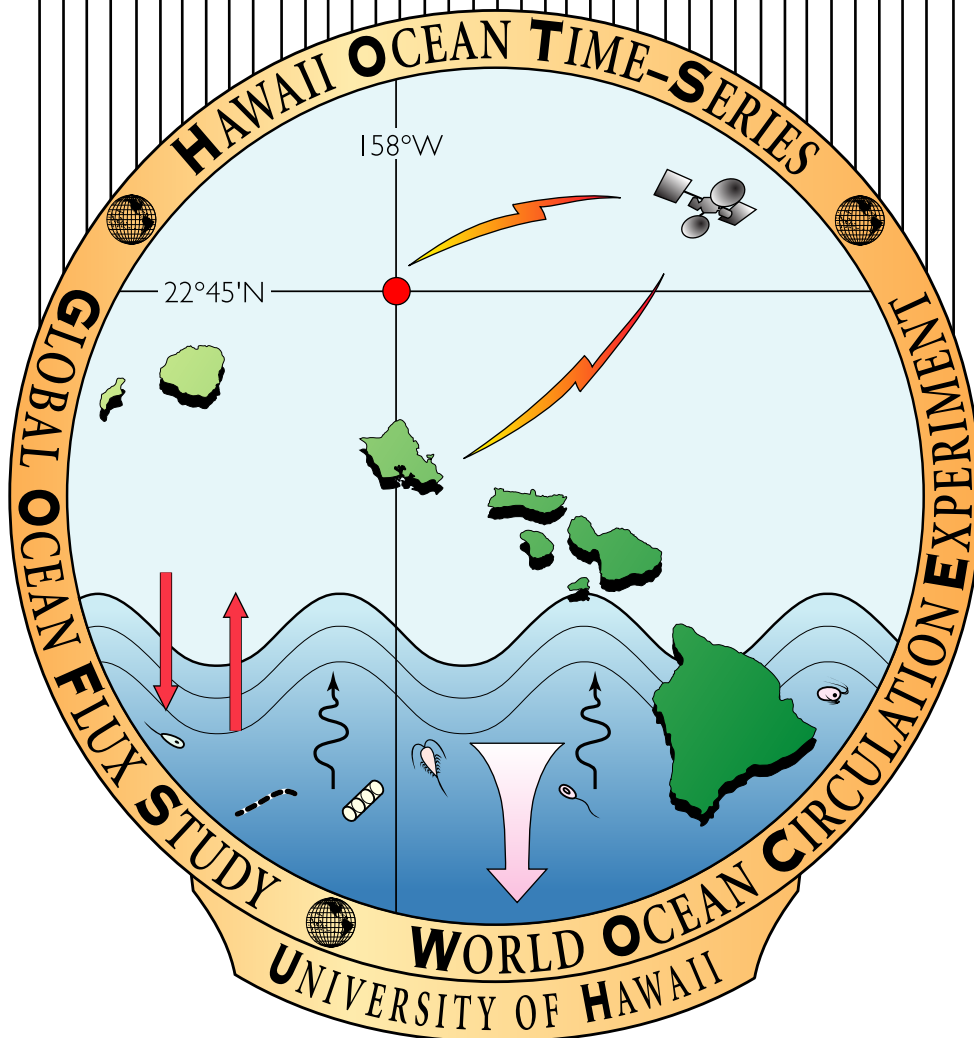


Hawaii Ocean Time-series Program

HOT 314



Hawaii Ocean Time-Series

HOT-314

KAHE Station Data Sheet

Station # 1
 Cast # 1
 Operator(s): KB, BB, TB, ES

Date: 8/1/2019 (HST)
 Time: 1413 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/Alk	pH	Nuts	LLN/LLP	Chl <i>a</i>	MCA
1	1000	1	7.8						
2	750	2,3,4	8.5						
3	500	5	9.7						
4	350	6	12.0			4			
5	250	7	15.9			5			
6	200								
7	175							7	
8	150	8	21.7			8	8	8	
9	125							9	
10	100	9,10,11	24.1			10	10	10A-B	
11	75							11	
12	45	12	27.6	12	1	12	12	12	
13	25	13	27.7	13	2			13A-B	
14	25								X
15	5	15	27.8	15	3,4,5	15	15	15	
16	5	QC	27.8						
17									
18									
19									
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-Series

HOT-314

KAHE Station Data Sheet

Station # 1

Date: 8/1/2019 (HST)

Cast # 1

Time: 1413 (HST)

Operator(s): KB, BB, TB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/Alk	pH	Nuts	LLN/LLP	Chl a	MCA
1	1000	1	7.8						
2	750	2,3,4	8.5						
3	500	5	9.7						
4	350	6	12.0			4			
5	250	7	15.9			5			
6	200								
7	175							7	
8	150	8	21.7			8	8	8	
9	125							9	
10	100	9,10,11	24.7			10	10	10A-B	
11	75							11	
12	45	12	27.6	12	1	12	12	12	
13	25	13 14	27.7	13	2			13A-B	
14	25								MC
15	5	15	27.8	15	3,4,5	15	15	15	
16	5	QC	27.8						
17									
18									
19									
20									
21									
22									
23									
24									

Sample temp

8.5

9.7

12.0

15.9

Notes:

Hawaii Ocean Time-series

HOT-314

Primary Production Data Sheet

Station # 2
 Cast # 1
 Operator(s): KB, TB, ES, BB

Date: 8/2/2019 (HST)
 Time: 2:00 (HST)

Rosette Position	Desired Depth	Light Bottle	Chl <i>a</i> FCM	SF-S	SF-S O2	Temp	
1	200						
2	200						
3	175		3A-B				
4	150		4A-B				
5	125	3-1	5	X			
6	125	3-2	6	X			
7	125	3-3	7	X			
8	100	4-1	8	X			
9	100	4-2	9	X			
10	100	4-3	10	X			
11	75	5-1	11	X			
12	75	5-2	12	X			
13	75	5-3	13	X			
14	45	6-1	14	X			
15	45	6-2	15	X			
16	45	6-3	16	X			
17	25	7-1	17	X			
18	25	7-2	18	X			
19	25	7-3	19	X			
20	15				121,122,123	26.7	
21	5	8-1	21	X			
22	5	8-2	22	X			
23	5	8-3	23	X			
24	5						

Notes: DO's 121-123 found with no SW seal at 1730 8/2/19

Hawaii Ocean Time-series

HOT-314

Primary Production Data Sheet

Station # 2
 Cast # 1
 Operator(s): KB, TB, ES, BB

Date: 8/2/2019 (HST)
 Time: 2:00 (HST)

Rosette Position	Desired Depth	Light Bottle	Chl <i>a</i> FCM	SF-S	SF-S O2	Temp	
1	200						
2	200 <i>200 Salmin</i>						
3	175		3A-B				
4	150		4A-B				
5	125	3-1	5	X			
6	125	3-2	6	X			
7	125	3-3	7	X			
8	100	4-1	8	X			
9	100	4-2	9	X			
10	100	4-3	10	X			
11	75	5-1	11	X			
12	75	5-2	12	X			
13	75	5-3	13	X			
14	45	6-1	14	X			
15	45	6-2	15	X			
16	45	6-3	16	X			
17	25	7-1	17	X			
18	25	7-2	18	X			
19	25	7-3	19	X			
20	15				121,122,123	26.7	
21	5	8-1	21	X			
22	5	8-2	22	X			
23	5	8-3	23	X			
24	5						

Notes:

*00's 121-123 found with
 no SW deal 1730 8/2/19*

Hawaii Ocean Time-series

HOT-314

WOCE Deep Data Sheet

Station # 2 Date: 8/2/2019 (HST)
 Cast # 2 Time: 5:08 (HST)
 Operator(s): EG, TC, RT, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/Alk	pH	DOC	Nutrient	Refrig. Si	
1	4800	3	3.7				1	1	
2	4600	16	3.6				2	2	
3	4500	17,18,19	4.2	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	4400	20	3.6				4	4	
5	4200	21	3.6				5	5	
6	4000	22,23,24	4.1			6ABC	6A-B	6A-B	
7	3800	25	3.7				7	7	
8	3600	26	3.7				8	8	
9	3400	27	3.7				9	9	
10	3200	28	3.7				10	10	
11	3000	29,30,31	4.2	11	4	11ABC	11A-B	11A-B	
12	2800	32	3.9				12	12	
13	2600	33	4.2				13	13	
14	2400	34	4.5				14	14	
15	2200	35	4.2				15	15	
16	2000	36,37,38	4.9	16	5	16ABC	16A-B	16A-B	
17	1800	39	4.8				17	17	
18	1600	150	5.0				18	18	
19	1400	41	5.4				19	19	
20	1200	42	5.9				20	20	
21	1000	43	6.6				21	21	
22	750	44	7.3				22	22	
23	500	45	8.7				23	23	
24	5	46	26.6				24		

Notes:

Hawaii Ocean Time-series

HOT-314

WOCE Deep Data Sheet

Station # 2

Date: 8/2/2019 (HST)

Cast # 2

Time: 5:08 (HST)

Operator(s): EG, TC, RT, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/Alk	pH	DOC	Nutrient	Refrig. Si	
1	4800	15,3	3.7				1	1	
2	4600	16	3.6				2	2	
3	4500	17,18,19	4.2	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	4400	20	3.6				4	4	
5	4200	21	3.6				5	5	
6	4000	22,23,24	4.1			6ABC	6A-B	6A-B	
7	3800	25	3.7				7	7	
8	3600	26	3.7				8	8	
9	3400	27	3.7				9	9	
10	3200	28	3.7				10	10	
11	3000	29,30,31	4.2	11	4	11ABC	11A-B	11A-B	
12	2800	32	3.9				12	12	
13	2600	33	4.2				13	13	
14	2400	34	4.5				14	14	
15	2200	35	4.2				15	15	
16	2000	36,37,38	4.9	16	5	16ABC	16A-B	16A-B	
17	1800	39	4.8				17	17	
18	1600	150	5.0				18	18	
19	1400	41	5.4				19	19	
20	1200	42	5.9				20	20	
21	1000	43	6.6				21	21	
22	750	44	7.3				22	22	
23	500	45	8.7				23	23	
24	5	46	26.6				24		

Notes:

Hawaii Ocean Time-series

HOT-314

PO Shallow Data Sheet

Station # 2
 Cast # 3
 Operator(s): EG, TC, RT, CF

Date: 8/2/2019 (HST)
 Time: 11:34 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	1020	47,48,49	8.2	1	1	1	1A-B	1A-B	1000
2	984	50	7.8				2	2	
3	948	51	7.9				3	3	
4	911	52	8.3				4	4	
5	875	53	8.0				5	5	
6	808	54	8.1				6	6	
7	741	55,56,57	8.8	7	2	7	7	7	750
8	696	58	8.6				8	8	
9	650	59	8.7				9	9	
10	581	60	9.1	10	3	10	10	10	600
11	539	61	9.5				11A-B	11A-B	525
12	495	62	9.9	12	4	12	12	12	500
13	463	63,64,65	10.7				13	13	450
14	404	66	11.4				14		
15	355	67	12.3	15AB	5,6	15	15		350
16	312	68	13.5				16		
17	247	69	16.7	17	7	17	17		250
18	196	70,71,72	19.8				18		225
19	140	73	21.8				19A-B		150
20	110	74	22.7				20		
21	102	75	23.0				21		
22	75	76	24.0				22		
23	45	77	25.2				23		
24	5	78	26.8				24		5

Notes:

Hawaii Ocean Time-series

HOT-314

PO Shallow Data Sheet

Station # 2
 Cast # 3
 Operator(s): EG, TC, RT, CF

Date: 8/2/2019 (HST)
 Time: 11:34 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	1020	47,48,49	8.2	1	1	1	1A-B	1A-B	1000
2	984	50	7.8				2	2	
3	948	51	7.9				3	3	
4	911	52	8.3				4	4	
5	875	53	8.0				5	5	
6	808	54	8.1				6	6	
7	741	55,56,57	8.8	7	2	7	7	7	750
8	696	58	8.6				8	8	
9	650	59	8.7				9	9	
10	581	60	9.1	10	3	10	10	10	600
11	539	61	9.5				11A-B	11A-B	525
12	495	62	9.9	12	4	12	12	12	500
13	463	63,64,65	10.7				13	13	450
14	404	66	11.4				14		
15	355	67	12.3	15AB	5,6	15	15		350
16	312	68	13.5				16		
17	247	69	16.2	17	7	17	17		250
18	196	70,71,72	19.8				18		225
19	140	73	21.8				19A-B		150
20	110	74	22.7				20		
21	102	75	23.0				21		
22	75	76	24.0				22		
23	45	77	25.2				23		
24	5	78	26.8				24		5

Notes:

Hawaii Ocean Time-series

HOT-314

PO Shallow Data Sheet

Station # 2
 Cast # 3
 Operator(s): _____

Date: 8/2/2019 (HST)
 Time: _____ (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/Alk	pH	DOC	Nutrient	Refriger. Si	Replicate Depths
1	1000	47,48,49		1	1	1	1A-B	1A-B	1020
2		50					2	2	984
3		51					3	3	948
4		52					4	4	911
5		53					5	5	875
6		54					6	6	808
7	750	55,56,57		7	2	7	7	7	741★
8		58					8	8	696
9		59					9	9	650
10	600	60		10	3	10	10	10	581A
11	525	61					11A-B	11A-B	539★
12	500	62		12	4	12	12	12	495★
13	450	63,64,65					13	13	463★
14		66					14		404
15	350	67		15AB	5,6	15	15		355★
16		68					16		312
17	250	69		17	7	17	17		247★
18	225	70,71,72					18		196★
19	150	73					19AB		140★
20	150	74					20A-B		110
21		75					21		102
22		76					22		75
23		77					23		45
24	5	78					24		5

Notes:

Hawaii Ocean Time-series

HOT- 314

PC/PN Data Sheet

Station # 2 Date: 8/2/2019 (HST)
 Cast # 4 Time: 1418 (HST)
 Operator(s): KB, BB, ES Pre-screen mesh size: 202 um
 Blank #'s B1 B2 B3

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DNA	MCA	
1	1000						
2	Sal Min						
3	350	1	8.1	3			
4	350	2	8.0	4			
5	250	3	10	5			
6	200	4	10	6			
7	175	5	10	7			
8	150	6	10	8			
9	125	7,8	4,4	9A-B			
10	100	9	4	10			
11	75	10	4	11			
12	75				X		
13	45	11	4	13			
14	45				X		
15	25	12,13	4,4	15 A, B			
16	25					X	
17	25				X		
18	5	14	4	18			
19	5				X		
20							
21							
22							
23							
24							

Notes: Carboys #1,2 filtered slow. Aborted at 1830. -1.9 L, -2 L
Brownish, yellowish stuff on filters. 2x500 ml saved from 314-2-4-4 in refer

Hawaii Ocean Time-series

HOT- 314

PC/PN Data Sheet

Station # 2 Date: _____ (HST)
 Cast # 4 Time: _____ (HST)
 Operator(s): _____ Pre-screen mesh size: 202 um
 Blank #'s B1 B2 B3

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DNA	MCA	
1	1000						
2	Sal Min						
3	350	1	10	3			
4	350	2	10	4			
5	250	3	10	5			
6	200	4	10	6			
7	175	5	10	7			
8	150	6	10	8			
9	125	7,8	4,4	9A-B			
10	100	9	4	10			
11	75	10	4	11			
12	75				X		
13	45	11	4	13			
14	45				X		
15	25	12,13	4,4	15 A, B			
16	25					X	
17	25				X		
18	5	14	4	18			
19	5				X		
20							
21							
22							
23							
24							

Notes: Carboy 1,2 filtered slow
 (-1.9L) (-2)L

Hawaii Ocean Time-series

HOT- 314

Particulate Phosphorus Data Sheet

Station # 2 Date: 8/2/2019 (HST)
 Cast # 5 Time: 1717 (HST)
 Operator(s): KB, BB, ES Pre-screen mesh size: 202 um
 Blank #'s B1 B2 B3

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	O2 SF-S	Temp	MC	
1	1000								
2	Sal								
3	350	1	10	3					
4	350	2	10	4					
5	250	3	10	5					
6	200	4	10	6					
7	175	5	10	7					
8	150	6	10	8					
9	125	7,8	4,4	9A-B					
10	100	9	4	10					
11	75	10	4	11					
12	45	11	4	12					
13	25	12,13	4,4,	13 A-B					
14	25				14 A,B				
15	25							X	
16	25							X	
17	15					124,125,126			
18	5	14	4	18					
19	5				19 A,B				
20									
21									
22									
23									
24									

Notes: forgot temp

Hawaii Ocean Time-series

HOT- 314

Particulate Phosphorus Data Sheet

Station # 2 Date: 8/2/2019 (HST)
 Cast # 5 Time: 1717 (HST)
 Operator(s): KB, BB, ES Pre-screen mesh size: 202 um
 Blank #'s B1 B2 B3

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	O2 SF-S	Temp	MC	
1	1000								
2	Sal								
3	350	1	10	3					
4	350	2	10	4					
5	250	3	10	5					
6	200	4	10	6					
7	175	5	10	7					
8	150	6	10	8					
9	125	7,8	4,4	9A-B					
10	100	9	4	10					
11	75	10	4	11					
12	45	11	4	12					
13	25	12,13	4,4,	13 A-B					
14	25				14 A.B				
15	25							X	
16	25							X	
17	15					124,125,126			
18	5	14	4	18					
19	5				18 19 A,B				
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-series
HOT-314
BEACH Shallow Data Sheet (1/2)

Station # 2
Cast # 6
Operator(s): KB, BB, ES

Date: 8/2/2019 (HST)
Time: 2011 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	1000	79	8.0						
2	O ₂ min	80	8.8						
3	Sal min	81	11.8						
4	200	82	20.4	4				1	4
5	175	83	21.2						5
6	165	84	21.5						
7	150	85	21.9	7				2	7
8	130								
9	125	86	22.7						9
10	115	87	23.1						
11	110								
12	100	88,89,96	23.7	12				3	12
13	90								
14	85	91	24.2						
15	75	92	24.4	15				4	15
16	60								16
17	45	93	26.6	17				5	17
18	35								18
19	25	94	26.7	19				6	19
20	25				20		20A-B		
21	15								21
22	5	95	26.8	22A-B				7,8	22
23	5				23	23A-B			
24	5						24A-B		

Notes: Keeling 2150
DOC labels blue (not yellow)
KB broke DO-bottle 90. Spec pH cell #7 sampled late (2203)
DO's did not get SW seal. Caps 79/71 and 84/89 switched

Hawaii Ocean Time-series

HOT-314

BEACH Shallow Data Sheet (1/2)

Station # 2
 Cast # 6
 Operator(s): KA, BH, ES

Date: 8/2/19 (HST)
 Time: 2017 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	1000	79	8.0						
2	O ₂ min	80	8.8						
3	Sal min	81	11.8						
4	200	82	20.4	4				1	4
5	175	83	21.2						5
6	165	84	21.5						
7	150	85	21.9	7				2	7
8	130								
9	125	86	22.7						9
10	115	87	23.1						
11	110								
12	100	88,89,90	23.7	12				3	12
13	90								
14	85	91	24.2						
15	75	92	24.4	15				4	15
16	60								16
17	45	93	26.6	17				5	17
18	35								18
19	25	94	26.7	19				6	19
20	25				20		20A-B		
21	15								21
22	5	95	26.8	22A-B				7,8	22
23	5				23	23A-B			
24	5						24A-B		

Notes: Keeling ϕ 150

Spec pH #7 sample of late (pH 2203)

Oxygen winklers did not have SW seal.

Stoppers from winklers 79/71 and 84/89 were switched

Hawaii Ocean Time-series

HOT-314

BEACH Shallow Data Sheet (2/2)

Station # 2
 Cast # 6
 Operator(s): KB, BB, ES

Date: 8/2/2019 (HST)
 Time: 2011 (HST)

Rosette Position	Desired Depth	Nutrient	LLN	LLP				
1	1000							
2	O₂ min							
3	Sal min							
4	200	4						
5	175	5	5	5				
6	165		6					
7	150	7	7A-B	7				
8	130		8					
9	125	9A-B	9	9				
10	115		10	10				
11	110		11					
12	100	12	12A-B	12				
13	90		13					
14	85		14	14				
15	75	15	15	15				
16	60	16	16	16				
17	45	17A-B	17	17				
18	35	18	18					
19	25	19	19	19				
20	25							
21	15	21	21					
22	5	22	22A-B	22				
23	5							
24	5							

Notes:

Hawaii Ocean Time-series

HOT-314

BEACH Shallow Data Sheet (2/2)

Station # 2 Date: _____ (HST)
 Cast # 6 Time: _____ (HST)
 Operator(s): _____

Rosette Position	Desired Depth	Nutrient	LLN	LLP				
1	1000							
2	O ₂ min							
3	Sal min							
4	200	4						
5	175	5	5	5				
6	165		6					
7	150	7	7A-B	7				
8	130		8					
9	125	9A-B	9	9				
10	115		10	10				
11	110		11					
12	100	12	12A-B	12				
13	90		13					
14	85		14	14				
15	75	15	15	15				
16	60	16	16	16				
17	45	17A-B	17	17				
18	35	18	18					
19	25	19	19	19				
20	25							
21	15	21	21					
22	5	22	22A-B	22				
23	5							
24	5							

Notes:

Hawaii Ocean Time-series

HOT-314

Open Data Sheet

Station # 2
 Cast # 7
 Operator(s): KB, BB, ES

Date: 8/2/2019 (HST)
 Time: 2339 (HST)

Rosette Position	Desired Depth	SF-S	DNA	MCA				
1	1000							
2	500							
3	Smin			X				
4	250			X				
5	175		X					
6	175			X				
7	150		X					
8	150			X				
9	125		X					
10	125			X				
11	100		X					
12	100			X				
13	75			X				
14	45			X				
15	25	15A,B						
16	25			X				
17	5	17A,B						
18	5			X				
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series

HOT-314

Open Data Sheet

Station # 2
 Cast # 7
 Operator(s): KB, BB, ES

Date: 8/2/2019 (HST)
 Time: 2339 (HST)

Rosette Position	Desired Depth	SF-S	DNA	MCA				
1	1000							
2	Sub Min 500			X				
3	500 5 MIN			X				
4	250			X				
5	175		X					
6	175			X				
7	150		X					
8	150			X				
9	125		X					
10	125			X				
11	100		X					
12	100			X				
13	75			X				
14	45			X				
15	25	15A,B						
16	25			X				
17	5	17A,B						
18	5			X				
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series

HOT- 314

Gas Array Experiment Data Sheet

Station # 2
 Cast # 8
 Operator(s): TC, EG, RT, CF

Date: 8/3/2019 (HST)
 Time: 2:10 (HST)

Rosette Position	Desired Depth	15N2	SF-S				
1	1020						
2	Sal min						
3	125	3-1					
4	125	3-2					
5	125	3-3					
6	100	4-1					
7	100	4-2					
8	100	4-3					
9	75	5-1					
10	75	5-2					
11	75	5-3					
12	45	6-1					
13	45	6-2					
14	45	6-3					
15	25	7-1					
16	25	7-2					
17	25	7-3					
18	25		18A,B				
19	5	8-1					
20	5	8-2					
21	5	8-3					
22	5		22A,B				
23							
24							

Notes:

Hawaii Ocean Time-series

HOT- 314

Gas Array Experiment Data Sheet

Station # 2
 Cast # 8
 Operator(s): UN, MB, ES, JB

Date: 8/3/2019 (HST)
 Time: 0210 (HST)

380

Rosette Position	Desired Depth	15N2	SF-S				
1	1020						
2	Sal min						
3	125	3-1					
4	125	3-2					
5	125	3-3					
6	100	4-1					
7	100	4-2					
8	100	4-3					
9	75	5-1					
10	75	5-2					
11	75	5-3					
12	45	6-1					
13	45	6-2					
14	45	6-3					
15	25	7-1					
16	25	7-2					
17	25	7-3					
18	25		18A,B				
19	5	8-1					
20	5	8-2					
21	5	8-3					
22	5		22A,B				
23							
24							

Notes:

Hawaii Ocean Time-series

HOT- 314

OPEN Data Sheet

Station # 2
 Cast # 9
 Operator(s): EG, RT, MC

Date: 8/3/2019 (HST)
 Time: 4:58 (HST)

Rosette Position	Desired Depth	DNA	SFS	MC	O2 SF-S	Temp.		
1	1020							
2	Sal min							
3	275	X						
4	250	X						
5	225	X						
6	200	X						
7	175			X				
8	150			X				
9	125			X				
10	100			X				
11	75			X				
12	45			X				
13	25			X				
14	25		14AB					
15	15				127,128,129	26.8		
16	5		16AB					
17	5			X				
18								
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series

HOT- 314

OPEN Data Sheet

Station # 2
 Cast # 9
 Operator(s): _____

Date: 8/3/2019 (HST)
 Time: 4:58 (HST)

375

Rosette Position	Desired Depth	DNA	SFS	MC	O2 SF-S	Temp.		
1	1020							
2	Sal min							
3	275	X						
4	250	X						
5	225	X						
6	200	X						
7	175			X				
8	150			X 2				
9	125			X				
10	100			X				
11	75			X				
12	45			X				
13	25			X				
14	25		14AB					
15	15				127,128,129	26.8		
16	5		16AB					
17	5			X				
18								
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series

HOT- 314

Particulate Silica Data Sheet

Station # 2 Date: 8/3/2019 (HST)
 Cast # 10 Time: 8:11 (HST)
 Operator(s): EG, MC, RT, CF Pre-screen mesh size: none
 Blank # **B1, B2, B3**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	MCA		
1	1000							
2	Sal min							
3	175	7	4	3				
4	150	8	4	4				
5	125	9,10	4,4	5A-B				
6	125					X		
7	125					X		
8	125					X		
9	125					X		
10	100	11	4	10				
11	75	12	4	11				
12	75					X		
13	75					X		
14	75					X		
15	75					X		
16	45	13	4	16				
17	25	14,15	4,4	17A-B				
18	25				18AB			
19	5				19AB			
20	5	16	4	20				
21	5					X		
22	5					X		
23	5					X		
24	5					X		

Notes:

Hawaii Ocean Time-series

HOT- 314

Particulate Silica Data Sheet

Station # 2 Date: 8-3-19 (HST)
 Cast # 10 Time: 811 (HST)
 Operator(s): _____ Pre-screen mesh size: none
 Blank # **B1, B2, B3**

450

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	MCA		
1	1000							
2	Sal min							
3	175	7	4	3				
4	150	8	4	4				
5	125	9,10	4,4	5A-B				
6	125					X		
7	125					X		
8	125					X		
9	125					X		
10	100	11	4	10				
11	75	12	4	11				
12	75					X		
13	75					X		
14	75					X		
15	75					X		
16	45	13	4	16				
17	25	14,15	4,4	17A-B				
18	25				18AB			
19	5				19AB			
20	5	16	4	20				
21	5					X		
22	5					X		
23	5					X		
24	5					X		

Notes:

Hawaii Ocean Time-series

HOT- 314

OPEN Data Sheet

Station # 2
 Cast # 11
 Operator(s): MC, RT, BB, CF

Date: 8/3/2019 (HST)
 Time: 11:01 (HST)

Rosette Position	Desired Depth	SF-S	PO	MACA			
1	1000		X				
2	1000		X				
3	1000		X				
4	1000		X				
5	1000		X				
6	1000		X				
7	Sal Min						
8	25			X			
9	25			X			
10	25	10AB					
11	5	11AB					
12	5			X			
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series

HOT- 314

OPEN Data Sheet

Station # 2

Date: 8/3/2019 (HST)

Cast # 11

Time: 1101 (HST)

Operator(s): MC, RT, BB, CF

440

Rosette Position	Desired Depth	SF-S	PO	MACA			
1	1000		X				
2	1000		X				
3	1000		X				
4	1000		X				
5	1000		X				
6	1000		X				
7	Sal Min						
8	25			X			
9	25			X			
10	25	108AB					
11	5	119AB		X			
12	5			X			
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series

HOT- 314

ATP Data Sheet

Station # 2 Date: 8/3/2019 (HST)
 Cast # 12 Time: 1436 (HST)
 Operator(s): KB, BB, ES Pre-screen mesh size: 202um
 Blank #'s 28, 29, 30

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	
1	1000						
2	770					X	
3	500					X	
4	Sal min						
5	400					X	
6	350	1 – 3	3x2	1			
7	300					X	
8	250	4 – 6	3x2	2			
9	150	7 – 9	3x1	7			
10	125	10 – 12	3x1	8			
11	100	13 – 15	3x1	9			
12	75	16 – 18	3x1	10			
13	45	19 – 21	3x1	11			
14	25	22 – 24	3x1	12	17A,B		
15	5				15A,B		
16	5	25 - 27	3x1	13			
17							
18							
19							
20							
21							
22							
23							
24							

**Notes: Niskin 17 not tripped. SF samples from 14 and 15. Still labeled 15 (5 m) and 17 (25m)
 21406 leaked, 21417 filter in top of tube
 Extra KB samples 1-9 red SSW-UW s**

Hawaii Ocean Time-series

HOT- 314

ATP Data Sheet

Station # 2

Date: 8-3-19 (HST)

Cast # 12

Time: 1436 (HST)

Operator(s): _____

Pre-screen mesh size: 202um

Blank #'s 28, 29, 30

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA
1	1000					
2	770					X
3	500					X
4	Sal min					
5	400					X
6	350	1 - 3	3x2	1		
7	300					X
8	250	4 - 6	3x2	2		
9	150	7 - 9	3x1	7		
10	125	10 - 12	3x1	8		
11	100	13 - 15	3x1	9		
12	75	16 - 18	3x1	10		
13	45	19 - 21	3x1	11		
14	25	22 - 24	3x1	14 12		
15	25				15A,B	
16	5	25 - 27	3x1	16 13		
17	5				17AB	
18						
19						
20						
21						
22						
23						
24						

31406 - leaked

Notes: 17 Nisk rb tripped
SF sample 17 → 14 (25 m)
15 → 15 (5 m)

Hawaii Ocean Time-series

HOT-314

OPEN CAST Data Sheet

Station # 2
 Cast # 13
 Operator(s): KB, BB, ES

Date: 8/3/2019 (HST)
 Time: 1705 (HST)

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp	MCA	
1	1000						
2	800	2					
3	600	3					
4	Sal Min						
5	400	5					
6	300	6					
7	200	7					
8	175	8					
9	150	9					
10	125	10					
11	100	11					
12	75	12					
13	45	13					
14	25	14					
15	25		15A,B				
16	25					X	
17	25					X	
18	25					X	
19	15			130,131,132	27.2		
20	5		20A,B		27.1		
21	5	21					
22							
23							
24							

Notes:

Hawaii Ocean Time-series

HOT-314

OPEN CAST Data Sheet

Station # 2
 Cast # 13
 Operator(s): KB, BB, ES

Date: 8/3/2019 (HST)
 Time: 1705 (HST)

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp	MCA	
1	1000						
2	800	2					
3	600	3					
4	Sal Min						
5	400	5					
6	300	6					
7	200	7					
8	175	8					
9	150	9					
10	125	10					
11	100	11					
12	75	12					
13	45	13					
14	25	14					
15	25		15A,B				
16	25					X	
17	25					X	
18	25					X	
19	15			130.131.132	27.2 °C		
20	5		20A,B		27.1 °C		
21	5	21					
22							
23							
24							

Notes:

Hawaii Ocean Time-series

HOT-314

HPLC & Chl *a*. Bottle Data Sheet

Station # 2
 Cast # 14
 Operator(s): KB, BB, ES

Date: 8/3/2019 (HST)
 Time: 2025 (HST)

Rosette Position	Desired Depth	Carboy #	Total Volume	HPLC	Chl <i>a</i> .	MCA		
1	1000							
2	Sal min							
3	175	1	10	3	3			
4	150	2	10	4	4			
5	135	7	4	5	5A-B			
6	125	8,9	4,4	6A-B	6			
7	125					X		
8	115	10	4	8	8			
9	100	11	4	9	9			
10	100					X		
11	85	12	4	11	11			
12	75	13	4	12	12			
13	75					X		
14	60	14	4	14	14A-B			
15	45	15,16	4,4	15A-B	15			
16	45					X		
17	25	3	8.2	17	17			
18	25					X		
19	5	4	9	19	19			
20	5					X		
21								
22								
23								
24								

Notes C-pix on during cast
314-2-14-5 – filter busted. Filtered OK.
Aborted carboys 3,4 at 2340 8.2L and 9L respectively

Hawaii Ocean Time-series

HOT-314

HPLC & Chl *a*. Bottle Data Sheet

Station # 2
 Cast # 14
 Operator(s): KB, BB, ES

Date: 8/3/2019 (HST)
 Time: 2025 (HST)

Rosette Position	Desired Depth	Carboy #	Total Volume	HPLC	Chl <i>a</i> .	MCA		
1	1000							
2	Sal min							
3	175	1	10	3	3			
4	150	2	10	4	4			
5	135	7	4	5	5A-B			
6	125	8,9	4,4	6A-B	6			
7	125					X		
8	115	10	4	8	8			
9	100	11	4	9	9			
10	100					X		
11	85	12	4	11	11			
12	75	13	4	12	12			
13	75					X		
14	60	14	4	14	14A-B			
15	45	15,16	4,4	15A-B	15			
16	45					X		
17	25	3	10	17	17			
18	25					X		
19	5	4	10	19	19			
20	5					X		
21								
22								
23								
24								

Notes

2-14-5 - filter busted filtered on C-pix on cast

Hawaii Ocean Time-series

HOT-314

WOCE Deep 2 Data Sheet

Station # 2
 Cast # 15
 Operator(s): KB, BB, ES

Date: 8/3/2019 (HST)
 Time: 23:19 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	ML	KB	Chl	
1	4800	97	6.5			1L	2x0.5L	
2	4000	98	5.7					
3	4000			X				
4	3000	99	5.8					
5	3000			X				
6	2000	100	10.5	X				
7	1000			X				
8	1000				X			
9	1000				X			
10	1000				X			
11	O2 min	101	8.5					
12	Sal min	102	12.3					
13	O2 max	103	24.8					
14	5	104	26.5			1L		
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes: Temperature taken 30 minutes later. Only one bottle at 2000 meters fired. DNA and O2 had to share a bottle.

Hawaii Ocean Time-series

HOT-314

WOCE Deep 2 Data Sheet

Station # 2

Date: 8/3/2019 (HST)

Cast # 15

Time: 2319 (HST)

Operator(s): KB, BB, ES

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	ML	KB	Chl
1	4800	97	6.5			1L	2x0.5L
2	4000	98	5.7				
3	4000			X			
4	3000	99	5.8				
5	3000			X			
6	2000	100	10.5	X			
7	2000			X			
8	1000			X			
9	1000				X		
10	1000				X		
11	1000				X		
12	O2 min	101	8.5				
13	Sal min	102	12.3				
14	O2 max	103	24.8				
15	5	104	26.5			1L	
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes: Temp. taken 30 minutes later.
 Only one bottle @ 2000 fixed.
 DNA & O₂ had to share.

Hawaii Ocean Time-series

HOT- 314

STATION 50 Data Sheet

Station # 50
 Cast # 1
 Operator(s): TC, CF, RT

Date: 8/4/2019 (HST)
 Time: 1305 (HST)

Rosette Position	Desired Depth	DIC/TA	pH	SCOPE	ML			
1	1000				X			
2	1000				X			
3	1000				X			
4	200			X				
5	200			X				
6	200			X				
7	200			X				
8	200			X				
9	200			X				
10	200			X				
11	200			X				
12	200			X				
13	200			X				
14	25			X				
15	25			X				
16	25			X				
17	25			X				
18	25			X				
19	25			X				
20	25			X				
21	25			X				
22	25			X				
23	25			X				
24	5	24A,B	1,2,3					

Notes:

Hawaii Ocean Time-series

HOT- 314

STATION 50 Data Sheet

Station # 50
 Cast # 1
 Operator(s): _____

Date: 8/4/2019 (HST)
 Time: _____ (HST)

Rosette Position	Desired Depth	DIC/TA	pH	SCOPE	ML			
1	1000				X			
2	1000				X			
3	1000				X			
4	200			X				
5	200			X				
6	200			X				
7	200			X				
8	200			X				
9	200			X				
10	200			X				
11	200			X				
12	200			X				
13	200			X				
14	25			X				
15	25			X				
16	25			X				
17	25			X				
18	25			X				
19	25			X				
20	25			X				
21	25			X				
22	25			X				
23	25			X				
24	5	24A,B	1,2,3					

Notes:

Hawaii Ocean Time-series

HOT-314

In Situ Primary Production Data Sheet

Operators in: EG, TC, CF, BW

Operators Out: BB, ES, KB

Date in: 8/2/2019

Date out: 8/2/2019

Time in: Start : 4:14 (HST)
Release: 4:31

Time out: 19:48 (HST)

Incubation Depth	
125	✓
100	✓
75	✓
45	✓
25	✓
5	✓

Insertion Time	Owner
4:18	
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Position in: 22°42.2059 N, 158° 00.7910 W

Position out: 22° 47.8326'N, 158°04.5016' W

Average weather condition during incubation:

Average sea state during incubation:

Notes: Tracy's (V) VPR on cast- bright light flash from instrument should discuss it. This is a concern, according to KB.

Begin Inoculation 3:16-3:23

End Inoculation _____

Filtration time _____

Hawaii Ocean Time-series

HOT-314

In Situ Primary Production Data Sheet

EG, TC, CF, BW

Operators in: Operators Out:

Date in: 8/2/2019

Date out: 8/2/2019

Time in: Start: 4:14 (HST)
Release: 4:31

Time out: 19:48 (HST)

Incubation Depth	
125	✓
100	✓
75	✓
45	✓
25	✓
5	✓

Insertion Time	Owner
<u>4:18</u>	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Position in: 22°42.2059 N, 158°00.7910 W

Position out: 22°47.8326 N, 158°04.5016 W

Average weather condition during incubation:

Average sea state during incubation:

Notes:

Begin Inoculation 3:16 - 3:23
Filtration time _____

End Inoculation _____

NOTE: Tracy's (V) VPR on cast - bright light flashes from instrument
 250 mL ^{14C} should discuss if this is a concern (I think it may be KB 8/2/19)

Data Sheet for Sediment Trap Volumes

Cruise #: 314

Analyst: EG, BW

Directions: 1) Mark the traps with 2 lines

a) Line #1 is at the interface

Trap Name	Height (cm) at Line #2 (Top Line)	Height (cm) at line #1 (bottom line)
A	44.9	39.7
B	38.6	34.1
C	37.8	32.8
D	38.0	33.1
E	38.0	33.5
F	36.0	31.5
G	39.0	34.0
H	39.0	34.5
I	38.0	33.4
J	36.8	32.1
K	38.8	33.9
L	37.8	33.4

Data Sheet for Sediment Trap Volumes

Cruise #: 314

Analyst: EG, BW

- Directions: 1) Mark the traps with 2 lines
 a) Line #1 is at the interface

Trap Name	Depth (m)	Height (cm) at Line #2 (Top Line)	w/cap	w/o cap
		44.9	39.7	5.2
A				
B		38.6	34.1	4.5
C		37.8	32.8	5
D		38.0	33.1	4.9
E		38.0	33.5	4.5
F		36.0	31.5	4.5
G		39.0	34.0	5
H		39.0	34.5	4.5
I		38.0	33.4	4.6
J		36.8	32.1	4.7
K		38.1	33.9	4.9
L		37.8	33.4	4.4

Hawaii Ocean Time-series

HOT-314 Sediment Trap Data Sheet

Deployment

Type of traps:	HOT 150m	Date:	8/2/2019
Operator(s):	BW, ES, TB, KB		
Position in:	22° 40.761'N 158° 01.233' W		
Time in (HST):	1:02		
Time released (HST):	1:12		

Recovery

Operator(s):	BW, RT, TC	Date:	8/4/2019
Start recovery (HST):	7:38	Wind:	11-13 knots E, SE
Time out (HST):	7:75	Sea state:	4-5 ft
Position out:	22°58.2899'N, 158° 13.1653' W		

Comments: A-F PC/PN filters ripped, I PPO4 filter ripped, J,L PIC filter ripped

Hawaii Ocean Time-series

HOT-314 Sediment Trap Data Sheet

Deployment

Type of traps:	HOT 150m	Date:	8/2/19
Operator(s):	BW, ES, TB, KM		
Position in:	22° 40.761' 158° 01.233'		
Time in (HST):	0108		
Time released (HST):	0112		

Recovery

Operator(s):	BW, RT, TC	Date:	8/4/2019
Start recovery (HST):	7:38	Wind:	11-13 East, SE
Time out (HST):	7:53	Sea state:	4-5 ft.
Position out:	22° 58.2899' N 158° 13.1653' W		
Weight on board (HST):	7:53		

Comments: A-F PC/PN Filters ripped
 I PPO4 filter ripped
 J, L PIC filter ripped

Hawaii Ocean Time-series HOT-314 In Situ Gas Array Data Sheet

Operators: BW, TC, RT, EG, CF	Operators: BW, TC, RT, EG, MB, CF
Date Deployed : 8/3/2019	Date Recovered: 8/4/2019
Time (HST): 4:21	Time (HST): 6:28
Position In: 22° 43.1944' N 158° 02.3904' W	Position Out: 22°51.5189' N 158°05.6149' W

Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	¹⁵ N Batch	Comments
3-1	8/3/2019	3:29	8/4/2019	6:35		Some ¹⁵ N may have spilled out
3-2		3:31		6:35		
3-3		3:32		6:35		
4-1		3:34		6:35		
4-2		3:35		6:35		
4-3		3:36		6:36		
5-1		3:38		6:36		
5-2		3:39		6:36		
5-3		3:40		7:10		
6-1		3:38		7:11		
6-2		3:39		7:11		
6-3		3:40		7:12		
7-1		3:34		7:12		
7-2		3:36		7:13		
7-3		3:37		7:13		
8-1		3:33		7:13		
8-2		3:32		7:58		
8-3		3:30		7:58		

Hawaii Ocean Time-series

HOT-314

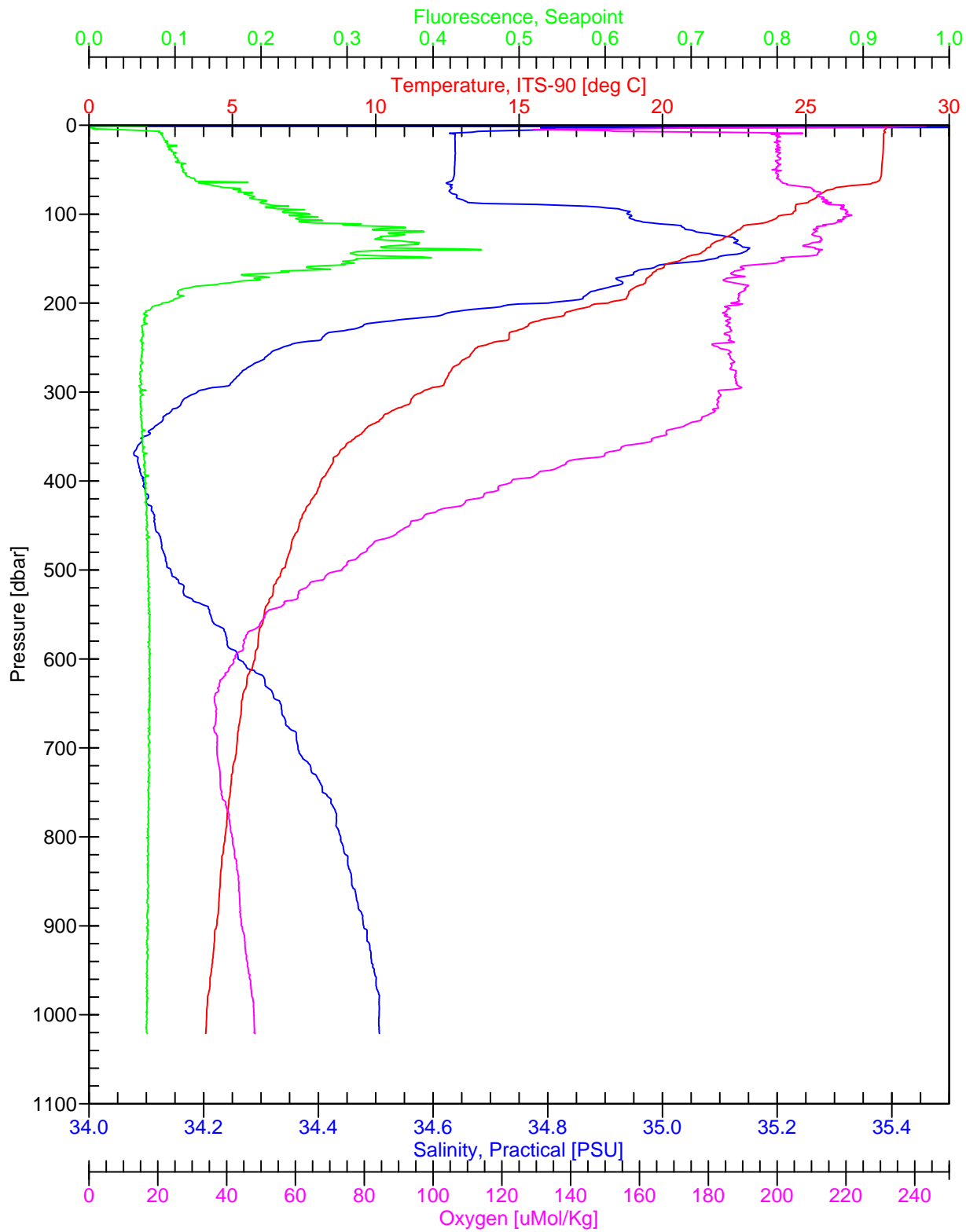
In Situ Gas Array Data Sheet

Operators: BW, RT, TC, EG, CF	Operators: RT, BW, EG, TC, CF, MB
Date Deployed: 8/3/2019	Date Recovered: 8/4/2019
Time (HST): 4:21	Time (HST): 4:28 6:28
Position In: 22° 43.1944'N 158° 02.3904'W	Position Out: 22° 51.5189'N 158° 05.6109'W

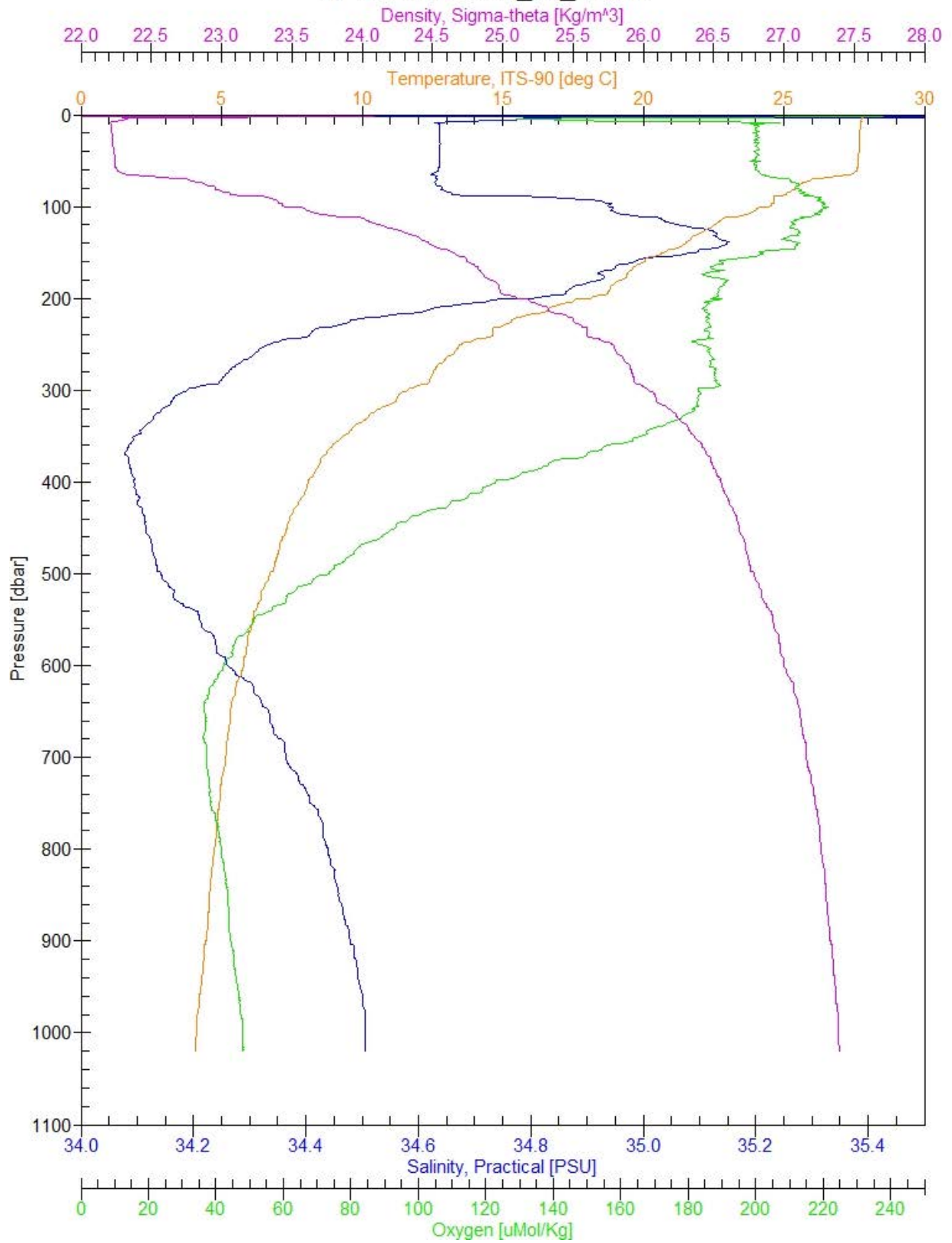
Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments		
3-1 1	8/3/19	3:29a	8/4/19	6:35		* Some 15N may have spilled		
3-2 2	↓	3:31a	↓	6:35				
3-3 3		3:32a		6:35				
4-1 4		3:34a		6:35				
4-2 5		3:35a		6:35				
4-3 6		3:36a		6:36				
5-1 7		3:38a		6:36				
5-2 8		3:39a		6:36				
5-3 1		3:40a		7:10				
6-1 2		3:38a		7:11				
6-2 3		3:39a		7:11				
6-3 4		3:40a		7:12				
7-1 5		3:34a		7:12				
7-2 6		3:36a		7:13				
7-3 7		3:37a		7:13				
8-1 8		3:33a		7:13				
8-2		✓		3:32a		7:58		
8-3				3:30a	↓	11		

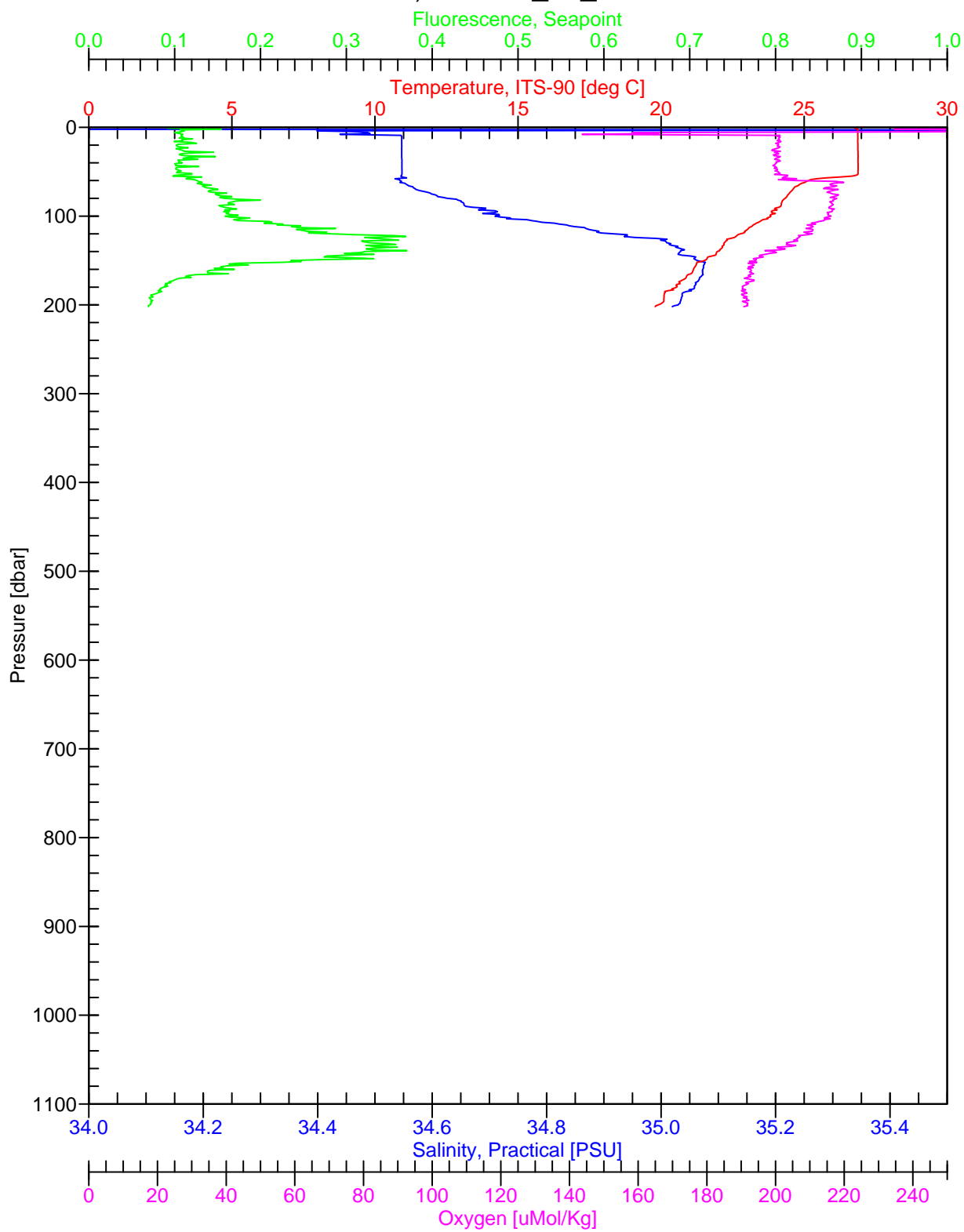
G-1000, hot-314_s1_c1.cnv



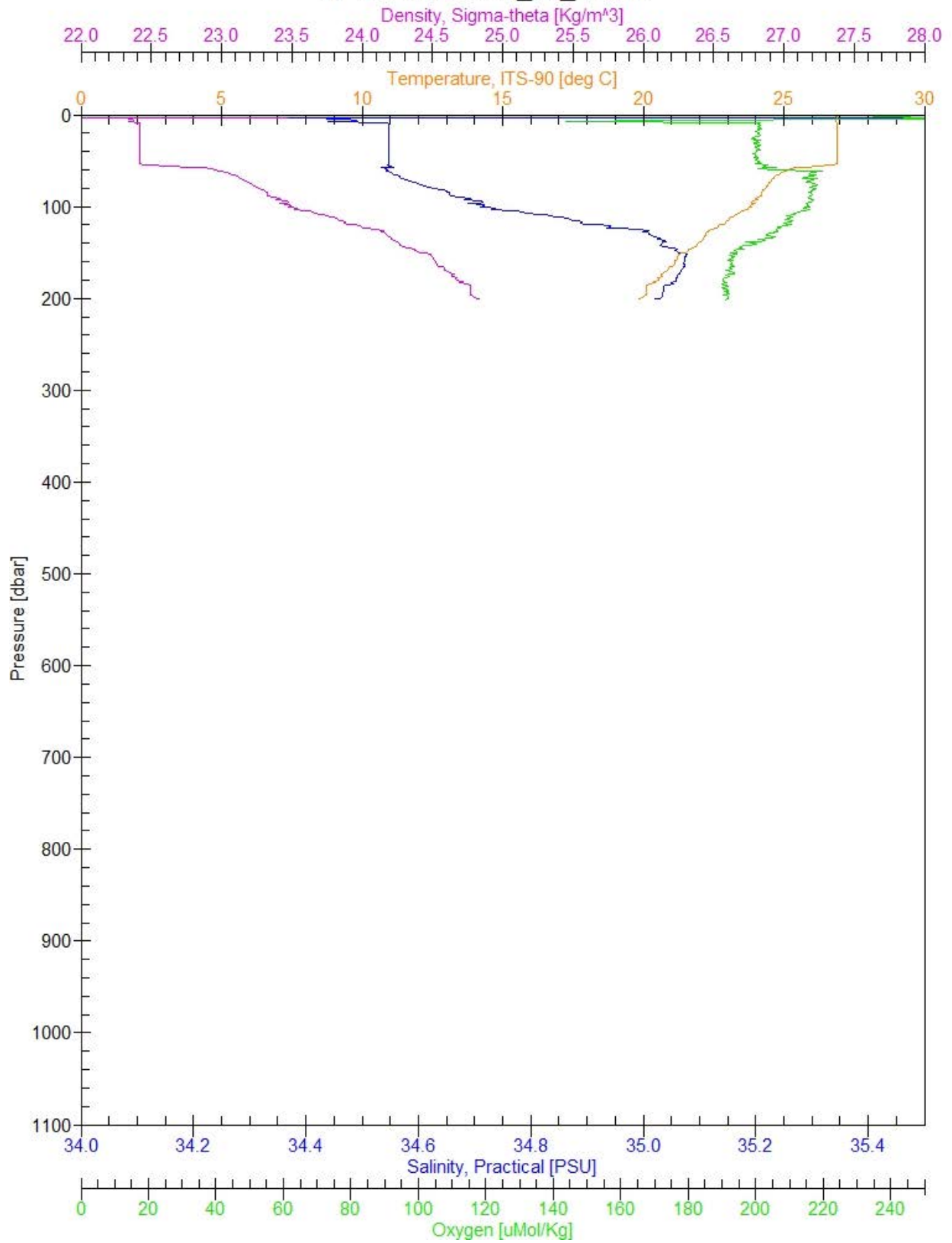
W-1000, hot-314_s1_c1.cnv



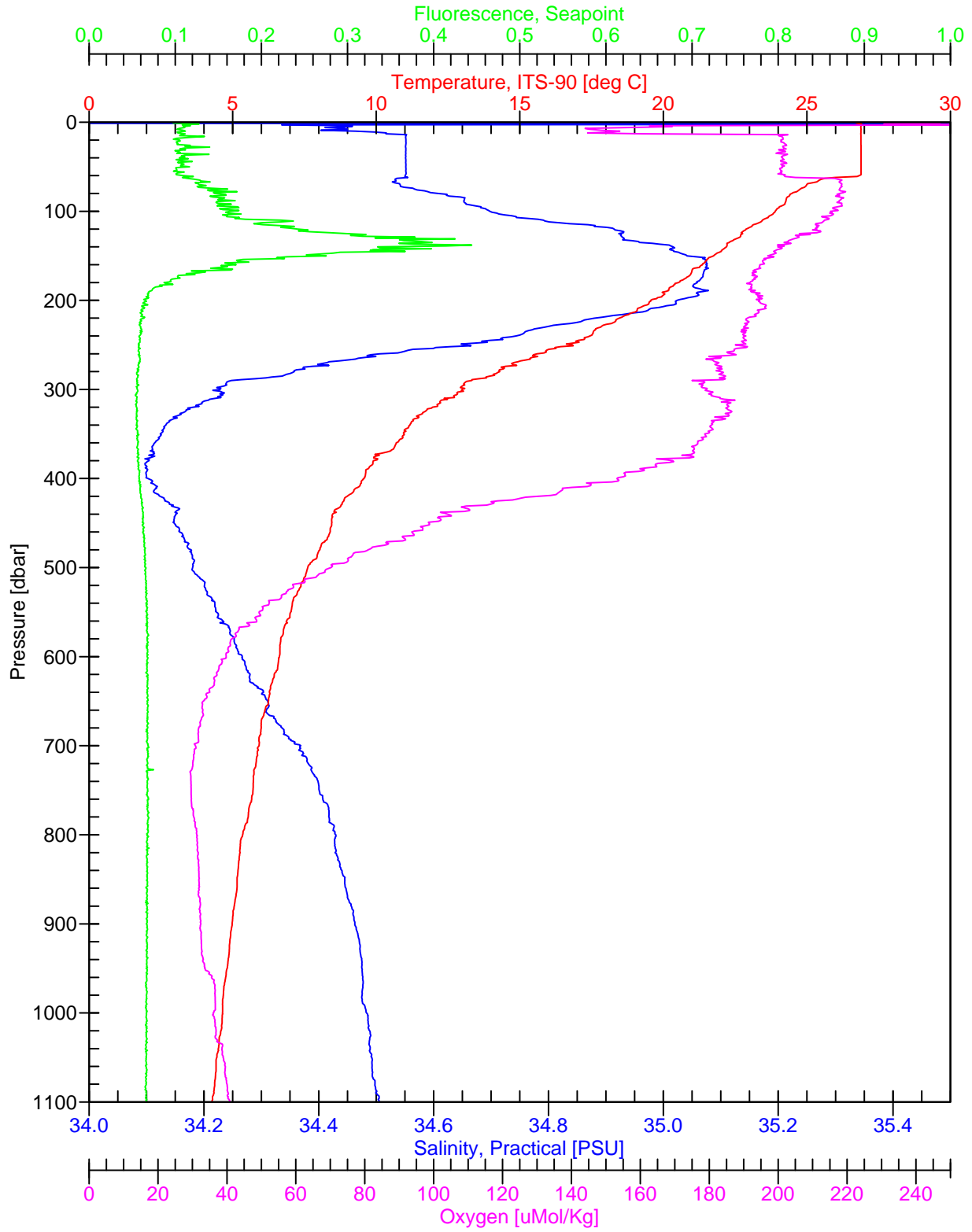
G-1000, hot-314_s2_c1.cnv



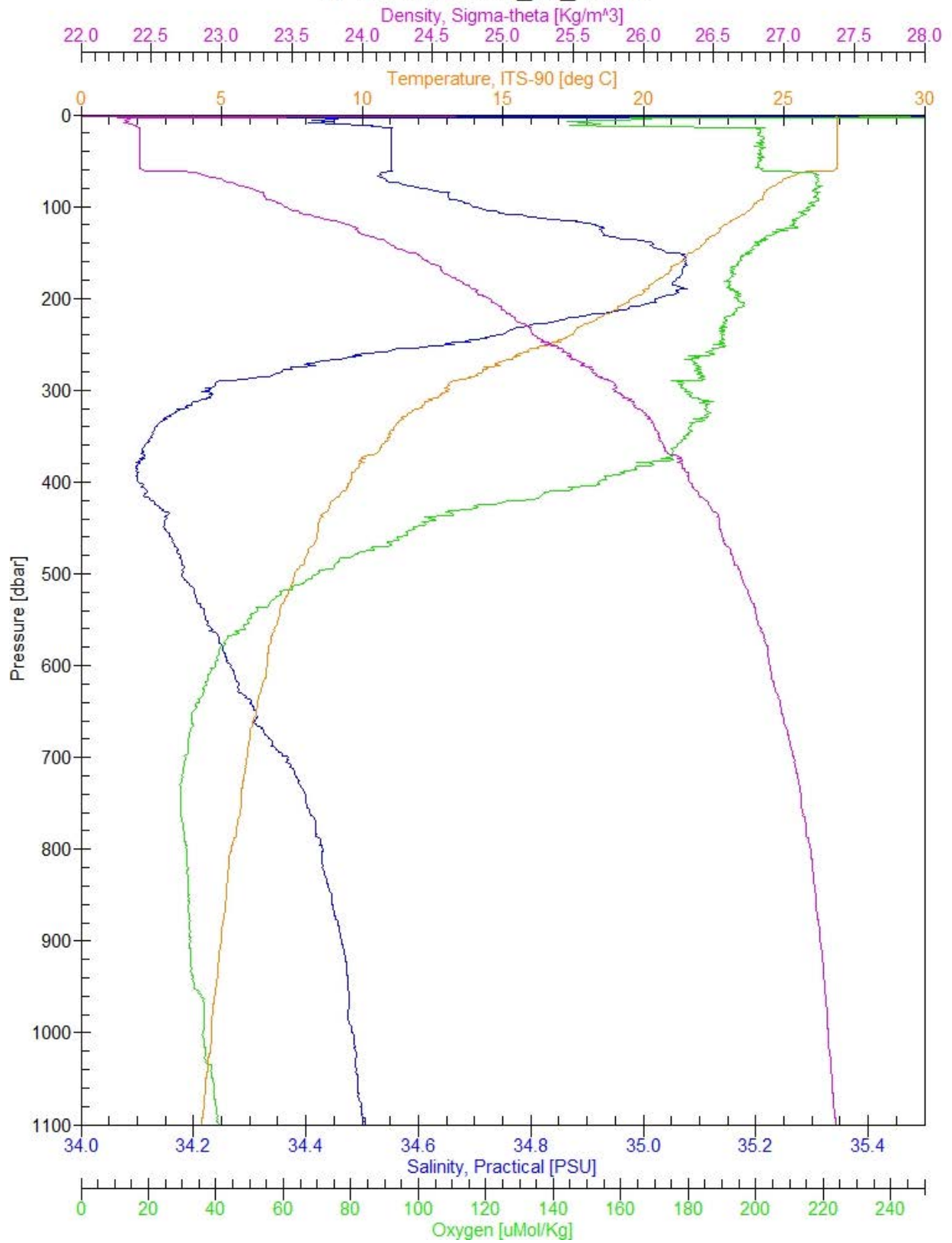
W-1000, hot-314_s2_c1.cnv



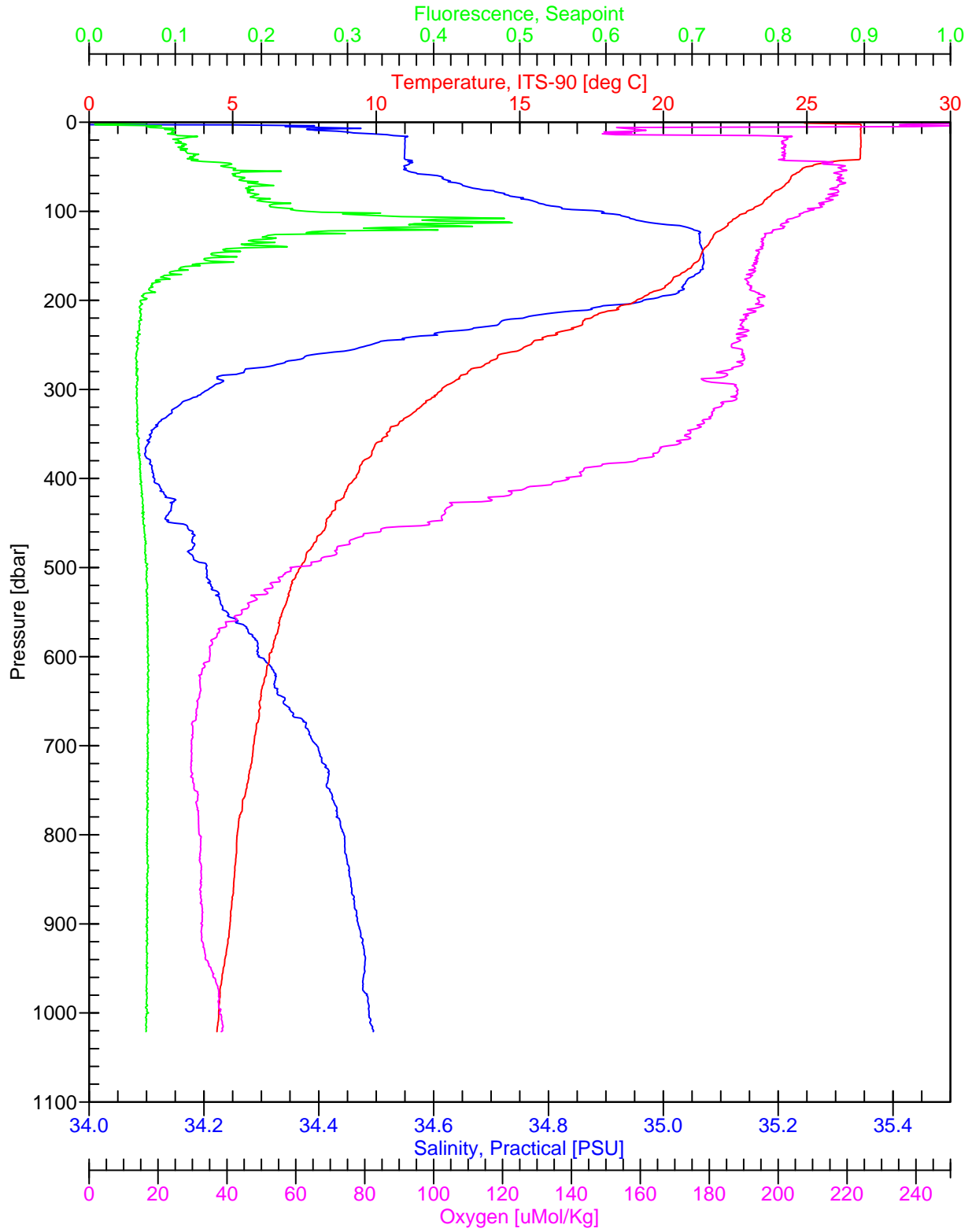
G-1000, hot-314_s2_c2.cnv



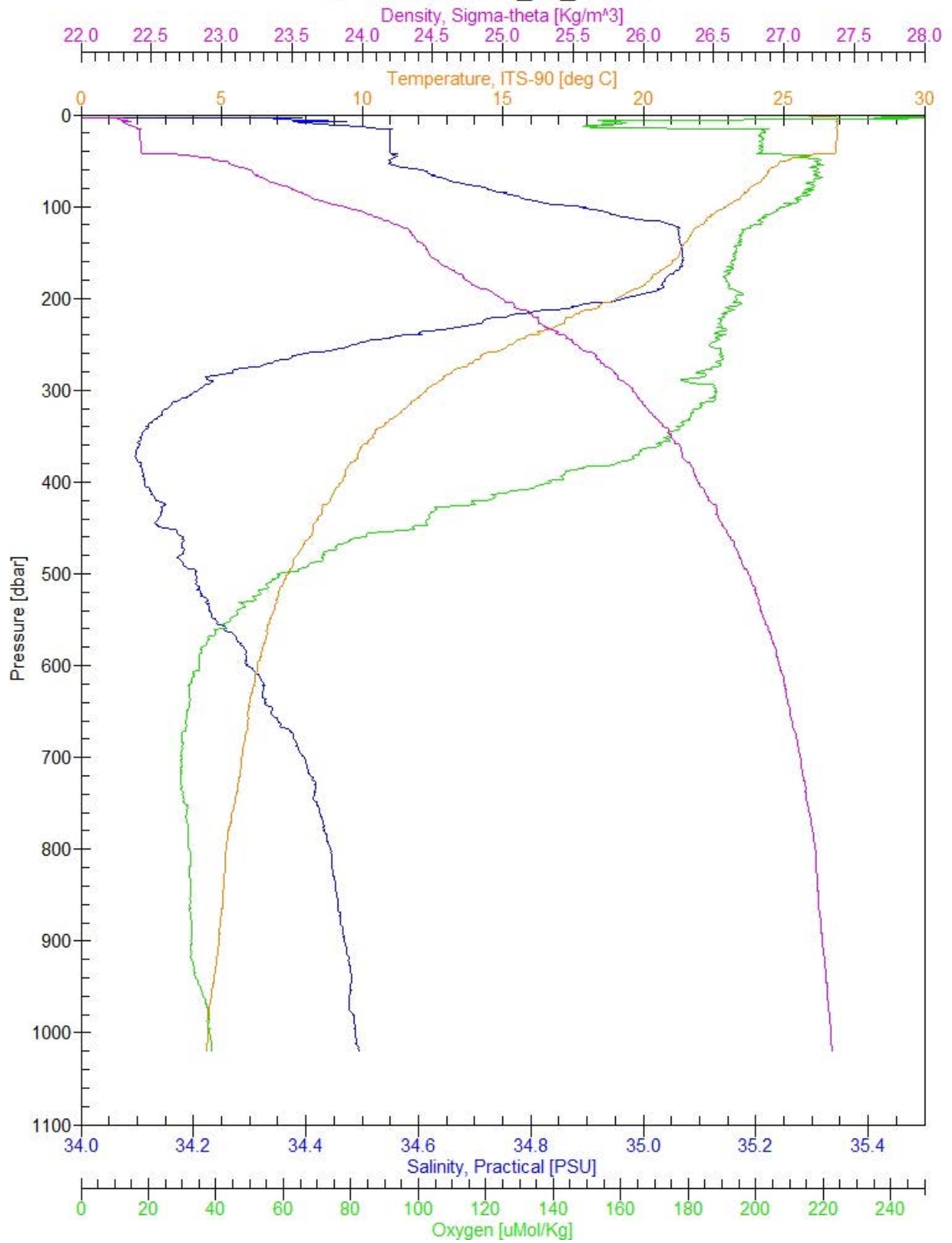
W-1000, hot-314_s2_c2.cnv



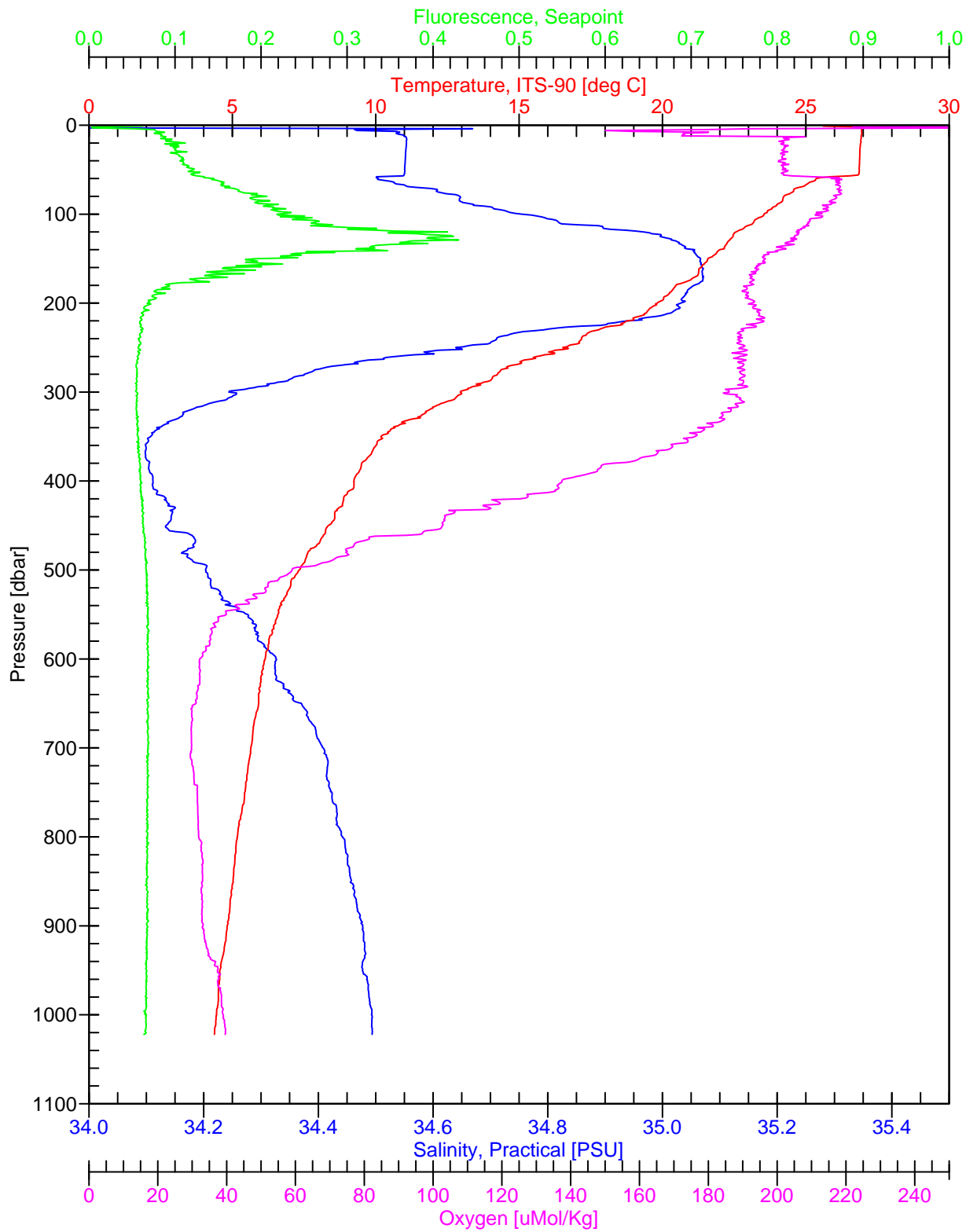
G-1000, hot-314_s2_c3.cnv



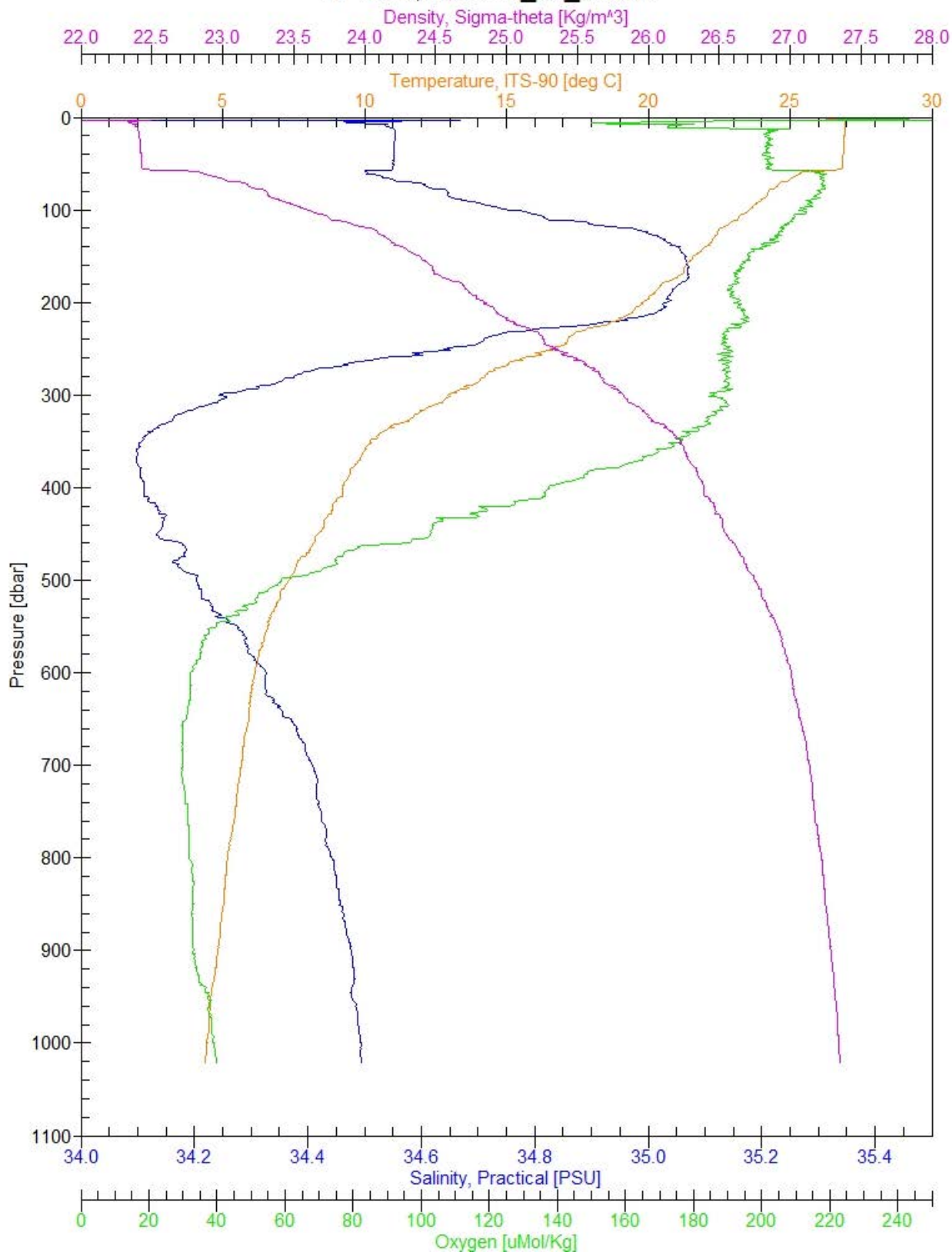
W-1000, hot-314_s2_c3.cnv



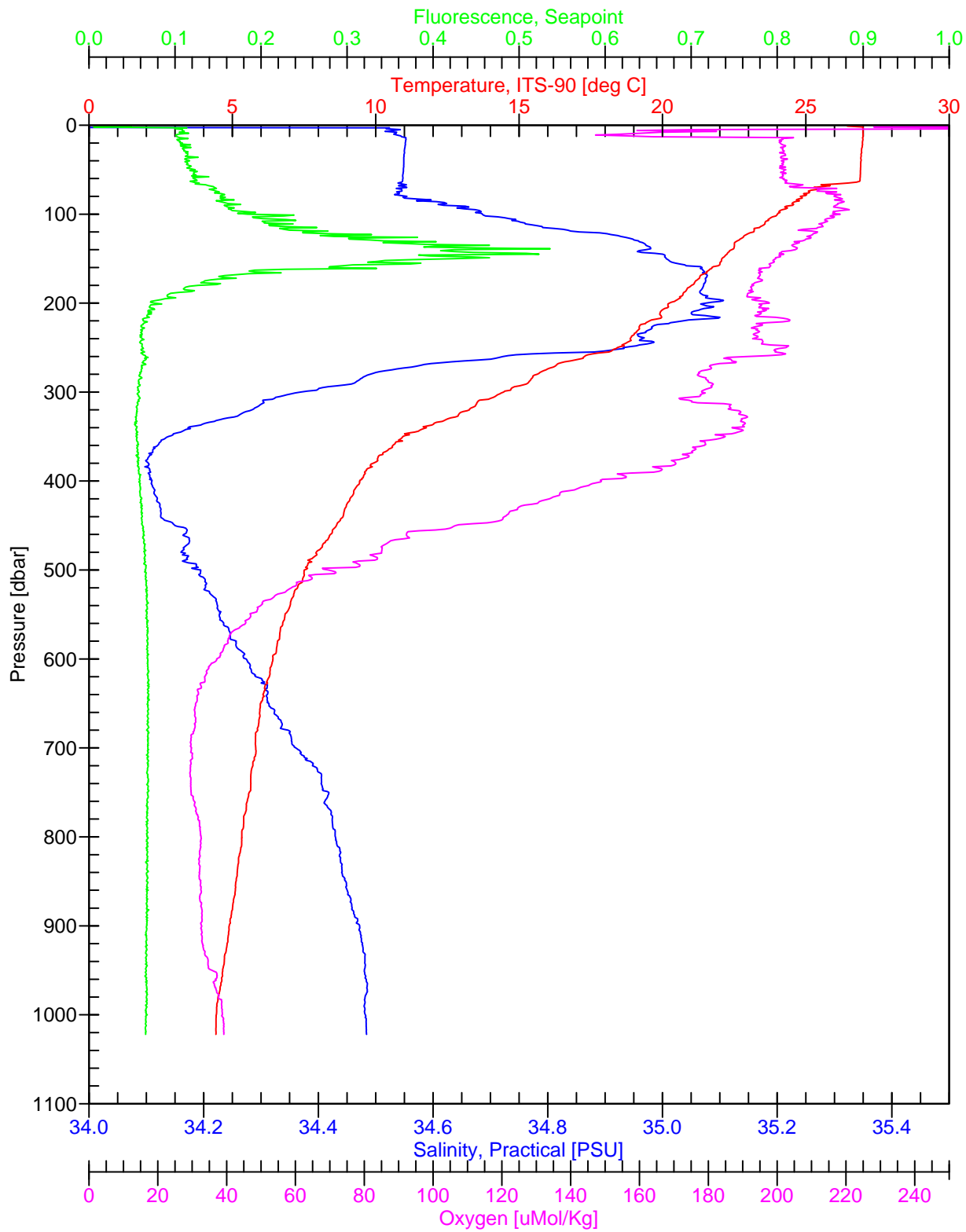
G-1000, hot-314_s2_c4.cnv



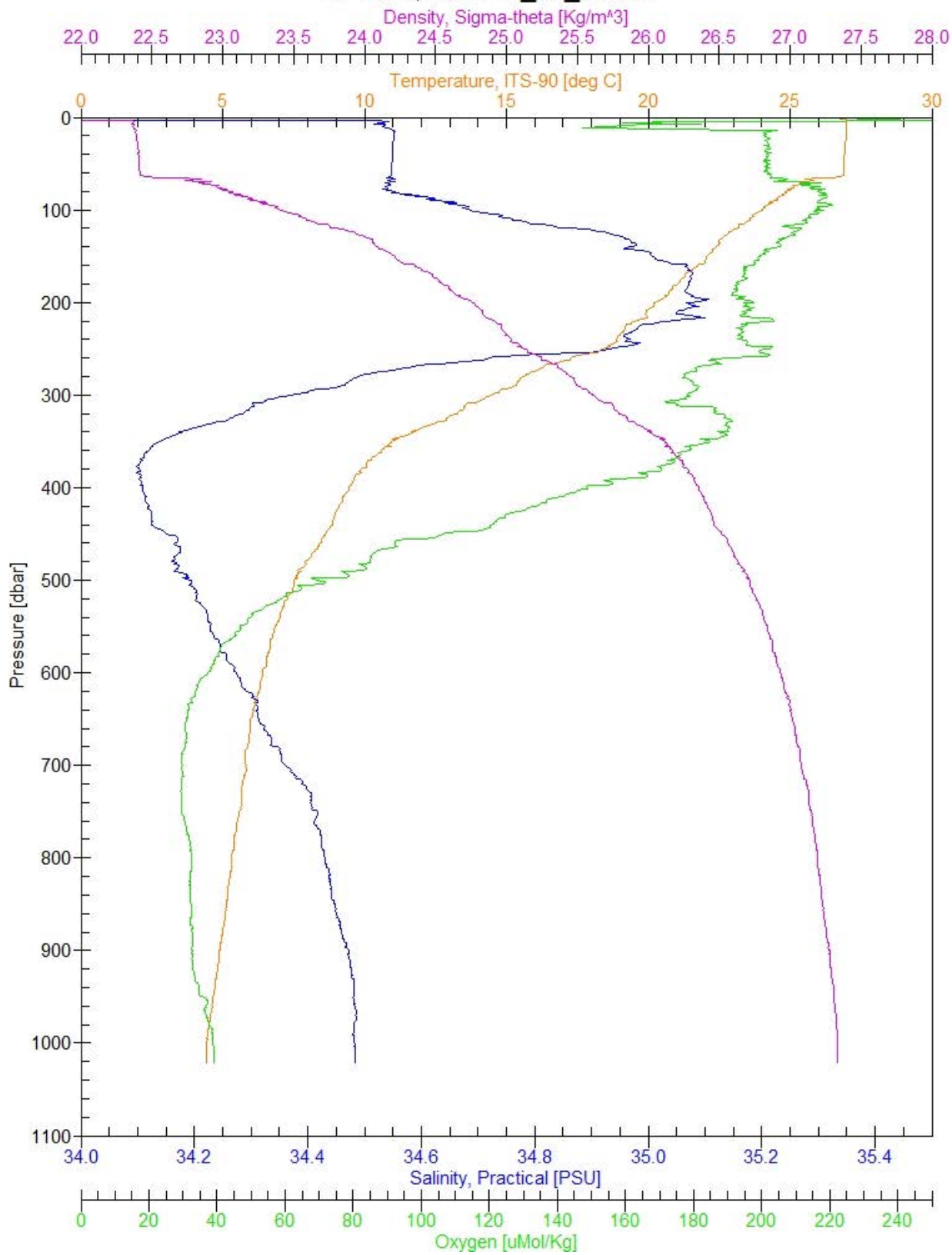
W-1000, hot-314_s2_c4.cnv



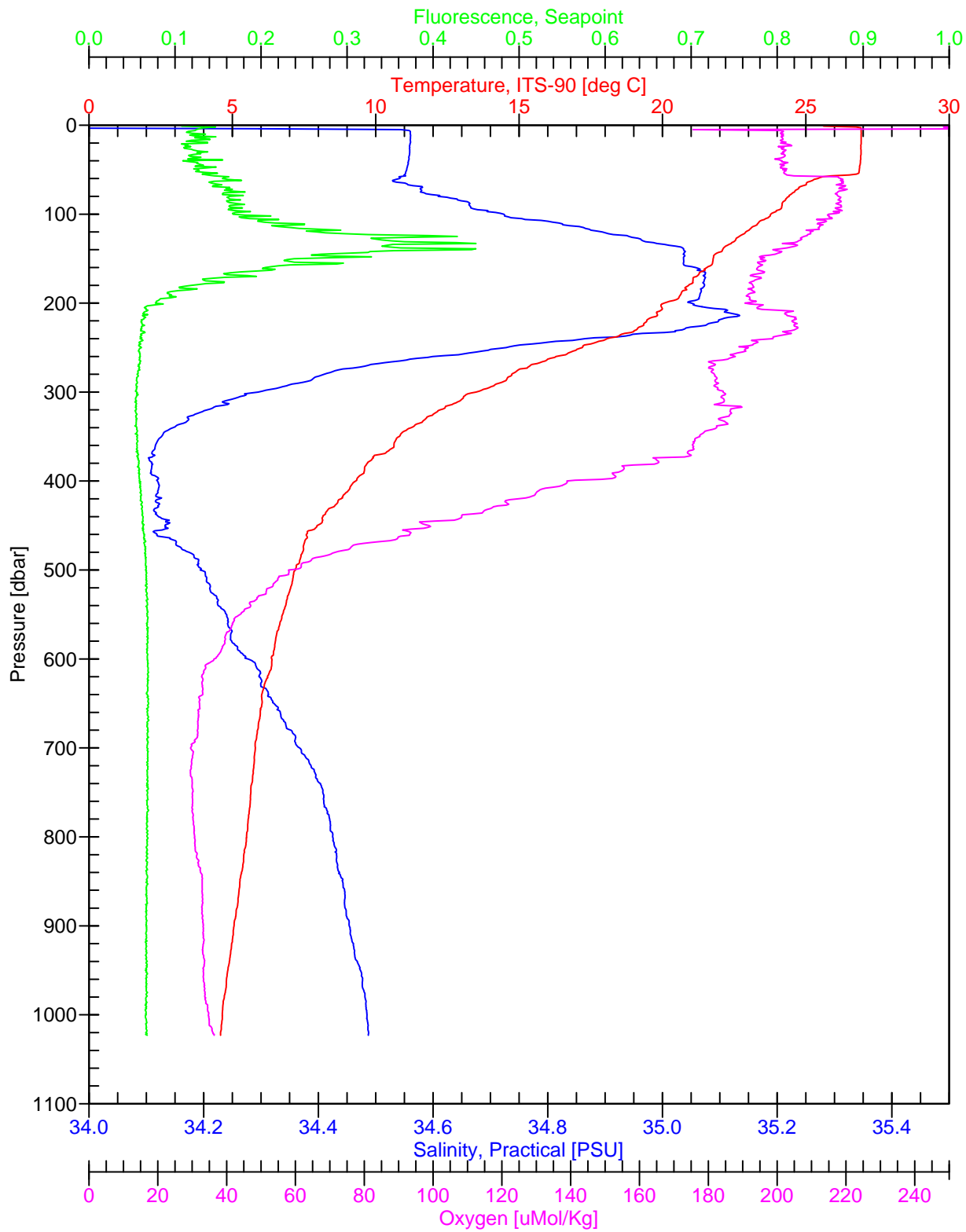
G-1000, hot-314_s2_c5.cnv



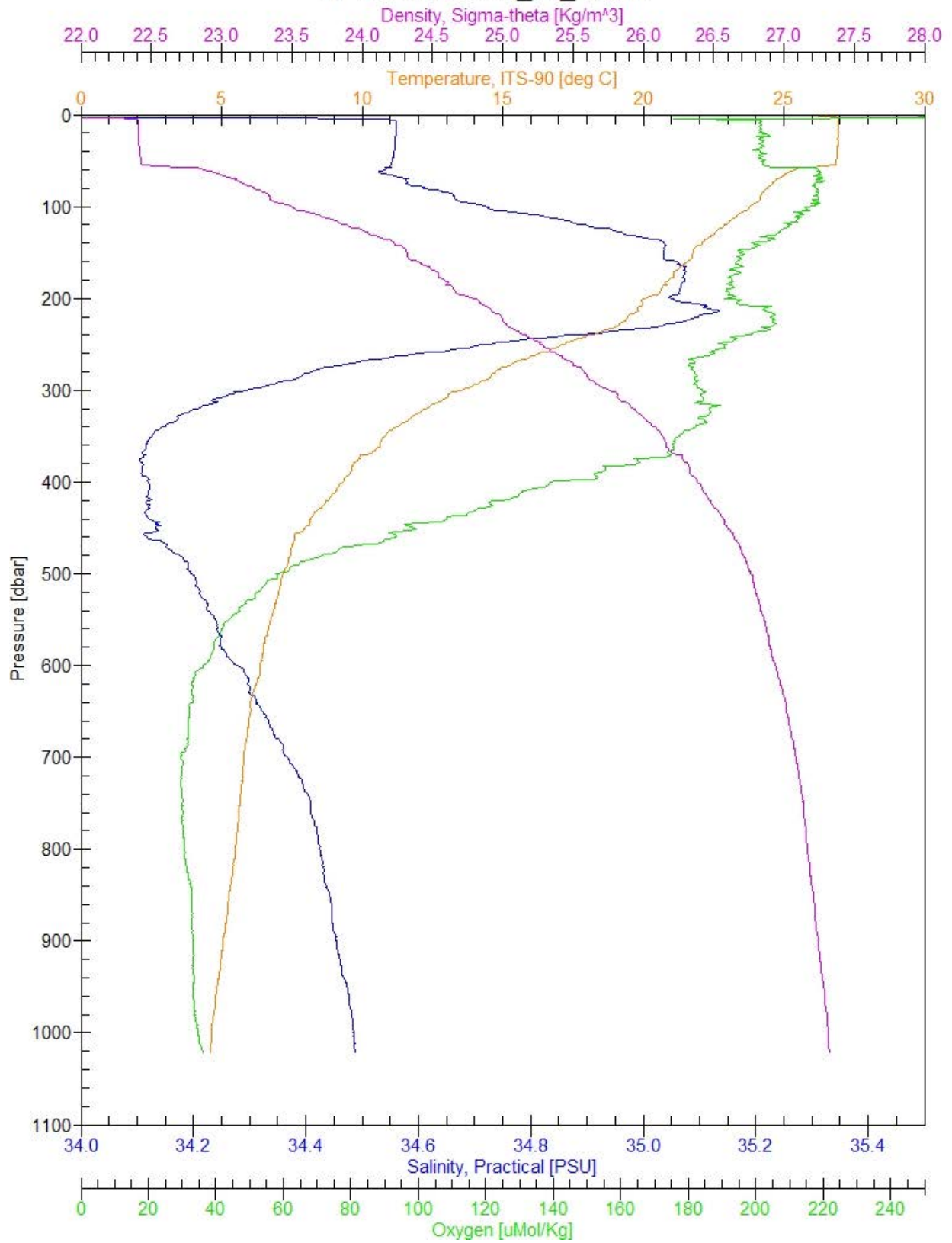
W-1000, hot-314_s2_c5.cnv



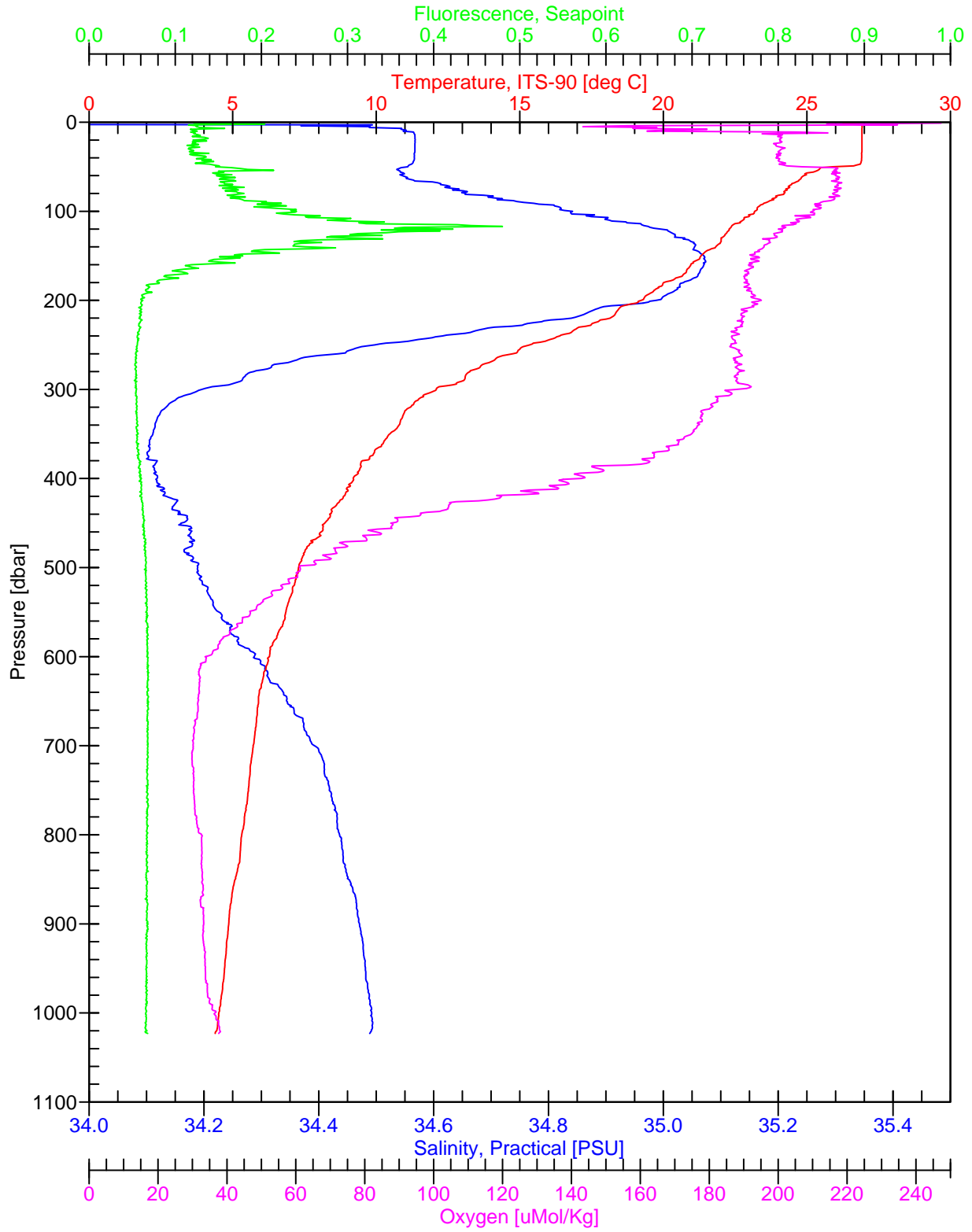
G-1000, hot-314_s2_c6.cnv



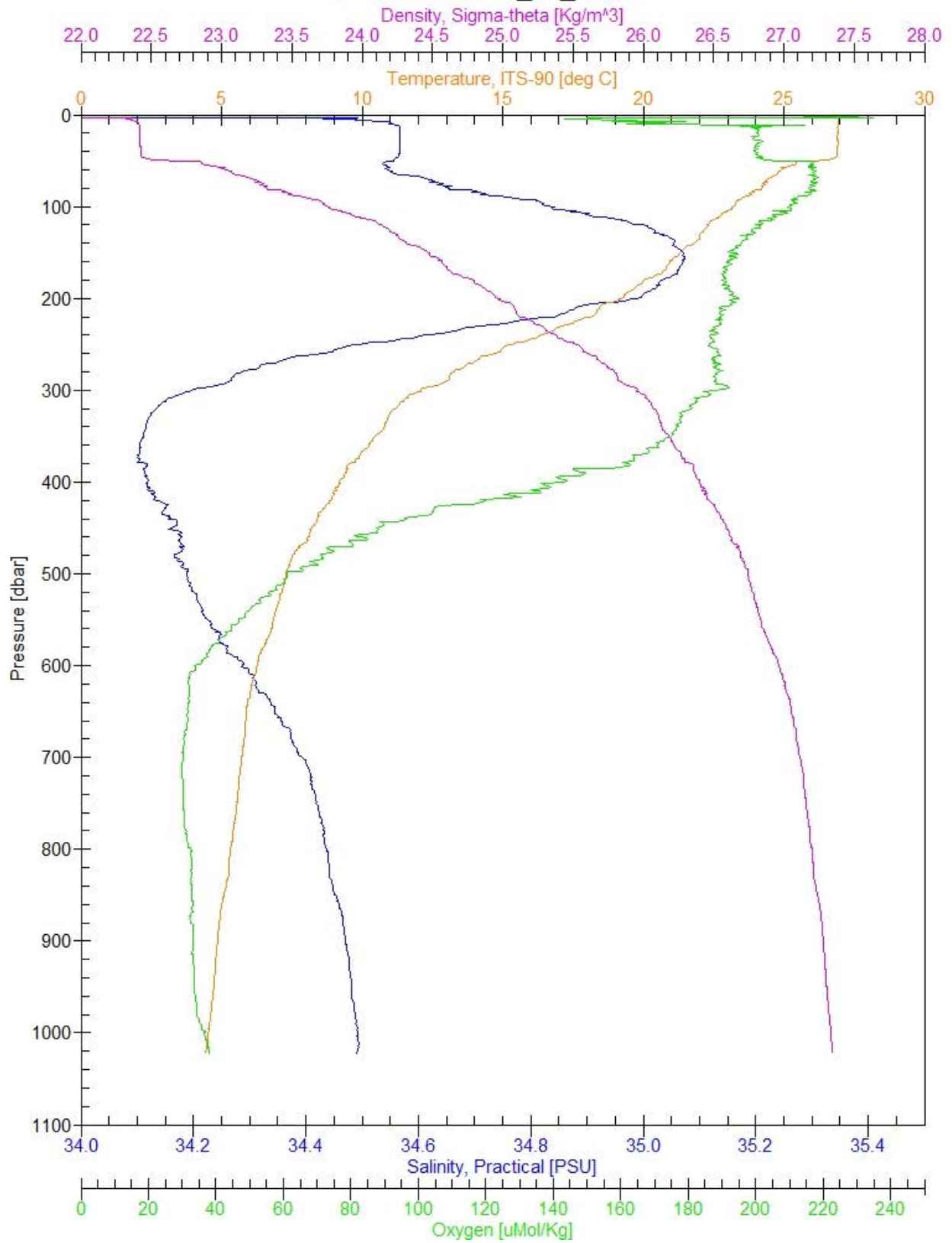
W-1000, hot-314_s2_c6.cnv



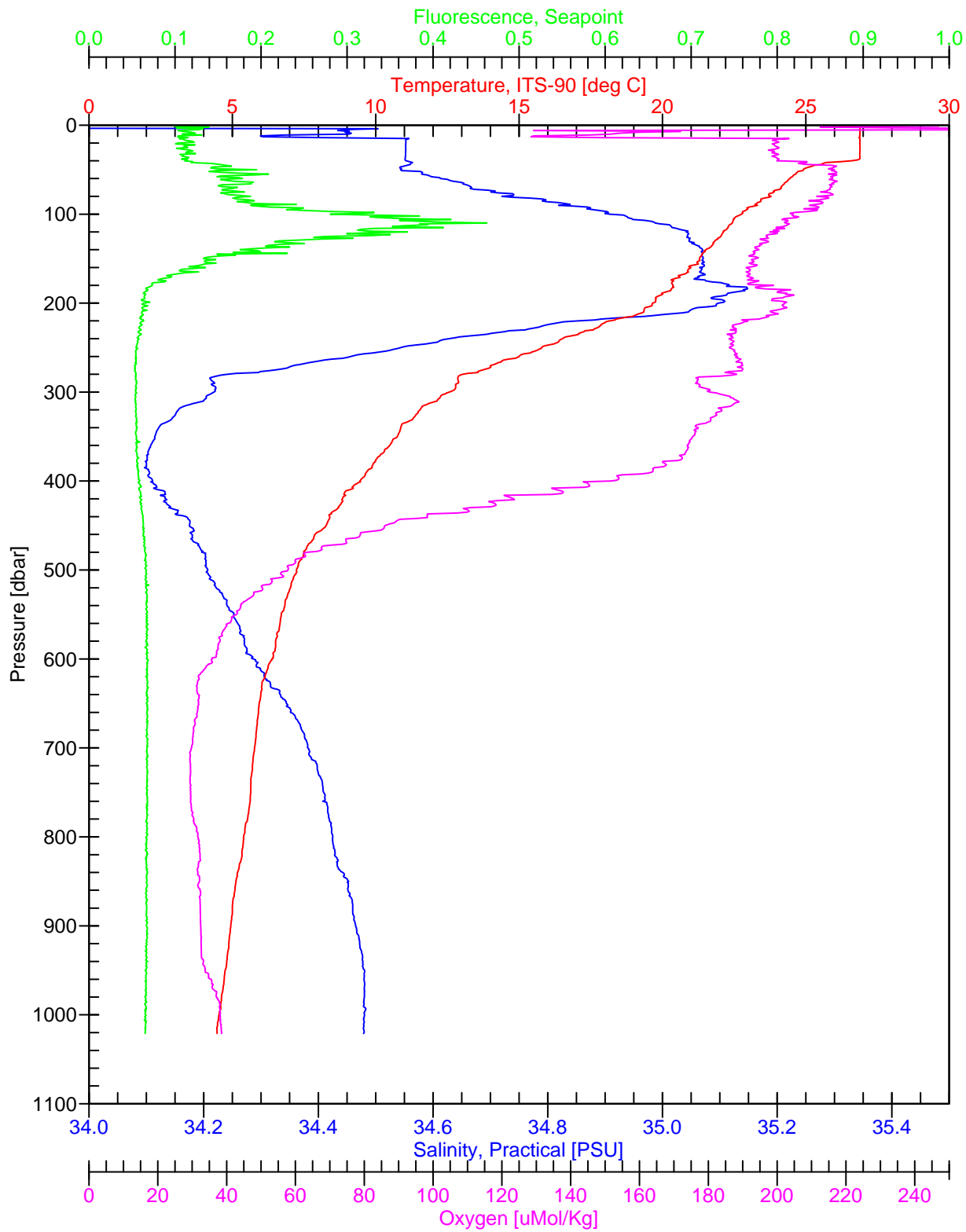
G-1000, hot-314_s2_c7.cnv



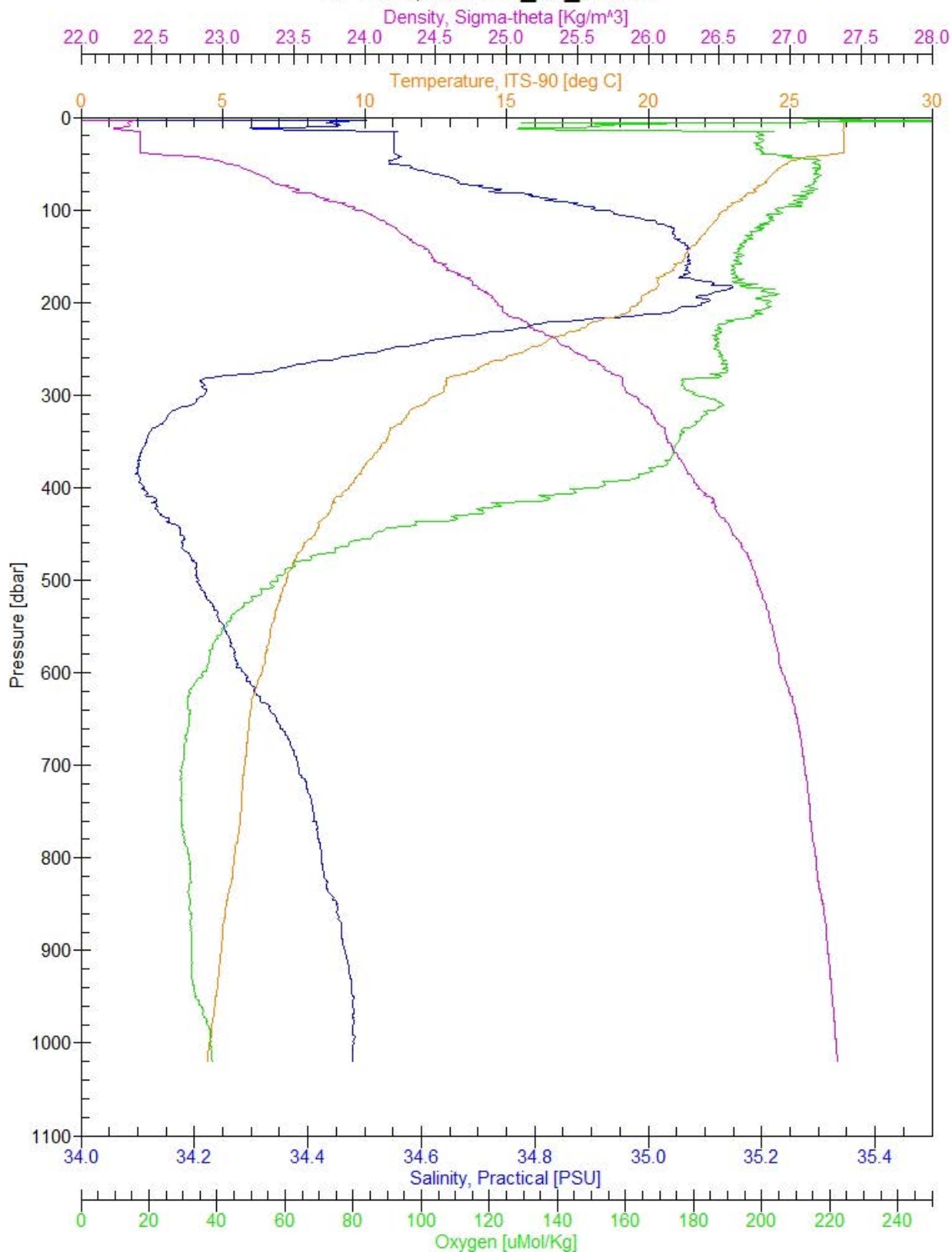
W-1000, hot-314_s2_c7.cnv



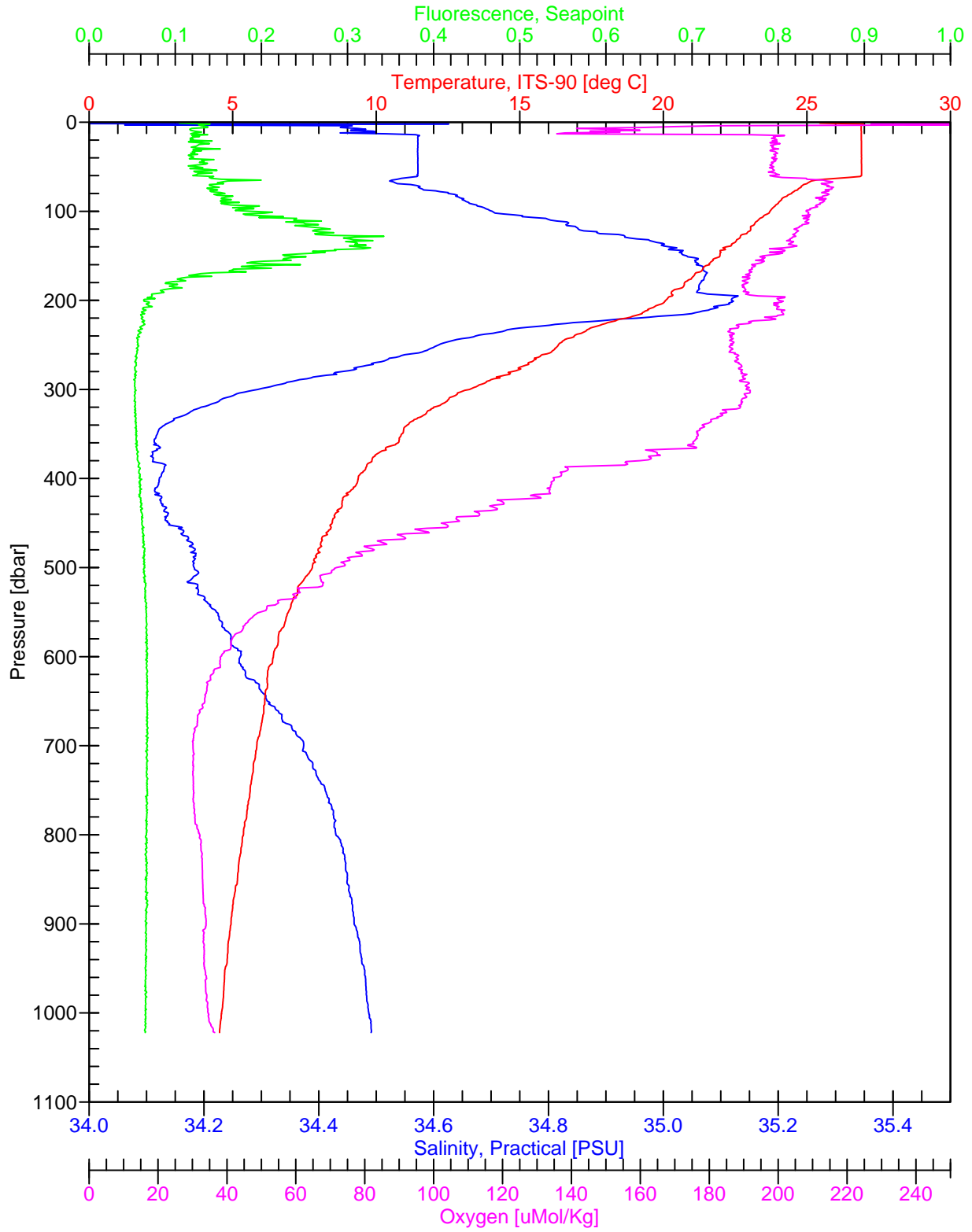
G-1000, hot-314_s2_c8.cnv



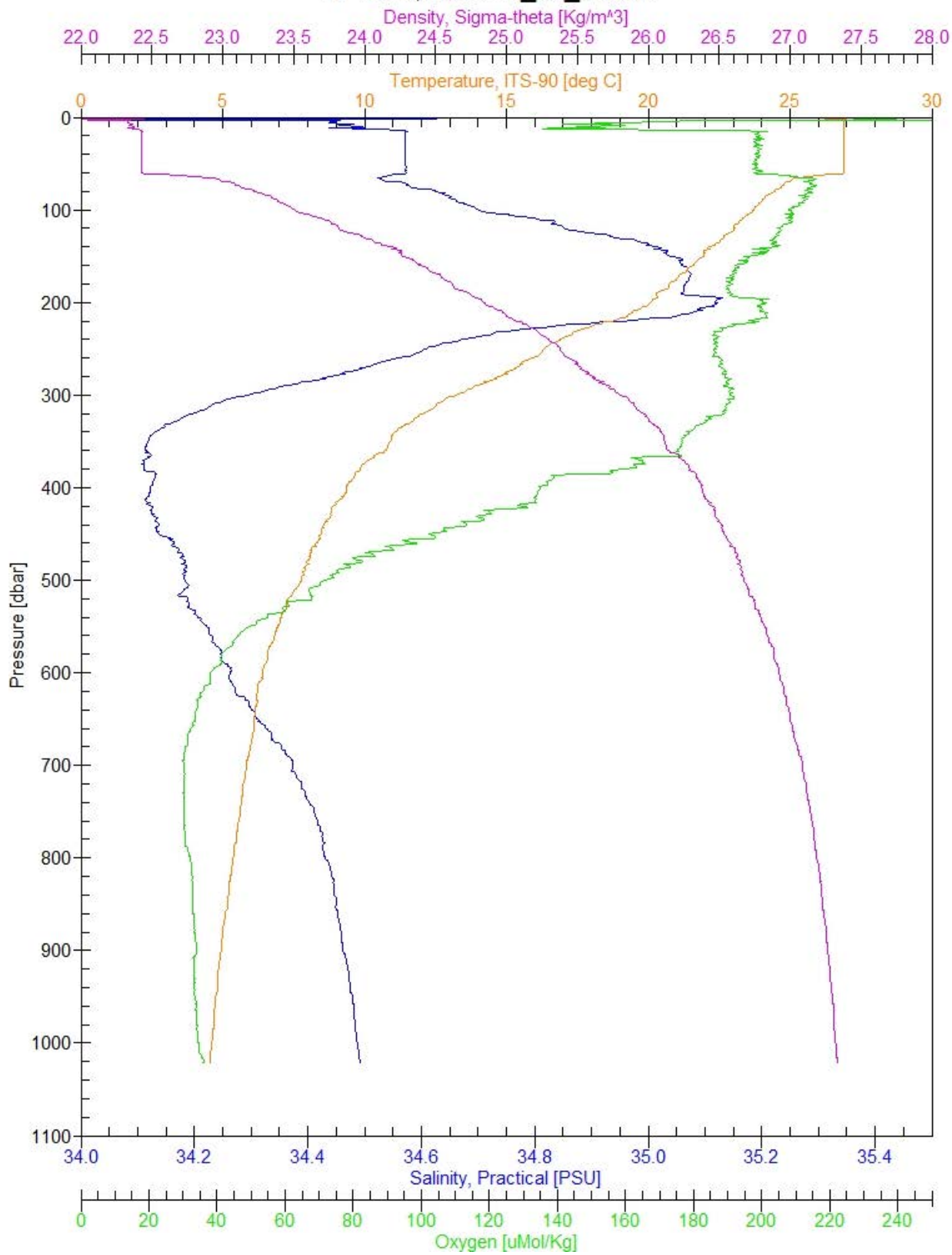
W-1000, hot-314_s2_c8.cnv



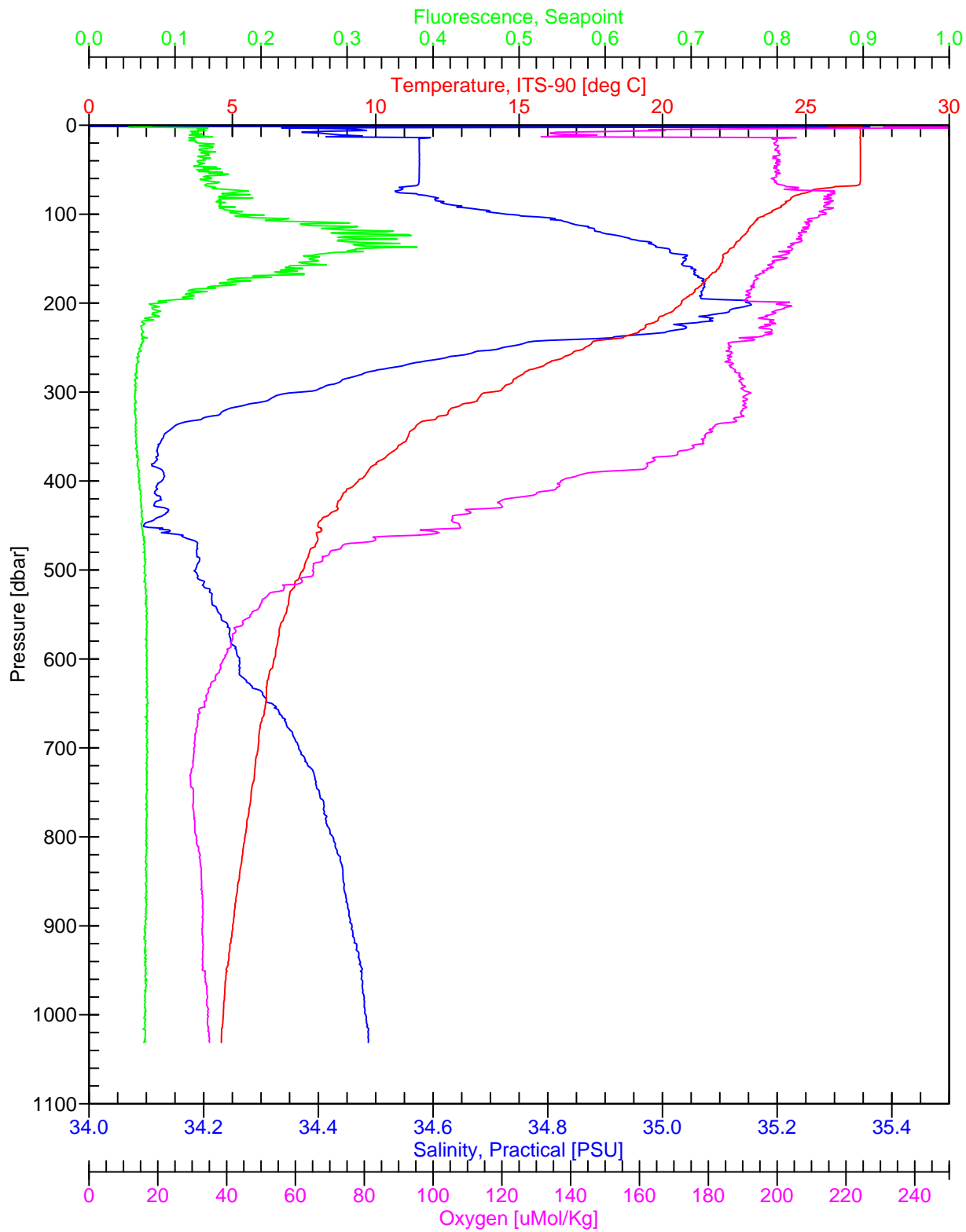
G-1000, hot-314_s2_c9.cnv



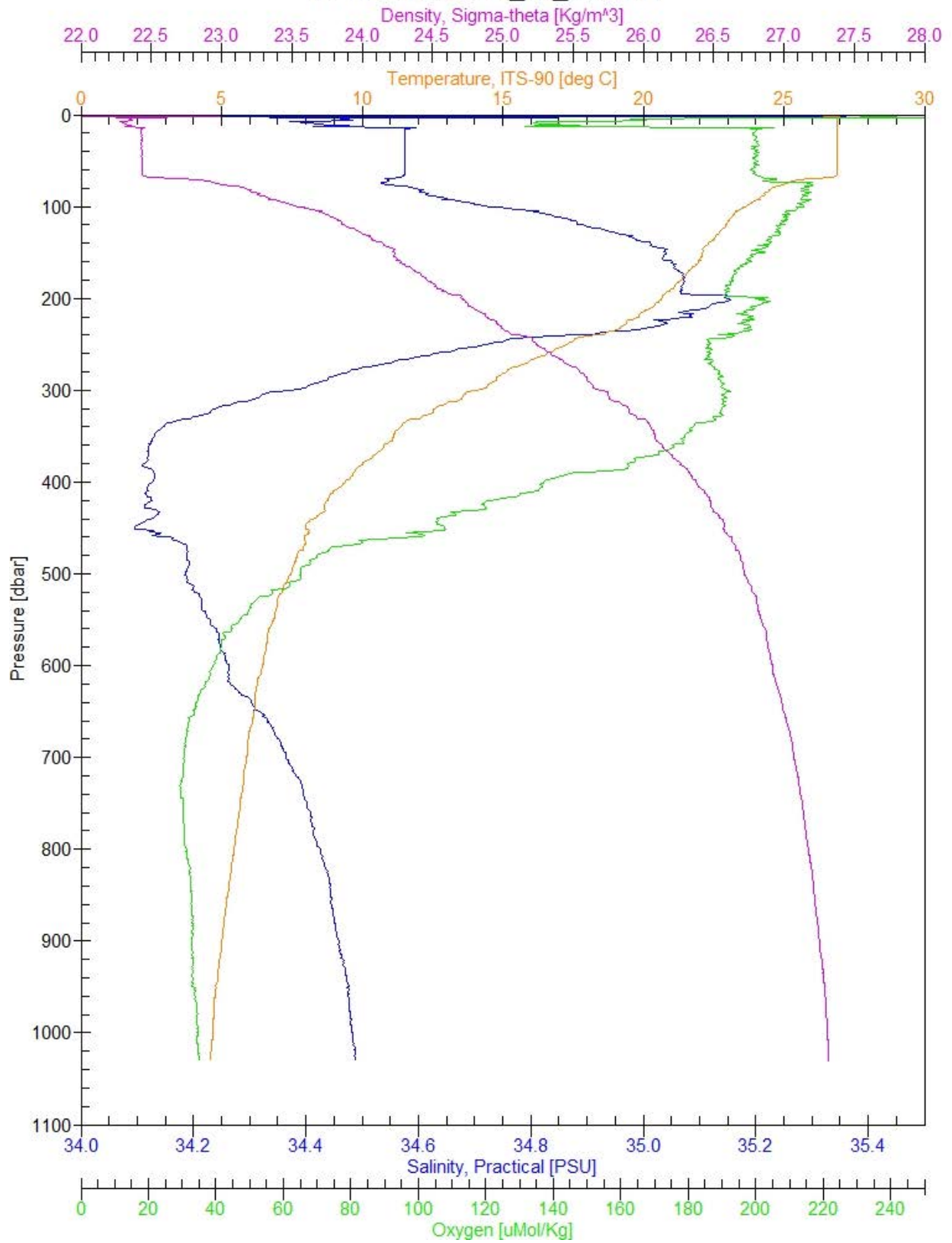
W-1000, hot-314_s2_c9.cnv



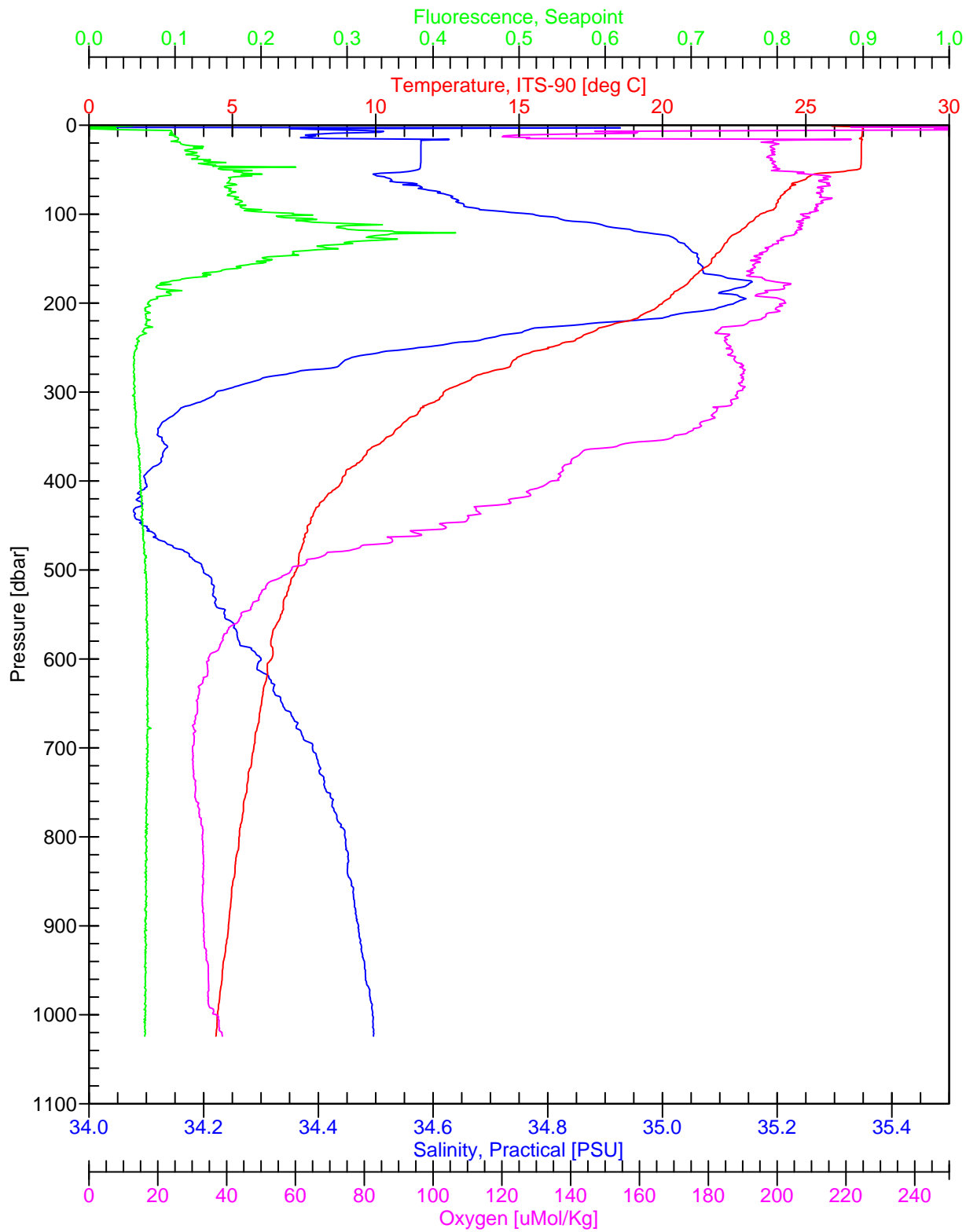
G-1000, hot-314_s2_c10.cnv



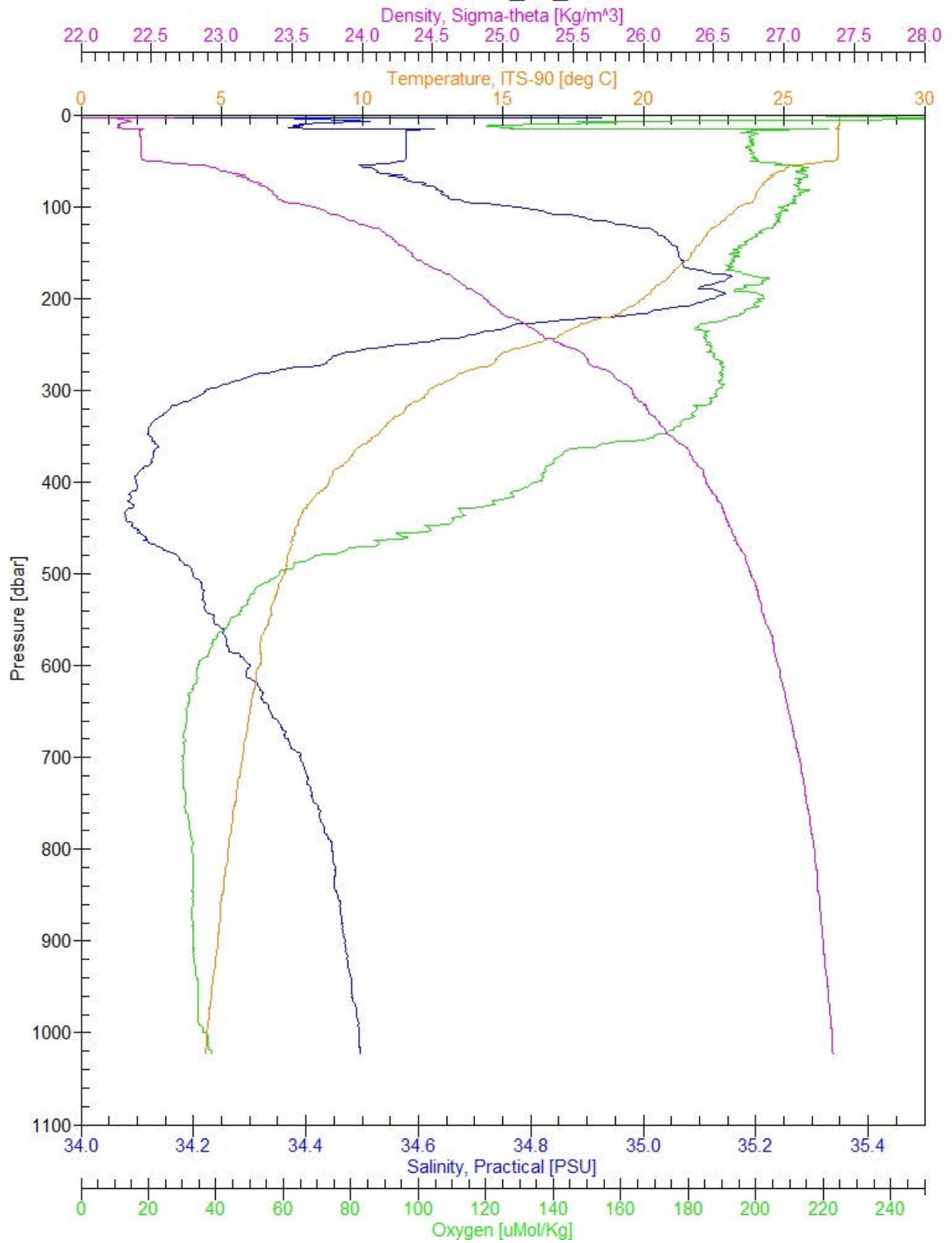
W-1000, hot-314_s2_c10.cnv



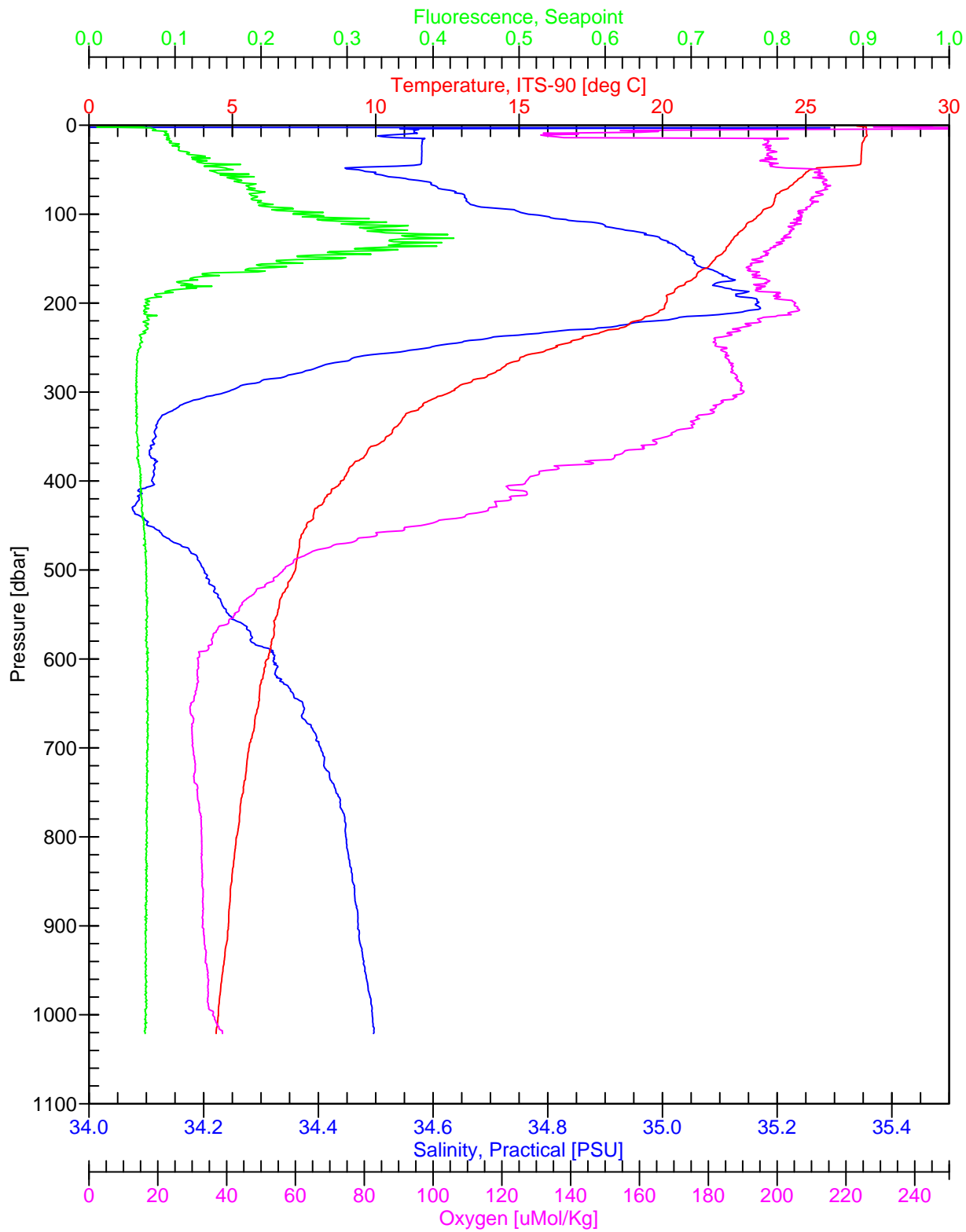
G-1000, hot-314_s2_c11.cnv



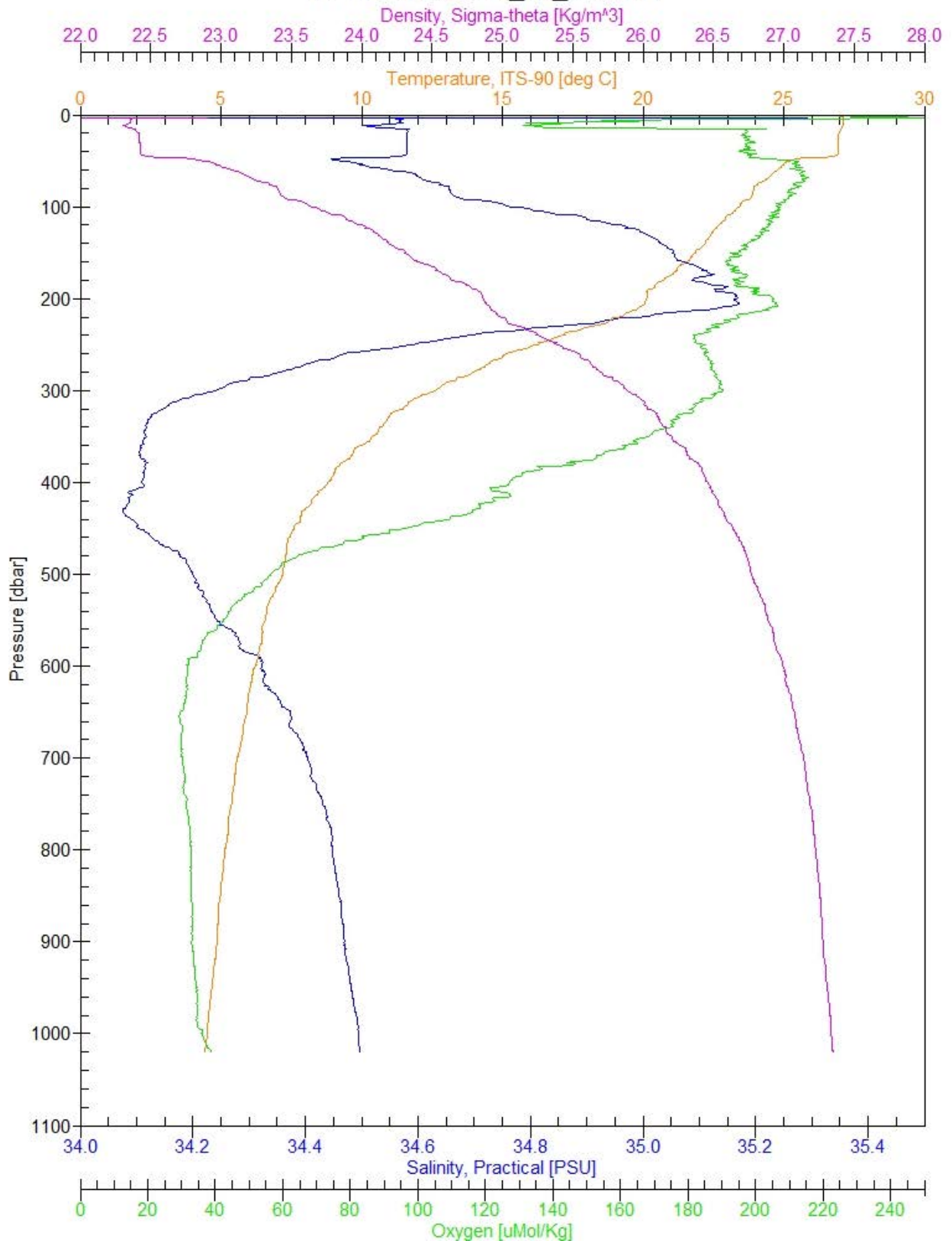
W-1000, hot-314_s2_c11.cnv



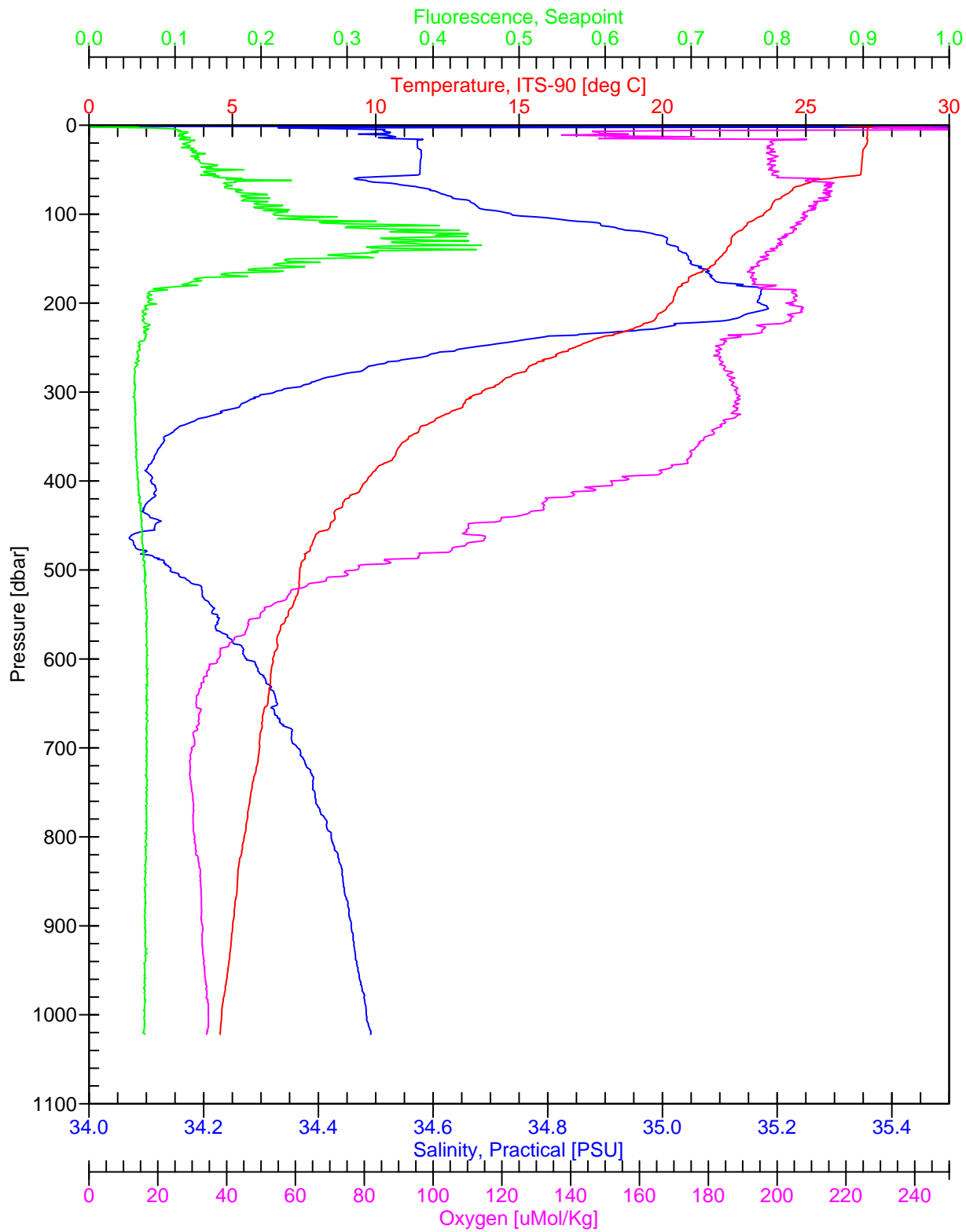
G-1000, hot-314_s2_c12.cnv



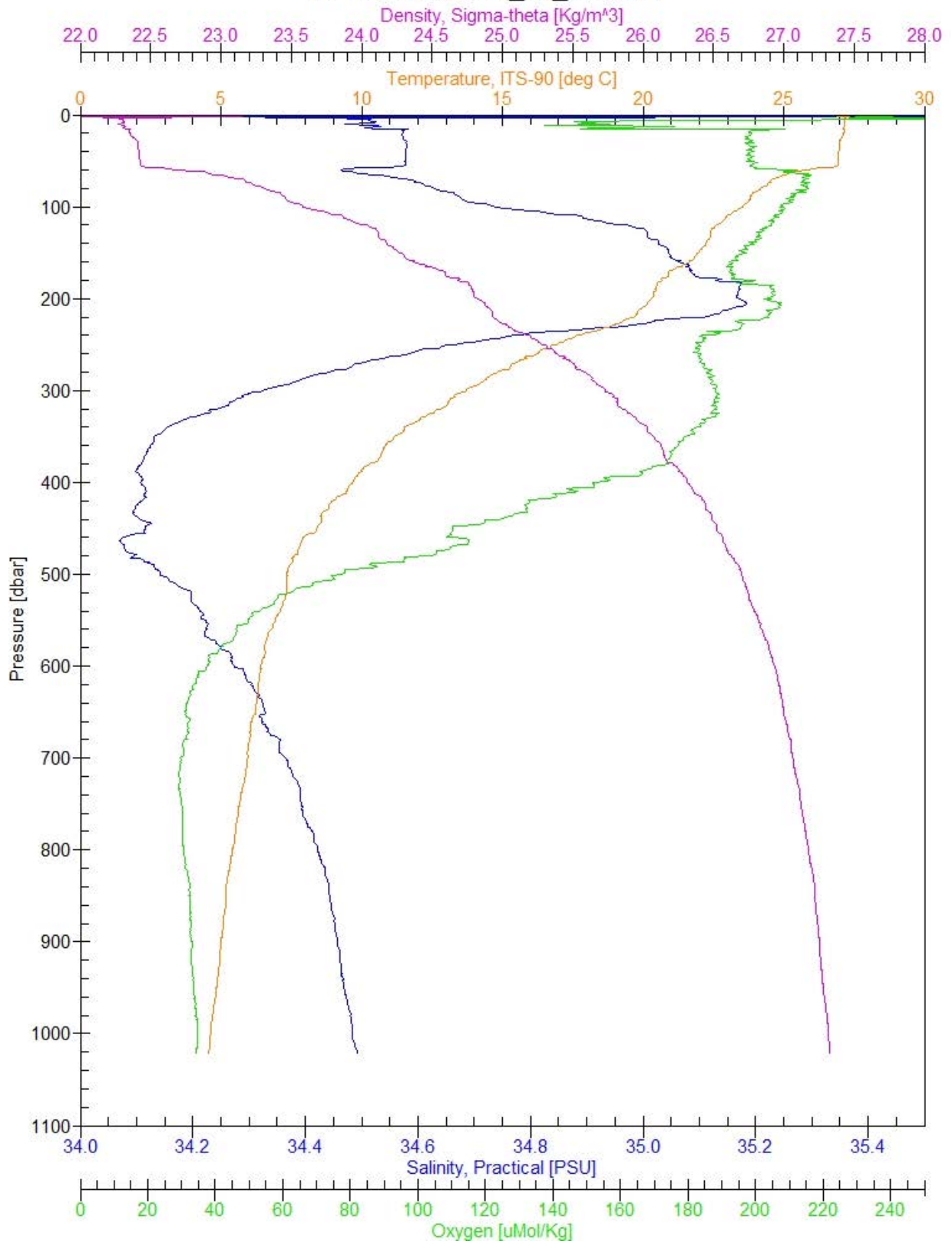
W-1000, hot-314_s2_c12.cnv



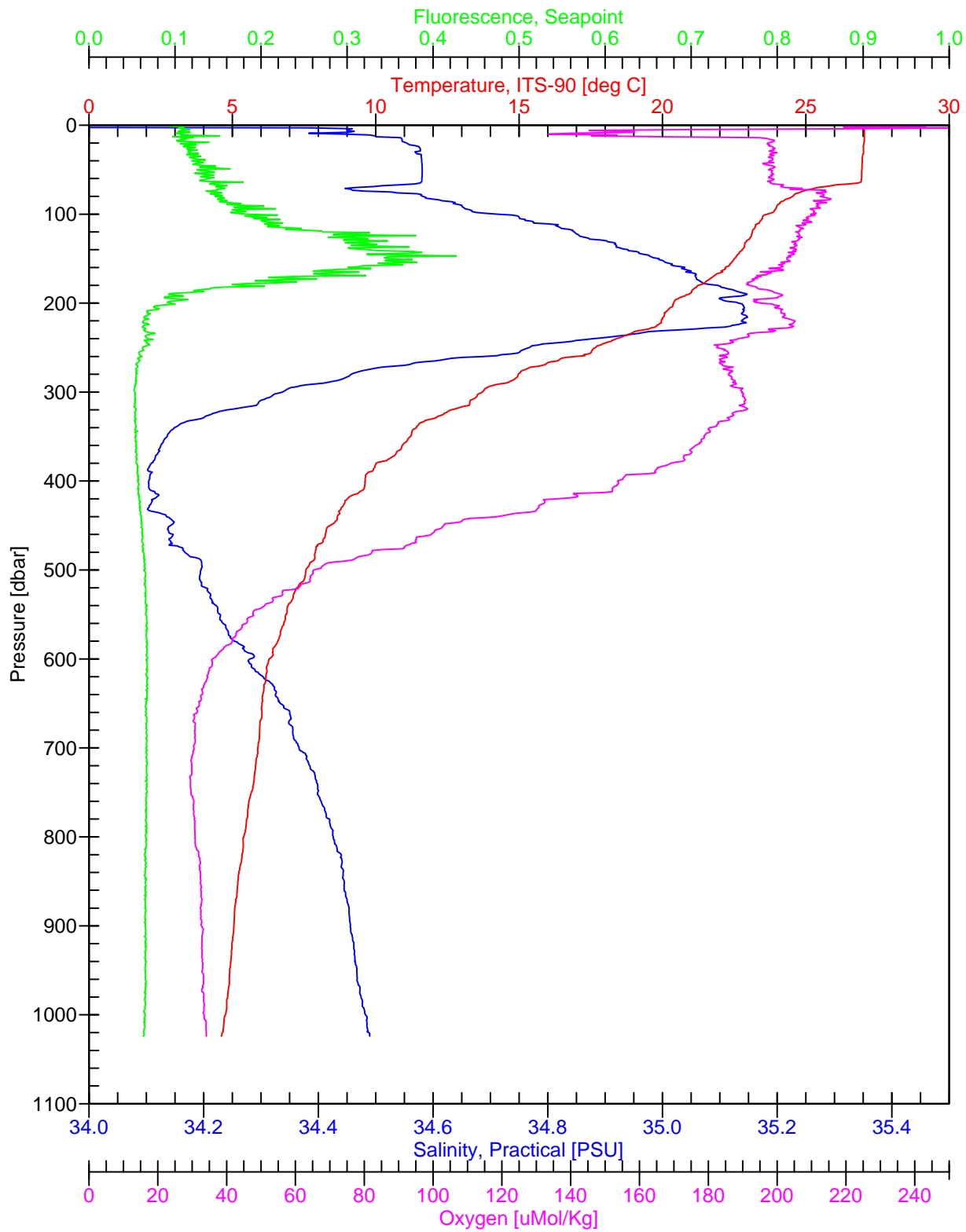
G-1000, hot-314_s2_c13.cnv



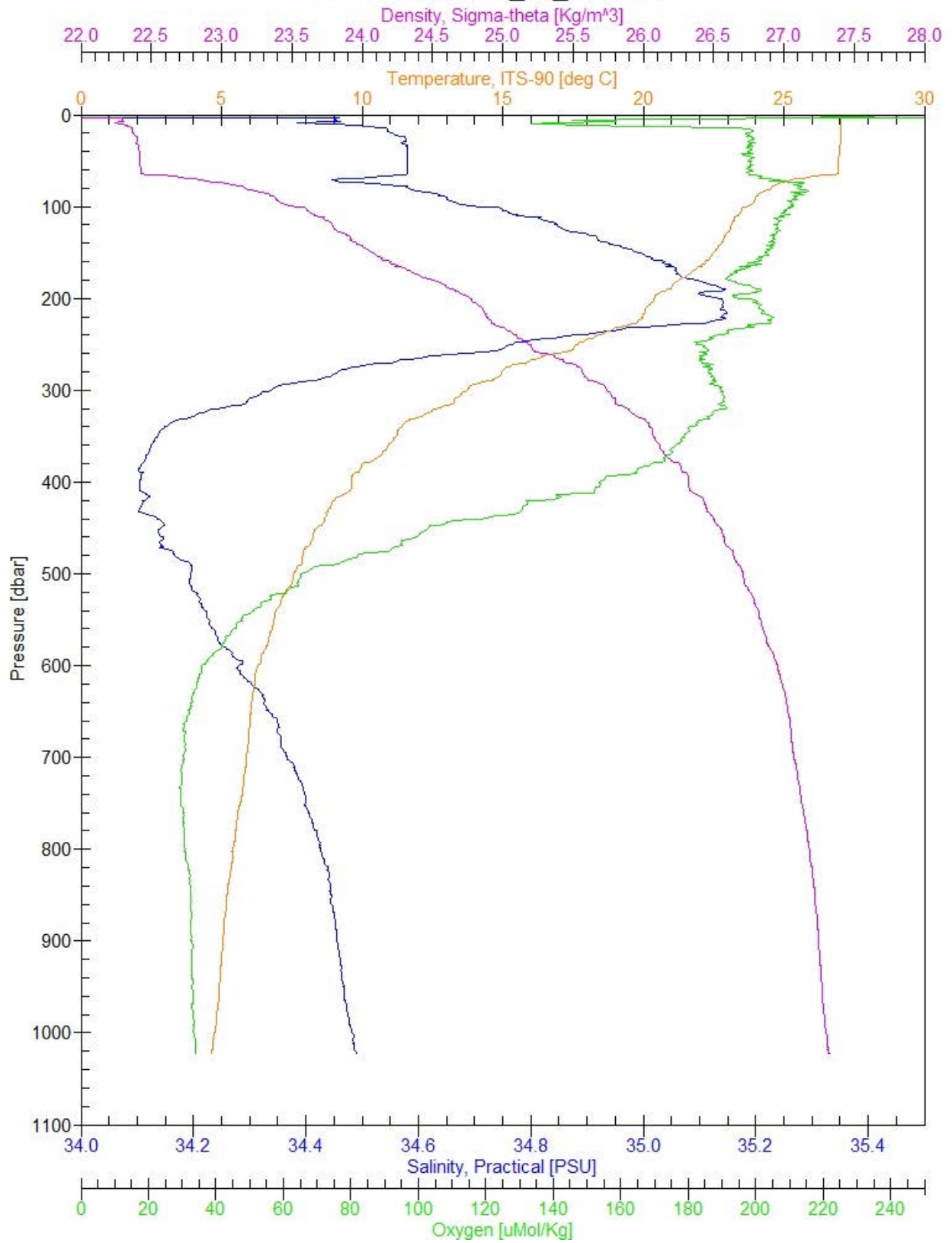
W-1000, hot-314_s2_c13.cnv



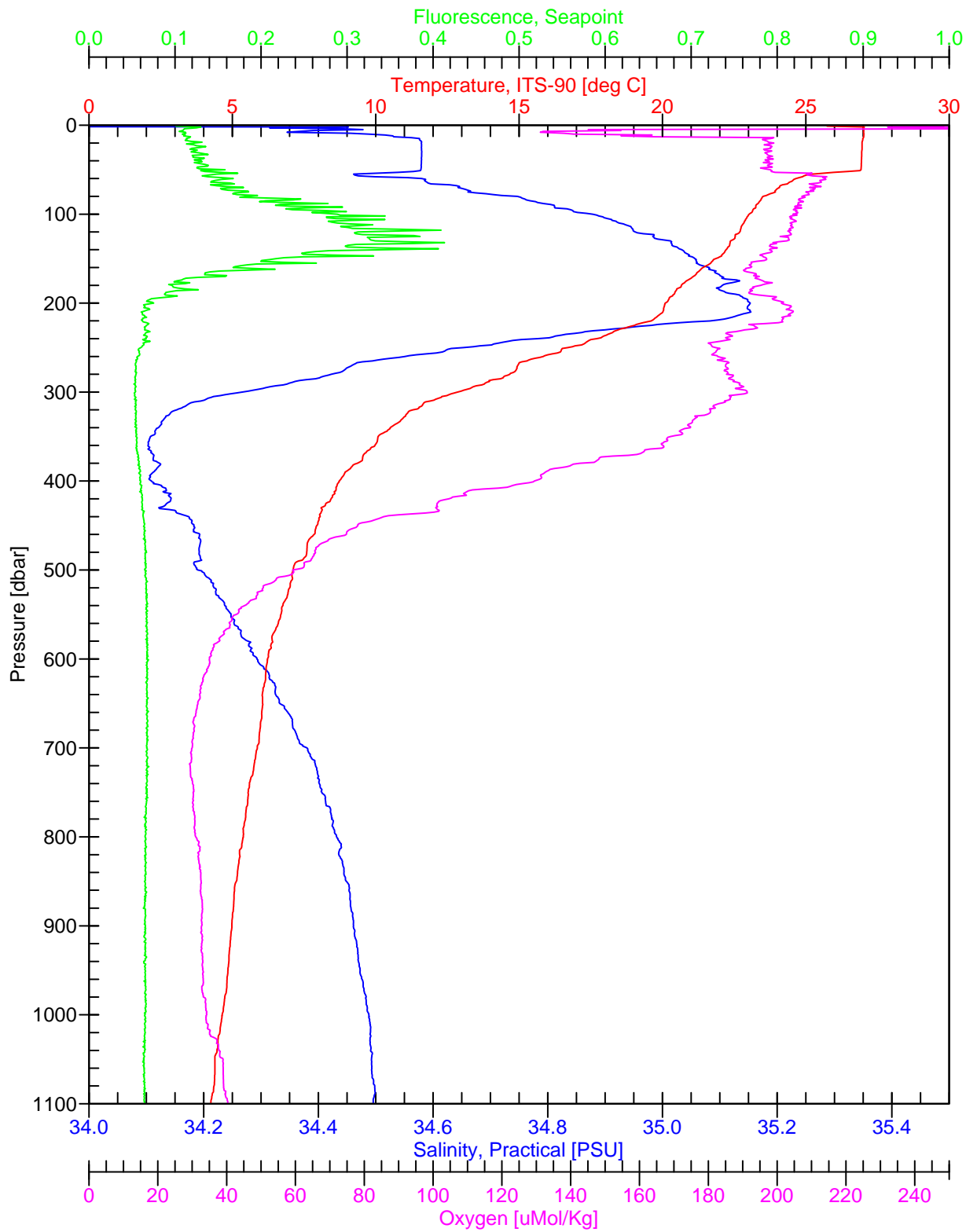
G-1000, hot-314_s2_c14.cnv



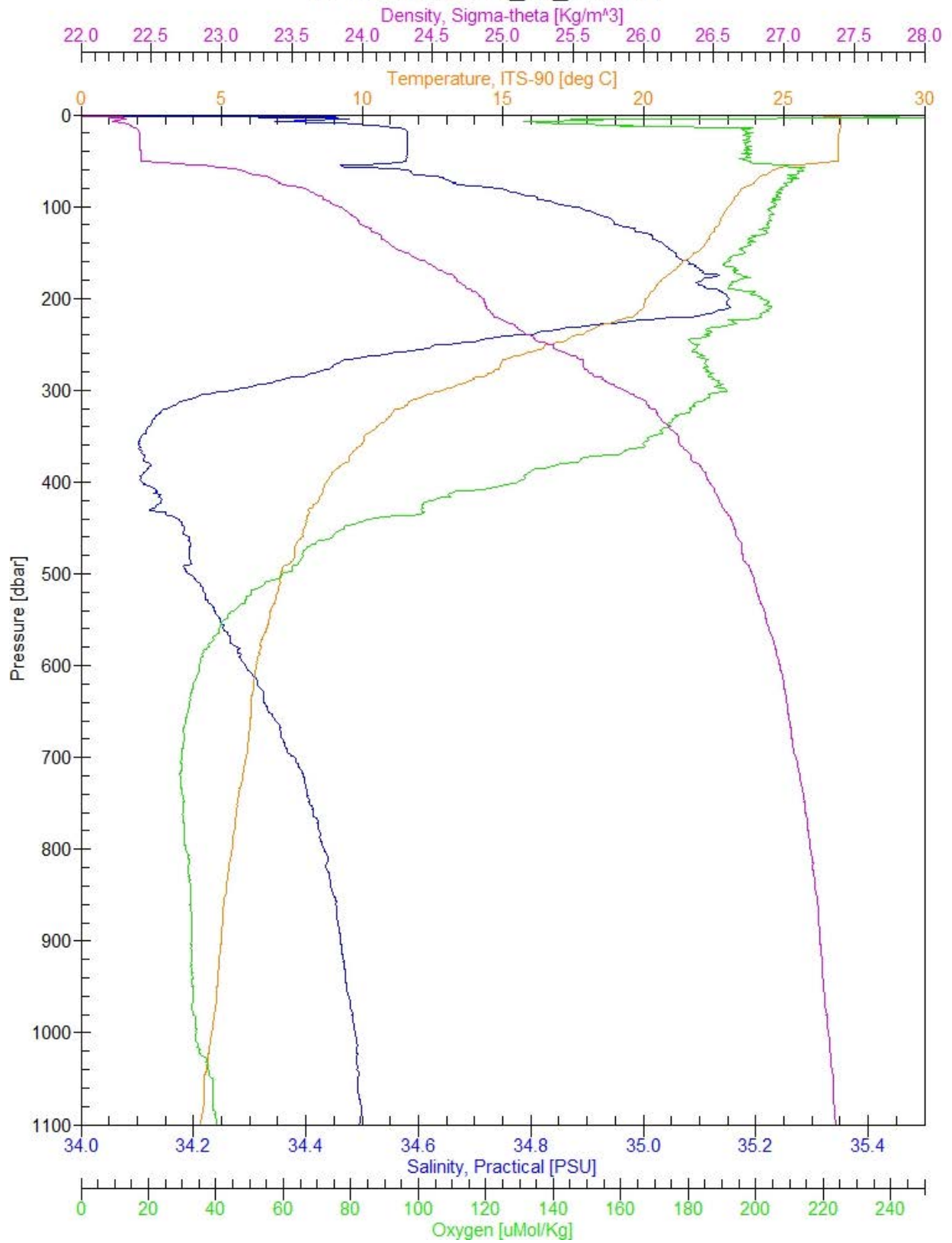
W-1000, hot-314_s2_c14.cnv



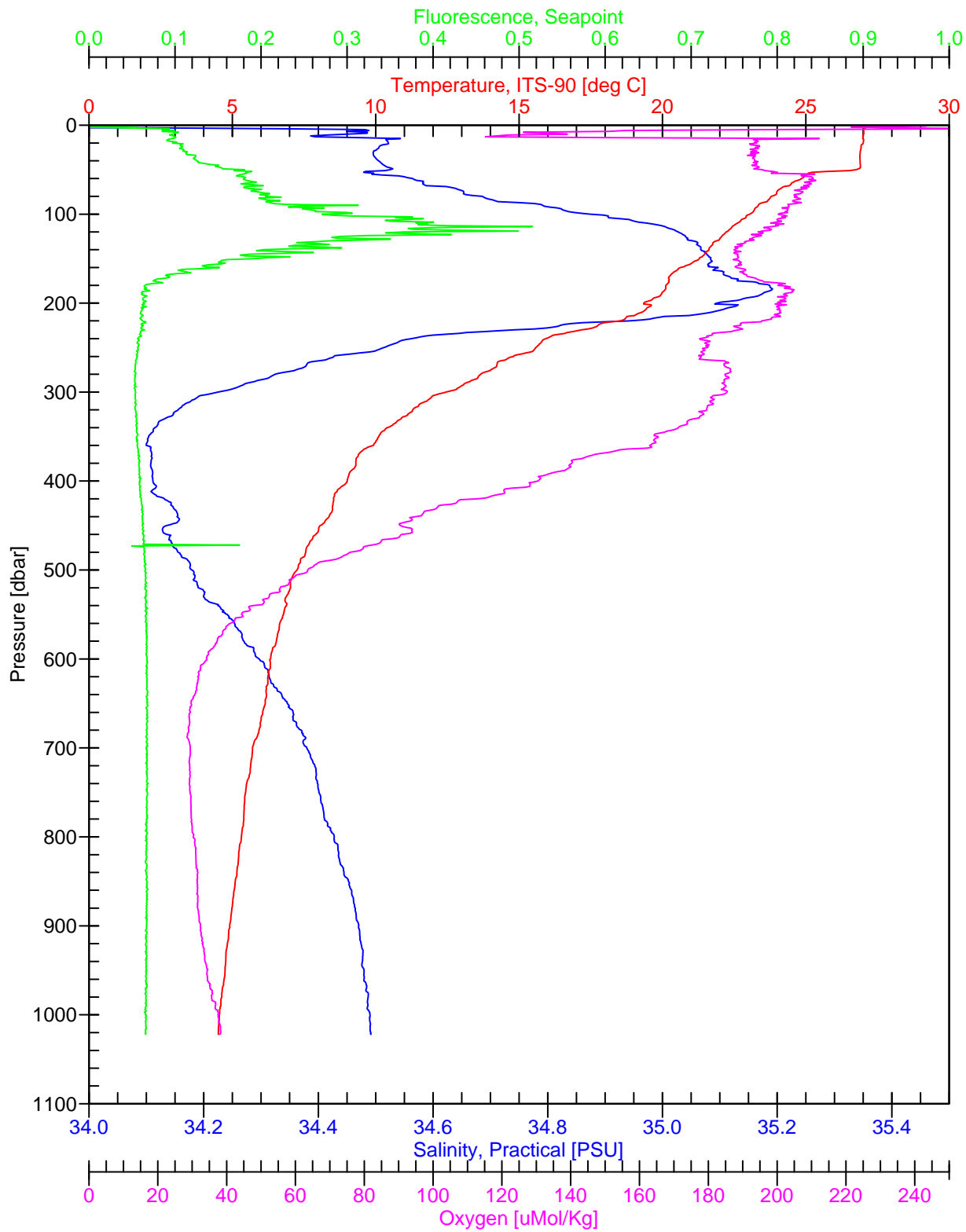
G-1000, hot-314_s2_c15.cnv



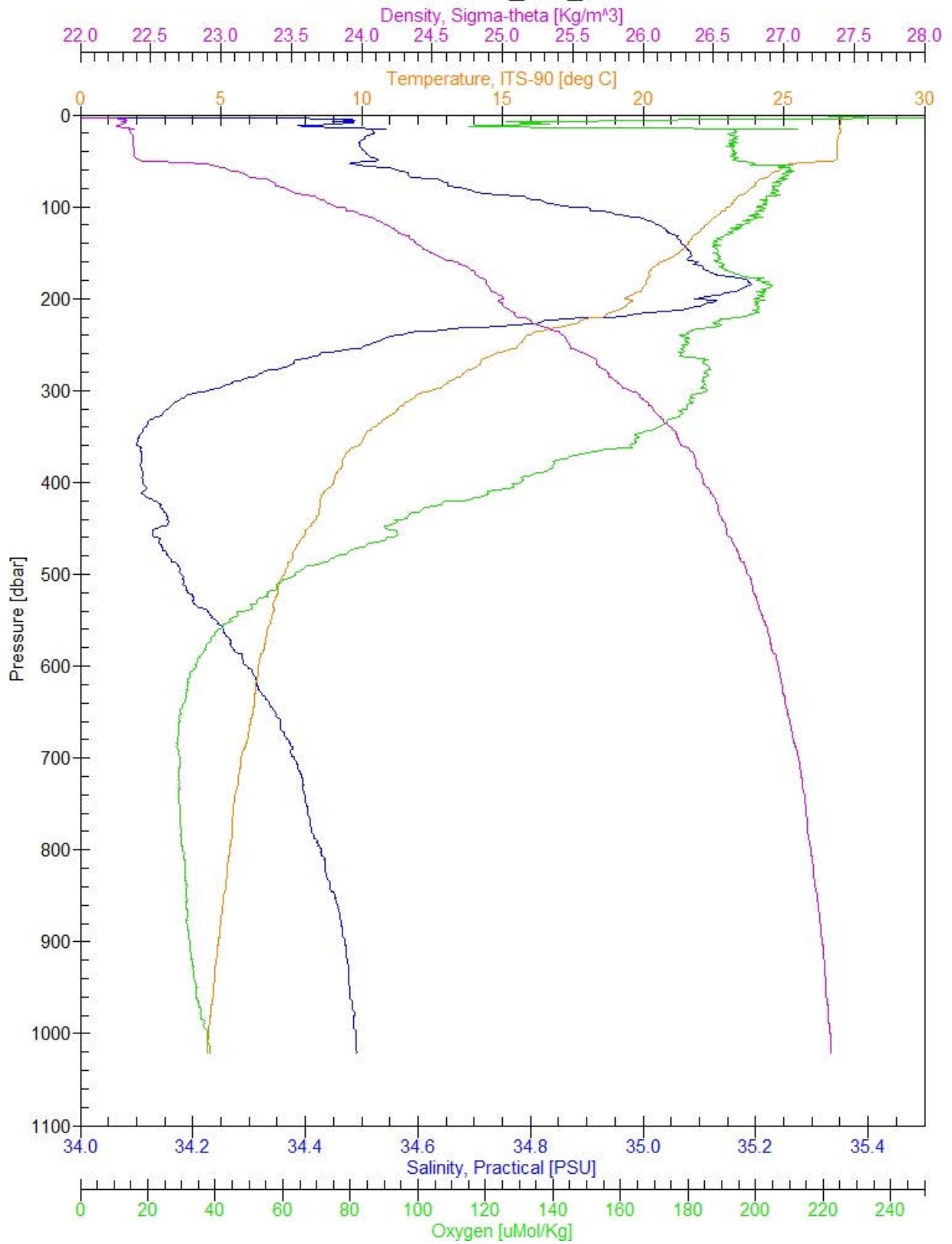
W-1000, hot-314_s2_c15.cnv



G-1000, hot-314_s50_c1.cnv



W-1000, hot-314_s50_c1.cnv



Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-1000-615	12L	28.09	DF

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

MLD = 60
 DCM = 140
 S_{MIN} = 370

Station: 1	Cast: 1
Latitude start: 21 20.3970	Longitude start: 158 16.3962
end:	end:
Depth of water: 1486 meters	Date (GMT): 8 12 119
Pressure on Deck	Time:
Begin: 0.3133	Start Log: 00:11
End: -0.1132	In Water: 00:17
Max cast pressure: 1021 dbar	Out of Water: 01:28

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:43:20	00:43:50	1020	1000	
2	00:51:41	00:52:01	749	750	
3	00:58:40	00:59:00	499	500	
4	01:03:30	01:04:00	350	350	
5	01:07:25	01:07:45	250	250	
6	01:10:10	01:10:30	200	200	
7	01:11:59	01:12:19	175	175	
8	01:13:50	01:14:10	151	150	
9	01:15:50	01:16:05	125	125	
10	01:17:55	01:18:15	101	100	
11	01:20:03	01:20:23	75	75	
12	01:22:05	01:22:25	45	45	
13	01:23:55	01:24:15	25	25	}
14	↓	:24:23	25	25	
15	01:26:10	01:26:30	5	5	}
16		:35	5	5	
17					
18					FIRE, BUT NO SAMPLE
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #:	Cast #:	Box #: 2
Salinity Sample Log Sheet			Cruise #: HOT- 314		Sampler: TR, KM, KT
Niskin #	Depth	Serial #	Comments		
1	1000	25			
2	750	26			
3	500	27			
4	350	28			
5	250	29			
6	200	30			
7	175	31			
8	150	32			
9	125	33			
10	100	34			
11	75	35			
12	45	36			
13	25	37			
14	25	38			
15	5	39			
16	5	40			
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-1000GPS	12L	26.95	TR

- Pinger
 Altimeter
 Transmissometer
 BEACH Sea Tech Fluorometer
 OTG Seapoint Fluorometer
 ISUS
 PO Fluorometer
 CPICS (TRACY VILLAREAL-UT AUSTIN)

MLD: 55 db
DCM: 140 db

Station: 2	Cast: 1
Latitude start: 22° 41.7818'N end: 22° 41.9133'N	Longitude start: 158° 00.9247'W end: 158° 00.9018'W
Depth of water: 4756 meters	Date (GMT): 8 / 2 / 19
Pressure on Deck	Time:
Begin: 0.3341	Start Log: 11:55
End: 0.2128	In Water: 12:00
Max cast pressure: 201 dbar	Out of Water: 12:42

Trip/ Niskin	Time	Confirm	Pressure	Target Depth	Comments
	stopped	tripped			
1	12:12:25	12:12:45	199	200	}
2	↓	12:12:55	199	200	
3	12:16:09	12:16:29	174	175	
4	12:19:10	12:19:30	149	150	
5	12:21:50	12:22:10	125	125	
6	↓	:15	125	125	
7	↓	:20	126	125	
8	12:24:40	12:25:00	101	100	
9	↓	:05	99	100	
10	↓	:10	100	100	
11	12:27:14	12:27:34	74	75	
12	↓	:39	76	75	
13	↓	:44	75	75	
14	12:29:54	12:30:14	45	45	
15	↓	:19	44	45	
16	↓	:24	46	45	
17	12:37:25	12:37:45	25	25	
18	↓	:51	25	25	
19	↓	:57	25	25	
20	12:39:22	12:39:42	16	15	
21	12:40:15	12:41:35	5	5	
22	↓	:40	5	5	
23	↓	:46	5	5	
24	↓	:52	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 1	Box #: 2, 3
Salinity Sample Log Sheet			Cruise #: HOT-314	Sampler: FSM, LY	
Niskin #	Depth	Serial #	Comments		
1	200	41			
2	200	42			
3	175	43			
4	150	44			
5	125	45			
6	125	46			
7	125	47			
8	100	48			
9	100	49			
10	100	50			
11	75	51			
12	75	52			
13	75	53			
14	45	54			
15	45	55			
16	45	56			
17	25	57			
18	25	58			
19	25	59			
20	15	60			
21	5	61			
22	5	62			
23	5	63			
24	5	64			

Hawaii Ocean Time-Series CONSOLE LOG

Cast type G-5000GPS	Bottle type 12L	SST 26.85	Operator DF
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Station: 2	Cast: 2
Latitude start: 22 45.0465 end: 22 44.9926	Longitude start: 157 59.9912 end: 158 00.0330
Depth of water: 4744 meters	Date (GMT): 012119
Pressure on Deck	Time:
Begin: 0.3571	Start Log: 15:10
End: -0.2826	In Water: 15:16
Max cast pressure: 4810 dbar	Out of Water: 19:58

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

MLD = 60
 DCM = 135
 S_{min} = 400

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		17:31:50	4810	4800	~6m off Bottom
2	17:39:00	17:39:20	4601	4600	
3	43:40	44:00	4500	4500	
4	47:55	48:15	4400	4400	
5	54:55	56:25	4201	4200	
6	1:45	2:15	4001	4000	
7	8:45	9:15	3802	3800	
8	15:10	15:40	3601	3600	
9	22:20	22:40	3400	3400	
10	28:55	29:15	3202	3200	
11	35:40	36:00	2999	3000	
12	41:55	42:15	2800	2800	
13	47:15	47:35	2601	2600	
14	52:15	52:35	2400	2400	
15	57:50	58:10	2202	2200	
16	19:02:20	19:02:40	2000	2000	
17	07:40	08:00	1800	1800	
18	12:15	12:35	1599	1600	
19	17:40	18:00	1399	1400	
20	23:10	23:30	1200	1200	
21	33:10	33:30	1000	1000	
22	39:15	39:35	750	750	
23	45:05	45:25	498	500	
24	56:10	56:30	5	5	

Hawaii Ocean Time Series		Station #: 2	Cast #: 2	Box #: 5
Salinity Sample Log Sheet		Cruise #: HOT- 314		Sampler:
Niskin #	Depth	Serial #	Comments	
1	4800	97	Duplicated	
2	4600	98		
3	4500	99		
4	4400	100		
5	4200	101		
6	4000	102		
7	3800	103		
8	3600	104		
9	3400	105		
10	3200	106		
11	3000	107		
12	2800	108		
13	2600	109		
14	2400	110		
15	2200	111		
16	2000	112		
17	1800	113		
18	1600	114		
19	1400	115		
20	1200	116		
21	1000	117		
22	750	118		
23	500	119		
24	5	120		

Hawaii Ocean Time Series			Station #: 2	Cast #: 2	Box #: 6
Salinity Sample Log Sheet			Cruise #: HOT- 314		Sampler:
Niskin #	Depth	Serial #	Comments		
1	4800	121	Triplicates		
2	4600	122			
3	4500	123			
4	4400	124			
5	4200	125			
6	4000	126			
7	3800	127			
8	3600	128			
9	3400	129			
10	3200	130			
11	3000	131			
12	2800	132			
13	2600	133			
14	2400	134			
15	2200	135			
16	2000	136			
17	1800	137			
18	1600	138			
19	1400	139			
20	1200	140			
21	1000	141			
22	750	142			
23	500	143			
24	5	144			

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GP	12L	26.95	DF

Station: 322 2	Cast: 3
Latitude start: 22 45.043 end: 22 45.0198	Longitude start: 158 00.0357 end: 158 00.0339
Depth of water: 4745 meters	Date (GMT): 8 12 19
Pressure on Deck	Time:
Begin: 0.60	Start Log: 2136
End: 0.1524	In Water: 21:47
Max cast pressure: 1020 dbar	Out of Water: 23:13

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

PO-2

ML = 40
 DCM = 110
 S_{min} = 350
 O_{min} = 700

Trip/ Niskin	Time	Confirm	Pressure	Target Depth	Comments
	stopped	tripped			
1	20:27:15	22:17:35	1019	1020	
2	19:25	19:45	984	984	
3	21:40	22:00	949	948	
4	24:05	24:25	910	911	
5	26:30	26:55	874	875	
6	29:30	29:50	808	808	
7	32:25	32:45	740	741	
8	35:00	35:20	696	696	
9	37:00	37:20	650	650	
10	39:30	40:10	581	581	
11	41:45	42:05	539	539	
12	43:45	44:15	495	495	
13	46:05	46:25	463	463	
14	48:50	49:10	404	404	
15	51:05	51:25	355	355	
16	53:10	53:30	312	312	
17	55:45	56:05	247	247	
18	58:10	58:35	196	196	
19	23:00:45	23 01:05	139	140	
20	02:30	02:50	109	110	
21	03:35	03:55	102	102	
22	05:20	05:40	76	75	
23	07:15	07:35	45	45	
24	09:40	10:00	5	5	

Station: <u>2</u>	Cast: <u>2</u>
Latitude: _____	Longitude: _____
Date: _____	Time (GMT): _____
Operator: _____	

$\delta\theta$	$\sigma\theta$	Depth
700	20.76	_____
650	21.28	_____
600	21.80	_____
550	22.33	_____
500	22.85	<u>45</u>
450	23.37	<u>75</u>
400	23.90	<u>102</u>
350	24.42	<u>140</u>
300	24.95	<u>196</u>
250	25.47	<u>247</u>
200	26.00	<u>312</u>
180	26.21	<u>355</u>
160	26.42	<u>404</u>
140	26.63	<u>463</u>
130	26.73	<u>495</u>
120	26.84	<u>539</u>
110	26.94	<u>586</u>
100	27.05	<u>650</u>
90	27.16	<u>741</u>
80	27.26	<u>875</u>
70	27.37	_____

S _{max}	<u>150</u>
S _{min}	_____
S _{max}	_____
S _{min}	_____

O _{max}	<u>150</u>
O _{min}	_____
O _{max}	_____
O _{min}	_____
O _{max}	_____

F _{max}	<u>110</u>
F _{min}	_____
F _{max}	_____
F _{min}	_____
F _{max}	_____

Bottle	Depth
1	<u>1020</u>
2	<u>984</u>
3	<u>948</u>
4	<u>911</u>
5	<u>875</u>
6	<u>808</u>
7	<u>741</u>
8	<u>696</u>
9	<u>650</u>
10	<u>581</u>
11	<u>539</u>
12	<u>495</u>
13	<u>463</u>
14	<u>404</u>
15	<u>355</u>
16	<u>312</u>
17	<u>247</u>
18	<u>196</u>
19	<u>140</u>
20	<u>110</u>
21	<u>102</u>
22	<u>75</u>
23	<u>45</u>
24	<u>55</u>

Hawaii Ocean Time Series			Station #: 2	Cast #: 3	Box #: 7
Salinity Sample Log Sheet			Cruise #: HOT-314		Sampler:
Niskin #	Depth	Serial #	Comments		
1	1020	145			
2	984	146			
3	948	147			
4	911	148			
5	875	149			
6	808	150			
7	741	151			
8	696	152			
9	650	153			
10	581	154			
11	539	155			
12	595	156			
13	463	157			
14	404	158			
15	355	159			
16	312	160			
17	247	161			
18	196	162			
19	140	163			
20	110	164			
21	102	165			
22	75	166			
23	45	167			
24	5	168			

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GB	12L	27.08	DF/TR

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

MLD = 55
 DCM = 125
 S_{MIN} = 370

Station: 2	Cast: 4
Latitude start: 22° 45.1218 end: 22° 45.3979' N	Longitude start: 158° 00. 0613 end: 157° 59.9771' W
Depth of water: 4738 meters	Date (GMT): 8 12 19
Pressure on Deck	Time:
Begin: 0.6566 End: 0.6206	Start Log: 00:18 In Water: 00:31 Out of Water: 01:45
Max cast pressure: 1022 dbar	

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	01:03:37	01:03:57	1020	1000	
2	01:18:54	01:19:14	371	370	S-MIN
3	01:20:43	01:20:03	350	350	↓
4	↓	01:21:13	350	350	↓
5	01:25:12	01:25:32	252	250	
6	01:28:02	01:28:22	201	200	
7	01:30:02	01:30:17	174	175	
8	01:31:55	01:32:15	149	150	
9	01:33:48	01:34:08	125	125	
10	01:35:40	01:36:00	100	100	
11	01:37:45	01:38:05	76	75	↓
12	↓	:10	75	75	↓
13	01:39:30	01:39:45	46	45	↓
14	↓	:50	45	45	↓
15	01:40:50	01:41:10	25	25	↓
16	↓	:15	25	25	3
17	↓	:20	25	25	↓
18	01:42:35	01:42:50	5	5	2
19		55	5	5	↓
20					
21					
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G10006PS	12L	27.20	TR/KM

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

DUM: 144
 MLD: 62
 Smin: 380

Station: 2	Cast: 5
Latitude start: 22° 50.0359' N end: 22° 50.0487' N	Longitude start: 158° 02.2128' W end: 158° 02.2092' W
Depth of water: 4719 meters	Date (GMT): 8 13 119
Pressure on Deck	Time:
Begin: 0.4500	Start Log: 03:16
End: 0.1452	In Water: 03:17
Max cast pressure: 1020.17 dbar	Out of Water: 04:29

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	03:47:03	03:47:23	1019.2	1020	
2	04:01:40	04:02:00	381.5	380	Smin
3	04:03:29	04:03:50	350.6	350]
4	↓	04:04:00	350.7	350	
5	04:07:40	04:08:00	251.3	250	
6	04:10:20	04:10:40	200.2	200	
7	04:12:30	04:12:50	176.2	175	
8	04:14:30	04:14:50	150.8	150	
9	04:16:40	04:17:00	125.4	125	
10	04:18:40	04:19:00	99.4	100	
11	04:20:30	04:20:50	75.2	75	
12	04:22:45	04:23:05	46	45	
13	04:24:02	04:24:22	25	25]
14	↓	04:24:30	↓	25	
15	↓	04:24:40	↓	25	
16	↓	04:24:50	↓	25	
17	04:25:35	04:25:50	16	15	
18	04:26:38	04:26:58	6	5]
19	↓	04:27:03	5	5	
20					
21					
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	27.02	TR

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

MLD: 57
 DCM: 133
 S_{min}: 380

Station: 2	Cast: 6
Latitude start: 22° 47.8675' N end: 22° 47.8758' N	Longitude start: 158° 04.4806' W end: 158° 04.4760' W
Depth of water: 4747 meters	Date (GMT): 8 13 19
Pressure on Deck	Time:
Begin: 0.4546	Start Log: 06:05
End: 0.1067	In Water: 06:11
Max cast pressure: 1022 dbar	Out of Water: 07:20

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	06:36:30	06:36:50	1020.9	1020	
2	06:44:45	06:45:05	727	725	0min
3	06:52:50	06:53:12	380	380	Smin
4	06:58:15	06:58:35	200	200	
5	06:59:50	07:00:10	175	175	
6	07:01:00	07:01:20	165	165	
7	07:02:05	07:02:25	150	150	
8	07:03:30	07:03:45	131	130	
9	07:04:18	07:04:33	125	125	
10	07:05:22	07:05:37	115	115	
11	07:06:10	07:06:25	110	110	
12	07:07:10	07:07:25	100	100	
13	07:08:09	07:08:24	89	90	
14	07:08:59	07:09:14	84	85	
15	07:10:00	07:10:15	75	75	
16	07:11:15	07:11:30	60	60	
17	07:12:10	07:12:25	45	45	
18	07:13:05	07:13:20	36	35	
19	07:14:02	07:14:17	25	25]
20	↓	:23	25	25	
21	07:15:15	07:15:30	15	15	
22	07:18:05	07:18:20	5	5]
23	↓	:25	↓	5	
24	↓	:30	↓	5	

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GFS	12L	26.95	TR

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

MLD: 48db
 DCM: 115db
 Smin: 375db

Station: 2	Cast: 7
Latitude start: 22° 47.4483' N end: 22° 47.4137' N	Longitude start: 158° 03.2748' W end: 158° 03.2912' W
Depth of water: 4744 meters	Date (GMT): 8 13 19
Pressure on Deck	Time:
Begin: 0.3588	Start Log: 09:38
End: -0.1255	In Water: 09:39
Max cast pressure: 1023 dbar	Out of Water: 10:43

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	10:08:21	10:08:40	1023	1020	
2	10:20:15	10:20:30	501	500	
3	10:23:38	10:23:53	377	375	Smin
4	10:26:55	10:27:10	249	250	
5	10:29:14	10:29:29	175	175	}
6	↓	10:29:35	175	175	
7	10:30:40	10:30:55	150	150	}
8	↓	10:31:00	150	150	
9	10:32:20	10:32:38	125	125	}
10	↓	10:32:46	125	125	
11	10:33:55	10:34:10	100	100	}
12	↓	10:34:15	100	100	
13	10:35:32	10:35:47	75	75	
14	10:37:10	10:37:25	45	45	
15	10:38:40	10:38:08	25	25	}
16	↓	10:38:17	25	25	
17	10:40:37	10:38:52	6	5	
18	↓	10:38:57	6	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type G1000 GB	Bottle type 12L	SST 26.89	Operator TR
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- Pinger
 Altimeter
 Transmissometer
 BEACH Sea Tech Fluorometer
 OTG Seapoint Fluorometer
 ISUS
 PO Fluorometer

MLD: 40 db
 DCM: 110 db
 S_{MIN}: 380 db

Station: 2	Cast: 8
Latitude start: 22° 50.3074' N end: 22 50.2908' N	Longitude start: 158° 01.1151' W end: 158 01.1160' W
Depth of water: 4713 meters	Date (GMT): 8 / 3 / 19
Pressure on Deck	Time:
Begin: 0.3900	Start Log: 12:10
End: 0.07520	In Water: 12:11
Max cast pressure: 1021 dbar	Out of Water: 13:07

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	12:38:21	12:38:41	1021	1020	
2	50:30	50:50	380	380	S _{MIN}
3	56:45	57:05	125	125	}
4	↓	:15	↓	125	
5	↓	:25	↓	125	
6	58:40	59:00	100	100	
7	↓	:10	↓	100	
8	↓	:20	↓	100	}
9	13:00:30	00:50	75	75	
10	↓	01:00	↓	75	
11	↓	01:10	↓	75	}
12	02:15	02:35	45	45	
13		:45	↓	45	}
14	04:00	:55	↓	45	
15	04:00	04:20	25	25	
16		1:30	↓	25	}
17		:40	↓	25	
18		:50	↓	25	
19	05:45	06:05	5	5	}
20		:15	↓	5	
21		:25	↓	5	
22		:35	↓	5	
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GBS	12L	26.91	DF

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

26.86
METU BC

OPEN

MLD = 60
 DCM = 135
 S_{min} = 375

Station: 2	Cast: 9
Latitude start: 22 43.2210W end: 22 43.1992	Longitude start: 158 01.8027N end: 158 01.8118W
Depth of water: 4751 meters	Date (GMT): 8 13 119
Pressure on Deck	Time:
Begin: 0.4432	Start Log: 1453
End: 0.0611	In Water: 1458
Max cast pressure: 1020 dbar	Out of Water: 1607

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	15:28:35	15:28:55	1020	1020	
2	44:10	44:30	375	375	S-MIN
3	47:15	47:35	275	275	
4	49:00	49:20	250	250	
5	50:45	51:05	225	225	
6	52:45	53:00	203	200	
7	54:20	54:40	176	175	
8	56:00	56:20	150	150	
9	57:20	57:40	126	125	
10	58:50	59:10	102	100	
11	16:00:30	16 00:50	75	75	
12	02:20	02:40	45	45	
13	03:35	03:55	25	25] x 2
14	04:50	:05	25	25	
15	04:50	05:10	15	15	
16	06:05	06:25	5	5] x 2
17	—	:35	5	5	
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series		Station #: 2	Cast #: 9	Box #: 11
Salinity Sample Log Sheet		Cruise #: HOT- 314	Sampler: FSM, LY, DF	
Niskin #	Depth	Serial #	Comments	
1	1020	243		
2	375	244		
3	 	 		
4	 	 		
5	 	 		
6	200	245		
7	 	 		
8	 	 		
9	 	 		
10	 	 		
11	 	 		
12	 	 		
13	 	 		
14	 	 		
15	 	 		
16	5	246		
17				
18				
19				
20				
21				
22				
23				
24				

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G10006B	12L	26.92	DF

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

PS:

MLD = 70
 DCM = 135
 S-M-N = 450

Station: 2	Cast: 10
Latitude start: 22 43.3697N end: 22 43.4027	Longitude start: 158 00.8313W end: 158 00.8249
Depth of water: 4740 meters	Date (GMT): 8 13 119
Pressure on Deck	Time:
Begin: 0.4177 End: -0.0866	Start Log: 1805 In Water: 18 11
Max cast pressure: 1030 dbar	Out of Water: 1910

Trip/ Niskin	Time	Confirm	Pressure	Target Depth	Comments
	stopped	tripped			
1	18:39:05	18:39:25	1020	1020	
2	50:40	51:00	451	450	S-M-N
3	56:50	57:10	175	175	
4	58:15	58:35	150	150	
5	59:40	19:00:00	125	125	} x5
6		:10	↓	125	
7		:20	↓	125	
8		:30	↓	125	
9		:40	↓	125	
10	19:01:35	19:01:55	100	100	
11	03:00	03:20	75	75	} x5
12		30	↓	75	
13		40	↓	75	
14		50	↓	75	
15		04:00	↓	75	
16	05:05	05:25	45	45	
17	6:30	6:50	25	25	} x2
18		7:00	25	25	
19	08:25	:45	5	5	} x6
20		:55	↓	5	
21		09:05	↓	5	
22		:15	↓	5	
23		:25	↓	5	
24		:35	↓	5	

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G10006P5	12L	27.00	DF/FSM

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

Station: 2	Cast: 11
Latitude start: 22 40.3069 end: 22 40.339	Longitude start: 157 58.8993 end: 157 59.8994
Depth of water: 4748 meters	Date (GMT): 8 13 19
Pressure on Deck	Time:
Begin: 0.4081 End: - 0.25	Start Log: 2055 In Water: 2101
Max cast pressure: 1020 dbar	Out of Water: 2153

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	24:20	:40	1020	1020	} x6
2		:50		1020	
3		25:00		1020	
4		:10		1020	
5		:20		1020	
6		:30		1020	
7	21:38.15	38:35	440	440	S-MIN
8	48:20	48:50	25	25	} x3
9		00	25	25	
10		10	25	25	
11	50:45	51:15	5	5	} x2
12		25	5	5	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G10006PS	12L	27.28	DF/TR

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

MLD: 45 db
 DCM: 132 db
 S_{MIN}: 430 db

Station: 2	Cast: 12
Latitude start: 22 40.3687 end: 22 40.603	Longitude start: 157 58.8199 end: 157 58.673
Depth of water: 4744 meters	Date (GMT): 8 14 119
Pressure on Deck	Time:
Begin: 0.407	Start Log: 00:23
End: -6.0506	In Water: 00:36
Max cast pressure: 1021 dbar	Out of Water: 01:42

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	01:04:03	01:04:23	1020	1020	
2	01:09:56	01:10:11	770	770	
3	01:15:59	01:16:15	501	500	
4	01:18:50	01:19:05	432	430	S-MIN
5	01:20:29	01:20:55	401	400	
6	01:22:30	01:22:50	350	350	
7	01:24:28	01:24:49	300	300	
8	01:26:02	01:26:22	250	250	
9	01:29:05	01:29:23	150	150	
10	01:30:27	01:30:46	124	125	
11	01:32:03	01:32:20	99	100	
12	01:34:02	01:34:19	76	75	
13	01:36:23	01:36:41	46	45	
14	01:38:00	01:38:20	26	25	
15	01:39:37	01:39:57	5	5	
16	↓	40:02	6	5	
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type G1000GPS	Bottle type 12L	SST 27.35	Operator TR/KM
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- Pinger
 Altimeter
 Transmissometer
 BEACH Sea Tech Fluorometer
 OTG Seapoint Fluorometer
 ISUS
 PO Fluorometer

MCD: 56 db
DCM: 123 db
Smin: 480 db

Station: 2	Cast: 13
Latitude start: 22° 40.6929' N end: 22° 41.2008' N	Longitude start: 157° 57.8549' W end: 157° 57.4384' W
Depth of water: 4745 meters	Date (GMT): 8 / 4 / 19
Pressure on Deck	Time:
Begin: 0.4728	Start Log: 03:03
End: -0.0260	In Water: 03:05
Max cast pressure: 1020. dbar	Out of Water: 04:18

Trip/ Niskin	Time	Confirm	Pressure	Target Depth	Comments
	stopped	tripped			
1	03:33:10	03:33:30	1020.3	1020	
2	03:40:00	03:40:20	799.7	800	
3	03:45:40	03:46:00	600.3	600	
4	03:50:00	03:50:20	481.0	480	Smin
5	03:53:20	03:53:40	401.3	400	
6	03:57:00	03:57:20	300.0	300	
7	04:01:00	04:01:20	201.6	200	
8	04:03:00	04:03:20	173.7	175	
9	04:05:10	04:05:30	150.5	150	
10	04:07:00	04:07:20	125.1	125	
11	04:08:50	04:09:10	101.2	100	
12	04:10:40	04:11:00	74.6	75	
13	04:12:10	04:12:32	47	45	
14	04:13:28	04:13:39	25	25	}
15	↓	↓	↓	25	
16	↓	↓	↓	25	
17	↓	↓	↓	25	
18	↓	04:14:00	↓	25	}
19	14:15:10	14:15:29	15	15	
20	14:16:28	14:16:48	5	5	
21	↓	14:17:00	5	5	}
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type G1000GPS	Bottle type 12L	SST 27.09	Operator TR
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- Pinger
 Altimeter
 Transmissometer
 BEACH Sea Tech Fluorometer
 OTG Seapoint Fluorometer
 ISUS
 PO Fluorometer

MLD: 65 db
DCM: 151 db
S_{min}: 400 db

Station: 2	Cast: 14
Latitude start: 22° 44.3290' N end: 22° 44.3337' N	Longitude start: 158° 00.3680' W end: 158° 00.3644' W
Depth of water: 4737 meters	Date (GMT): 8 / 4 / 19
Pressure on Deck	Time:
Begin: 0.4334	Start Log: 06:25
End: 0.0022	In Water: 06:26
Max cast pressure: 1024 dbar	Out of Water: 07:28

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	06:55:00	06:55:20	1020	1020	
2	07:08:00	07:08:15	400	400	S _{min}
3	07:13:03	07:13:29	173	175	
4	07:14:19	07:14:35	150	150	
5	07:15:22	07:15:37	135	135	
6	07:16:15	07:16:32	125	125]
7	↓	07:16:37	124	125	
8	07:17:20	07:17:35	116	115	
9	07:18:27	07:18:47	100	100]
10	↓	18:52	100	100	
11	07:19:39	07:19:54	85	85	
12	07:20:34	07:20:43	75	75]
13	↓	07:20:57	75	75	
14	07:21:43	07:21:58	60	60	
15	07:23:00	07:23:09	45	45]
16	↓	07:23:16	45	45	
17	07:24:20	07:24:42	25	25]
18	↓	07:24:56	25	25	
19	07:26:12	07:26:25	5	5]
20	↓	07:26:29	5	5	
21					
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type G50004B5	Bottle type 12L	SST 26.90	Operator TR/KM
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- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer
-

Bottom Time: 11:13
 LAT: 22° 44.9805' N
 LONG: 158° 00.092' W
 DIST. FROM BOTTOM: 7m

MLD: 50
 DCM: 132
 Smin: 355
 Omin: 720

Station: 2	Cast: 15
Latitude start: 22° 45.0172' N end: 22° 45.0580' N	Longitude start: 158° 00.0073' N end: 157° 59.9991' W
Depth of water: 4742 meters	Date (GMT): 8 / 4 / 19
Pressure on Deck	Time:
Begin: 0.4221 End: -0.2665	Start Log: 09:17 In Water: 09:18
Max cast pressure: 4808 dbar	Out of Water: 12:59

Trip/ Niskin	Time	Confirm	Pressure	Target Depth	Comments
	stopped	tripped			
1	11:13:50	11:13:50	4807	4800	
2	11:31:05	11:31:20	4000	4000	}
3	↓	11:31:25	4000	4000	
4	11:51:40	11:52:00	3000.5	3000	
5	↓	11:52:10	3000.4	3000	}
6	12:11:40	12:12:00	1998.8	2000	
7	12:32:00	12:32:20	1000	1000	}
8	↓	12:32:25	1000	1000	
9	↓	12:32:30	1000	1000	
10	↓	12:32:35	1000	1000	
11	12:39:40	12:40:00	719.8	720	Omin
12	12:47:30	12:47:45	354	355	Smin
13	12:55:18	12:55:33	60	60	Omax
14	12:57:54	12:58:15	5	5	
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
62006PS	12 L	27.19	DF

- 27.11
- Pinger
- Altimeter
- Transmissometer
- BEACH Sea Tech Fluorometer
- OTG Seapoint Fluorometer
- ISUS
- PO Fluorometer

★ GO TO 1000m ON FINAL Y0-Y0

1111

Station: 50	Cast: 1
Latitude start: 22° 47.4696' N	Longitude start: 157° 54.9472' W
Latitude end: 22° 47.4689' N	Longitude end: 157° 54.9472' W
Depth of water: 4695 meters	Date (GMT): 8 14 19
Pressure on Deck	Time:
Begin: 0.3625	Start Log: 2305
End: -0.3013	In Water: 2310
Max cast pressure: 1020 dbar	Out of Water: 00:54

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:26:50	00:27:10	1020	1020	} x3
2		:20		1020	
3		:30		1020	
4	43:10	43:25	200	200	} x10
5		35		200	
6		45		200	
7		55		200	
8		44:05		200	
9		15		200	
10		25		200	
11		35		200	
12		45		200	
13		55		200	
14	00:49:49	00:50:10	25	25	} x10
15		:14		25	
16		:18		25	
17		:22		25	
18		:26		25	
19		:30		25	
20		:34		25	
21		:38		25	
22		:44		25	
23		00:50:52		25	
24	00:52:10	00:52:28	6	5	

HOT-314

July 31, 2019

using OTG TERMINATION
 01322'', 600 conduct
 - 261 Ω

TRANSMISSOMETER

OPEN: 4.843883

CLOSED: 0.03053

Fluorometer removed from the
 underway system before
 the cruise.

HOT-3

CTD CON

CTD: 91

Deck Un

Pressure

Carouse

T: 1416

C: 3984

O: 1601

Pump: 9

Fluoromet

Altimete

Bucket 7

Transmiss

Cruise 1

B. Baron

B. Brene

K. Björk

M. Burge

T. Burrel

M. Caffir

T. Clemen

Jacquely

D. Fitzger

C. Funkey

E. Grabc

Isaiah

Rachel K.

K. Malone

Daniel N

T. Rohrer

F. Santia

E. Shimak

R. Tobata

HOT-314 KM-1915

July 31, 2019

CTD configuration:

CTD: 91361 (Beta)

Deck Unit: 112060 (Secondary)

Pressure: 75434

Carousel: 1261 (New)

T₁: 1416 T₂: 5519C₁: 3984 C₂: 4687O₁: 1601 O₂: 3761Pump₁: 968 Pump₂: 494

Fluorometer: 3831

Altimeter: 7769

Bucket Thermometer: 3638

Transmissometer: 1431, 1192, 1366 were sent
back for calibrationCruise Participants:

B. Barone	Kirstin Thompson (Grad student, UH)
B. Brenes	Tracy Villareal (Scientist, UT Austin)
K. Björkman	B. Watkins
M. Burgos	J. Yuan
T. Burrell	Lauren Yumol (Grad student, UH)
M. Caffin	Max Cremer (Marine Tech, ROV)
T. Clemente - Chief Sci.	Blue Eisen (Marine Engineer, ROV)
Jacquelyn Corpus	T. Young > OTG
D. Fitzgerald	J. Diehl
C. Funkey	
E. Grabowski	
Isaiah Kela-Pacheco	(volunteer, UH)
Rachel Kelly	(Grad student, USC/SCOPE)
K. Maloney	
Daniel Muratore	(Grad student, GA Tech/SCOPE)
T. Rohrer	
F. Santiago-Mandujano	
E. Shimabukuro	
R. Tobata	

1945 Depa
1930 Saf
fi
2130 Begin
Au
Wa
2135 Weight
2154 Star
2208 Testing
2218 continu
2235 end
2248 start
2328 END

00:13 BEGI
01:28 END SI
01:40 BEGIN DR
02:30 END DR

HOT-314 1, August, 2019

- 1845 Depart from Pier 35
- 1930 Safety briefing, abandon ship, fire drill
- 2130 Begin Weight Cast, 500m
Air Weight: 1225 lb zero Tension: 110 lbs
Water Weight: 980 lb
- 2135 Weight Cast delayed due to level wind issues
- 2159 Start weight cast
- 2208 Testing winch & level wind before upcast
- 2218 continuing weight cast
- 2235 End weight cast
- 2248 Start Hyperpro 21 20.5933'N, 158 16.4253'W
- 2328 End Hyperpro

2 - AUGUST 2019

- 00:13 BEGIN SIC1 21 20.3934' N
158 16.3953' W
- 01:28 END SIC1, 24 MARKS OK (ONLY 16 BOTTLES SAMPLED)
- 01:40 BEGIN DRONE OPERATION
- 02:30 END DRONE OPERATION

KM1915

02:39 TRANS

10:00 ARRIVE

10:25 BEGIN

22°

10:36 END

22°

10:37 TRANSIT

10:51 ARRIVE

10:53 BEGIN S

22°

11:12 END DE

22°

11:16 TRANSIT

12:00 BEGIN S

22°

WIND

OF W

12:42 END S

22°

3:15 Trac

4:14 Sta

14M1915

HOT-314

AUG 2, 2019

02:39 TRANSIT TO STATION ALOHA

10:00 ARRIVE STATION ALOHA EDGE

10:25 BEGIN WIRE WALKER DEPLOYMENT
22° 39.7183' N, 158° 01.3815' W10:36 END WIRE WALKER DEPLOYMENT
22° 39.7169' N, 158° 01.3815' W

10:37 TRANSIT TO SEDIMENT TRAP DEPLOYMENT SITE 1 NM NORTH

10:51 ARRIVE AT DEPLOYMENT SITE

10:53 BEGIN SEDIMENT TRAP ARRAY DEPLOYMENT
22° 40.7469' N, 158° 01.2607' W11:12 END DEPLOYMENT
22° 40.7618' N, 158° 01.2543' W

11:16 TRANSIT TO PP CTD CAST SITE 1 NM NORTH

12:00 BEGIN SZC1, 61000GPS
22° 41.7818' N, 158° 00.9247' WWINCH STOPPED AT 26 db and HAD TO PAY OUT 10m
OF WIRE (DURING UPCAST). LEVELWIND PROBLEM.12:42 END SZC1, 24 MARKS OK
22° 41.9133' N, 158° 00.9018' W

13:15 Trace metal pump deployed.

14:14 Start PP array deployment.

2-AUGUST-2019

HOT-314/

1430

22°

Pla

Need to replace bucket used for soaking of LTD sensors. The bucket is cracked.

1432

Saw

with

Eng

on 681

- IN AIR ~ 850 #

1508

ON

BEA

→ TRAC

Look

1732

1923

P

fo

1928

2000

2134

BE

A

HOT-314 2 August 2019

1430 22° 42.2007' N, 158° 0.08047' W
 Array deployed.

switching CTD ops. to 0.681 winch/
 wire due to 0.321 level winding issues

1432 End TM pump sampling.
 - transit to center of station

- WIRE IS SWITCHED TO 0.681''

1508 ON STATION

BEGIN S2C2 22 45.0465' N
 157 59.9982' W

→ TRANSMISSOMETER SIGNAL
 Looks bad below 1200 dbar

1732 - Bottom ~ 6m from Bottom

22 45.0054' N
 158 00.0220' W

1923 PAUSED AT 1200 dbar ON UPGAST
 for engineers to EXAMINE 681 WINCH.

1928 - RESUME UPGAST - ALL clear from engineering

2000 END S2C2 , 24 BOTTLES ok
 MARKS
 22 44.9926' N
 158 00.0330' W

2134 BEGIN S2C3

CPICS

Attached camera inside rosette
 before cast

2316 END

2327 BEG

- 3 A

00 05 END

0018 BEGIN

01:45 END

01:53 TRANS

03:17 BEGIN

04:30 END S

04:39 TRANSIT

0515 BEGIN

05:48 end

06:11 BEGIN S

07:20 END S

HOT-314

2316 END S2C3 22 45.0198' N ✓ 24 MARKS
158 00.0339' N OK

2327 BEGIN HYPERPRO 22 45.0318' N
158 00.0311' W ✓

- 3 AUGUST - 2019

00 05 END HYPERPRO 22 45.0940' N
158 00.0696' W

0018 BEGIN S2C4 22 45.1218 N
158 00.0613 W

01:45 END S2C4, 19 MARKS OK
22° 45.3979' N, 157° 59.9771' W

01:53 TRANSIT TO PUMP TANKS

03:17 BEGIN S2C5, G1000 GPS
22° 50.0359' N, 158° 02.2128' W

04:30 END S2C5, 19 MARKS OK
22° 50.0487' N, 158° 02.2092' W

04:39 TRANSIT TO PP ARRAY, ~ 4 NM TO SW

0515 BEGIN RECOVERY OF PRIMARY PRODUCTION ARRAY
22° 47.6415' N, 158° 04.6490' W

05:48 END RECOVERY OF PRIMARY PRODUCTION ARRAY
22° 47.8326' N, 158° 04.5016' W

06:11 BEGIN S2C6, G1000 GPS
22° 47.8675' N, 158° 04.4806' W

07:20 END S2C6, 24 MARKS OK
22° 47.8758' N, 158° 04.4760' W

122

07:44 BEGIN

2

08:10 END V

08:25 BEGIN

22°

09:26 END N

09:39 BEGIN

22°

10:43 END S

10:48 TRANS

11:32 BEGIN

22°

12:00 END

12:11 BEGIN

22°

13:07 END

TRANS

14:03 BEGIN

22

14:21 END

22°

HOT-314

AUG 3, 2019

- 07:44 BEGIN VPR TOWED CAMERA DEPLOYMENT
22° 47.88' N, 158° 4.47' W
- 08:10 END VPR DEPLOYMENT
- 08:25 BEGIN NET TOWS (2)
22° 47.74' N, 158° 3.99' W
- 09:26 END NET TOWS
- 09:39 BEGIN S2C7, G1000 GPS
22° 47.4483' N, 158° 03.2748' W
- 10:43 END S2C7, 18 MARKS OK
- 10:48 TRANSIT TO PUMP TANKS
- 11:32 BEGIN ACOUSTIC ZOOPLANKTON FISH PROFILER DEPLOYMENT
22° 50.2800' N, 158° 01.1151' W
- 12:00 END AZFP DEPLOYMENT
- 12:11 BEGIN S2C8, GAS ARRAY CAST, G1000 GPS
22° 50.3074' N, 158° 01.1151' W
- 1307 END S2C8 22 50.2908' N
158 01.1160' W
- TRANSIT TO GAS ARRAY DEPLOYMENT SNE
- 1403 BEGIN GAS ARRAY DEPLOYMENT
22 43.1328' N, 158 02.4362' W
- 1421 END GAS ARRAY DEPLOYMENT
22° 43.1944' N, 158° 02.3904' W

KM1915

1445 B

1536

1608 END
22°

1629
22° L

1658 E
22 L

1713 B
22°

1756

1758
22°

1805 ST
2
- spi

1912 EA
22°
B

16M1915 HOT-314 3-AUG-2019

1445 BEGIN SAC9 22 43.2210' N

158 01.8027' W

- relative secondary s-min @ 70 dbar

↳ base of MIXED LAYER

- SPIKE IN S and DO @ 200 dbar.

1536 - RAINING ON STATION

1608 END SAC9

17 MARKS OK

22° 43.1992' N,

158° 01.8118' W

1629 BEGIN VPR

22° 43.1877' N, 158° 01.6699' W

1658 END VPR

22 43.1641' N, 158 00.8487' W

1713 BEGIN AZFP

22° 43.1781' N, 158° 00.8441' W

1756 RAINING

1758 END AZFP

22° 43.3526' N, 158° 00.8368' W

1805 START SAC10 - Psi

22° 43.3697' N, 158° 00.8313' W

- spike in S, T, & DO @ 70 dbar

- spike in S + DO @ 200 dbar

1812 END SAC10

22° 43.4027' N, 158° 00.8249' W

BOTTLES #11 leaking from BOTTOM CAP

↳ TIE WRAP GOT CAUGHT

KM1915

1923 TR

2012 BE

2047 EN
22

2055 BE
22°

2153 EN

2214 BE
2

Coll
Sc

2240 EN

2246 B

2313 E
22°

2322 I

2335 B
21

0007 E

0023 BE

0026 EN

KM1915

HOT-314

3-AUG-2019

1923 TRANSITING TO PUMP TANKS

2012 BEGIN AZFP CAST
22° 40.2676' N, 157° 59.9057' W2047 END AZFP
22 40.3037' N, 157° 59.9011' W2055 BEGIN S2C11
22° 40.3075' N, 157° 59.9011' W

2153 END of cast, 12 marks OK

2214 BEGIN NET TOW
22° 40.3567' N, 157° 59.8315' WCollected 1000 m water for salinity
substandards in 60 l plastic carboy.

2240 End net tow

2246 Begin net tow

2313 END NET TOW
22° 40.3530' N, 157 58.8309' W2322 BEGIN DRONE OPS 22 40.3685
157 58.8219

2335 BEGIN AZFP

24 ——— 4 - AUG - 2019

0007 END AZFP 22' 40.3685' N

0023 BEGIN S2C12 157° 58.8199' W

0026 END DRONE OPS

KM 1915 HOT-314 4-AUG-2019

KM 1915

01:42 END

2

01:58 BEGIN

2

02:50 END

03:05 BEGIN

22

04:18 END

2

04:28 TRANS

05:42 BEGIN

06:25 BEGIN

2

S2C14 was performed in DP with the ship over the ALO coordinates.



06:25 BEGIN

2

07:28 END

22

07:42 BEGIN

22°

08:16 END

08:26 BEGIN

22°

08:32 END

22°

10M1915 HOT-314 4-AUG-2019

01:42 END S2C12, 16 MARKS OK
22° 40.603' N, 157° 58.673' W

01:58 BEGIN VPR TOW
22° 40.6623' N, 157° 58.6313' W

02:50 END VPR TOW

03:05 BEGIN S2C13, G1000 GPS
22° 40.6929' N, 157° 57.8549' W

04:18 END S2C13, 21 MARKS OK
22° 41.2008' N, 157° 57.4384' W

04:28 TRANSIT TO PUMP TANKS

05:42 BEGIN AZFP DEPLOYMENT, 22° 44.4329' N, 158° 00.3424' W

06:25 BEGIN ACO DEPTH SURVEY (BRIDGE PLACED COORDINATES
22° 44.3240' N, 158° 00.3120' W UNDER MULTIBEAM)

06:25 BEGIN S2C14, G1000 GPS
22° 44.3290' N, 158° 00.3680' W

07:28 END S2C14, 20 MARKS OK.
22° 44.3337' N, 158° 00.3644' W

07:42 BEGIN AZFP DEPLOYMENT
22° 44.3289' N, 158° 00.3690' W

08:16 END DEPLOYMENT

08:26 BEGIN NET TOW
22° 44.5426' N, 158° 00.2380' W

08:32 END net tow due to line snagging with 322 wire
22° 44.5983' N, 158° 00.2261' W on A-frame.

KM191

08:34

Re

2

09:01

END

09:18

BEG

2

Tr

be

11:13

REAC

13:00

EM

13:13

BE

14:52

EM

2

14:56

TR

16:13

Re

2

16:28

Com

2

16:30

TR

KM1915

HOT-314

Aug 4, 2019

08:34 Re deploy net tow

22°44.6135'N, 158°00.2225'W

09:01 END NET TOW

09:18 BEGIN S2C15, G5000 GPS

22°45.0172'N, 158°00.0073'W

Transmissometer appears to be giving bad data
below 1200db again.

11:13 REACHED CAST BOTTOM, 7m off BOTTOM (4808db)

22°44.9805'N, 158°00.0192'W

1300 END S2C15 22°45.0580'N 14 MARKS OK
157°59.9991'W

1313 BEGIN OPTICS CAST

1452 END OPTICS CAST

22°45.0872'N, 157°59.9982'W

1456 TRANSIT TO GAS ARRAY, ~8 miles,

1613 Recovering Gas array

22°51.573°N, 158°5.654'W

1628 COMPLETE WITH GAS ARRAY RECOVERY

22°51.5189'N, 158°05.6149'W

1630 TRANSITING TO SED TRAPS

KM 1915

1738 BEG
22 5

1753 END
TRA

1830 BEG
22

1841 EM
22

TRA

2133 B
22

2210 E

2231 BEG
22

2301 RAIN

2305 BEG
22

0024 DR

0040 Ha

0048 Net

00:54 END
22

KM1915 ' HOT-314

4-AUG-2019

1738 BEGIN SED TRAP RECOVERY

22 58.2899' N, 158° 13.1653' W

1753

END SED TRAP RECOVERY
TRANSIT TO WIREWALKER

1830

BEGIN WIREWALKER RECOVERY
22° 57.4322' N, 158° 13.7411' W

1841

END WIREWALKER RECOVERY
22 57.4313' N, 158° 13.7439' W

TRANSIT TO STATION 50 - WHOTS

2133

BEGIN HYPERPRO
22° 47.4415' N, 157° 54.9628' W

2210

End hyperpro cast.

2231

BEGIN DRONE OPS
22° 47.4689' N, 157° 54.9463' W

2301

RAINING ON DECK.

2305

BEGIN S50C1

22° 47.4696' N, 157° 54.9472' W

- 5-AUG-2019

0024

DRONE OPS COMPLETE

0040

Hand held net tow in fuel water

0048

Net tow out of water

00:54

END S50C1, 24 MARKS OK
22° 47.4689' N, 157° 54.9472' W

KMI915

01:12 BEGIN

22⁹

02:04 END V

02:05 TRANS

03:07 BEGIN

05:00 SHIP

E

06:45 RELEA

07:00 UPON

ON B

INST

TAKE

WILL

THIS

KAE

08:17 LOWERIN

08:30 BEGIN

08:40 ELEVATOR

08:45 BEGIN

10:11 BEGIN

ELE

10:13 ELEVATOR

10:20 SETTING

KM1915

HOT-314

AUG 5, 2019

01:12 BEGIN VPR TOW

 $22^{\circ} 47.3293' N, 157^{\circ} 54.6524' W$

02:04 END VPR TOW

02:05 TRANSIT TO "LOST" ROV LU'UKAI SITE

03:07 BEGIN ROV ELEVATOR DEPLOYMENT

05:00 SHIP NEEDS TO REPOSITION SLIGHTLY TO RELEASE
ELEVATOR AWAY FROM ROV.

06:45 RELEASE COMMAND SENT

07:00 UPON RELEASE OF ELEVATOR, ELEVATOR DID NOT REMAIN
ON BOTTOM AS PLANNED, BUT FLOATED TO THE SURFACE
INSTEAD. WIRE IS BEING RECOVERED, BUT WILL
TAKE ~1-1.5 HOURS TO FULLY RECOVER. ELEVATOR
WILL THEN NEED TO BE RECOVERED AS WELL.
THIS WILL CAUSE THE CANCELLATION OF SBCL,
KAENA POINT CAST.

08:17 LOWERING RELEASES RECOVERED

08:30 BEGIN ELEVATOR RECOVERY ATTEMPT

08:40 ELEVATOR RECOVERED

08:45 BEGIN RETROFIT OF ELEVATOR ANCHOR SYSTEM

10:11 BEGIN REDEPLOYMENT (DROP FROM SURFACE) OF
ELEVATOR

10:13 ELEVATOR RELEASED

10:20 SETTING UP FOR TRIANGULATION OF ELEVATOR/ANCHOR

KM1919

11:39 BEGIN

0008 F

KM1915

HOT-314

AUG 5, 2019

11:39 BEGIN TRANSIT TO HONOLULU

6 August, 2019

0008 First line. End of cruise