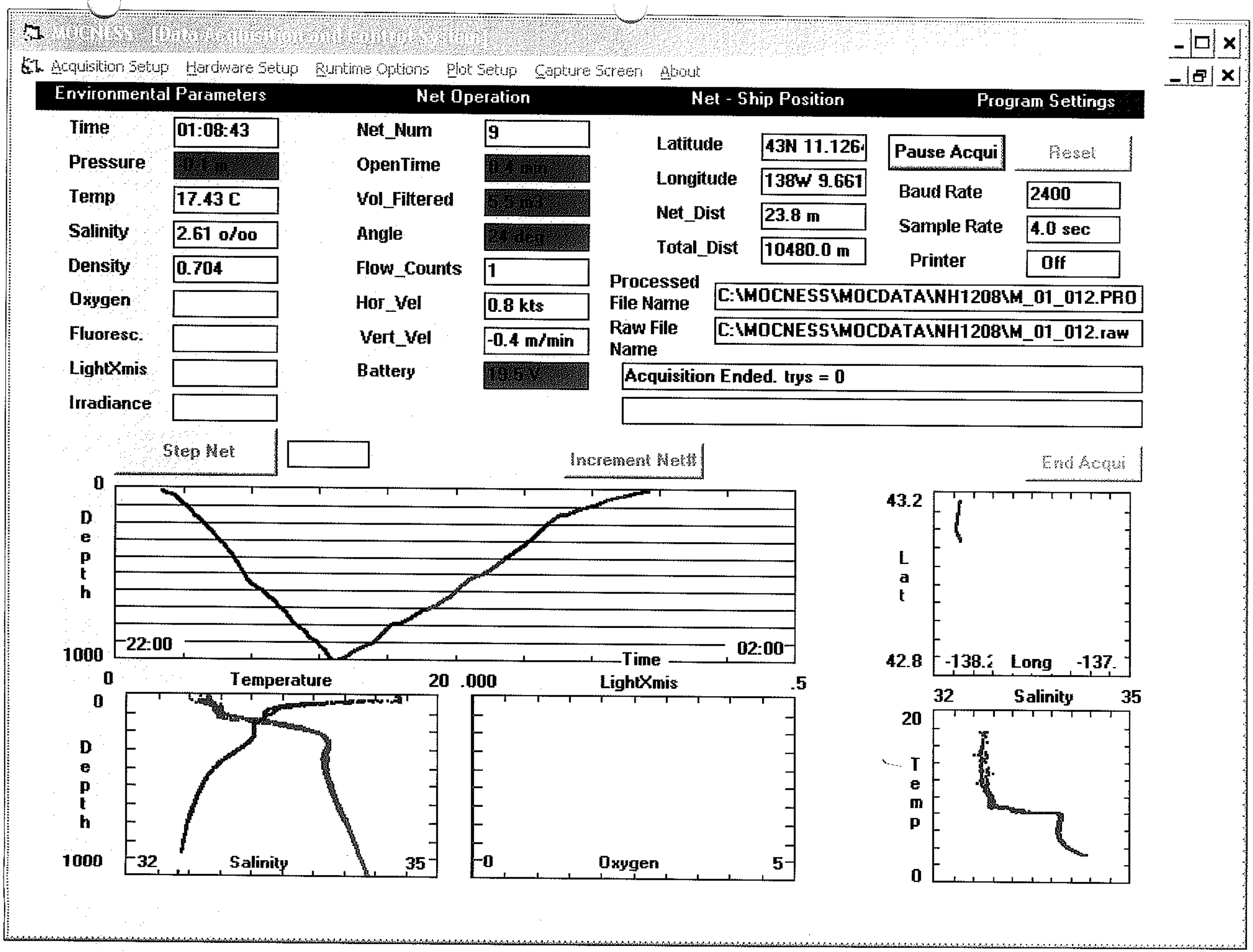
Net Size 1 m² Net Condition Good
Net Mesh 150µm net 0 = 335µm

Processed Filename MI_01_012.pro Raw Filename MI_01_012.raw

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	2215	0			3611	0	Start at 10 m/min; 2220 increase to 20 m/min
Net 0 Down	2318	1000			-731 2880	1650	2229 increase to 25 m/min
Net 1	2318	1000			1063	1630	2238 increase to 30 m/min
Net 2	2337	800			796	1402	2314 stop winch; 2319 up at 10 m/min
Net 3	2350	700			1645	1154	2326 up at 15 m/min; 2341 up at 20 m/min
Net 4	0017	400			944	615	0034 slow to 15 m/min
Net 5	0033	187			745	297	0035 slow to 10 m/min; 0054 slow to 5 m/min
Net 6	0045	100			536	162	
Net 7	0054	50			428	77	
Net 8	0101	25			467	39	
Closed	0108	0				2.0	

COMMENTS: Good tow except for Wiebe misfires for net 3,5
Ship speed was varying from 1.5 to 2.6 kts throughout tow



Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
01:08:43
Pressure
Temp
17.43 C
Salinity
2.61 o/oo
Density
0.704
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
1
Hor_Vel
0.8 kts
Vert_Vel
-0.4 m/min
Battery
Latitude
43N 11.126
Longitude
138W 9.661
Net_Dist
23.8 m
Total_Dist
10480.0 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_012.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_012.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
22:00
Time
02:00
0
Temperature
20
.000
LightXmis
.5
32
Salinity
35
0
Oxygen
5
43.2
Lat
42.8
-138.
Long
-137.
32
Salinity
35
20
Temp
0

Tow: M-01-012 New Horizon 1208
Date: 5 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

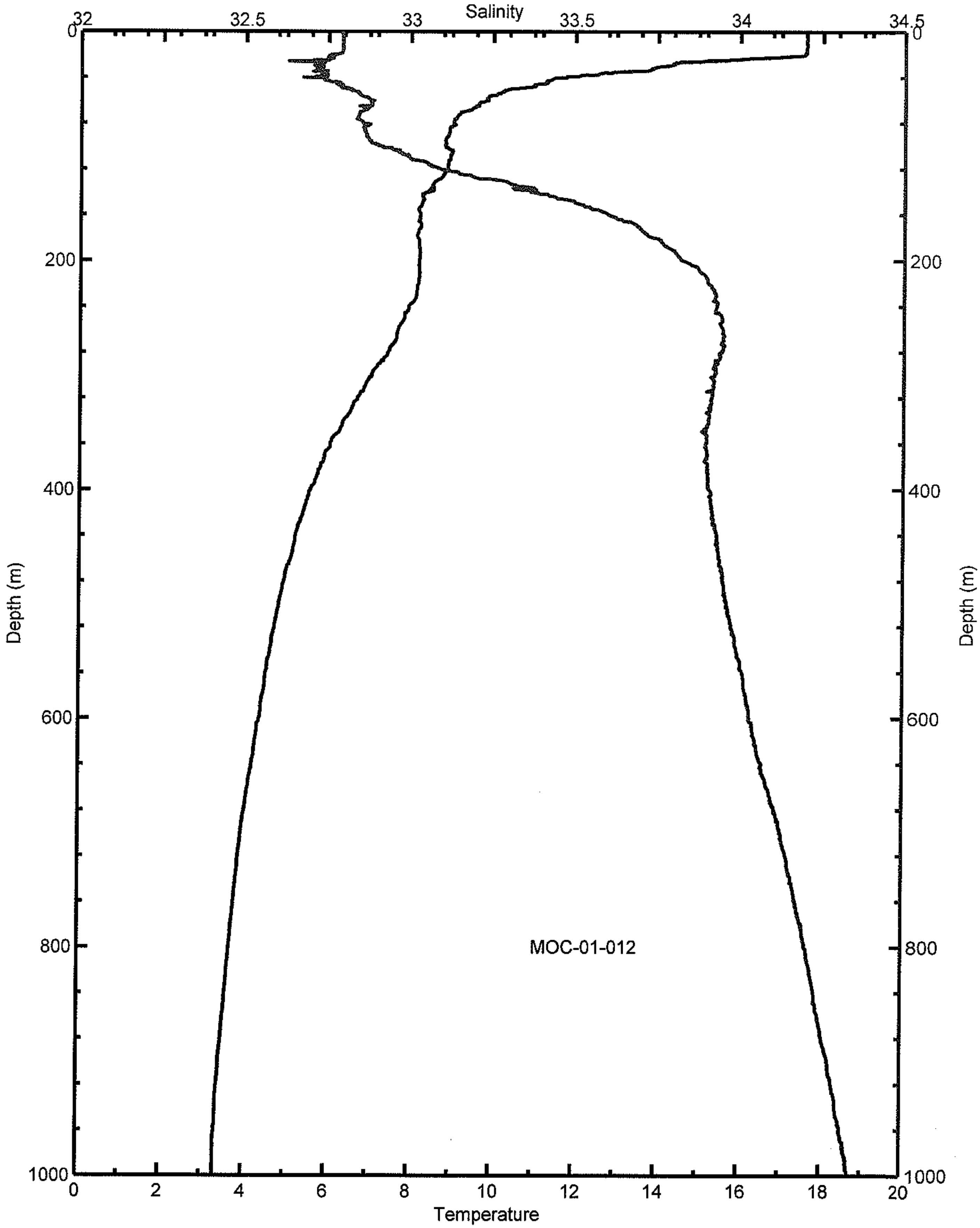
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.0	1014.1	453.9	03.3	17.7	07.3	03.3	17.7	07.3	00.01	50.00	34.43
1	000.8	997.3	909.8	03.3	17.2	03.5	03.3	17.2	03.4	34.20	50.00	34.34
2	699.8	797.8	751.5	03.7	03.9	03.8	03.6	03.9	03.8	34.13	34.20	34.17
3	399.4	698.6	551.0	03.9	05.6	04.6	03.9	05.6	04.6	33.91	34.13	34.01
4	184.4	397.5	298.4	05.6	08.2	07.0	05.6	08.2	07.0	33.76	33.95	33.91
5	101.1	182.3	135.3	08.2	09.0	08.6	08.2	09.0	08.6	32.91	33.76	33.30
6	051.4	100.6	078.8	08.8	10.3	09.2	08.8	10.3	09.2	32.82	32.92	32.86
7	025.5	051.4	037.5	10.3	15.4	12.6	10.3	15.4	12.6	32.63	32.82	32.75
8	-000.6	025.2	009.5	15.6	17.6	17.5	15.6	17.6	17.5	32.72	32.79	32.79

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.26	37.07	26.80	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	27.19	37.03	27.31	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.10	27.19	27.15	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.74	27.10	26.93	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.28	26.74	26.55	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.51	26.27	25.85	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.20	25.51	25.41	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	24.13	25.20	24.71	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.67	24.10	23.71	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	00.0	70.0	43.8	00.0	07.0	01.4	-32.4	11.9	-14.5	01037	03611
1	39.0	54.0	45.8	01.2	02.7	02.2	-01.2	20.1	11.0	00272	01063
2	45.0	58.0	50.1	01.9	02.7	02.4	-00.6	14.8	07.6	00197	00795
3	41.0	55.0	47.1	01.9	03.1	02.3	01.2	18.5	11.0	00406	01645
4	39.0	50.0	42.5	01.6	02.3	02.2	06.8	19.5	13.7	00233	00944
5	40.0	51.0	45.8	01.9	02.3	02.2	-04.8	15.0	07.0	00180	00745
6	37.0	50.0	42.8	01.9	02.3	02.1	00.6	10.1	05.8	00129	00536
7	36.0	45.0	40.4	01.6	02.3	02.0	01.4	07.0	03.9	00102	00428
8	37.0	56.0	47.1	01.6	02.7	02.3	-00.2	08.6	03.6	00107	00467

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	249.922789	22:8:48	000.0	1014.1	453.9	01037	03611
1	249.923252	22:9:29	000.8	997.3	909.8	00272	01063
2	249.984155	23:37:11	699.8	797.8	751.5	00197	00795
3	249.993356	23:50:25	399.4	698.6	551.0	00406	01645
4	250.012361	0:17:47	184.4	397.5	298.4	00233	00944
5	250.023229	0:33:27	101.1	182.3	135.3	00180	00745
6	250.031644	0:45:33	051.4	100.6	078.8	00129	00536
7	250.037685	0:54:16	025.5	051.4	037.5	00102	00428
8	250.042465	1:1:9	-000.6	025.2	009.5	00107	00467
9	250.047488	1:8:23					


Salinity
32
32.5
33
33.5
34
34.5
Depth (m)
0
200
400
600
800
1000
Temperature
0
2
4
6
8
10
12
14
16
18
20
MOC-01-012

* = removed

MOCNESS TOW#: 12
Date: 9/5/12 Night
Station: 15
People Processing Sample: Amy, Leo, Liza, Tom

Taxonomic Composition

NET	DEPTH	Taxonomic Composition	
0		jellies fish (cyclothone & myctophids) corolla pneumoderma	orange shrimp Cliopsis krohni clione limacina atlanta
1	800-1000	Beautiful purple jellies, white jellies big orange & med. shrimp 1 fish black amphipods	*benthoeuphausia? (1)* - removed * 1 Krill ?? (1)* siphonophore pneumoderma Candacia
2	700-800	2 big red shrimp many med orange shrimp 4 nice purple jellies odd ball jelly	3 fish *Krill ?? (2)* amphipods
3	400-700	viper fish cyclothone myctophid black polychaete 6 jellies	med. orange shrimp euphausia sp LARGE DENSE copepods (juv. Neocal?) Clione limacina
4.	187-400	hatchetfish clear jelly clione limacina	*Krill big chaetognath *Limacina helicina (1) CRYO*
5	100-187	*Krill (3)* Corolla (1) Lots of krill	big jelly sergestids amphipods
6	50-100	Lots of krill (Nematoscelis?) sergestids corolla (1)	black amphipods jellies (small, clear) ostracods
7	25-50	big salp black amphipods few krill	*limacina helicina (3)* CRYO* 4 into the 70%
8	0-25	Cliopsis krohni (2) corolla (2) *limacina helicina (6 removed)* atlantid heteropods	amphipods TINY squid Clio pyramidata *(3 removed)* radiolarians hundreds of TINY & black?

for photos: 1 amphipod, 2 atlantid heteropods > put back in 95% split

Specimens Removed from MOCNESS tows

cruise: ~~OC-473~~ time tow ended:
date: 5 Sept 2012
tow: 12 Sta. 15

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
1	Benthеuphausia amblyops	1		N2	Leo
1	Thysanoessa longipes	1		N_2	LBB
2	Thysanoessa longipes	1		N_2	LBB
4	Thysanoessa longipes	1		N_2	LBB
4	Limacina helicina	1		N2	AM
5	Nematoscelis difficilis	2		N_2	LBB
7	Lim. helicina	3 ←	4 in N_2?	N2	
7	Lim. helicina	4		70%	
8	Limacina helicina	6		70%	AM
8	Clio pyramidata	3		70%	AM
2	pneumoderma	7		95%	AEM
2	large fish for stegeman	1		frozen; RNAlater	AEM
4	Nematoscelis difficilis	1		N_2	LBB

MOCNESS DATA SHEET

Cruise MMMMOP Location [illegible] Tow # M_01_013

Date 7 Sept 2012 Wind Speed 24 Kts Direction 240

Year/Day 251 Sea State [illegible] [illegible] for launch

Local Time 0125 to ______ Start Lat [illegible] Long [illegible]

GMT Time ______ to ______ End Lat ______ Long ______ 41.533 -135.786

Net Size 1 m² Net Condition Good/OK
Net Mesh 150 μm Net 0 = 333 μm

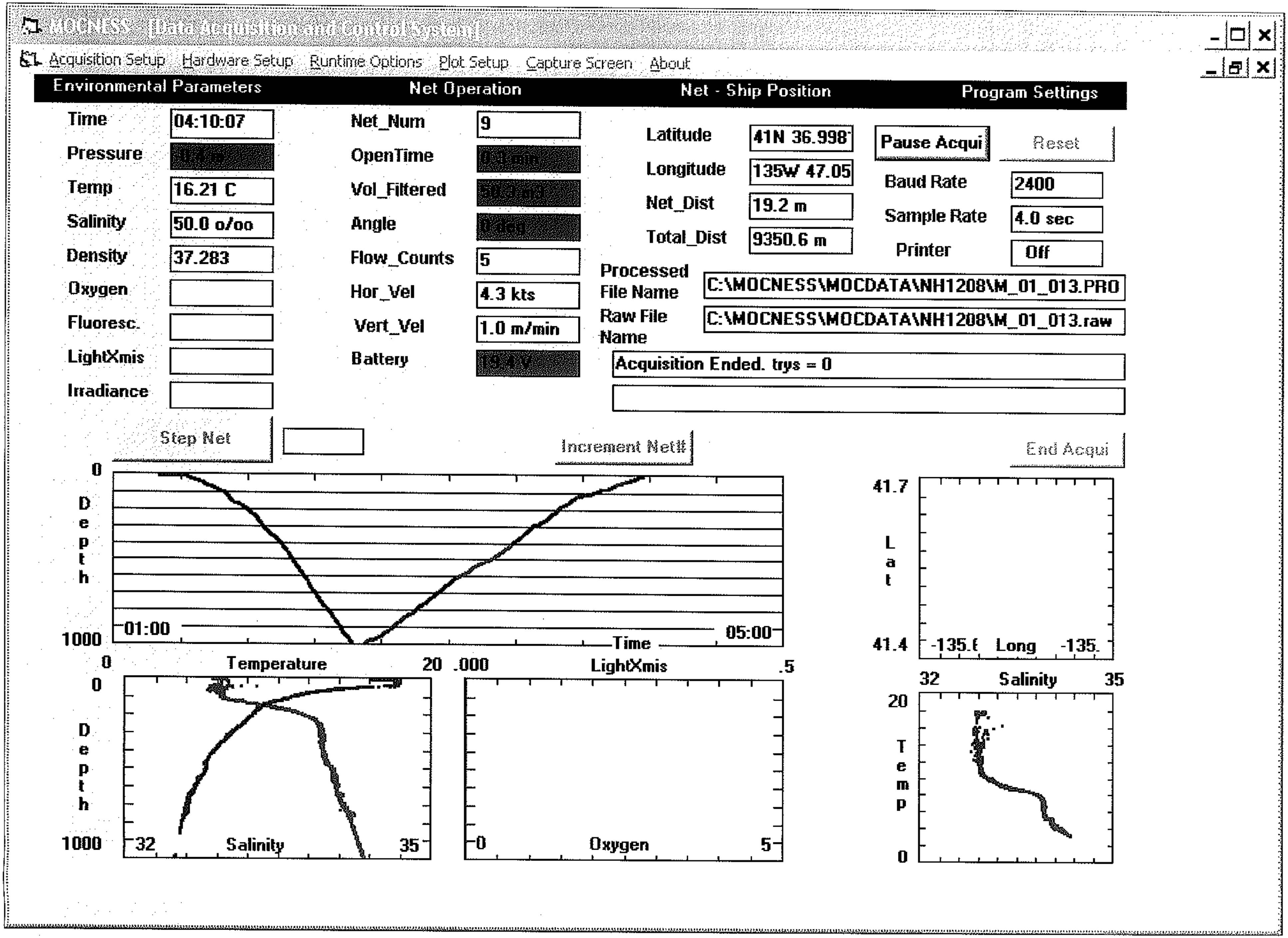
Processed Filename M_01_013.pro Raw Filename M_01_013.raw

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	0125	0				0	Started down at 10 m/min
Net 0 Down	0226	1022				1417	increase to 15 m/min at increase to 20 m/min
Net 1	0230	1000				1395	increase to 25 m/min, increase to 30 m/min
Net 2	0248	800				1238	stop at 0226 0226 up at 10 m/min
Net 3	0303	600				1015	0231 stop at 0231 Net coming up to fast
Net 4	0323	400				668	0232 up at 10 m/min 0246 up at 15 m/min
Net 5	0339	200				337	0315 up at 20 m/min 0340 slow to 15 m/min
Net 6	0351	100				167	0345 slow to 10 m/min 0401 slow to 5 m/min
Net 7	0400	50				79	0403 increase to 10 m/min
Net 8	0404	25				48	
Closed	0409	0				0	

Net 5 had Rip along a seam. Net replaced before net tow

COMMENTS: Launch was very nice in rough seas - Came up at 10 m/min in last 25 m to avoid catching too many salps. end bat volt => 19.4 V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Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
04:10:07
Pressure
Temp
16.21 C
Salinity
50.0 o/oo
Density
37.283
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
5
Hor_Vel
4.3 kts
Vert_Vel
1.0 m/min
Battery
Latitude
41N 36.998
Longitude
135W 47.05
Net_Dist
19.2 m
Total_Dist
9350.6 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
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Raw File Name
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Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
Depth
0
1000
01:00
Time
05:00
41.7
Lat
41.4
-135.
Long
-135.
Temperature
0
20
Salinity
32
35
LightXmis
.000
.5
Oxygen
0
5
Temp
20
0

Tow: M-01-013 New Horizon 1208
Date: 7 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

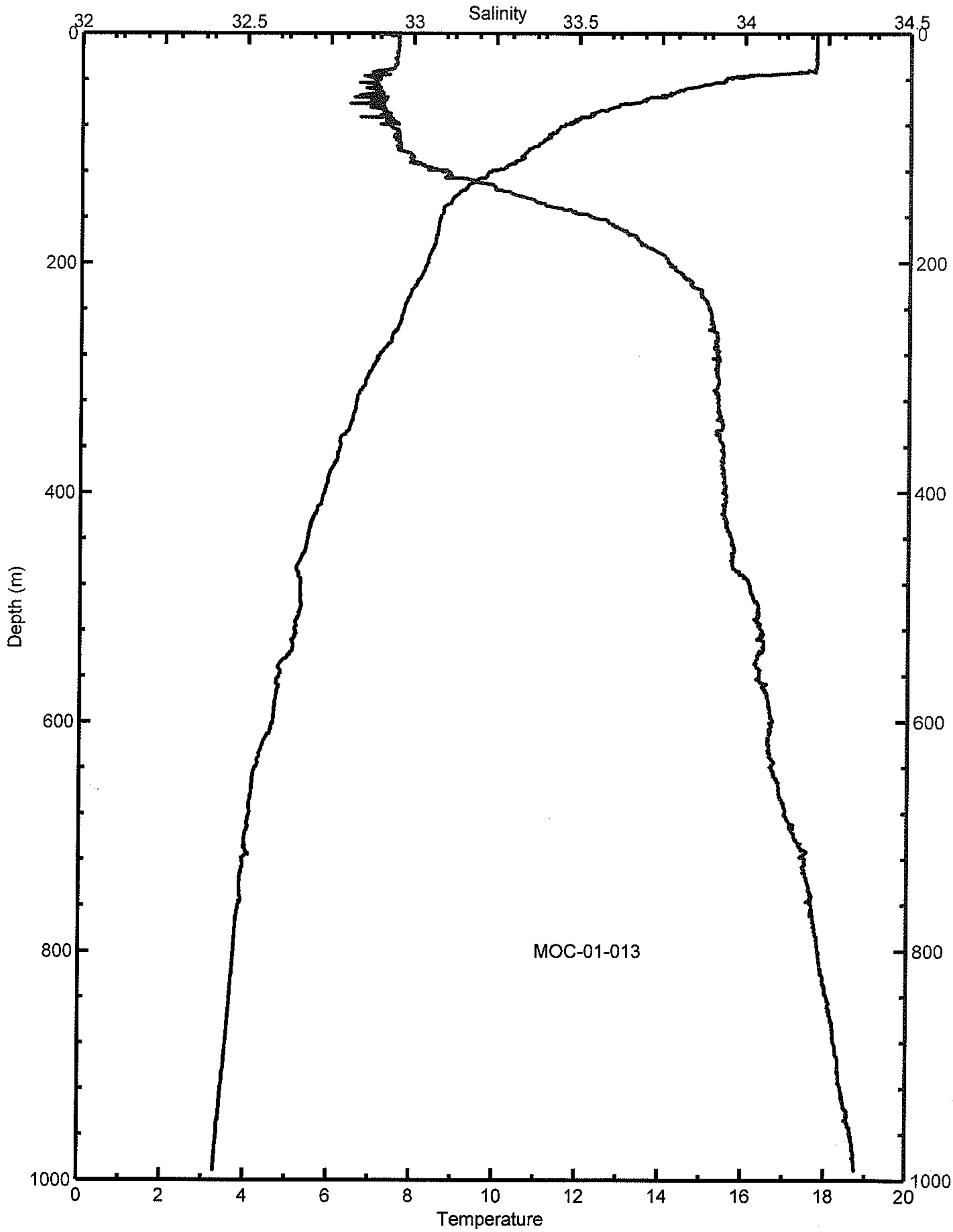
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.9	1024.4	432.0	03.2	17.9	07.7	03.2	17.9	07.6	32.91	50.00	33.56
1	000.5	990.8	604.6	03.3	17.9	02.4	03.2	17.9	02.4	00.01	50.00	23.12
2	601.0	800.0	699.3	03.7	04.7	04.1	03.7	04.6	04.0	34.07	34.23	34.15
3	399.1	600.6	508.0	04.7	05.9	05.2	04.6	05.9	05.1	33.94	34.09	34.03
4	199.4	397.5	296.1	05.9	08.4	07.1	05.9	08.3	07.0	33.77	33.95	33.91
5	099.8	196.3	135.9	08.4	10.8	09.6	08.3	10.8	09.6	32.95	33.77	33.26
6	050.6	099.4	076.1	10.9	14.4	12.1	10.9	14.4	12.1	32.81	32.96	32.93
7	025.5	049.5	036.9	14.5	17.7	16.3	14.5	17.7	16.3	32.84	32.95	32.90
8	-000.8	025.2	010.3	16.6	17.7	17.7	16.6	17.7	17.7	00.47	32.96	31.63

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	23.69	37.22	26.09	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.26	37.22	18.39	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.99	27.20	27.11	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.73	27.00	26.89	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.26	26.73	26.55	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.21	26.25	25.66	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.47	25.21	24.96	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.72	24.46	24.06	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	-00.79	23.78	22.77	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	25.0	89.0	49.5	00.0	03.5	01.4	-37.2	28.1	-15.3	00978	02884
1	00.0	64.0	27.3	00.0	11.3	01.2	-03.7	27.5	07.4	00398	00930
2	36.0	64.0	44.1	01.6	02.7	02.1	06.8	21.8	13.6	00220	00823
3	44.0	69.0	49.1	01.9	02.7	02.3	02.3	19.1	10.0	00299	01151
4	43.0	63.0	48.3	01.9	02.7	02.4	-03.1	20.8	12.3	00243	00957
5	43.0	64.0	51.2	01.9	02.7	02.5	-02.7	20.2	08.1	00184	00744
6	39.0	58.0	47.2	01.6	02.7	02.2	-07.4	13.8	05.9	00124	00486
7	41.0	54.0	47.3	01.9	02.7	02.2	00.4	12.1	05.9	00063	00255
8	07.0	64.0	49.7	01.6	03.1	02.5	-00.2	08.9	05.0	00079	00371

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	251.052824	1:16:4	000.9	1024.4	432.0	00978	02884
1	251.053252	1:16:40	000.5	990.8	604.6	00398	00930
2	251.116968	2:48:25	601.0	800.0	699.3	00220	00823
3	251.127234	3:3:12	399.1	600.6	508.0	00299	01151
4	251.141169	3:23:17	199.4	397.5	296.1	00243	00957
5	251.152512	3:39:37	099.8	196.3	135.9	00184	00744
6	251.161100	3:51:58	050.6	099.4	076.1	00124	00486
7	251.166910	4:0:20	025.5	049.5	036.9	00063	00255
8	251.169884	4:4:38	-000.8	025.2	010.3	00079	00371
9	251.173553	4:9:55					



Salinity
32
32.5
33
33.5
34
34.5
Depth (m)
0
200
400
600
800
1000
MOC-01-013
0
2
4
6
8
10
12
14
16
18
20
Temperature

41° 32.2' ~~[illegible]~~ -135° 47.2'

MOCNESS TOW#: 13
Date: 09/07/2012
Station: 18
People Processing Sample: LEO, LIZA, TOM

NET	DEPTH	Taxonomic Composition
0	0 1022	[illegible] *(3)* etoH Carolina uncinata *(2)*
1	1000 800	? [illegible] Large [illegible]
2	600	[illegible] (Leo [illegible]) 4 large jellys 4 fish
3	400	6 [illegible] *1 megamnatum (leo)* [illegible] jelly Gaussia princeps
4	200	Gaussia. [illegible] C. Krohn. picture Clione *2 x bodies of cavolinid?)* + 1 abdominal part of shell → EtOH 95%
5	100	Ripped Net C. Krohn. ~~[illegible]~~ Hosts [illegible] ? [illegible] [illegible] Very small [illegible]
6	50	Large salp 4 fish C. Krohn 1 Phronima
7	25	Clio pyramidata (leo) C. Krohn 2 [illegible] ~~(8)~~ (9)
8	0	1 polychaete C. Krohn ~~C. pyramidata (leo)~~ ~~[illegible]~~ (9)

Carolina uncinata

Specimens Removed from MOCNESS tows

cruise: OC-473
date: 04/07/2012
tow: 13
sta. 18

time tow ended:

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
2	Bentheuphausia amblyops	1		Flash Frozen	Leo NH1208 #55
3	Megacalanus sp. ♀	1		EtOH	Leo Co4260 5
0	Cavolina uncinata	1		95%	LB Ga 21.13
0	Clio pyr...	3			[illegible]
7	Clio pyramidata	5		95%	LB Ga 01.34
7	Clio pyramidata	4		70%	LB
8	Clio pyramidata	4		95%	LB Ga 01.35
8	Clio pyramidata	5		70%	LB
0	Carolinia uncineta	1		70%	LB
4	Cavolinia uncinata	2 bodies + 1 abdomen		95%	Amy/Leo Ga 29.12
		part of shell			

MOCNESS DATA SHEET

Cruise [illegible] Location [illegible] Tow # [illegible]

Date [illegible] Wind Speed [illegible] Direction [illegible]

Year/Day [illegible] Sea State [illegible] 8

Local Time 0945 to 1245 Start Lat 41 48.704 Long 135 49.351 W

GMT Time 1745 to 2045 End Lat 41 49.096 Long 135 47.87

Net Size [illegible] Net Condition ok

Net Mesh [illegible]

course ° 007

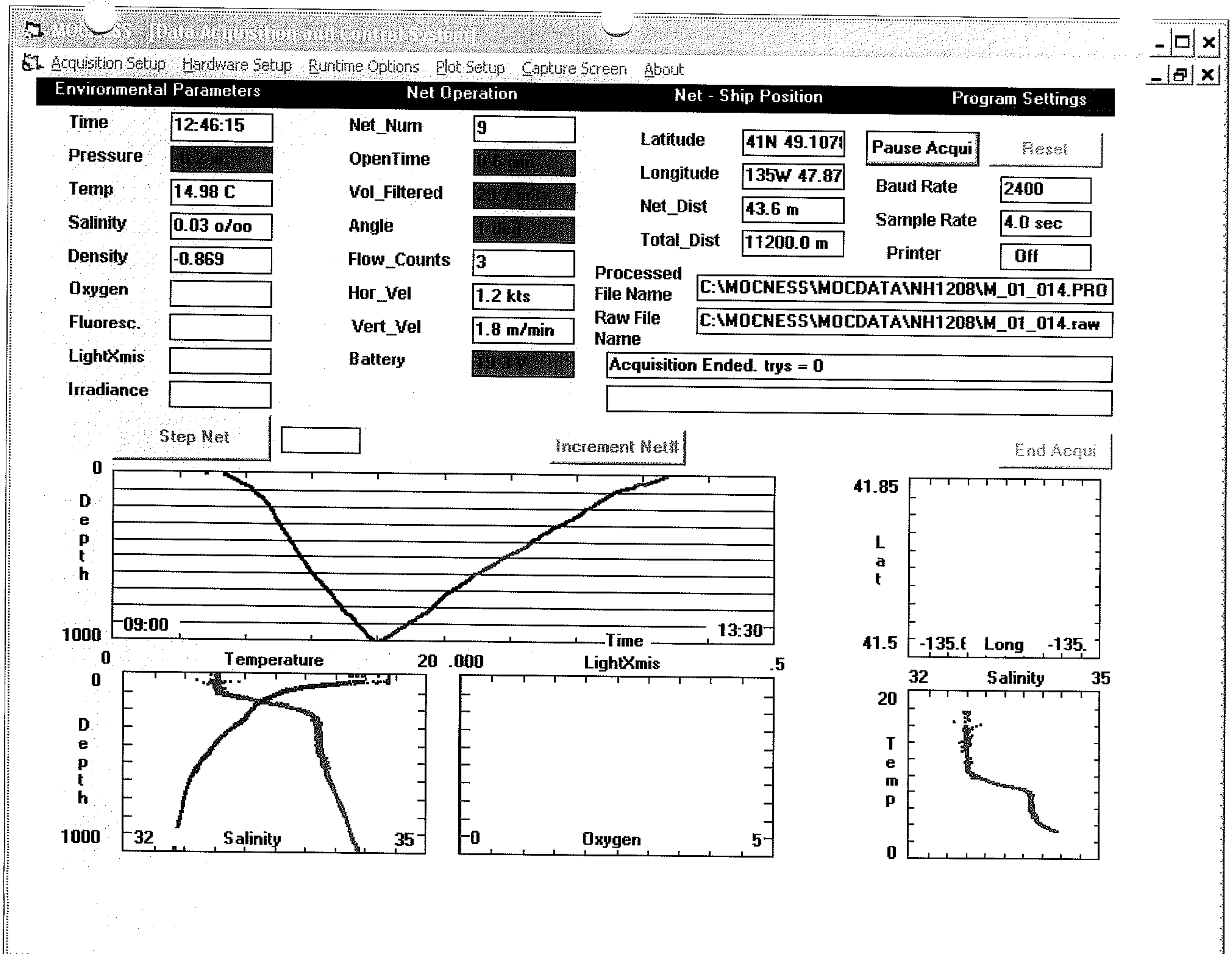
41.720
-135.823

Processed Filename M.01.014.[illegible] Raw Filename M.01.014.[illegible]

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments	
Start	0945						Start out	
Net 0 Down	1049	1012			2695	1604	0954 110 MWO 0959 200 MWO	↑ 20 m/min ↑ 25 m/min
Net 1	1049	999			1169	1604	1003 300 MWO 1022 ~~[illegible]~~ at	↑ 30 m/min 10 m/min
Net 2	1110	799			1019	1342	1058 911 mz 1108 825 mz	↑ 15 m/min ↑ 20 m/min
Net 3	1127	600			1382	1090	1110 786 mz ~~1116 709 mz~~	↓ 15 m/min ↓ 10 m/min
Net 4	1150	400			1314	704	1118 693 mz 1128 586 mz	↑ 15 m/min ↓ ship speed
Net 5	1212	199			697	370	1143 464 mz 1151 389 mz	↑ 20 m/min ↓ 15 m/min
Net 6	1224	100			592	195	~~1224 98 mz~~	↓ 10 m/min
Net 7	1233	50			409	102	1233 50 mz	↓ 5 m/min
Net 8	1240	28			363	54	1237 45 mz	↑ to 10 m/min
Closed	1245	0				1.4		

COMMENTS: 19.6V at start. Launch rough but nets streaming ok. Speed of ship highly variable. Angle variable too during haul. Slowed in 100-325 to sample accurate [illegible]. Increased 75-50 to avoid salps.



Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
12:46:15
Pressure
Temp
14.98 C
Salinity
0.03 o/oo
Density
-0.869
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
3
Hor_Vel
1.2 kts
Vert_Vel
1.8 m/min
Battery
Latitude
41N 49.107
Longitude
135W 47.87
Net_Dist
43.6 m
Total_Dist
11200.0 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
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Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_014.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
09:00
Time
13:30
41.85
Lat
41.5
Long
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
32
Salinity
35
0
Oxygen
5
32
Salinity
35
20
Temp
0

Tow: M-01-014 New Horizon 1208
Date: 7 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

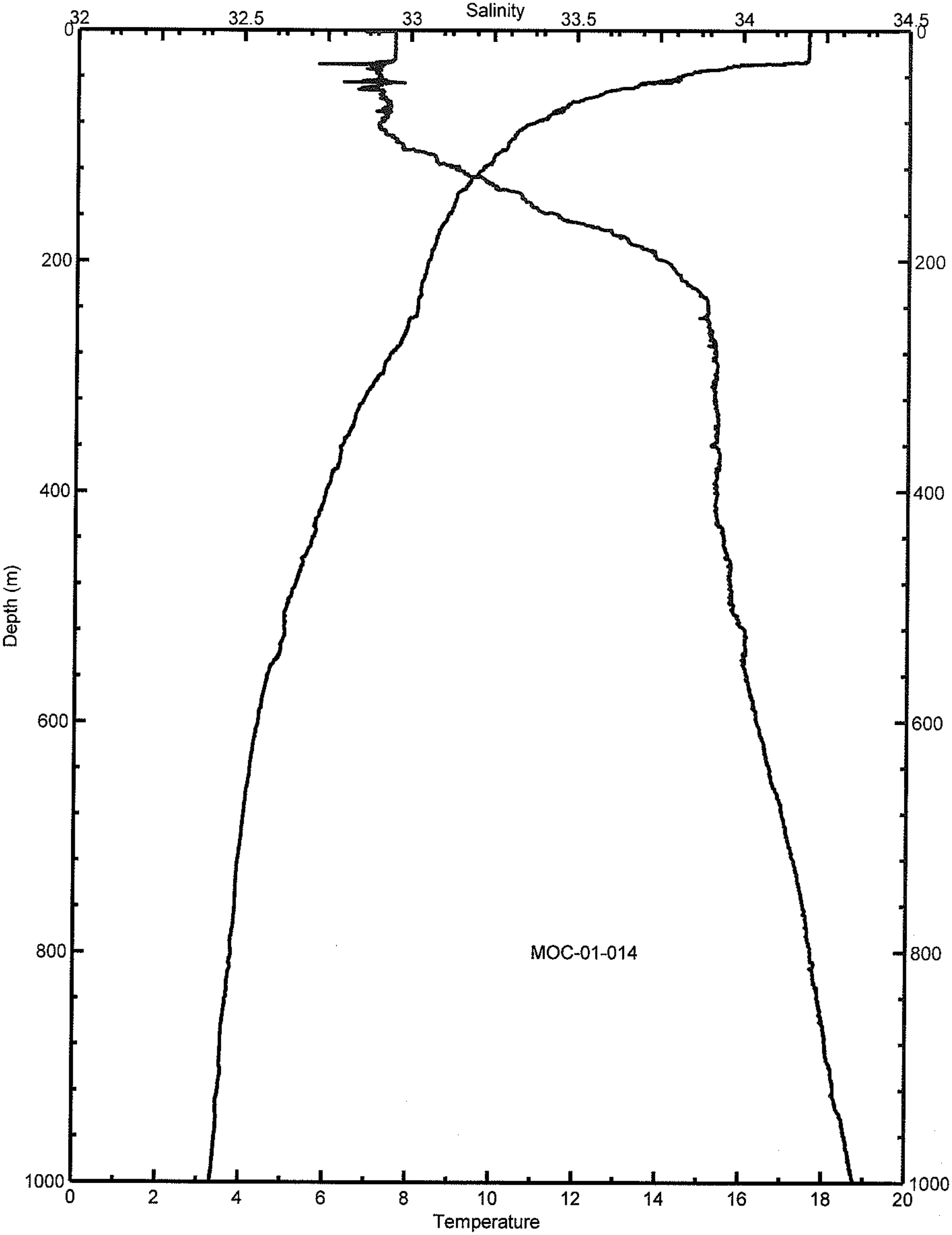
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-000.1	1012.3	490.0	03.3	17.6	07.0	03.2	17.6	07.0	32.89	50.00	33.70
1	000.2	998.5	895.2	03.3	16.0	03.6	03.3	16.0	03.5	01.29	50.00	34.06
2	600.1	796.8	692.3	03.8	04.4	04.1	03.7	04.4	04.0	34.05	34.21	34.13
3	400.7	598.7	501.6	04.4	06.0	05.1	04.4	06.0	05.1	33.92	34.05	33.98
4	199.0	398.4	300.2	06.0	08.5	07.3	06.0	08.4	07.2	33.76	33.93	33.91
5	101.6	197.7	151.9	08.5	10.3	09.1	08.5	10.3	09.1	32.98	33.74	33.40
6	050.2	100.7	075.4	10.3	13.1	11.3	10.3	13.1	11.3	32.84	32.98	32.93
7	027.1	049.9	041.1	13.4	17.5	14.5	13.4	17.5	14.5	32.72	32.98	32.90
8	000.2	027.6	013.9	17.5	17.6	17.6	17.5	17.6	17.6	32.86	32.95	32.95

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	23.76	37.46	26.30	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.07	37.37	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.99	27.19	27.10	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.70	26.99	26.86	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.23	26.70	26.52	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.32	26.21	25.84	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.72	25.32	25.11	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.80	24.68	24.46	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.74	23.82	23.81	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	27.0	89.0	47.6	00.4	49.7	01.6	-39.9	09.2	-15.7	00959	02695
1	36.0	69.0	45.9	01.6	50.1	02.1	-05.6	18.7	09.4	00317	01169
2	43.0	64.0	48.8	01.9	02.7	02.4	01.2	19.3	11.7	00256	01019
3	45.0	62.0	51.1	01.9	02.7	02.4	00.6	17.0	08.6	00348	01382
4	44.0	60.0	49.7	01.9	02.7	02.4	-00.6	16.9	09.1	00327	01314
5	46.0	62.0	51.3	01.9	02.7	02.5	-02.3	16.3	08.6	00171	00697
6	47.0	61.0	52.7	02.3	03.1	02.6	-02.1	13.0	05.4	00139	00592
7	46.0	68.0	53.2	01.9	03.1	02.6	-07.2	11.5	03.7	00097	00409
8	39.0	60.0	49.2	02.3	03.1	02.6	01.8	08.6	05.3	00078	00363

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	251.401169	9:37:41	-000.1	1012.3	490.0	00959	02695
1	251.401505	9:38:10	000.2	998.5	895.2	00317	01169
2	251.465625	11:10:30	600.1	796.8	692.3	00256	01019
3	251.477569	11:27:42	400.7	598.7	501.6	00348	01382
4	251.493785	11:51:2	199.0	398.4	300.2	00327	01314
5	251.509028	12:12:59	101.6	197.7	151.9	00171	00697
6	251.517014	12:24:30	050.2	100.7	075.4	00139	00592
7	251.523519	12:33:52	027.1	049.9	041.1	00097	00409
8	251.528067	12:40:24	000.2	027.6	013.9	00078	00363
9	251.531748	12:45:43					


Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
Depth (m)
MOC-01-014
0
2
4
6
8
10
12
14
16
18
20
Temperature

r

MOCNESS TOW#: 14 Sta. 18
Date: Sept 7 2012
Station: 18
People Processing Sample: NC, AB - (Amy Neill)

NET	DEPTH	Taxonomic Composition
0	0-1000	10 Cav. uncinata, shrimp, krill; cliopsis, 1-1" squid, syphonophor, some black flecks; 7 fish, chaetignaths, pneumoderma-1 — 1450 local net 0 processing
1	1000-800	decapods, medusae-3, chaeto; 1 fish, syphon, 1 gym
2	800-600	*large Clio? ⇒ etoh vial, 70%; shrimp; Bentheuphausia -1; 1g ost., chaet, sm. medusa, 3 fish
3	600-400	shrimp, fish -10+ (clear), orange astracods; syph, chaet
4	400-200	- 2 fish (1 hatchet), - giant mutant salp → form pint, clio 4 Pyramidata → 1/6 N2 7 on ice, 3 in 70%, - 1 shrimp; - syphanophore, - chaetignaths, - a few small jellies (clear), rads; 70% ← 3 Clio pyr., 1 gymnosome
5	100-199	- 2 krill, - rads*, - siph; - phronima amph - 1 or 2
6	50-100	- 2 Cav. uncinata 70%, - 4 huge C. pyr. 70%, - krill, - rads; 4 Cliopsis krohni (gym), 1 Pneumoderma, 8mm-balls of rads
7	28-50	Cliopsis krohni - 10, Carolinia uncinata - 4 70%, krill
8	0-28	net blown out top ⇒ bottom, 2 orange shrimp, 1 cliopsis; v. small blue copepods (*) = clausocalanus

MOC-13 - formalin was put in at start 36 M14

Specimens Removed from MOCNESS tows

cruise: OC-473 [illegible]
date: [illegible]
tow: [illegible]
sta. 18

time tow ended: [illegible]

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	cryo-vial #
2	C. pyramidata large	1		70%	Alex	
4	C. pyramidata	1		freeze LN2		T16
4	C. pyramidata	2		70%		
5	C. pyramidata	4		70%		
6	C. uncinata	2		70%		
7	C. uncinata	4		70%		
2	Megacalanus sp. ♀	1		95%	LEO	6429.6

MOCNESS DATA SHEET

Cruise NH1208 Location Mendocino station 21 Tow # M-01-015

Date 5 Sept 2012 Wind Speed 14 Direction 338

Year/Day 252 Sea State 1-3' Ship's course 353

Local Time 0843 to 1138 Start Lat 40° 0.709' N Long 135° 01.028 W

GMT Time 1643 to 1938 End Lat 40 05.131 Long 135 01.178

Net Size 1 m² Net Condition ok, some w big patches

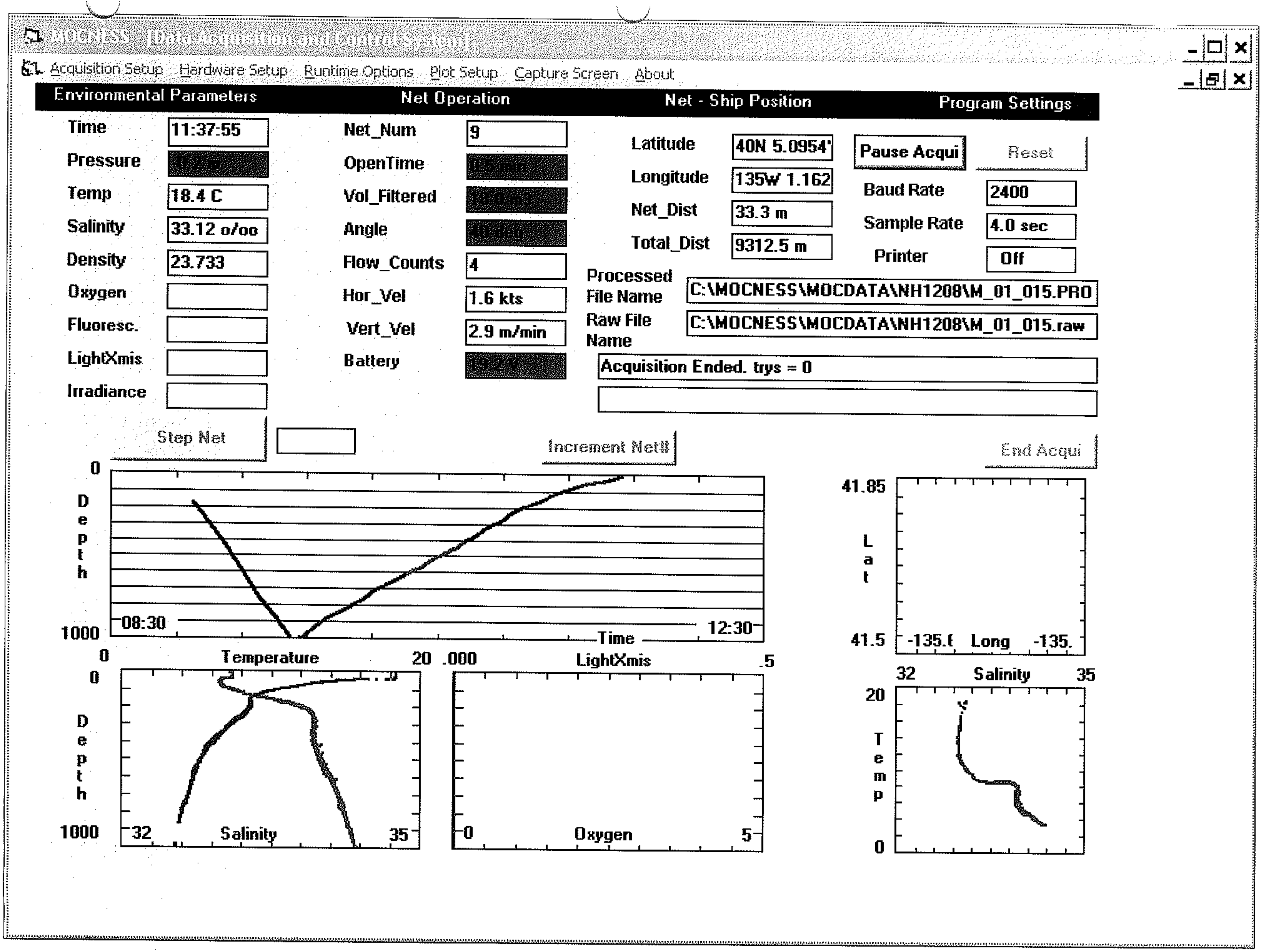
Net Mesh 150 µm, Net 0 = 333 µm

Processed Filename M-01-015.pro Raw Filename M-01-015.idw

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	0843	0					Start down at 10 m/min
Net 0 Down	0938	1012		2365	1338		0852 100 mwo ↑ 20 m/min; 0857 200 mwo ↑ 25 m/min
Net 1	0938	999		1022	1338		0901 305 mwo ↑ 30 m/min; 0922 Request slight speed ↑
Net 2	0958	801		1197	1137		0939 haul in at 10 m/min; ~~0940 Request~~ speed ↑
Net 3	1018	602		1273	917		1002 ↑ haul in to 15 m/min; ~~1005 ↓ to~~ 10 m/min
Net 4	1040	400		1298	655		1024 ↑ to 12 m/min
Net 5	1100	200		958	383		1036 ↑ to 15 m/min; ~~1047 ↓ to~~ 10 m/min
Net 6	1115	99		559	193		1052 ↑ to 15 m/min; ~~1055 ↓ to~~ 13 m/min
Net 7	1123	52		587	103		1115 ↓ to 10 m/min
Net 8	1132	26		335	51		1124 ↓ to 5 m/min; 1132 ↑ to 10 m/min
Closed	1137	2		No NR → did close (gave extra step) though.			(avoiding salps)

COMMENTS: 19.6V at start. Smooth launch. Angle a little low net 1, settled down after changed ship speed. 19.2V at end.


MOCNESS [Data Acquisition and Control System]
Acquisition Setup Hardware Setup Runtime Options Plot Setup Capture Screen About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time 11:37:55
Pressure
Temp 18.4 C
Salinity 33.12 o/oo
Density 23.733
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num 9
OpenTime
Vol_Filtered
Angle
Flow_Counts 4
Hor_Vel 1.6 kts
Vert_Vel 2.9 m/min
Battery
Latitude 40N 5.0954'
Longitude 135W 1.162
Net_Dist 33.3 m
Total_Dist 9312.5 m
Pause Acqui
Reset
Baud Rate 2400
Sample Rate 4.0 sec
Printer Off
Processed File Name C:\MOCNESS\MOCDATA\NH1208\M_01_015.PRO
Raw File Name C:\MOCNESS\MOCDATA\NH1208\M_01_015.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
08:30
Time
12:30
41.85
Lat
41.5
-135.(
Long
-135.
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
32
Salinity
35
0
Oxygen
5
32
Salinity
35
20
Temp
0

Tow: M-01-015 New Horizon 1208
Date: 8 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

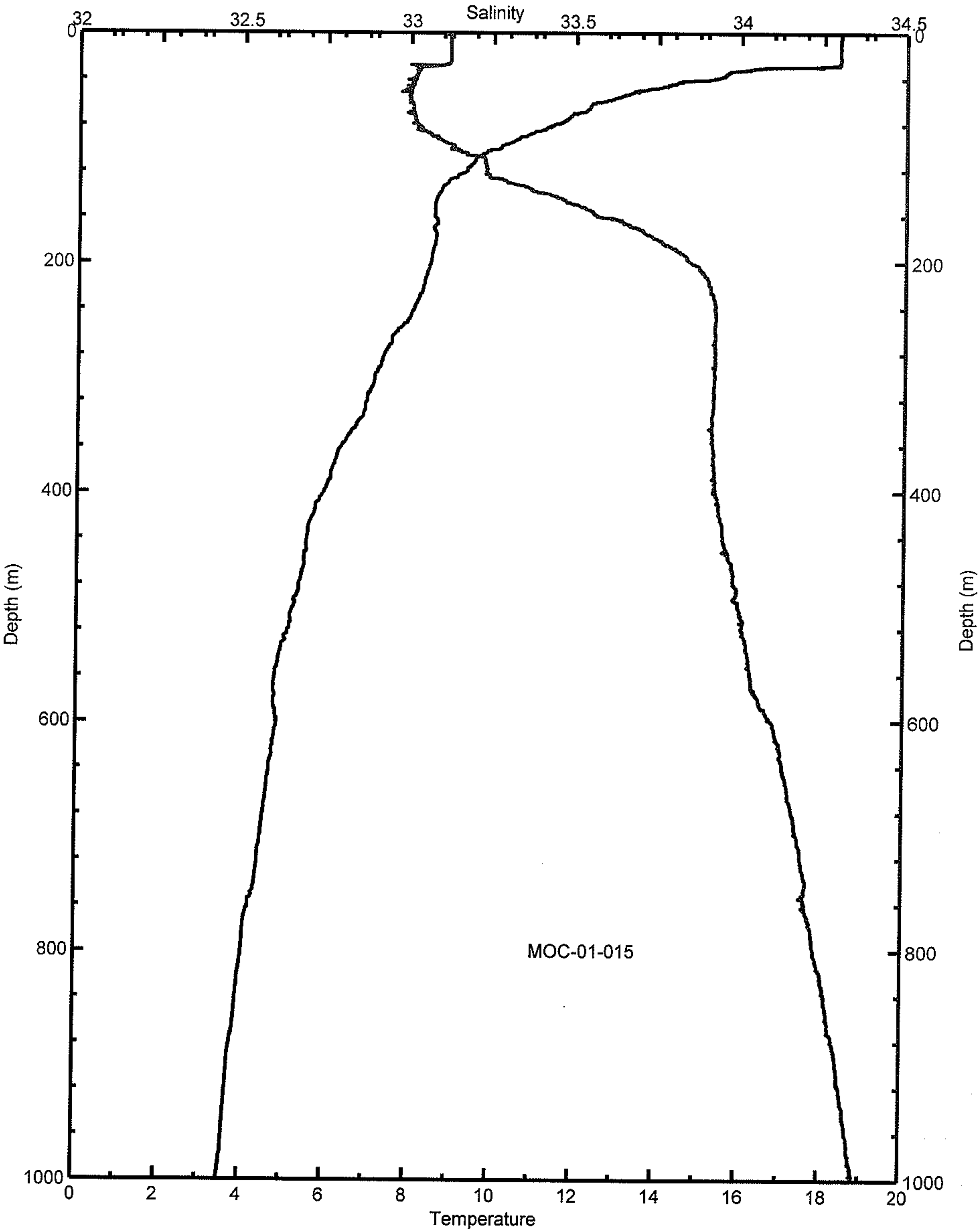
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.0	1012.2	453.0	03.5	18.4	07.6	03.4	18.4	07.6	00.01	34.39	33.58
1	000.0	998.3	874.5	03.5	17.5	03.8	03.4	17.5	03.7	00.01	34.36	33.59
2	602.2	801.0	697.5	04.0	04.9	04.5	04.0	04.8	04.4	34.10	34.23	34.17
3	400.6	600.5	506.4	04.8	06.0	05.2	04.7	05.9	05.2	33.92	34.10	34.00
4	201.3	399.0	302.5	06.0	08.5	07.2	05.9	08.5	07.2	33.86	33.93	33.92
5	099.2	200.0	152.3	08.5	10.2	08.9	08.5	10.2	08.9	33.12	33.85	33.52
6	052.6	098.8	075.6	10.2	13.3	11.7	10.2	13.3	11.7	32.99	33.13	33.03
7	026.2	051.9	038.1	13.4	18.4	15.5	13.3	18.4	15.5	32.97	33.12	33.02
8	000.8	025.8	012.5	18.4	18.4	18.4	18.4	18.4	18.4	33.11	33.12	33.12

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.30	27.36	26.11	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.30	27.33	26.69	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.99	27.18	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.71	26.99	26.87	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.31	26.71	26.54	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.46	26.30	25.98	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.79	25.46	25.11	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.68	24.77	24.33	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.73	23.74	23.74	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	19.0	69.0	42.9	00.0	07.0	01.2	-31.3	11.9	-18.2	00826	02365
1	25.0	55.0	35.7	00.4	05.4	01.7	-04.6	19.1	10.2	00292	01022
2	33.0	50.0	39.7	01.6	02.3	01.9	03.1	17.0	09.7	00309	01197
3	36.0	48.0	41.7	01.6	02.3	02.0	02.7	16.6	09.4	00319	01273
4	39.0	52.0	43.8	01.9	02.7	02.3	00.4	15.4	10.1	00297	01248
5	44.0	55.0	48.2	02.3	02.7	02.5	02.5	11.3	07.0	00219	00958
6	49.0	55.0	51.5	02.3	03.1	02.7	01.2	08.2	05.6	00125	00559
7	49.0	57.0	52.5	02.3	03.1	02.6	00.4	06.8	03.0	00134	00587
8	45.0	57.0	51.0	02.3	03.1	02.7	02.1	07.8	05.0	00074	00335

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	252.355613	8:32:5	000.0	1012.2	453.0	00826	02365
1	252.355972	8:32:35	000.0	998.3	874.5	00292	01022
2	252.415475	9:58:16	602.2	801.0	697.5	00309	01197
3	252.429884	10:19:2	400.6	600.5	506.4	00319	01273
4	252.444757	10:40:27	201.3	399.0	302.5	00297	01248
5	252.458600	11:0:22	099.2	200.0	152.3	00219	00958
6	252.468819	11:15:6	052.6	098.8	075.6	00125	00559
7	252.474676	11:23:32	026.2	051.9	038.1	00134	00587
8	252.480949	11:32:34	000.8	025.8	012.5	00074	00335
9	252.484387	11:37:30					


Salinity
32
32.5
33
33.5
34
34.5
Depth (m)
0
200
400
600
800
1000
MOC-01-015
0
2
4
6
8
10
12
14
16
18
20
Temperature

NH1208

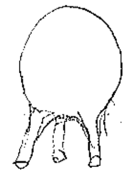
MOCNESS TOW#: 15

Date: 8 Sept 2012

Station: 21

People Processing Sample: Copley, Bergan

(+ not writing down 'regular' zoop + common ones)



Acanthometron n2

NET	DEPTH	Taxonomic Composition
0		SALPS 7 Cavolinia uncinata → respiration (Amy) - Died because 95% or Liza time ~1300
1		~25 shrimp medusa * Benthoceph removed 95% → L-60
2		live fish 3½"
3		squid 2 lg. jellies → form.
4.		SALPS - 4 very larg (9") 3 sm-med (2½-4") (9+) > formalin, separate from form split w/dark "ears" + very thick body
5		SALPS - 2 w/ yellow gut → form. split ~20% lost in sink. - rads - tiny Limacina - tiny Clio pyr.
6		- Lim. inflata - tiny - embryonic Clio - Rads - lg + brown - (look like L. helicina) doz. krill
7		- L. inflata - tiny, many heteropod >24 krill - 1 Cavolinia unc. → 70% vial
8		L. inflata - many - pinkish clausocal - blue rope

Specimens Removed from MOCNESS tows

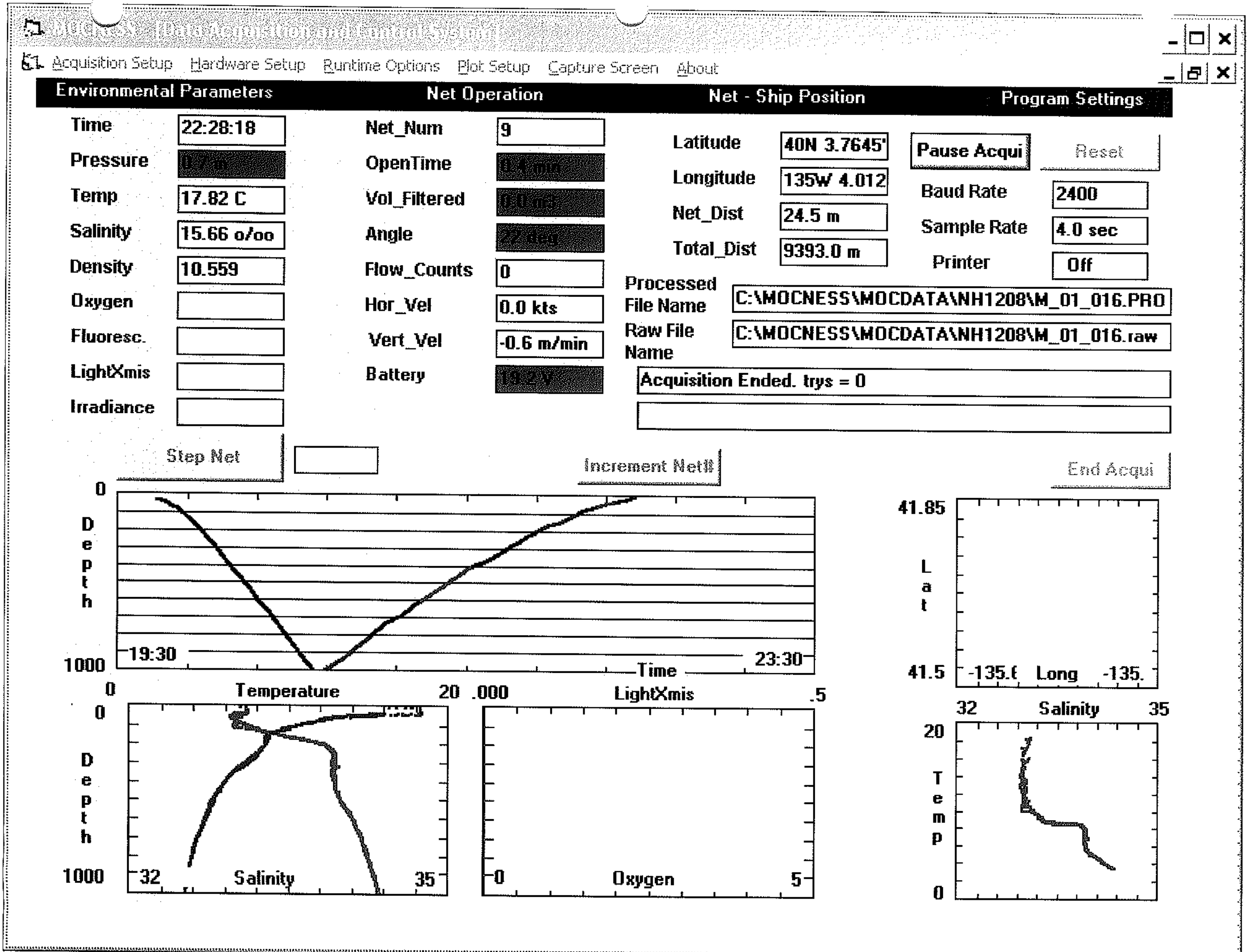
cruise: OC-473 [illegible]

time tow ended: 11:45

date: 8 Sept 12

tow: 15 [illegible]

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
1	Benthoeuphausia	1	~1200	95%	[illegible] (Eu05.4)
7	Cavolinia uncinata	1	~1300	70%	
Ø	Cavolinia uncinata	3		95%	AEM (Ga29.14) PHOTOS
Ø	Cavolinia uncinata	4		Liza	AEM PHOTOS



Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
22:28:18
Pressure
0.7 m
Temp
17.82 C
Salinity
15.66 o/oo
Density
10.559
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
0.4 min
Vol_Filtered
0.0 m3
Angle
22 deg
Flow_Counts
0
Hor_Vel
0.0 kts
Vert_Vel
-0.6 m/min
Battery
19.2 V
Latitude
40N 3.7645'
Longitude
135W 4.012
Net_Dist
24.5 m
Total_Dist
9393.0 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_016.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_016.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
19:30
23:30
Time
41.85
Lat
41.5
-135.(
Long
-135.
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
32
Salinity
35
0
Oxygen
5
32
Salinity
35
20
Temp
0

MOCNESS DATA SHEET

GL + Pier

Cruise NH1208 Location NE Pacific Station 21 Tow # M_01_016

Date 8 Sept 2012 Wind Speed 15 Direction 345

Year/Day 252 Sea State Moderate 3-5', no white caps

Local Time 1940 to 2228 Start Lat 39 59.013 Long 135 1.789W

GMT Time 0340 to 0628 End Lat 40 3.765 Long 135 4.012W

Ship's course 337

Net Size 1m² Net Condition ok, quite a few patches

Net Mesh 150μm. Net 0 = 333 μm

Processed Filename M.01_016.p50 Raw Filename M_01_016.raw

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	1940	0				0	St Down at 10 m/min
Net 0 Down	2038	1000			2701	1485	1950 100 MWO ↑ to 20 m/min 1954 200 MWO ↑ to 25 m/min
Net 1	2040	1000			9119	1474	1959 300 MWO ↑ to 30 m/min 2039 up at 10 m/min
Net 2	2057	800			1033	1228	2041 up at 15 m/min
Net 3	2114	600			1098	991	2102 slow to 10 m/min 2107 up at 15 m/min
Net 4	2132	400			1401	723	2209 slow to 10 m/min 2217 slow to 7 m/min
Net 5	2154	200			935	394	2224 up to 10 m/min
Net 6	2208	~~100~~ 98			499	185	
Net 7	2215	50			376	88	
Net 8	2221	25			403	51	
Closed	2227	0			-	1.5	No NR but net closed!

COMMENTS: 19.5V. Sunset was at 1919. Should be completely dark by the time we reach 1000m. 2047 adjusted ship speed up to ~2.0 from 1.5-1.6 kts

Tow: M-01-016   New Horizon 1208
Date: 8 Sept 2012
Temperature Probe # 535   Conductivity Probe # 120   Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

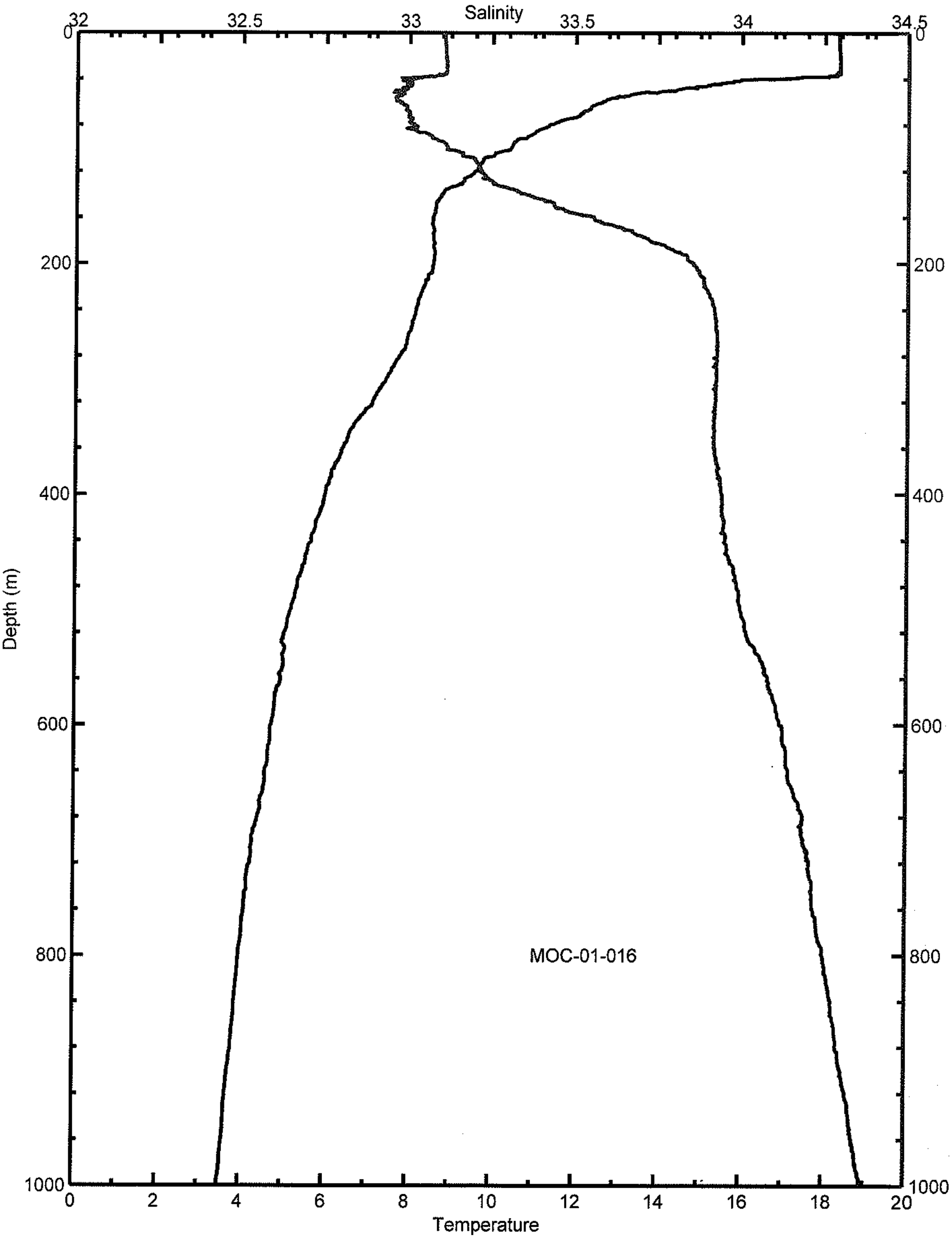
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	-000.1	1015.5	456.1	03.5	18.4	07.3	03.4	18.4	07.2	00.20	50.00	33.34
1	000.7	999.9	900.8	03.5	17.4	03.8	03.4	17.4	03.7	00.63	50.00	34.14
2	600.4	798.1	696.0	04.0	04.7	04.4	03.9	04.7	04.3	34.12	34.25	34.19
3	399.7	598.3	498.6	04.8	06.0	05.3	04.7	06.0	05.2	33.94	34.12	34.01
4	199.7	398.7	305.4	06.0	08.6	07.3	06.0	08.6	07.2	33.85	33.94	33.92
5	098.5	198.6	149.2	08.6	10.5	09.0	08.5	10.5	09.0	33.11	33.85	33.46
6	050.6	096.9	071.3	10.5	14.1	12.0	10.5	14.1	12.0	32.95	33.11	33.00
7	025.8	050.2	037.6	14.4	18.4	17.2	14.4	18.4	17.2	32.97	33.11	33.06
8	000.1	025.3	012.8	18.3	18.4	18.4	18.3	18.4	18.3	28.83	33.11	33.06

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.12	37.04	25.98	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.80	36.99	27.13	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.01	27.20	27.11	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.72	27.01	26.86	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.29	26.72	26.53	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.40	26.28	25.92	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.60	25.40	25.03	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.73	24.54	23.98	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	20.48	23.74	23.70	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	26.0	69.0	44.5	00.0	10.9	01.3	-29.2	09.9	-16.5	00911	02701
1	33.0	52.0	40.2	01.2	09.7	02.0	-06.0	18.1	12.1	00247	00949
2	38.0	51.0	43.2	01.6	02.7	02.2	03.1	17.9	11.7	00256	01033
3	43.0	50.0	46.3	01.9	02.7	02.4	07.4	15.0	11.4	00263	01098
4	42.0	53.0	47.1	01.9	02.7	02.4	01.0	13.4	09.1	00328	01401
5	45.0	56.0	50.0	02.3	03.1	02.6	00.8	11.9	07.2	00210	00935
6	48.0	55.0	50.9	02.3	03.1	02.6	01.8	11.7	06.4	00111	00499
7	44.0	56.0	50.3	02.3	02.7	02.5	00.4	06.8	04.3	00086	00376
8	20.0	57.0	49.2	01.2	02.7	02.5	01.4	07.4	04.2	00094	00403

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	252.812245	19:29:37	-000.1	1015.5	456.1	00911	02701
1	252.812998	19:30:42	000.7	999.9	900.8	00247	00949
2	252.873183	20:57:22	600.4	798.1	696.0	00256	01033
3	252.885116	21:14:33	399.7	598.3	498.6	00263	01098
4	252.897384	21:32:13	199.7	398.7	305.4	00328	01401
5	252.912674	21:54:15	098.5	198.6	149.2	00210	00935
6	252.922477	22:8:21	050.6	096.9	071.3	00111	00499
7	252.927685	22:15:51	025.8	050.2	037.6	00086	00376
8	252.931725	22:21:41	000.1	025.3	012.8	00094	00403
9	252.936088	22:27:57					



Salinity
32
32.5
33
33.5
34
34.5
Depth (m)
0
200
400
600
800
1000
Temperature
0
2
4
6
8
10
12
14
16
18
20
MOC-01-016

MOCNESS TOW#: 16
Date: 08/09 (Sep 8)
Station: 21
People Processing Sample: Leo, Amy, Tom

NET	DEPTH	Taxonomic Composition
0		~~2 fish~~ ~~2~~ Big shrimp (gnathophausia) ~~Cliopsis krohni~~ 2 fish (large) hatchet fish gausia sp *pneumoderma (2)* *C. uncinata (4)*
1	800-1000	3 fish 2 jelly Many little shrimps. 4 poebius
2	600-800	*benthoeuphausia amblyops (1)* Frozen Leo 1 sergestid 7 cyclothone fish copepods w/blue eggs 1 purple medusa Many orange shrimp
3	400-600	6 fish chaetognaths 1 large shrimp 1 med purple jelly big clear jelly
4	200-400	myctophid ~~[illegible]~~ krill (few) 2 hatchet fish * 1. C. uncinata → 70% *
5	100-200	C. uncinata 12 → to splitter Shrimp 1 Cliopsis Krohni MANY Euphausiids sergestids
6	50-100	*Calvolinia uncinata (1) 70%* Sergestids Cliopsis Krohni (3) 3 fish Krill cool polychaete
7	25-50	Siphonophore Krill Cliopsis krohni (2) 1 Salp chain limacina inflata some 2 fish
8	0-25	1 solitary salp *Clio pyramidata (2) T#18 Cliopsis Krohni small pneumoderma *Limacina inflata many (1) some T#19 ~20*

39.98-1
135.036

Specimens Removed from MOCNESS tows

cruise: OC-473
date: 9 Sep 12
tow: 16 St 22

time tow ended: 2210

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
2	B. amblyops	1	23:00	LN_2	200
6	C. uncinata	1	23:30	70%	AEM
8	C. pyramidata	2	23:30	N_2 T#18	AEM
8	L. inflata	~20	23:30	N_2 T#19	AEM
4	C. uncinata	1	23:20	70%	AEM
10	pneumoderma	2	23:40	95%	AEM
0	C. uncinata	4	23:40	dry – LIZA	AEM

8 G2

MOCNESS DATA SHEET

Cruise NH1208 Location NE Pacific Station 24 Tow # M-01-017

Date 9 Sept 2012 Wind Speed 13 Direction 318

Year/Day 253 Sea State calm, 2-4', no white caps

Local Time 1332 to ______ Start Lat 38 42.639 Long 135 02.380 W

GMT Time 2133 to ______ End Lat ______ Long ______

Net Size 1 m^2 Net Condition ok, lots of patches

Net Mesh 150 µm, net 0 - 333 µm

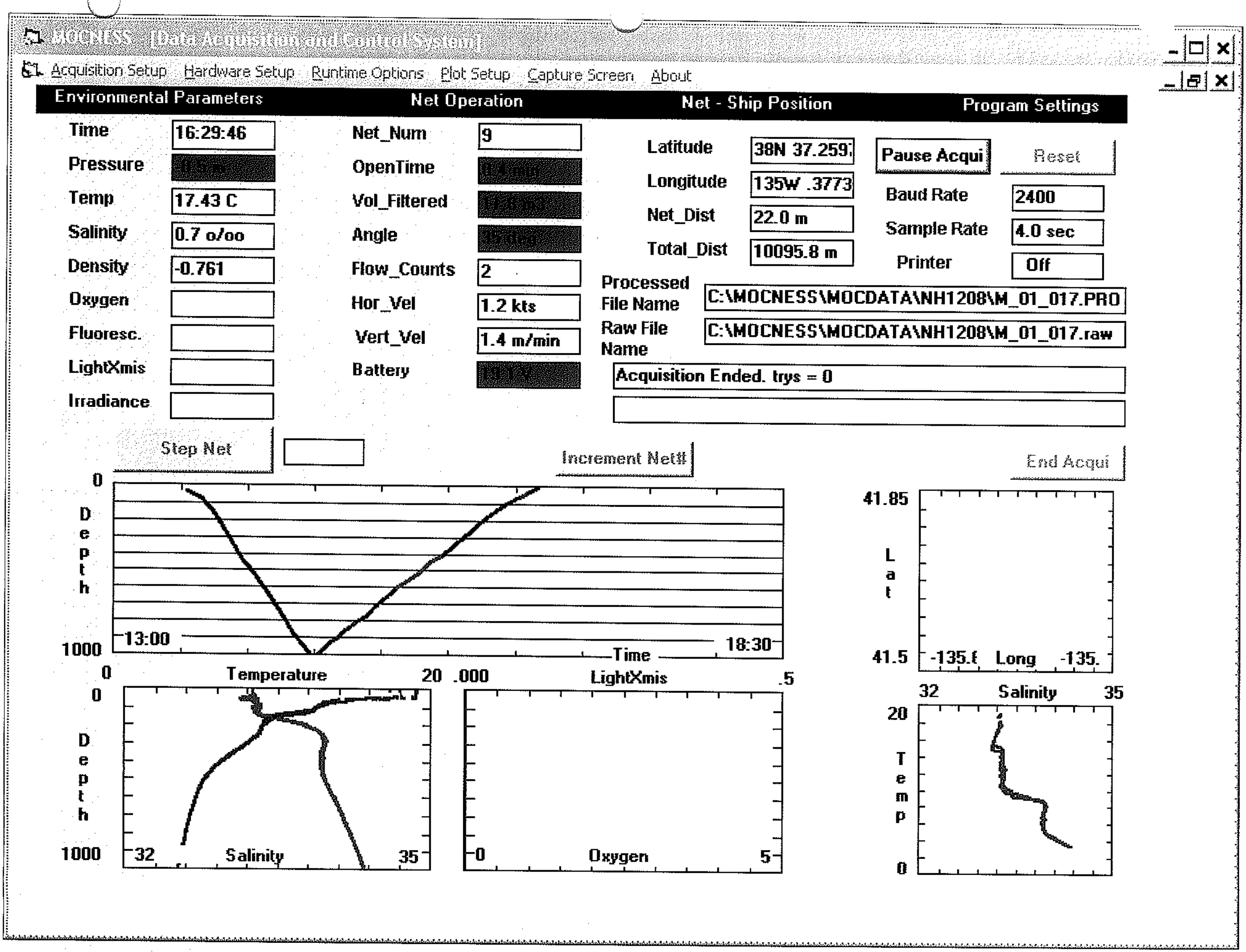
Processed Filename M_01_017.pro Raw Filename M_01_017.raw

Ship's Course 177

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	1332	0					Start down at 10 m/min
Net 0 Down	1440	1012		3384	1675		1342 100 MWO ↑ to 20 m/min; 1347 200 MWO ↑ to 25 m/min
Net 1	1440	1001		1217	1675		1351 300 MWO ↑ to 30 m/min; ~~1440 1009 mz~~ in at 10 m/min
Net 2	1500	801		1195	1417		1448 905 mz ↑ to 15 m/min; 1501 788 mz ↑ to 20 m/min
Net 3	1519	600		1422	1098		1507 723 mz ↓ to 15 m/min
Net 4	1542	400		1202	712		1530 513 mz ↑ to 20 m/min; 1535 448 mz ↓ to 15 m/min
Net 5	1601	200		740	357		1539 418 mz ↑ to 20 m/min; 1552 286 mz ↓ to 15 m/min
Net 6	1612	100		536	179		1613 98 mz ↓ to 10 m/min
Net 7	1620	50		251	92		
Net 8	1624	25		311	50		
Closed	1629	0		–			

COMMENTS: 19.4V at start. Towing with the wind to get to stn. Smooth launch. 19.1V at end.



MOCNESS - [Data Acquisition and Control System]
Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
16:29:46
Pressure
Temp
17.43 C
Salinity
0.7 o/oo
Density
-0.761
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
2
Hor_Vel
1.2 kts
Vert_Vel
1.4 m/min
Battery
Latitude
38N 37.259
Longitude
135W .3773
Net_Dist
22.0 m
Total_Dist
10095.8 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
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Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_017.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
13:00
Time
18:30
41.85
Lat
41.5
-135.
Long
-135.
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
32
Salinity
35
0
Oxygen
5
32
Salinity
35
20
Temp
0

Tow: M-01-017 New Horizon 1208
Date: 9 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

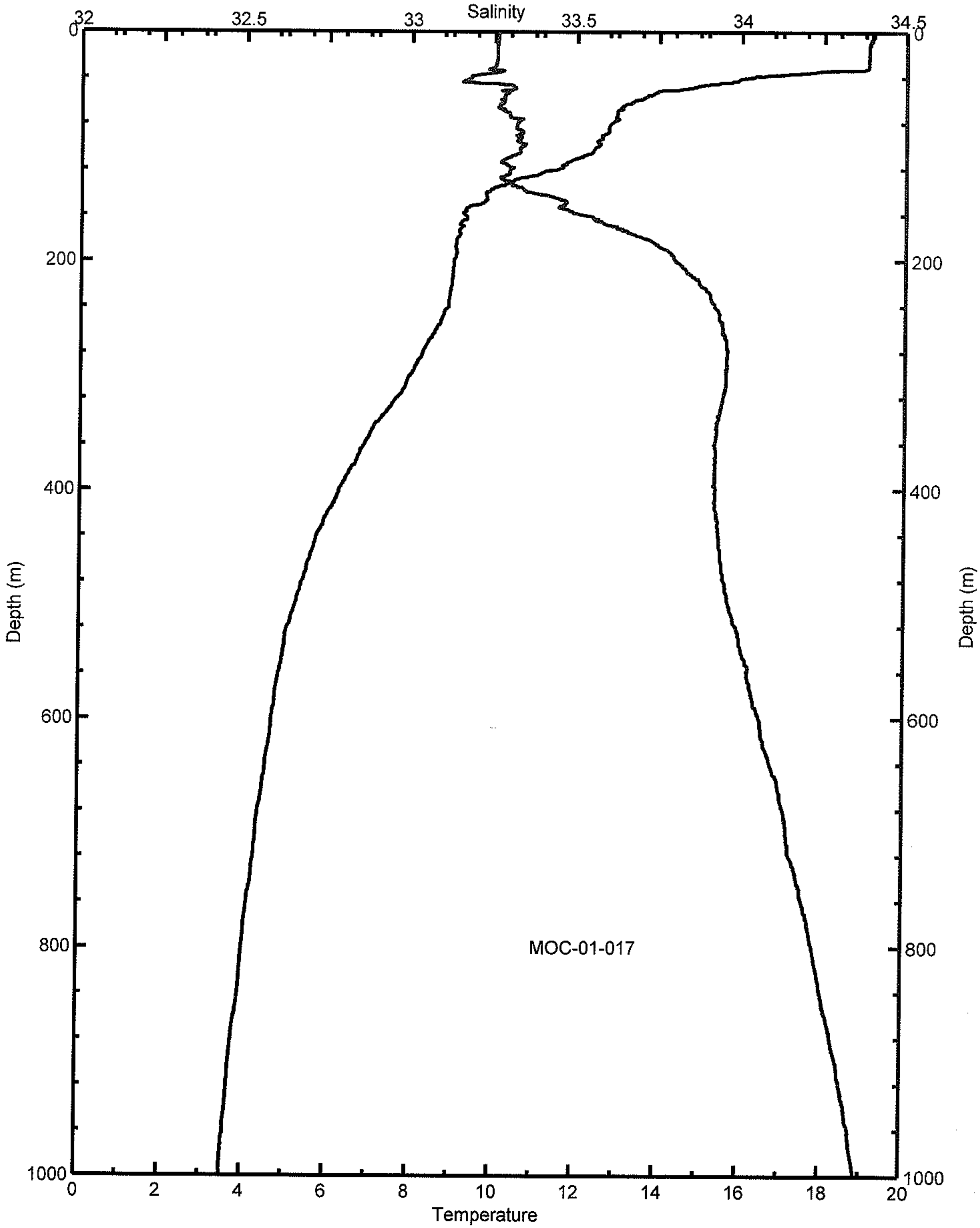
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.5	1012.2	478.2	03.5	19.6	07.7	03.4	19.6	07.6	00.01	50.00	33.73
1	001.2	1000.9	889.6	03.5	19.6	03.8	03.4	19.6	03.7	00.57	50.00	34.07
2	601.0	800.2	704.7	04.0	04.7	04.3	03.9	04.6	04.3	34.07	34.23	34.15
3	400.2	599.7	499.4	04.7	06.3	05.3	04.6	06.2	05.3	33.92	34.06	33.98
4	200.7	399.4	300.6	06.3	09.0	07.9	06.2	09.0	07.8	33.80	33.96	33.93
5	101.7	199.0	149.3	09.0	12.4	10.1	09.0	12.4	10.1	33.27	33.80	33.48
6	050.9	100.4	074.5	12.5	14.1	13.1	12.5	14.1	13.0	33.26	33.35	33.30
7	024.8	049.9	038.3	14.5	19.1	16.9	14.5	19.1	16.9	33.15	33.32	33.24
8	000.1	023.9	011.6	19.1	19.2	19.1	19.1	19.2	19.1	33.26	33.26	33.26

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.60	36.42	26.21	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.26	36.36	27.07	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.98	27.18	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.67	26.97	26.83	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.18	26.67	26.45	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.21	26.17	25.74	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.85	25.20	25.07	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.67	24.77	24.17	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.65	23.67	23.66	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	29.0	61.0	44.7	00.0	03.5	01.5	-22.8	06.8	-15.0	01000	03384
1	37.0	52.0	45.5	01.2	02.7	02.2	-05.6	16.6	09.7	00307	01217
2	43.0	50.0	46.3	01.9	02.7	02.4	05.3	16.4	10.4	00287	01195
3	45.0	52.0	48.0	01.9	02.7	02.4	04.7	13.8	08.8	00341	01422
4	42.0	50.0	46.2	01.9	02.7	02.4	06.6	13.4	10.4	00286	01202
5	44.0	49.0	46.5	02.3	02.7	02.5	07.2	11.1	08.9	00166	00740
6	46.0	51.0	48.5	02.3	02.7	02.5	03.7	09.3	06.4	00119	00536
7	47.0	56.0	49.7	02.3	02.7	02.6	04.1	09.1	06.7	00057	00251
8	46.0	55.0	51.0	02.3	03.1	02.7	02.9	09.0	05.6	00068	00311

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	253.557905	13:23:22	000.5	1012.2	478.2	01000	03384
1	253.558252	13:23:53	001.2	1000.9	889.6	00307	01217
2	253.625255	15:0:22	601.0	800.2	704.7	00287	01195
3	253.638634	15:19:37	400.2	599.7	499.4	00341	01422
4	253.654525	15:42:31	200.7	399.4	300.6	00286	01202
5	253.667870	16:1:43	101.7	199.0	149.3	00166	00740
6	253.675625	16:12:54	050.9	100.4	074.5	00119	00536
7	253.681204	16:20:55	024.8	049.9	038.3	00057	00251
8	253.683889	16:24:48	000.1	023.9	011.6	00068	00311
9	253.687095	16:29:25					


Salinity
32
32.5
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
MOC-01-017
0
2
4
6
8
10
12
14
16
18
20
Temperature

NH1208

MOCNESS TOW#: 17
Date: 9/9/12
Station: 24
People Processing Sample: Copley, Bergan

NET	DEPTH	Taxonomic Composition
0		phronima, house fish, medusa shrimp; no big pteros
1	800-1000	shrimp pneumoderma - III; small bit of 70% spilled
2	800	large euphausid; 1g hatchet fish (photo); 5 small fish; ~10 large copepods (paraeuchaeta?); shrimp
3	600	fish krill spp.
4	400	5 9/10 → 70% *
5	200	tiny red cops sapphirina sparkles rads
6	100	tiny red cops rads
7	50	1 Cavolinia sp., longer neck than previous uncinata → 70% * 8 tiny euphausiids rads purple - young amphipods?
8	25	very fine stuff - oithona; L. inflata; purple amphipods - fast

Specimens Removed from MOCNESS tows

cruise: OC-473 time tow ended: 1630
date: 9/9/12
tow: 17

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
4	Clio pyr.	5	~17:15	70%	NC/AB/GL
7	Cavolinia sp.	1	~1730	70%	"

MOCNESS DATA SHEET

Cruise NH1208 Location North Pacific Tow # M-01-018

Date 9 Sept 2012 Wind Speed 11 kts Direction 314° Cog = 157°

Year/Day 253 Sea State Moderate

Local Time 2137 to 0025 Start Lat 38 37.407' Long -135° 3.742'

GMT Time 0537 to 0825 End Lat 38° 31.888' Long 135° 0.9296

Net Size 1 m² Net Condition OK - some patches on 150 µm nets
Net Mesh 150 µm net 0 150 µm - Bucket changed

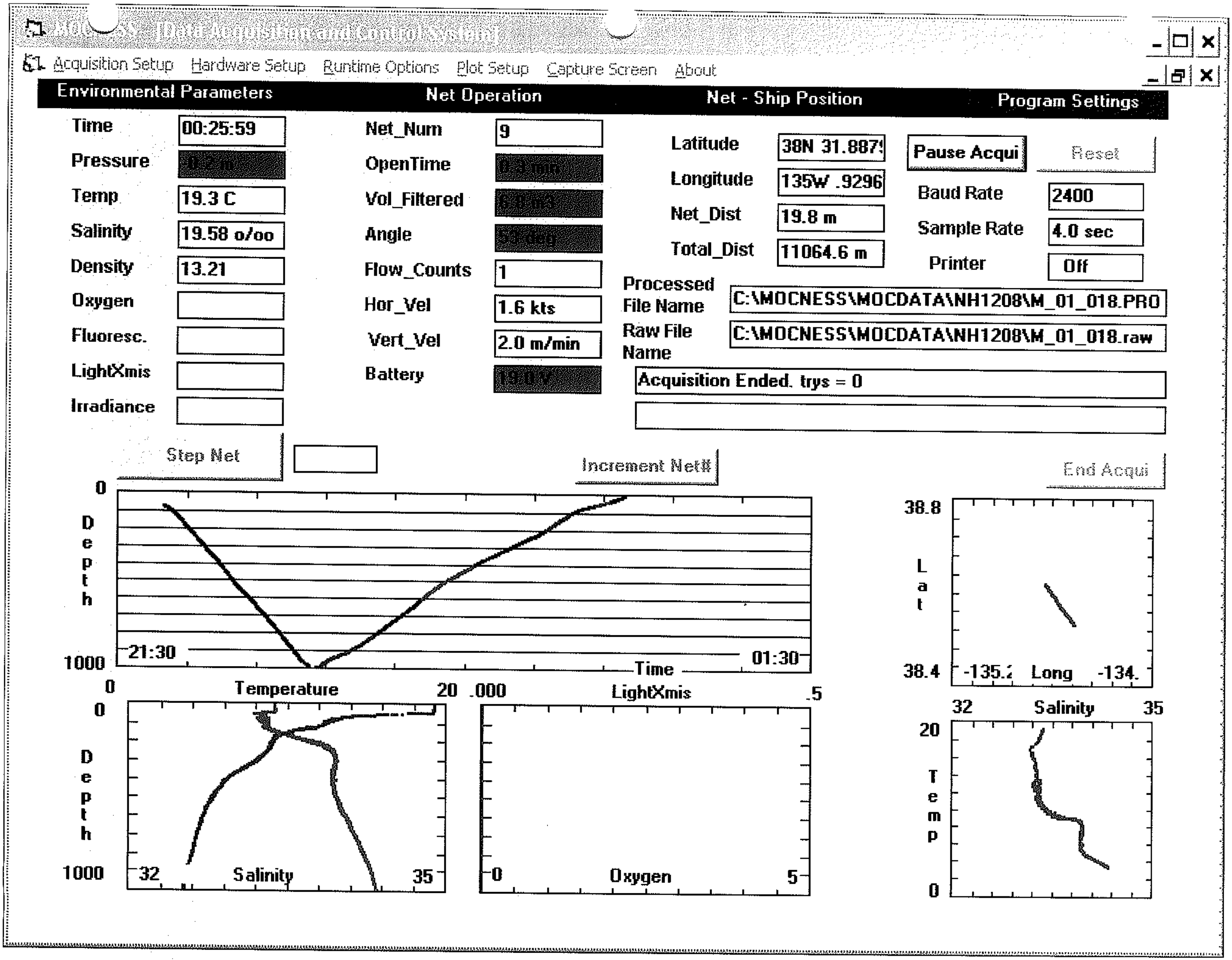
Processed Filename M-01-018.pro Raw Filename M-01-018.raw

Batvolts at start 19.3 V

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	2137	0					Start down at 10 m/min
Net 0 Down	2237	1012			3072	1732	2143 increase to 15 m/min; 2147 increase to 20 m/min
Net 1	2238	1000			1294	1732	2150 increase to 30 m/min; ~~2204 increase to 35 m/min~~
Net 2	2259	800			992	1458	2240 up at 10 m/min
Net 3	2315	600			1169	1142	~~2249 up at 15 m/min~~; 2254 up at 20 m/min
Net 4	2333	400			1557	846	2318 down to 15 m/min; 2340 increase to 20 m/min
Net 5	2357	200			641	389	0007 slow to 15 m/min; 0009 slow to 10 m/min
Net 6	0006	100			562	204	
Net 7	0015	50			364	103	
Net 8	0021	25			287	47	
Closed	0025	0				2.6	

COMMENTS: Very Nice tow No problems


Data Acquisition and Control System
Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
00:25:59
Pressure
Temp
19.3 C
Salinity
19.58 o/oo
Density
13.21
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
1
Hor_Vel
1.6 kts
Vert_Vel
2.0 m/min
Battery
Latitude
38N 31.887
Longitude
135W .9296
Net_Dist
19.8 m
Total_Dist
11064.6 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
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Raw File Name
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Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
21:30
Time
01:30
38.8
Lat
38.4
-135.
Long
-134.
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
32
Salinity
35
0
Oxygen
5
32
Salinity
35
20
Temp
0

Tow: M-01-018 New Horizon 1208
Date: 9 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

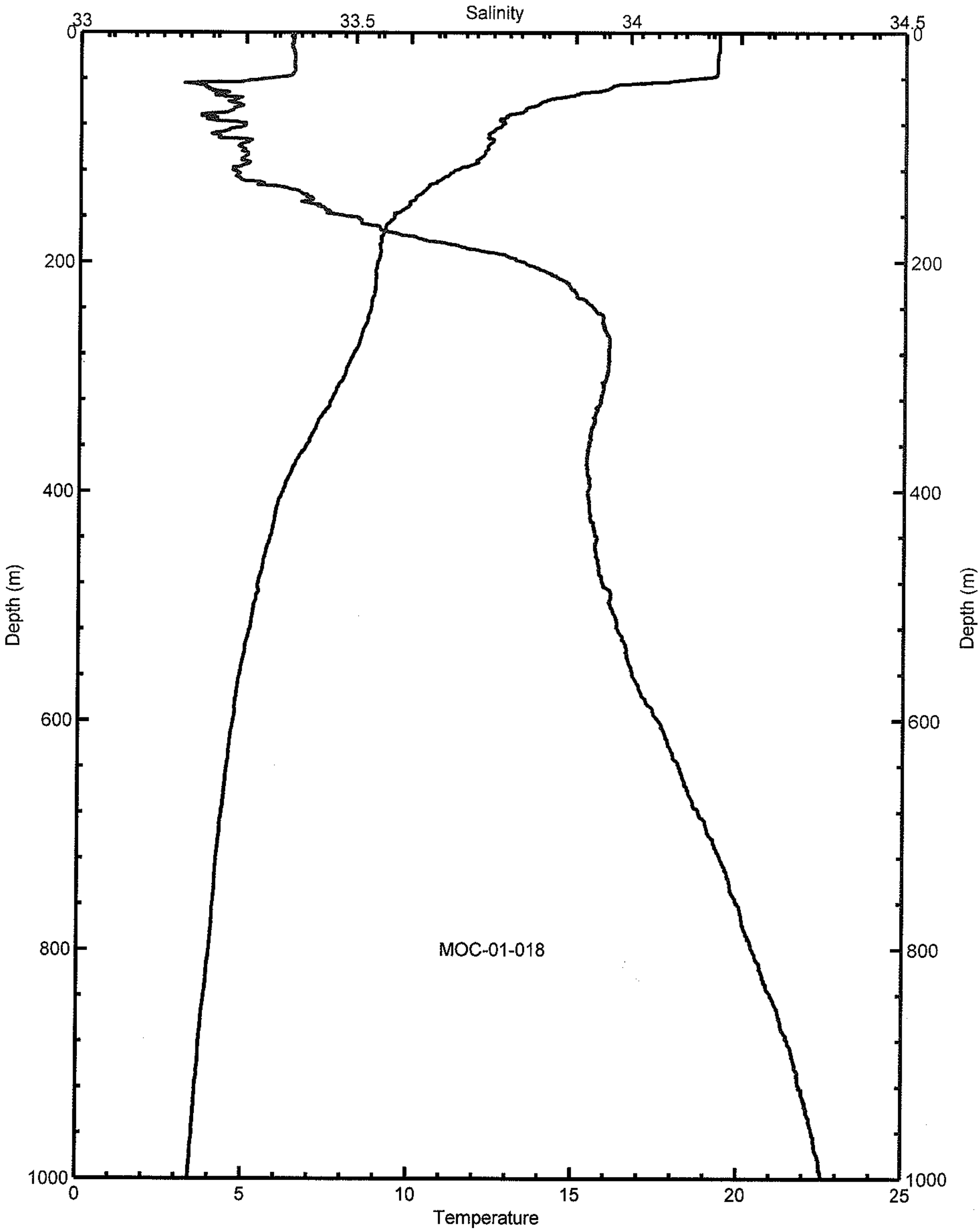
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	001.2	1012.3	468.1	03.4	19.5	07.6	03.3	19.5	07.6	00.01	50.00	33.57
1	001.3	1000.8	888.2	03.4	19.4	03.7	03.4	19.4	03.6	00.67	50.00	33.80
2	600.2	798.4	701.3	04.0	04.7	04.3	04.0	04.7	04.3	34.06	34.22	34.15
3	400.8	598.3	490.9	04.7	06.2	05.4	04.7	06.1	05.4	33.92	34.05	33.97
4	203.2	399.2	300.9	06.2	09.0	07.8	06.1	09.0	07.8	33.82	33.96	33.93
5	099.7	202.3	151.5	09.0	12.3	10.2	09.0	12.3	10.2	33.28	33.81	33.48
6	051.6	098.1	071.0	12.3	15.5	13.4	12.3	15.5	13.4	33.22	33.31	33.27
7	025.7	051.2	039.3	15.7	19.3	18.0	15.7	19.3	18.0	33.19	33.39	33.32
8	000.4	024.8	012.0	19.3	19.4	19.3	19.3	19.4	19.3	33.38	33.39	33.39

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.69	36.44	26.09	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.13	36.46	26.86	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.96	27.17	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.69	26.96	26.81	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.20	26.69	26.46	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.20	26.19	25.73	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.53	25.20	24.96	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.72	24.46	23.97	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.70	23.72	23.70	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	29.0	60.0	43.9	00.0	03.5	01.4	-23.4	13.7	-16.7	00902	03072
1	34.0	52.0	45.4	00.0	02.7	02.2	-03.9	14.8	09.3	00323	01294
2	47.0	52.0	49.2	02.3	02.7	02.6	10.3	15.4	12.8	00233	00992
3	46.0	54.0	50.7	02.3	03.1	02.7	07.8	16.0	10.9	00274	01169
4	50.0	58.0	53.9	02.3	03.1	02.8	06.0	12.3	08.3	00356	01557
5	48.0	54.0	50.7	02.3	03.1	02.8	08.4	13.2	10.9	00142	00641
6	51.0	56.0	53.2	02.7	03.1	02.8	02.7	11.5	05.9	00125	00562
7	46.0	54.0	50.3	02.3	02.7	02.5	03.1	07.0	04.7	00082	00364
8	45.0	52.0	47.8	01.9	02.7	02.4	02.9	07.2	05.8	00066	00287

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	253.896748	21:31:18	001.2	1012.3	468.1	00902	03072
1	253.897269	21:32:4	001.3	1000.8	888.2	00323	01294
2	253.958160	22:59:44	600.2	798.4	701.3	00233	00992
3	253.969039	23:15:25	400.8	598.3	490.9	00274	01169
4	253.981817	23:33:49	203.2	399.2	300.9	00356	01557
5	253.998403	23:57:41	099.7	202.3	151.5	00142	00641
6	254.005081	0:7:18	051.6	098.1	071.0	00125	00562
7	254.010937	0:15:44	025.7	051.2	039.3	00082	00364
8	254.014792	0:21:17	000.4	024.8	012.0	00066	00287
9	254.017905	0:25:46					



Salinity
33
33.5
34
34.5
Depth (m)
0
200
400
600
800
1000
MOC-01-018
Temperature
0
5
10
15
20
25

MOCNESS TOW#: 18
Date: 09/09 - to Sep 10th (deploy - recovery)
Station: 24
People Processing Sample: Leo, Lisa, Tom, Amy

Everything is pretty dead

NET	DEPTH	Taxonomic Composition
0	0 - 1000	1 Cavolinia uncinata; 1 jelly; 10+ fish; many little shrimp; Candacea
1	1000 - 800	pneumoderma (2); shrimp; medusa; 1 fish
2	800 - 600	benthoplausta am. (1); fish (7 fish); poebius; big ostracod; medusa
3	600 - 400	Big transparent jelly; 1 Hatchet fish; lots of cyclothone; Small fish; *Strange chin* 9.5%
4	400 - 200	3 hatchet fish; *1 megacalanus - Leo*; cyclothone; 1 squid
5	200 - 100	Krill (lots) Eu. Thysanoessa, Stylocheiron; fish; Euphausia; ~~[illegible]~~
6	100 - 50	*pneumoderma (huge!)*; *Cavolinia uncinata* 70%; 4 fish; Krill (lots) Stylocheiron, Eu, Thysanoessa; Candacea
7	50 - 25	Cuvierina collumnella more than 10; 6 fish; small krill; Candacea; limacina inflata (LOTS); limacina bulimoides
8	25 - 0	Cuvierina collumnella more than 10; L. inflata (LOTS); Doliolids (small, blue); juvenile caroliniids (LOTS); Thalia?? (small, straight, blue...); Small purple gastropods (??) Photos

Specimens Removed from MOCNESS tows

cruise: OC-473

time tow ended: 00:39

date: 9/9/12 to 9/10/12

38.623
135.062

tow: 18

Station 24

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/free ze	Collector's name	
4	Megacalanus sp. ♀	1	1316	95%	Leo	Co 429.7
3	Clionidae sp (C. limacina?)	1		95%	AEM	Ga
6	Pneumodermа	1		95%	AEM	PHOTOS
~~8~~	~~purple [illegible] pods~~	~~2~~				
6	cavolinia uncinata	1		70%	AEM	
8	unknown purple gastropods	2		95%	AEM	PHOTOS Ga no. 2

MOCNESS DATA SHEET

Cruise NH 1208 Location NE Pacific Station 27 Tow # M-01-019

Date 10 Sept 2012 Wind Speed 17 Direction 27

Year/Day 254 Sea State Calm 2-3' Ship's course 208°

Local Time 1334 to ______ Start Lat 37 15.492 Long 135 00.549

GMT Time 2134 to ______ End Lat ______ Long ______

Net Size 1 m² Net Condition OK, Aatzles on 150 µm nets
Net Mesh 150 µm, Net 0 = 333 µm

Processed Filename M-01-019.PRO Raw Filename M-01-019.RAW

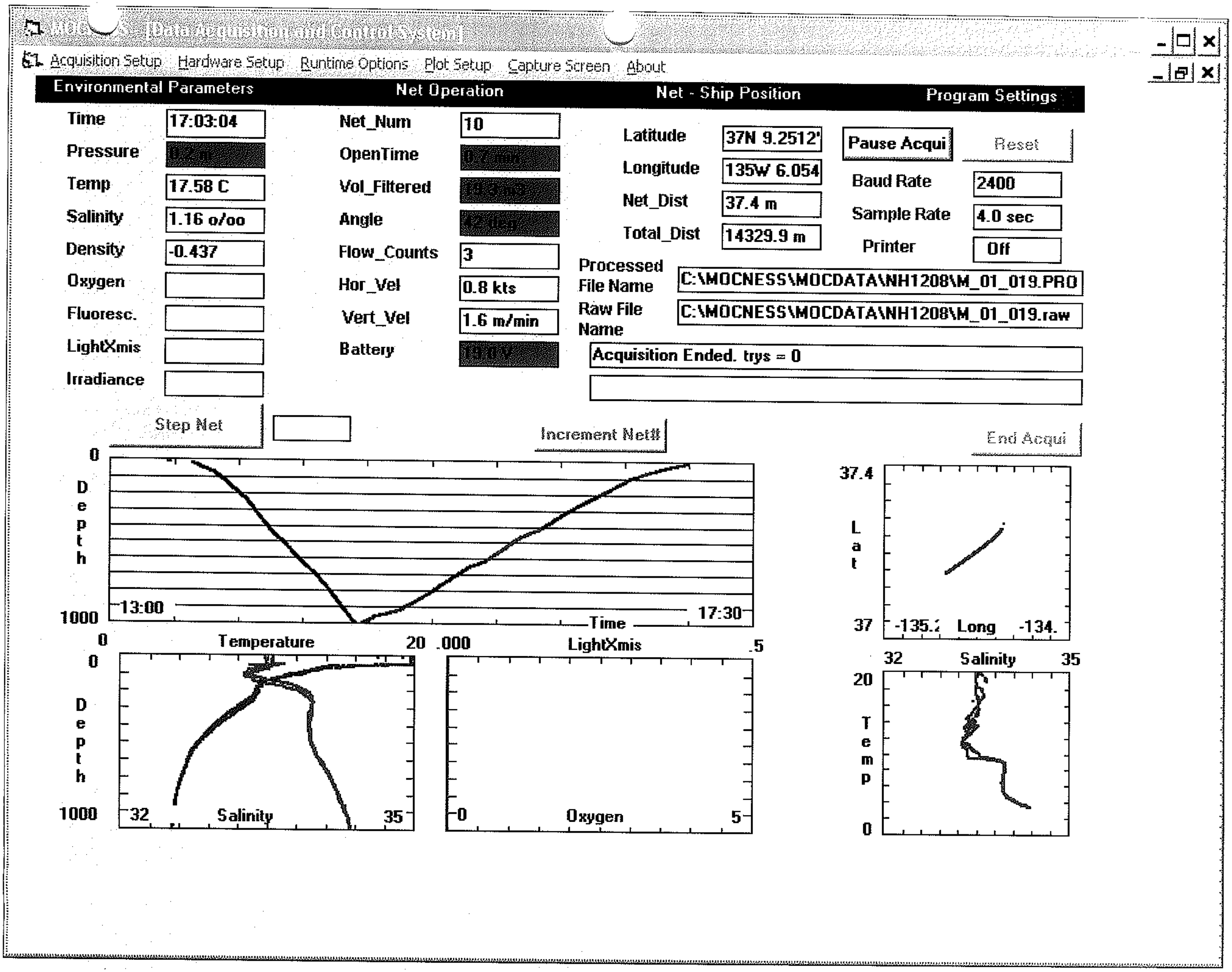
NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	1334	0					Start down at 10 m/min
Net 0 Down	1445	1010			3890	2017	1342 100 MWO ↑ to 20 m/min 1347 200 MWO ↑ to 25 m/min
Net 1	1445	1001			1819	2017	1351 300 MWO ↑ to 30 m/min 1356 Requested speed ↓
Net 2	1515	801			1486	?	1412 919 MWO ↑ to 35 m/min 1443 stopped winch
Net 3	1538	600			1445	1156	1448 980 mz start in at 10 m/min 1453 945 mz ↑ to 15 m/min
Net 4	1601	401			1507	787	1454 943 mz + ↓ ship speed 1.5 the rate
Net 5	1625	201	(.974)		2837.04 861	392	↗ to 20 m/min 1517 772 mz ↓ to 15 m/min
Net 6	1638	100	(449)	No NR	283 0.6 279	185	1533 629 mz ↑ to 20 m/min 1540 574 mz ↓ to 15 m/min
Net 7	1647	50		NR	437	91	1559 417 mz ↑ to 20 m/min 1606 348 mz ↓ to 15 m/min
Net 8	1654	26			525	50	1647 49 mz ↓ to 5 m/min
Closed	1702	0					

COMMENTS: 19.4 V at start, Towing towards station (15.5 nmi).
Angle 50° while deep

1643 → Net response fired (Net 6 incremented to Net 7) midway thgh 50-100 m

See volume correction above for Nets 5+6 because Net 5/6 bar hung up for a while - NR at 72 m.


Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
17:03:04
Pressure
Temp
17.58 C
Salinity
1.16 o/oo
Density
-0.437
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
10
OpenTime
Vol_Filtered
Angle
Flow_Counts
3
Hor_Vel
0.8 kts
Vert_Vel
1.6 m/min
Battery
Latitude
37N 9.2512'
Longitude
135W 6.054
Net_Dist
37.4 m
Total_Dist
14329.9 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_019.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_019.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
13:00
Time
17:30
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
32
Salinity
35
0
Oxygen
5
37.4
Lat
37
-135.2
Long
-134.
32
Salinity
35
20
Temp
0

Tow: M-01-019 New Horizon 1208
Date: 10 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

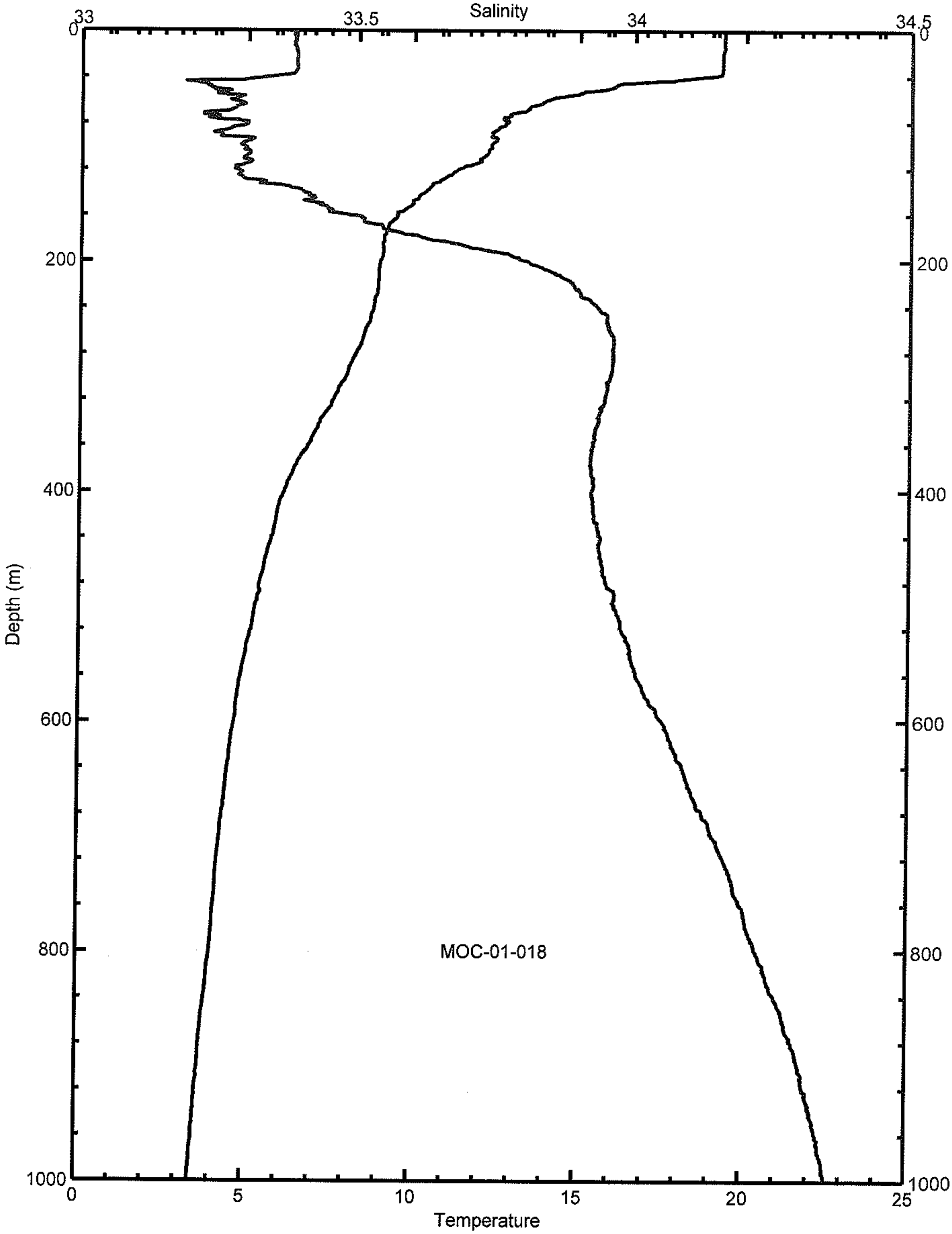
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	001.8	1011.7	456.8	03.5	20.2	07.8	03.4	20.2	07.8	00.01	50.00	33.76
1	002.1	1000.2	897.3	03.5	20.2	03.7	03.5	20.2	03.6	00.96	50.00	33.95
2	600.5	801.0	690.4	03.9	04.6	04.2	03.8	04.5	04.2	34.04	34.23	34.14
3	401.9	599.1	490.8	04.6	06.3	05.5	04.5	06.3	05.4	33.93	34.04	33.97
4	202.2	400.6	296.8	06.3	09.2	07.9	06.3	09.2	07.9	33.92	33.97	33.95
5	099.0	201.5	151.6	09.2	11.6	10.0	09.2	11.5	10.0	33.27	33.92	33.65
6	074.5	098.3	086.2	11.6	13.0	12.4	11.6	13.0	12.4	33.27	33.46	33.37
7	052.7	073.8	063.5	13.0	14.3	13.7	13.0	14.3	13.6	33.42	33.52	33.46
8	026.2	051.6	039.4	14.2	20.1	17.9	14.2	20.1	17.9	33.33	33.67	33.52
9	001.0	025.9	013.2	20.1	20.1	20.1	20.1	20.1	20.1	33.55	33.56	33.56

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.78	36.22	26.21	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.02	36.24	26.98	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.97	27.19	27.09	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.67	26.97	26.81	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.24	26.67	26.46	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.34	26.24	25.90	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	25.19	25.34	25.26	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	24.92	25.19	25.07	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.65	24.91	24.16	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
9	23.64	23.65	23.64	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000
9	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	36.0	62.0	51.4	00.0	03.9	01.8	-21.4	09.0	-14.1	01066	03890
1	40.0	62.0	53.1	00.8	03.1	02.6	-06.8	11.3	06.6	00448	01819
2	48.0	56.0	51.5	02.3	03.1	02.6	01.8	13.5	08.6	00351	01486
3	49.0	56.0	52.4	02.3	03.1	02.7	03.7	12.9	08.7	00341	01445
4	48.0	56.0	51.2	02.3	03.1	02.6	05.8	12.5	08.5	00351	01507
5	47.0	55.0	50.0	02.3	02.7	02.6	05.1	11.5	07.8	00197	00861
6	50.0	54.0	51.7	02.3	02.7	02.4	02.5	08.2	05.2	00072	00283
7	46.0	50.0	47.7	02.3	02.7	02.4	03.1	07.2	05.3	00062	00279
8	44.0	52.0	47.2	01.9	02.7	02.3	00.2	06.8	03.9	00101	00437
9	41.0	52.0	47.0	01.6	02.7	02.3	00.8	05.8	03.1	00122	00525

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	254.558507	13:24:14	001.8	1011.7	456.8	01066	03890
1	254.558854	13:24:45	002.1	1000.2	897.3	00448	01819
2	254.635509	15:15:7	600.5	801.0	690.4	00351	01486
3	254.651863	15:38:40	401.9	599.1	490.8	00341	01445
4	254.667755	16:1:34	202.2	400.6	296.8	00351	01507
5	254.684109	16:25:7	099.0	201.5	151.6	00197	00861
6	254.693264	16:38:18	074.5	098.3	086.2	00072	00283
7	254.696655	16:43:11	052.7	073.8	063.5	00062	00279
8	254.699583	16:47:24	026.2	051.6	039.4	00101	00437
9	254.704317	16:54:12	001.0	025.9	013.2	00122	00525
10	254.710046	17:2:27					



Salinity
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
Depth (m)
MOC-01-018
0
5
10
15
20
25
Temperature

MOCNESS TOW#: 19
Date: 10 Sept
Station: 27
People Processing Sample: Nancy, Alex

NET	DEPTH	Taxonomic Composition
0	0-1000	fish (H15) 2 jellos shrimp *gymnosome → 95% for SD (?) copes - a Gaussia candacia
1	-1000	lg shrimp fish 12+
2	-800	lg fish - formalin lg shrimp medusa polychaete lg copepods chaetognaths
3	-600	krill eu. fish - cyclothone paraeuchaeta jelles
4	-400	phronima radiolarians small krill Cuvierina columnella (juv) other cavolinid juv? limacina inflata few → or ostracods?
5	-200	phronima fish paraeuchaeta + eggs! Sapphirina sparkles
6	-100	*2 Cavolinia uncinata → 80% (alciopid polychaete fr 1) rads krill
7	-50	*3 Cavol. → 70% purple striped jelly white fish tiny purple alciopid (different than 1) atlantid
8	0-25	amphipods candacia atlantid mysid ctenophore Lobulimoides - dark pu L. inflata/lesueuri Mostly gastropods - purple

Specimens Removed from MOCNESS tows

cruise: ~~OC473~~ NH1202 time tow ended:

date: 10 Sept 2012

tow: 19 Sta 27

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	
6	Cavolinia uncinata	2	17:30	70%	NC	
7	Cavolinia uncinata	3	17:50	70%	NC	
Ø	pneumoderma	1	18:20	95%	AEM	Gall 3.20

MOCNESS DATA SHEET

Cruise NH1208 Location Station 27 North Pacific Tow # M_01_020

Date 10 Sept 2012 Wind Speed 21 Kts Direction 32°

Year/Day 254 Sea State Rough - Some water onto fantail during launch

Local Time 2200 to 0129 Start Lat 37.230947 Long 135.128588

GMT Time 0600 to 0929 End Lat 37° 20.217' Long 135 5.188'

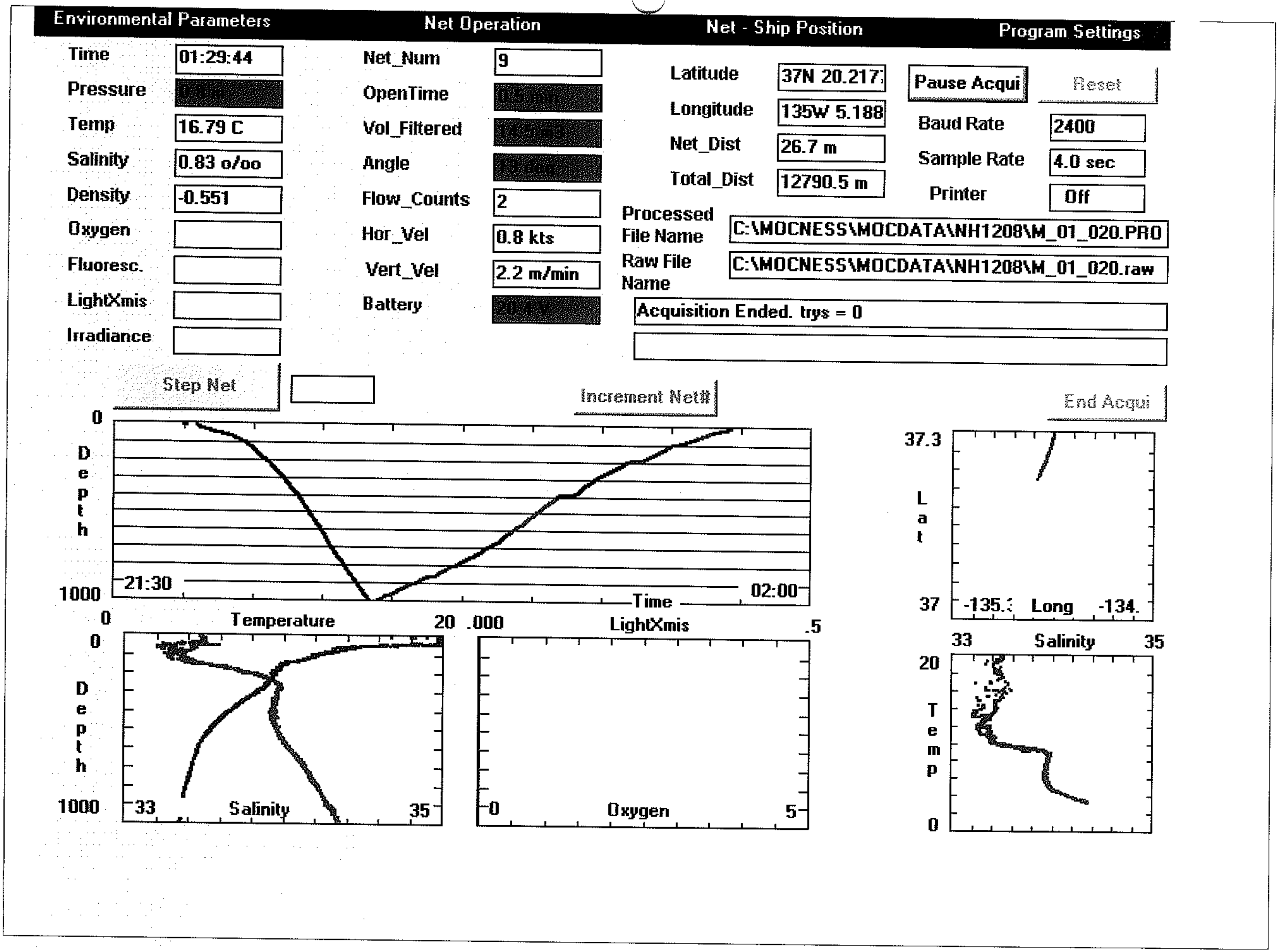
Net Size 1-m² Net Condition OK lots of patches
Net Mesh 150µm Net 0 = 333µm

Processed Filename M_01_020.pro Raw Filename M_01_020.raw

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	2200	0					Start down at 10 m/min
Net 0 Down	2310	1011			3520	1693	2216 increase to 15 m/min 2220 increase to 20 m/min
Net 1	2311	1002			1728	1693	2229 increase to 25 m/min 2235 increase to 30 m/min
Net 2	2341	800			1361	1369	2240 increase to 35 m/min 2310 stop at 1011
Net 3	0004	600			1069	1012	2313 in at 10 m/min 2332 up at 15 m/min
Net 4	0021	400			1653	739	0022 up at 12 m/min
Net 5	0048	200			1121	407	0106 slow to 10 m/min
Net 6	0106	100			696	195	0118 slow to 8 m/min 0122 slow to 5 m/min
Net 7	0116	52			305	85	
Net 8	0121	25			456	40	
Closed	0129	0			—	1.7	

COMMENTS: Nets 2+3 replaced after last tow #19 for repairs
Slow start going down, wire tension variable
Tow went fine,



Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
01:29:44
Pressure
Temp
16.79 C
Salinity
0.83 o/oo
Density
-0.551
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
2
Hor_Vel
0.8 kts
Vert_Vel
2.2 m/min
Battery
Latitude
37N 20.217
Longitude
135W 5.188
Net_Dist
26.7 m
Total_Dist
12790.5 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_020.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_020.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
21:30
Time
02:00
37.3
Lat
37
-135.
Long
-134.
0
Temperature
20
.000
LightXmis
.5
0
Depth
1000
33
Salinity
35
0
Oxygen
5
33
Salinity
35
20
Temp
0

Tow: M-01-020 New Horizon 1208
Date: 10 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

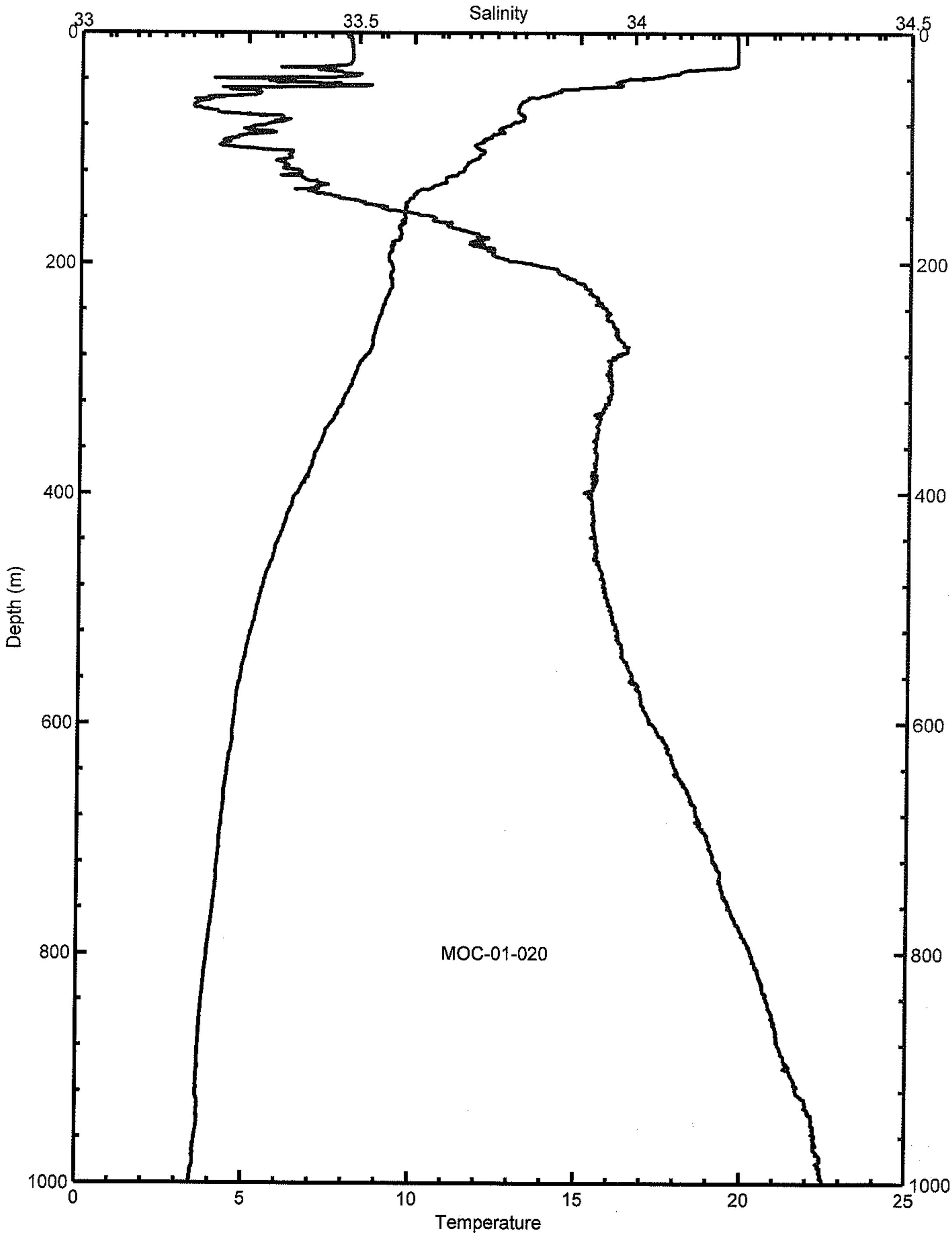
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	001.1	1013.2	392.1	03.4	19.9	09.1	03.3	19.9	09.1	00.01	50.00	33.31
1	001.3	1001.6	888.3	03.4	18.3	03.7	03.4	18.3	03.6	00.01	34.35	33.83
2	599.6	800.6	711.2	03.9	04.7	04.3	03.9	04.6	04.2	34.03	34.22	34.14
3	400.6	597.8	501.8	04.7	06.5	05.4	04.6	06.5	05.4	33.92	34.03	33.97
4	200.7	399.3	310.6	06.6	09.4	08.0	06.5	09.4	08.0	33.81	33.99	33.94
5	099.8	200.0	160.8	09.3	12.1	10.0	09.2	12.1	10.0	33.28	33.80	33.60
6	052.0	098.9	078.4	11.8	14.3	12.8	11.8	14.3	12.8	33.20	33.38	33.29
7	025.0	051.4	038.8	14.3	19.8	17.1	14.3	19.8	17.1	33.24	33.52	33.41
8	000.9	023.8	011.5	19.7	19.8	19.7	19.7	19.8	19.7	33.48	33.49	33.49

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.44	36.77	25.63	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.45	27.33	26.89	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.95	27.18	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.64	26.95	26.81	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	26.14	26.63	26.44	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.28	26.13	25.86	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.84	25.27	25.10	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.63	24.82	24.25	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.67	23.68	23.68	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	30.0	79.0	51.4	00.0	06.6	01.6	-33.0	11.7	-14.2	01059	03520
1	30.0	63.0	46.1	00.0	02.3	02.1	-02.0	13.3	06.7	00447	01728
2	40.0	55.0	46.3	01.9	02.3	02.2	-00.4	16.2	08.7	00344	01361
3	42.0	56.0	46.9	01.9	02.7	02.4	03.1	17.1	11.4	00261	01069
4	44.0	61.0	50.1	01.9	02.7	02.4	-07.0	18.1	07.5	00399	01653
5	44.0	58.0	49.5	01.9	02.7	02.5	-02.5	12.1	05.8	00259	01121
6	44.0	55.0	49.4	02.3	02.7	02.4	00.4	10.5	04.5	00161	00696
7	40.0	52.0	44.7	01.9	02.3	02.2	02.5	07.8	05.4	00073	00305
8	22.0	55.0	42.6	01.6	02.7	02.1	-00.6	07.4	03.4	00108	00456

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	254.913634	21:55:37	001.1	1013.2	392.1	01059	03520
1	254.914734	21:57:13	001.3	1001.6	888.3	00447	01728
2	254.987083	23:41:24	599.6	800.6	711.2	00344	01361
3	255.003113	0:4:29	400.6	597.8	501.8	00261	01069
4	255.015289	0:22:0	200.7	399.3	310.6	00399	01653
5	255.033877	0:48:47	099.8	200.0	160.8	00259	01121
6	255.045961	1:6:11	052.0	098.9	078.4	00161	00696
7	255.053484	1:17:0	025.0	051.4	038.8	00073	00305
8	255.056921	1:21:58	000.9	023.8	011.5	00108	00456
9	255.061991	1:29:16					


Salinity
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
MOC-01-020
0
5
10
15
20
25
Temperature

MOCNESS TOW#: 20 | 37 23 1
Date: Start 9/10/12 ? 9/11/12 | -135.129
Station: 27
People Processing Sample: Leo, Liza, Tom, Amy

NET	DEPTH	Taxonomic Composition
0	1000	*large fish* Lombard-frozen; lots of small shrimp; big shrimp; hatchetfish; many smaller fish
1	800	*pneumoderma* 95% Nen(2); >10 fish; Small shrimp
2	600	jellies (lots); Shrimp; >10 fish; Valdiviella copepod; *Megacalanus* Leo; Strange worm?
3	400	big shrimp; jellies; bunch of Cyclothone fish; *Clione* Amy 6 bucal cones; pleuromamma; large ostracods
4	200	Hatchetfish; 1 large, transparent jelly; 1 shrimp; Valdiviella, large ostracods; Stylocheiron (dead); Pleuromamma
5	100	*HUGE leptocephali!! PHOTOS*; gausia copepod; alciopid worm; many thysanoessa few euphausia, stylocheiron; clio Pyramidata → 70 h; Shrimp (2); radiolarians
6	50	Cavolinia uncinata (2); 4 fish; Polychaete; Gaussia.; Stylocheiron; Clio pyramidata (to LN2)
7	25	Euphausia; Clio pyramidata; 3 fish; limacina inflata; Cavolinia columnella
8	0	*L. inflata* (Tous) 20; salps; alciopid worm; mysids; Lots → *clio pyramidata*; Candacia; 1 in N2

Specimens Removed from MOCNESS tows

cruise: ~~OC-473~~ NH1208 time tow ended: 1:36
date: Sept 11th 2012
tow: 20
station 27

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	
Ø	mesopelagic fish	1	1:50	frozen Lombard	AEM for Lombard	
1	pneumoderma	2		95%	AEM	Ga113.21
2	megacalarus sp	1		95%	Leo	Co429.8
3	Clione limacina	1	2:15	95%	AEM	Ga04.29
5	clio pyramidata	1	2:21	70%	Leo	
6	Cavolinia uncinata	2	2:26	70%	Leo AEM	
6	Clio pyramidata	4	2:30	LN2	AEM	
8	clio pyramidata	2	2:40	LN_2	AEM	
8	Limacina inflata	20	2:45	LN_2	AEM	
5	Leptocephalus	1 chunk		95%; form. jar	Leo + Amy	Ve48.1

MOCNESS DATA SHEET
Station 30

Cruise NH1208 Location North Pacific Tow # M_01_021

Date 11 Sept 2012 Wind Speed (on deck before launch) 22 Kts / 11 Kts right after start – Back up to 18 Kts Direction 52°

Year/Day 255 Sea State Rough

Local Time 2357 to 0318 Start Lat 35° 35.159' Long -135° 0.1571'

GMT Time 0757 to 1118 End Lat 35 39.736' Long -134° 54.23'

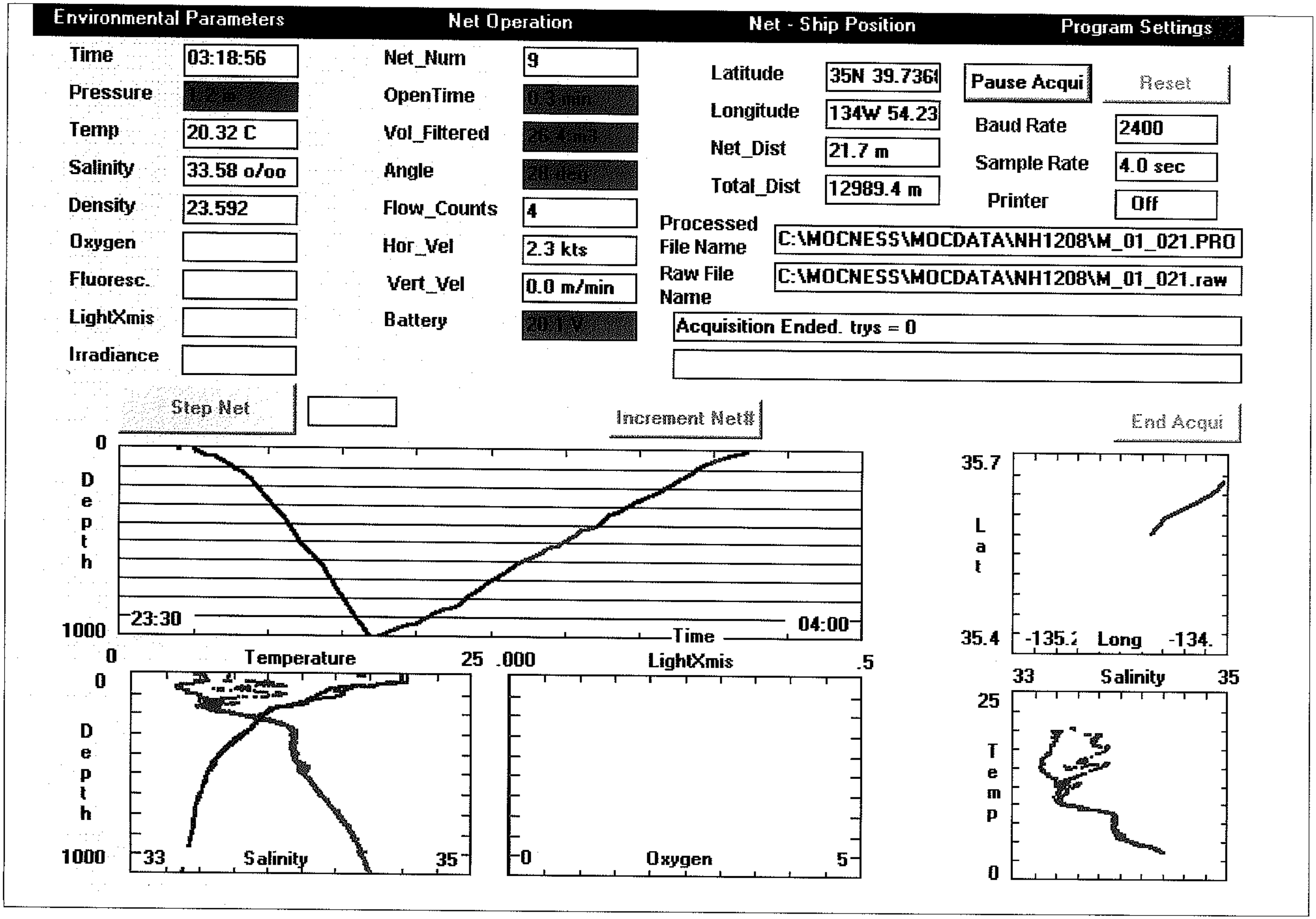
Net Size 1-m² Net Condition OK - lots of patches
Net Mesh 150µm Net 0 = 333µm

Processed Filename M_01_021.pro Raw Filename M-01_021.raw
Bat volt start 20.5

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	2357	0				0	Start down at 10 m/min
Net 0 Down	0101	1014			3387	1685	0008 increase to 15 m/min 0014 increase to 25 m/min
Net 1	0104	1000			1856	1685	0020 increase to 30 m/min
Net 2	0136	789			1148	1419	0043 increase to 35 m/min 0105 up at 5 m/min
Net 3	0155	600			1722	1130	0119 up at 10 m/min 0133 up at 15 m/min
Net 4	0223	400			1505	699	0300 slow to 10 m/min
Net 5	0248	200			722	328	0306 slow to 7 m/min 0312 slow to 5 m/min
Net 6	0259	100			425	156	
Net 7	0306	50			288	80	
Net 8	0310	25			511	44	
Closed	0318	0				1.2	

COMMENTS:


Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time 03:18:56
Pressure
Temp 20.32 C
Salinity 33.58 o/oo
Density 23.592
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num 9
OpenTime
Vol_Filtered
Angle
Flow_Counts 4
Hor_Vel 2.3 kts
Vert_Vel 0.0 m/min
Battery
Latitude 35N 39.736
Longitude 134W 54.23
Net_Dist 21.7 m
Total_Dist 12989.4 m
Pause Acqui
Reset
Baud Rate 2400
Sample Rate 4.0 sec
Printer Off
Processed File Name C:\MOCNESS\MOCDATA\NH1208\M_01_021.PRO
Raw File Name C:\MOCNESS\MOCDATA\NH1208\M_01_021.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
23:30
Time
04:00
0
Temperature
25
.000
LightXmis
.5
0
Depth
1000
33
Salinity
35
0
Oxygen
5
35.7
Lat
35.4
-135.2
Long
-134.
33
Salinity
35
25
Temp
0

Tow: M-01-021 New Horizon 1208
Date: 11 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

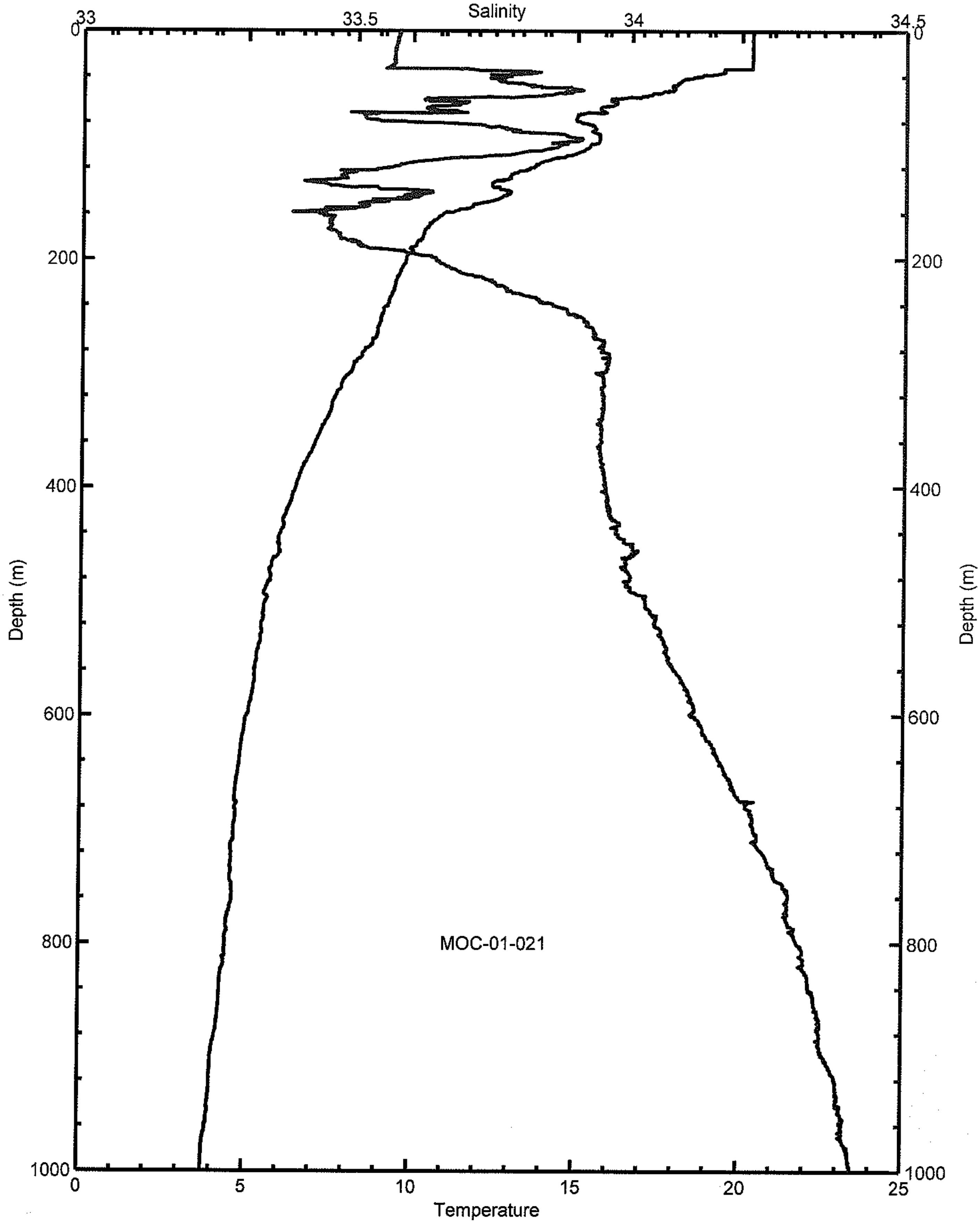
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.9	1014.8	424.5	03.8	50.0	09.1	03.7	50.0	09.0	00.78	50.00	33.69
1	789.1	998.7	904.4	03.8	04.5	04.1	03.7	04.4	04.0	34.29	34.41	34.36
2	601.2	786.9	694.9	04.5	05.0	04.7	04.4	05.0	04.7	34.12	34.30	34.22
3	400.9	599.2	499.9	05.1	06.5	05.7	05.0	06.5	05.6	33.95	34.12	34.03
4	201.4	400.4	291.7	06.5	09.8	08.3	06.5	09.8	08.3	33.64	33.96	33.90
5	098.9	200.2	152.8	09.8	15.4	11.9	09.8	15.4	11.9	33.38	33.88	33.54
6	051.2	098.2	071.7	15.0	17.9	15.9	14.9	17.9	15.9	33.49	33.91	33.71
7	025.5	049.8	037.8	17.9	20.3	19.1	17.9	20.3	19.1	33.55	33.89	33.71
8	001.2	025.4	011.9	20.3	20.3	20.3	20.3	20.3	20.3	33.56	33.58	33.57

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-00.59	37.12	25.94	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	27.18	27.35	27.28	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.98	27.19	27.10	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.67	26.97	26.83	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	25.93	26.67	26.37	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.02	25.93	25.47	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.45	24.99	24.77	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.58	24.43	24.01	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.59	23.59	23.59	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	33.0	81.0	51.0	00.8	14.0	01.6	-29.3	08.6	-14.8	01014	03387
1	40.0	67.0	48.5	01.6	02.7	02.2	-04.1	17.6	06.5	00480	01856
2	46.0	61.0	49.8	01.9	02.7	02.5	04.1	16.0	09.9	00284	01148
3	45.0	61.0	50.4	01.9	02.7	02.4	-03.1	16.0	07.1	00422	01722
4	42.0	55.0	48.0	01.9	02.7	02.4	02.3	17.7	08.3	00361	01505
5	38.0	47.0	41.6	01.9	02.3	02.1	03.1	16.7	08.8	00170	00722
6	41.0	51.0	44.3	01.9	02.7	02.2	01.4	14.6	07.4	00099	00425
7	42.0	52.0	45.7	01.9	02.3	02.3	03.5	09.9	05.7	00067	00288
8	42.0	54.0	47.2	01.9	02.7	02.3	00.0	07.4	03.2	00117	00511

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	255.993750	23:51:0	000.9	1014.8	424.5	01014	03387
1	256.044664	1:4:19	789.1	998.7	904.4	00480	01856
2	256.067014	1:36:30	601.2	786.9	694.9	00284	01148
3	256.080255	1:55:33	400.9	599.2	499.9	00422	01722
4	256.099907	2:23:52	201.4	400.4	291.7	00361	01505
5	256.116725	2:48:5	098.9	200.2	152.8	00170	00722
6	256.124676	2:59:32	051.2	098.2	071.7	00099	00425
7	256.129317	3:6:12	025.5	049.8	037.8	00067	00288
8	256.132477	3:10:46	001.2	025.4	011.9	00117	00511
9	256.137963	3:18:40					


Salinity
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
Depth (m)
MOC-01-021
0
5
10
15
20
25
Temperature

MOCNESS Plankton Observations

Rest of samples according to nets

Cruise: NH1208	Station: 30	Cast #: 21
Date: 9/11/12	Latitude: 35.585	Longitude: -135.003
Local time start: 23:56	Day / Night	Local time end:

Net 0

Pyrosomes
10+ fish

*Fish to oxygen → pictures + ENAlater
* C. inflexa → 3
* C. pyramidata → 1
* C. columnella – shell

Net 1
Formalin ONLY

Looks like nothing

Net 2

NO PHOTO

7 shrimp
pneumatophores
fish – 5

ostracods
big jellies

Net 3
Formalin ONLY

looks like nothing...
fish (12)
shrimp
ostracods

Net 4
Formalin ONLY

almost nothing
2 shrimp
leptocephalus larvae

Net 5

strange larvae
radiolarians
pneumatophores

Net 6

*Clio pyramidata
*Cavolinia inflexa (70%)
*Styliola subula (70%)

fish like the one in...

Net 7

70% *(1) Cavolinia inflexa *Clio pyramidata (1) 2 fish
*(1) Diacria quadridentata

Net 8

some fish, copepods

C. inflexa
C. pyramidata
D. quadridentata

More than 10 → to splits

Specimens Removed from MOCNESS tows

cruise: ~~OC-473~~ N4/12C8 time tow ended:

date: 9/10/12 - 9/11/12 ←? 9/12/12?

tow: 21

Station 30

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	
6	Cavolinia inflexa	1	4:17	70%	AEM	
6	Clio pyramidata	2	4:17	70%	AEM	
6	Styliola subula	1	4:17	70%	AEM	
Ø	fish	1		Stegeman	AEM	
7	diacria quadridentata	1		70%	AEM	photos
7	cavolinia inflexa	4		70%	AEM	
7	clio pyramidata	1		70%	AEM	
Ø	C. inflexa	3		resp. +95%	AEM	Ga 37.13
Ø	C. pyramidata	1		resp.	AEM	
Ø	C. columnella	2		95%	AEM	Ga 06.26

Mail Stegeman

MOCNESS DATA SHEET

Cruise NH1208 Location NE Pacific Station 30 Tow # M-01-22

Date 12 Sept 2012 Wind Speed 22 Direction 36

Year/Day 256 Sea State 2-4' seas, lots of rolls

Local Time 0856 to 1235 Start Lat 35 41.019 Long 134 54.437

GMT Time 1656 to 2035 End Lat 35 47.313 Long 134 49.363

Net Size 1m² Net Condition OK, lots of patches on 150 μm
Net Mesh 150 μm Net 0 = 333 μm

Processed Filename M-01-22.pro Raw Filename M_01_22.raw
ship's course on

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	0856	0					Start down at 10 m/min
Net 0 Down	1015	1010		4252		2019	0907 100 MWO ↑ slowly to 20 m/min; 0912 200 MWO ↑ slowly to 25 m/min
Net 1	1015	1000		1717		2019	0916 500 MWO ↑ to 30 m/min; 1014 start in at 10 m/min
Net 2	1043	801		1455		1556	1021 1950 MWO ↑ 15 m/min; 1029 Request ↓ ship speed
Net 3	1106	602		2135		1270	1033 1749 ↑ to 20 m/min; 1043 1548 MWO ↓ to 15 m/min
Net 4	1141	400		1353		608	1052 1419 MWO ↓ to 10 m/min; 1109 1242 MWO ↑ to 15 m/min
Net 5	1204	200		647		265	1114 1163 MWO ↑ to 20 m/min; 1127 Request ↓ ship speed
Net 6	1214	100	NO	507 NR → extra step → increment net #			1134 748 MWO ↑ to 25 m/min; 1139 653 MWO ↓ to 20 m/min
Net 7	1223	50		353 NR → accidentally incremented net # 64			1140 608 MWO ↓ to 15 m/min; 1205 231 MWO ↓ to 10 m/min
Net 8	1229	25		288 NR		28	1216 126 MWO ↓ to 5 m/min; 1218 112 MWO ↑ to 10 m/min
Closed	1234	0		NR			1223 58 MWO ↓ to 5 m/min

COMMENTS: Voltage at start 20.3V. Net angle quite unstable during down cast. Payout slow at start b/c of swell.

NH1208

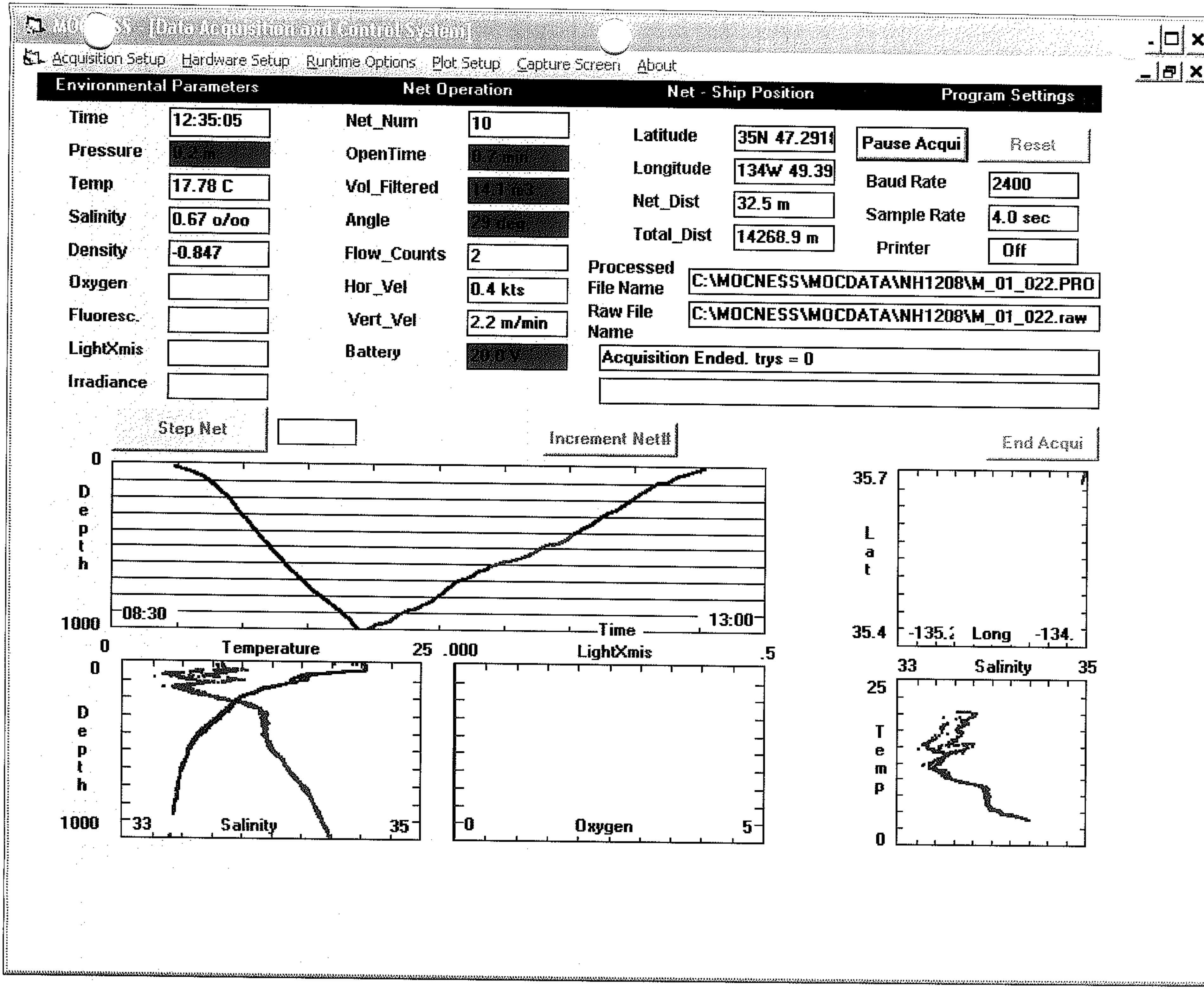
MOCNESS TOW#: 22
Date: 12 Sept.
Station: 30
People Processing Sample: Nancy, Alex, Gareth beaten up

NET	DEPTH	Taxonomic Composition	
0	0–1000	1 Cav. uncinata 2 Cav. inflexa >70%	very beaten up shrimp bits
1	800–1000	red shrimp no pteros	· Very beaten up – catch above tangle of cod ends
2	800	2 4" + snipe eel? lg black copes ~10	– Very beaten up – catch above codend tangle
3	600	nothing much	– V. beaten up – not much/any catch above codend tangle
4	400	1 C. Columnella 3 Cav. inflexa } 70% rads	small catch
5	200	~~2 D. quadridentata 70%~~ rads ↳ Amphipods	small catch
6	100	2 Styliola 1 D. quadr. } 70%	better catch – small spp
7	50	4 D. quadr → 70% + a few ~~more~~ not removed	OK catch – small spp
8	0–25	gastropod larvae	V. small catch

Specimens Removed from MOCNESS tows

cruise: ~~OC473~~ NH1208 time tow ended: 1235 local
date: 12 Sept 2012
tow: 22 Sta. 30

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved local	Preservation 70% etoh/dry/freeze	Collector's name
0	Cavolinia uncinata	1	<~1400	70%	Copley
0	Cavolinia inflexa	2	"	70%	"
4	Cuvierina columnella	1	<~1300	70%	"
4	Cav. inflexa	9		70%	"
6	Styliola subula	2	~1330	70%	"
6	Diacria quad.	1	~1330	70%	"
7	Diacria quadridentata	4	~1330	70%	"


[Data Acquisition and Control System]
Acquisition Setup Hardware Setup Runtime Options Plot Setup Capture Screen About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time 12:35:05
Pressure
Temp 17.78 C
Salinity 0.67 o/oo
Density -0.847
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num 10
OpenTime
Vol_Filtered
Angle
Flow_Counts 2
Hor_Vel 0.4 kts
Vert_Vel 2.2 m/min
Battery
Latitude 35N 47.291
Longitude 134W 49.39
Net_Dist 32.5 m
Total_Dist 14268.9 m
Pause Acqui
Reset
Baud Rate 2400
Sample Rate 4.0 sec
Printer Off
Processed File Name C:\MOCNESS\MOCDATA\NH1208\M_01_022.PRO
Raw File Name C:\MOCNESS\MOCDATA\NH1208\M_01_022.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
Depth
0
1000
08:30
Time
13:00
35.7
Lat
35.4
-135.2
Long
-134.
Temperature
0
25
Salinity
33
35
.000
LightXmis
.5
Oxygen
0
5
Salinity
33
35
Temp
25
0

Tow: M-01-022 New Horizon 1208
Date: 12 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

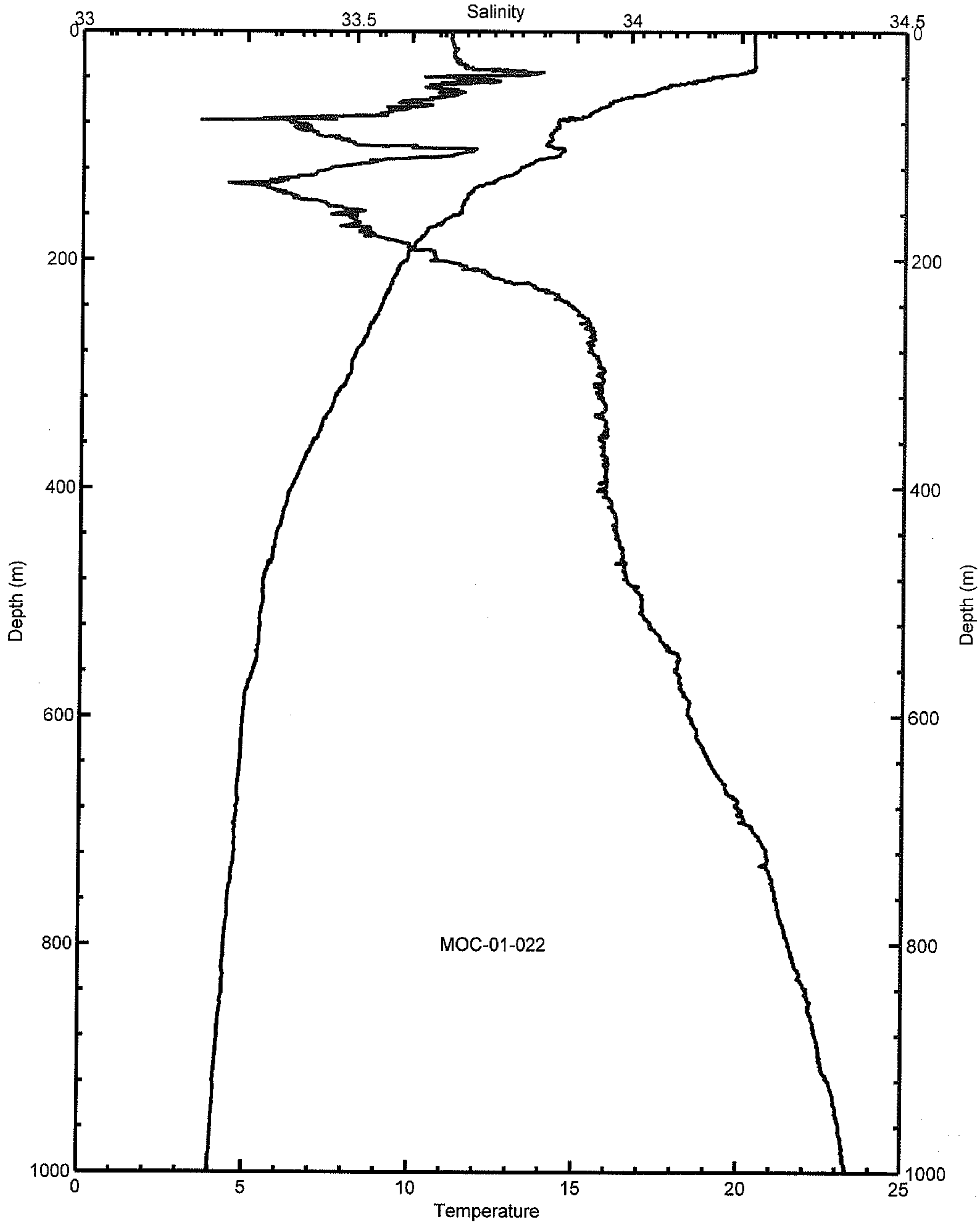
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.2	1012.3	485.3	03.9	20.4	08.4	03.8	20.4	08.4	00.01	50.00	33.82
1	000.6	1000.1	893.2	04.0	19.0	04.2	03.9	19.0	04.1	01.23	50.00	34.05
2	602.6	800.1	690.0	04.4	04.9	04.7	04.4	04.9	04.7	34.11	34.29	34.20
3	400.6	601.8	513.4	04.9	06.4	05.5	04.9	06.3	05.4	33.94	34.11	34.04
4	201.2	399.4	302.0	06.4	09.7	08.0	06.4	09.7	08.0	33.66	33.96	33.92
5	098.2	200.8	147.0	09.8	14.6	11.9	09.8	14.6	11.9	33.27	33.72	33.50
6	053.2	097.3	078.7	14.1	17.2	14.9	14.1	17.2	14.9	33.22	33.69	33.46
7	052.4	052.7	052.6	17.3	17.4	17.3	17.3	17.4	17.3	33.65	33.69	33.67
8	024.7	051.0	037.8	17.4	20.4	19.4	17.4	20.4	19.4	33.62	33.84	33.72
9	000.7	024.0	012.2	20.4	20.4	20.4	20.4	20.4	20.4	33.67	33.68	33.67

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.45	36.67	26.15	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.64	36.57	27.01	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.99	27.19	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.68	26.99	26.86	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	25.95	26.68	26.42	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.00	25.92	25.43	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.43	25.00	24.81	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	24.39	24.44	24.41	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.65	24.40	23.94	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
9	23.65	23.65	23.65	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000
9	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	38.0	79.0	51.7	00.0	37.6	01.9	-23.8	10.1	-12.5	01204	04252
1	43.0	76.0	52.8	00.4	35.3	02.6	-07.9	15.8	07.0	00426	01717
2	49.0	61.0	53.0	02.3	03.1	02.7	-00.4	14.8	08.6	00345	01455
3	41.0	66.0	52.6	01.9	03.1	02.6	-03.7	16.7	05.9	00510	02135
4	33.0	52.0	40.6	01.6	02.3	02.0	01.8	15.4	08.7	00342	01353
5	31.0	49.0	37.7	01.6	02.7	01.9	04.9	16.9	09.7	00159	00647
6	30.0	46.0	37.5	01.2	02.3	01.8	-02.7	12.1	05.3	00128	00500
7	33.0	39.0	36.0	01.9	01.9	01.9	05.5	09.3	07.4	00002	00007
8	25.0	42.0	31.0	01.2	01.9	01.5	00.0	08.8	04.6	00088	00333
9	24.0	47.0	33.7	01.6	01.9	01.7	02.7	08.2	05.0	00071	00288

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	256.364792	8:45:18	000.2	1012.3	485.3	01204	04252
1	256.365266	8:45:59	000.6	1000.1	893.2	00426	01717
2	256.447188	10:43:57	602.6	800.1	690.0	00345	01455
3	256.463264	11:7:5	400.6	601.8	513.4	00510	02135
4	256.487014	11:41:18	201.2	399.4	302.0	00342	01353
5	256.502951	12:4:14	098.2	200.8	147.0	00159	00647
6	256.510382	12:14:56	053.2	097.3	078.7	00128	00500
7	256.516319	12:23:29	052.4	052.7	052.6	00002	00007
8	256.516470	12:23:43	024.7	051.0	037.8	00088	00333
9	256.520602	12:29:40	000.7	024.0	012.2	00071	00288
10	256.523947	12:34:29					


Salinity
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
MOC-01-022
0
5
10
15
20
25
Temperature

MOCNESS DATA SHEET

PHW

Cruise NH1208 Location Station 32 North Pacific Tow # M_01_023

Date 12 Sept 2012 Wind Speed <10 Kts Direction 38°

Year/Day 256 Sea State Moderat 3 to 5' swells

Local Time 22:50 to 02:08 Start Lat 34° 29.811' Long -135 0.1033'

GMT Time 06:50 to 10:08 End Lat 34° 25.675 Long -135 5.961

Net Size 1-m² Net Condition OK - patched holes

Net Mesh 150 µm Net 0 = 333 µm

Processed Filename M_01_023.pro Raw Filename m_01_023.raw

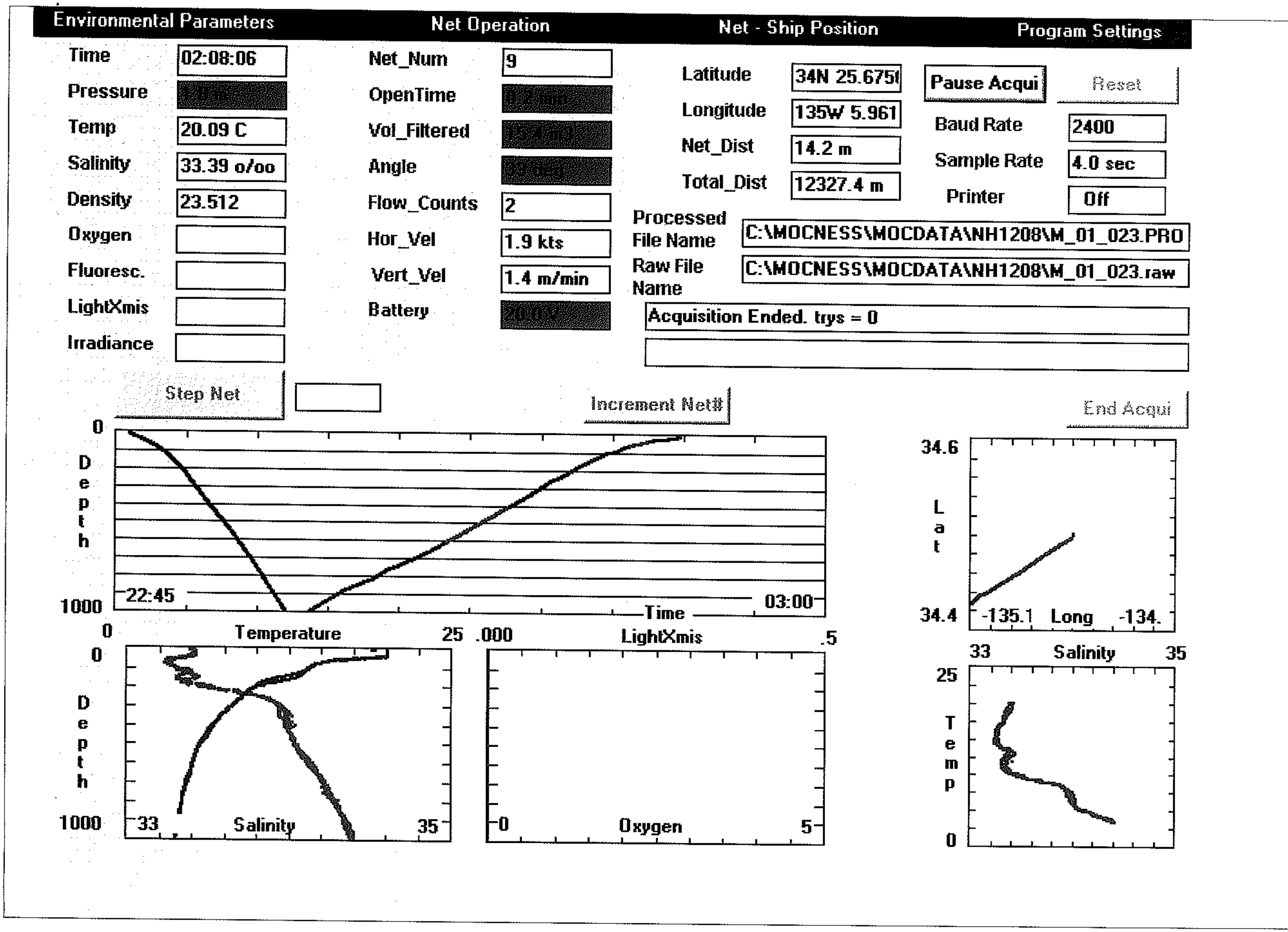
Tow being made with the wind

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	2250	0					Start down at 10 m/min
Net 0 Down	2349	1053			2750	1445	2258 increase to 15 m/min
Net 1	2354	1000			1413	1445	~~2302 increase to 20 m/min~~ 2309 increase to 25 m/min
Net 2	0018	800			1594	1413	2315 increase to 30 m/min
Net 3	0044	600			1426	1058	0012 up at 5 m/min 0017 up at 10 m/min
Net 4	0106	400			1415	711	0025 up at 15 m/min 0140 Slow to 10 m/min
Net 5	0128	202			748	379	0150 Slow to 5 m/min 0152 Slow to 3/4 m/min
Net 6	0139	110 dam cursor!			691	205	0202 up to 5 m/min
Net 7	0150	50			468	86	
Net 8	0157	25			690	43	
Closed	0207	0			-	0.0	

COMMENTS: Ship speed low going down speed up at bottom so paid out to 1050 m & let ships speed adjust - Nets came up in a tangle -

Very consistent tow, went down & came up nicely


Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time 02:08:06
Pressure
Temp 20.09 C
Salinity 33.39 o/oo
Density 23.512
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num 9
OpenTime
Vol_Filtered
Angle
Flow_Counts 2
Hor_Vel 1.9 kts
Vert_Vel 1.4 m/min
Battery
Latitude 34N 25.675
Longitude 135W 5.961
Net_Dist 14.2 m
Total_Dist 12327.4 m
Pause Acqui
Reset
Baud Rate 2400
Sample Rate 4.0 sec
Printer Off
Processed File Name C:\MOCNESS\MOCDATA\NH1208\M_01_023.PRO
Raw File Name C:\MOCNESS\MOCDATA\NH1208\M_01_023.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
22:45
Time
03:00
34.6
Lat
34.4
-135.1
Long
-134.
0
Temperature
25
.000
LightXmis
.5
33
Salinity
35
Oxygen
5
Temp

Tow: M-01-023 New Horizon 1208
Date: 12 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

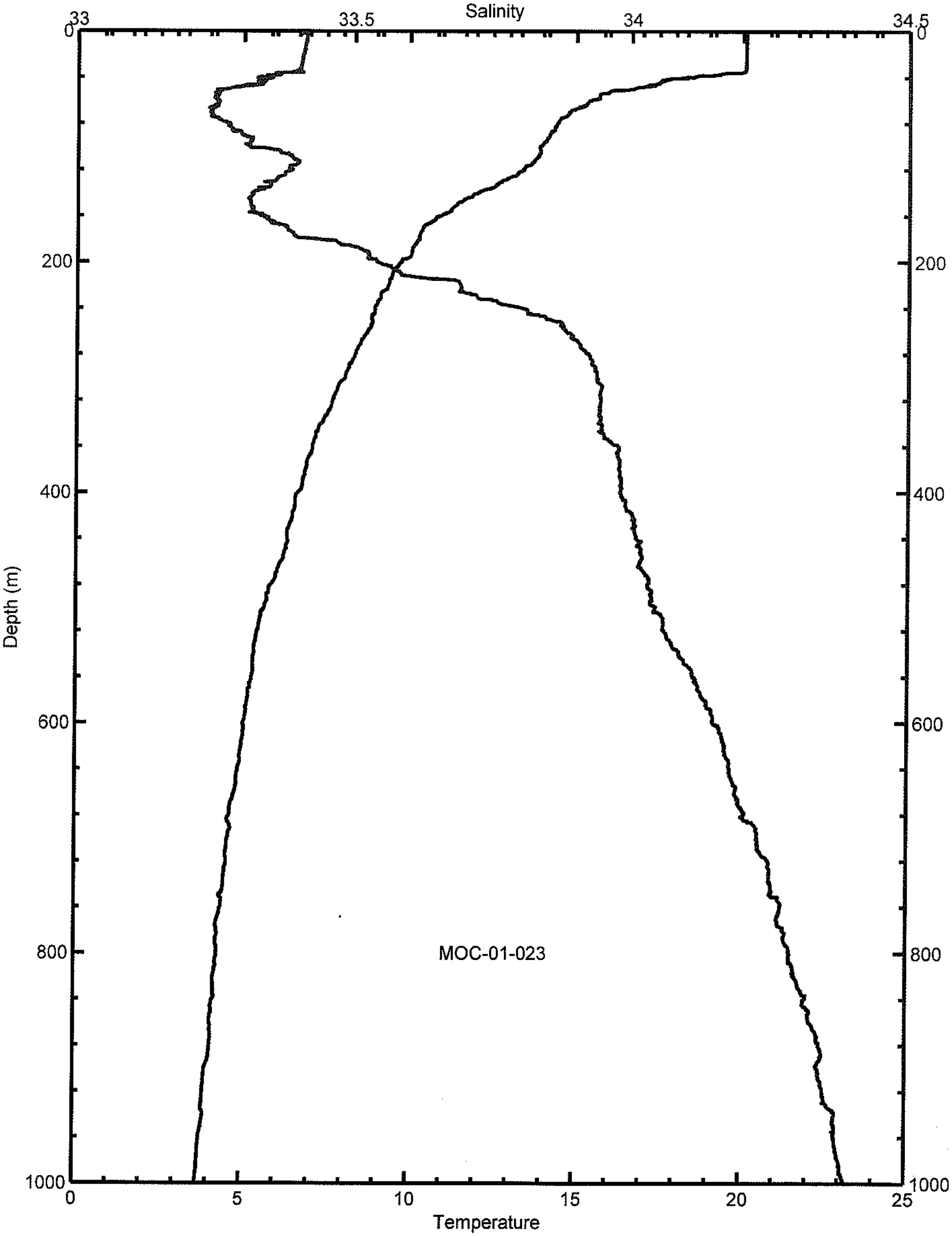
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.9	1053.5	483.7	03.5	20.1	08.4	03.5	20.1	08.3	00.08	50.00	33.57
1	002.2	999.1	887.0	03.7	19.0	04.1	03.6	19.0	04.0	34.29	50.00	34.38
2	601.3	799.8	700.9	04.3	05.1	04.6	04.2	05.0	04.6	34.15	34.29	34.23
3	400.9	599.9	500.3	05.0	06.6	05.8	05.0	06.6	05.7	33.98	34.15	34.06
4	203.5	399.7	298.7	06.7	09.7	08.1	06.6	09.6	08.0	33.56	33.98	33.88
5	110.8	202.0	154.3	09.7	13.8	11.5	09.6	13.7	11.5	33.31	33.55	33.38
6	050.9	110.2	081.1	13.8	16.1	14.6	13.8	16.1	14.6	33.24	33.39	33.29
7	025.3	050.5	037.6	16.5	20.1	18.8	16.5	20.1	18.8	33.26	33.41	33.36
8	001.5	025.3	013.8	20.1	20.1	20.1	20.1	20.1	20.1	33.40	33.41	33.41

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.57	36.57	25.96	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	27.20	36.54	27.29	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.00	27.20	27.11	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.67	27.00	26.84	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	25.89	26.67	26.38	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.00	25.88	25.43	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.37	24.99	24.74	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.52	24.30	23.82	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.52	23.53	23.53	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	21.0	68.0	41.6	00.0	02.3	01.2	-26.6	13.7	-15.4	00976	02750
1	31.0	51.0	39.9	01.2	02.3	01.9	-00.4	14.0	08.3	00360	01413
2	43.0	54.0	47.5	01.9	02.7	02.4	03.7	11.5	07.9	00379	01594
3	42.0	52.0	46.4	01.9	02.7	02.3	06.2	12.1	08.9	00338	01426
4	43.0	50.0	46.3	02.3	02.7	02.4	04.7	13.2	09.1	00325	01415
5	45.0	54.0	49.2	02.3	03.1	02.6	05.1	12.3	08.3	00166	00748
6	45.0	54.0	47.9	02.3	02.7	02.5	01.2	09.1	05.8	00155	00691
7	43.0	49.0	45.7	01.9	02.3	02.3	00.4	06.8	03.6	00106	00468
8	40.0	53.0	46.6	01.6	02.7	02.3	-00.6	05.3	02.3	00157	00690

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	256.943495	22:38:37	000.9	1053.5	483.7	00976	02750
1	256.944132	22:39:32	002.2	999.1	887.0	00360	01413
2	257.012998	0:18:43	601.3	799.8	700.9	00379	01594
3	257.030648	0:44:7	400.9	599.9	500.3	00338	01426
4	257.046400	1:6:48	203.5	399.7	298.7	00325	01415
5	257.061551	1:28:37	110.8	202.0	154.3	00166	00748
6	257.069306	1:39:47	050.9	110.2	081.1	00155	00691
7	257.076551	1:50:13	025.3	050.5	037.6	00106	00468
8	257.081528	1:57:24	001.5	025.3	013.8	00157	00690
9	257.088866	2:7:57					


Salinity
33
33.5
34
34.5
Temperature
0
5
10
15
20
25
Depth (m)
0
200
400
600
800
1000
MOC-01-023

NH1208

MOCNESS TOW#: 23

Date: 12Sep

Station: 32

People Processing Sample: Amy, Leo, Liza

NET	DEPTH	Taxonomic Composition
0		gaussia (many) *Cavolinia uncinata (1) *pneumoderma (1) * clio pyramidata (2) >10 fish 1 big shrimp many small jelly hatchetfish Megacalanus*
1 ONLY FORMALIN		MOSTLY WATER whole sample → formalin
SPLIT 2		gausia pneumoderma (1) lat. gill fish (6) shrimp
3 ONLY FORMALIN		MOSTLY WATER ~~mangled~~ fish, few copepods whole sample → formalin
4 ONLY Formalin		big fish large squid gausia Whole sample → formalin
5 ONLY FORMALIN	200 | 100.	* Clio pyramidata Squid Whole sample → formalin
6 ONLY FORMALIN	100 | 50	3 fish gausia whole sample → formalin
7		pneumoderma* 99% small pyrosomes fish ~~Squid~~ * cavolinia inflexa → 70% few small cones few small limacinas?
8		Squid *C. pyramidata (2 into LN2 C. inflexa (12) → 70% 25 | 26

34.501
-135.000

Specimens Removed from MOCNESS tows

cruise: ~~OC 473~~ NH1208
time tow ended: 0208
date: 12 Sept 2012
tow: M-01-23
Sta 32

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	
Ø	Cavolinia uncinata	1		95		Ga 29.17
Ø	pneumoderma	1		95		Ga 113.24
Ø	Clio pyramidata	2		resp.		
Ø	Megacalanus	1		95 %	Leo	429.9
2	Pneumoderma	1		95 %		Ga 113.25
5	Clio pyramidata	1		70%	[illegible]	
7	pneumoderma	1		95 %		Ga 113.26
7	Cavolinia inflexa	1		70%	AEM	
8	Clio pyramidata	1		LN2	AEM	
8	Clio pyramidata	1		LN2	AEM	
8	Cavolinia inflexa	12		70%	AEM	
ON DECK	Cavolinia uncinata	1		Liza, wings 95 %		Ga 29 ~~7~~.2

MOCNESS DATA SHEET

Cruise NH1208 Location NE Pacific Stn 32 Tow # M-01-024

Date 13 Sept 2012 Wind Speed 12 Direction 24

Year/Day 257 Sea State long period 5-6' swell from left

Local Time 0823 to 1143 Start Lat 34 31.582 Long 135 04.381

GMT Time 1623 to 1943 End Lat 34 38.73 Long 135 4.599

Net Size 1m² Net Condition ok, Many particles on 150s
Net Mesh 150 μm Net 0 = 333 μm

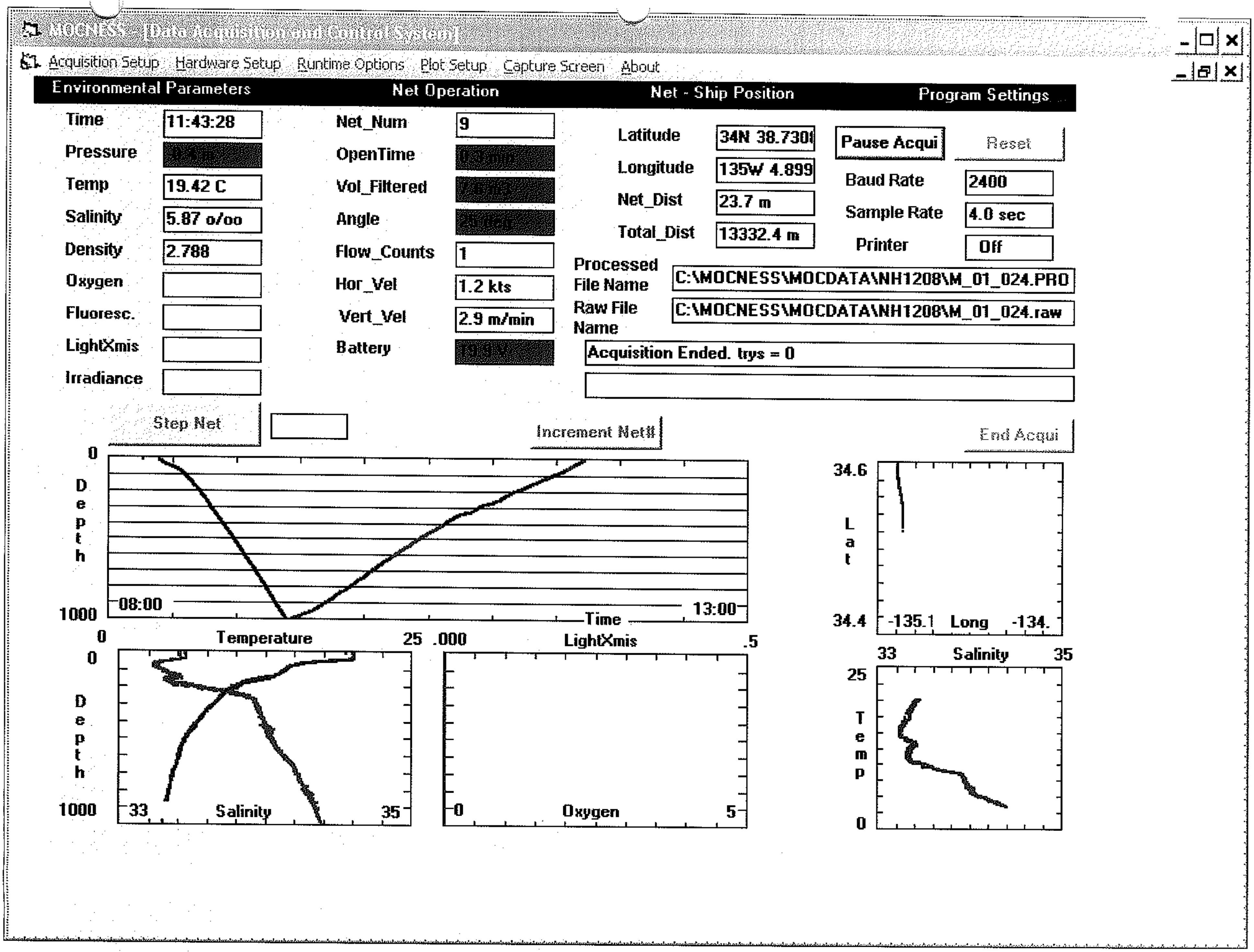
Processed Filename M-01-024.pro Raw Filename M-01-024.raw

Course 338 - into wind but not seas trying to minimize pitching

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	0823	0					Start down at 10 m/min
Net 0 Down	0925	1011			3056	1584	0832 100 MWO ↑ to 20 m/min
Net 1	0925	1000			1583	1584	0837 200 MWO ↑ to 25 m/min; 0841 300 MWO ↑ to 30 m/min; 0924 winch all stop
Net 2	0952	799			1288	1398	0935 Start hauling in 10 m/min; 0958 ↑ to 15 m/min
Net 3	1013	600			1548	1109	1018 1037 MWO ↓ to 12 m/min; 1042 729 MWO ↓ to 10 m/min
Net 4	1037	400			2073	799	1045 Request ↓ ship speed; 1048 677 MWO ↑ to 15 m/min
Net 5	1109	201			1147	351	1109 348 MWO ↓ to 10 m/min
Net 6	1127	102			540	162	
Net 7	1136	50			206	73	
Net 8	1139	25			236	40	
Closed	1143	0			—		

COMMENTS: Voltage 20.2V at start. Nice deployment, wire not snapping. Few big rolls every now + then, frame angle jerked around, then settled down. Didn't filter too much water in upper 300 b/c didn't want to slow haul-in rate too much. 19.9V at end


MOCNESS - [Data Acquisition and Control System]
Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
11:43:28
Pressure
Temp
19.42 C
Salinity
5.87 o/oo
Density
2.788
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
1
Hor_Vel
1.2 kts
Vert_Vel
2.9 m/min
Battery
Latitude
34N 38.730
Longitude
135W 4.899
Net_Dist
23.7 m
Total_Dist
13332.4 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_024.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_024.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
08:00
Time
13:00
34.6
Lat
34.4
-135.1
Long
-134.
0
Temperature
25
.000
LightXmis
.5
0
Depth
1000
33
Salinity
35
0
Oxygen
5
33
Salinity
35
25
Temp
0

Tow: M-01-024 New Horizon 1208
Date: 13 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

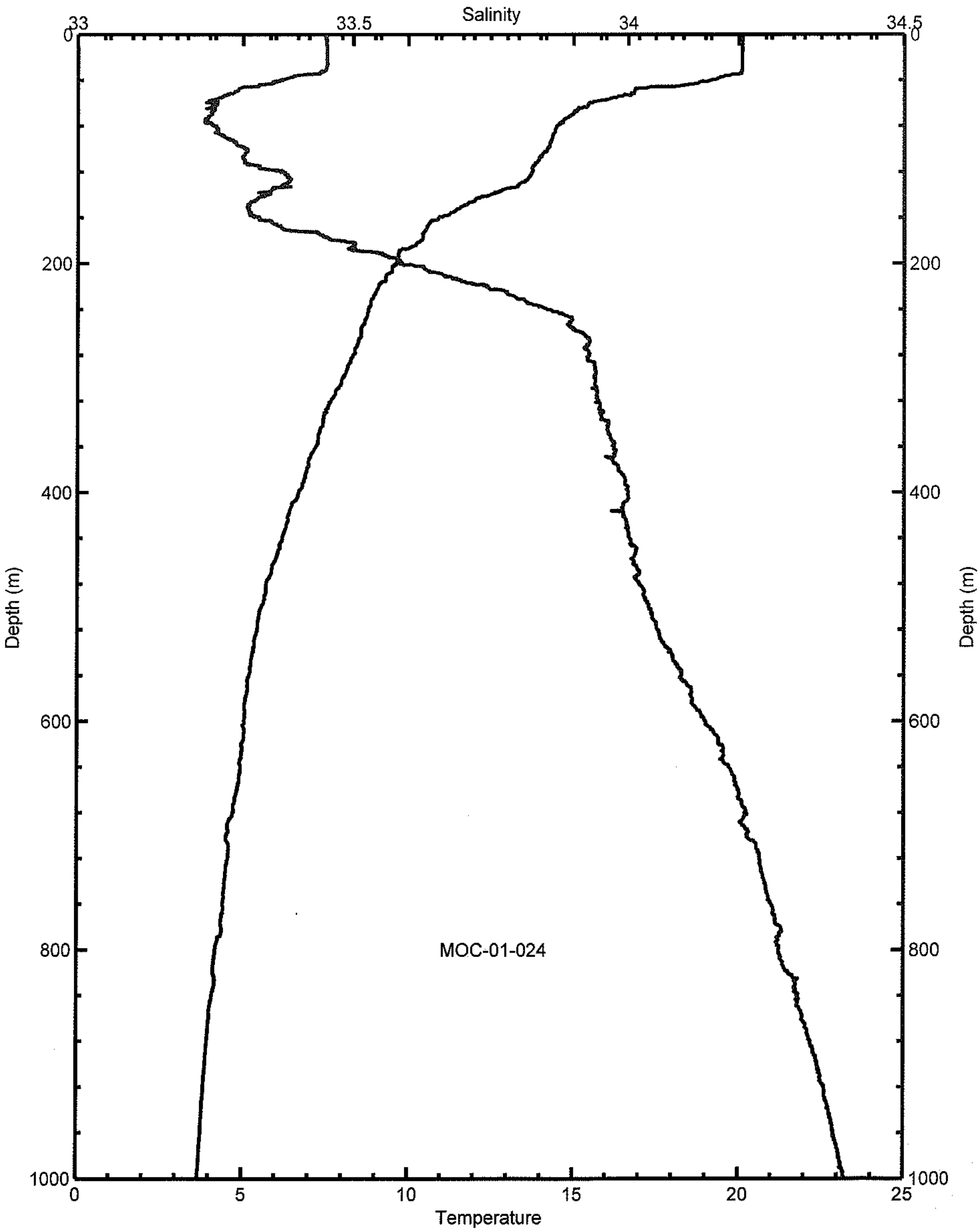
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.3	1011.3	442.3	03.7	20.1	08.7	03.6	20.1	08.7	00.01	50.00	33.68
1	000.9	999.8	901.5	03.7	20.0	03.9	03.6	20.0	03.8	01.06	50.00	34.10
2	601.5	799.0	699.4	04.2	05.1	04.7	04.1	05.0	04.6	34.14	34.28	34.22
3	400.5	600.1	496.6	05.0	06.7	05.7	05.0	06.7	05.7	33.97	34.14	34.05
4	202.3	399.1	299.0	06.7	09.6	08.0	06.7	09.5	08.0	33.61	34.00	33.91
5	102.0	201.3	152.5	09.6	14.2	11.7	09.6	14.2	11.7	33.30	33.59	33.40
6	049.7	101.4	077.3	14.2	16.8	14.9	14.2	16.8	14.8	33.23	33.31	33.26
7	025.1	049.2	036.5	16.9	20.1	19.2	16.8	20.1	19.2	33.29	33.45	33.39
8	000.8	023.9	012.2	20.1	20.1	20.1	20.1	20.1	20.1	33.45	33.45	33.45

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.75	36.28	25.99	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-00.99	36.27	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.99	27.19	27.10	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.68	26.99	26.84	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	25.95	26.68	26.42	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	24.85	25.92	25.38	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.24	24.84	24.66	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.56	24.24	23.73	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.55	23.56	23.56	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	28.0	78.0	48.6	00.0	07.0	01.5	-25.9	09.9	-16.1	00935	03052
1	34.0	62.0	44.5	01.6	06.2	02.1	-05.9	12.9	07.4	00406	01583
2	43.0	58.0	47.7	01.9	02.7	02.4	03.5	14.6	09.6	00309	01288
3	45.0	58.0	50.1	02.3	02.7	02.5	03.9	12.9	08.3	00362	01548
4	46.0	63.0	52.1	02.3	03.1	02.6	00.4	11.5	06.2	00480	02073
5	43.0	52.0	47.7	01.9	02.7	02.4	01.8	09.3	05.7	00263	01147
6	40.0	50.0	43.7	01.9	02.3	02.2	01.6	10.9	06.0	00127	00540
7	41.0	48.0	44.3	01.9	02.3	02.3	05.3	09.7	07.6	00049	00206
8	38.0	53.0	44.1	01.9	02.7	02.3	04.1	09.3	06.8	00055	00236

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	257.343900	8:15:13	000.3	1011.3	442.3	00935	03052
1	257.344282	8:15:45	000.9	999.8	901.5	00406	01583
2	257.411574	9:52:40	601.5	799.0	699.4	00309	01288
3	257.425984	10:13:24	400.5	600.1	496.6	00362	01548
4	257.442847	10:37:41	202.3	399.1	299.0	00480	02073
5	257.465197	11:9:53	102.0	201.3	152.5	00263	01147
6	257.477465	11:27:32	049.7	101.4	077.3	00127	00540
7	257.483414	11:36:6	025.1	049.2	036.5	00049	00206
8	257.485729	11:39:27	000.8	023.9	012.2	00055	00236
9	257.488333	11:43:12					


Salinity
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
MOC-01-024
0
5
10
15
20
25
Temperature

MOCNESS TOW#: 24
Date: 13 Sept 2012
Station: 32
People Processing Sample: Nancy Alex

NET	DEPTH	Taxonomic Composition
0	0-1000	fish 2 C. uncinata - 1 → Liq N 1 → 70% pyrosome c-2"
1	1000	small catch 2 orange polychaets squid shrimp shreds all sample → 95% etoh
2	800	lg red caridean → Formalin sm. fish lg. black copepods
3	600	lg. fish - (formalin), sm. fish squid - formalin
4	400	1 gymnosome - brown 4 Clio pyr. 3 → 70% 1 → LN #2+ 2 Cuv. col. → 70% 1 Cav. inflexa → 70% many tiny Lim-
5	200	sm. fish small stuff
6	100	small stuff - probably L. inflata
7	50	nothing obvious 1 Phronima amphipod - pinkish
8	25	tiny purple gastropod larvae

Specimens Removed from MOCNESS tows

cruise: ~~OC-473~~ NH 1208 time tow ended:

date: 13 Sept '12

tow: 24

Sta. 32

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
0	C. uncinata	1		distilled H_2O	for Liza Roger
0	C. uncinata	1		70%	NC
4	Clio pyramidata	3		70%	NC
4	Clio pyramidata	1		LN2	NC
4	Cav. inflexa	1		70%	NC
4	Cuv. columnella	2		70%	NC

PMW

MOCNESS DATA SHEET

Station 34

Cruise NH 1208 Location North Pacific Tow # M-01-025

Date 18 Sept 2012 Wind Speed <10 Kts Direction 350°

Year/Day 257 Sea State Moderate - S.E. swell

Local Time 2235 to 0158 Start Lat 33° 30.59' Long 134° 59.98'

GMT Time 0635 to 0958 End Lat 33° 36.869' Long -134° 59.76'

Net Size 1-m² Net Condition OK - patched holes

Net Mesh 150 μm Net 0 = 333 μm

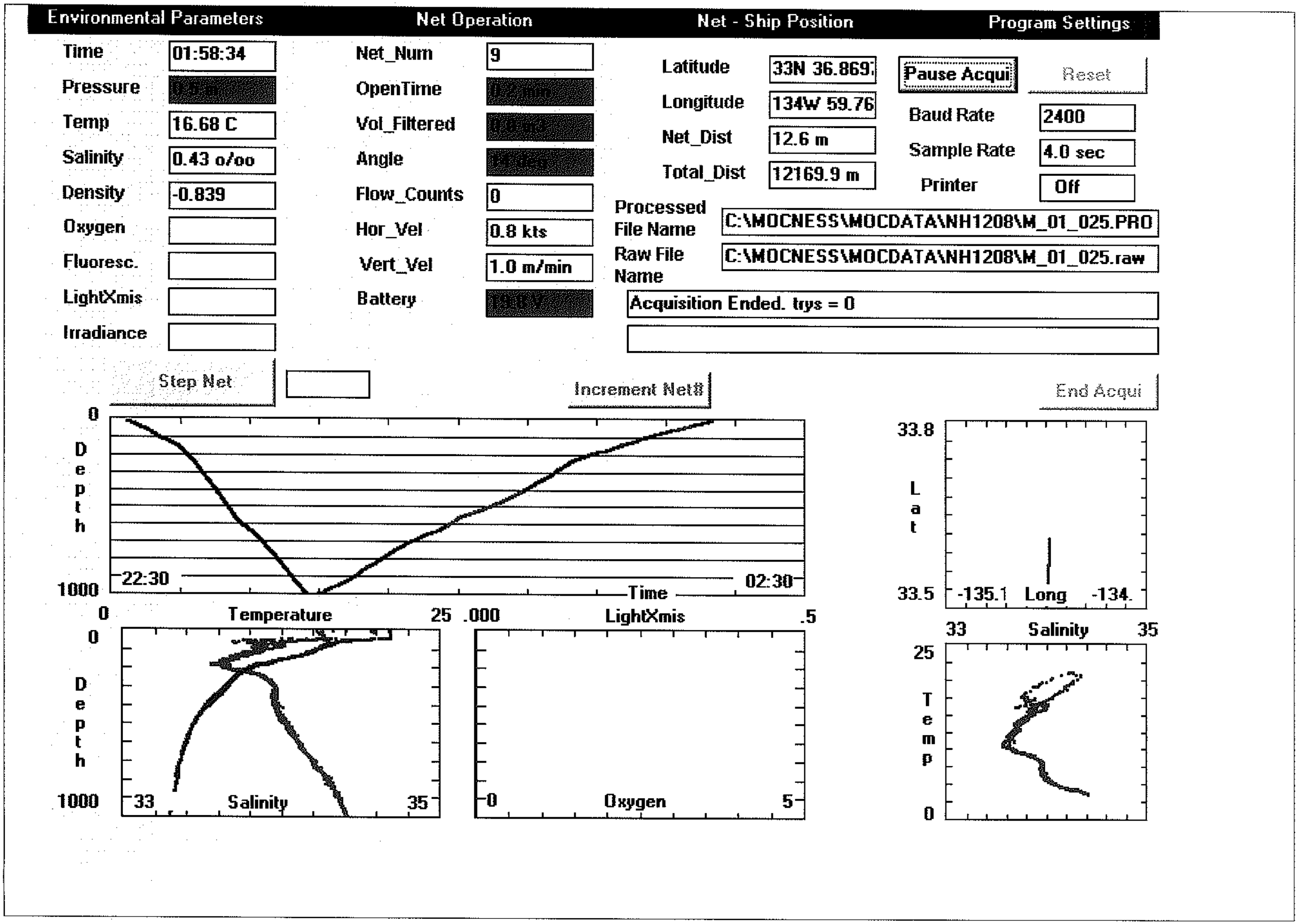
Processed Filename M-01-025.pro Raw Filename M-01-025.raw

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	2235	0					Start down @ 10 m/min
Net 0 Down		1014			3142	1544 NR	2242 increase to 15 m/min; 2252 increase to 25 m/min
Net 1	2341	995			1333	1544 NR	2302 increase to 30 m/min; 2339 up at 5 m/min
Net 2	0004	786			1337	1325 NR	2343 up at 10 m/min
Net 3	0026	600			1660	1083 NR	0022 increase to 15 m/min; 0109 Slow to 10 m/min
Net 4	0052	400			1392	684 NR	0138 slow to 7/8 m/min
Net 5	0114	200			1258	378 NR	
Net 6	0133	102			721	181 NR	
Net 7	0145	52			417	87	No NR 7408
Net 8	0151	25			410	43	No NR
Closed	0158	0			—	-	

COMMENTS: Smooth launch ~ Last 2 Nets did not give NR

Nets came on deck untangled.


Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
01:58:34
Pressure
Temp
16.68 C
Salinity
0.43 o/oo
Density
-0.839
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
0
Hor_Vel
0.8 kts
Vert_Vel
1.0 m/min
Battery
Latitude
33N 36.869
Longitude
134W 59.76
Net_Dist
12.6 m
Total_Dist
12169.9 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_025.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_025.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
0
Depth
1000
22:30
Time
02:30
33.8
Lat
33.5
-135.1
Long
-134.
0
Temperature
25
.000
LightXmis
.5
33
Salinity
35
0
Depth
1000
33
Salinity
35
0
Oxygen
5
25
Temp
0

Tow: M-01-025   New Horizon 1208
Date: 13 Sept 2012
Temperature Probe # 535   Conductivity Probe # 120   Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.9	1013.9	464.7	03.7	50.0	08.8	03.6	50.0	08.8	33.62	50.00	33.91
1	001.6	994.4	894.0	03.7	19.9	04.0	03.6	19.9	04.0	00.70	50.00	34.24
2	600.5	784.1	686.0	04.2	05.0	04.6	04.2	05.0	04.5	34.12	34.30	34.19
3	400.7	599.4	498.7	05.1	06.5	05.7	05.0	06.5	05.6	33.96	34.11	34.03
4	201.2	399.4	294.6	06.5	09.8	08.1	06.5	09.8	08.1	33.68	33.96	33.91
5	101.2	201.4	153.3	09.8	15.2	12.4	09.8	15.2	12.4	33.56	33.88	33.68
6	051.8	101.3	075.5	15.2	17.3	16.1	15.2	17.3	16.1	33.70	33.97	33.86
7	023.6	051.4	038.4	17.2	21.2	20.1	17.2	21.2	20.1	33.76	34.27	34.10
8	000.6	023.6	011.2	21.0	21.2	21.2	21.0	21.2	21.2	23.48	34.27	34.15

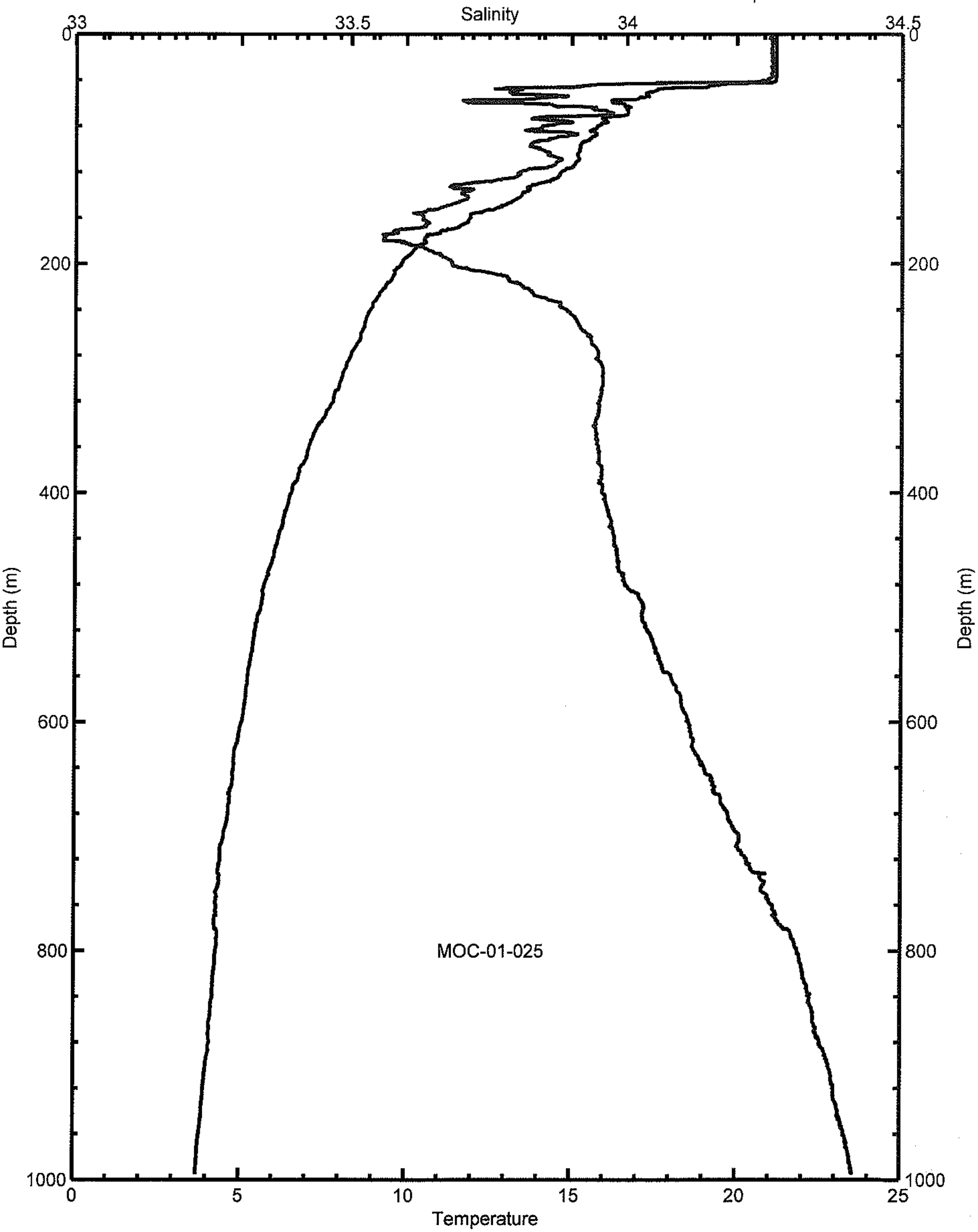
net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	23.89	36.35	26.13	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.24	36.32	27.18	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	26.97	27.20	27.08	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.67	26.97	26.83	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	25.96	26.66	26.39	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.04	25.96	25.47	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.53	25.04	24.85	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.88	24.53	24.04	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	15.74	23.89	23.80	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	26.0	72.0	45.3	00.0	03.5	01.4	-26.5	08.2	-15.0	00994	03142
1	32.0	54.0	42.0	01.2	03.1	02.0	-05.6	15.2	09.1	00342	01333
2	42.0	55.0	46.9	01.9	02.7	02.3	02.7	13.7	08.5	00324	01337
3	44.0	53.0	47.7	01.9	02.7	02.4	02.5	12.7	07.6	00394	01660
4	43.0	53.0	47.6	01.9	02.7	02.4	03.7	13.2	09.2	00327	01392
5	44.0	54.0	48.5	01.9	02.7	02.4	-01.3	09.0	05.2	00286	01258
6	43.0	51.0	47.3	01.9	02.7	02.3	01.8	07.6	04.5	00166	00721
7	42.0	53.0	46.6	01.9	02.3	02.3	02.3	06.2	04.2	00097	00417
8	30.0	51.0	46.0	01.2	02.7	02.3	01.2	05.8	03.6	00098	00410

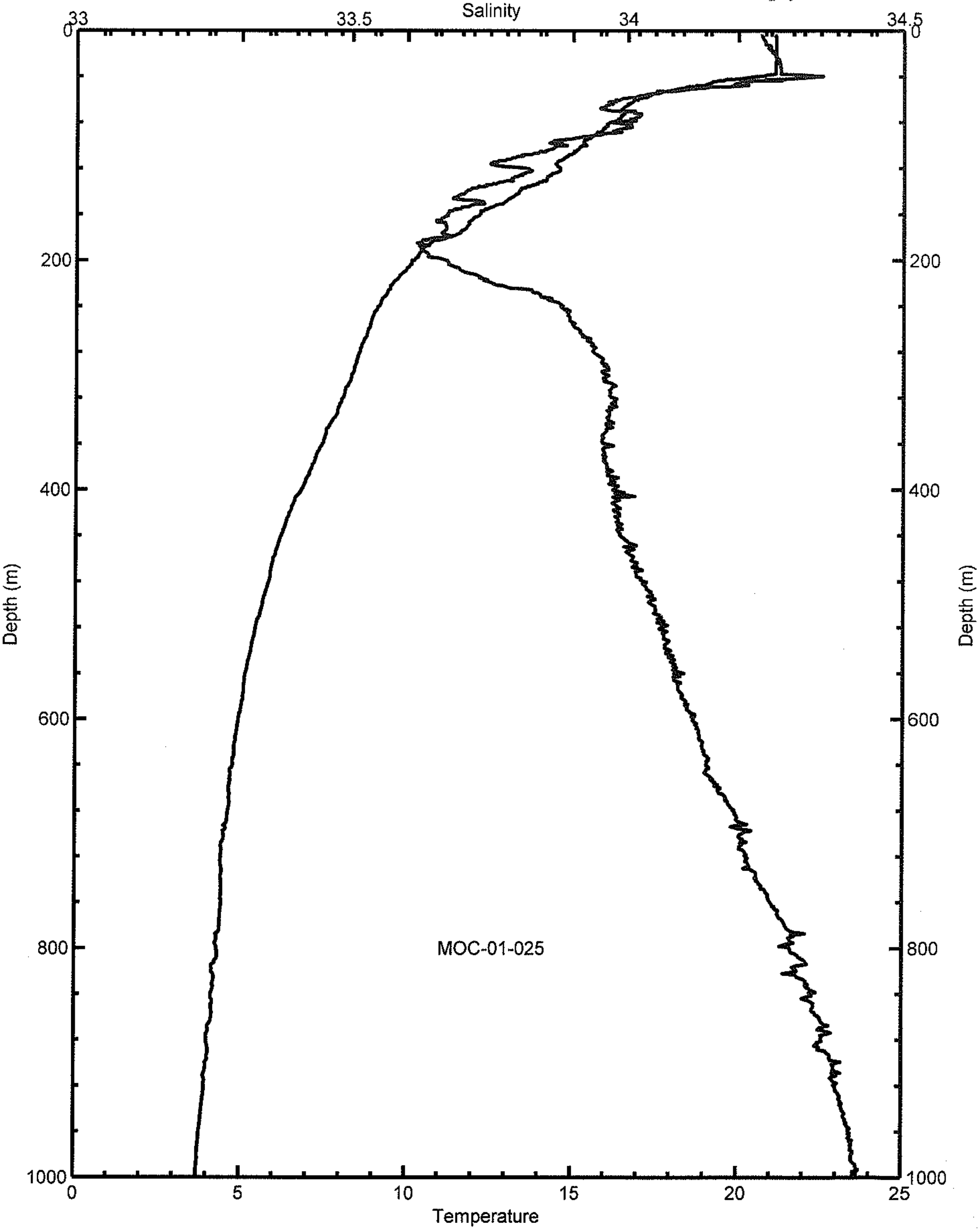
net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	257.932917	22:23:23	000.9	1013.9	464.7	00994	03142
1	257.933287	22:23:56	001.6	994.4	894.0	00342	01333
2	258.003391	0:4:53	600.5	784.1	686.0	00324	01337
3	258.018495	0:26:38	400.7	599.4	498.7	00394	01660
4	258.036852	0:53:3	201.2	399.4	294.6	00327	01392
5	258.052083	1:15:0	101.2	201.4	153.3	00286	01258
6	258.065417	1:34:12	051.8	101.3	075.5	00166	00721
7	258.073183	1:45:23	023.6	051.4	038.4	00097	00417
8	258.077685	1:51:52	000.6	023.6	011.2	00098	00410
9	258.082245	1:58:25					

Up trace



Salinity
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
MOC-01-025
0
5
10
15
20
25
Temperature

Down Trace


Salinity
33
33.5
34
34.5
0
200
400
600
800
1000
Depth (m)
Depth (m)
MOC-01-025
0
5
10
15
20
25
Temperature

Specimens Removed from MOCNESS tows

cruise: ~~OC473~~ NH1208 time tow ended:
date: 9/13/12 st. 4
tow:

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name	
Ø	C. inflexa	17		95% +resp		*Ga37.15
Ø	c. pyramidata	2		resp		
2	pneumodermo	2		95%		*Ga 113.28
3	megacalanus	1	2:33	95	Leo	*6429.10
5	C pyramidata	7	3:16	70%	AEM	
5	styliola subula	8	3:16	70%	AEM	
5	d. trispinosa	1	3:16	70%	AEm	
7	d. trispinosa	1	3:01	70%	AEM	
5	cavolinia inflexa	1	3:16	70%	AEM	
6	C. pyramidata	1		N_2	AEm	

MOCNESS Plankton Observations

Cruise: NH1208	Station: 34	Cast #: 25
Date: 9/13/12	Latitude: 33.505	Longitude: -135.000
Local time start: [illegible]	Day / Night	Local time end:

Net 0

[illegible]

1000 **Net 1** Crazy [illegible]
vamp[illegible]
[illegible]
[illegible]

800 **Net 2** *pneumoderma*
3 jellies (cteto[illegible])
fish
shrimp

600 **Net 3** *megacalanus* 429, 10
huge jelly
MANY fish ([illegible])

400 **Net 4** gausia
shrimp
1 euphausiid
radiolarians

200 **Net 5** 3 squid + [illegible]
amphipod
euphausiids
shrimp

Clio pyramidata
C. inflexa
Styliola sub[illegible]
d. trispinosa? (1)
[illegible] %

100 **Net 6** many diverse fish
Squid 2
[illegible] euphausiids
Siphonophore

C. pyramidata
C. inflexa
Styliola [illegible]

50 **Net 7** D trispinosa (1) 70%
Styliola subula
Clio pyramidata

C. inflexa
L. bulimoides
pneumoderma (2)

pyrosomes
fish
shrimp
euphausiids

25 **Net 8** Cuvierina columnella
Clio pyramidata
C. inflexa
Styliola subula
D. quadridentata

fish

0

MOCNESS DATA SHEET

Cruise NH1208 Location NE Pacific Station 34 Tow # M-01-026

Date 14 Sept 2012 Wind Speed 5 kt Direction 55

Year/Day 258 Sea State Calm 1-2' swell from NE

Local Time 0829 to 1200 Start Lat 33 35.339 Long 134 58.746

GMT Time 1629 to 2000 End Lat 33 42.045 Long 135 00.669

Net Size 1-m² Net Condition ok, quite a few patches on 150s
Net Mesh 150 µm, Net 0 = 333 µm

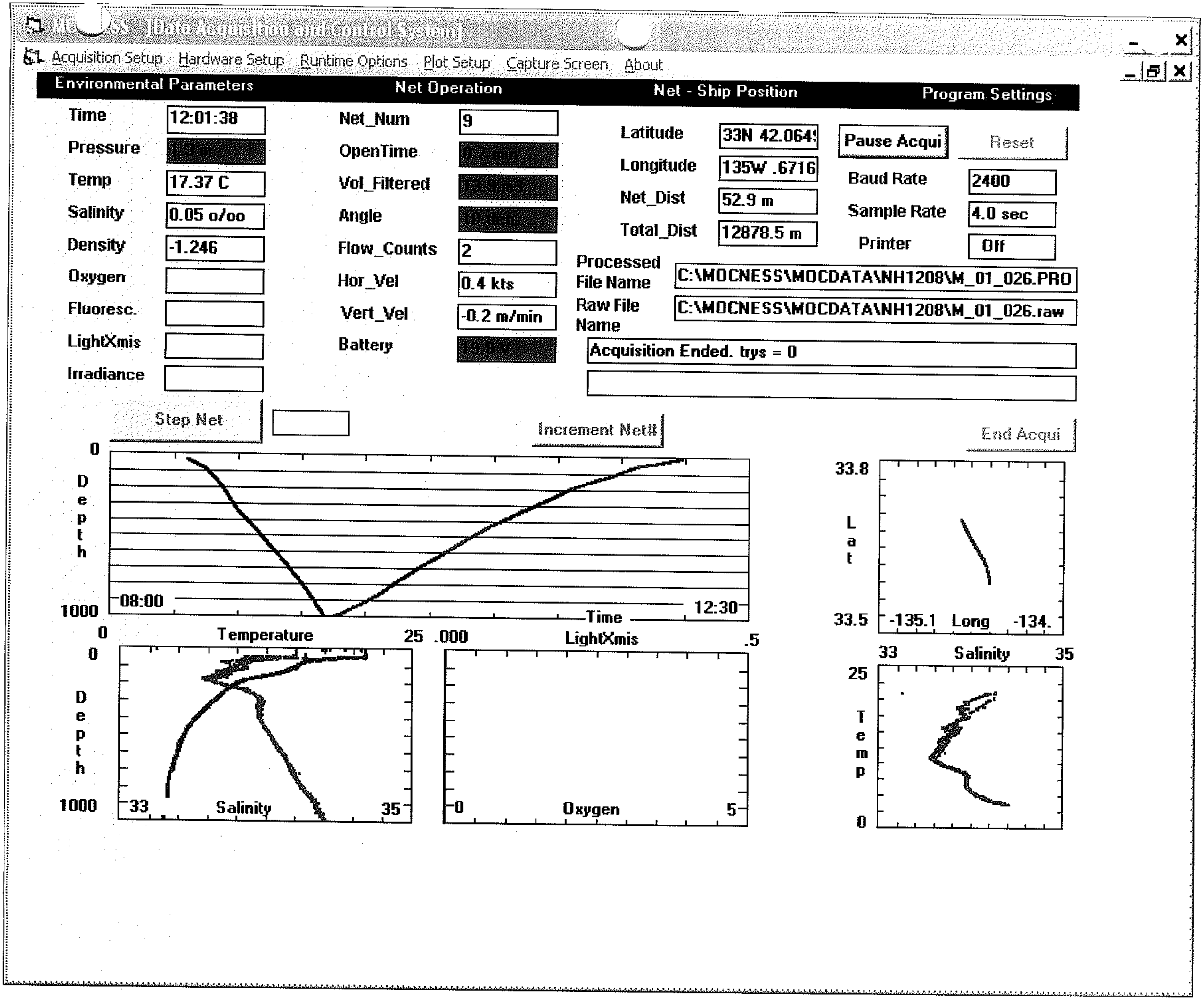
Processed Filename M-01-026.pro Raw Filename M-01-026.raw

Course 351, into wind with light swell on stbd side.

NET TOW INFORMATION

	Time Open	Depth (m)	Angle	Flow Counts	Volume Filtered	MWO Net	Comments
Start	0829	0					Start down at 10 m/min
Net 0 Down	0934	1012			3081	1616	0838 100 MWO ↑ to 20 m/min 0844 200 MWO ↑ to 25 m/min
Net 1	0934	1000			1488	1616	0847 300 MWO ↑ to 30 m/min 0930 Winch all stop
Net 2	0959	800			1303	1223	0932 Hauling in 10 m/min 0937 1562 ↑ to 15 m/min
Net 3	1020	600			1490	972	1000 1197 ↓ to 12 m/min 1017 1061 ↓ to 10 m/min
Net 4	1044	400			1876	735	1049 689 ↑ to 12 m/min 1113 389 ↓ to 10 m/min
Net 5	1113	200			1318	393	1144 81 ↓ to 5 m/min
Net 6	1133	100			654	193	
Net 7	1142	51			602	95	
Net 8	1152	27			576	45	
Closed	1200	0			-		

COMMENTS: 20.1 V at start. Smooth launch 2 buckets looped under frame briefly but resolved themselves. 19.8 V at end.



MOCNESS [Data Acquisition and Control System]
Acquisition Setup
Hardware Setup
Runtime Options
Plot Setup
Capture Screen
About
Environmental Parameters
Net Operation
Net - Ship Position
Program Settings
Time
12:01:38
Pressure
Temp
17.37 C
Salinity
0.05 o/oo
Density
-1.246
Oxygen
Fluoresc.
LightXmis
Irradiance
Net_Num
9
OpenTime
Vol_Filtered
Angle
Flow_Counts
2
Hor_Vel
0.4 kts
Vert_Vel
-0.2 m/min
Battery
Latitude
33N 42.064
Longitude
135W .6716
Net_Dist
52.9 m
Total_Dist
12878.5 m
Pause Acqui
Reset
Baud Rate
2400
Sample Rate
4.0 sec
Printer
Off
Processed File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_026.PRO
Raw File Name
C:\MOCNESS\MOCDATA\NH1208\M_01_026.raw
Acquisition Ended. trys = 0
Step Net
Increment Net#
End Acqui
Depth
0
1000
08:00
Time
12:30
Temperature
0
25
Salinity
33
35
LightXmis
.000
.5
Oxygen
0
5
Lat
33.8
33.5
Long
-135.1
-134.
Temp

Tow: M-01-026 New Horizon 1208
Date: 14 Sept 2012
Temperature Probe # 535 Conductivity Probe # 120 Pressure Probe # 169
Flow Meter Calibration 6.3882 (m/count)

MOCNESS STATISTICAL SUMMARY

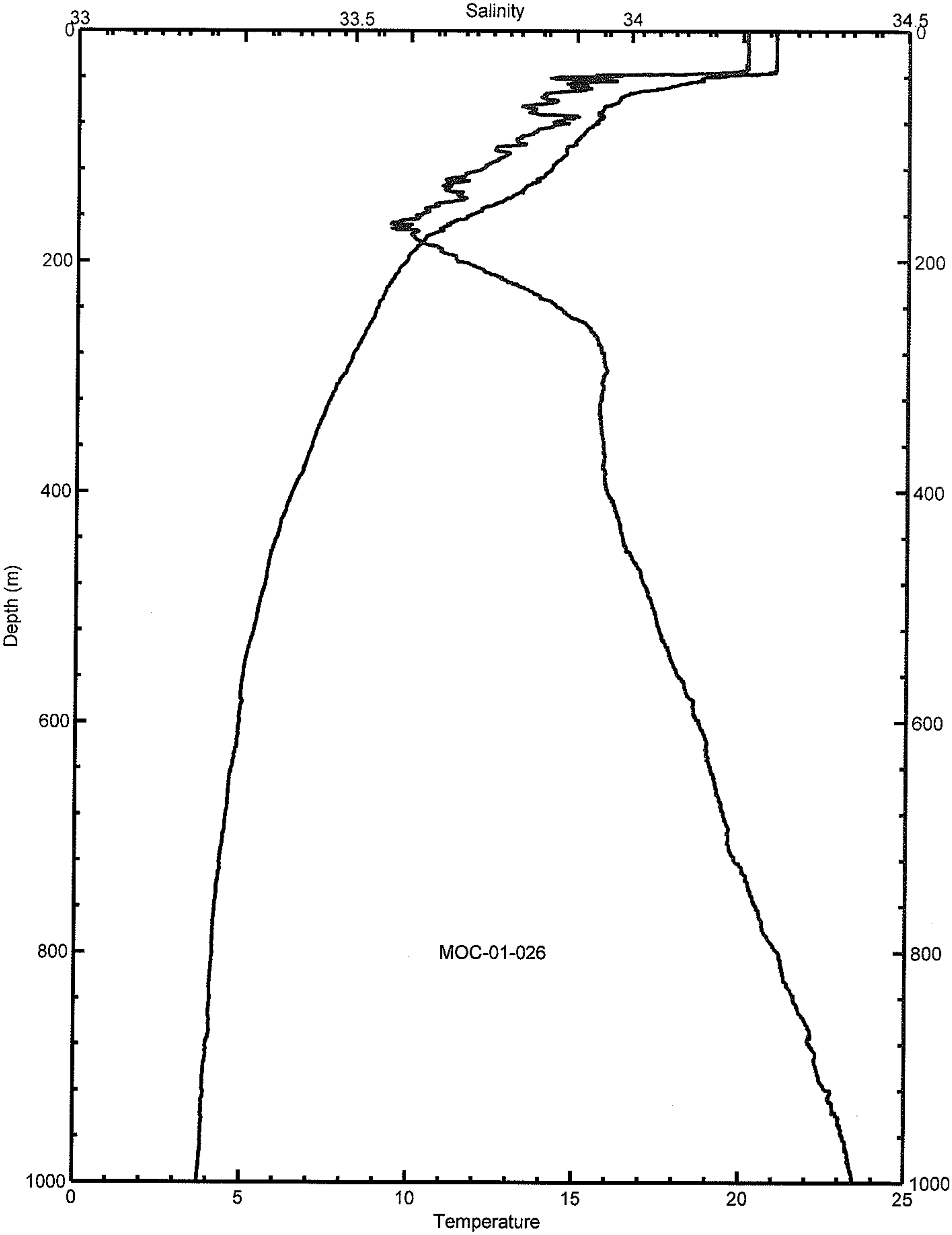
net#	pmin	pmax	pavg	tmin	tmax	tavg	thmin	thmax	thavg	smin	smax	savg
0	000.3	1012.3	472.1	03.7	21.2	08.4	03.6	21.2	08.4	00.01	50.00	33.90
1	000.8	1000.8	896.0	03.7	20.1	03.9	03.7	20.1	03.8	00.97	50.00	33.92
2	600.4	799.4	696.9	04.1	04.9	04.5	04.1	04.9	04.4	34.12	34.27	34.18
3	401.9	598.8	495.0	04.9	06.5	05.6	04.9	06.4	05.5	33.96	34.13	34.04
4	200.3	401.0	301.6	06.5	09.9	08.0	06.4	09.9	08.0	33.69	33.96	33.91
5	101.6	199.4	148.6	09.9	14.7	12.5	09.9	14.7	12.5	33.56	33.78	33.67
6	051.4	101.2	075.3	14.7	17.4	15.7	14.7	17.4	15.7	33.76	33.91	33.83
7	026.6	050.2	037.2	17.4	21.0	19.9	17.4	21.0	19.9	33.85	34.21	34.07
8	001.4	026.2	013.1	21.0	21.0	21.0	21.0	21.0	21.0	34.21	34.21	34.21

net#	simin	simax	siavg	cmin	cmax	cavg	fmin	fmax	favg	oxmin	oxmax	oxavg
0	-01.79	36.28	26.19	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
1	-01.07	36.23	26.93	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
2	27.00	27.19	27.09	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
3	26.68	27.00	26.85	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
4	25.95	26.67	26.42	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
5	25.08	25.94	25.45	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
6	24.59	25.08	24.92	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
7	23.87	24.58	24.07	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0
8	23.89	23.89	23.89	00.00	00.00	00.00	00.00	00.00	00.00	00.0	00.0	00.0

net#	irrmin	irrmax	irravg
0	0.000000000	0.000000000	0.000000000
1	0.000000000	0.000000000	0.000000000
2	0.000000000	0.000000000	0.000000000
3	0.000000000	0.000000000	0.000000000
4	0.000000000	0.000000000	0.000000000
5	0.000000000	0.000000000	0.000000000
6	0.000000000	0.000000000	0.000000000
7	0.000000000	0.000000000	0.000000000
8	0.000000000	0.000000000	0.000000000

net#	amin	amax	aavg	spmin	spmax	spavg	armin	armax	aravg	#obs	vol
0	28.0	68.0	44.1	00.0	03.1	01.4	-25.2	09.2	-15.7	00955	03081
1	36.0	49.0	40.6	00.8	02.3	01.9	-06.3	12.5	07.8	00383	01488
2	37.0	47.0	40.8	01.9	02.3	02.0	06.4	13.1	09.3	00321	01303
3	39.0	51.0	44.7	01.9	02.7	02.3	03.7	11.5	08.5	00353	01490
4	46.0	54.0	49.4	02.3	02.7	02.5	04.7	09.5	06.9	00432	01876
5	47.0	56.0	50.6	02.3	02.7	02.6	02.2	09.7	05.1	00291	01318
6	48.0	55.0	50.9	02.3	02.7	02.6	01.8	06.6	05.2	00145	00654
7	45.0	55.0	49.3	01.9	02.7	02.4	00.0	05.4	02.7	00139	00602
8	39.0	55.0	49.2	01.6	02.7	02.5	00.6	04.9	02.9	00130	00576

net#	Yearday/Time	hh:mm:ss (NetOpenTime)	pmin	pmax	pavg	#obs	vol
0	258.347789	8:20:49	000.3	1012.3	472.1	00955	03081
1	258.348148	8:21:19	000.8	1000.8	896.0	00383	01488
2	258.416250	9:59:23	600.4	799.4	696.9	00321	01303
3	258.431215	10:20:57	401.9	598.8	495.0	00353	01490
4	258.447662	10:44:37	200.3	401.0	301.6	00432	01876
5	258.467778	11:13:35	101.6	199.4	148.6	00291	01318
6	258.481343	11:33:8	051.4	101.2	075.3	00145	00654
7	258.488125	11:42:54	026.6	050.2	037.2	00139	00602
8	258.494630	11:52:15	001.4	026.2	013.1	00130	00576
9	258.500718	12:1:2					


Salinity
33
33.5
34
34.5
Temperature
0
5
10
15
20
25
Depth (m)
0
200
400
600
800
1000
MOC-01-026

all but nets 0+2 tangled

MOCNESS Plankton Observations

Cruise: NH1208	Station: 34	Cast #: 26
Date: 14 Sep	Latitude: 33.589	Longitude: -134.979
Local time start:	Day / Night	Local time end:

Net 0 red Shrimp - broken up
hatchet fish
other fish
1 Cuvierina col. → dry for Lisa

Net 1 very small sample all → 95%

Net 2 jellies
sm fish
lg. red shrimp
* 1 Bentheuph → 95% *
small 1/2" hole necessary

Net 3 * 2 huge amphipod? → 1 in 95% *

Net 4 C. pyramidata
C. inflexa
Limacina inflata

Net 5 Rads
small stuff

Net 6 Rads
Small copepods

Net 7 very ground up/detritus - brown

Net 8 brown detritus - smelly when came up

Specimens Removed from MOCNESS tows

cruise: ~~OC473~~ NH1208   time tow ended:
date: 14 Sept 12
tow: 26
sta. 34

NET	Species (ok if not known; give shape if possible- cone, snail, etc.)	Count	Time preserved	Preservation 70% etoh/dry/freeze	Collector's name
2	Benthempth.	1	12²⁰	95%	NC -> Leo
3	huge amphipod-clear exoskel?	1	12³⁰	95%	NC
4	Clio pyr	4	1240	70 %	NC
4	Cav inflexa	5	"	70	NC
4	Stylida	10			
0	Cuv. columnella	1	1310	DI-H_2O to	Lisa NC

EW05.5-
1in more rest of sample
Am 78.1