

CCE-P1706 MOCNESS tows

Jun-2017

<u>HAUL</u>	<u>CYCLE</u>	<u>TOW</u>	<u>DATE</u>	<u>Event No.</u>	<u>START TIME</u>	<u>END TIME</u>	<u>MAX DEPTH</u>	<u>DEPTH INTERVAL</u>	<u>Fixative</u>	<u>Fixative</u>
1	1	1	9 Jun 2017	219	13:37	15:12	463	50 m; then 25 m	50% Formalin*	50% Ethanol**
2	1	2	9 Jun 2017	231	22:45	23:52	409	50 m; then 25 m	50% Formalin*	50% Ethanol**
3	1	3	10 Jun 2017	249	13:14	14:23	409	50 m; then 25 m	100% Formalin*	
4	1	4	10 Jun 2017	260	22:43	23:53	411	50 m; then 25 m	100% Formalin*	
5	2	1	13-14 June 2017	326	23:02	0:15	420	50 m; then 25 m	50% Formalin*	50% Ethanol**
6	2	2	14 Jun 2017	344	13:10	14:19	419	50 m; then 25 m	50% Formalin*	50% Ethanol**
7	2	3	14-15 June 2017	350	22:47	0:10	426	50 m; then 25 m	100% Formalin*	
8	2	4	15 Jun 2017	367	13:27	15:09	463	50 m; then 25 m	100% Formalin*	
9	3	1	19. Jun. 2017	493	13:09	14:21	436	50 m; then 25 m	50% Formalin*	50% Ethanol**
10	3	2	19-20 June 2017	508	23:06	0:11	428	50 m; then 25 m	50% Formalin*	50% Ethanol**
11	3	3	20. Jun. 2017	526	13:11	14:35	427	50 m; then 25 m	100% Formalin*	
12	3	4	20-21 June 2017	537	22:50	23:51	415	50 m; then 25 m	100% Formalin*	
13	4	1	24. Jun. 2017	659	14:21	15:31	436	50 m; then 25 m	50% Formalin*	50% Ethanol**
14	4	2	24-25 June 2017	673	23:10	0:13	420	50 m; then 25 m	50% Formalin*	50% Ethanol**
15	4	3	25. Jun. 2017	691	13:05	14:27	415	50 m; then 25 m	100% Formalin*	
16	4	4	25-26 June 2017	697	23:02	0:01	414	50 m; then 25 m	100% Formalin*	
									*buffered w/ sodium tetraborate	**addition of 5 mM NH ₄ OH

MOCNESS

HAUL

		Latitude	Longitude	Time PDT	Tow duration (h)	Interval between tows (h)
1	start	35.04667	121.0950	13:31	1.68	
	stop	35.475	121.1517	15:12		
2	start	35.0450	121.1067	22:45	1.12	
	stop	35.0583	121.1617	23:52		
3	start	34.9862	121.12817	13:14	1.15	
	stop	34.99517	121.17217	14:23		
4	start	34.934	121.1507	22:43	1.17	
	stop	34.94117	121.1962	23:53		
5	start	34.7075	121.8571	23:02	1:13	
	stop	34.2103	121.9020	0:15		
6	start	34.7250	122.0083	13:10	1.15	
	stop	34.7313	122.0585	14:19		
7	start	34.7060	122.1020	22:47	1:23	
	stop	34.7247	122.1577	0:10		
8	start	34.7773	122.1933	13:27	1.70	
	stop	34.7165	122.2568	15:09		
9	start	34.2448	123.1370	13:09	1.20	
	stop	34.247	123.1759	14:21		
10	start	34.2023	123.1133	23:06	1:05	
	stop	34.2057	123.1455	0:11		
11	start	34.0992	122.9937	13:11	1.40	
	stop	34.1090	123.0435	14:35		
12	start	34.0792	122.9673	22:50	1.02	
	stop	34.0910	122.9988	23:51		
13	start	34.4110	122.9869	14:21	1.17	
	stop	34.1573	123.0103	15:31		
14	start	34.4360	122.9730	23:10	1:03	
	stop	34.4428	123.0151	0:13		
15	start	34.4462	122.9413	13:05	1.37	
	stop	34.4280	122.9902	14:27		
16	start	34.4895	122.9492	23:02	0:59	
	stop	34.4929	122.9880	0:01		

MOCNESS Data Sheet

Cruise P1706 Date 9 June 2017 Haul # 1 Cycle # 1 Tow # 1Wind Speed 5-8 (kts.) Direction 340 (°) Sea State 2-3 (ft.)
*High overcast*File Name: Processed Cycle 1-01 Raw _____Start Time 13:37 (PDT) End Time 15:12 (PDT)Lat 35° 02.8' N ^{35.04667} Lat 35° 28.5' N ^{35.475}Long 121° 05.7' W ^{121.095} Long 121° 09.1' W ^{121.15167}Event deploy # 219Event rec. # 220Net Mesh 202 μ mFrame Size 1 m²Bottom Depth 519 (m)Console Operator Bmw, MDO, CM

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

*Response but
v. small magnitude*

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	13:37	45.7	746	2,732	409.6	400	X	5% Form.	X	95% EtOH	✓
1	14:16	40.3	450	2,313	463	349	X	5% Form.	X	95% EtOH	✓
2	14:38	39.4	111	571	349	302	X	5% Form.	X	95% EtOH	✓
3	14:43	39	106	546	302	250	X	5% Form.	X	95% EtOH	✓
4	14:47	43	100	486	250	201	X	5% Form.	X	95% EtOH	✓
5	14:51	45	139	643	201	151	X	5% Form.	X	95% EtOH	✓
6	14:56	45	142	673	151	101	X	5% Form.	X	95% EtOH	✓
7	15:02	48	112	501	101	50	X	5% Form.	X	95% EtOH	✓
8	15:06	45	74	347	50	26	X	5% Form.	X	95% EtOH	✓
9	15:09	45	64	312	26	0	X	5% Form.	X	95% EtOH	
Closed	15:12										

At Depth Data

wire out 841 (m)Time 14:14 (PDT)

Surface Data

Pressure 0.9 (m)Temp. 14.25 (°C)Salinity 33.69 (‰)O₂ 7.62 (ml/l)Fluoresc. 0.0 (V)Trans 1.453 (m)Battery 14.33 (V)

Notes:

Net 1 went from 400m → 395m → 463m → 350m
 Stopped winch during Net 1
 at 14:18, block was looking weird
 began pulling 14:24 reached max depth
 at 463m for Net 1

150% 0.532 → From Sverdrup; O₂ Ar system

0.1 0.528

0.232

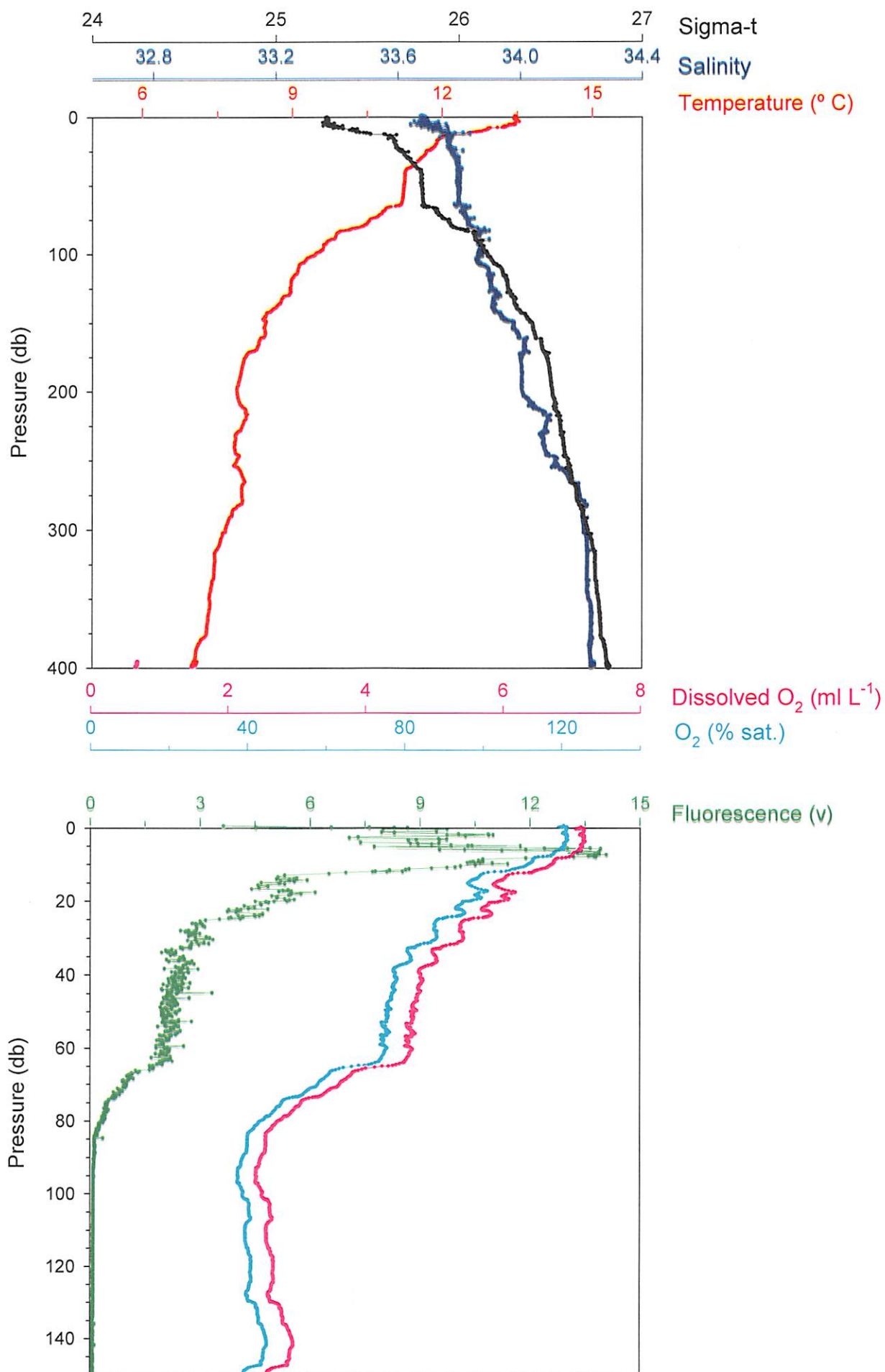
14.33

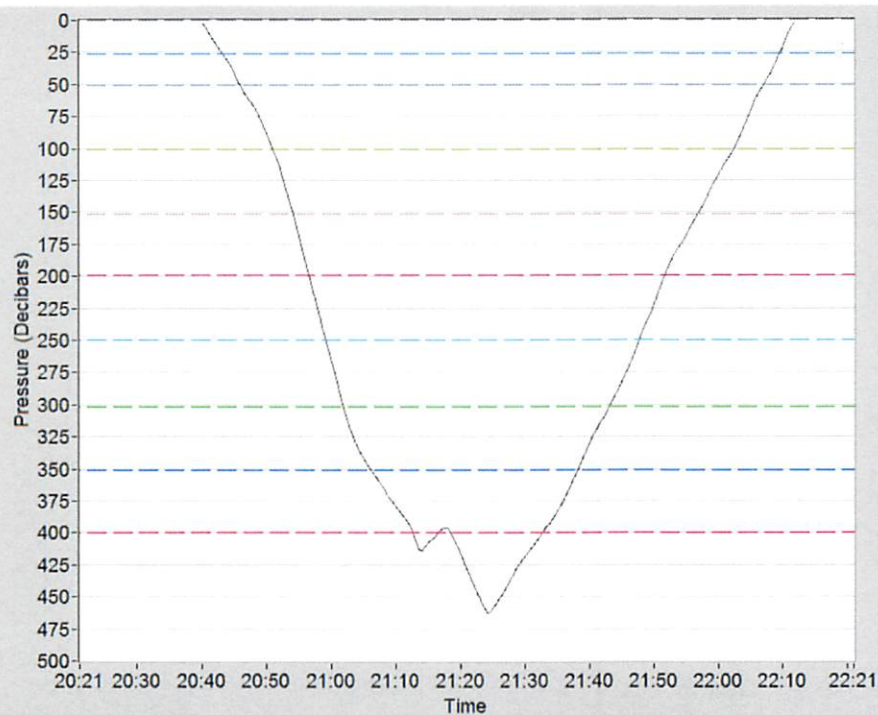
Turn on "Non-Uplink" to power on.

Net 0: 3,700 m³
 968 m³ - initial
 2,732 m³

MOCNESS - Haul 1, CCE P1706

Cycle 1 (1337-1512, 9 June 2017)





Jun 09 2017 20:20:51

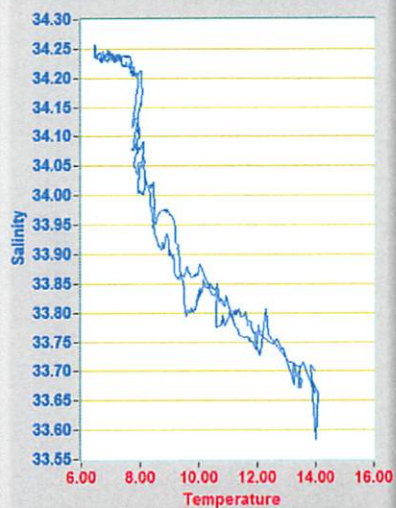
Ship: Revelle

Cruise: P1706

File: Cycle1_01

Tow: 01

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale

TIME Scale MAX 2 HRS Autoscale

Plot XY Scales

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170609 211626	400.2	45.7	746	3699.9
2				0.0	0.0	0	0.0
3				0.0	0.0	0	0.0
4				0.0	0.0	0	0.0
5			170609 215135	200.1	43.1	100	485.9
6				0.0	0.0	0	0.0
7				0.0	0.0	0	0.0
8				0.0	0.0	0	0.0
9				0.0	0.0	0	0.0

Trip Count Flow Cnts Flow Cnts 2 Motor Volts
 Confirms VOL CTD Volts
 Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

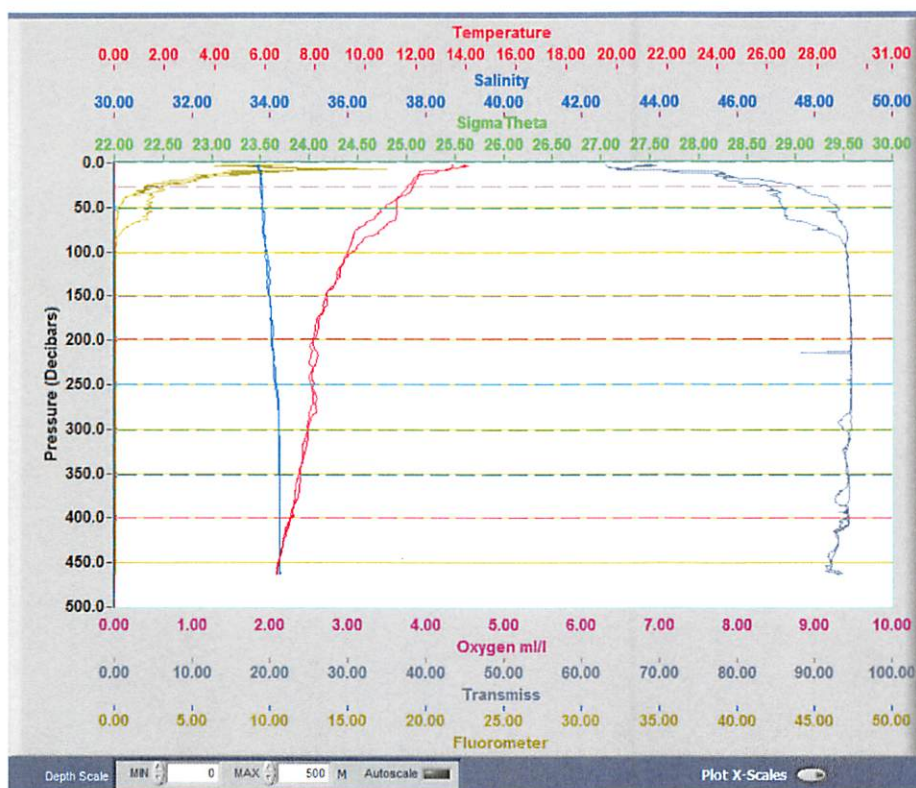
UNLOCK

Trip in Progress

Motor ON

Trip NET

Cycle 1-01



Jun 09 2017 20:20:51

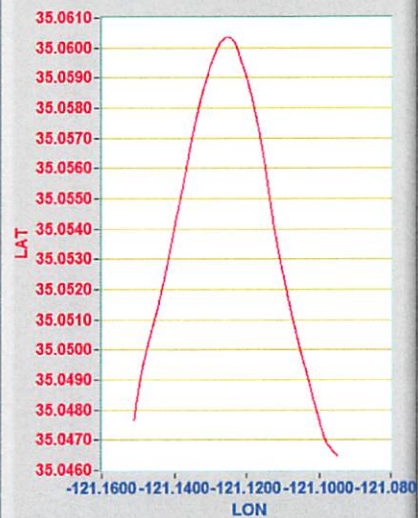
Ship: Revelle

Cruise: P1706

File: Cycle1_01

Tow: 01

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 9 Jun 2017 Haul # 2 Cycle # 1 Tow # 2Wind Speed 15-18 (kts.) Direction 322 (°) Sea State 2-3 (ft.)File Name: Processed Cycle1-02 Raw _____Start Time 22:45 (PDT) End Time 23:52 (PDT)Lat 35° 02.7' N Lat 35° 03.5' NLong 121° 06.4' W Long 121° 09.7' W

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mEvent deploy # 231Event rec. # 232Frame Size 1 m²Bottom Depth 544 (m)Console Operator MDO, BMW

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	22:45	33	362	2778	409	0	X	5% Form.	X	95% EtOH	☒
1	23:16	43	106	491	399	352	X	5% Form.	X	95% EtOH	☒
2	23:20	42	129	640	352	297	X	5% Form.	X	95% EtOH	☒
3	23:25	45	116	552	297	250	X	5% Form.	X	95% EtOH	☒
4	23:30	43	125	609	250	201	X	5% Form.	X	95% EtOH	☒
5	23:34	46	106	545	201	150	X	5% Form.	X	95% EtOH	☒
6	23:39	39	96	467	150	101	X	5% Form.	X	95% EtOH	☒
7	23:43	38	96	508	101	50	X	5% Form.	X	95% EtOH	☒
8	23:47	43	50	245	50	24	X	5% Form.	X	95% EtOH	☒
9	23:49	43	69	327	24	0	X	5% Form.	X	95% EtOH	☒
Closed	23:51										

No net response had to manually confirm

At Depth Data

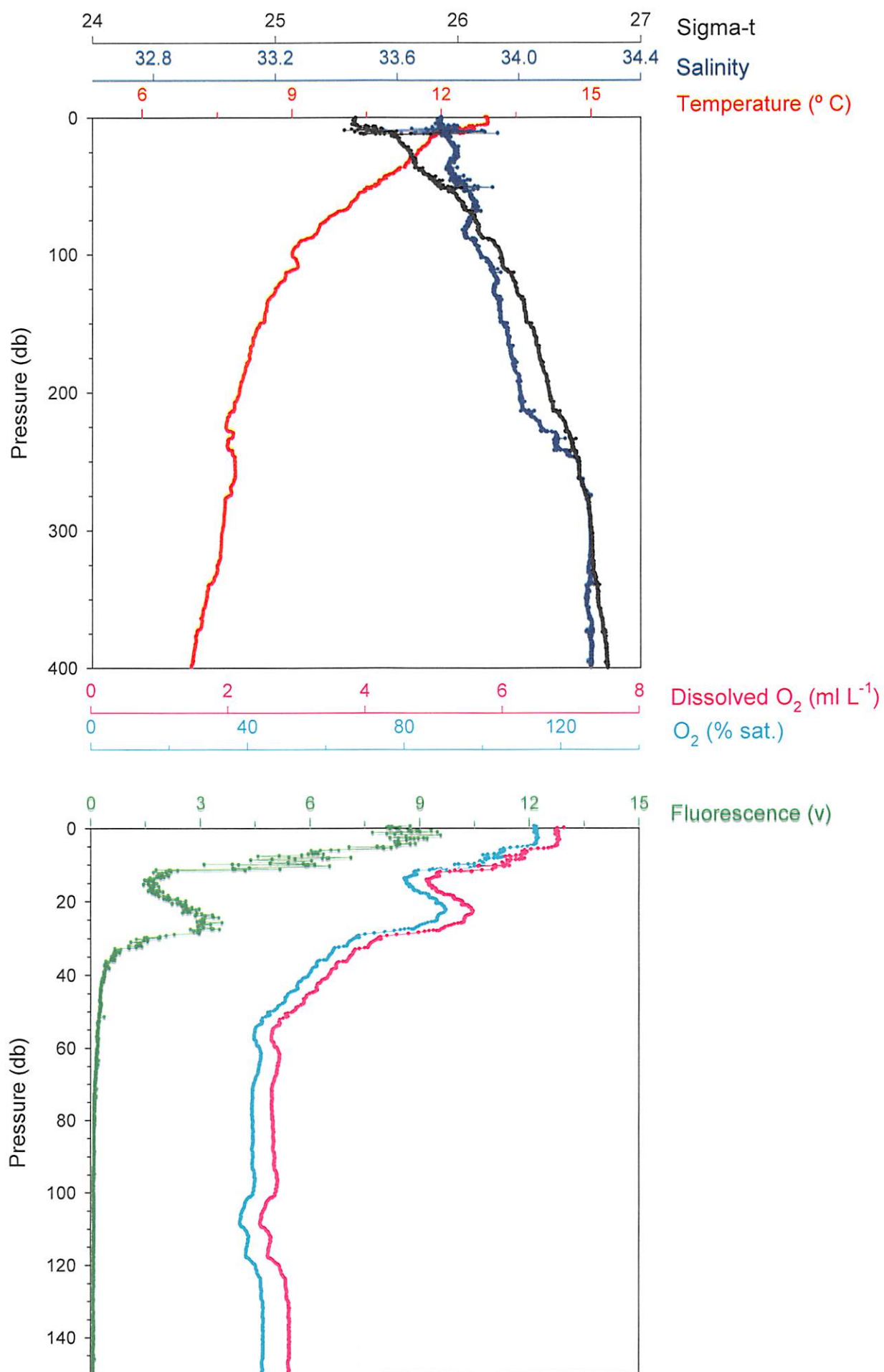
wire out 681 (m)Time 23:15 (PDT)

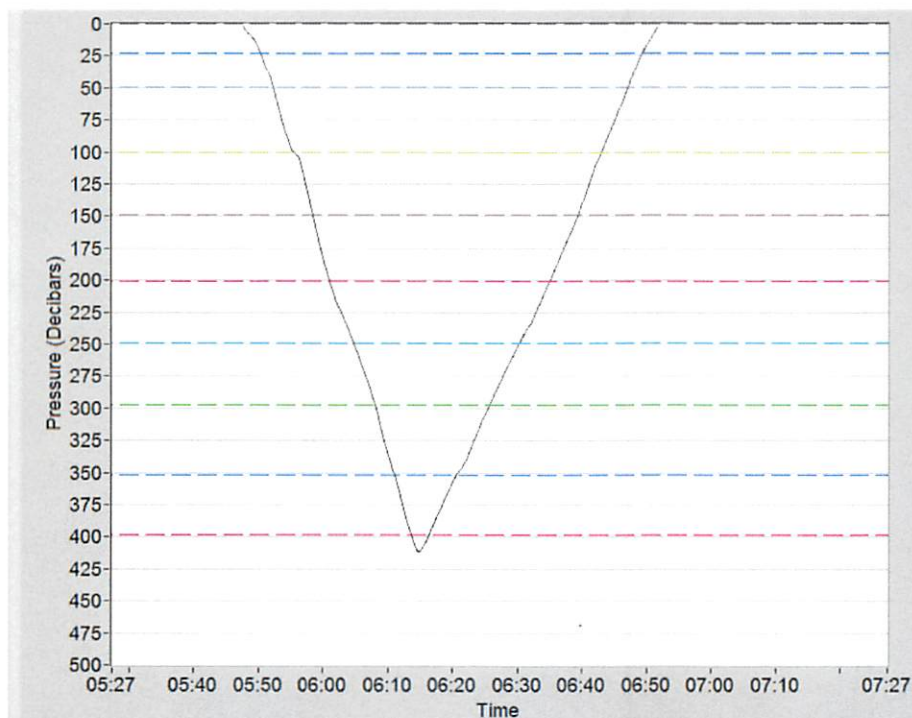
Surface Data

Pressure 1.1 (m)Temp. 13.15 (°C)Salinity 33.76 (‰)O₂ 7.06 (ml/l)Fluoresc. 9.3 (V)Trans 1.44 (m)CTD V Battery 13.79 (v)Notes: Nets came up in a big knotNet ϕ Volume: 27787772.6 initial
2006.1496 FC
134 initial
362

MOCNESS - Haul 2, CCE P1706

Cycle 1 (2245-2352, 9 June 2017)





Jun 10 2017 05:27:06

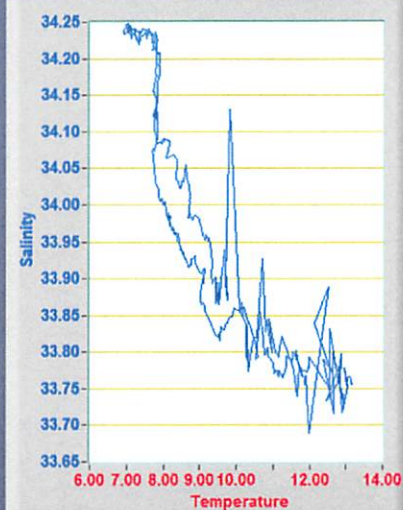
Ship: Revelle

Cruise: P1706

File: Cycle1_02

Tow: 02

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale

TIME Scale MAX 2 HRS Autoscale

Plot XY Scales

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170610 061618	398.5	33.1	496	2778.7
2			170610 062038	351.7	42.8	100	490.6
3			170610 062544	297.4	41.8	129	640.3
4			170610 063010	250.3	44.6	116	551.6
5			170610 063459	201.0	43.0	125	608.6
6			170610 063916	149.8	39.8	106	545.1
7			170610 064302	100.5	38.9	90	466.5
8			170610 064707	49.6	37.6	96	507.5
9			170610 064910	24.0	42.7	50	245.3

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

UNLOCK

Trip in Progress

Motor ON

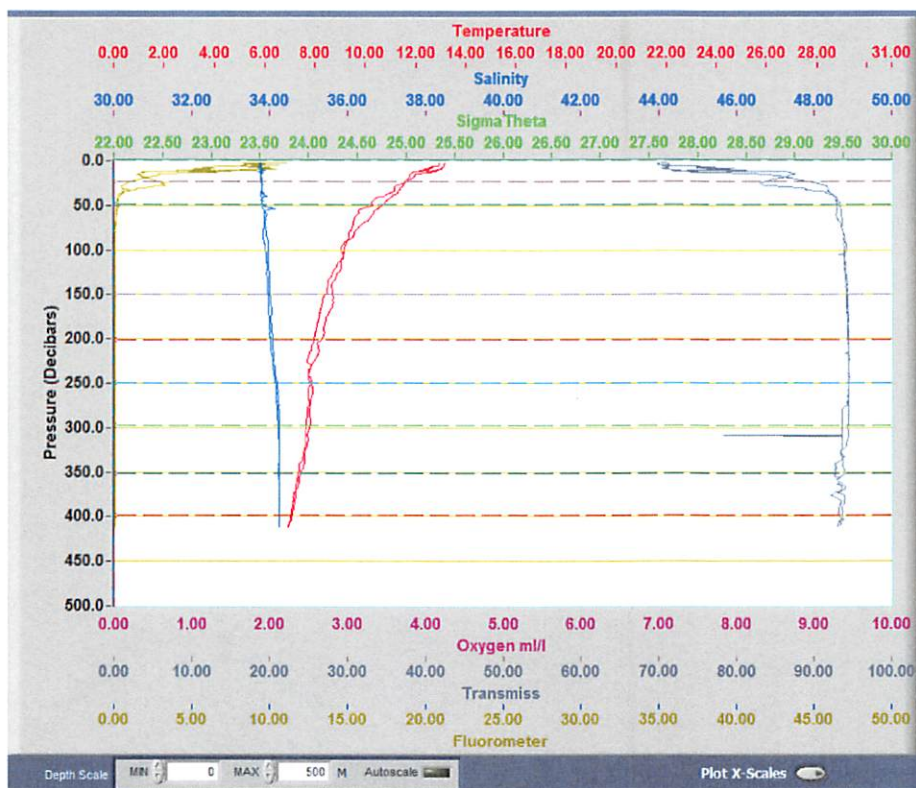
Trip NET

Trip Count Flow Cnts Flow Cnts 2 Motor Volts

Confirms VOL CTD Volts

Modem Data

Cycle 1_02



Jun 10 2017 05:27:06

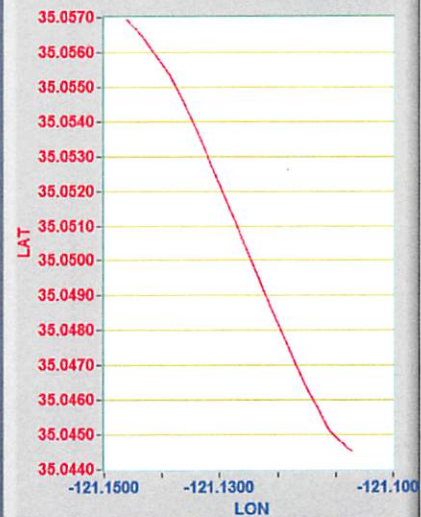
Ship: Reville

Cruise: P1706

File: Cycle1_02

Tow: 02

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 10 June 2017 Haul # 3 Cycle # 1 Tow # 3Wind Speed 18-20 (kts.) Direction _____ (°) Sea State _____ (ft.)File Name: Processed Cycle1-03 Raw _____Start Time 13:14 (PDT) End Time 14:23 (PDT)Lat 34° 59.17' Lat 34° 59.71' NLong 121° 07.69' Long 121° 10.33' W

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mEvent deploy # 249Event rec. # 250Frame Size 1 m²Bottom Depth 551 (m)Console Operator Bmw, m00

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	13:14	29	342	1976	409	0	100%	5% Form.		95% EtOH	☒
1	13:40	39	107	557	399	351		5% Form.		95% EtOH	☒
2	13:45	40	128	655	351	301		5% Form.		95% EtOH	☒
3	13:51	41	116	596	301	250		5% Form.		95% EtOH	☒
4	13:56	45	130	601	250	200		5% Form.		95% EtOH	☒
5	14:01	45	145	688	200	156		5% Form.		95% EtOH	☒
6	14:07	41	120	607	150	160		5% Form.		95% EtOH	☒
7	14:11	40	126	641	100	51		5% Form.		95% EtOH	☒
8	14:18	38	64	340	51	25		5% Form.		95% EtOH	☒
9	14:20	38	56	268	25	0	☒	5% Form.		95% EtOH	☒
Closed	14:23										

No green
lights but
modern
data
correct

At Depth Data

wire out 658 (m)Time 13:29 (PDT)

Notes: _____

Surface Data

Pressure 1.0 (m)Temp. 13.15 (°C)Salinity 33.74 (‰)O₂ 6.76 (ml/l)Fluoresc. 1.16 (V)Trans 0.833 (m)CTDY Battery 14.32 (v)Net ϕ

34066.7

2031.1 initial m³

1975.6

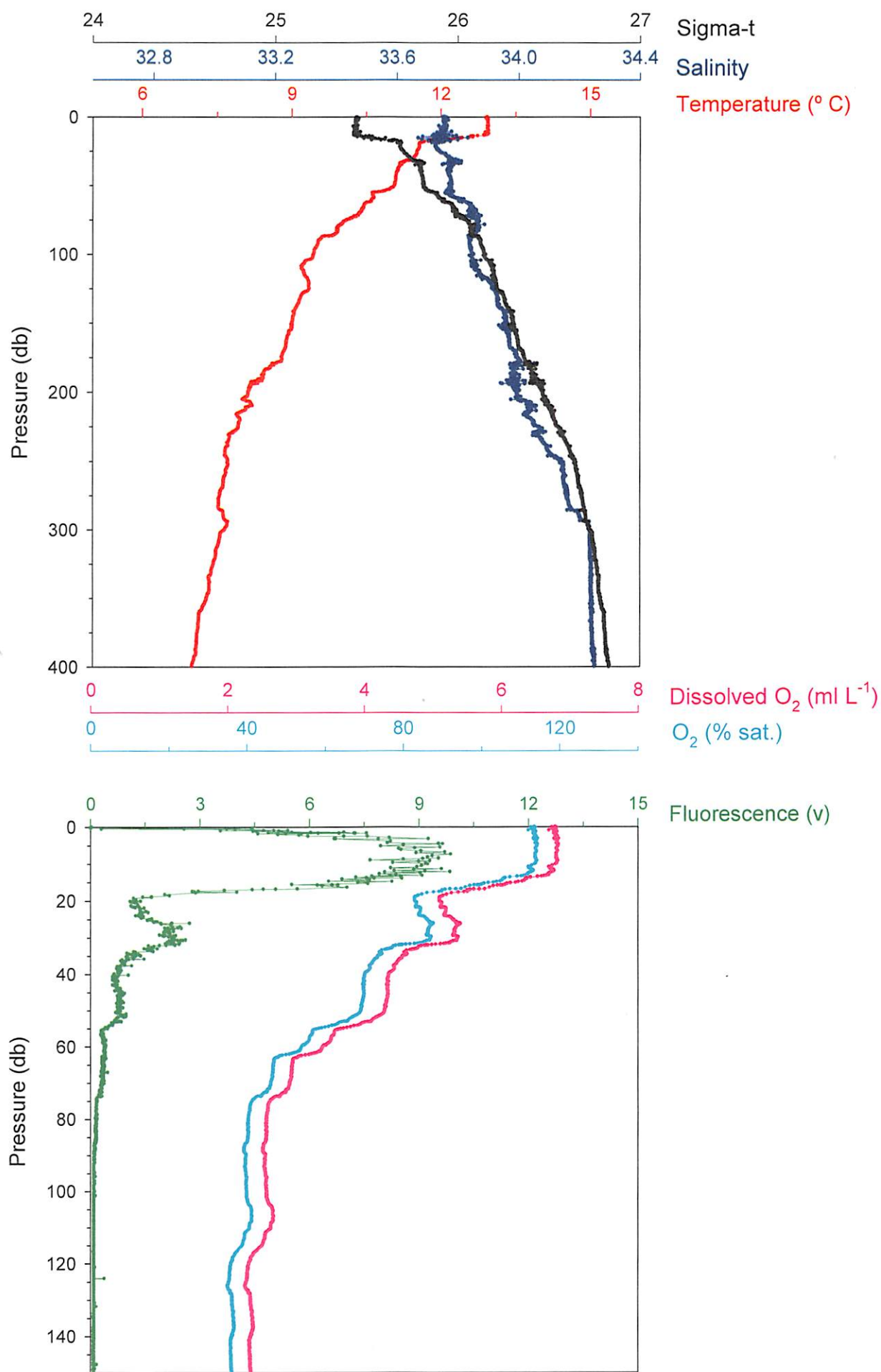
680

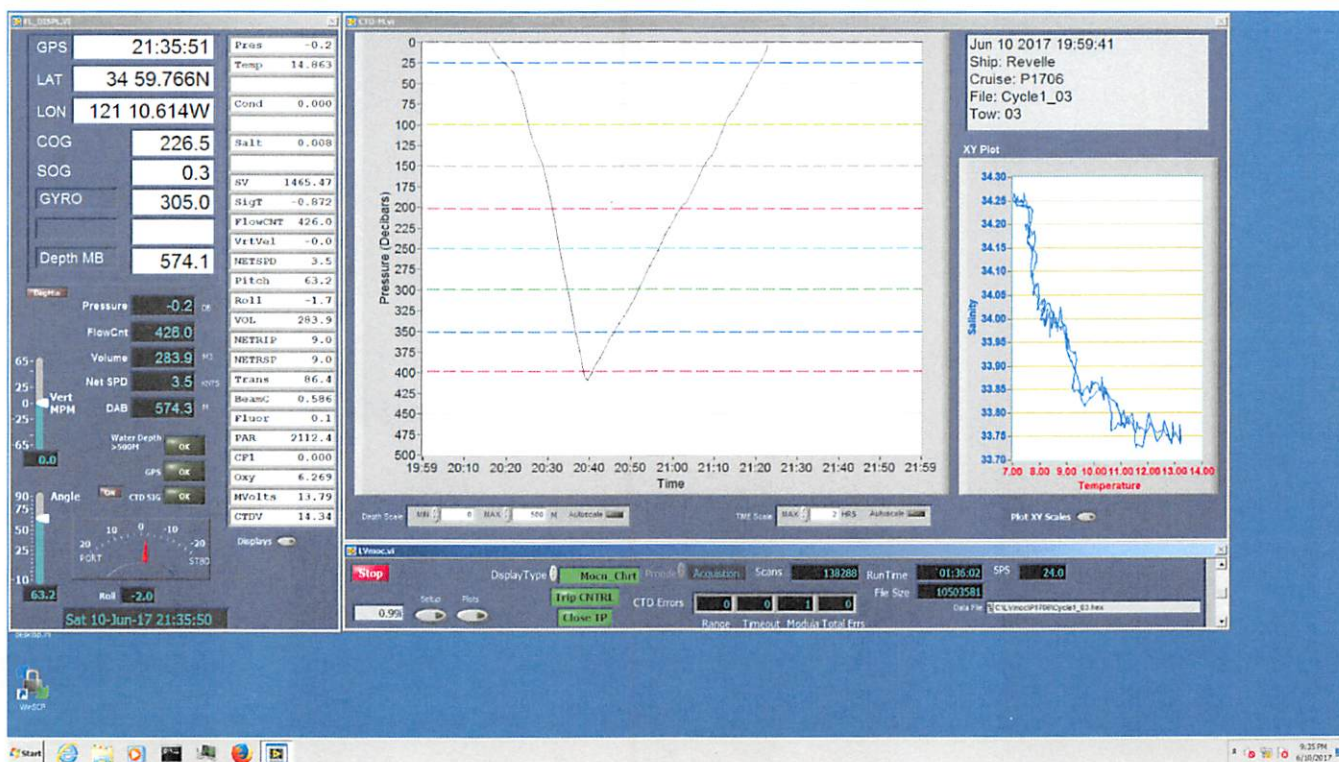
338 initial Fc

342

MOCNESS - Haul 3, CCE P1706

Cycle 1 (1314-1423, 10 June 2017)





TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170610 204040	398.9	29.1	680	4006.9
2			170610 204553	351.3	38.7	107	556.5
3			170610 205141	300.7	40.1	128	655.3
4			170610 205641	250.1	40.5	116	589.5
5				0.0	0.0	0	0.0
6			170610 210724	150.4	44.5	145	688.3
7			170610 211227	100.3	40.6	120	607.0
8			170610 211803	50.9	40.4	126	641.5
9			170610 212056	25.4	37.9	64	340.2

Trip Count Flow Cnts Flow Cnts 2 Motor Volts

Confirms VOL CTD Volts

Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

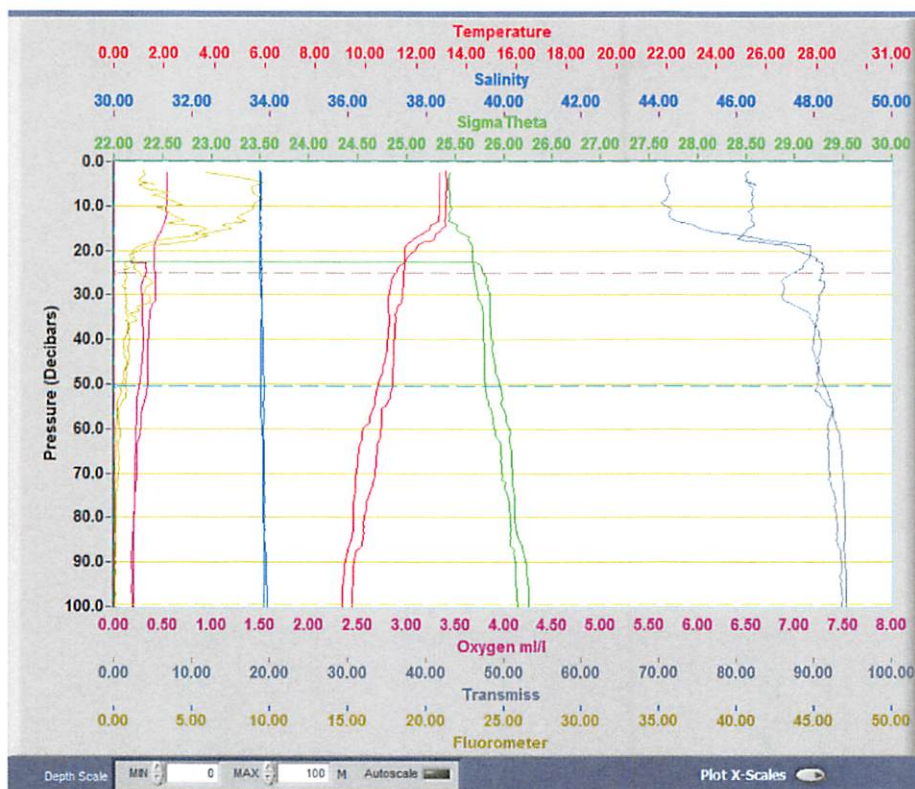
UNLOCK

Trip in Progress

Motor ON

Trip NET

Cycle 1 - 03



Jun 10 2017 19:59:41

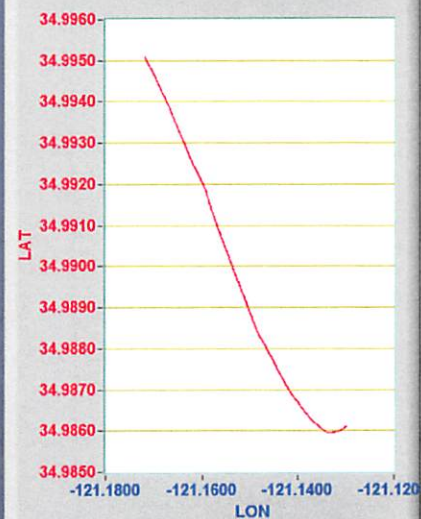
Ship: Reville

Cruise: P1706

File: Cycle1_03

Tow: 03

XY Plot



Cruise CCE-P1604 Date 10 June 2017 Haul # 4 Cycle # 1 Tow # 4

Wind Speed 22-24 (kts.) Direction 313 (°) Sea State 4-6 (ft.)

File Name: Processed Cycle 1-04 Raw _____

Start Time 22:43 (PDT) End Time 23:53 (PDT)

Lat 34° 56.04' N Lat 34° 56.47' N

Long 121° 09.04' W Long 121° 11.77' W

Pre-deployment checks:

☒ Flow Meter
☒ Net Response
☒ Stepping Motor
☒ Clean Optical Surface
☒ Transmissometer
☒ Fluorometer

Net Mesh 202 µm

Event deploy # 260 Event rec. # 261

Frame Size 1 m²

Bottom Depth 573 (m)

Console Operator BMW

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net response
0	22:45	34	404	2339	411	Ø	100%	5% Form.		95% EtOH	✓
1	23:15	42	86	428	399	351		5% Form.		95% EtOH	✓
2	23:18	47	111	512	351	297		5% Form.		95% EtOH	✓
3	23:23	43	147	717	297	251		5% Form.		95% EtOH	✓
4	23:29	45	110	522	251	202		5% Form.		95% EtOH	✓
5	23:33	44	172	829	202	151		5% Form.		95% EtOH	✓
6	23:40	41	116	580	151	100		5% Form.		95% EtOH	✓
7	23:44	43	106	520	100	51		5% Form.		95% EtOH	✓
8	23:49	42	54	269	51	24		5% Form.		95% EtOH	✓
9	23:51	41	48	227	24	Ø	✓	5% Form.		95% EtOH	✓
Closed	23:53										

At Depth Data

wire out 711 (m)

Time 23:13 (PDT)

Notes:

Surface Data

Pressure 2.9 (m)

Temp. 13.09 (°C)

Salinity 33.75 (‰)

O₂ 6.08 (ml/l)

Fluoresc. 4.9 (V)

Trans 0.860 (m)

Battery 14.32 (V)

411 m

6.83

34.64

0.49

0.1

0.237

14.33

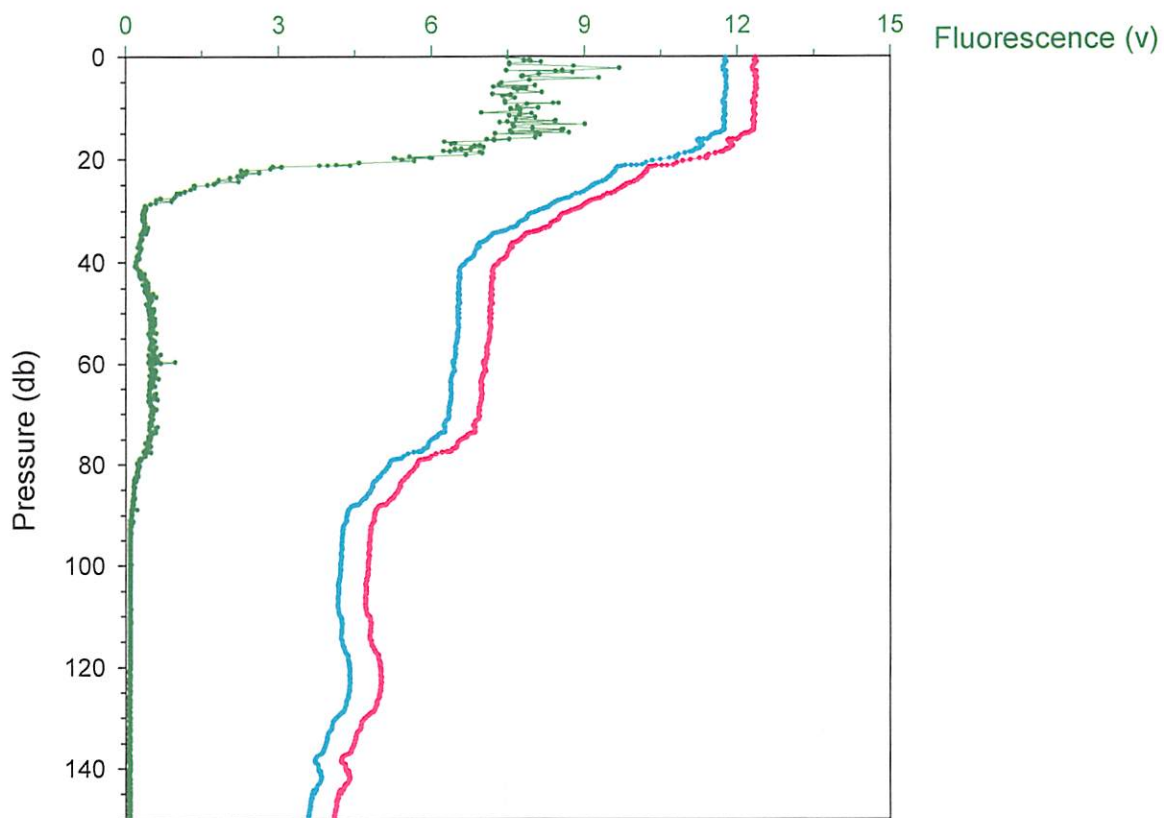
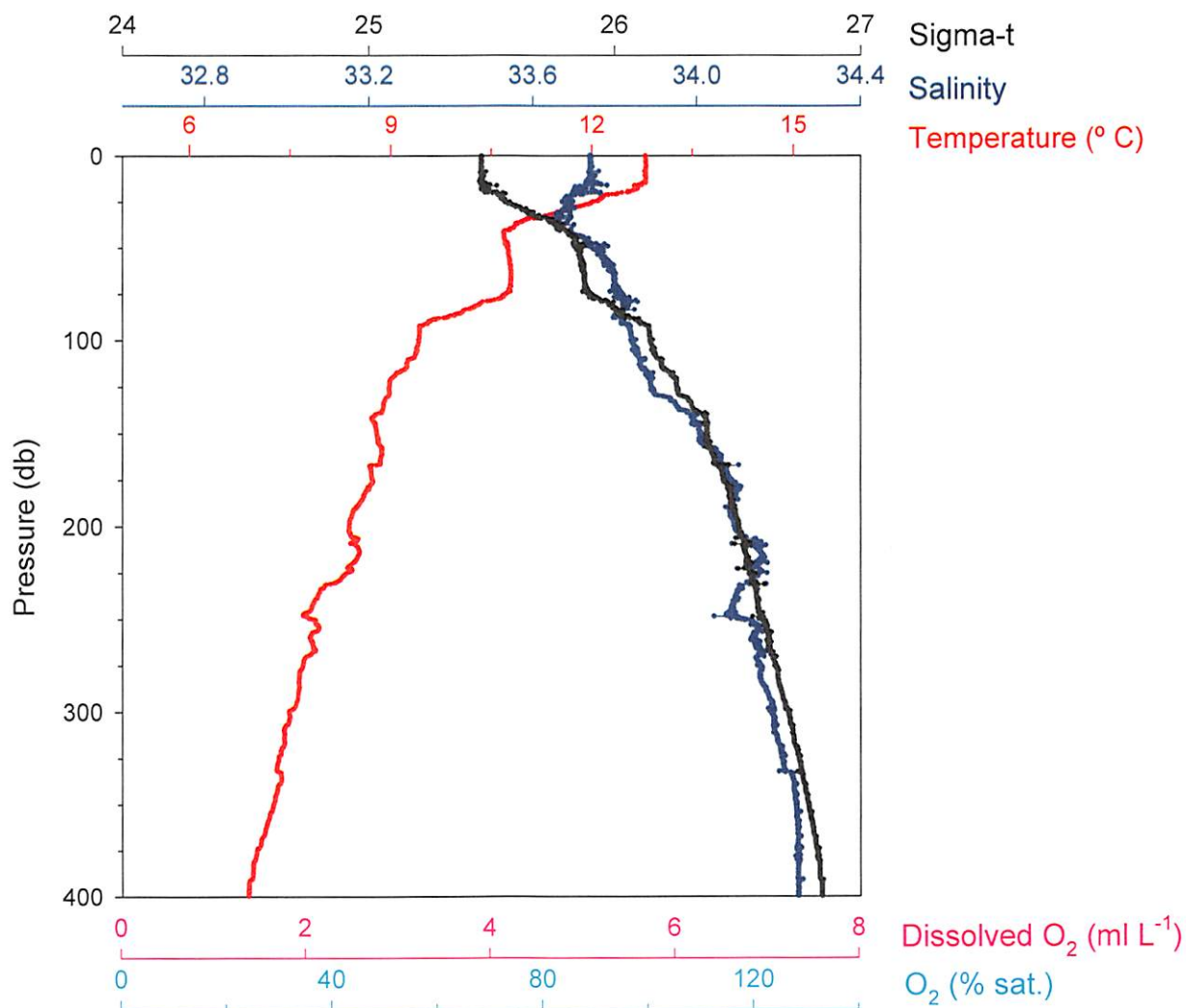
Net 0

3285.1
946.0 initial m³.
2339.1

572
168 FC
404

MOCNESS - Haul 4, CCE P1706

Cycle 1 (2243-2353, 10 June 2017)



TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170611 061502	398.9	33.8	572	3285.1
2			170611 061846	350.8	41.6	86	428.4
3			170611 062311	296.4	46.3	111	512.8
4			170611 062912	251.3	43.2	147	717.3
5			170611 063330	201.6	44.5	110	522.0
6			170611 064012	150.8	43.8	172	829.1
7			170611 064455	99.8	41.4	116	580.2
8			170611 064903	50.9	42.5	106	520.2
9			170611 065113	24.1	41.9	54	268.8

Trip Count Flow Cnts Flow Cnts 2 Motor Volts

Confirms VOL CTD Volts

Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

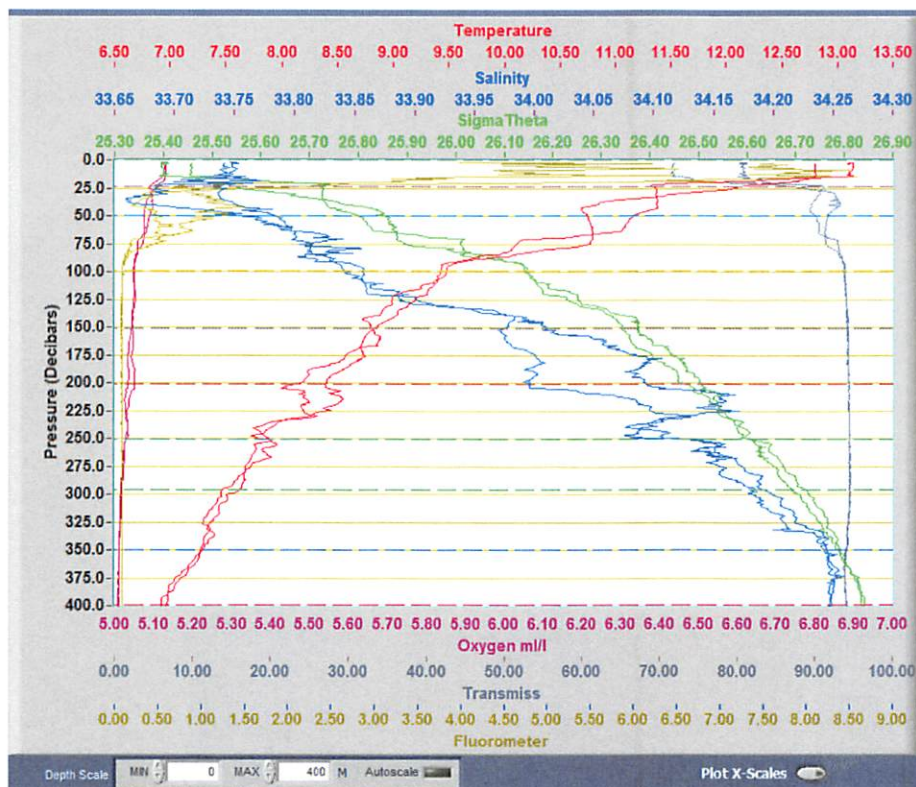
UNLOCK

Trip in Progress

Motor ON

Trip NET

Cycle 1-04



Jun 11 2017 05:29:21

Ship: Revella

Cruise: P1706

File: Cycle1_04

Tow: 04

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 13-14 June 2017 Haul # 5 Cycle # 2 Tow # 1Wind Speed 10-24 (kts.) Direction 336 (°) Sea State 8-10 (ft.)File Name: Processed Cycle 2-01 Raw _____Start Time 23:02 (PDT) End Time 00:15 (PDT)Lat 34° 42.448' (34.70747) Lat 34° 12.002' N (34.21033)Long 121° 51.423' (121.8591) Long 121° 54.12' W (121.902)Event deploy # 326 Event rec. # 327Bottom Depth 3930 (m) Console Operator Bmw

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mFrame Size 1 m²

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	23:14	29	155	890.3	420	0	X	5% Form.	X	95% EtOH	X
1	23:37	32	61	343	398	350	X	5% Form.	X	95% EtOH	X
2	23:41	34	84	465	350	298	X	5% Form.	X	95% EtOH	X
3	23:45	36	93	504	298	251	X	5% Form.	X	95% EtOH	X
4	23:50	40	78	396	251	260	X	5% Form.	X	95% EtOH	X
5	23:53	50	83	356	200	151	X	5% Form.	X	95% EtOH	X
6	23:57	51	146	616	151	98	X	5% Form.	X	95% EtOH	X
7	00:04	49	125	557	98	51	X	5% Form.	X	95% EtOH	X
8	00:09	45	60	2739	51	26	X	5% Form.	X	95% EtOH	X
9	00:12	48	52	307	26	0	X	5% Form.	X	95% EtOH	X
Closed	00:15										

At Depth Data

wire out 515 (m)Time 23:36 (PDT)

Surface Data

Pressure 0 (m) 420mTemp. 12.82 (°C) 6.93Salinity 33.63 (‰) 34.25O₂ 5.53 (ml/l) 0.501Fluoresc. 6.0 (V) 0.1Beam Trans 0.912 (m) 0.225CTDV Battery 14.31 (V) 14.32

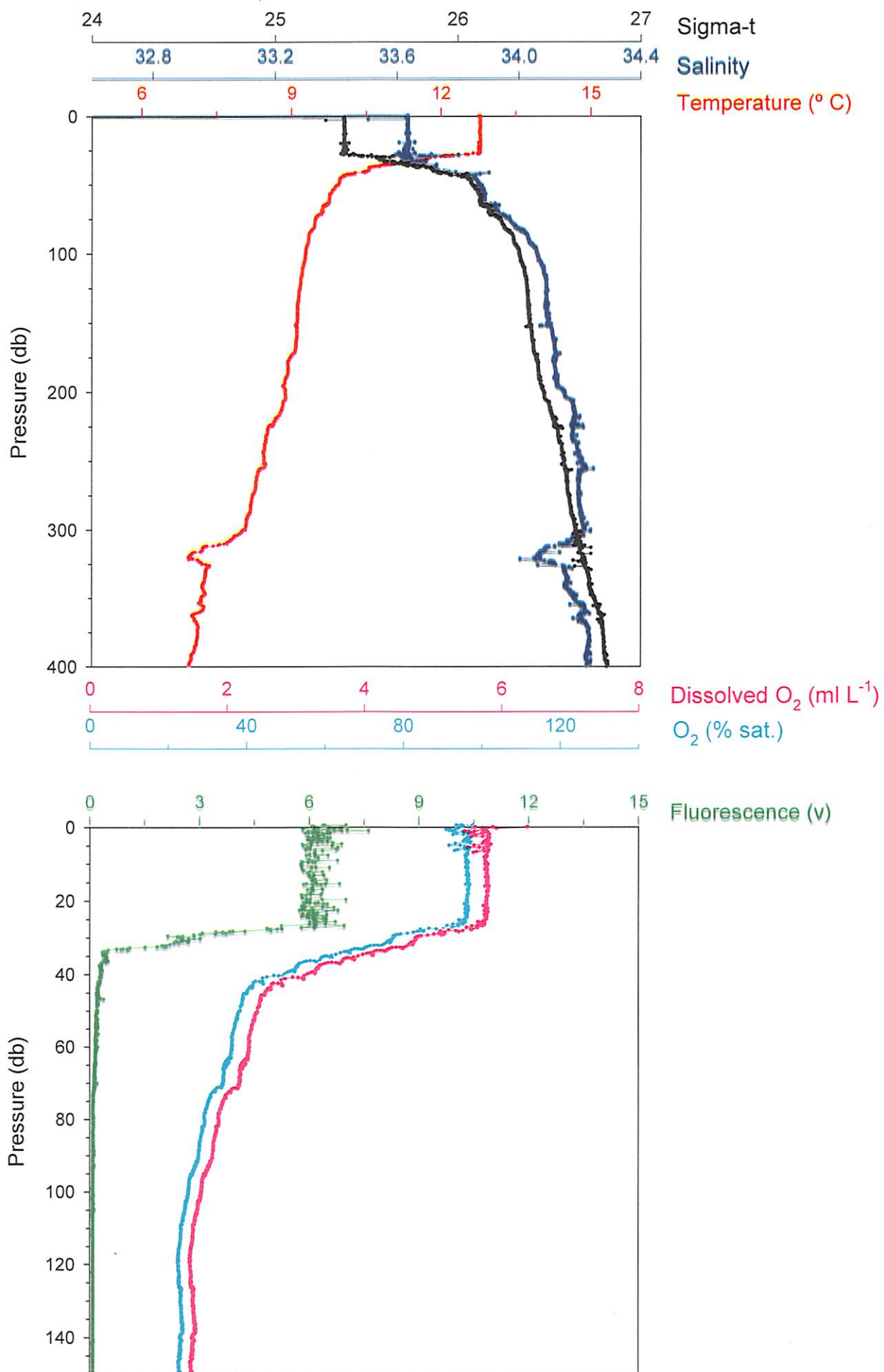
Notes: _____

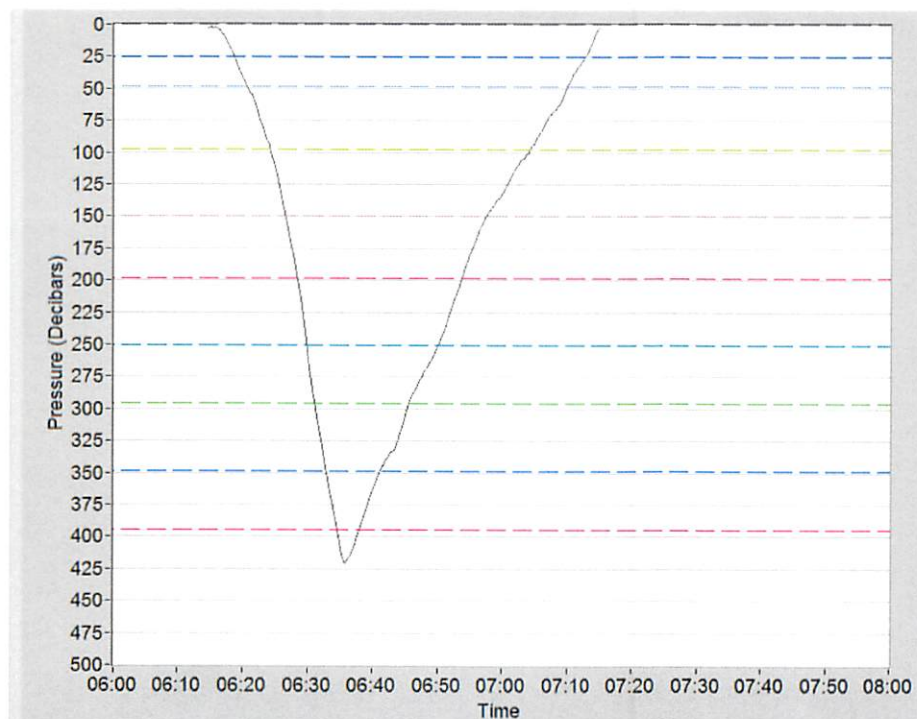
Net 0

1753.7
863.4 initial m³
890.5

295
140 Fc
155

MOCNESS - Haul 5, CCE P1706
Cycle 2 (2302-0015, 13-14 June 2017)





Jun 13 2017 19:58:54

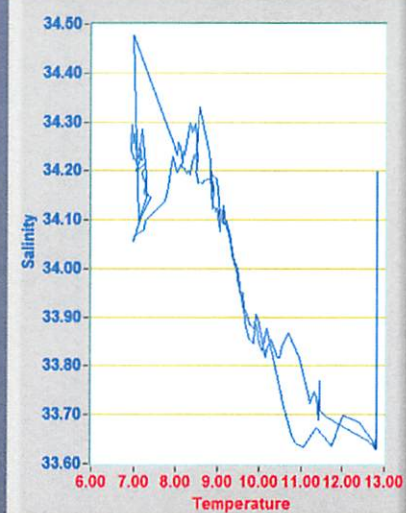
Ship: Revelle

Cruise: P1706

File: Cycle2_01

Tow: 01

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale

TIME Scale MAX 12 HRS Autoscale

Plot XY Scales

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170614 063748	397.5	29.3	295	1753.7
2			170614 064100	349.8	32.4	61	343.0
3			170614 064529	298.4	34.3	84	465.1
4			170614 065003	250.9	36.3	93	504.3
5			170614 065341	200.2	40.3	78	395.7
6			170614 065724	151.1	50.0	83	355.9
7			170614 070413	97.9	50.8	146	615.7
8			170614 070948	50.6	48.5	125	556.9
9			170614 071235	26.0	44.5	60	2738.8

Trip Count Flow Cnts Flow Cnts 2 Motor Volts

Confirms VOL CTD Volts

Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

UNLOCK

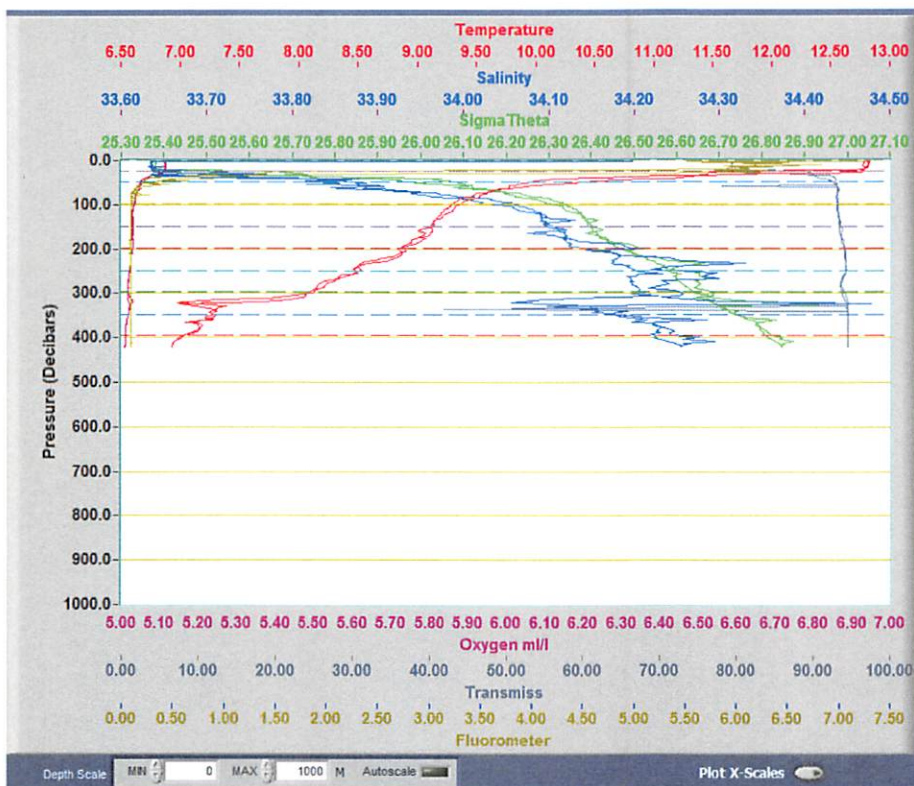
Trip in Progress

Motor ON

Trip NET

STOP

Cycle 2-01



Jun 13 2017 19:58:54

Ship: Revelle

Cruise: P1706

File: Cycle2_01

Tow: 01

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 14 June 2017 Haul # 6 Cycle # 2 Tow # 2Wind Speed 18-20 (kts.) Direction 334 (°) Sea State 5-6 (ft.)File Name: Processed Cycle 2-02 Raw _____Start Time 13:10 (PDT) End Time 14:19 (PDT)Lat 34° 43.5 Lat 34° 43.88Long 122° 00.5 Long 122° 03.51Event deploy # 344Event rec. # 345Net Mesh 202 μ mFrame Size 1 m²Bottom Depth 4037 (m)Console Operator BMW, MDO

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	13:08	37	365	1943	419	0	X	5% Form.	X	95% EtOH	None
1	13:39	38	127	670	399	345	X	5% Form.	X	95% EtOH	None
2	13:45	41	98	506	345	301	X	5% Form.	X	95% EtOH	✓
3	13:50	39	105	543	301	251	X	5% Form.	X	95% EtOH	✓
4	13:55	34	135	745	251	198	X	5% Form.	X	95% EtOH	None
5	14:01	35	68	378	198	150	X	5% Form.	X	95% EtOH	✓
6	14:04	31	110	637	150	100	X	5% Form.	X	95% EtOH	✓
7	14:10	39	68	357	100	51	X	5% Form.	X	95% EtOH	✓
8	14:14	40	53	272	51	25	X	5% Form.	X	95% EtOH	✓
9	14:16	42	50	305	25	0	X	5% Form.	X	95% EtOH	
Closed	14:19										

Manual confirmed manual

Manual confirmed

At Depth Data

wire out 630 (m)Time 13:36 (PDT)

Notes:

Strange T and S decline 225-275 m.; inversion

Surface Data

Pressure 1.0 (m)Temp. 12.94 (°C)Salinity 33.63 (‰)O₂ 7.22 (ml/l)Fluoresc. 1.6 (V)Trans 0.948 (m)CTDV Battery 14.33 (v)

419 Net 0 Codend was cracked

6.20

34.17

0.619

0.1

0.220

14.33

Net 0:

3484.2

1581.3 initial m³

1902.9

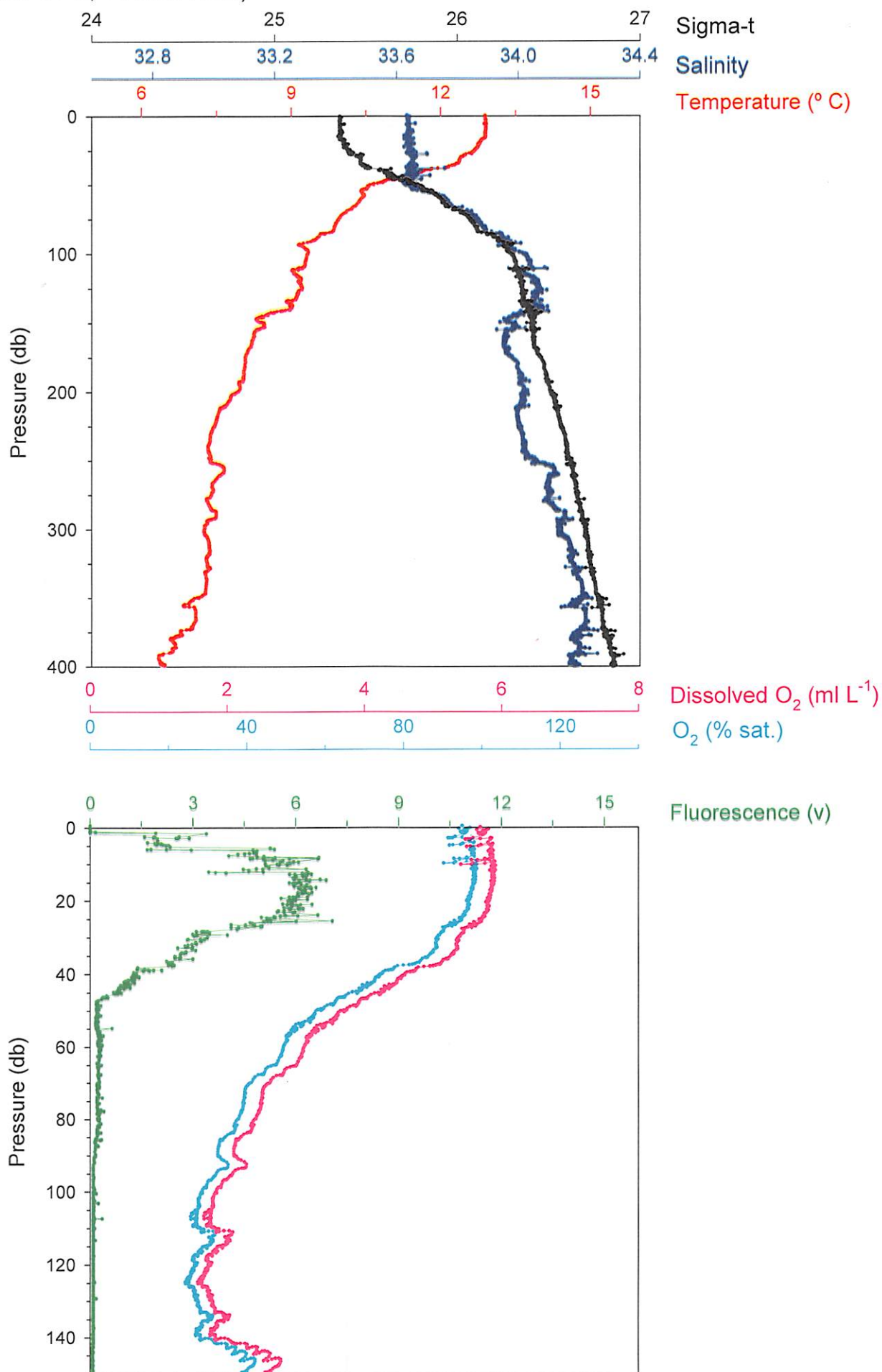
646

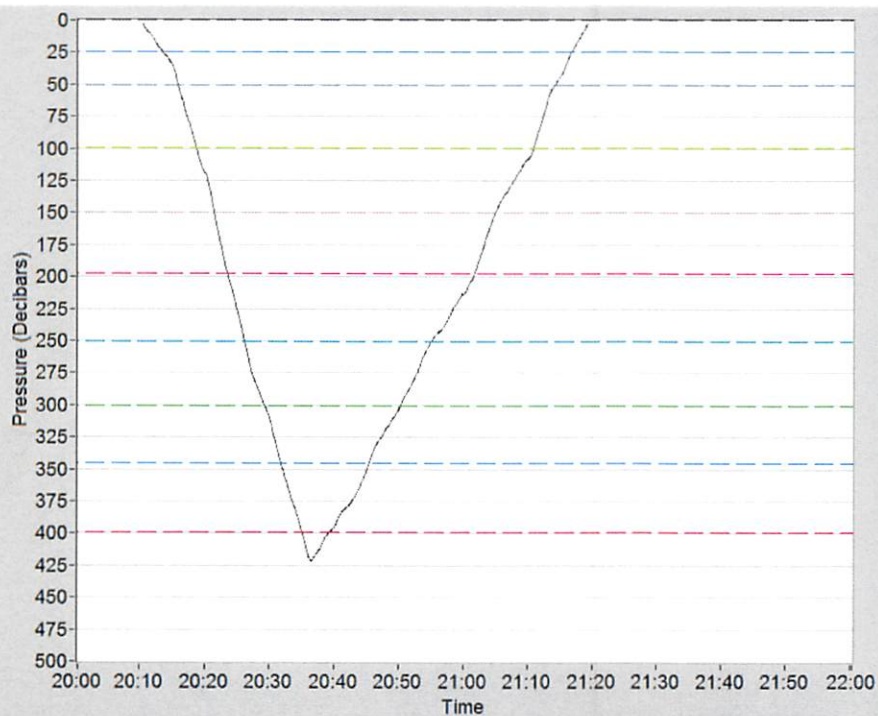
281 FC

365

MOCNESS - Haul 6, CCE P1706

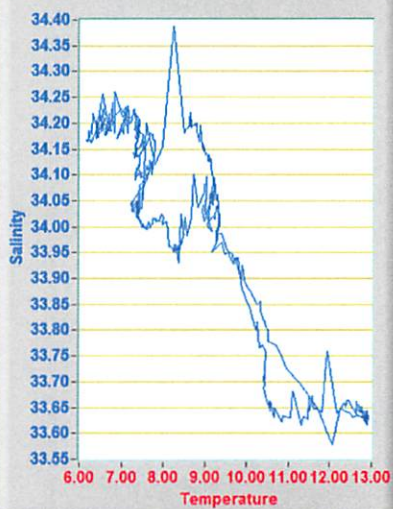
Cycle 2 (1310-1419, 14 June 2017)





Jun 14 2017 20:00:14
Ship: Revelle
Cruise: P1706
File: Cycle2_02
Tow: 02

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale

TIME Scale MAX 2 HRS Autoscale

Plot XY Scales

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1
2
3
4
5
6
7
8
9

		170614 203914	399.0	36.8	646	3484.3
		170614 204524	345.4	37.5	127	670.1
		170614 205009	301.4	40.8	98	506.0
		170614 205501	250.5	39.0	105	542.6
		170614 210143	197.9	33.8	135	745.3
		170614 210458	149.9	34.6	68	375.7
		170614 211049	100.0	31.1	110	636.9
		170614 211404	51.3	38.7	68	357.1
		170614 211636	25.4	39.5	53	272.0

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

LOCK

Trip in Progress

Motor ON

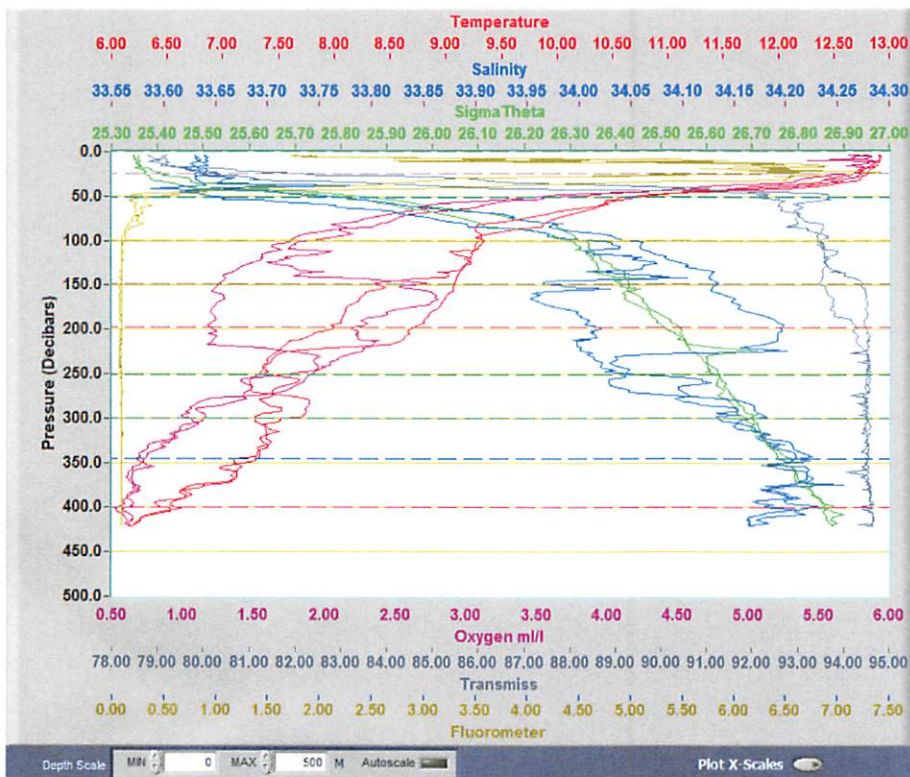
Trip NET

Trip Count 9 Flow Cnts 161 Flow Cnts 2 0 Motor Volts 13.630

Confirms 9 VOL 305.9 CTD Volts 14.332

Modem Data 161,0,9,9,0,1262,1327,0,0

Cycle 2-02



Jun 14 2017 20:00:14
Ship: Revelle
Cruise: P1706
File: Cycle2_02
Tow: 02

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 14¹⁵ June 2017 Haul # 7 Cycle # 2 Tow # 3Wind Speed 20-22(kts.) Direction 332 (°) Sea State 6-7(ft.)File Name: Processed Cycle 2-03 Raw _____Start Time 22:47 (PDT) End Time 00:10 (PDT)Lat 34° 42.36' Lat 34° 43.48' NLong 122° 06.12' Long 122° 09.40' WEvent deploy # 350Event rec. # 351Net Mesh 202 µmFrame Size 1 m²Bottom Depth 4,143 (m)Console Operator BMW, MDO

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

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	22:47	34	654	3504.2	426	0	100%	5% Form.		95% EtOH	✓
1	23:34	38	73	384	398	349		5% Form.		95% EtOH	✓
2	23:37	44	69	338	349	302		5% Form.		95% EtOH	✓
3	23:40	41	156	790	302	249		5% Form.		95% EtOH	✓
4	23:47	40	79	406	249	201		5% Form.		95% EtOH	✓
5	23:51	45	68	324	201	152		5% Form.		95% EtOH	✓
6	23:54	47	120	550	152	99		5% Form.		95% EtOH	✓
7	23:59	51	91	385	99	51		5% Form.		95% EtOH	✓
8	00:03	47	69	319	51	26		5% Form.		95% EtOH	✓
9	00:06	34	64	388	26	0	✓	5% Form.		95% EtOH	
Closed	00:10										

At Depth Data

wire out 652 (m)Time 23:32 (PDT)

Notes:

Card filed down net response indicator prior to this MOCNESS.

Surface Data

Pressure 2.0 (m)Temp. 12.90 (°C)Salinity 33.61 (‰)O₂ 5.60 (ml/l)Fluoresc. 5.37 (V)Trans 0.88 (m)CTDV Battery 14.31 (v)~23:10 - Net 0: Stopped winch @ 353 m, 560 m. Level windnot working correctly.23:28 - started winch again.had ship slow to ~ 0.8 speed through the waterduring the winch trouble on the towhit shear layer during ascent
at ~260m, ~140m, ~25m

Net 0:

8
4490.1925.9 initial m³

3564.2

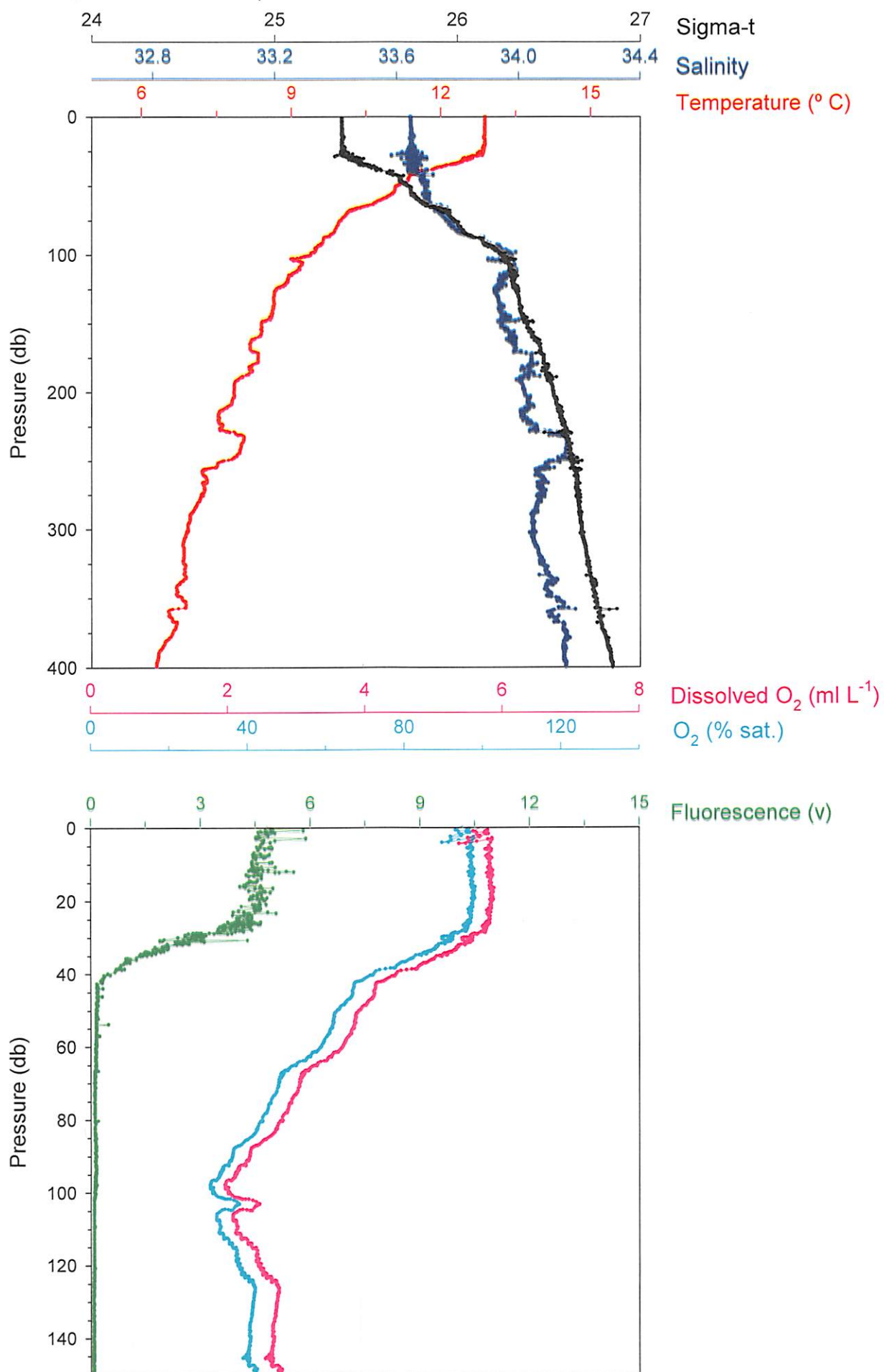
804

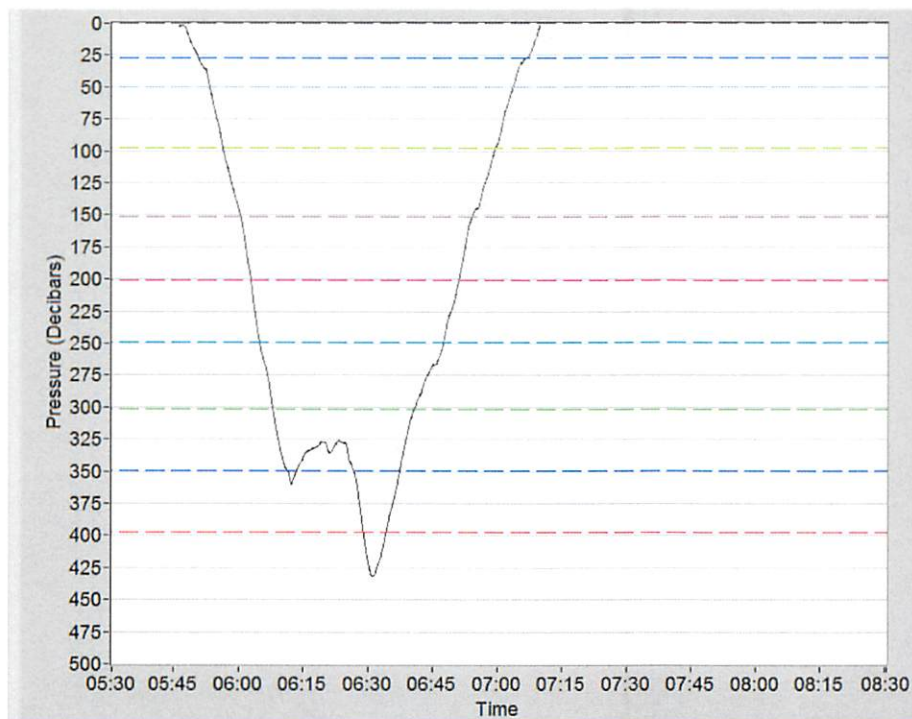
150 FC

654

P 426 m
t 6.25°C
S 34.18
O₂ 0.583
Fl 0.1
trans 0.223
CTDV 14.33

MOCNESS - Haul 7, CCE P1706
Cycle 2 (2247-0010, 14-15 June 2017)





Jun 15 2017 05:30:25

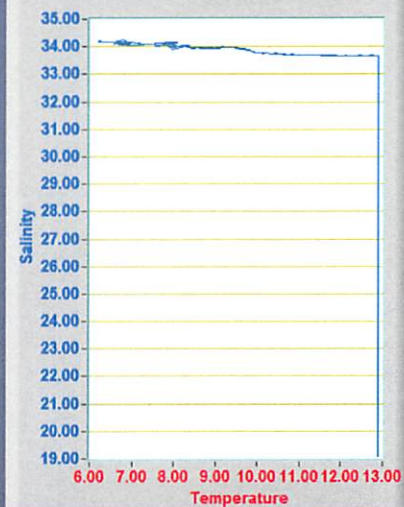
Ship: Revelle

Cruise: P1706

File: Cycle2_03

Tow: 03

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale TIME Scale MAX 3 HRS Autoscale

Plot XY Scales

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170615 063407	398.3	33.7	804	4488.2
2			170615 063724	349.4	37.7	73	384.2
3			170615 064036	302.2	44.2	69	338.2
4			170615 064733	249.4	40.5	156	790.4
5			170615 065103	200.6	39.7	79	405.6
6			170615 065402	152.0	44.5	68	324.1
7			170615 065920	99.1	47.0	120	550.3
8			170615 070328	50.5	50.6	91	384.7
9			170615 070642	26.4	46.6	69	317.4

Trip Count Flow Cnts Flow Cnts 2 Motor Volts

Confirms VOL CTD Volts

Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

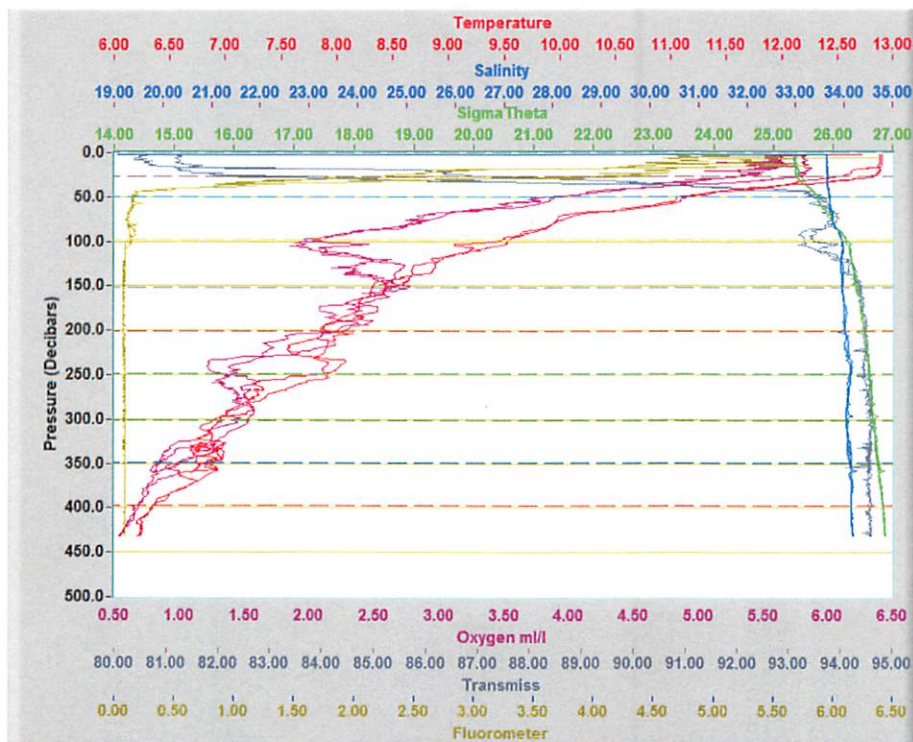
UNLOCK

Trip in Progress

Motor ON

Trip NET

Cycle2-03



Jun 15 2017 05:30:25

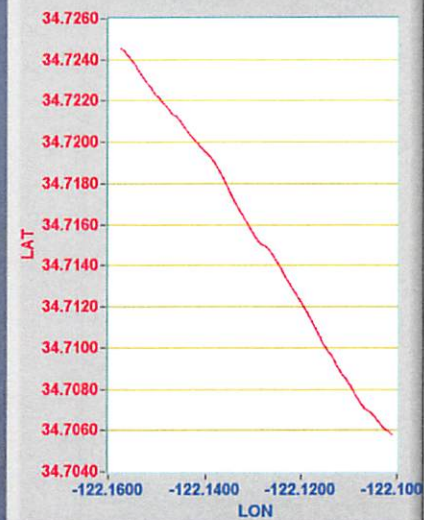
Ship: Revelle

Cruise: P1706

File: Cycle2_03

Tow: 03

XY Plot



MOCNESS Data Sheet

Cruise P1766 Date 15 June 2017 Haul # 8 Cycle # 2 Tow # 4Wind Speed 23 (kts.) Direction 326.8 (°) Sea State 10 (ft.)File Name: Processed Cycle2-04 Raw _____Start Time 13:27 (PDT) End Time 1509 (PDT)Lat 34° 46.64 ^{34.7773} Lat 34° 42.99 ^{34.7165} NLong 122 11.60 ^{122.1933} Long 122° 15.41 ^{122.2568} WEvent deploy # 367 Event rec. # 368Bottom Depth 4021 (m) Console Operator SM, BMW

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mFrame Size 1 m²

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	13:37	40	800	3963	462	0	100	5% Form.		95% EtOH	✓
1	14:32	42	89	4427	400	351		5% Form.		95% EtOH	✓
2	14:36	46	110	532.1	351	299		5% Form.		95% EtOH	✓
3	14:41	42	103	517.0	299	251		5% Form.		95% EtOH	✓
4	14:46	41	96	479.2	251	200		5% Form.		95% EtOH	✓
5	14:50	45	96	457.8	200	151		5% Form.		95% EtOH	✓
6	14:54	45	102	483	151	101		5% Form.		95% EtOH	✓
7	14:59	43	130	636	101	52		5% Form.		95% EtOH	✓
8	15:05	39	55	285	52	25		5% Form.		95% EtOH	✓
9	15:07	37	45	231	25	0		5% Form.		95% EtOH	✓
Closed	15:09										

400
350
300
250
200
150
100
50
25

At Depth Data

wire out 1800 (m)Time 14:22 (PDT)

Surface Data

Pressure 0 (m)Temp. 12.98 (°C)Salinity 33.64 (‰)O₂ 5.76 (ml/l)Fluoresc. 0.9 (V)Trans 0.779 (m)Battery 14.31 (V)

beam CTDV

Notes: deployment paused at 562 mwo/378m depth 1407-

to check level wind issue

Began paying out again 14:10

462.3 Stopped again for level wind at 14:16-14:18
6.36 668 mwo 420m depth
34.29 it rose to 395 before could start with
0.333 again taking down to 500 mwo to
0.1 reset level wind hit 462.3m depth

Net 8 was a little up a 6-10"
open when we hit the surface

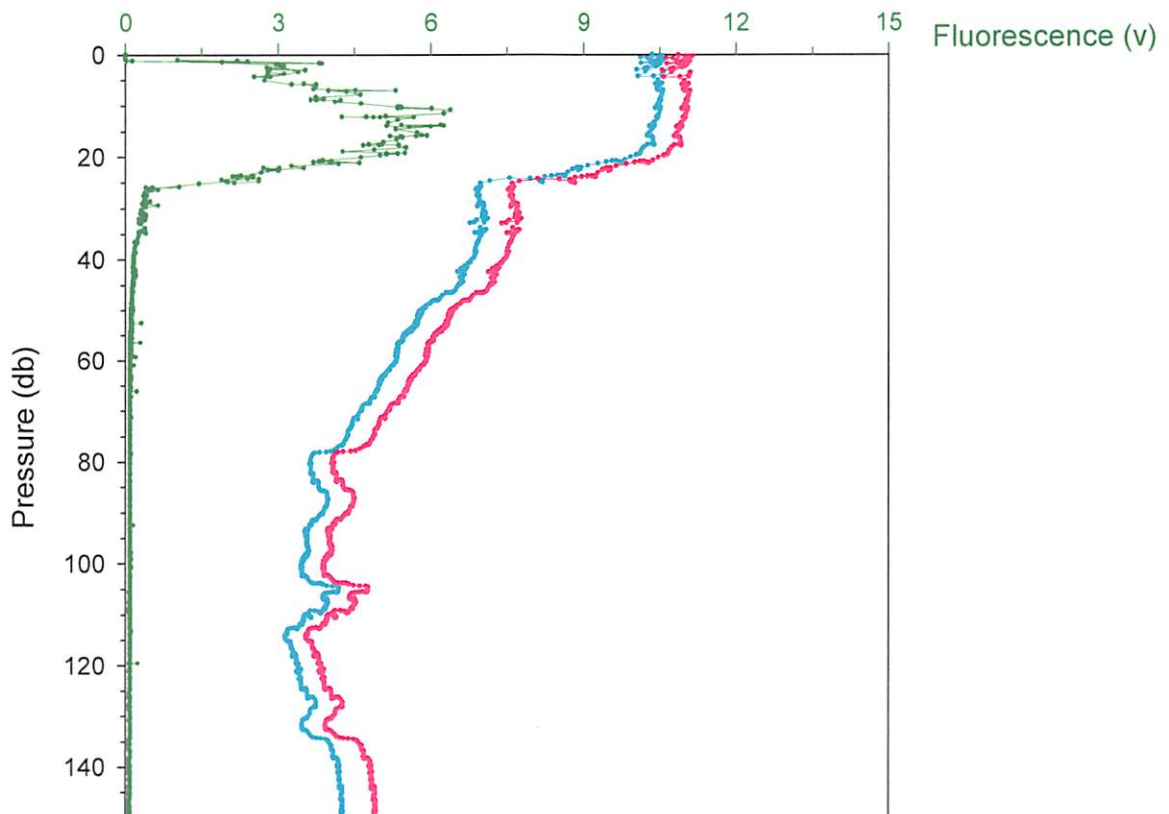
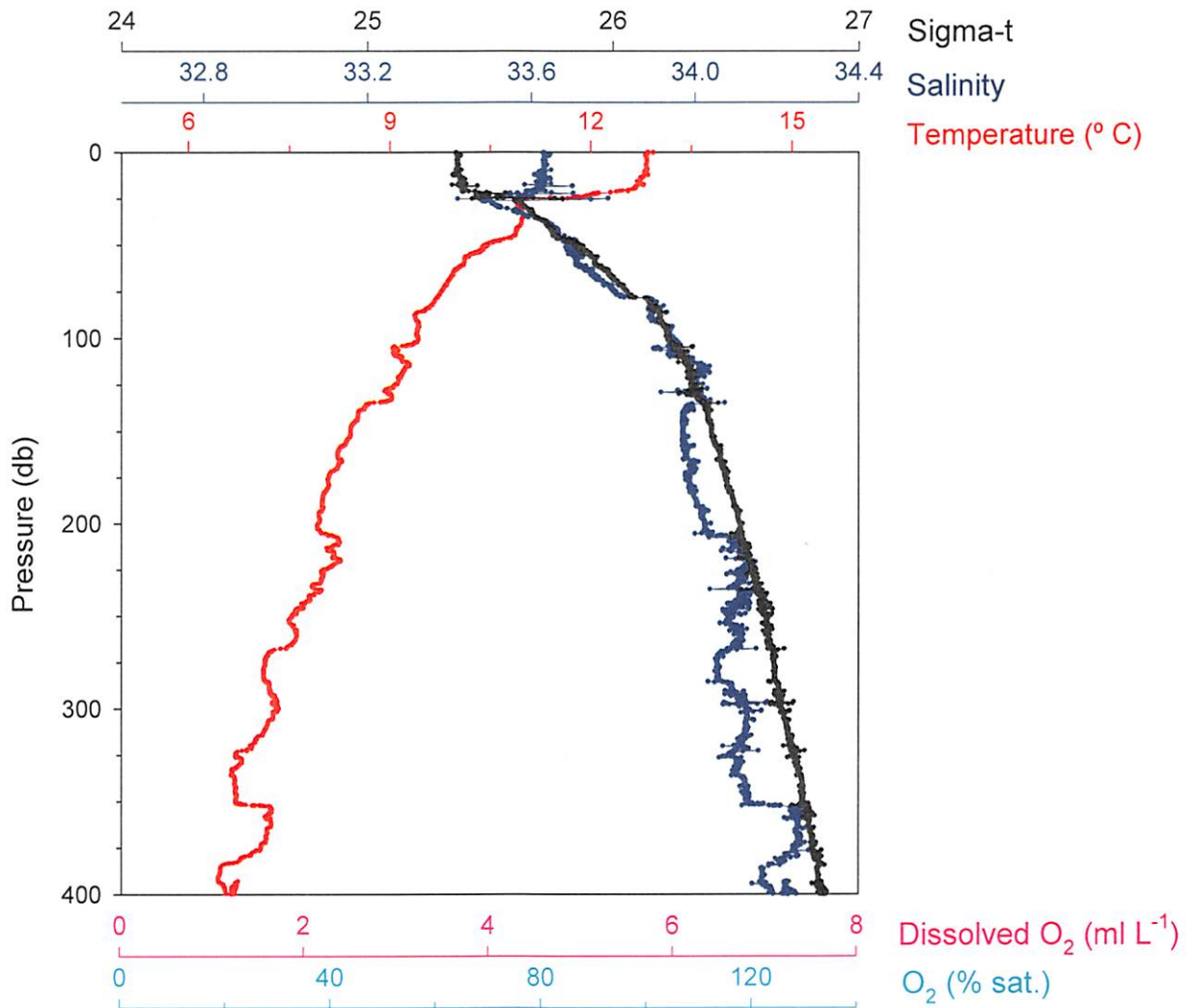
Net 0:

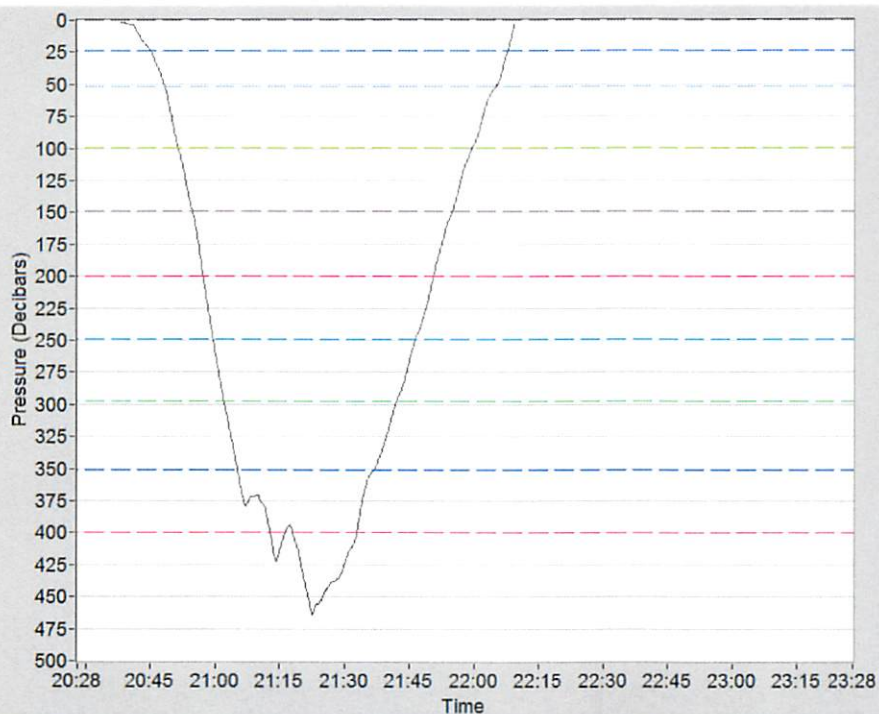
455 28.1
1565.3 initial m3
3962.8

1077
271 FC
806

MOCNESS - Haul 8, CCE P1706

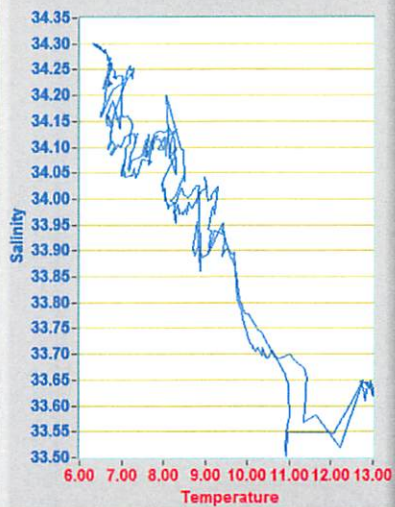
Cycle 2 (1327-1509, 15 June 2017)





Jun 15 2017 20:27:36
Ship: Revelle
Cruise: P1706
File: Cycle2_04
Tow: 04

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale TIME Scale MAX 3 HRS Autoscale

Plot XY Scales

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170615 213249	399.7	40.0	1077	5528.9
2			170615 213638	351.0	42.1	89	442.7
3			170615 214142	299.3	45.7	110	532.1
4			170615 214612	250.7	41.5	103	515.0
5			170615 215031	200.0	41.4	96	479.2
6			170615 215447	150.5	45.0	96	457.8
7			170615 215918	100.7	44.7	102	482.9
8			170615 220501	51.8	42.8	130	635.6
9			170615 220732	24.8	38.9	55	284.7

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

UNLOCK

Trip in Progress

Motor ON

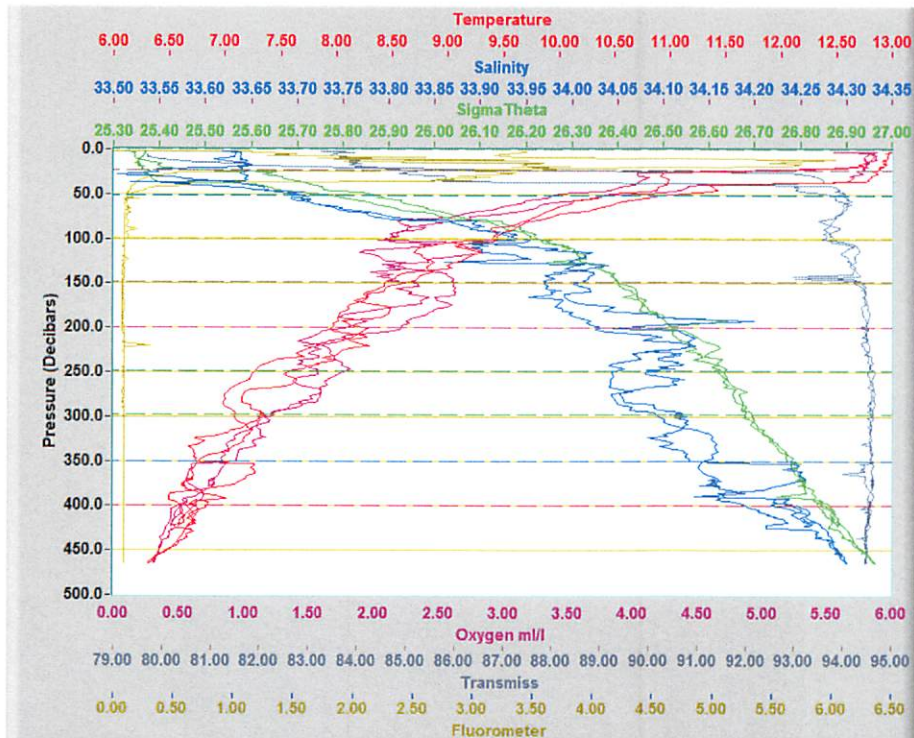
Trip NET

Trip Count 9 Flow Cnts 318 Flow Cnts 2 0 Motor Volts 13.727

Confirms 9 VOL 244.9 CTD Volts 14.332

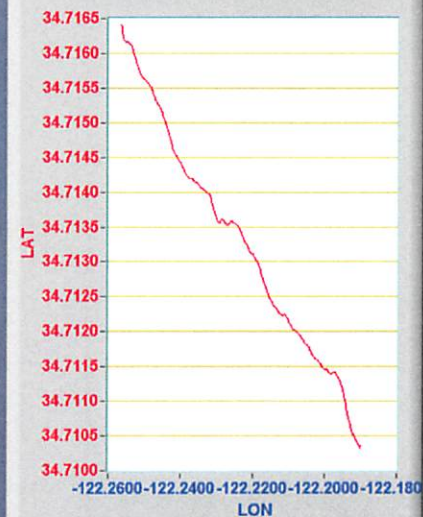
Modem Data 318,0,9,9,0,1271,1327,0,0

Cycle 2-04



Jun 15 2017 20:27:36
 Ship: Revelle
 Cruise: P1706
 File: Cycle2_04
 Tow: 04

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale

Plot X-Scales

Plot XY Scales

MOCNESS Data Sheet

Cruise P1706 Date 19 June 2017 Haul # 9 Cycle # 3 Tow # 1Wind Speed 14-16 (kts.) Direction 320 (°) Sea State 3-4 (ft.)
100% DVFile Name: Processed Cide3-01 Raw _____Start Time 1309 (PDT) End Time 14:21 (PDT)Lat 34° 14.685 Lat 34° 14.821
34.2448 34.2470
123.13698 123.1759Long 123° 08.219 Long 123° 10.553Event deploy # 493 Event rec. # 494Bottom Depth 4,301 (m) Console Operator SM, MDO, BMW

Pre-deployment checks:

☒ Flow Meter
☒ Stepping Motor
☒ Net Response
☒ Clean Optical Surface
☒ Transmissometer
☒ Fluorometer

Net Mesh 202 μ mFrame Size 1 m²

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	1309	28.4	289	1787	436	0	50	5% Form.	50	95% EtOH	✓
1	1333	29.4	49	284.0	399	350		5% Form.		95% EtOH	✓
2	1336	35.2	98	532.1	350	300.8		5% Form.		95% EtOH	✓
3	1341	39.0	111	591	300.8	250.1		5% Form.		95% EtOH	✓
4	1347	41.3	149	752.5	250.1	201.2		5% Form.		95% EtOH	✓
5	1354	41.4	158	803.7	201.2	149.7		5% Form.		95% EtOH	✓
6	1401	44.8	116	548.9	149.7	101.4		5% Form.		95% EtOH	✓
7	1406	38.5	155	842.6	101.4	47.8		5% Form.		95% EtOH	✓
8	1413	46.3	49	230.4	47.8	25.6		5% Form.		95% EtOH	✓
9	1415	43.2	69	285	25.6	0		5% Form.		95% EtOH	✓
Closed	14:21										

At Depth Data

wire out 531 (m)Time 1330 (PDT)

Surface Data

Pressure 0.9 (m)Temp. 15.74 (°C)Salinity 33.12 (‰)O₂ 5.50 (ml/l)Fluoresc. 0.80 (V)Trans 0.33 (/m)Battery 14.31 (v)

Notes: _____

CTDV

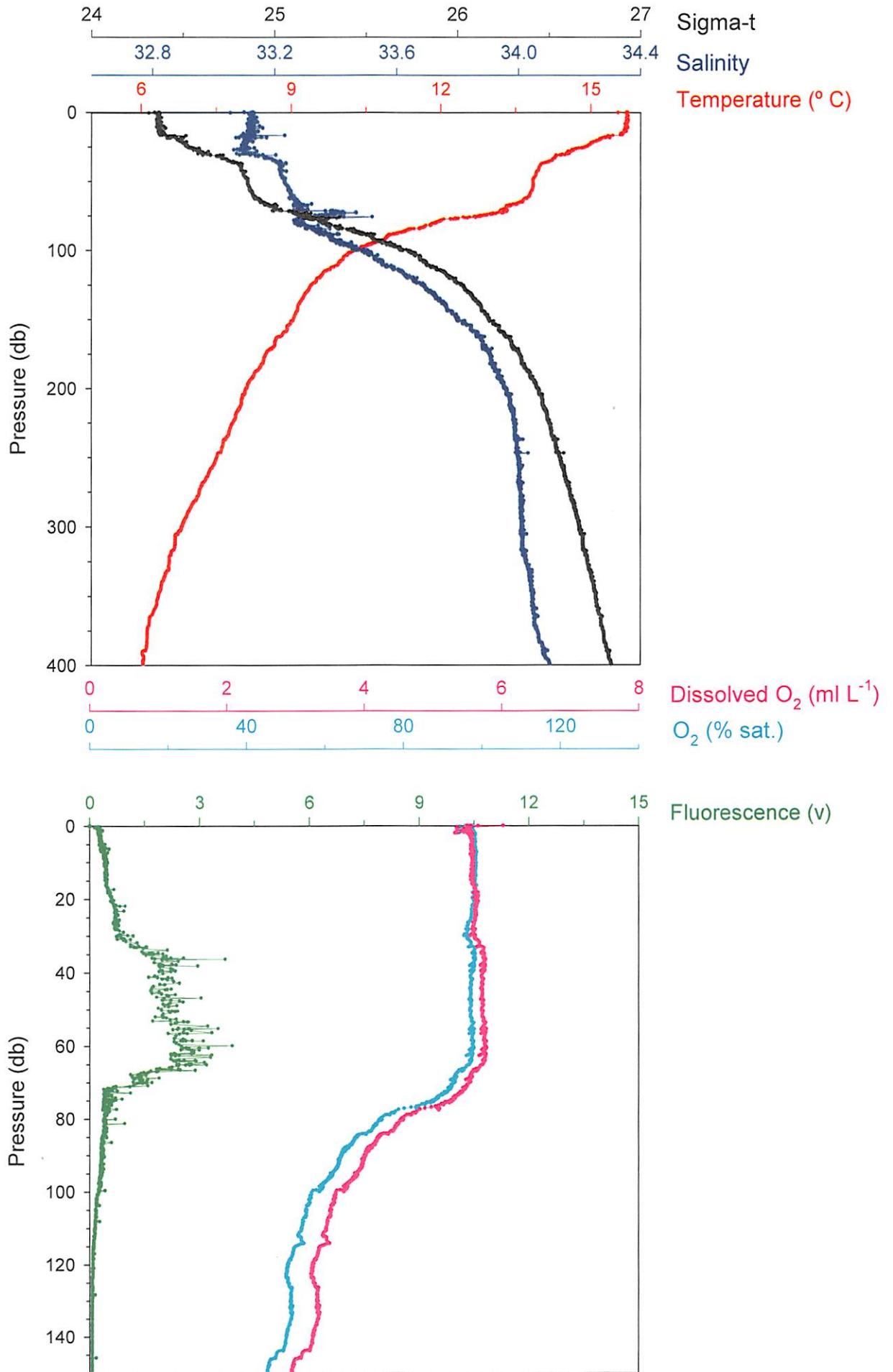
Net 0:

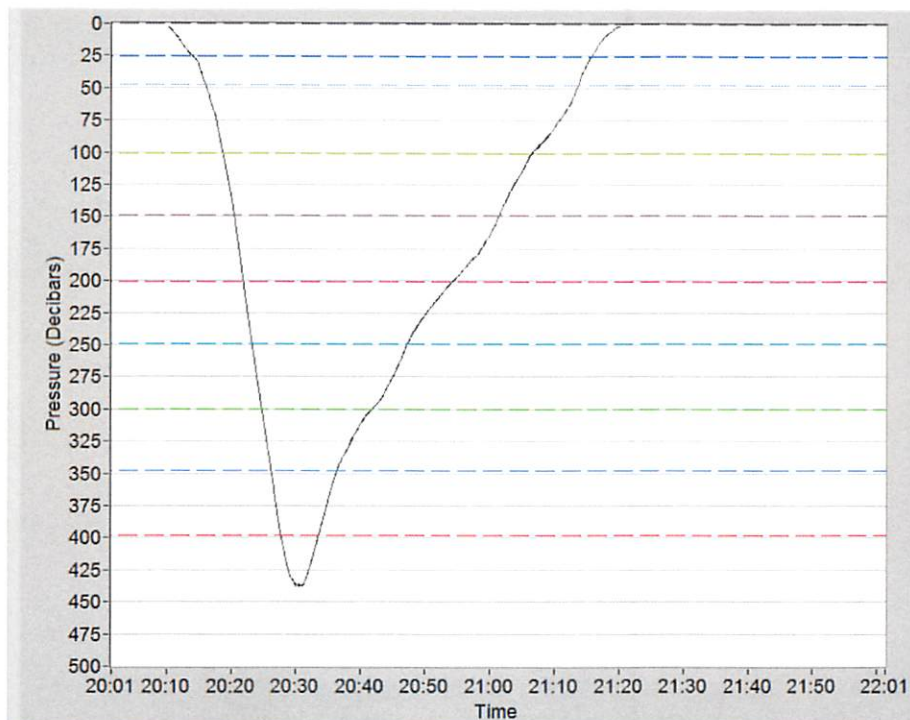
12
 2193.0
 315.7 initial m³
 1787.3

13
 2848
 59 FC
 289

MOCNESS - Haul 9, CCE P1706

Cycle 3 (1309-1421, 19 June 2017)





Depth Scale MIN 0 MAX 500 M Autoscale TIME Scale MAX 2 HRS Autoscale

Jun 19 2017 20:01:12

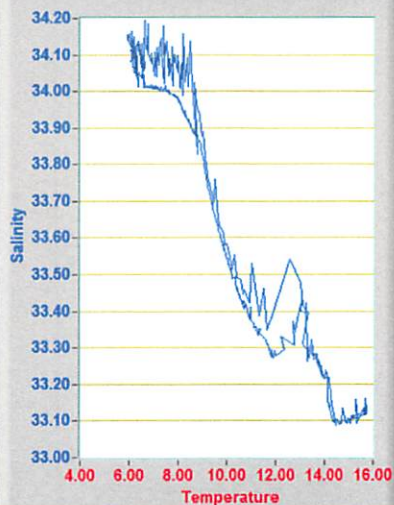
Ship: Revelle

Cruise: P1706

File: Cycle3_01

Tow: 01

XY Plot



Plot XY Scales

TRIP CONTROL

	Trip RSP	Date	Time	Pres	Net Angle	Flow Cnts	Volume
1		170619	203332	399.0	28.4	348	2100.6
2		170619	203615	350.0	29.4	49	284.0
3		170619	204137	300.8	35.2	98	532.1
4		170619	204711	250.1	39.0	111	588.7
5		170619	205403	201.2	41.3	149	752.5
6		170619	210124	149.7	41.4	158	803.7
7		170619	210615	101.4	44.8	116	548.9
8		170619	211326	47.8	38.5	155	842.6
9		170619	211529	25.6	46.3	49	230.4

Trip Count Flow Cnts Flow Cnts 2 Motor Volts
 Confirms VOL CTD Volts
 Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

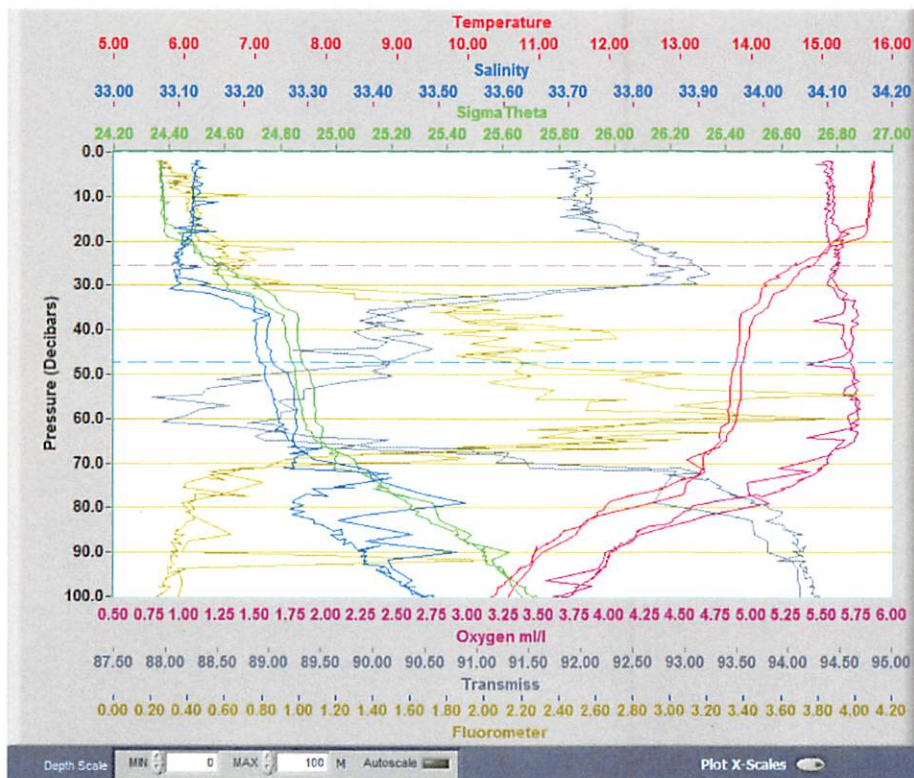
LOCK

Trip in Progress

Motor ON

Trip NET

Cycle 3-01



Jun 19 2017 20:01:12

Ship: Revelle

Cruise: P1706

File: Cycle3_01

Tow: 01

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 19-20 June 2017 Haul # 10 Cycle # 3 Tow # 2Wind Speed 8.20 (kts.) Direction 335 (°) Sea State 4-6 (ft.)File Name: Processed Cycle 3-02 Raw _____Start Time 23:06 (PDT) End Time 00:11 (PDT)Lat 34° 12.135' N Lat 34° 12.341' NLong 123° 06.800' W Long 123° 08.73' WEvent deploy # 508 Event rec. # 509Bottom Depth 4,357 (m) Console Operator BMW

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mFrame Size 1 m²

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	23:06	29	299	1683	428	0	50	5% Form.	50	95% EtOH	✓
1	23:34	31	56	319	399	350	1	5% Form.	1	95% EtOH	✓
2	23:37	38	104	553	350	301	1	5% Form.	1	95% EtOH	✓
3	23:42	39	116	606	301	250	1	5% Form.	1	95% EtOH	✓
4	23:48	40	112	570	250	201	1	5% Form.	1	95% EtOH	✓
5	23:53	40	119	612	201	150	1	5% Form.	1	95% EtOH	✓
6	23:58	37	99	524	150	100	1	5% Form.	1	95% EtOH	✓
7	00:03	41	82	416	100	50	1	5% Form.	1	95% EtOH	✓
8	00:06	42	47	233	50	26	1	5% Form.	1	95% EtOH	✓
9	00:08	42	70	348	26	0	1	5% Form.	1	95% EtOH	✓
Closed	00:11										

At Depth Data

wire out 551 (m)23:29-Time 11:29 (PDT)

Surface Data

Pressure 2.5 (m)Temp. 15.8 (°C)Salinity 33.12 (‰)O₂ 5.20 (ml/l)Fluoresc. 0.66 (V)Trans 0.32 (m)CTD V Battery 14.32 (v)

Notes:

low angle so had ship come up to 2.5 through the water at 23:33 Net 0codends came up in a knot

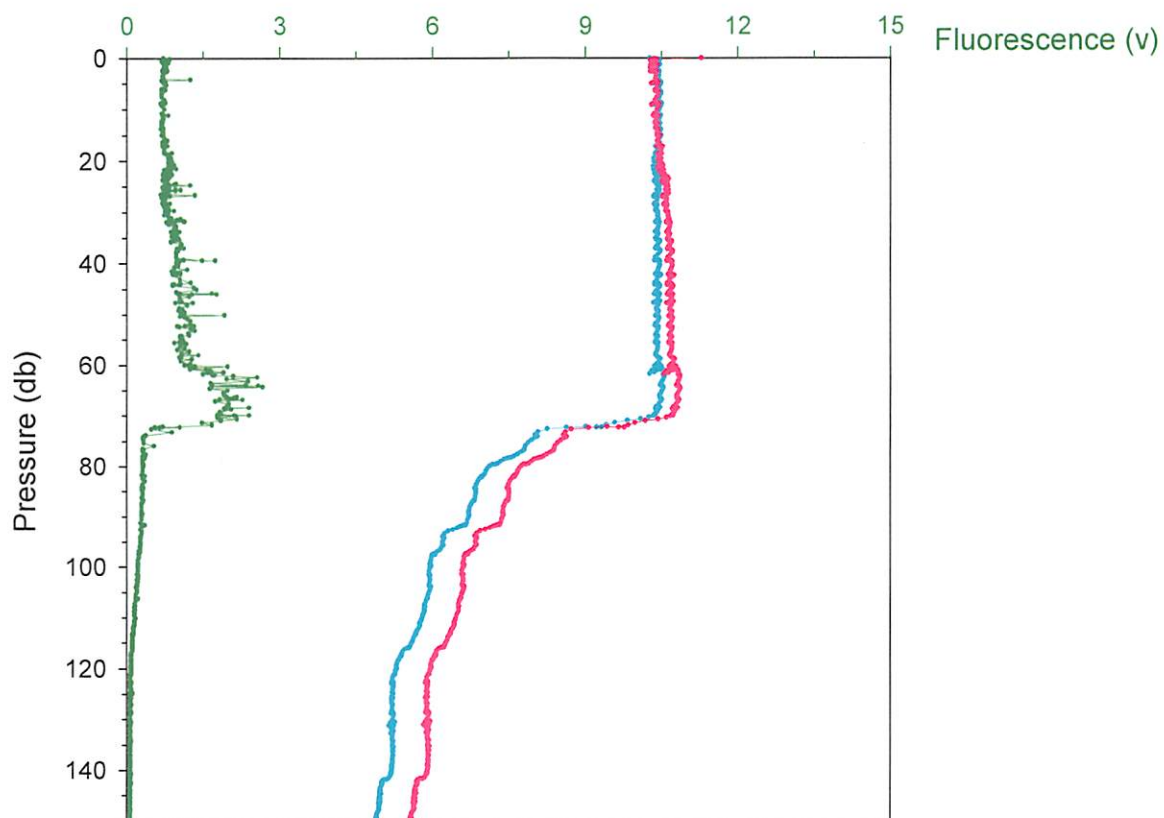
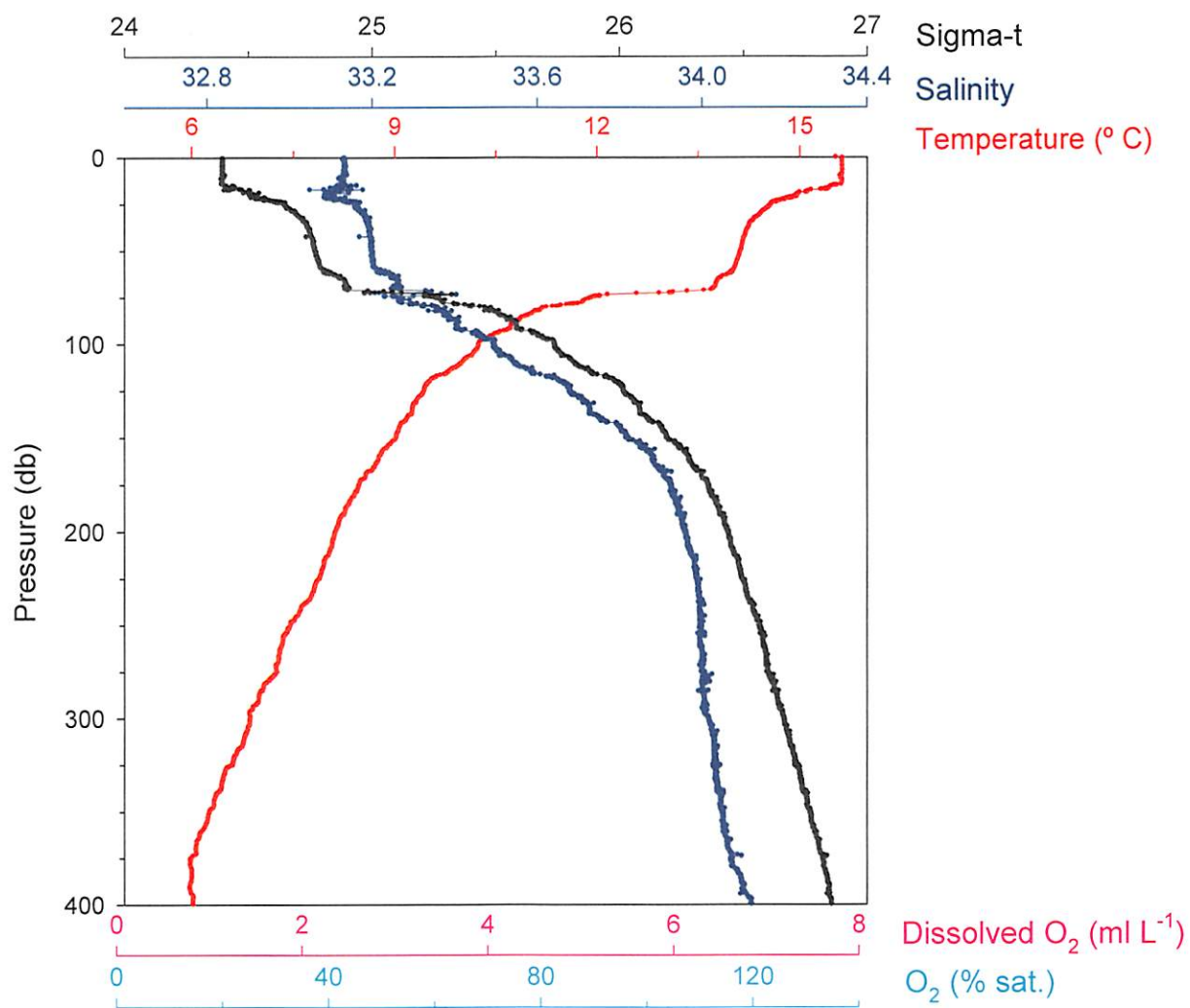
Net 0

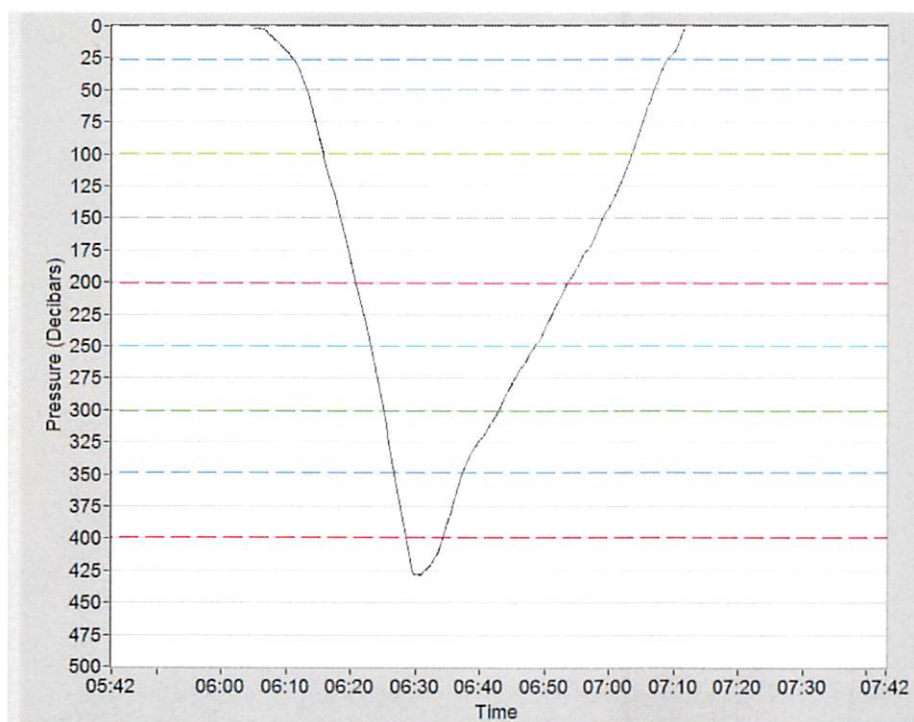
23¹²
 23:29.0
 1647.0 initial m³
 1682.6

14
 4 5517
 258 FC
 299

MOCNESS - Haul 10, CCE P1706

Cycle 3 (2306-0011, 19-20 June 2017)





Jun 20 2017 05:42:48

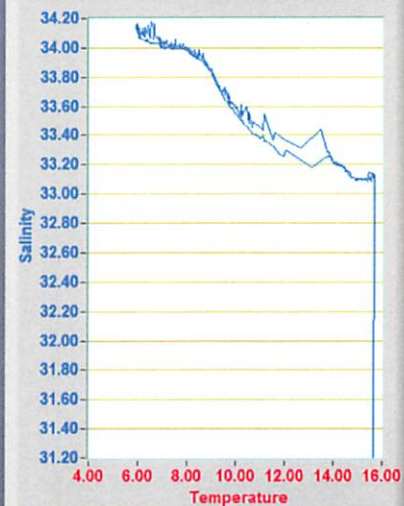
Ship: Revelle

Cruise: P1706

File: Cycle3_02

Tow: 02

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale

TIME Scale MAX 2 HRS Autoscale

Plot XY Scales

Cycle3_02

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1
2
3
4
5
6
7
8
9

		170620 063418	398.9	29.2	557	3329.6
		170620 063716	350.3	31.3	56	318.5
		170620 064249	300.7	38.2	104	553.2
		170620 064822	250.4	38.9	116	605.8
		170620 065323	201.1	40.3	112	569.9
		170620 065855	150.4	39.5	119	612.4
		170620 070321	99.9	37.3	99	524.1
		170620 070653	49.7	40.9	82	416.0
		170620 070851	26.4	42.0	47	232.5

Trip Count Flow Cnts Flow Cnts 2 Motor Volts
 Confirms VOL CTD Volts

Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

UNLOCK

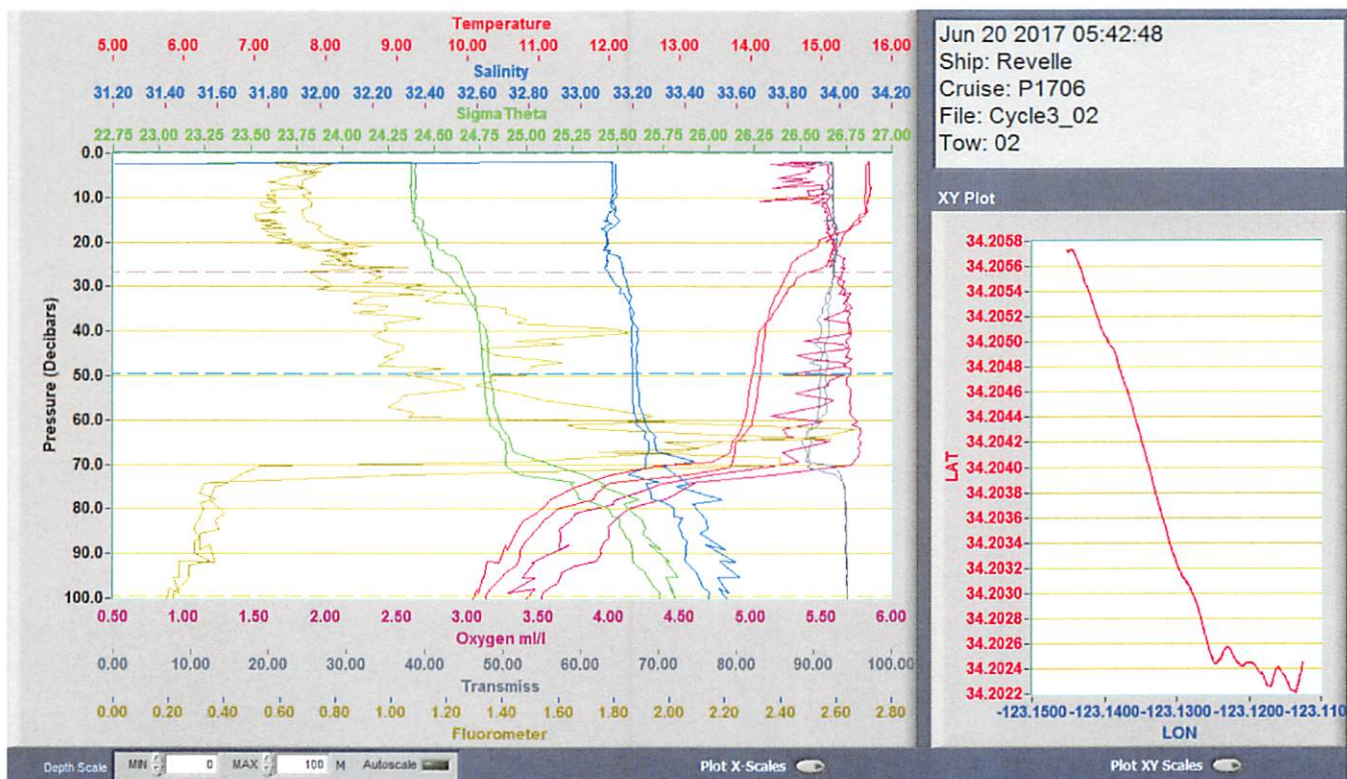
Trip in Progress

Motor ON

Trip NET

STOP

Cycle 3-02



Cycle 3-02

MOCNESS Data Sheet

Cruise P1706 Date 20 June 2017 Haul # 11 Cycle # 3 Tow # 3Wind Speed ~25 (kts.) Direction 330 (°) Sea State 4-6 (ft.)File Name: Processed Cycle3-03-PRO Raw _____Start Time 1311 (PDT) End Time 1435 (PDT)Lat 34° 05.953' N Lat 34° 06.51' NLong 122° 51.621' W Long 123° 02.61' WEvent deploy # 526 Event rec. # 527Bottom Depth 4,266 (m) Console Operator SM, MDO

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mFrame Size 1 m²

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	1314	38	545	2898	427	0	100	5% Form.		95% EtOH	☒
1	1351	44	138	667	400	350		5% Form.		95% EtOH	☒
2	1357	44	158	758	350	300		5% Form.		95% EtOH	☒
3	1403	46	150	704	300	252		5% Form.		95% EtOH	☒
4	1410	47	115	529	252	200		5% Form.		95% EtOH	☒
5	1415	46	124	580	200	150		5% Form.		95% EtOH	☒
6	1420	48	111	500	150	100		5% Form.		95% EtOH	☒
7	1425	49	119	527	100	51		5% Form.		95% EtOH	☒
8	1429	49	71	323	51	23		5% Form.		95% EtOH	☒
9	1432	47	59	273	23	0	☒	5% Form.		95% EtOH	☒
Closed	1435										

At Depth Data

wire out 746 (m)Time 1348 (PDT)

Surface Data

Pressure 0.06 (m)Temp. 15.62 (°C)Salinity 33.13 (‰)O₂ 5.49 (ml/l)Fluoresc. 0.1 (V)Trans 0.508 (m)CTDV Battery 14.31 (v)

Notes:

Shear layer at ~300m
 Shear layer at ~50m

At depth:

426.95.9834.140.650.10.20014.3

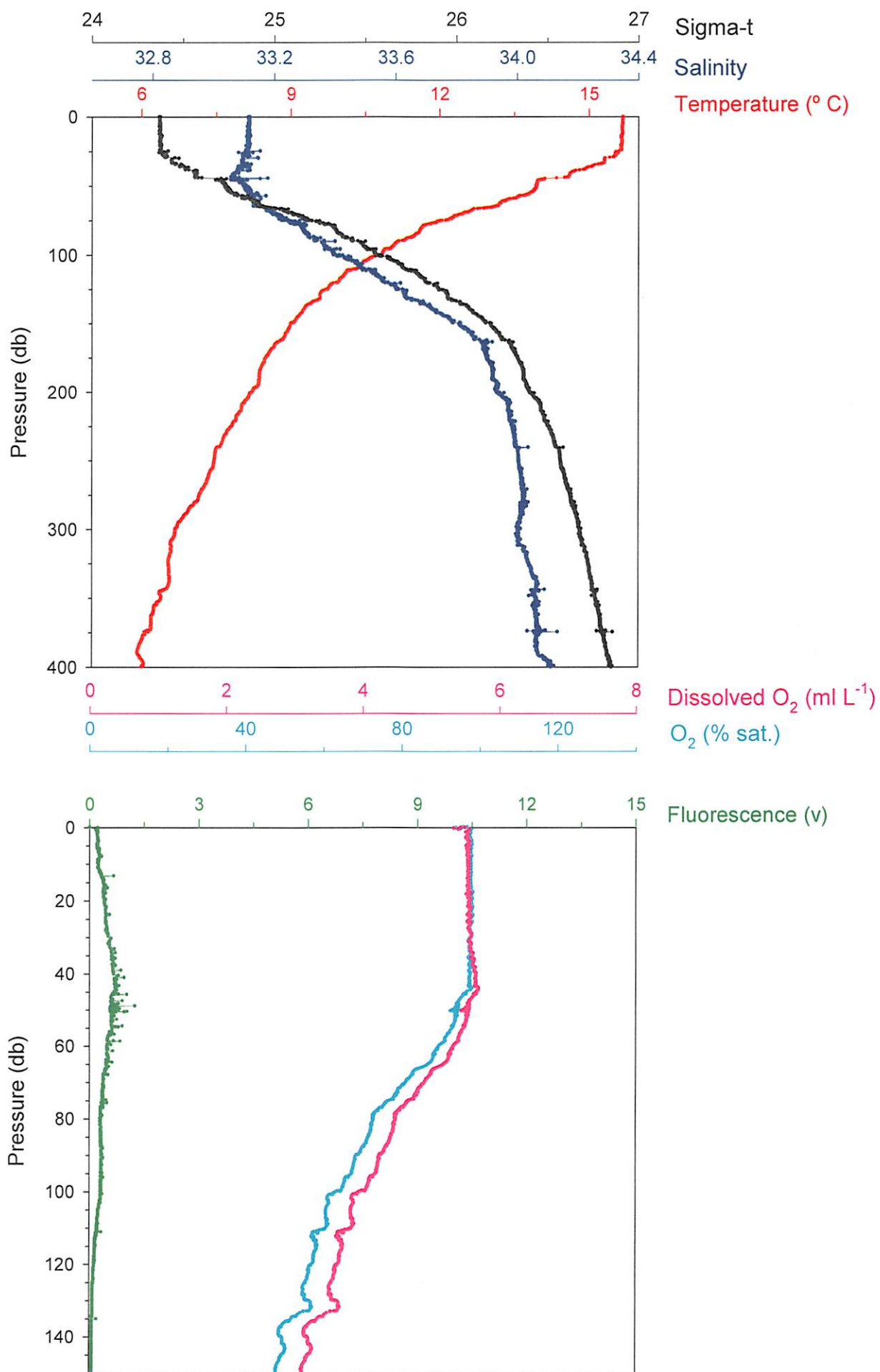
Net 0:

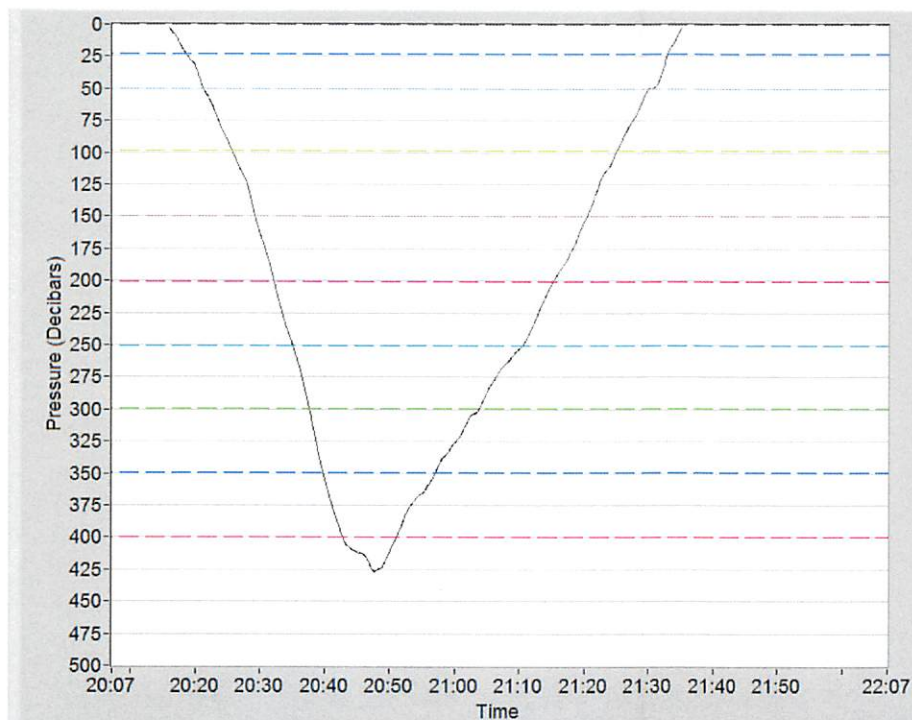
1712
 288318.3
 935.0 initial m³
 2898.3

6
 718
 173 FC
 545

MOCNESS - Haul 11, CCE P1706

Cycle 3 (1311-1435, 20 June 2017)





Jun 20 2017 20:06:57

Ship: Revelle

Cruise: P1706

File: Cycle3_03

Tow: 03

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale TIME Scale MAX 2 HRS Autoscale

Plot XY Scales

TRIP CONTROL

	Trip RSP	Date	Time	Pres	Net Angle	Flow Cnts	Volume
1		170620	205101	400.2	38.0	718	3833.9
2		170620	205701	350.2	43.7	138	666.9
3		170620	210351	299.9	44.2	158	758.3
4		170620	211021	251.8	45.6	150	704.4
5		170620	211512	200.3	46.9	115	529.4
6		170620	212022	150.3	45.6	124	580.0
7		170620	212501	99.5	47.5	111	499.8
8		170620	212949	50.5	48.6	119	526.9
9		170620	213254	23.4	48.8	71	322.5

Trip Count Flow Cnts Flow Cnts 2 Motor Volts
 Confirms VOL CTD Volts
 Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT+

TRIP CNT-

CNFM CNT+

CNFM CNT-

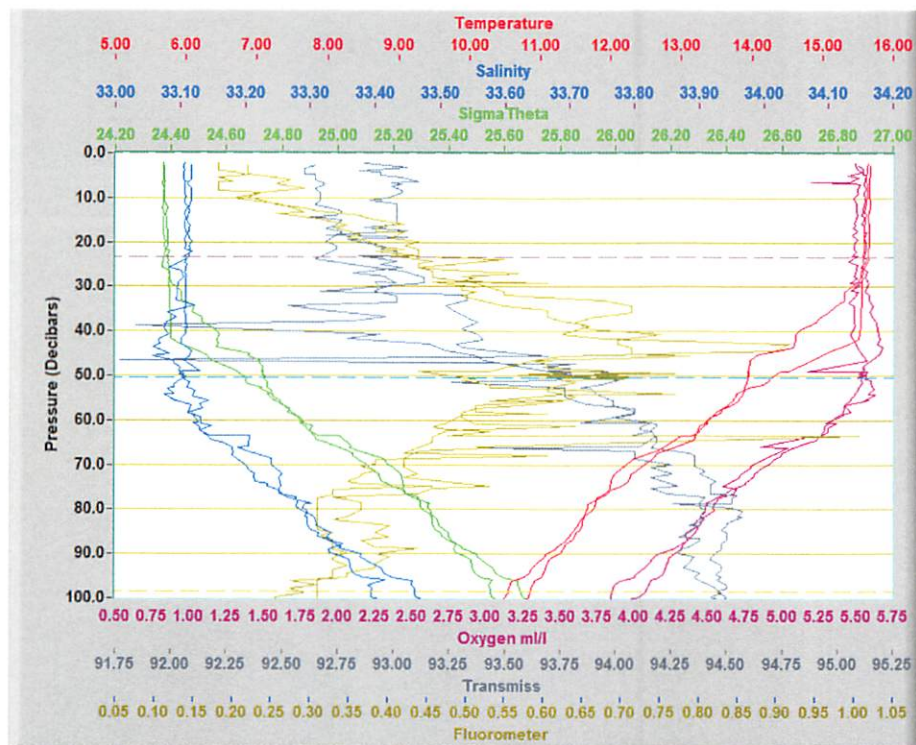
UNLOCK

Trip in Progress

Motor ON

Trip NET

Cycle3_03



Jun 20 2017 20:06:57

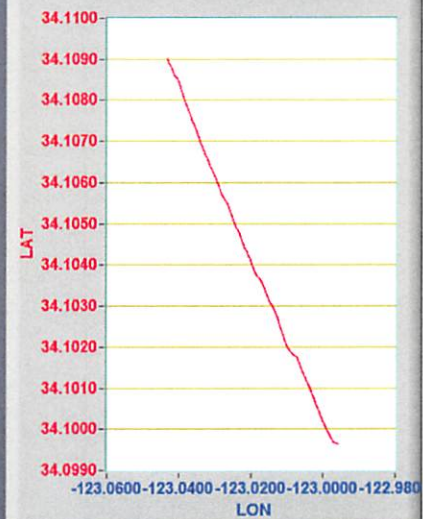
Ship: Revelle

Cruise: P1706

File: Cycle3_03

Tow: 03

XY Plot



Depth Scale MIN 0 MAX 100 M Autoscale

Plot X Scales

Plot XY Scales

MOCNESS Data Sheet

Cruise P1706 Date 20 June 2017 Haul # 12 Cycle # 3 Tow # 4Wind Speed 25-27 (kts.) Direction 332 (°) Sea State 6-8 (ft.)File Name: Processed Cycle3-04 Raw _____Start Time 22:50 (PDT) End Time 23:51 (PDT)Lat 34.04.75 ^{34.0792} Lat 34° 05.40' N ^{34.090}Long 122 58.04 ^{122.9693} Long 122° 59.93' W ^{122.9988}Event deploy # 537 Event rec. # 538Bottom Depth 4,238 (m)Console Operator BMW, MDA

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mFrame Size 1 m²

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	22:50	30	416	2232	422	Ø	100	5% Form.		95% EtOH	✓
1	23:19	35	68	369	399	350		5% Form.		95% EtOH	✓
2	23:22	40	91	468	350	300		5% Form.		95% EtOH	✓
3	23:26	42	91	451	300	251		5% Form.		95% EtOH	✓
4	23:30	47	97	444	251	201		5% Form.		95% EtOH	✓
5	23:34	44	130	619	201	151		5% Form.		95% EtOH	✓
6	23:39	44	105	507	151	99		5% Form.		95% EtOH	✓
7	23:44	45	97	458	99	51		5% Form.		95% EtOH	✓
8	23:48	50	50	216	51	26		5% Form.		95% EtOH	✓
9	23:50	53	64	260	26	Ø		5% Form.		95% EtOH	
Closed	23:51										

Flow found when
283 swimming

At Depth Data

wire out 639 (m)Time 23:17 (PDT)Notes: shear layer ~ 325m + at 201m

Surface Data

Pressure 2.0 (m)Temp. 15.61 (°C)Salinity 33.11 (‰)O₂ 5.53 (ml/l)Fluoresc. 0.7 (V)Beam Trans 0.310 (m)CTOV Battery 14.31 (V)

423
6.01
34.14
0.709
0.1
0.204
14.33

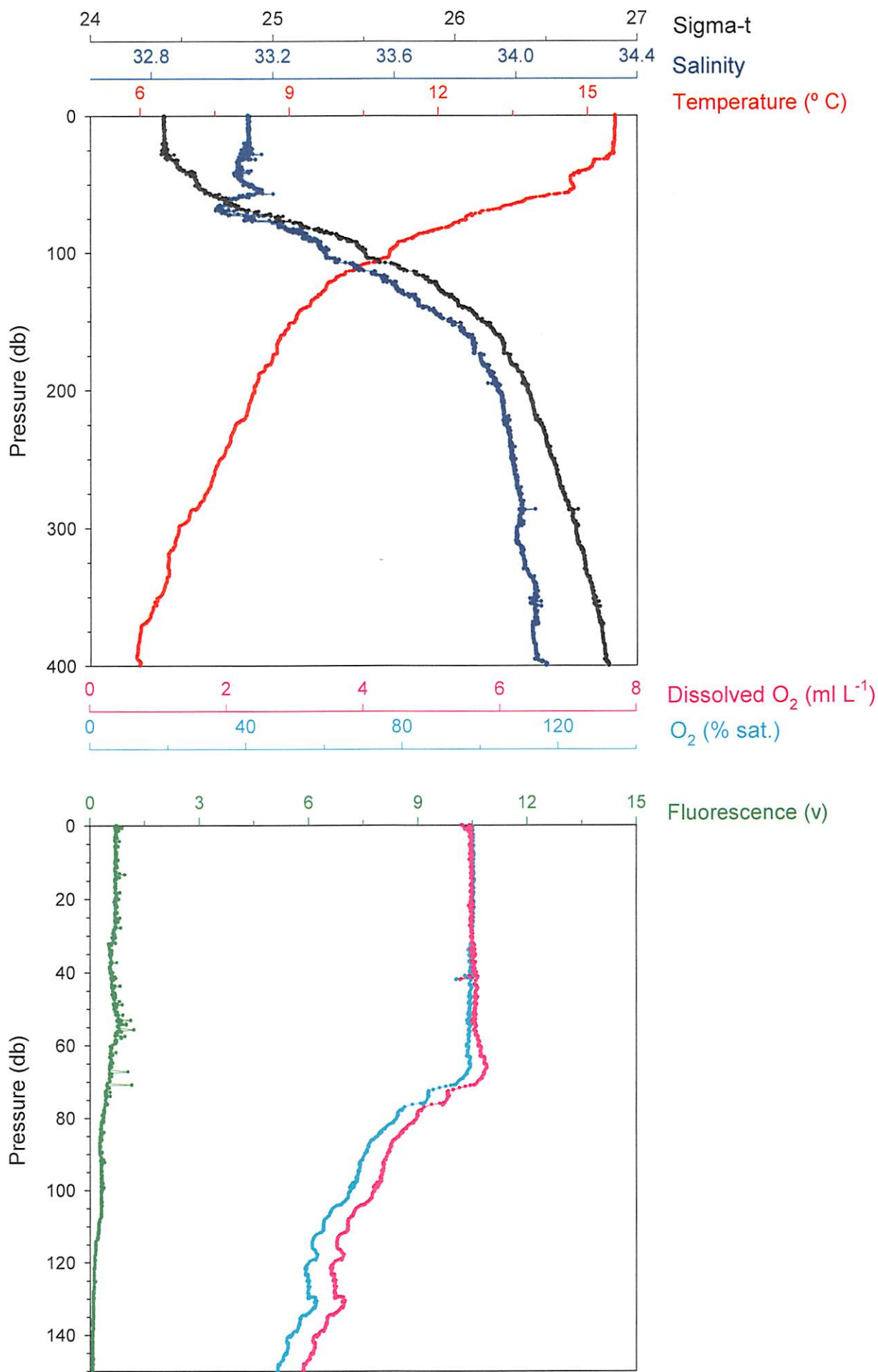
NetO:

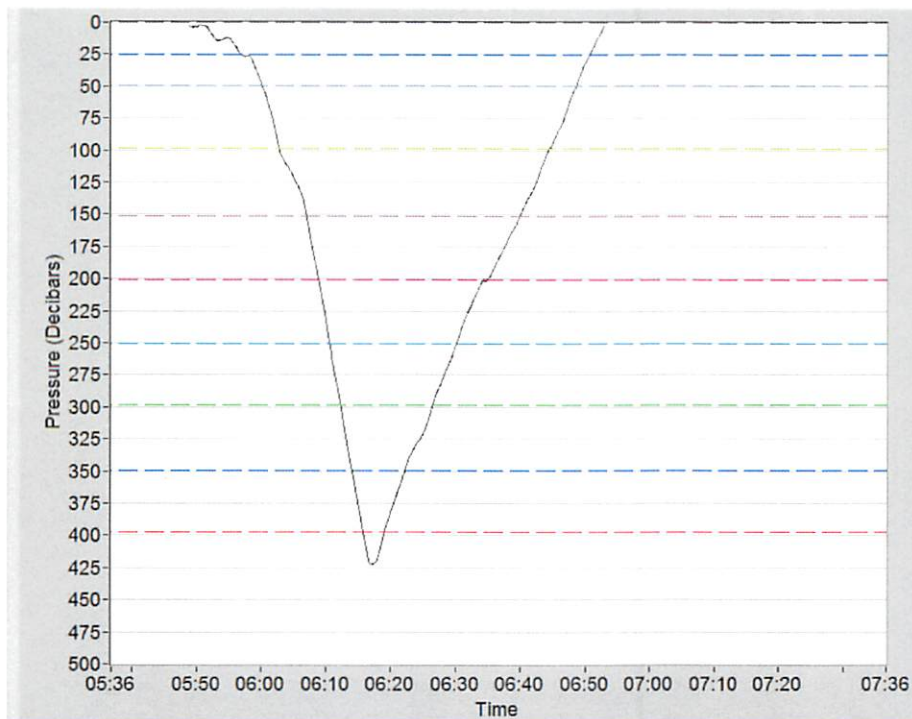
$$\begin{array}{r} 34911.512 \\ 1783.5 \text{ initial m}^5 \\ \hline 2231.7 \end{array}$$

$$\begin{array}{r} 698 \\ 282 \text{ FC} \\ \hline 416 \end{array}$$

MOCNESS - Haul 12, CCE P1706

Cycle 3 (2250-2351, 20-21 June 2017)





Depth Scale MIN 0 MAX 500 M Autoscale TIME Scale MAX 2 HRS Autoscale

Jun 21 2017 05:36:38
Ship: Revelle
Cruise: P1706
File: Cycle3_04
Tow: 04

XY Plot



Plot XY Scales

TRIP CONTROL

	Trip RSP	Date	Time	Pres	Net Angle	Flow Cnts	Volume
1		170621	061900	398.6	29.5	698	4115.2
2		170621	062214	349.8	35.3	68	369.2
3		170621	062625	299.5	40.1	91	467.9
4		170621	063009	250.8	42.4	91	451.4
5		170621	063417	200.9	46.6	97	444.5
6		170621	063954	151.2	44.3	130	619.3
7		170621	064423	98.8	43.5	105	506.9
8		170621	064830	50.5	45.3	97	458.0
9		170621	065039	25.6	50.4	50	215.7

Trip Count Flow Cnts Flow Cnts 2 Motor Volts
 Confirms VOL CTD Volts

Modem Data

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

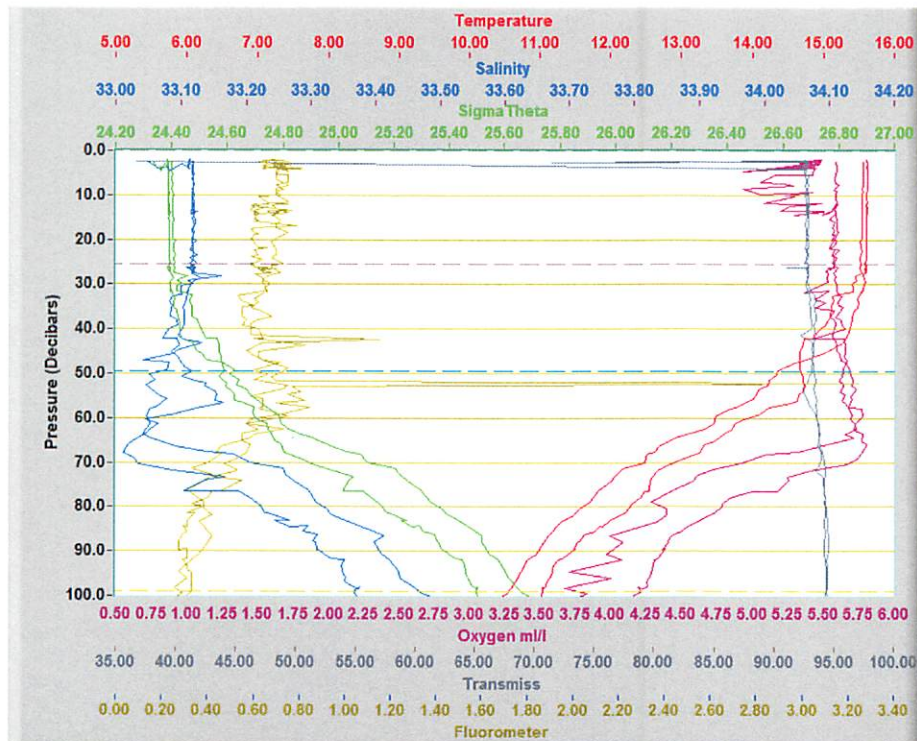
UNLOCK

Trip in Progress

Motor ON

Trip NET

Cycle 304



Jun 21 2017 05:36:38

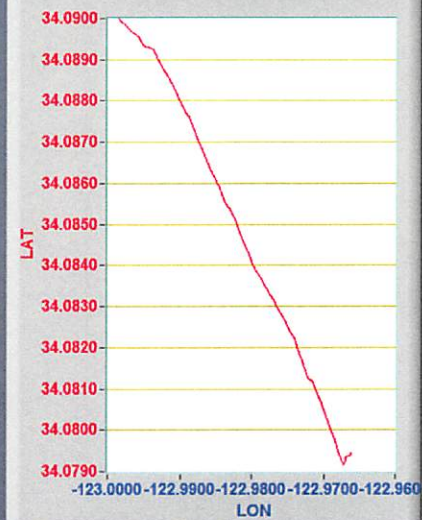
Ship: Revelle

Cruise: P1706

File: Cycle3_04

Tow: 04

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 24 June 2017 Haul # 13 Cycle # 4 Tow # 1Wind Speed ~10 (kts.) Direction 300 (°) Sea State 1-2 (ft.)File Name: Processed Cycle 4-01 Raw _____Start Time 14:21 (PDT) End Time 1531 (PDT)Lat 34° 24.660 Lat 34° 09.440' NLong 122° 59.216' Long 123° 00.615' WEvent deploy # 659 Event rec. # 660Bottom Depth 4205 (m) Console Operator SM, MDO, BMW

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 µmFrame Size 1 m²

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	1421	36	430	2352	436	0	50	5% Form.	50	95% EtOH	
1	1453	42	122	615	400	350		5% Form.		95% EtOH	✓
2	1458	43	124	616	350	300		5% Form.		95% EtOH	✓
3	1503	43	108	537	300	250		5% Form.		95% EtOH	✓
4	1508	42	107	531	250	199		5% Form.		95% EtOH	✓
5	1512	43	112	550	199	151		5% Form.		95% EtOH	✓
6	1517	45	105	495	151	100		5% Form.		95% EtOH	✓
7	1521	45	114	538	100	51		5% Form.		95% EtOH	✓
8	1526	45	53	249	51	25		5% Form.		95% EtOH	✓
9	1528	45	60	291	25	0	↓	5% Form.	↓	95% EtOH	✓
Closed	1531										

At Depth Data

wire out 76.9 (m)Time 1449 (PDT)

Notes:

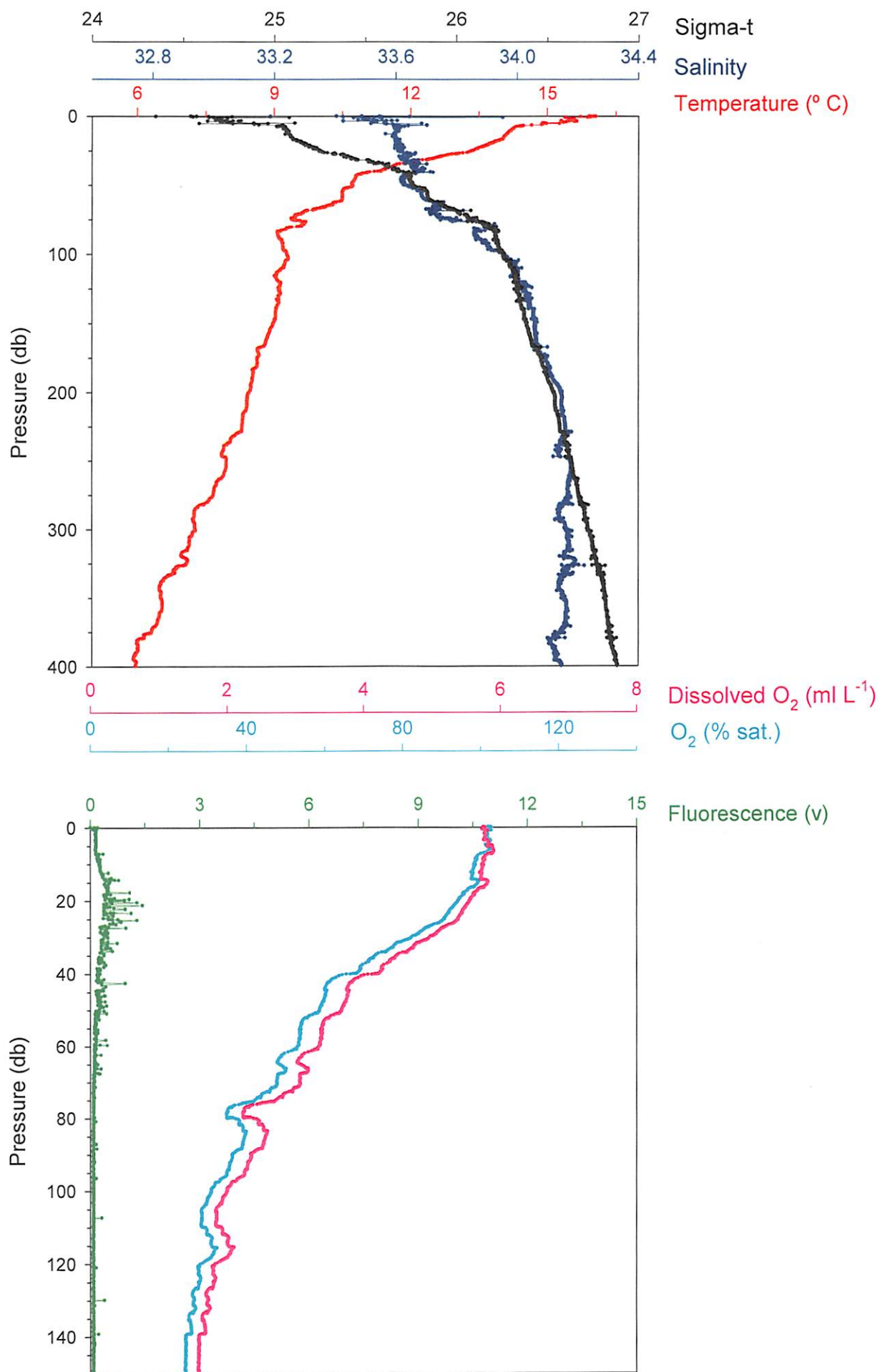
Surface Data

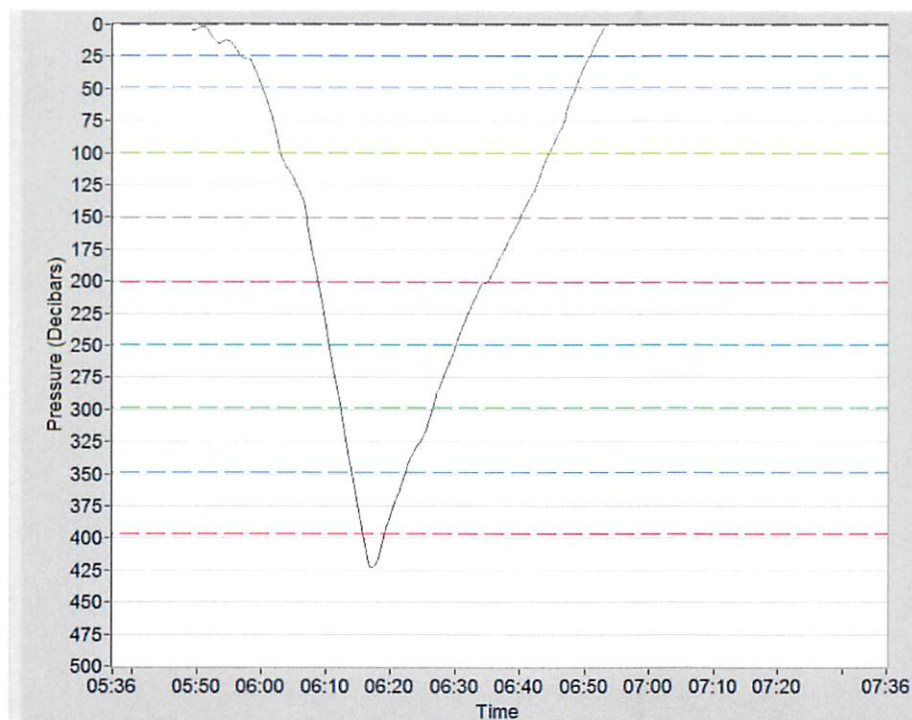
Pressure 1.1 (m)Temp. 15.94 (°C)Salinity 33.50 (‰)O₂ 6.84 (ml/l)Fluoresc. 0.1 (V)BeamC Trans 0.256 (m)CTDV Battery 14.33 (v)

Net 0: FC + volume filtered
not needed to be corrected
from file no jump

MOCNESS - Haul 13, CCE P1706

Cycle 4 (1421-1531, 24 June 2017)





Jun 21 2017 05:36:38

Ship: Revelle

Cruise: P1706

File: Cycle3_04

Tow: 04

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale TIME Scale MAX 2 HRS Autoscale

Plot XY Scales

Cycle 4-01

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170624 215300	399.6	35.9	430	2351.9
2			170624 215831	350.2	41.6	122	614.8
3			170624 220359	300.4	42.5	124	615.9
4			170624 220833	250.8	42.5	108	537.3
5			170624 221248	199.3	41.9	107	531.2
6			170624 221716	151.3	42.5	112	549.5
7			170624 222130	99.8	45.0	105	495.4
8			170624 222625	50.9	45.1	114	538.1
9			170624 222837	25.3	45.3	53	249.9

Trip Count 9 Flow Cnts 65 Flow Cnts 2 0 Motor Volts 13.738

Confirms 9 VOL 294.0 CTD Volts 14.332

Modem Data 65,0,9,9,0,1272,1327,0,0

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

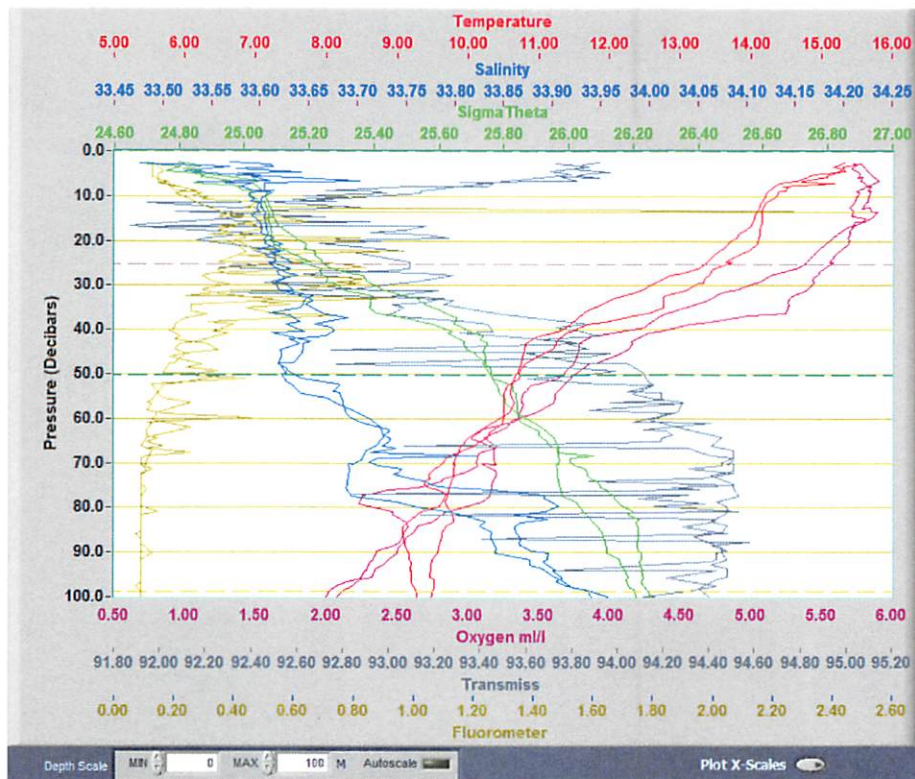
CNFM CNT--

UNLOCK

Trip in Progress

Motor ON

Trip NET



Jun 24 2017 21:12:07

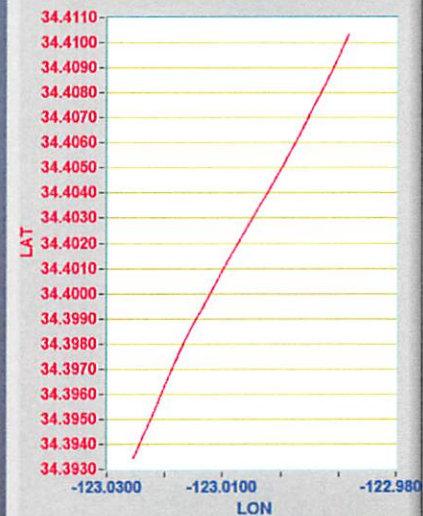
Ship: Revelle

Cruise: P1706

File: Cycle4_01

Tow: 01

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 24-25 June 2017 Haul # 14 Cycle # 4 Tow # 2Wind Speed 7-8 (kts.) Direction 335 (°) Sea State 1-2 (ft.)File Name: Processed Cycle4-02 Raw _____Start Time 23:10 (PDT) End Time 00:13 (PDT)Lat 34° 26.16' N ^{34.436} Lat 34° 26.569' N ^{34.4428}Long 122° 58.38' W ^{122.973} Long 123° 00.965' W ^{123.01588}Event deploy # 673Event rec. # 674Net Mesh 202 μ mFrame Size 1 m²Bottom Depth 4,205 (m)Console Operator Bmw

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	23:10	33	338	1935	420	Ø	50	5% Form.	50	95% EtOH	✓
1	23:37	40	85	437	398	351		5% Form.		95% EtOH	✓
2	23:41	40	103	524	351	300		5% Form.		95% EtOH	✓
3	23:45	43	101	497	300	250		5% Form.		95% EtOH	✓
4	23:49	46	111	515	250	201		5% Form.		95% EtOH	✓
5	23:53	46	125	574	201	151		5% Form.		95% EtOH	✓
6	23:58	43	117	568	151	101		5% Form.		95% EtOH	✓
7	00:03	46	115	534	101	50		5% Form.		95% EtOH	✓
8	00:07	46	78	363	50	24		5% Form.		95% EtOH	✓
9	00:10	46	80	378	24	Ø		5% Form.		95% EtOH	✓
Closed	00:13										

At Depth Data

wire out 650 (m)Time 23:35 (PDT)

Notes: _____

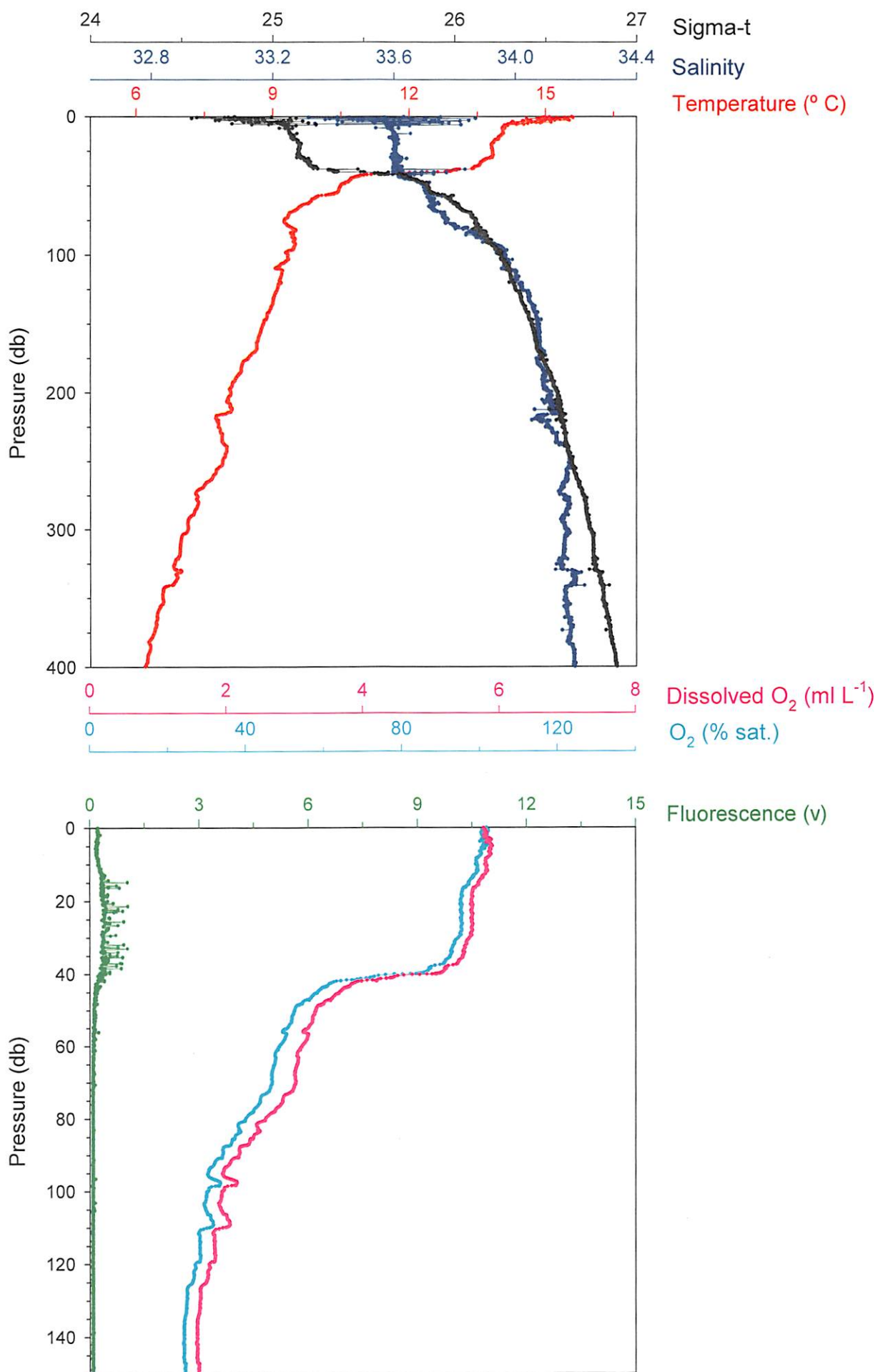
Surface Data

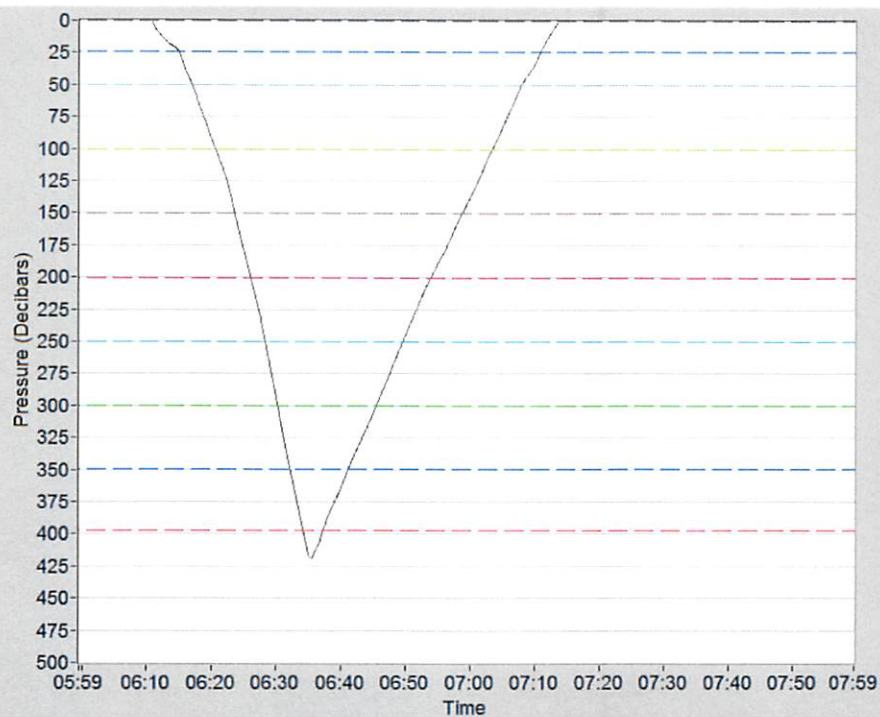
Pressure 1.0 (m) 420Temp. 15.57 (°C) 6.057Salinity 33.17 (‰) 34.19O₂ 5.55 (ml/l) 0.516Fluoresc. 0.20 (V) 0.1Trans 0.25 (m) 0.207CTDV Battery 14.32 (V) 14.33

Net0: FC + volume filtered
look good: no jump before
entering water

MOCNESS - Haul 14, CCE P1706

Cycle 4 (2310-0013, 24-25 June 2017)





Jun 25 2017 05:59:20

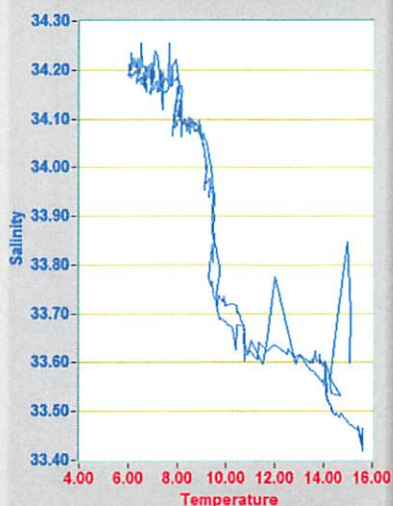
Ship: Revelle

Cruise: P1706

File: Cycle4_02

Tow: 02

XY Plot



Depth Scale MIN 0 MAX 500 M Autoscale TME Scale MAX 2 HRS Autoscale

Plot XY Scales

TRIP CONTROL

	Trip RSP	Date	Time	Pres	Net Angle	Flow Cnts	Volume
1		170625	063710	398.4	32.5	338	1935.1
2		170625	064106	350.6	39.8	85	437.1
3		170625	064524	300.3	40.1	103	524.8
4		170625	064929	250.3	42.5	101	497.2
5		170625	065347	200.7	45.9	111	514.5
6		170625	065838	151.0	46.4	125	574.4
7		170625	070315	100.7	43.2	117	568.4
8		170625	070744	50.4	46.0	115	534.5
9		170625	071040	24.4	45.7	78	363.2
Trip Count 9 Flow Cnts 104 Flow Cnts 2 0 Motor Volts 13.802 Confirms 9 VOL 410.4 CTD Volts 14.332 Modem Data 104,0,9,9,0,1278,1327,0,0							

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

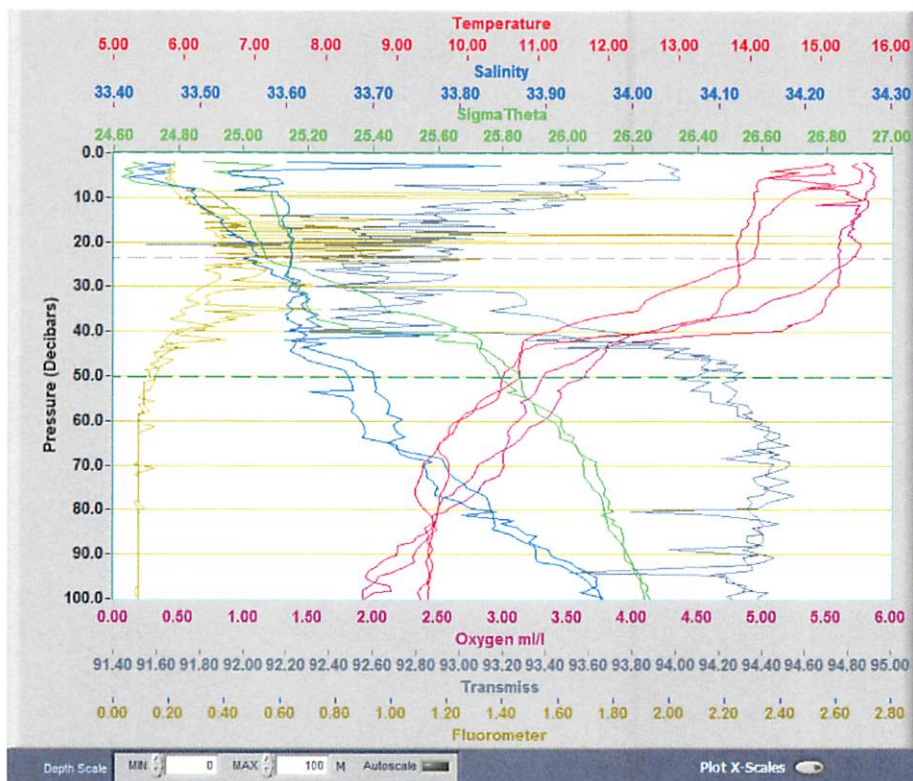
UNLOCK

Trip in Progress

Motor ON

Trip NET

Cycle 4_02



Jun 25 2017 05:59:20

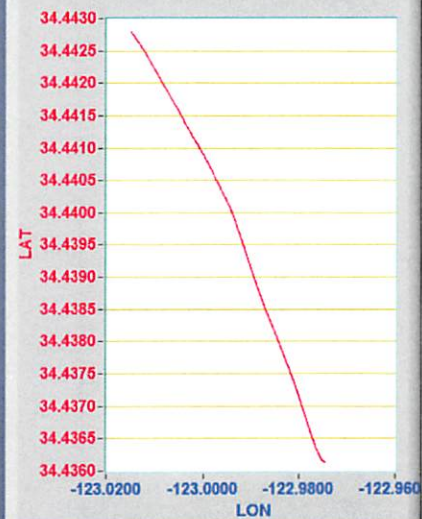
Ship: Revelle

Cruise: P1706

File: Cycle4_02

Tow: 02

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 25 June 2017 Haul # 15 Cycle # 4 Tow # 3Wind Speed 8 (kts.) Direction 320 (°) Sea State 1-2 (ft.)File Name: Processed Cycle4-03 Raw _____Start Time 13:05 (PDT) End Time 14:27 (PDT)Lat 34° 26.77' ^{34.446171} N Lat 34° 25.68' ^{34.428} NLong 122° 56.48' ^{122.94131} W Long 122° 59.41' ^{122.99021} W

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mEvent deploy # 691Event rec. # 692Frame Size 1 m²Bottom Depth 4,135 (m)Console Operator SM, MDO, BMW

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	1305	35	670	3759	415	0	100	5% Form.		95% EtOH	✓
1	1347	40	118	606	400	345		5% Form.		95% EtOH	* no response
2	1352	42	106	523	345	300		5% Form.		95% EtOH	✓
3	1356	44	113	539	300	250		5% Form.		95% EtOH	✓
4	1400	45	152	721	250	201		5% Form.		95% EtOH	✓
5	1407	45	128	603	201	150		5% Form.		95% EtOH	✓
6	1411	47	117	537 ⁺	150	100		5% Form.		95% EtOH	✓
7	1416	47	131	589	100	53		5% Form.		95% EtOH	✓
8	1421	46	70	324	53	25		5% Form.		95% EtOH	✓
9	1424	47	66	299	25	0	↓	5% Form.		95% EtOH	
Closed	1427										

At Depth Data

wire out 706 (m)Time 13:45 (PDT)

Surface Data

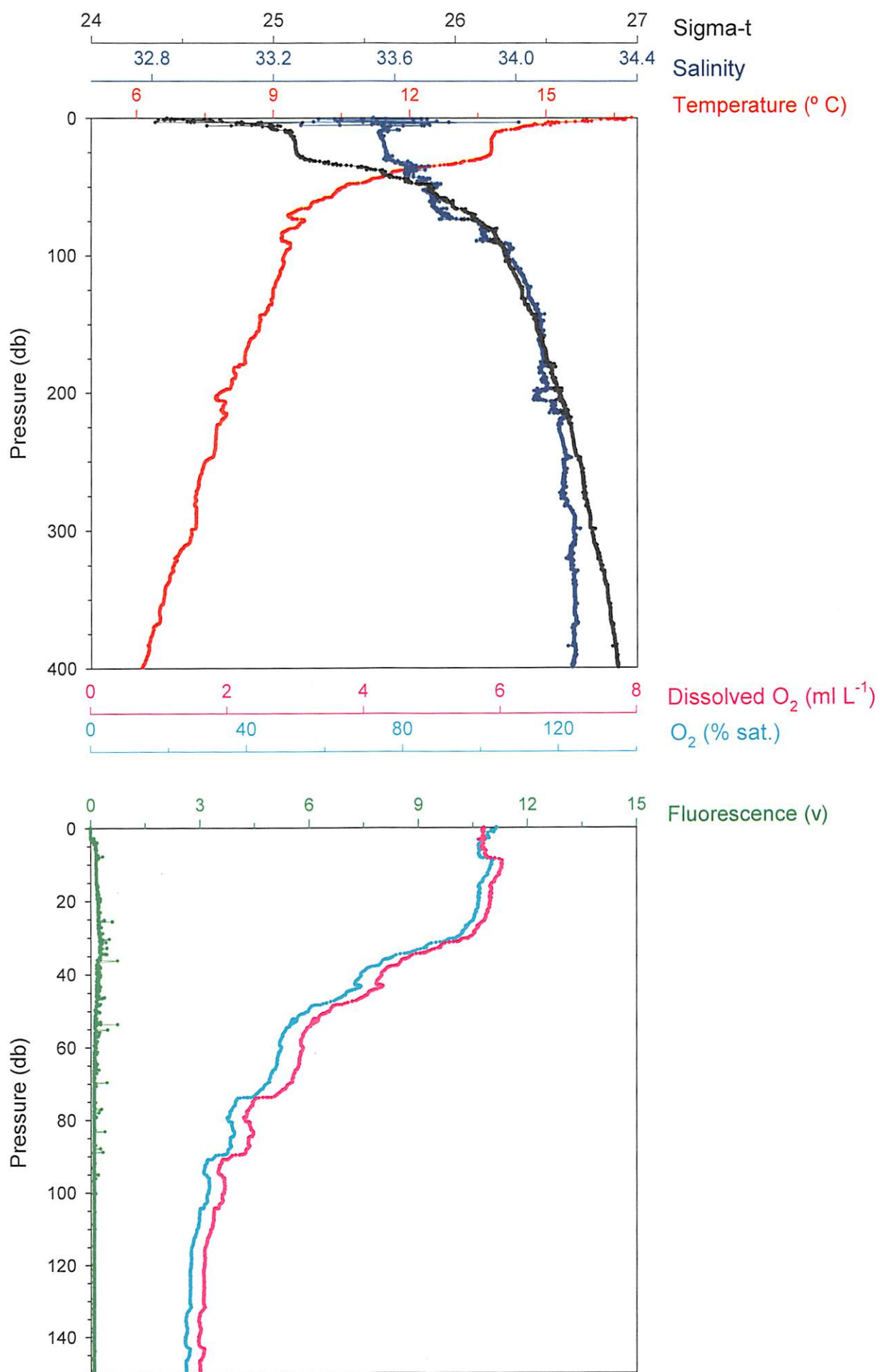
Pressure 1.0 (m)Temp. 15.87 (°C)Salinity 33.62 (‰)O₂ 5.73 (ml/l)Fluoresc. 0.0 (V)Trans 0.249 (m)CTDY Battery 14.32 (V)Notes: descent stopped 13:25-13:29 to viewSpaceX launch from Vandenberg* No trap response for net 2. Manuallyconfirmed several seconds after trapping414.6 net6.022 t must be wrong - check file34.188 wrong in file also (PRO file)0.513 Ship speed 2.0-2.2 kts through0.1 the water0.20714.33

Neto:

$$\begin{array}{r}
 12 \\
 3783.2 \\
 - 34.625 \text{ initial volume} \\
 \hline
 3758.6 \\
 \text{670}
 \end{array}$$

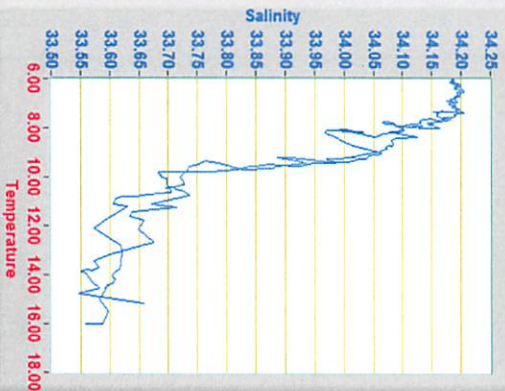
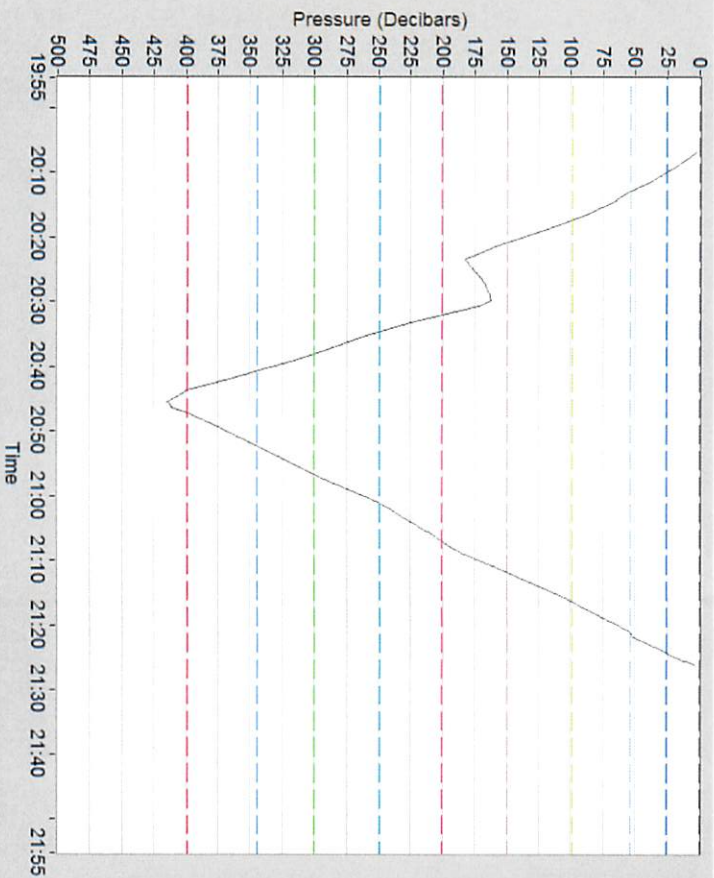
MOCNESS - Haul 15, CCE P1706

Cycle 4 (1305-1427, 25 June 2017)



Jun 25 2017 19:55:00
Ship: Revelle
Cruise: P1706
File: Cycle4_03
Tow: 03

XY Plot



Plot XY Scales

Depth Scale

MIN

0

MAX

500

M

Autoscale

TIME Scale

MAX

2

HRS

Autoscale

Cycle ~~4-03~~
4-03

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170625 204707	399.7	34.7	676	3793.2
2			170625 205219	344.5	39.9	118	605.6
3			170625 205641	300.5	42.3	106	523.3
4			170625 210056	250.1	44.3	113	538.6
5			170625 210700	200.6	44.8	152	721.8
6			170625 211147	150.0	45.1	128	603.4
7			170625 211611	100.3	46.5	117	5192.4
8			170625 212122	53.1	47.4	131	589.7
9			170625 212409	25.4	46.2	70	323.8

Trip Count 9 Flow Cnts 68 Flow Cnts 2 0 Motor Volts 13.576

Confirms 9 VOL 320.6 CTD Volts 14.332

Modem Data 68,0,9,9,0,1257,1327,0,0

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CONF CNT++

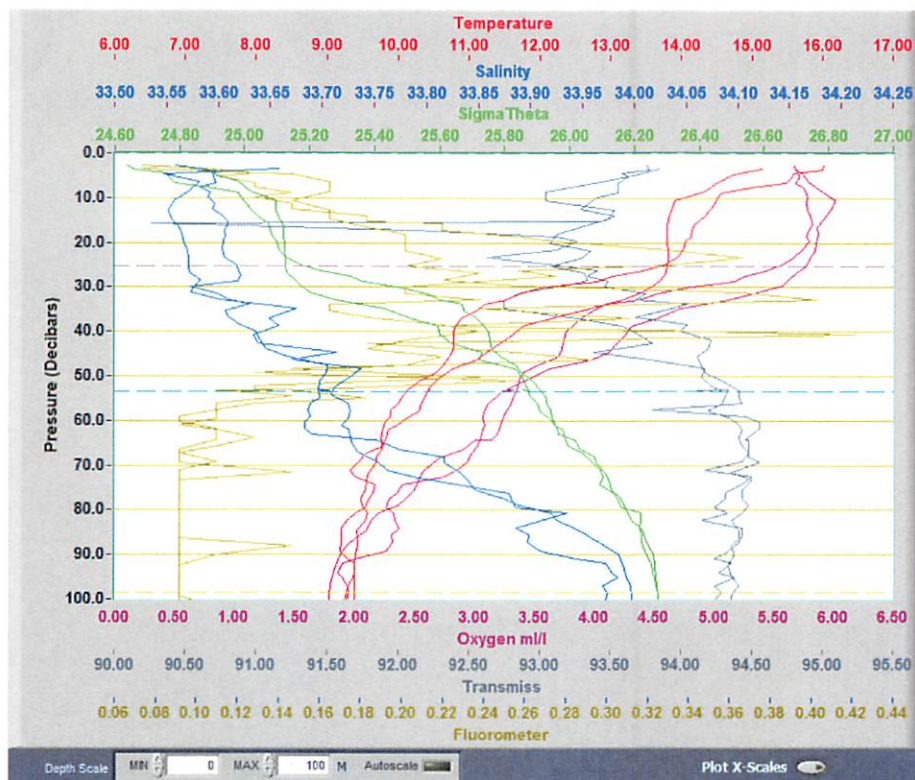
CONF CNT--

UNLOCK

Trip in Progress

Motor ON

Trip NET



Jun 25 2017 19:55:00

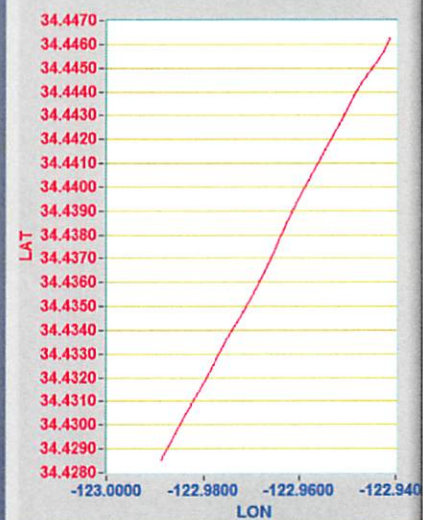
Ship: Revelle

Cruise: P1706

File: Cycle4_03

Tow: 03

XY Plot



MOCNESS Data Sheet

Cruise P1706 Date 25-26 June 2017 Haul # 16 Cycle # 4 Tow # 4Wind Speed 3-4 (kts.) Direction 270° Sea State 1-2 (ft.)File Name: Processed Cycle4-04 Raw _____Start Time 23:02 (PDT) End Time 00:01 (PDT)Lat 34.48952N Lat 34° 34.4929' NLong 122.94915W Long 122° 59.277' WEvent deploy # 697 Event rec. # 698Bottom Depth 4140 (m)Console Operator Bmw

Pre-deployment checks:

- ☒ Flow Meter
- ☒ Stepping Motor
- ☒ Net Response
- ☒ Clean Optical Surface
- ☒ Transmissometer
- ☒ Fluorometer

Net Mesh 202 μ mFrame Size 1 m²

Net Tow Information

Net	Time Open	Angle	Flow Counts	Volume Filtered (m ³)	Max Depth (m)	Min Depth (m)	Split	Fixative	Split	Fixative	Net Response
0	23:02	32	302	1733	414	0	100	5% Form.		95% EtOH	✓
1	23:29	41	92	462	399	350		5% Form.		95% EtOH	✓
2	23:34	41	88	440	350	301		5% Form.		95% EtOH	✓
3	23:37	44	121	586	301	250		5% Form.		95% EtOH	✓
4	23:41	44	108	520	250	201		5% Form.		95% EtOH	✓
5	23:45	48	74	330	201	150		5% Form.		95% EtOH	✓
6	23:49	48	76	340	150	101		5% Form.		95% EtOH	✓
7	23:53	48	76	339	101	51		5% Form.		95% EtOH	✓
8	23:57	47	64	292	51	25		5% Form.		95% EtOH	✓
9	23:59	45	66	310	25	0		5% Form.		95% EtOH	✓
Closed	00:01										

At Depth Data

wire out 657 (m)Time 23:28 (PDT)

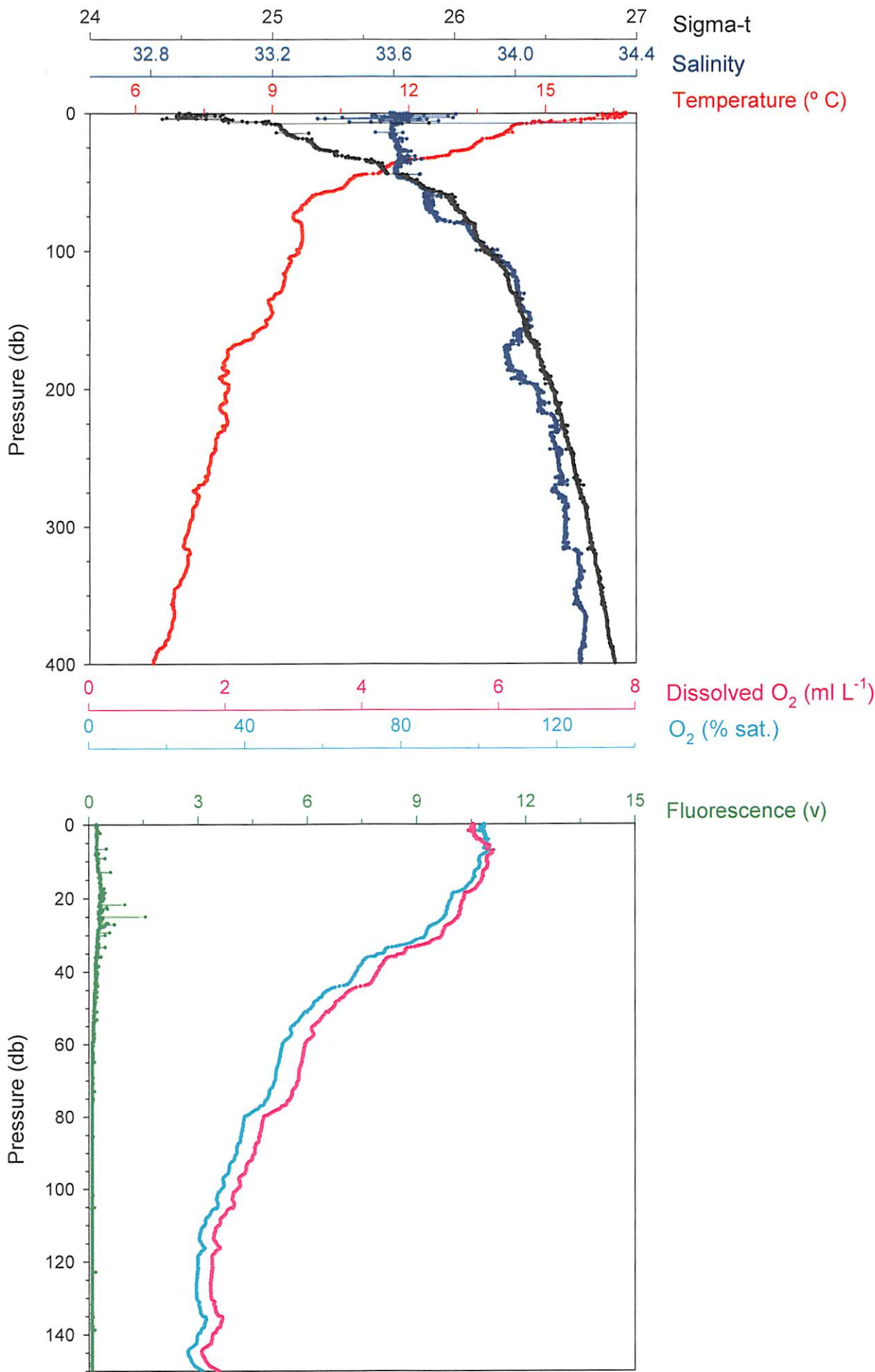
Notes: _____

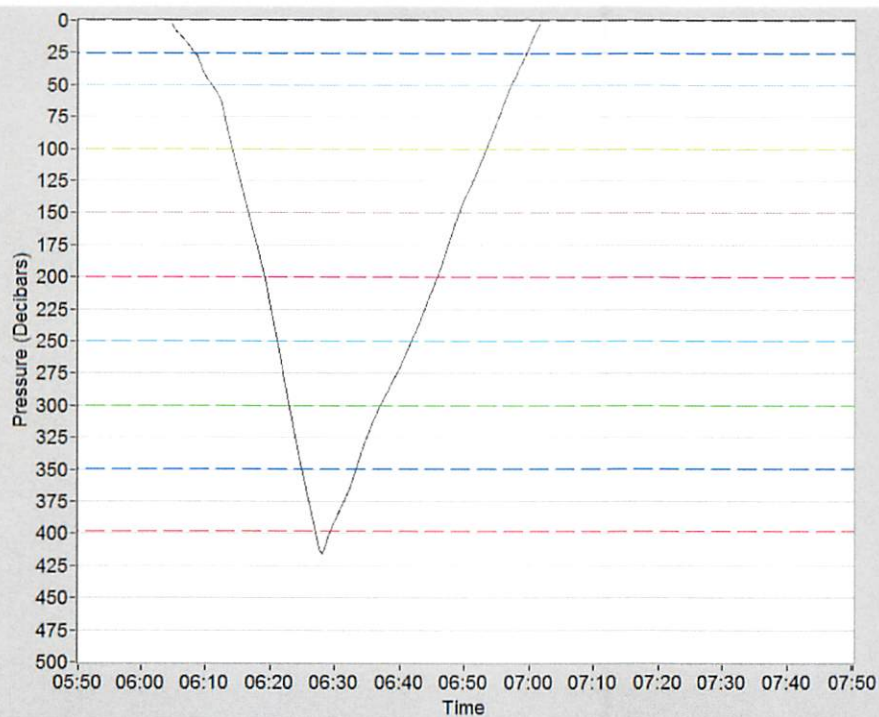
Surface Data

Pressure 0.5 (m)Temp. 15.98 (°C)Salinity 33.91 (‰)O₂ 5.60 (ml/l)Fluoresc. 0.3 (V)Trans 0.268 (m)CTDY Battery 14.32 (v)

Net: FC and m³ filtered but good
in file no jump

MOCNESS - Haul 16, CCE P1706
Cycle 4 (2302-0001, 25-26 June 2017)





Depth Scale MIN 0 MAX 500 M Autoscale TIME Scale MAX 2 HRS Autoscale

Jun 26 2017 05:50:05

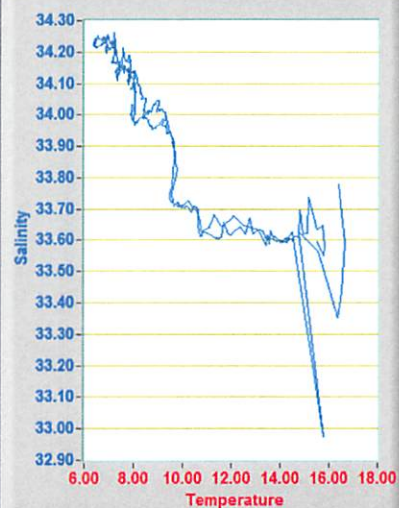
Ship: Revelle

Cruise: P1706

File: Cycle4_04

Tow: 04

XY Plot



Plot XY Scales

TRIP CONTROL

Trip RSP Date Time Pres Net Angle Flow Cnts Volume

1			170626 062915	399.4	32.2	302	1732.7
2			170626 063319	349.5	40.5	91	461.6
3			170626 063652	300.6	41.4	88	439.9
4			170626 064143	250.4	43.5	121	586.1
5			170626 064542	200.7	43.7	108	520.4
6			170626 064908	150.2	48.0	74	330.1
7			170626 065314	100.7	47.8	76	339.8
8			170626 065702	51.1	48.1	76	338.5
9			170626 065928	25.4	46.7	64	292.2

Trip Count 9 Flow Cnts 68 Flow Cnts 2 0 Motor Volts 13.802

Confirms 9 VOL 328.2 CTD Volts 14.321

Modem Data 68,0,9,9,0,1278,1326,0,0

Reset Trip Count

Reset Flow Count

Single Step Motor

MANUAL CONFIRM

TRIP CNT++

TRIP CNT--

CNFM CNT++

CNFM CNT--

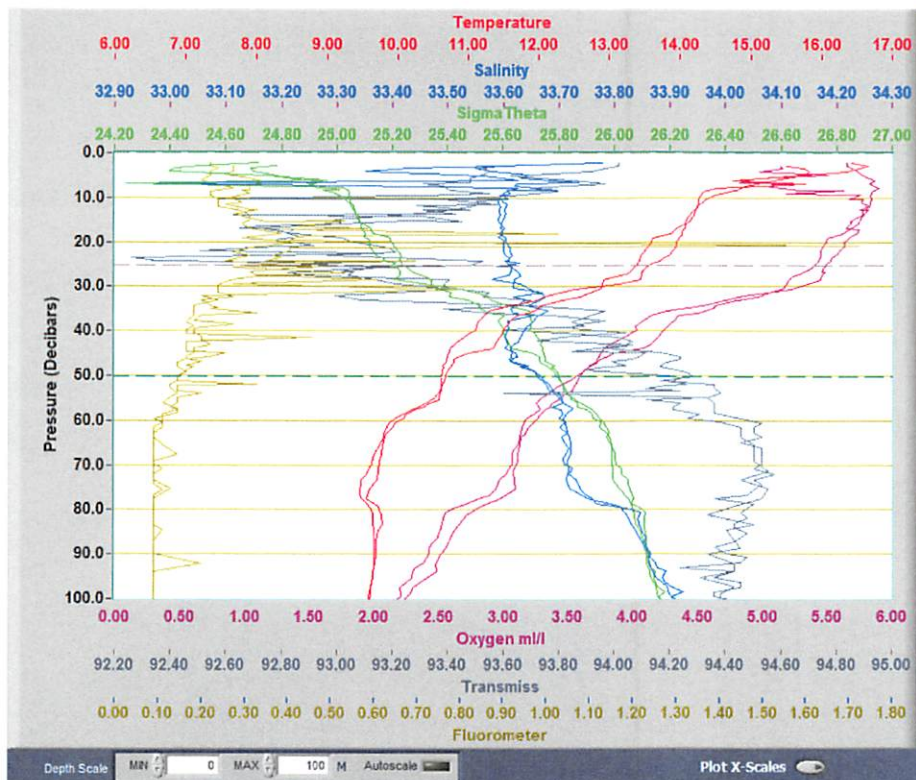
UNLOCK

Trip in Progress

Motor ON

Trip NET

Cycle 4-04



Jun 26 2017 05:50:05
Ship: Reville
Cruise: P1706
File: Cycle4_04
Tow: 04

XY Plot

