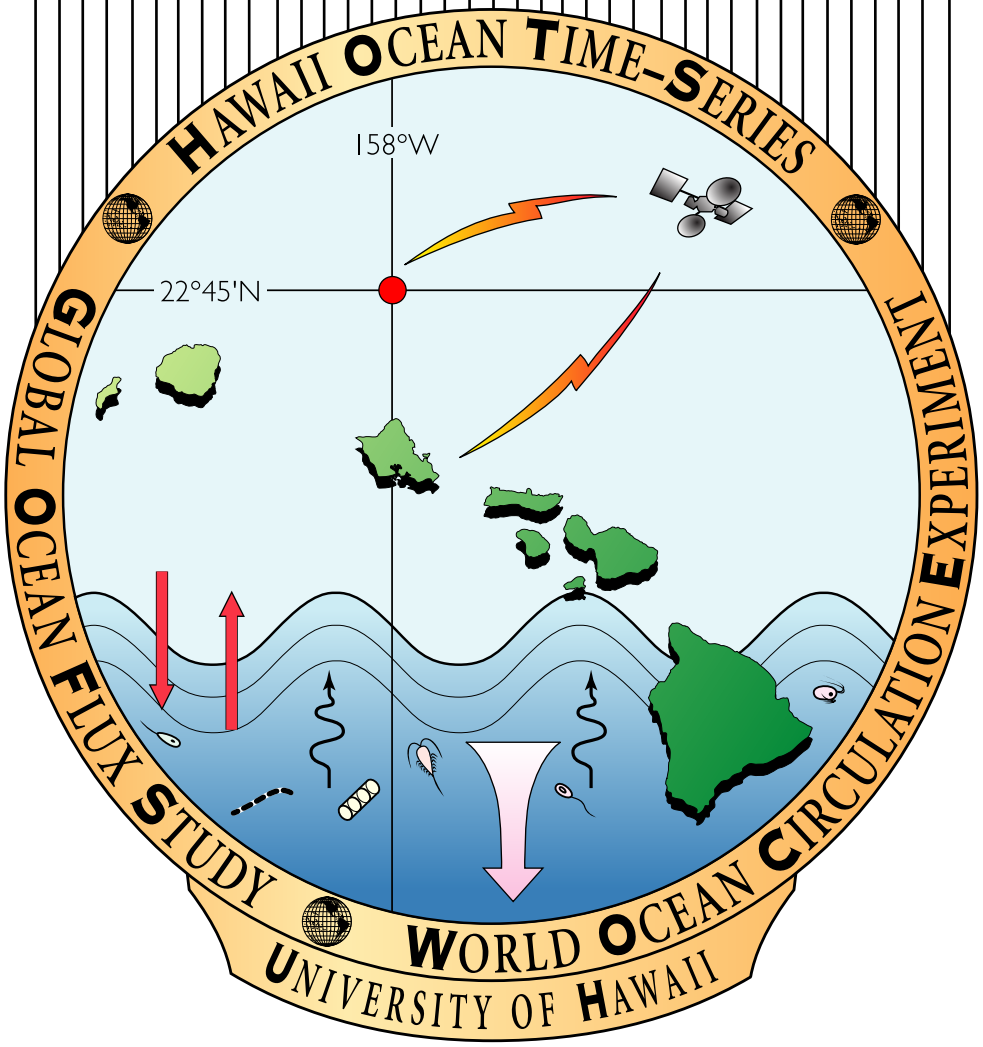
Hawaii Ocean Time-series Program

HOT 310



Hawaii Ocean Time-Series

HOT-**310**

KAHE Station Data Sheet

Station # 1 Date: 2/18/19 (HST)

Cast # 1 Time: 13:40 (HST)

Operator(s): DS, TC, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	6.8						
2	**750**	2,3,4	7.4						
3	**500**	5	8.2						
4	**350**	6	10.5			4			
5	**250**	7	13.9			5			
6	**200**								
7	**175**							7	
8	**150**	8	21.4			8	8	8	
9	**125**							9	
10	**100**	9,10,11	22.9			10	10	10A-B	
11	**75**							11	
12	**45**	12	23.4	12	1	12	12	12	
13	**25**	13	23.7	13	2			13A-B	
14	**5**	14	23.8	14	3,4,5	14	14	14	
15	**5**	QC	23.9						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-Series
HOT-**310**
KAHE Station Data Sheet

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

Date: 2/18/2019 ~~2/1/2019~~ (HST)
Time: 13:40 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	6.8						
2	**750**	2,3,4	7.4						
3	**500**	5	8.2						
4	**350**	6	10.5			4			
5	**250**	7	13.9			5			
6	**200**								
7	**175**							7	
8	**150**	8	21.4			8	8	8	
9	**125**							9	
10	**100**	9,10,11	22.9			10	10	10A-B	
11	**75**							11	
12	**45**	12	23.4	12	1	12	12	12	
13	**25**	13	23.7	13	2			13A-B	
14	**5**	14	23.8	14	3,4,5	14	14	14	
15	**5**	QC	23.9						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-series

HOT-**310**

WOCE Deep Data Sheet

Station # 2 Date: 2/19/2019 (HST)

Cast # 1 Time: 04:40 (HST)

Operator(s): DS, TC, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	3.3				1	1	
2	**4600**	16	3.3				2	2	
3	**4500**	17,18,19	3.5	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	3.3				4	4	
5	**4200**	21	3.4				5	5	
6	**4000**	22	3.5				6	6	
7	**3800**	23,24,25	3.7			7ABC	7A-B	7A-B	
8	**3600**	26	3.4				8	8	
9	**3400**	27	3.5				9	9	
10	**3200**	28	3.5				10	10	
11	**3000**	29,30,31	4.0	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	3.7				12	12	
13	**2600**	33	3.6				13	13	
14	**2400**	34	3.8				14	14	
15	**2200**	35	4.0				15	15	
16	**2000**	36	3.9	16	5	16ABC	16A-B	16A-B	
17	**1800**	37,38,39	4.7				17	17	
18	**1600**	150	4.6				18	18	
19	**1400**	41	4.9				19	19	
20	**1200**	42	5.3				20	20	
21	**1000**	43	5.8				21	21	
22	**750**	44	6.4				22	22	
23	**500**	45	8.8				23	23	
24	**5**	46	22.6				24		

Notes:

Hawaii Ocean Time-series
HOT-**310**
WOCE Deep Data Sheet

Station # 2
Cast # 1
Operator(s): DS, TC, CF

Date: 2/19/2019 (HST)
Time: 9:40 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	3.3				1	1	
2	**4600**	16	3.3				2	2	
3	**4500**	17,18,19	3.5	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	3.3				4	4	
5	**4200**	21	3.4				5	5	
6	**4000**	22	3.5				6	6	
7	**3800**	23,24,25	3.7			7ABC	7A-B	7A-B	
8	**3600**	26	3.4				8	8	
9	**3400**	27	3.5				9	9	
10	**3200**	28	3.5				10	10	
11	**3000**	29,30,31	4.0	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	3.7				12	12	
13	**2600**	33	3.6				13	13	
14	**2400**	34	3.8				14	14	
15	**2200**	35	4.0				15	15	
16	**2000**	36	3.9	16	5	16ABC	16A-B	16A-B	
17	**1800**	37,38,39	4.7				17	17	
18	**1600**	150	4.6				18	18	
19	**1400**	41	4.9				19	19	
20	**1200**	42	5.3				20	20	
21	**1000**	43	5.8				21	21	
22	**750**	44	6.4				22	22	
23	**500**	45	8.8				23	23	
24	**5**	46	22.6				24		

Notes:

Hawaii Ocean Time-series
HOT-**310**
PO Shallow Data Sheet

Station # 2 Date: 02/19/19 (HST)
Cast # 2 Time: 16:21 (HST)
Operator(s): TB, KB, KKB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	**988**	47,48,49	7.5	1	1	1	1A-B	1A-B	**1000**
2	**942**	50	7.1				2	2	
3	**896**	51	7.2				3	3	
4	**850**	52	7.3				4	4	
5	**804**	53	7.5				5	5	
6	**752**	54, 55, 56	7.9	6	2	6	6	6	**750**
7	**700**	57	8.0				7	7	
8	**665**	58	8.0				8	8	
9	**630**	59	8.2	9	3	9	9	9	
10	**575**	60	8.7				10	10	
11	**535**	61	8.9				11A-B	11A-B	**525**
12	**498**	62	9.4	12	4	12	12	12	
13	**442**	63, 64, 65	10.4				13	13	**450**
14	**390**	66	10.7				14	14	
15	**340**	67	11.9	15AB	5,6	15	15		**350**
16	**302**	68	13.4				16		
17	**242**	69	16.0				17		
18	**211**	70, 71, 72	18.0	18	7	18	18		**225**
19	**180**	73	20.0				19		
20	**142**	74	21.3				20 A-B		**150**
21	**112**	75	22.6				21		
22	**82**	76	22.7				22		
23	**44**	77	22.8				23		
24	**5**	78	22.7				24		

Notes: Niskin #10 vent open

Hawaii Ocean Time-series
HOT-**310**
PO Shallow Data Sheet

Station # 2 Date: 02/19/19 (HST)
Cast # 2 Time: 16:21 (HST)
Operator(s): KB, TB, KKB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	988	47,48,49	7.5	1	1	1	1A-B	1A-B	1000
2	942	50	7.1				2	2	
3	896	51	7.2				3	3	
4	850	52	7.3				4	4	
5	804	53	7.5				5	5	
6	752	54 55,56	7.9				6	6	750
7	700	~~55,56~~,57	8.0	7	2	7	7	7	
8	665	58	8.0				8	8	
9	630	59	8.2	9	3	9	9	9	
10	575	60	8.7				10	10	
11	535	61	8.9				11A-B	11A-B	525
12	498	62	9.4	12	4	12	12	12	
13	442	63 64,65	10.4				13	13	450
14	390	~~64,65~~,66	10.7				14	14	
15	340	67	11.9				15		350
16	302	68	13.4	16AB	5A-B	16	16		
17	242	69	16.0				17		
18	211	70 71,72	18.0	18	6 7	18	18		225
19	180	~~71,72~~,73	20.0				19		
20	142	74	21.3				20 A-B		150
21	112	75	22.6				21		
22	82	76	22.7				22		
23	44	77	22.8				23		
24	5	78	22.7				24		

Notes:

Niskin #10 vent open

Hawaii Ocean Time-series

HOT-**310**

BEACH Shallow Data Sheet (1/2)

Station # 2 Date: 02/19/19 (HST)

Cast # 3 Time: 21:10 (HST)

Operator(s): TB, KB, KKB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	7.3						
2	**O_2 min**	80	8.0						
3	**Sal min**	81	10.8						
4	**200**	82	17.5	4				1	4
5	**175**	83	18.9						5
6	**165**	84	19.7						
7	**150**	85	20.6	7				2	7
8	**130**								
9	**125**	86	21.5						9
10	**115**	87	22.5						
11	**110**								
12	**100**	88,89,90	22.7	12				3	12
13	**90**								
14	**85**	91	22.8						
15	**75**	92	22.8	15				4	15
16	**60**								16
17	**45**	93	22.8	17				5	17
18	**35**								18
19	**25**	94	22.8	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	22.8	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling A: 23:17
B: 23:19

Hawaii Ocean Time-series
HOT-**310**
BEACH Shallow Data Sheet (1/2)

Station # 2 Date: 02/19/19 (HST)
Cast # 3 Time: 21:10 (HST)
Operator(s): TB, KB, KKB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	7.3						
2	**O_2 min**	80	8.0						
3	**Sal min**	81	10.8						
4	**200**	82	17.5	4				1	4
5	**175**	83	18.9						5
6	**165**	84	19.7						
7	**150**	85	20.6	7				2	7
8	**130**								
9	**125**	86	21.5						9
10	**115**	87	22.5						
11	**110**								
12	**100**	88,89,90	22.7	12				3	12
13	**90**								
14	**85**	91	22.8						
15	**75**	92	22.8	15				4	15
16	**60**								16
17	**45**	93	22.8	17				5	17
18	**35**								18
19	**25**	94	22.8	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	22.8	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling
A : 23:17 HST
B 23:19 HST

Hawaii Ocean Time-series
HOT-**310**
BEACH Shallow Data Sheet (2/2)

Station # 2 Date: 02/19/19 (HST)
Cast # 3 Time: 21:10 (HST)
Operator(s): TB, KB, KKB

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-**310**
BEACH Shallow Data Sheet (2/2)

Station # 2
Cast # 3
Operator(s): TB, KB, KKB

Date: 02/19/19 (HST)
Time: 21:10 (HST)

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- **310**

Gas Array Experiment Data Sheet

Station #	2	Date:	02/19/19	(HST)
Cast #	4	Time:	02:07	(HST)
Operator(s):	DS, TR, MB, CF			

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

Notes:

Hawaii Ocean Time-series
HOT- **310**
Gas Array Experiment Data Sheet

Station # 2
Cast # 4
Operator(s): ~~TB, KB, KKB~~

Date: 02/19/19 (HST)
Time: 02:07 (HST)

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

19A,B

Notes:

Hawaii Ocean Time-series

HOT- **310**

Particulate Silica Data Sheet

Station #	2	Date:	02/20/19 (HST)
Cast #	5	Time:	5:40 (HST)
Operator(s):	DS, MB, CF	Pre-screen mesh size:	none
Blank #	**B1, B2, B3**		

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	Salts	MD	
1	**1020**					X		
2	**500**						X	
3	**500**						X	
4	**500**						X	
5	**500**						X	
6	**Sal min**					X		
7	**175**	7	4	7				
8	**150**	8	4	8				
9	**125**	9,10	4,4	9A-B				
10	**125**						X	
11	**125**						X	
12	**125**						X	
13	**125**						X	
14	**100**	11	4	14				
15	**75**	12	4	15				
16	**45**	13	4	16				
17	**25**	14,15	4,4	17A-B				
18	**25**				18A-B			
19	**5**				19A-B			
20	**5**	16	4	20		X		
21	**5**						X	
22	**5**						X	
23	**5**						X	
24	**5**						X	

Notes:

Hawaii Ocean Time-series
HOT- **310**
Particulate Silica Data Sheet

Station # 2 Date: 02/20/19 (HST)
Cast # 5 Time: 5.40 (HST)
Operator(s): DS, MB, CF Pre-screen mesh size: none
Blank # **B1, B2, B3**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	Salts	MD	
1	**1020**					X		
2	~~Sal min~~	510				X	X	
3	**500**						X	
4	**500**						X	
5	**500**						X	
6	~~500~~ Sal min						X	
7	**175**	7	4	7				
8	**150**	8	4	8				
9	**125**	9,10	4,4	9A-B				
10	**125**						X	
11	**125**						X	
12	**125**						X	
13	**125**						X	
14	**100**	11	4	14				
15	**75**	12	4	15				
16	**45**	13	4	16				
17	**25**	14,15	4,4	17A-B				
18	**25**				18A-B			
19	**5**				19A-B			
20	**5**	16	4	20		X		
21	**5**						X	
22	**5**						X	
23	**5**						X	
24	**5**						X	

Notes:

Hawaii Ocean Time-series

HOT- **310**

PC/PN Data Sheet

Station #	2		Date:	2/20/2019	(HST)
Cast #	6		Time:	8:02	(HST)
Operator(s):	DS, MB, CF	Pre-screen mesh size:		202 um	
Blank #'s	**___B1___**	**___B2___**	**___B3___**		

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DNA	SF-S	
1	**1000**						
2	**700**						
3	**Sal Min**						
4	**350**	1	10	4			
5	**350**	2	10	5			
6	**250**	3	10	6			
7	**200**	4	10	7			
8	**175**	5	10	8			
9	**175**				X		
10	**150**	6	10	10			
11	**150**				X		
12	**125**	7,8	4,4	12A-B			
13	**125**				X		
14	**100**	9	4	14			
15	**100**				X		
16	**75**	10	4	16			
17	**45**	11	4	17			
18	**25**	12,13	4,4	18A-B			
19	**25**					19A-B	
20	**5**	14	4	20			
21	**5**					21A-B	
22							
23							
24							

Notes: Filter # 9 (rosette 14), Filter #4 (rosette 7) torn but filtered at normal speed.

Hawaii Ocean Time-series
HOT- **310**
PC/PN Data Sheet

Station # 2 Date: 2/20/2019 (HST)
Cast # 6 Time: 8:02 (HST)
Operator(s): DS, MB, CF Pre-screen mesh size: 202 um
Blank #'s **B1** **B2** **B3**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DNA	SF-S	
1	**1000**						
2	**700**						
3	**Sal Min**						
4	**350**	1	10	4			
5	**350**	2	10	5			
6	**250**	3	10	6			
7	**200**	4	10	7			
8	**175**	5	10	8			
9	**175**				X		
10	**150**	6	10	10			
11	**150**				X		
12	**125**	7,8	4,4	12A-B			
13	**125**				X		
14	**100**	9	4	14			
15	**100**				X		
16	**75**	10	4	16			
17	**45**	11	4	17			
18	**25**	12,13	4,4	18A-B			
19	**25**					19A-B	
20	**5**	14	4	20			
21	**5**					21A-B	← 21 A-B
22							
23							
24							

Notes: Filter #9 (rosette 14) torn, filtered at normal speed.
* Filter #4 (rosette 7)

Hawaii Ocean Time-series

HOT- **310**

Particulate Phosphorus Data Sheet

Station #	2	Date:	2/20/2019 (HST)
Cast #	7	Time:	11:00 (HST)
Operator(s):	DS, MB, CF	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	TC
1	**1000**							X
2	**1000**							X
3	**Sal min**							
4	**350**	1	10	4				
5	**350**	2	10	5				
6	**250**	3	10	6				
7	**200**	4	10	7				
8	**175**	5	10	8				
9	**150**	6	10	9				
10	**125**	7,8	4,4	10A-B				
11	**100**	9	4	11				
12	**75**	10	4	12				
13	**45**	11	4	13				
14	**25**	12,13	4,4	14A-B				
15	**25**				15 A,B			
16	**15**					125,126,127	23.0	
17	**5**	14	4	17				
18	**5**				18 A,B			
19								
20								
21								
22								
23								
24								

Notes: Carboy #4 (rosette 7), Carboy #6 (rosette 9) Carboy # 3 (rosette 6) filters torn.

Hawaii Ocean Time-series
HOT- **310**
Particulate Phosphorus Data Sheet

Station # 2 Date: 2/20/2019 (HST)
Cast # 7 Time: 11:00 (HST)
Operator(s): DS, MB, CF 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	TC
1	**1000**							X
2	**1000**							X
3	**Sal min**							
4	**350**	1	10	4				
5	**350**	2	10	5				
6	**250**	3	10	6				
7	**200**	4	10	7				
8	**175**	5	10	8				
9	**150**	6	10	9				
10	**125**	7,8	4,4	10A-B				
11	**100**	9	4	11				
12	**75**	10	4	12				
13	**45**	11	4	13				
14	**25**	12,13	4,4	14A-B				
15	**25**				15 A,B			
16	**15**					125,126,127	23.0	
17	**5**	14	4	17				
18	**5**				18 A,B			
19								
20								
21								
22								
23								
24								

Notes: Carboy #4 (rosette 7), Carboy #6 rosette (9) Carboy #3 (rosette 4) filters torn.

Hawaii Ocean Time-series

HOT- **310**

ATP Data Sheet

Station # 2 Date: 2/20/2019 (HST)

Cast # 8 Time: 2:33 (HST)

Operator(s): TB, KB, KKB Pre-screen mesh size: 202um

Blank #'s 28, 29, 30

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	
1	**1020**						
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			
15	**25**				15A,B		
16	**5**	25 - 27	3x1	13			
17	**5**				17AB		
18							
19							
20							
21							
22							
23							
24							

Notes: 210mL not added to ATP #006

Hawaii Ocean Time-series
HOT- **310**
ATP Data Sheet

Station # 2
Cast # 8
Operator(s): KB, KB & TB
Blank #'s 28, 29, 30

Date: 2/20/2019 (HST)
Time: 2:33 (HST)
Pre-screen mesh size: 202um

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	
1	**1020**						
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			
15	**25**				15A,B		
16	**5**	25 - 27	3x1	13			
17	**5**				17AB		
18							
19							
20							
21							
22							
23							
24							

Notes: 210 ml left out of #006

Hawaii Ocean Time-series
HOT-**310**
OPEN CAST Data Sheet

Station #	2		Date:	2/20/19	(HST)
Cast #	9		Time:	17:09	(HST)
Operator(s):	TB, KB, KKB				

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp		SALTS
1	**1000**						X
2	**800**	2					
3	**600**	3					
4	**Sal Min**						X
5	**400**	5					
6	**300**	6					
7	**200**	7					
8	**175**	8					
9	**150**	9					
10	**125**	10					
11	**100**	11					
12	**75**	12					X
13	**45**	13					
14	**25**	14 A, B					
15	**25**		15A,B				
16	**15**			130,131,132	22.9		
17	**5**	17 A,B					X
18	**5**		18A,B				
19							
20							
21							
22							
23							
24							

Notes: O2 temperatures were taken late

Hawaii Ocean Time-series
HOT-**310**
OPEN CAST Data Sheet

Station # 2
Cast # 9
Operator(s): KB, TB, KKB

Date: 2/20/19 (HST)
Time: 17:09 (HST)

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

Notes: * O2 temperatures were taken late

Hawaii Ocean Time-series

HOT- **310**

OPEN Data Sheet

Station #	2	Date:	02/20/19 (HST)
Cast #	10	Time:	20:02 (HST)
Operator(s):	TB, KB, KKB		

Rosette Position	Desired Depth	DNA	SFS	MC	Chla	HPLC	Carboy #	FCM
1	**1020**							
2	**Sal min**							
3	**275**	X						
4	**250**	X						
5	**225**	X						
6	**200**	X						
7	**175**			1				
8	**175**				8	8	1	8
9	**150**			2				
10	**150**				10	10	2	10
11	**135**				11	11	7	
12	**125**			3				
13	**125**				13A,B	13A,B	8,9	13
14	**115**				14	14	10	
15	**100**			4	15	15	11	15
16	**85**				16	16	12	
17	**75**			5	17	17	13	17
18	**60**				18	18	14	
19	**45**			6				
20	**45**				20A,B	20A,B	15,16	20
21	**25**		21AB	7	21			21
22	**25**					22	3	
23	**5**		23AB			23	4	
24	**5**			8	24			24

Notes:
HPLC- 14, 20A filtered fast (filters askew)

Hawaii Ocean Time-series
HOT- **310**
OPEN Data Sheet

Station # 2
Cast # 10
Operator(s): JB, KB, KCB

Date: 02/20/19 (HST)
Time: 20:02 (HST)

Rosette Position	Desired Depth	DNA	SFS	MC	Chla	HPLC	Carboy #	FCM
1	**1020**							
2	**Sal min**							
3	**275**	X						
4	**250**	X						
5	**225**	X						
6	**200**	X						
7	**175**			1				
8	**175**				8	8	1	8
9	**150**			2				
10	**150**				10	10	2	10
11	**135**				11	11	7	
12	**125**			3				
13	**125**				13A,B	13A,B	8,9	13
14	**115**				14	14	10	
15	**100**			4	15	15	11	15
16	**85**				16	16	12	
17	**75**			5	17	17	13	17
18	**60**				18	18	14	
19	**45**			6				
20	**45**		21		20A,B	20A,B	15,16	20
21	**25**		~~14~~AB	7	~~21~~ 19			19
22	**25**		23		22	22	3	~~22~~
23	**5**		~~24~~ 16AB		~~23~~	23	4	~~23~~ 21
24	**5**			8	~~24~~			24

Notes:
HPLC – 14, 20A filtered fast (Matthew)

Hawaii Ocean Time-series

HOT-**310** WOCE Deep 2 Data Sheet

Station # 2 Date: 2/21/2019 (HST)

Cast # 11 Time: 1:17 (HST)

Operator(s): DS, MB, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	TC	SF O2	
1	**4800**	96	3.2				
2	**4000**				X		
3	**4000**				X		
4	**4000**	97	3.2				
5	**4000**			X			
6	**3000**	98	3.3				
7	**3000**			X			
8	**2000**	99	3.7				
9	**2000**			X			
10	**1000**			X			
11	**O2 min**	100	7.2				
12	**Sal min**	101	10.0				
13	**Salmax**						
14	**O2 max**	102	22.7				
15	**15**		22.9			128,129,133	
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT-**310** WOCE Deep 2 Data Sheet

Station # 2
Cast # 11
Operator(s): DS, CF, MRB

Date: 2/21/2019 (HST)
Time: 1:17 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	TC	SF O2	
1	**4800**	96	3.2				
2	**4000**				X		
3	**4000**				X		
4	**4000**	97	3.2				
5	**4000**			X			
6	**3000**	98	3.3				
7	**3000**			X			
8	**2000**	99	3.7				
9	**2000**			X			
10	**1000**			X			
11	**O2 min**	100	7.2				
12	**Sal min**	101	10.0				
13	**Salmax**						
14	**O2 max**	102	22.7				
15	**15**		22.9			128,129,130	
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT- **310**
STATION 50 Data Sheet

Station # 50 Date: 2/21/2019 (HST)
Cast # 1 Time: 13:05 (HST)
Operator(s): DS, MB, TC, CF

Rosette Position	Desired Depth	DIC/TA	pH	CS				
1	**100**			X				
2	**75**			X				
3	**25**			X				
4	**5**	4A,B	1,2,3					
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								

Notes:

Hawaii Ocean Time-series
HOT- **310**
STATION 50 Data Sheet

Station # 50
Cast # 1
Operator(s): DS, MB, CF

Date: 2/21/2019 (HST)
Time: 13:05 (HST)

Rosette Position	Desired Depth	DIC/TA	pH	CS				
1	**100**			X				
2	**75**			X				
3	**25**			X				
4	**5**	4A,B	1,2,3					
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								

Notes:

Hawaii Ocean Time-series
HOT-310 Sediment Trap Data Sheet

Deployment

Type of traps:	HOT and EG 150m 150m	Date:	2/19/19
Operator(s):	BW, TB, KB, KKB	Wind:	14.0 knots
Position in:	22° 45.0695N 158° 02.1002W	Sea State:	6-8 ft
Time in (HST):	00:16		
Time relseased (HST):	00:31		

Recovery

Operator(s):	BW, TB, TC, DS, TR	Date:	2/21/2019
Start recovery (HST):	9:05	Wind:	2-3 knots
Time out (HST):	9:28	Sea state:	3 meter swells
Position out:	22° 44.0812N 158° 05.0391 W		
Weight on board (HST):			

Comments:

Hawaii Ocean Time-series
HOT-310 Sediment Trap Data Sheet

Deployment

Type of traps:	HOT and EG 150m	Date:	2/19/19
Operator(s):	BW, TB, KB, KCB	Wind:	14.0 knts
Position in:	2245.069'N	Sea State:	6-8 ft
Time in (HST):	00:16 158 02.1002'W		
Time relseased (HST):	00:30		

Recovery

Operator(s):	BW, TB, TC, DS	Date:	2/21/2019
Start recovery (HST):	9:05	Wind:	2-3 knots
Time out (HST):	9:28	Sea state:	3 meter swell
Position out:	22° 44.0812'N	158° 05.0391W	
Weight on board (HST):			

Comments:

Data Sheet for Sediment Trap Volumes

Cruise #: 310
Analyst: DS

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)
A	150	35.7
B	150	36.8
C	150	35.5
D	150	38.1
E	150	38.0
F	150	35.7
G	150	38.0
H	150	39.5
I	150	36.0
J	150	37.7
K	150	36.8
L	150	36.7

Blank -3 PSi Filter fell on counter, PC/PN- D Filter fell on counter

Data Sheet for Sediment Trap Volumes

Cruise #: 310

Analyst: _____

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)
A	150	35.7
B	150	36.8
C	150	35.5
D	150	38.1
E	150	38.0
F	150	35.7
G	150	38.0
H	150	39.5
I	150	36.0
J	150	37.7
K	150	36.8
L	150	36.7

Hawaii Ocean Time-series
HOT-310
In Situ Gas Array Data Sheet

Operators: DS, CF, BW	**Operators: TB, BW, MB, DS, CF**
Date Deployed : 2/20/2019	**Date Recovered: 2/21/2019**
Time (HST): 5:04	**Time (HST): 7:30**
Position: 22° 41.5147 N, 157°58.9966 W	**Position:** 22°35.05 N, 157° 58.71 W

Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
3-1	**2/20/2019**	**4:10**	**2/21/2019**	**8:13**	**2.14**	
3-2		**4:09**		8:13		
3-3		**4:08**		8:13		
4-1		**4:11**		8:14		
4-2		**4:12**		8:14		
4-3		**4:13**		8:14		
5-1		**4:13**		8:16		
5-2		**4:12**		8:16		
5-3		**4:11**		8:56		
6-1		**4:10**		9:00		
6-2		**4:09**		9:09		
6-3		**4:08**		9:09		
7-1		**4:07**		**9:10**		
7-2		**4:07**		9:10		
7-3		**4:06**		9:10		
8-1		**4:05**		9:10		
8-2		**4:04**		9:36		
8-3		**4:03**		9:44		

Hawaii Ocean Time-series
HOT-310
In Situ Gas Array Data Sheet

Operators: DS, CF, BW	**Operators:** TB, BW, MB, DS, CE
Date Deployed : 2/20/2019	**Date Recovered:** 2/21/2019
Time (HST): 5:04	**Time (HST):** 7:30
Position: 22° 41.5147 N, 158° 58.9966 W	**Position:** 22° 35.05 N, 158° 58.71 W

Nitrogen Fixation Sample Processing Sheet

	Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
1	3-1	2/20/19	4:10	2/21	8:13	2.14	
2	3-2		4:09		8:13		
3	3-3		4:08		8:13		
4	4-1		4:11		8:14		
5	4-2		4:12		8:14		
6	4-3		4:13		8:14		
7	5-1		4:13		8:16		
8	5-2		4:12		8:16		
1	5-3		4:11		8:56		
2	6-1		4:10		9:00		
3	6-2		4:09		9:09		
4	6-3		4:08		9:09		
5	7-1		4:07		9:10		
6	7-2		4:07		9:10		
7	7-3		4:06		9:10		
8	8-1		4:05		9:10		
1	8-2		4:04		9:36		
2	8-3		4:03		9:41		

Hawaii Ocean Time-series
HOT 310
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #
2/18/19	12:13	Kahe	1
2/18/19	18;06	Transit ALOHA	2
2/18/19	22:47	Transit ALOHA	3
2/19/19	04:33	Station ALOHA	4
2/19/19	10:45	Station ALOHA	5
2/19/19	16:20	Station ALOHA	6
2/19/19	00:04	Station ALOHA	7
2/20/19	06:22	Station ALOHA	8
2/20/19	13:08	Station ALOHA	9
2/20/19	22:29	Station ALOHA	10
2/21/19	03:48	Station ALOHA	11
2/21/19	13:48	Station 50	12

Hawaii Ocean Time-series
HOT 310
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #
2/18/19	~~1215~~ 12:13	Kahe	1
"	1806	Transit ~~to HI~~	~~2~~
"	0247	"	3
2/19/19	4:33	Station Aloha	4
"	10:45	"	5
"	16:20	"	6
"	00:04	"	7
2/20/19	6:22	"	8
	13:08	"	9
2/20/19	22:29	"	10
2/21/2019	3:48	"	"
	13:48	Station 50	12

Hawaii Ocean Time-series
HOT 310
Argos Fix Log Sheet

ARGOS

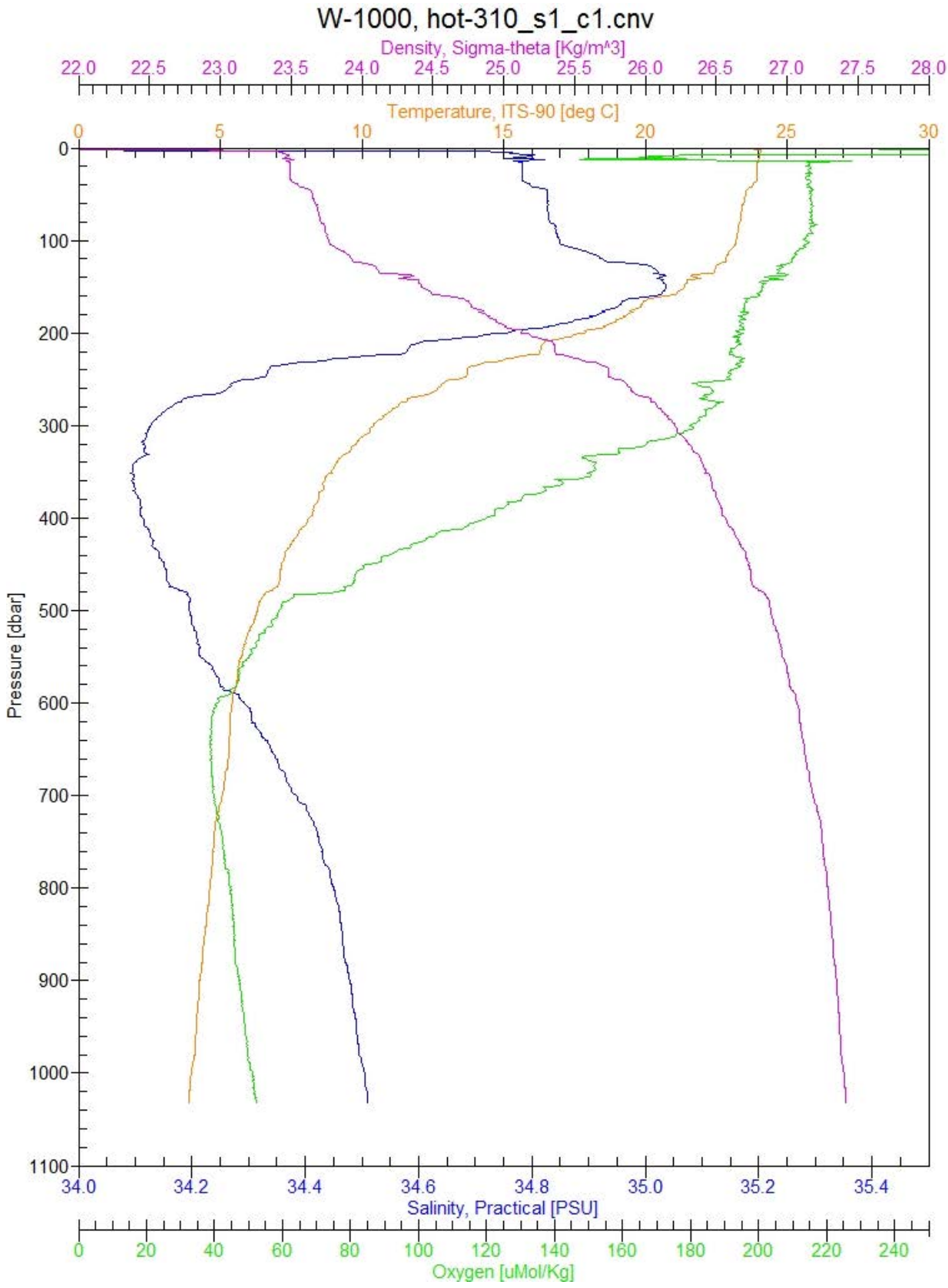
TRIDIAM

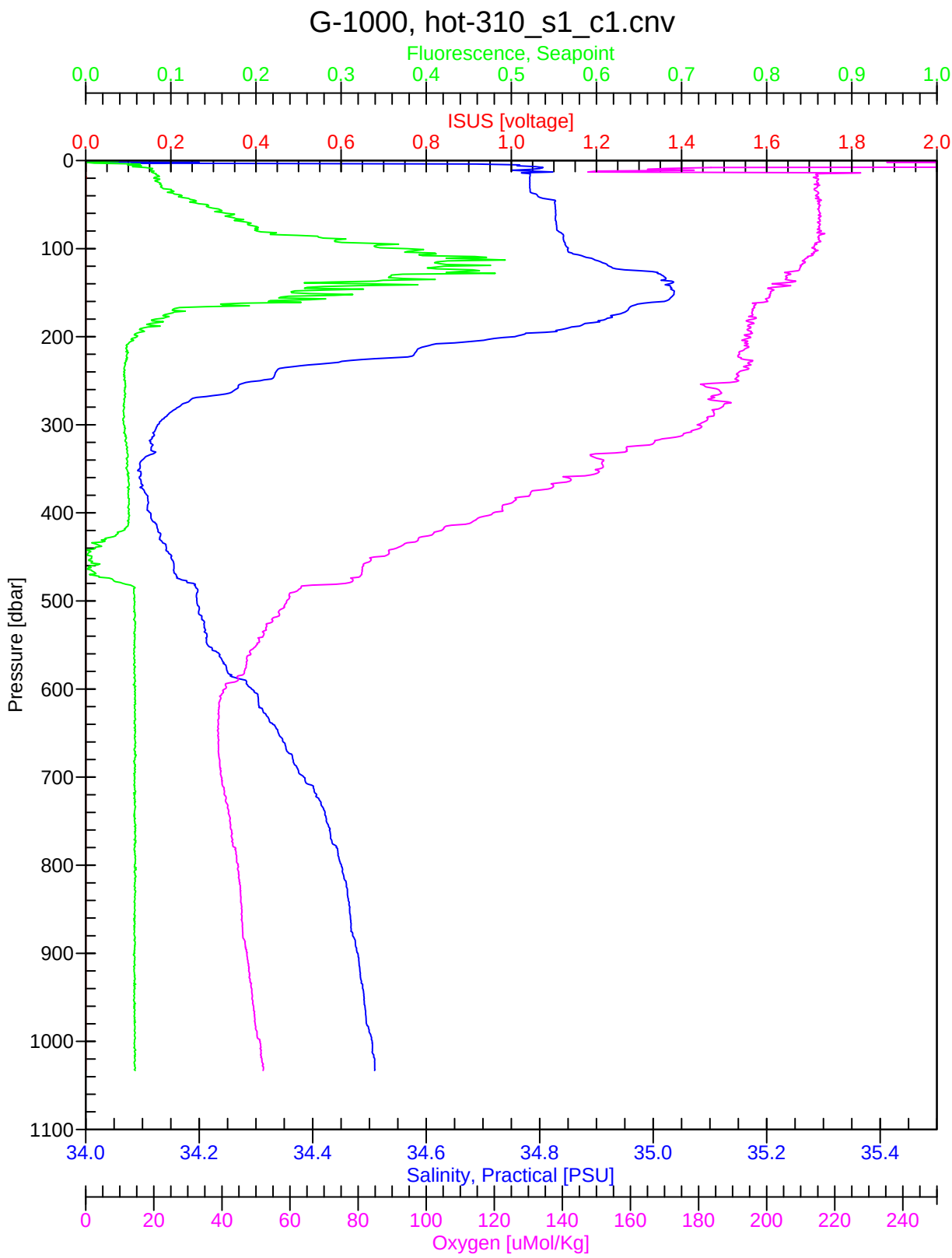
Array	Platform #	Platform #
Sediment Trap	84857	~~59100~~ 200
PP/Gas Array	60484	50030 (78)
Wirewalker		51020 (77)
GAS ARRAY	60484	50030

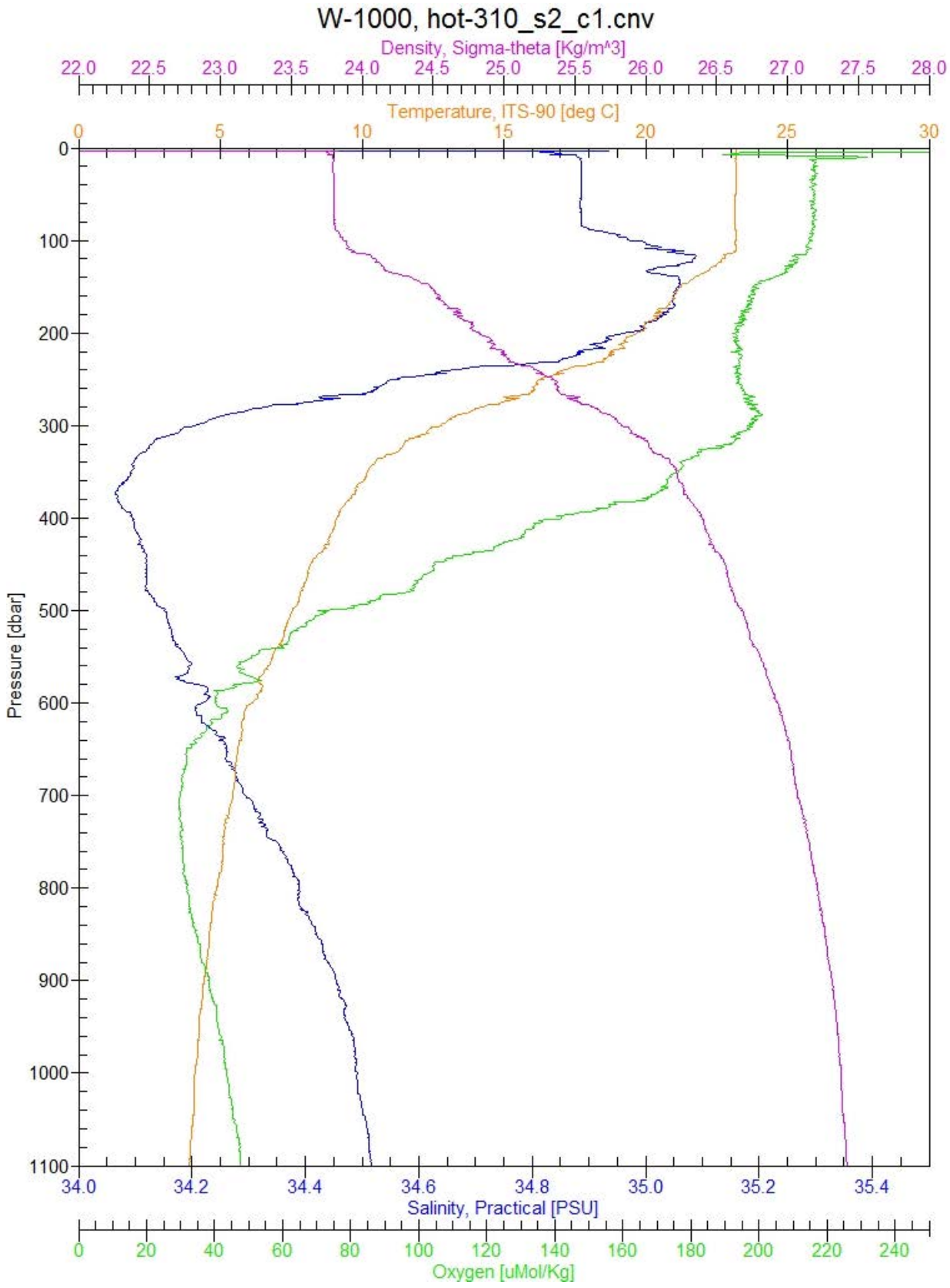
22 44.617
158 6.118

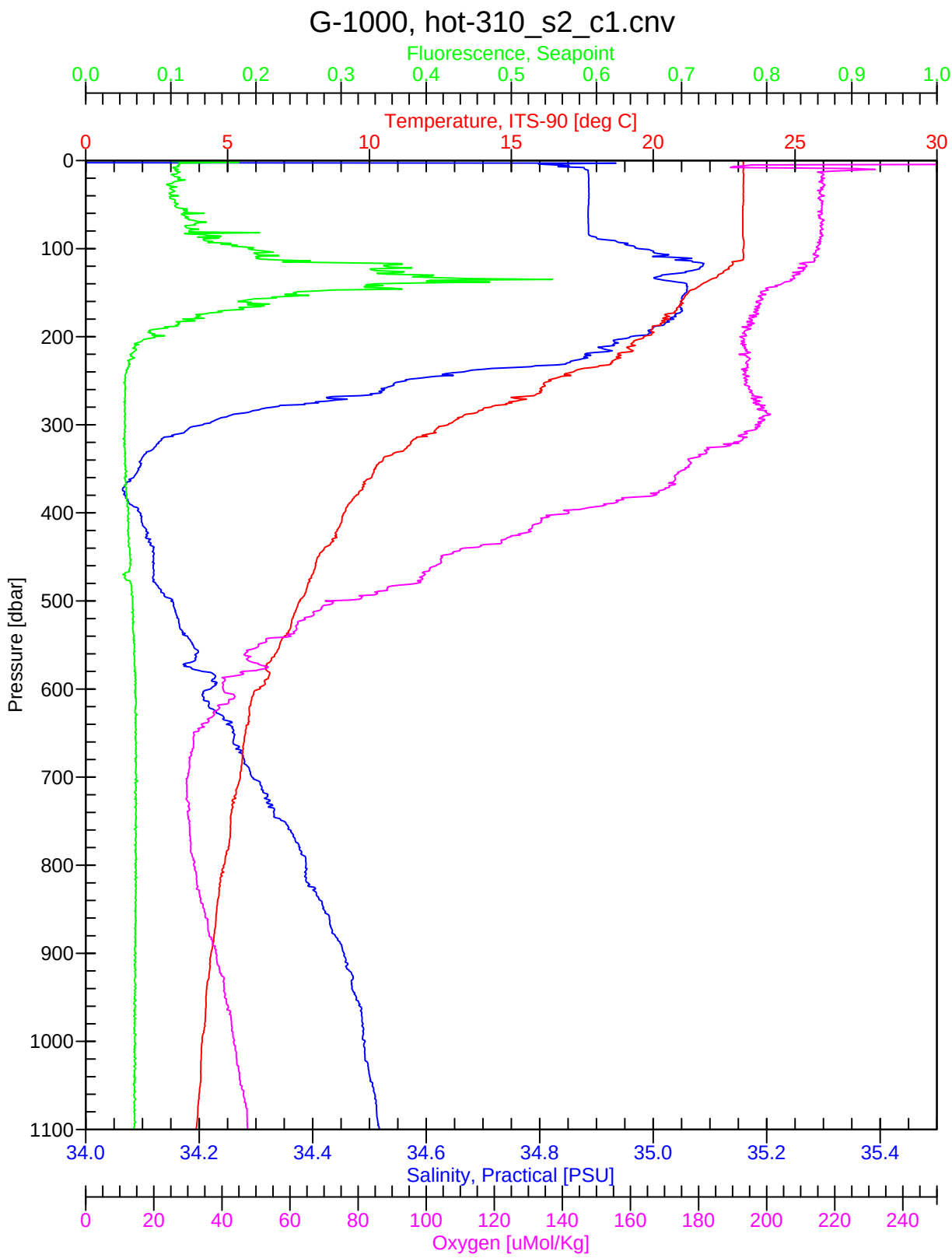
60481 - GAS/PP ?

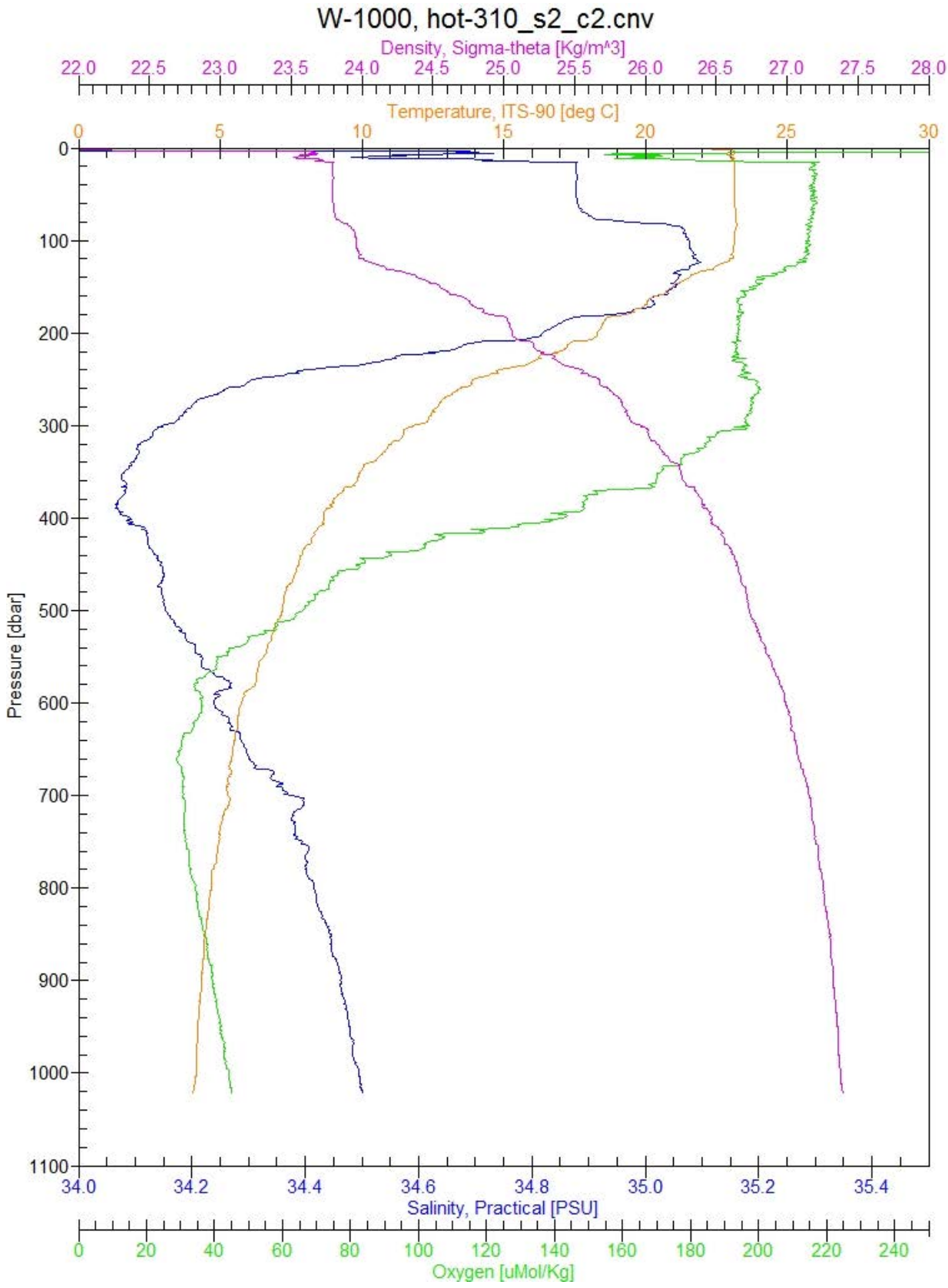
Date	Time	Platform	Position	Initials	Array Name
2/19/19	17:30	51020	22° 44.9240', 158° 3.688'	TR	WW1
2/19/19	16:51	84857	22° 45.36', 158° 2.520'	TR	ST1
2/19/19	19:38	84857	22° 45.96', 158° 2.64'	TR	ST2
2/19/19	22:00	51020	22° 44.995, 158° 3.849	TR	WW2
2/20/19	07:27	84857	22 46.080'N, 158 3.240'	DF	ST4
2/20/19	0800	51020	22 45.707'N, 158 3.995'W	DF	WW5
2/20/19	12:00	51020	22 45.085'N, 158 3.797	DF	WW6
2/20/19	15:36	84857	22 45.24, 158 2.88	TR	ST5
2/20/19	16:30	51020	22 45.009, 158 4.135 (45.357, 4.295)	TR	WW7
2/20/19	17:00	50030	22 41.153, 157 58.746	TR	GA1
2/20/19	19:00	50030	22 40.833, 157 58.294 / 22 39.892 157 58.234	TR	GA2/3
2/20/19	17:15 (21:34)	84857	22 45.54, 158 2.76 (22 45.78, 158 2.34)	TR	ST6
2/21	02:30	51020	22 44.917, 158. 4.964	DF	WW8
2/21	0200	50030	22 38.252, 157. 58.938	DF	GA4
2-21	0539	84857	22 44.580, 158 3.120'	DF	ST8
2-21	0600	50030	22 37.489, 157 58.565	DF	GA5
2-21	0600	51020	22 45.091, 158 5.075	DF	WW9
2-21	1200	50030	22 35.909, 157 58.844	DF	GA6
2-21	1530	50030	22 35.327 157 58.991	TR	GA7
2-21	15:05	84857	22 44.04 158 4.620	TR	ST8
2-21	18:00	51020	22 44.527 158 6.137		

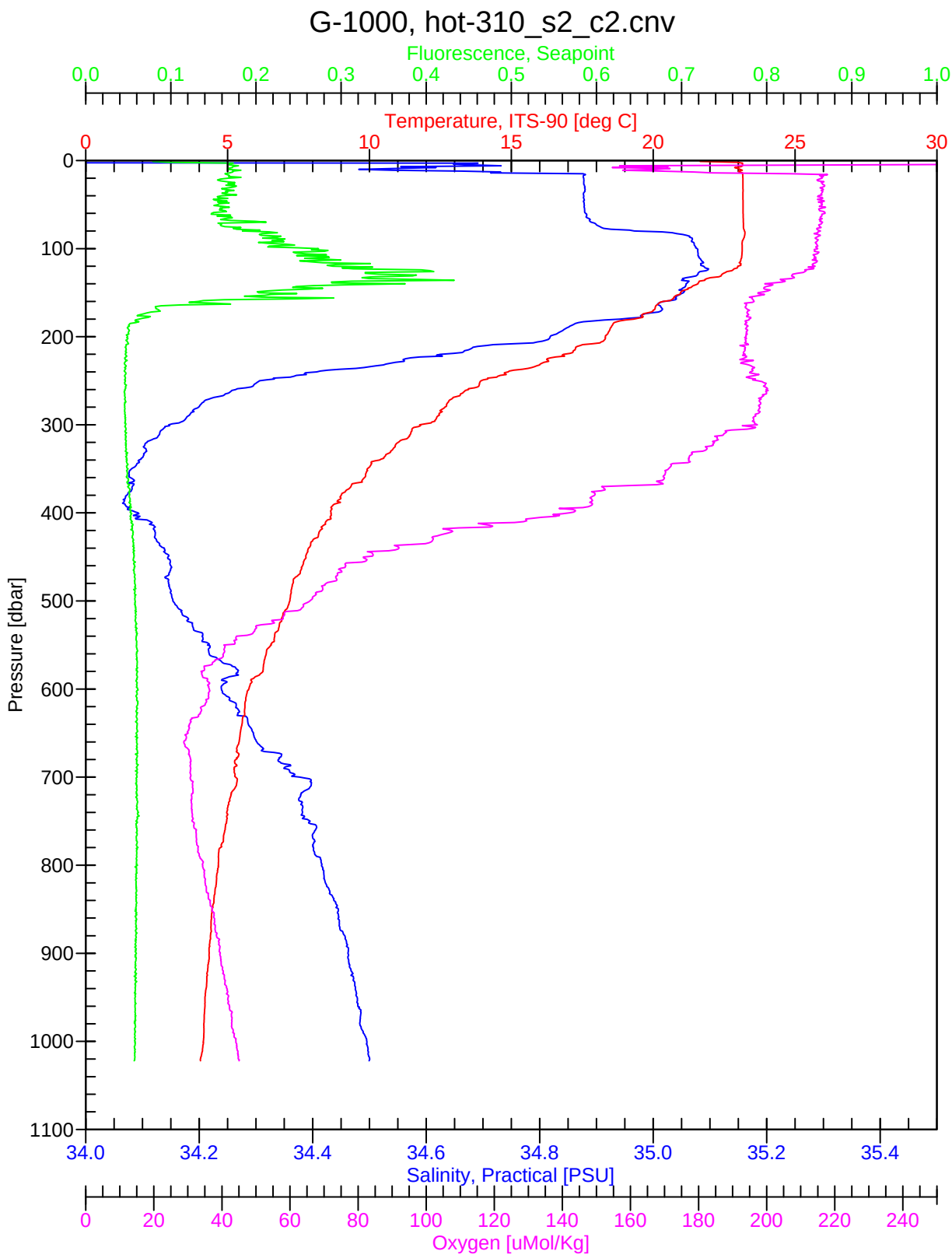

W-1000, hot-310_s1_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

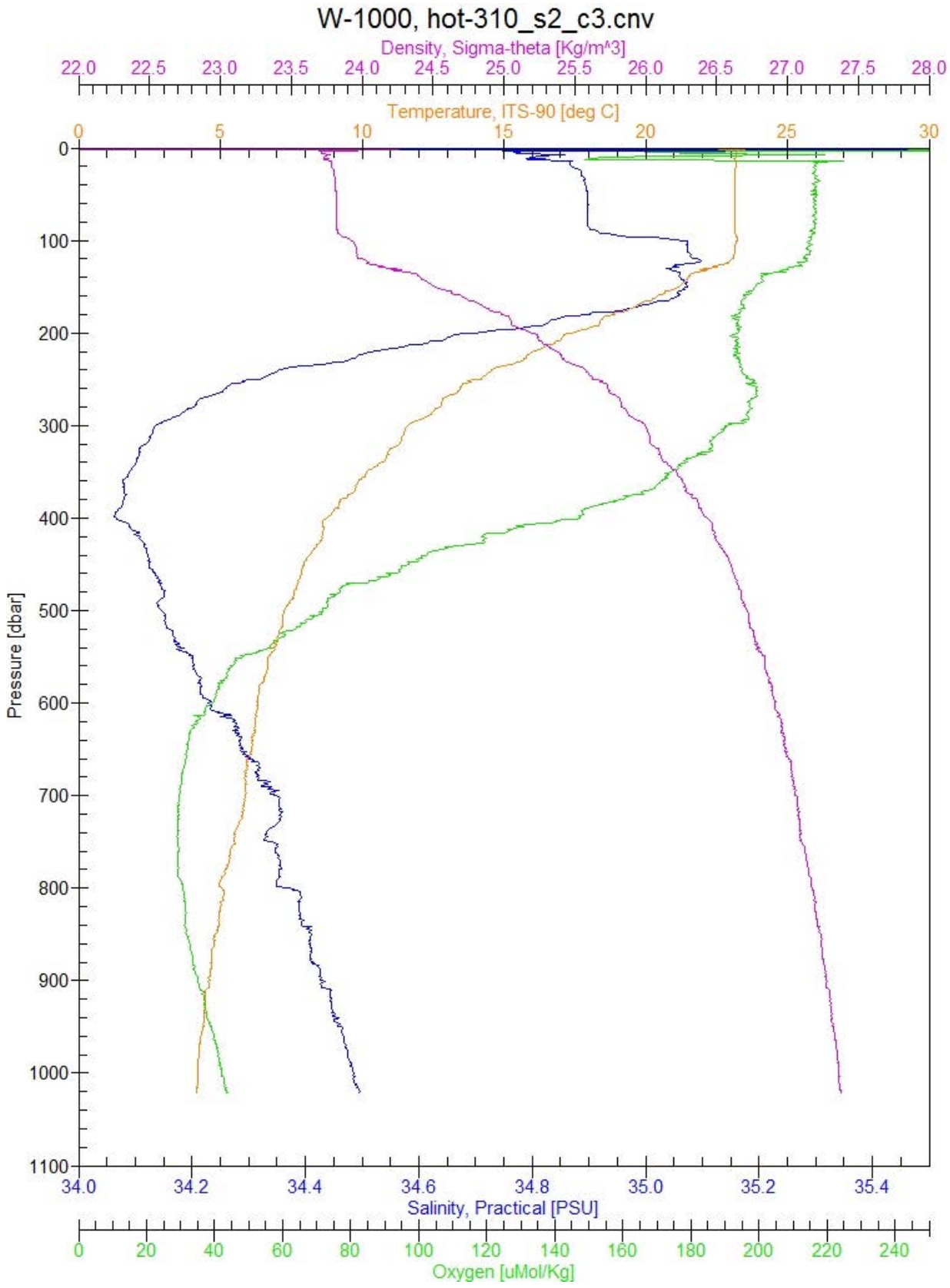

G-1000, hot-310_s1_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
ISUS [voltage]
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

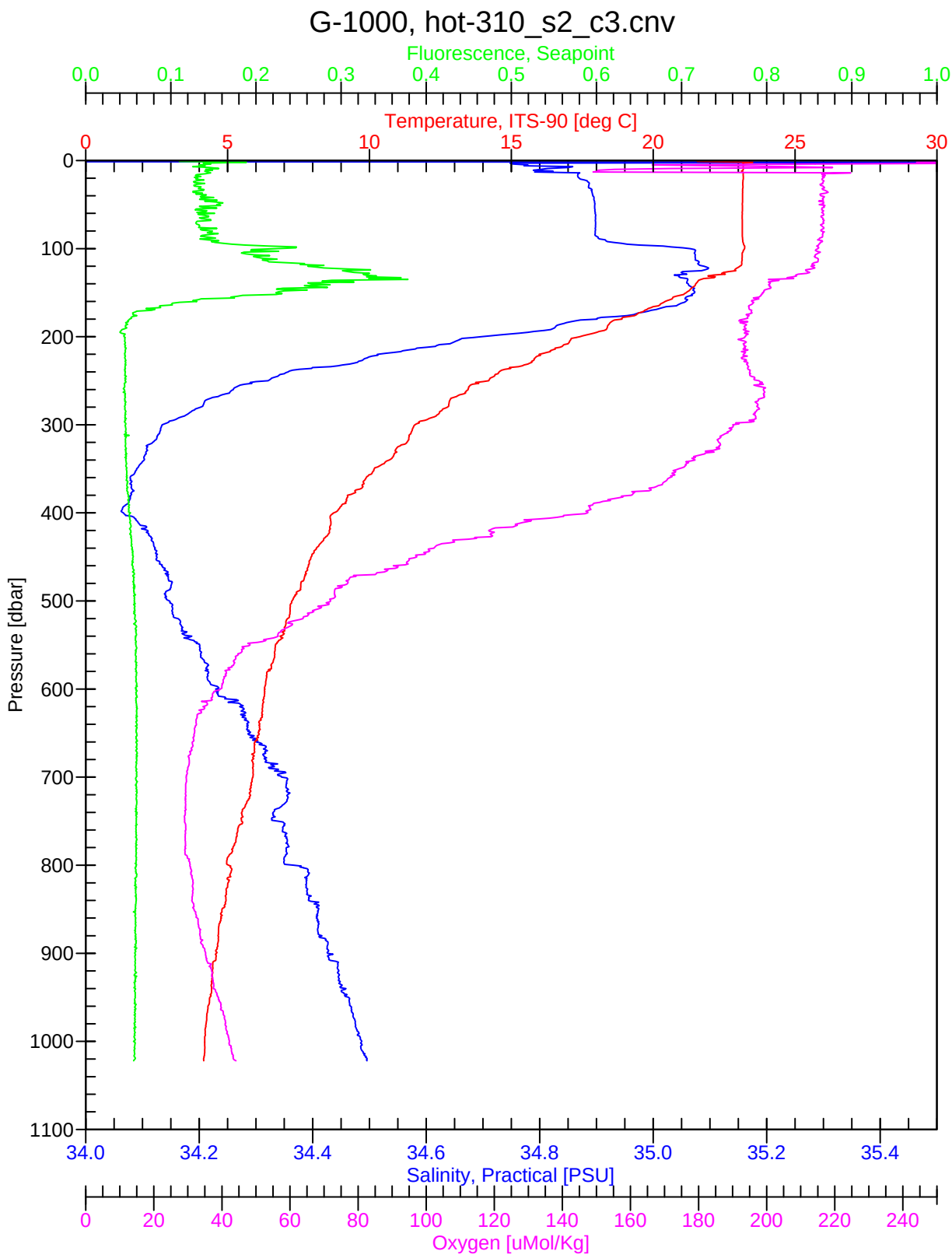

W-1000, hot-310_s2_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

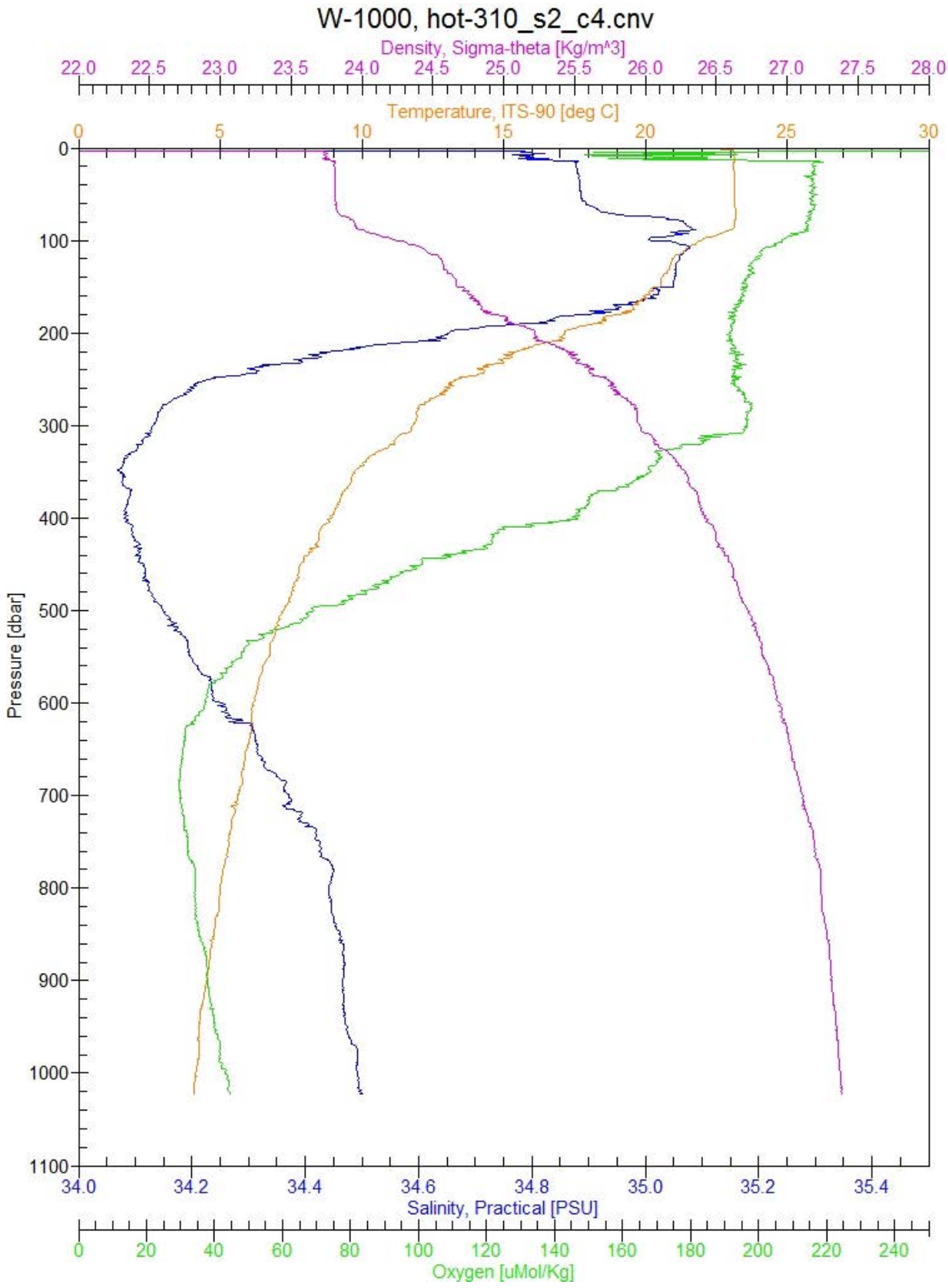

G-1000, hot-310_s2_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

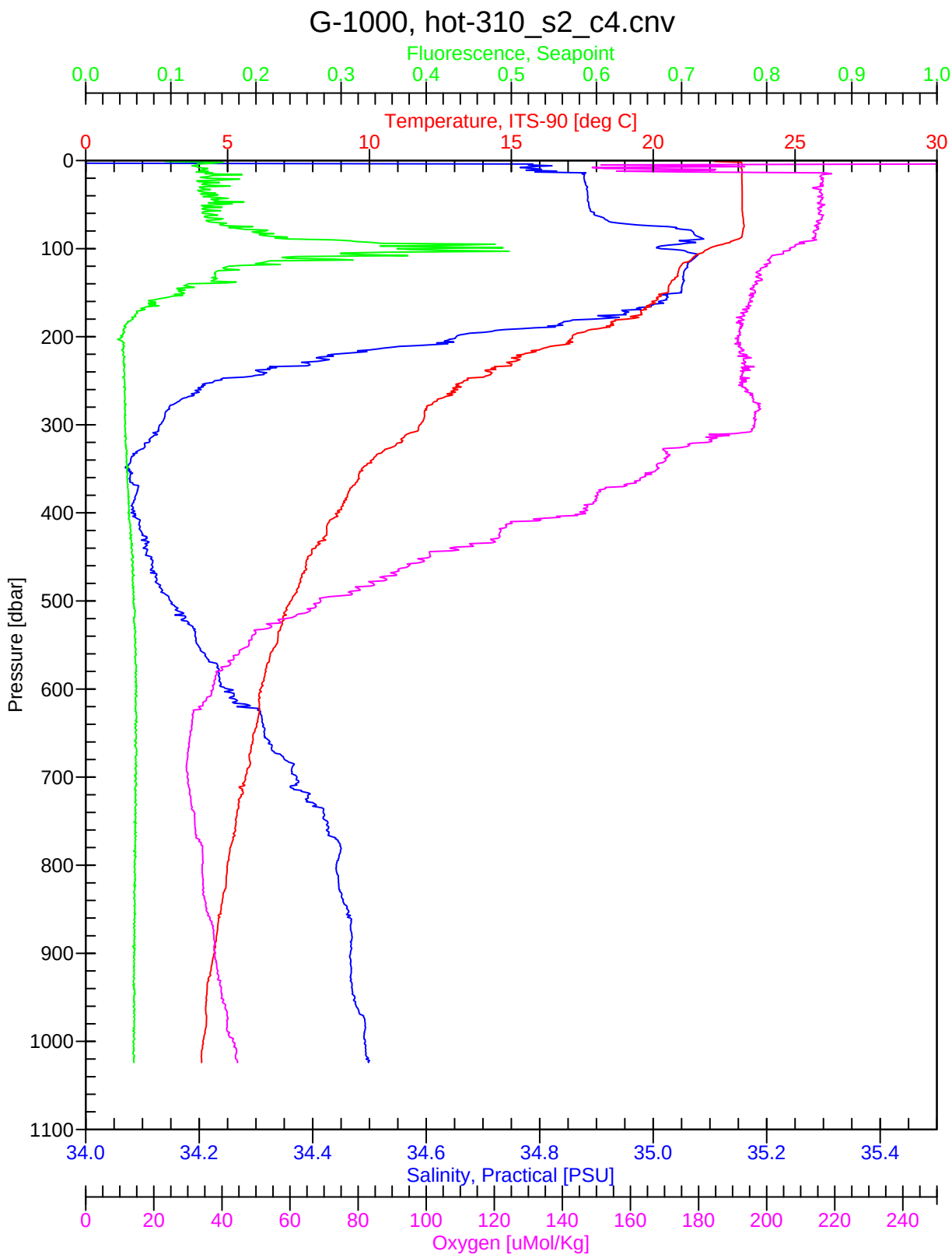

W-1000, hot-310_s2_c2.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

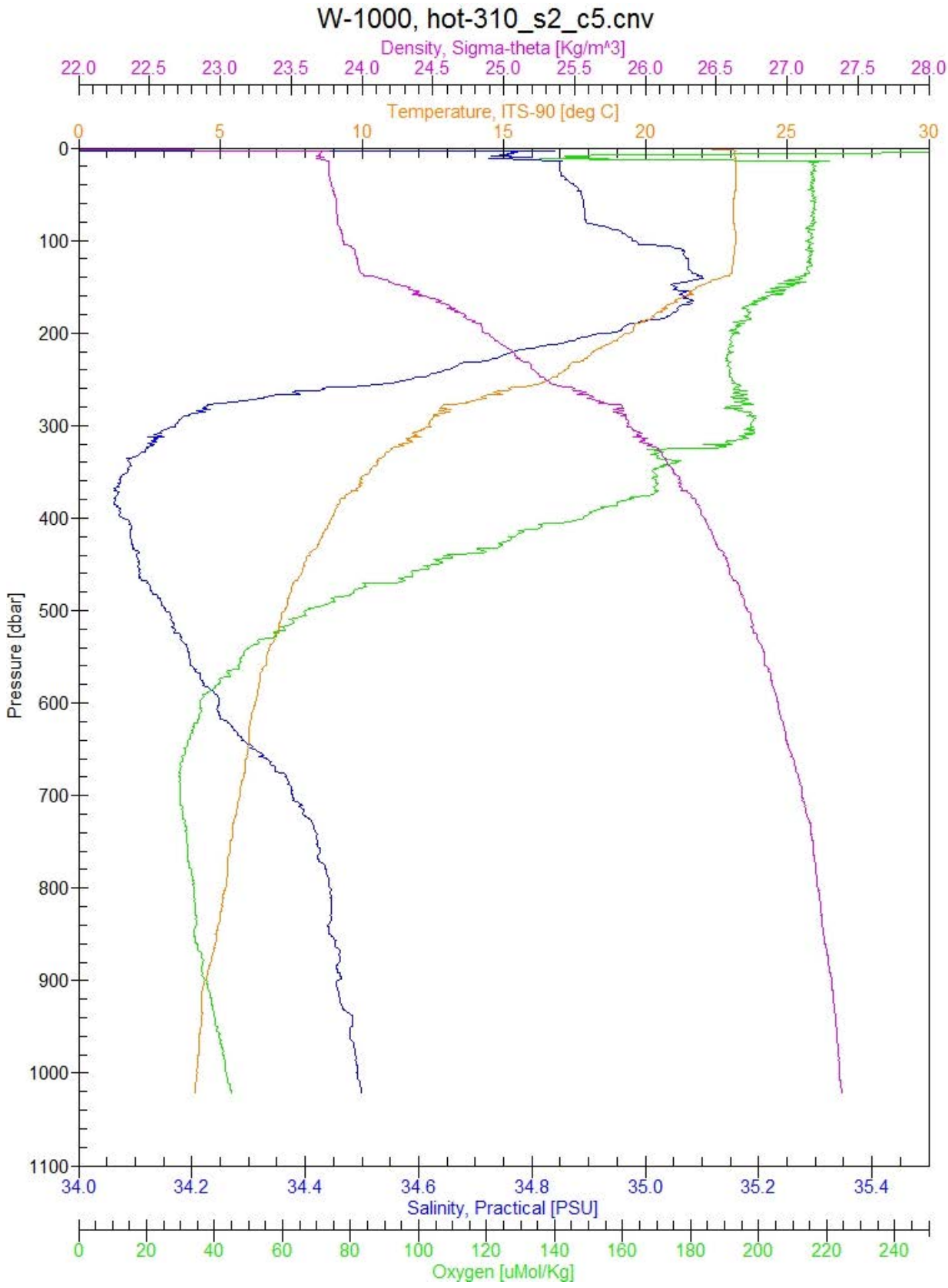

G-1000, hot-310_s2_c2.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

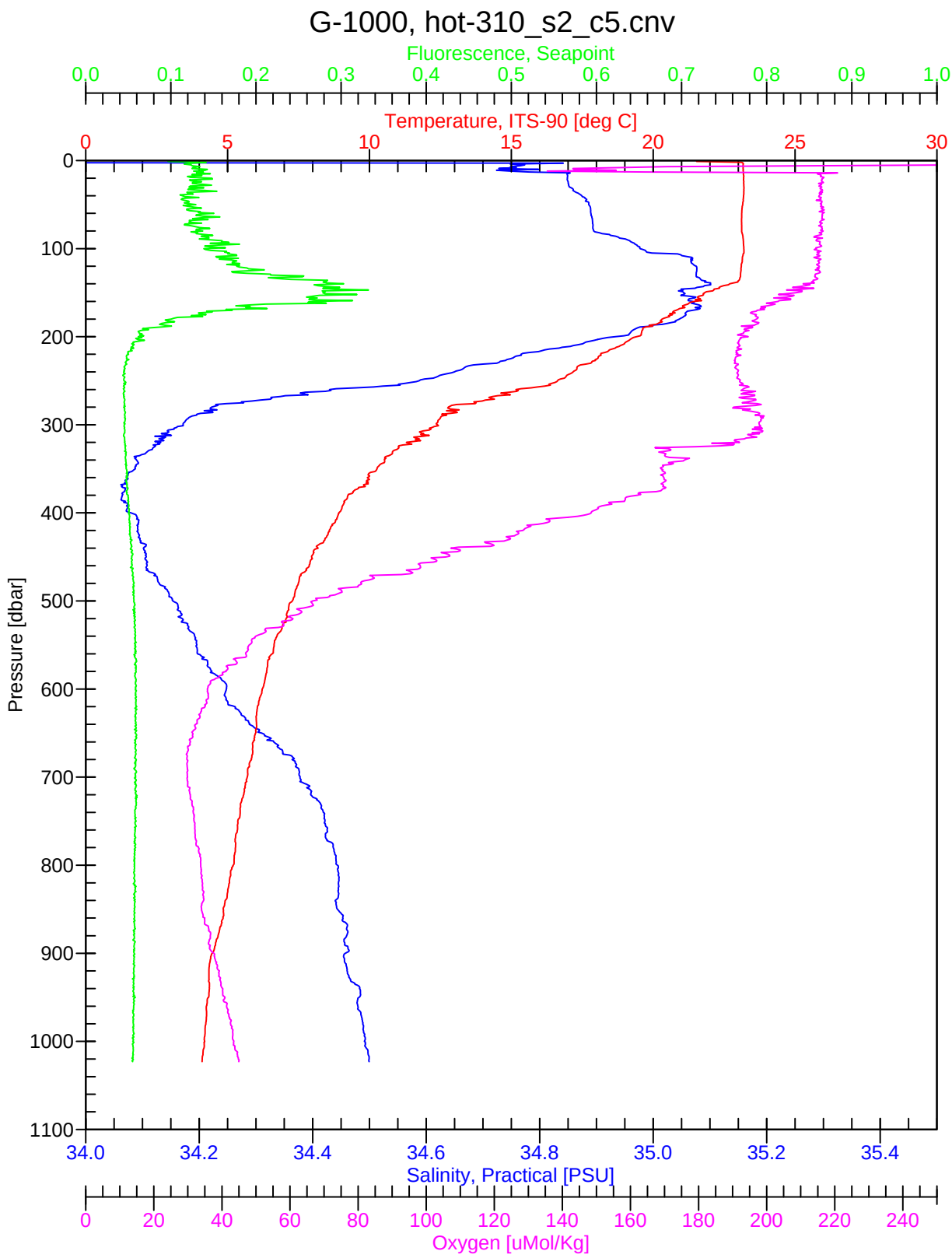

W-1000, hot-310_s2_c3.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

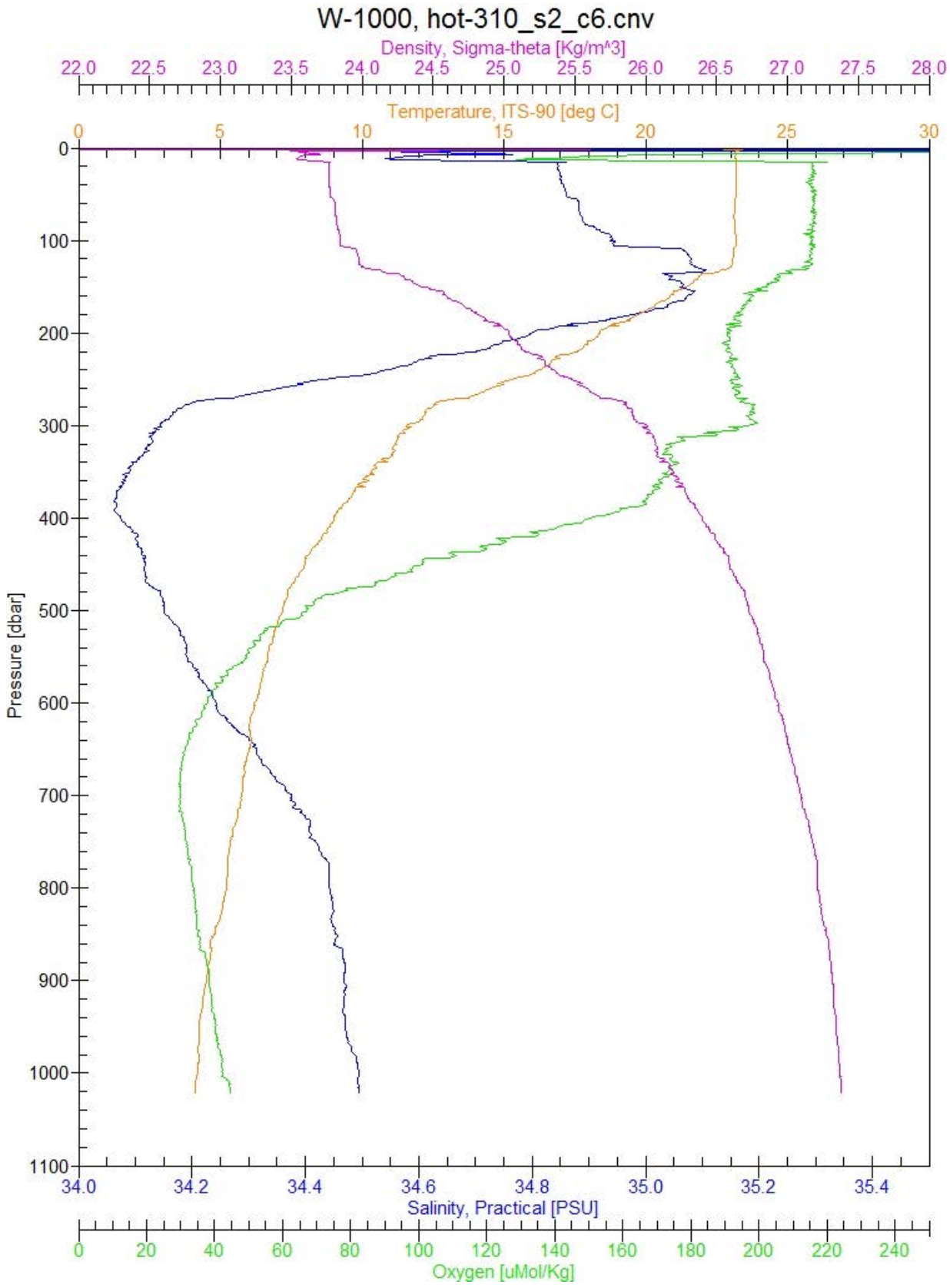

G-1000, hot-310_s2_c3.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

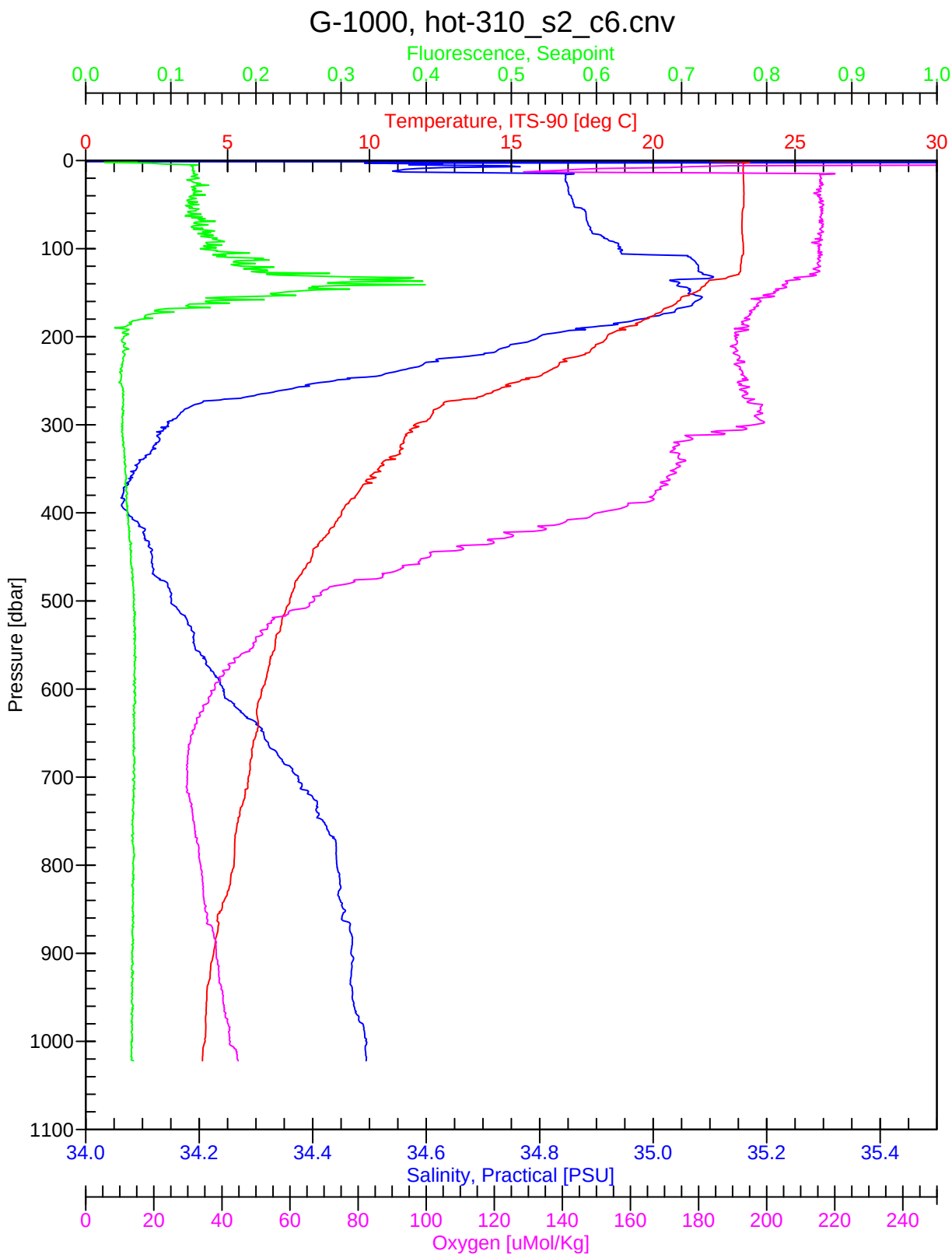

W-1000, hot-310_s2_c4.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

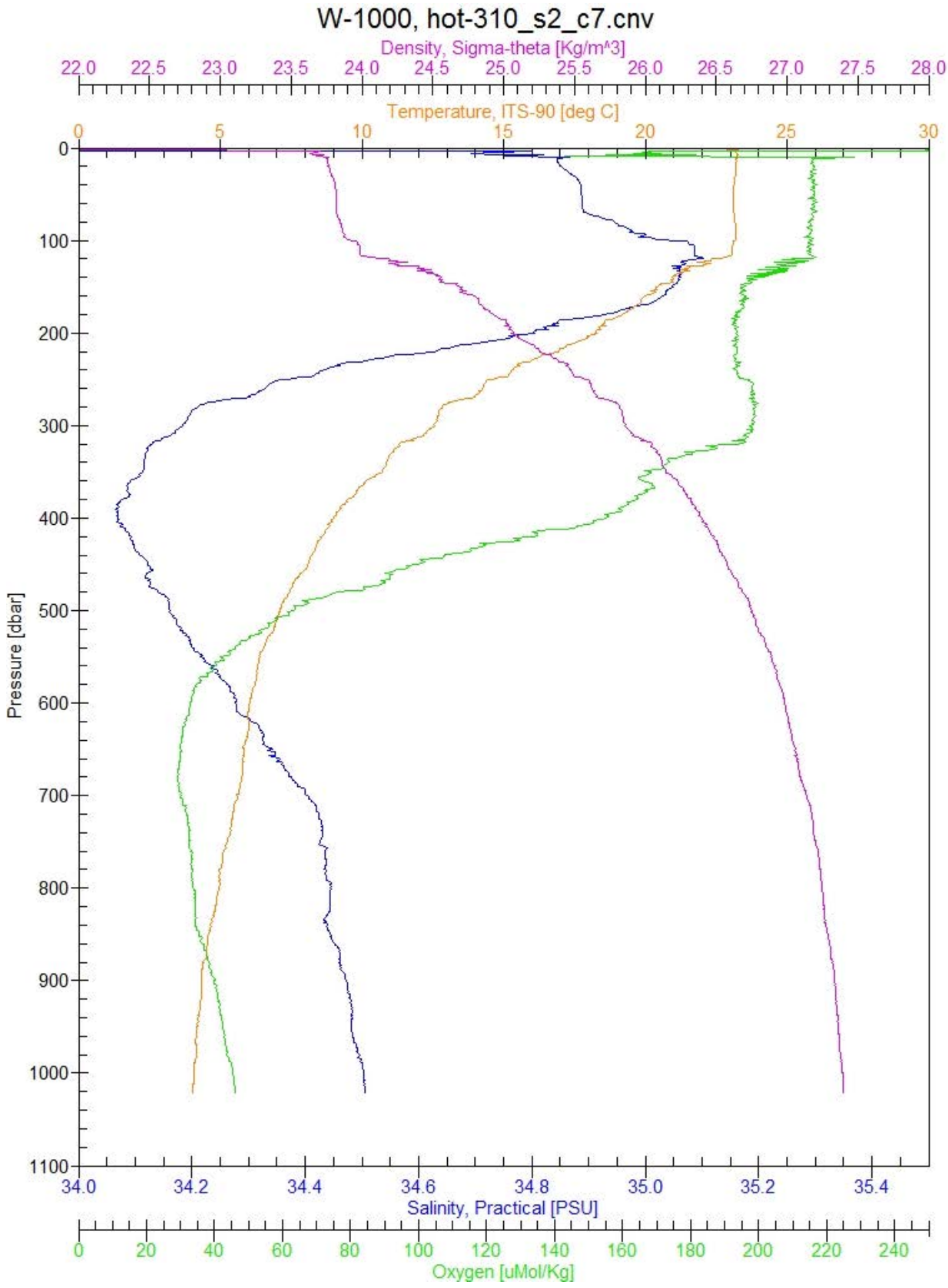

G-1000, hot-310_s2_c4.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

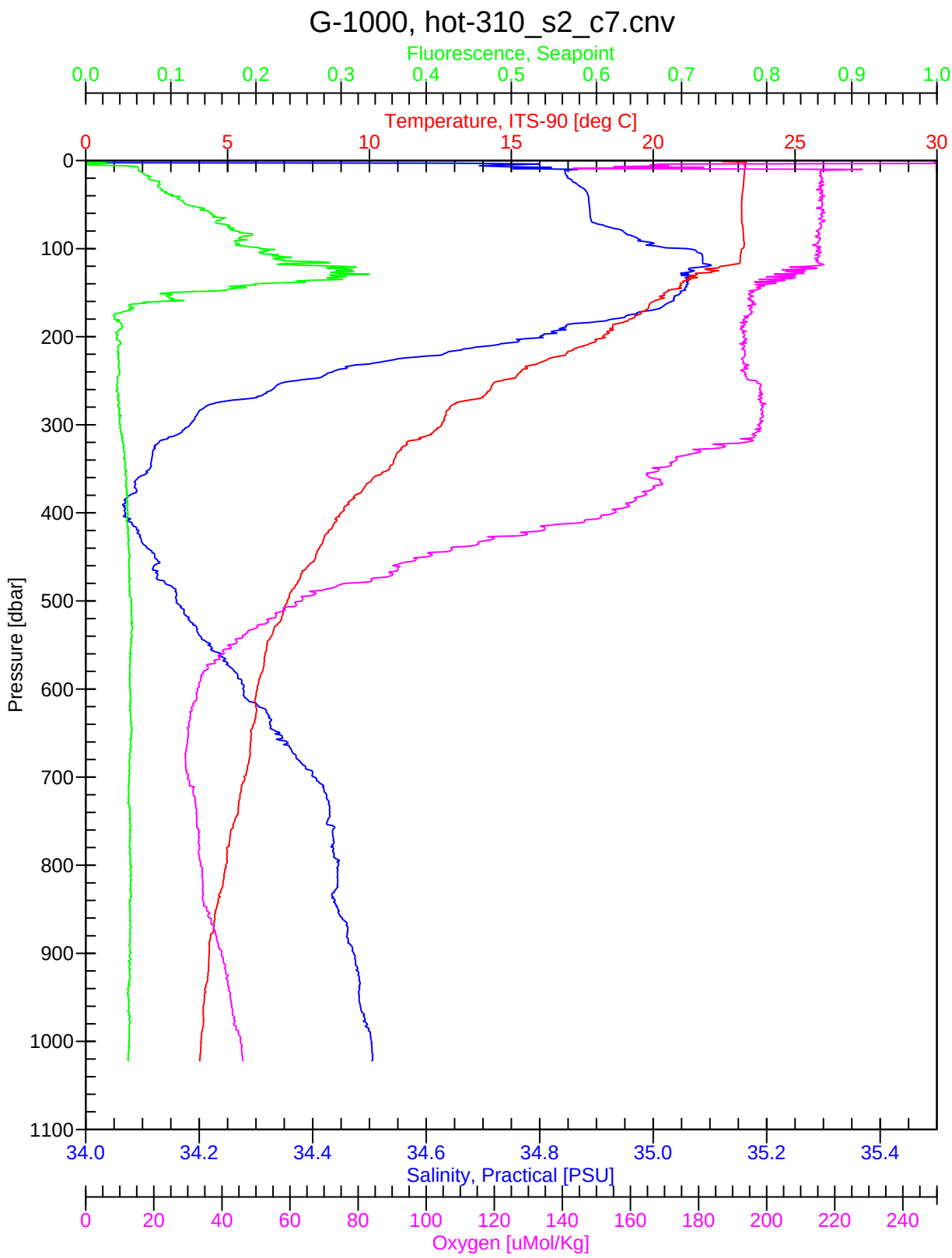

W-1000, hot-310_s2_c5.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

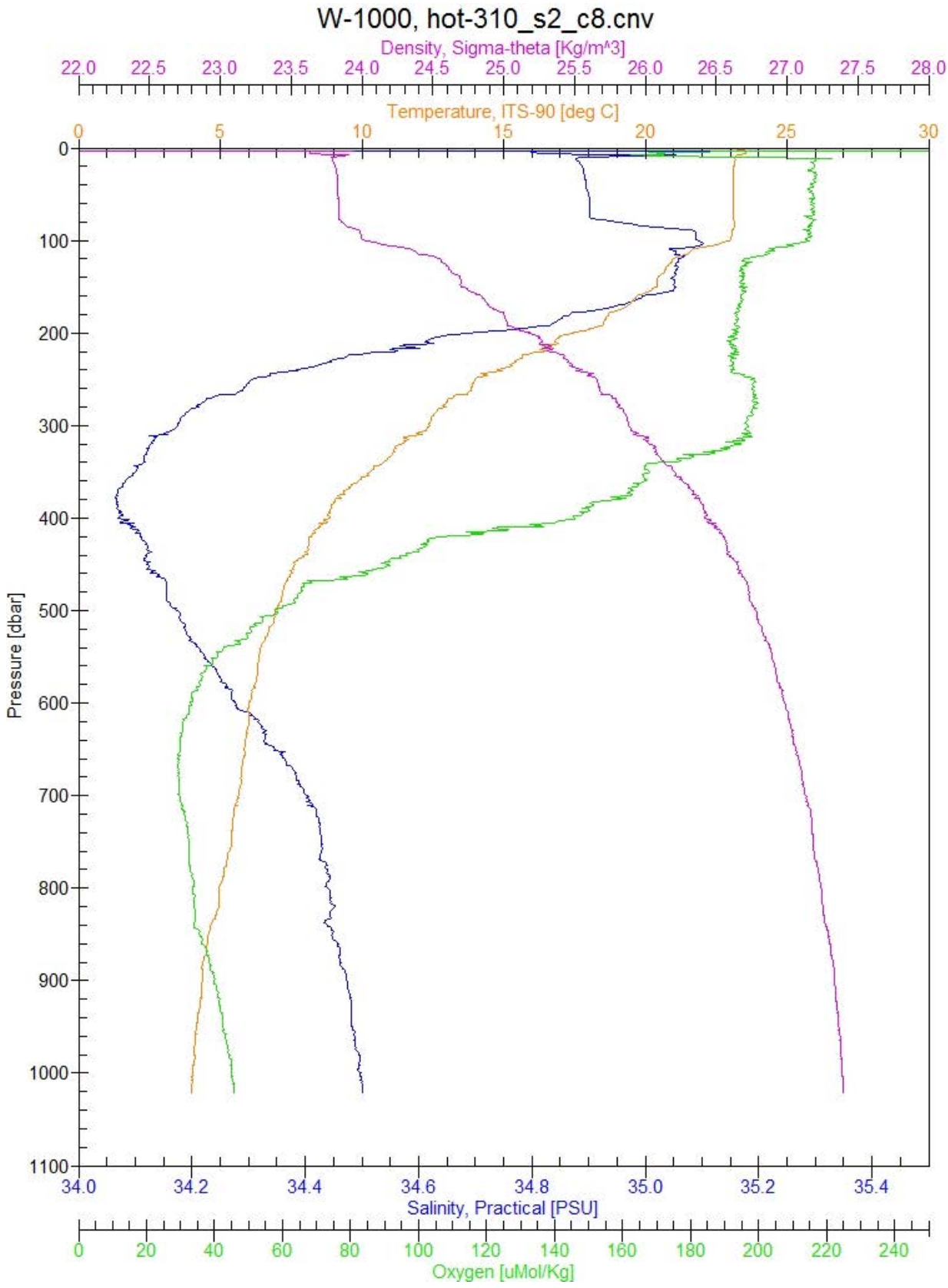

G-1000, hot-310_s2_c5.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

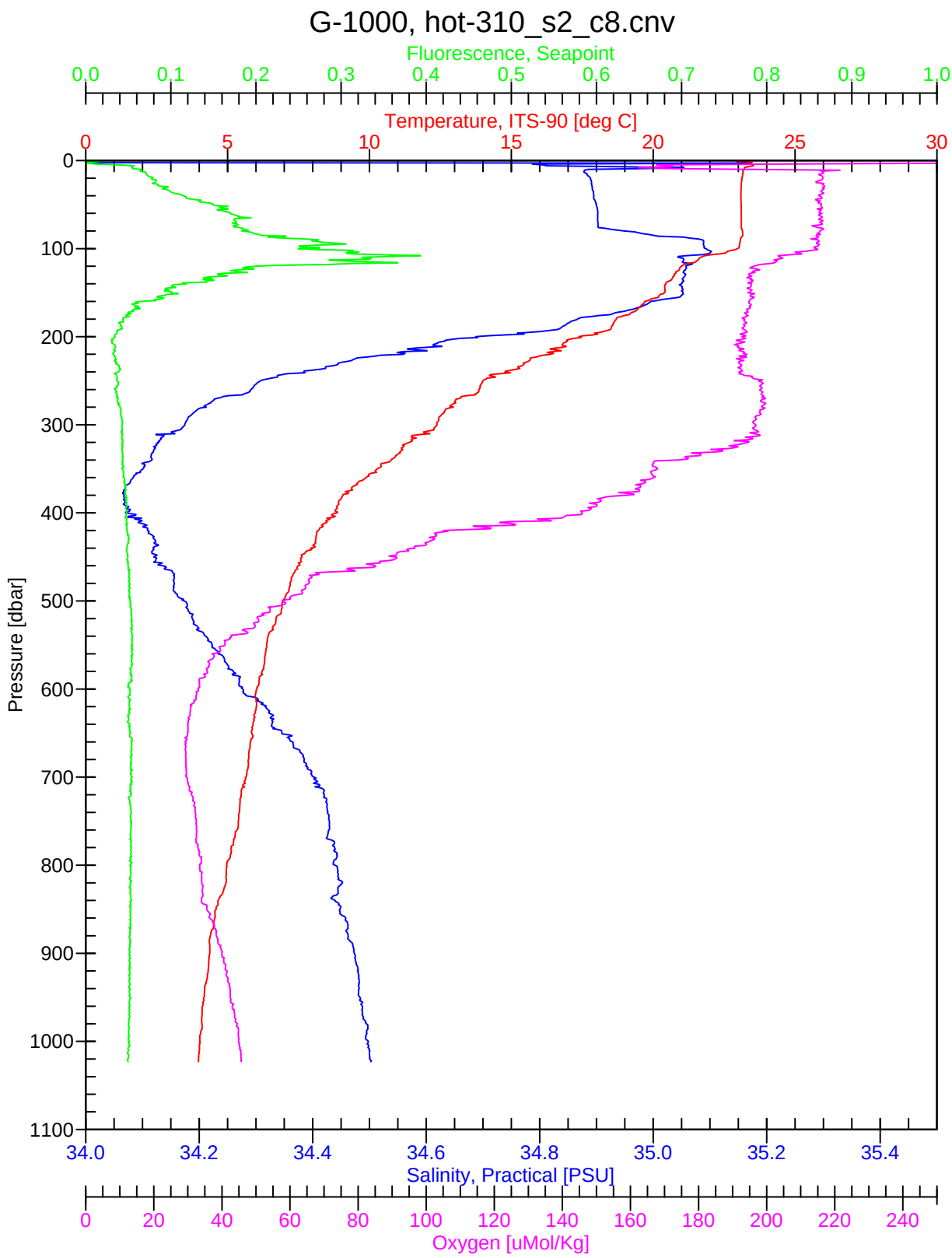

W-1000, hot-310_s2_c6.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

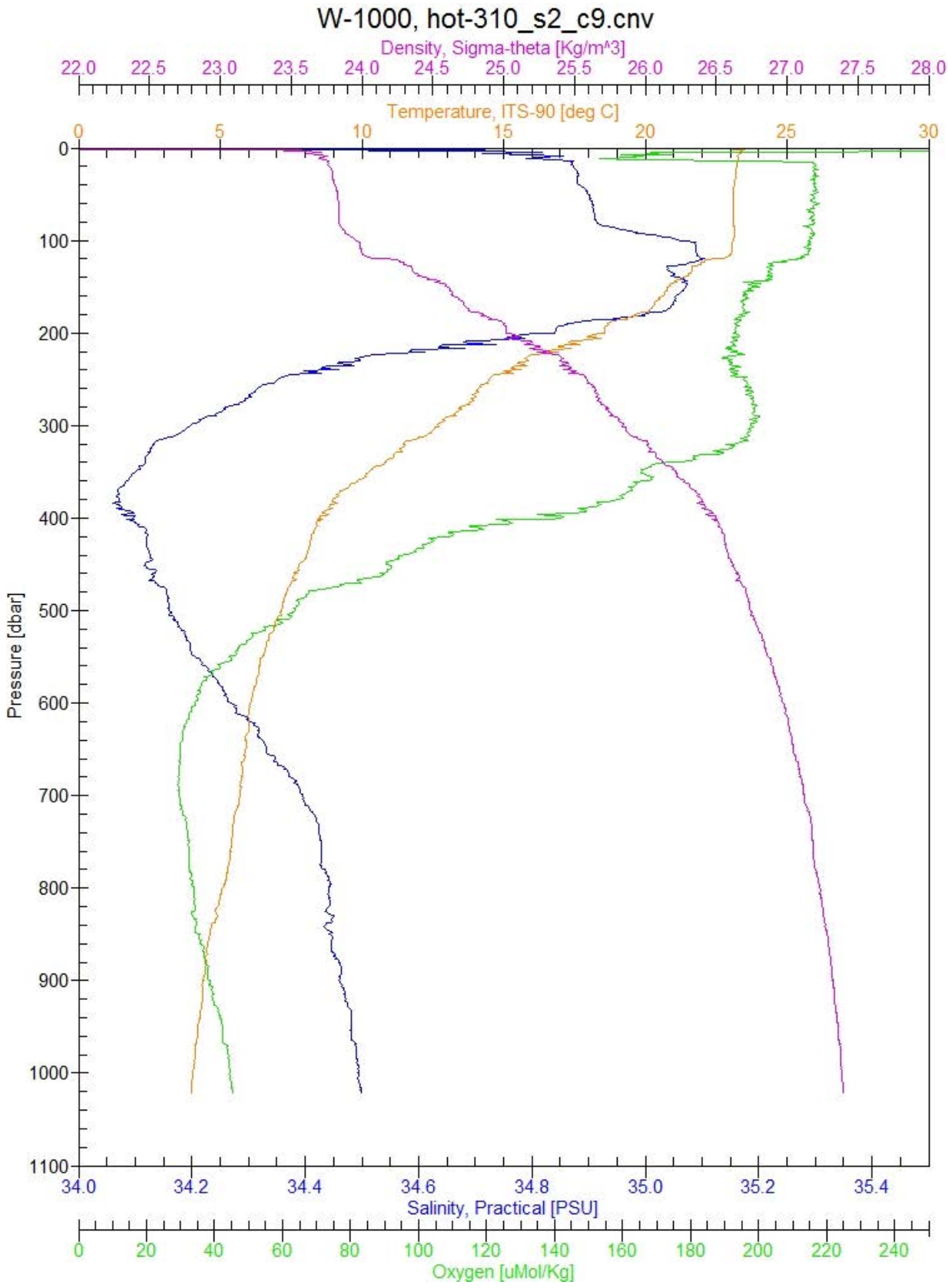

G-1000, hot-310_s2_c6.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

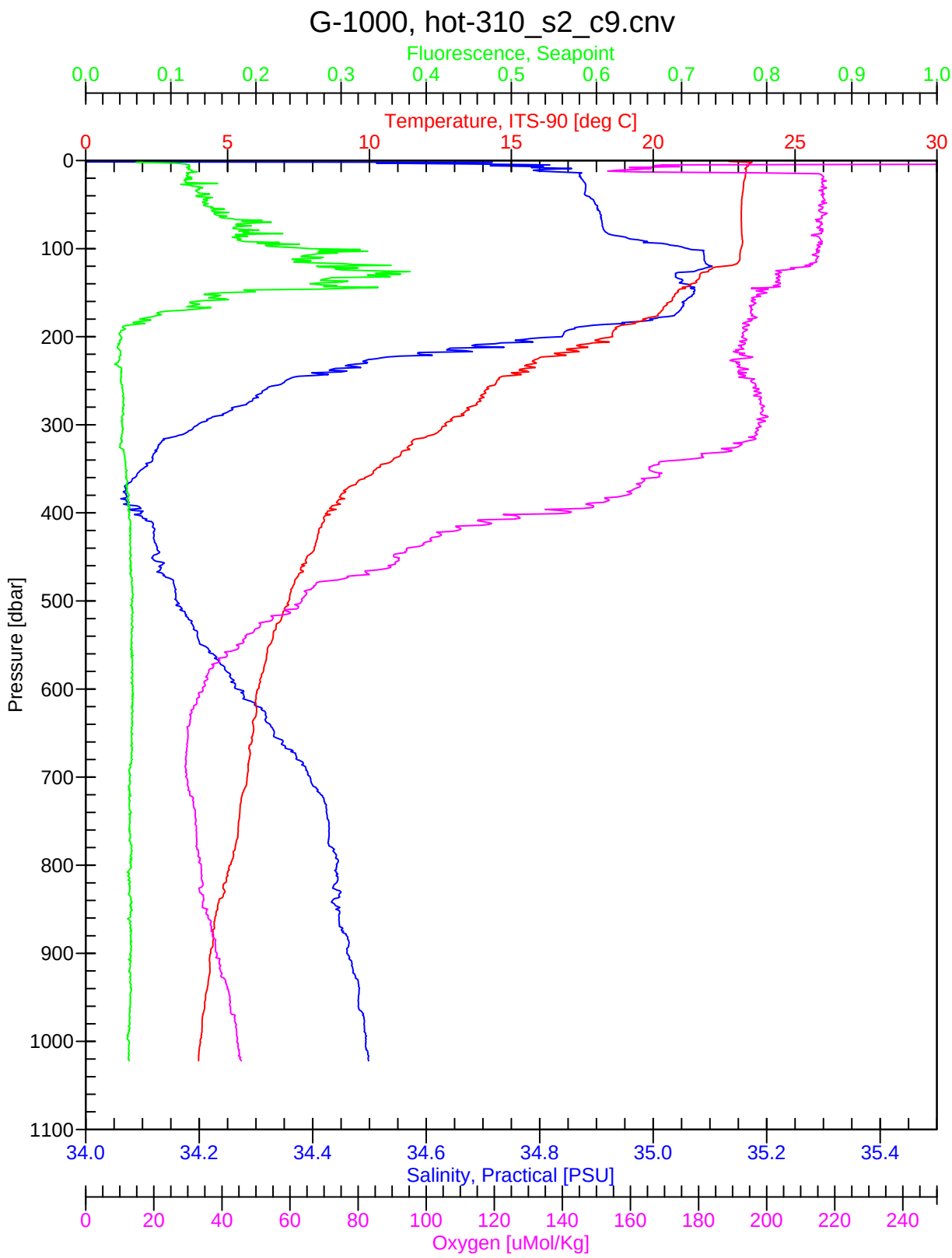

W-1000, hot-310_s2_c7.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

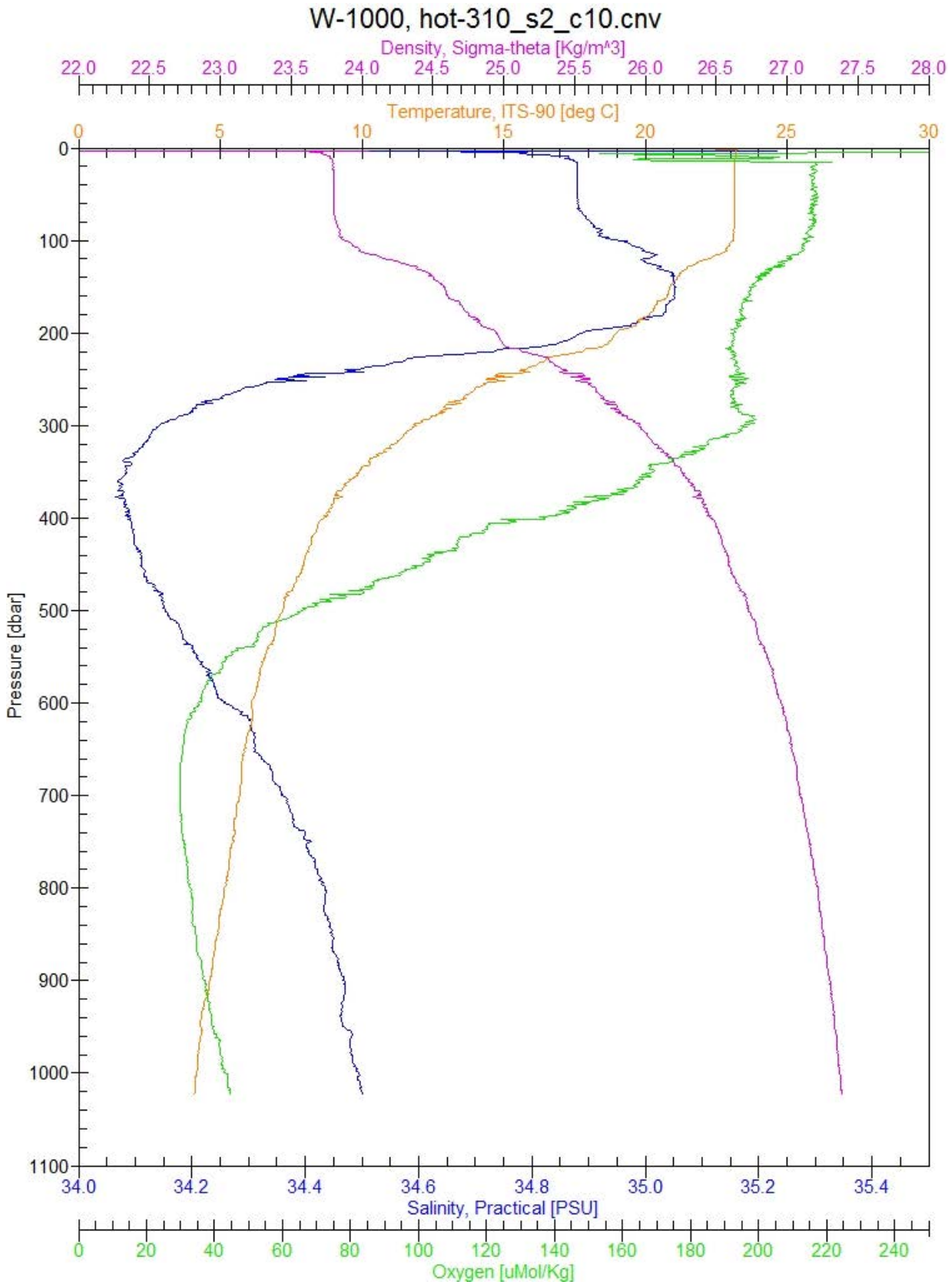

G-1000, hot-310_s2_c7.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

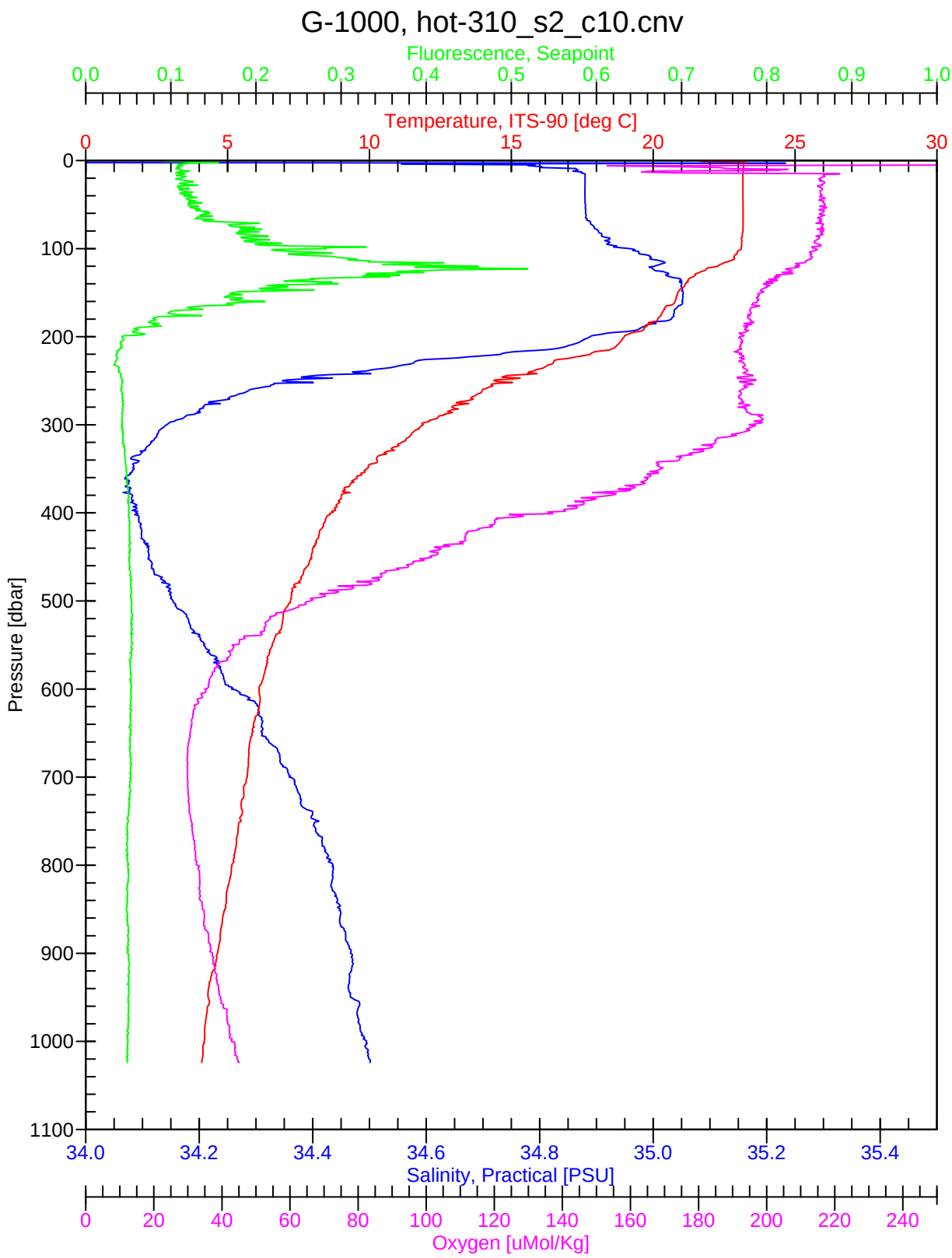

W-1000, hot-310_s2_c8.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

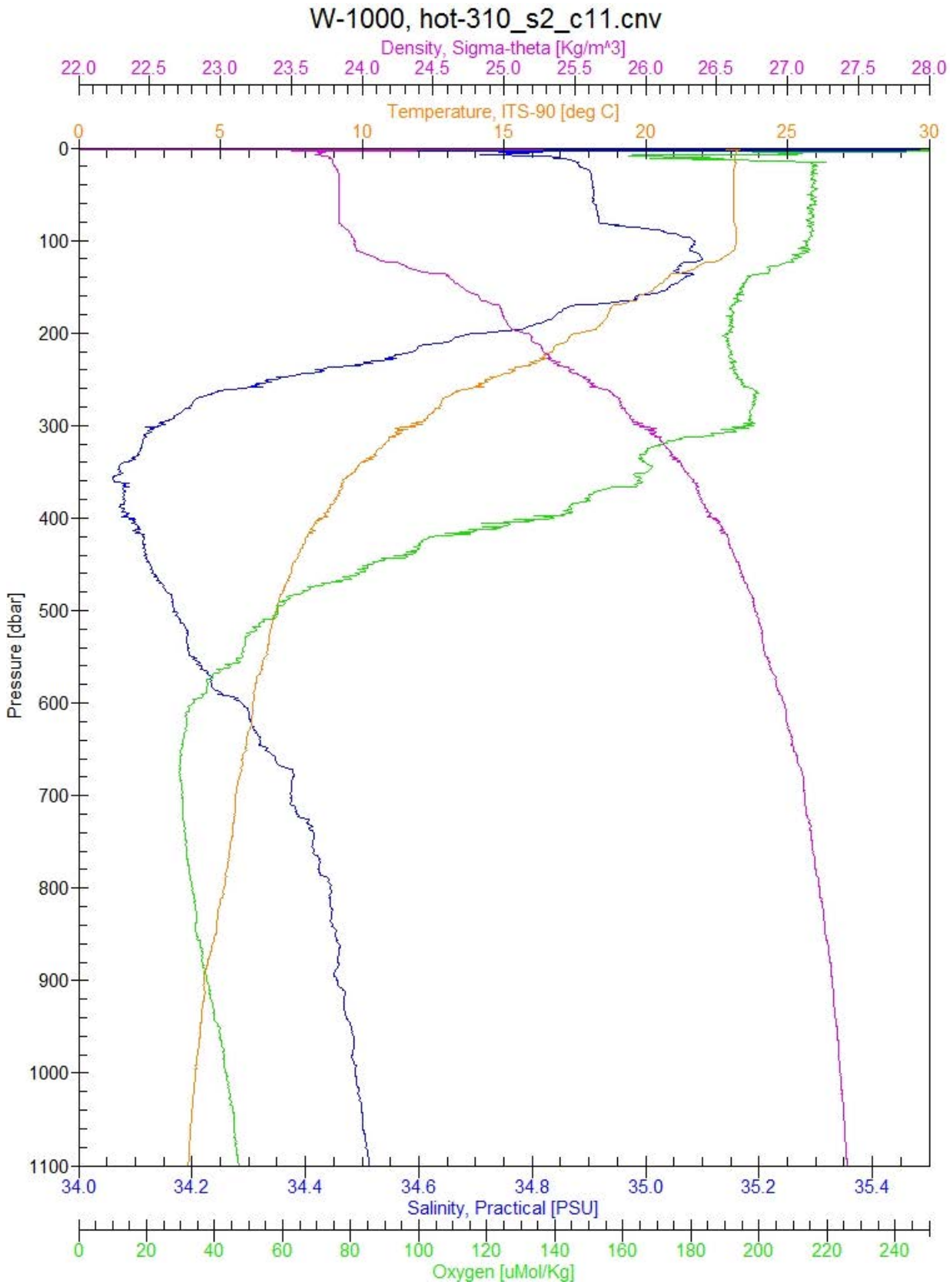

G-1000, hot-310_s2_c8.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

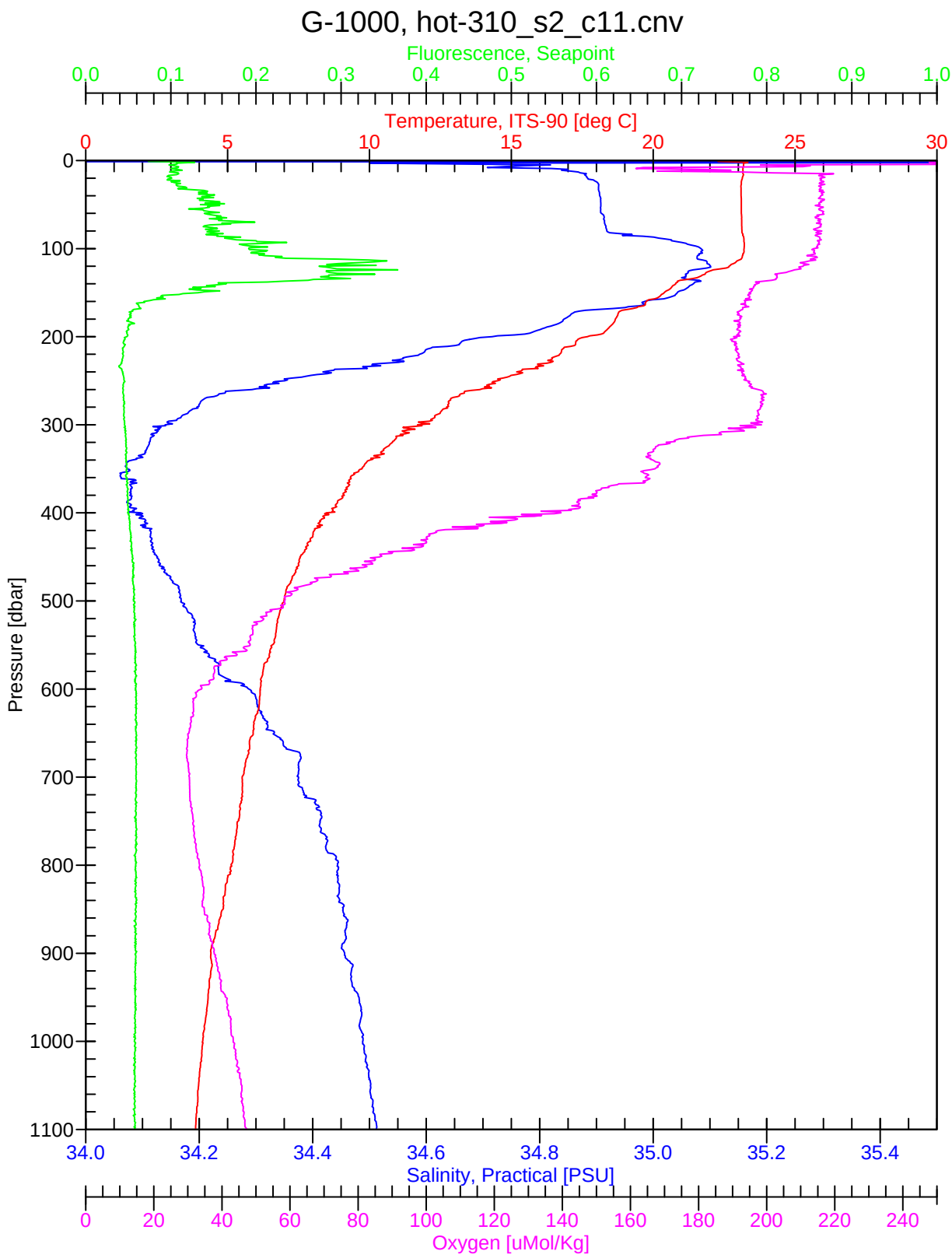

W-1000, hot-310_s2_c9.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

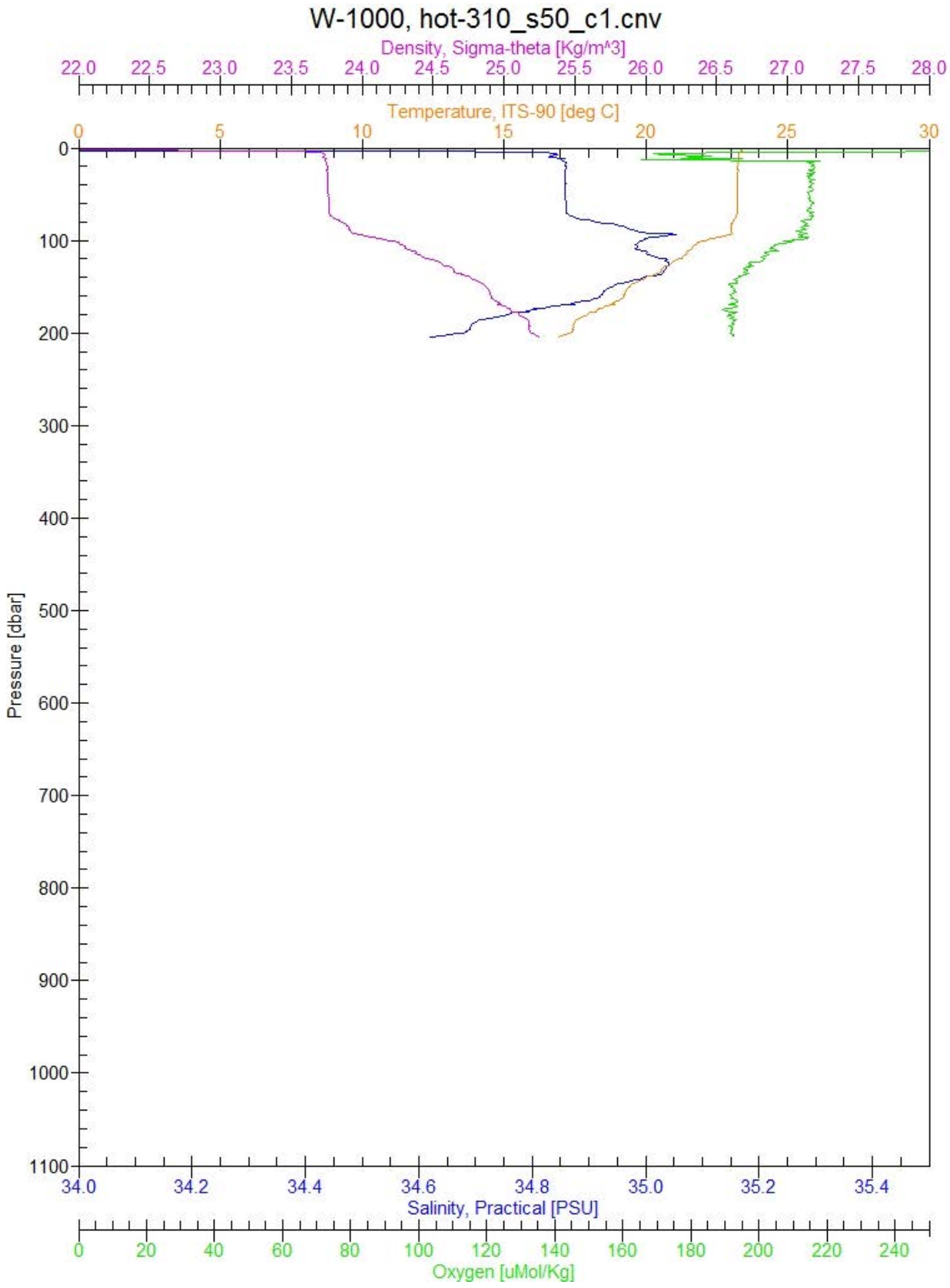

G-1000, hot-310_s2_c9.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

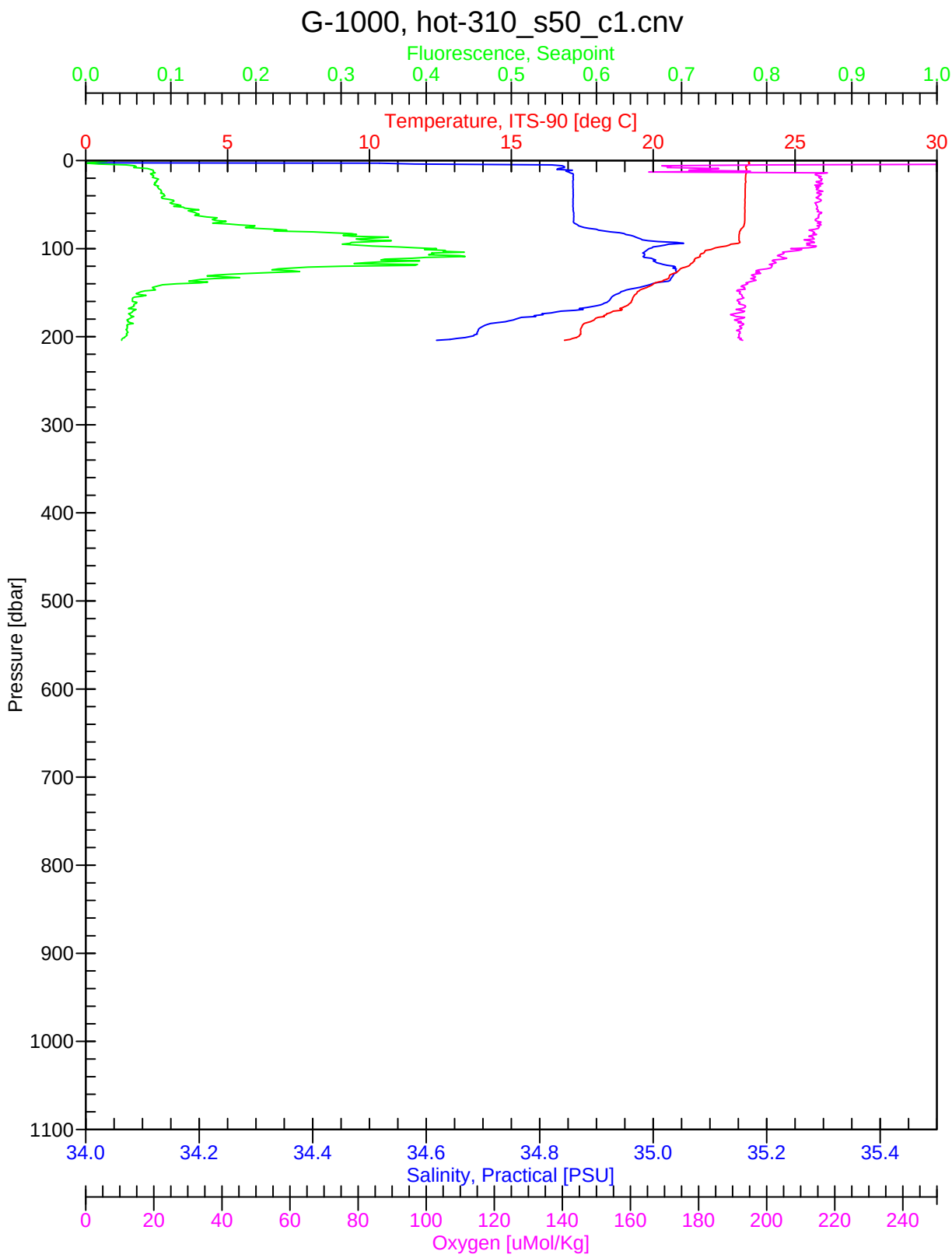

W-1000, hot-310_s2_c10.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]


G-1000, hot-310_s2_c10.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]


W-1000, hot-310_s2_c11.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]


G-1000, hot-310_s2_c11.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]


W-1000, hot-310_s50_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240


G-1000, hot-310_s50_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

HOT-310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	24.10	TR, JS

#5-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH~~ Sea Tech Fluorometer
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECOV2 (Logging Internally)

MLD: 35m
DCM: 118m
SMWI: 350m

Station: 1	Cast: 1
Latitude start: 21° 20.5700' N end: 21 20.569	Longitude start: 158° 16.3696' W end: 158 16.372
Depth of water: 1537 meters	Date (GMT): 2 / 18 / 19
Pressure on Deck	Time:
Begin: 0.2907 End: 0.10	Start Log: 23:40 In Water: 23:45
Max cast pressure: 1030 dbar	Out of Water: 00:58

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:13:03	00:13:28	1022	1020	
2		:20:30	750	750	
3		:26:45	501	500	
4		:31:15	351	350	
5		34:45	251	250	
6		37:28	200	200	
7		39:25	176	175	
8		41:32	150	150	
9		43:40	125	125	
10		45:40	100	100	
11	35	48:15	74	75	
12	50:30	51:25	45	45	
13	53:00	53:30	25	25	
14	55:45	56:15	5	5	
15		25	5	5	
16		✓			FIRED FOR VACUUM TEST
17		✓			
18		✓			
19		✓			
20		✓			
21		✓			
22		✓			
23		✓			
24		✓			

Hawaii Ocean Time Series			Station #: 1	Cast #: 1	Box #: 2
Salinity Sample Log Sheet			Cruise #: HOT-310		Sampler: BF, TR, AM
Niskin #	Depth	Serial #	Comments		
1	1020	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	5	38			
15		39	NO SAMPLE		
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G5000 GPS	12L	23.20	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech~~ Fluorometer
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECO-2 Fluorometer (Logging Internally)

MLD: 83m
DCM: 134m
Smin: 374m

MAX PRESSURE LAT/LONG:
22° 45.0241'N, 157° 59.9899'W

Station: 2	Cast: 1
Latitude start: 22° 44.9923'N end: 22° 45.0288'N	Longitude start: 158° 00.0037'W end: 158° 00.0137'W
Depth of water: 4743 meters	Date (GMT): 2 / 19 / 19
Pressure on Deck	Time:
Begin: 0.3219 End: -0.4005	Start Log: 14:32 In Water: 14:40
Max cast pressure: 4809 dbar	Out of Water: 18:55

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	16:53:48	16:53:50	4809	4800	
2		17:00:08	4602	4600	
3		17:03:29	4500	4500	
4		:06:26	4400	4400	
5		:11:23	4202	4200	
6		:16:30	3998	4000	
7		:21:15	3798	3800	
8		:26:45	3600	3600	
9		:31:00	3400	3400	
10		:36:15	3202	3200	
11		:42:15	3000	3000	
12		:47:12	2799	2800	
13		:52:02	2602	2600	
14		:56:46	2400	2400	
15		18:01:45	2198	2200	
16		18:08:10	1999	2000	
17		18:10:55	1797	1800	
18		15:50	1600	1600	
19		20:22	1398	1400	
20		24:56	1201	1200	
21		29:30	999	1000	
22		35:04	749	750	
23		40:38	498	500	
24		52:02	5.8	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 1	Box #: 3
Salinity Sample Log Sheet			Cruise #: HOT-310	Sampler: JS, TR, SS, AR	
Niskin #	Depth	Serial #	Comments		
1	4800	49			
2	4600	50			
3	4500	51			
4	4400	52			
5	4200	53			
6	4000	54			
7	3800	55			
8	3600	56			
9	3400	57			
10	3200	58			
11	3000	59			
12	2800	60			
13	2600	61			
14	2400	62			
15	2200	63			
16	2000	64			
17	1800	65			
18	1600	66			
19	1400	67			
20	1200	68			
21	1000	69			
22	750	70			
23	500	71			
24	5	72			

Hawaii Ocean Time Series			Station #: 2	Cast #: 1	Box #: 4
Salinity Sample Log Sheet			Cruise #: HOT-310	Sampler: JS, TR, SS, AR	
Niskin #	Depth	Serial #	Comments		
1	4800	73			
2	4600	74			
3	4500	75			
4	4400	76			
5	4200	77			
6	4000	78			
7	3800	79			
8	3600	80			
9	3400	81			
10	3200	82			
11	3000	83			
12	2800	84			
13	2600	85			
14	2400	86			
15	2200	87			
16	2000	88			
17	1800	89			
18	1600	90			
19	1400	91			
20	1200	92			
21	1000	93			
22	750	94			
23	500	95			
24	5	96			

DUPLICATES

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	23.15	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECO V2 Fluorometer (Internally Logging)

Station: 2	Cast: 2
Latitude start: 22 45.016 end: 22 44.972	Longitude start: 157 59.946 end: 157 59.987
Depth of water: 4741 meters	Date (GMT): 2/20/19
Pressure on Deck	Time:
Begin: 0.40 End: 0.10	Start Log: 02:10 In Water: 2:21
Max cast pressure: 1022 dbar	Out of Water: 4:06

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	2:55:50	56:20	988	989	
2	58:30	59:00	941	942	
3	1:55	2:25	896	896	
4	5:50	6:20	852	850	
5	9:45	10:15	803	804	
6	13:55	14:25	755	752	
7	18:00	18:30	700	700	
8	20:50	21:20	665	665	
9	24:20	24:50	629	630	
10	27:15	27:45	577	575	
11	29:35	30:05	536	535	
12	32:30	33:00	501	498	
13	35:30	36:00	442	442	
14	38:40	39:10	392	390	
15	41:30	42:00	340	340	
16	44:00	44:30	302	302	
17	47:00	47:30	241	242	
18	49:25	49:55	214	211	
19	51:50	52:20	182	180	
20	54:30	55:00	143	142	
21	56:40	57:10	112	112	
22	58:55	59:25	81	82	
23	01:30	02:10	45	44	
24	4:00	4:55	5	5	

Hawaii Ocean Time-Series

HOT - 310

Station:	2	Cast:	2
Latitude:		Longitude:	
Date:	2/2919	Time (GMT):	02:10
Operator:	FS-M		

δ_θ	σ_θ	Depth
700	20.76	
650	21.28	
600	21.80	
550	22.33	
500	22.85	
450	23.37	
400	23.90	82
350	24.42	142
300	24.95	180
250	25.47	242
200	26.00	302
180	26.21	340
160	26.42	390
140	26.63	442
130	26.73	498
120	26.84	535
110	26.94	575
100	27.05	630
90	27.16	700
80	27.26	804
70	27.37	988

S_{max}	100
S_{min}	390
S_{max}	
S_{min}	

O_{max}	
O_{min}	
O_{max}	
O_{min}	
O_{max}	

F_{max}	
F_{min}	
F_{max}	
F_{min}	
F_{max}	

Bottle	Depth
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

PO-2

Hawaii Ocean Time Series			Station #: 2	Cast #: 2	Box #: 5
Salinity Sample Log Sheet			Cruise #: HOT- 310	Sampler: DF, TR, AM, FSM	
Niskin #	Depth	Serial #	Comments		
1	988	97			
2	942	98			
3	896	99			
4	850	100			
5	804	101			
6	752	102			
7	700	103			
8	665	104			
9	630	105			
10	575	106			
11	535	107			
12	498	108			
13	442	109			
14	390	110			
15	340	111			
16	302	112			
17	242	113			
18	211	114			
19	180	115			
20	142	116			
21	112	117			
22	82	118			
23	44	119			
24	5	120			

HOT- 310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-1000	12L	23.18	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☑ EcoV2 Fluorometer

Station: 2	Cast: 3
Latitude start: 22 44.954 end: 22 44.980	Longitude start: 157 59.985 end: 157 59.993
Depth of water: 4738 meters	Date (GMT): 2/20/19
Pressure on Deck	Time:
Begin: 0.5 End: 0.3	Start Log: 7:10 In Water: 7:12
Max cast pressure: 1020 dbar	Out of Water: 8:52

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	8:01:05	01:35	1018	1020	
2	11:20	11:50	751	750	O2 min
3	21:00	21:30	402	400	5-min
4	27:20	27:50	202	200	
5	29:10	29:40	174	175	
6	30:30	31:00	165	165	
7	31:55	32:25	147	150	
8	33:20	33:50	131	130	
9	34:20	34:50	127	125	
10	35:35	36:05	114	115	
11	36:40	37:10	112	110	
12	37:55	38:25	98	100	
13	39:10	39:40	90	90	
14	40:05	40:35	85	85	
15	41:25	41:55	73	75	
16	42:45	43:15	59	60	
17	44:05	44:35	43	45	
18	45:15	45:45	37	35	
19	46:25	46:55	25	25	
20		05	25	25	
21	47:45	48:15	15	15	
22	49:40	50:10	5	5	
23		20	5	5	
24		30	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 3	Box #: 6
Salinity Sample Log Sheet			Cruise #: HOT-310	Sampler: DF, TR, FS-1	
Niskin #	Depth	Serial #	Comments		
1	1020	121			
2	750	122			
3	500	123			
4	200	124			
5	175	125			
6	165	126			
7	150	127			
8	130	128			
9	125	129			
10	115	130			
11	110	131			
12	100	132			
13	90	133			
14	85	134			
15	75	135			
16	60	136			
17	45	137			
18	35	138			
19	25	139			
20					
21	15	140			
22	5	141			
23					
24					

HOT- 310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
61000	12L	23.10	FS-M

- ☐ ~~Pinger~~
- ☐ ~~Altimeter~~
- ☐ ~~Transmissometer~~
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☐ ~~PO~~ Fluorometer
- ☑ ECO V2 fluorometer

MLD: 62 db
DCM: 102 db
S_{min}: 400 db

Station: 2	Cast: 4
Latitude start: 22 41.486 end: 22° 41.5247' N	Longitude start: 157 56.578 end: 157° 56.8378' W
Depth of water: 4748 meters	Date (GMT): 2/20/19
Pressure on Deck	Time:
Begin: 0.35 End: 0.1338	Start Log: 12:00 In Water: 12:06
Max cast pressure: 1024 dbar	Out of Water: 13:33

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	12:59:30	12:59:50	1018	1020	
2		13:09:57	402	400	5-min
3		17:30	124	125	
4		17:32	125	125	
5		17:35	123	125	
6		19:40	102	100	
7		19:42	98	100	
8		19:46	102	100	
9		22:55	75	75	
10		22:58	75	75	
11		23:00	74	75	
12		23:03	76	75	
13		25:30	46	45	
14		25:33	44	45	
15		25:37	45	45	
16		25:40	45	45	
17		27:42	25	25	
18		27:47	25	25	
19		27:52	25	25	
20		28:01	25	25	
21		30:27		5	
22		30:30		5	
23		30:35		5	
24		30:38		5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 4	Box #: 6, 7
Salinity Sample Log Sheet			Cruise #: HOT- 310		Sampler: SS, JS, TR
Niskin #	Depth	Serial #	Comments		
1	1020	142			
2	400	143			
3	125	144			
4	125	145			
5	125	146			
6	100	147			
7	100	148			
8	100	149			
9	75	150			
10	75	151			
11	75	152			
12	75	153			
13	45	154			
14	45	156			
15	45	156			
16	45	157			
17	25	158			
18	—	—			
19	25	159			
20	25	160			
21	5	161			
22	—	—			
23	—	—			
24	—	—			

HOT-310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	~~SST~~	Operator
G1000 GPS	12L	~~22.30~~ 23.17	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea-Tech Fluorometer~~
- ☐ ~~OTG Seapoint~~ Fluorometer
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECO V2 Fluorometer (logging Internally)

MLD: 80
DCM: 147
S_{MIN}: 360

Station: 2	Cast: 5
Latitude start: 22° 42.4792' N end: 22° 42.4745' N	Longitude start: 157° 59.2667' W end: 157° 59.2674' W
Depth of water: 4740 meters	Date (GMT): 2 / 20 / 19
Pressure on Deck	Time:
Begin: 0.3277 End: -0.0194	Start Log: 15:35 In Water: 15:42
Max cast pressure: 1023 dbar	Out of Water: 16:55

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	16:19:27	16:19:47	1020	1020	
2		30:40	500	500	
3		30:47	↓	500	
4		30:56	↓	500	
5		31:05	↓	500	
6		35:10	359	360	S_{min}
7		39:50	173	175	
8		41:57	151	150	
9		43:50	125	125	
10		44:00	↓	125	
11		44:07	↓	125	
12		44:13	↓	125	
13		44:23	↓	125	
14		46:10	101	100	
15		47:30	76	75	
16		49:06	45	45	
17		50:35	25	25	
18		50:40	25	25	
19		52:40	5	5	
20		52:43	↓	5	
21		52:48	↓	5	
22		52:52	↓	5	
23		52:55	↓	5	
24		52:59	↓	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 5	Box #: 7, 8
Salinity Sample Log Sheet			Cruise #: HOT-310		Sampler: TR, JS, SS
Niskin #	Depth	Serial #	Comments		
1	1020	162			
2			NO SAMPLE		
3			↓		
4					
5					
6					
7	175	163			
8	150	164			
9	125	165			
10			No SAMPLE		
11			↓		
12					
13					
14	100	166			
15	75	167			
16	45	168			
17	25	169			
18			NO SAMPLE		
19			NO SAMPLE		
20	5	170			
21			NO SAMPLE		
22			↓		
23					
24					

HOT- 3/0

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	23.15	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☑ ECO V2 Fluorometer (logs Internally)

MLD: 105 db
DCM: 133 db
S_{MIN}: 385 db

Station: 2	Cast: 6
Latitude start: 22° 42.3539'N end: 22° 42.3524'N	Longitude start: 157° 59.0515'W end: 157° 59.0387'W
Depth of water: 4742 meters	Date (GMT): 2/20/19
Pressure on Deck	Time:
Begin: 0.3838 End: 0.0012	Start Log: 18:00 In Water: 18:06
Max cast pressure: 1021 dbar	Out of Water: 19:13

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	18:36:00	18:36:15	1020	1020	
2		:43:30	702	700	
3		:50:45	385	385	S_{MIN}
4		:52:15	350	350]	
5		:52:35	350	350	
6		:55:50	249	250]	
7		:57:40	202	200	
8		:58:59	173	175]	
9		:59:10	173	175	
10		19:00:34	150	150]	
11		:00:38	150	150	
12		:02:09	126	125]	
13		:02:13	126	125	
14		:03:36	100	100]	
15		:03:40	100	100	
16		:05:10	74	75	
17		:06:57	45	45	
18		:08:13	25	25]	
19		:08:18	25	25	
20		:11:22	6	5]	
21		:11:27	6	5	
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 6	Box #: 8
Salinity Sample Log Sheet			Cruise #: HOT-310		Sampler: TR, JS, SS
Niskin #	Depth	Serial #	Comments		
1	1020	171			
2	700	172			
3	385	173	S_{MIN}		
4	350	174			
5	350	175			
6	250	176			
7	200	177			
8	175	178			
9	X				
10	150	179			
11	X				
12	125	180			
13	X				
14	100	181			
15	X				
16	75	182			
17	45	183			
18	25	184			
19	X				
20	5	185			
21	X				
22					
23					
24					

HOT- 310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	23.37	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECOV2 Fluorometer

MLD: 70 db
DCM: 125 db
S_{MIN}: 400 db

Station: 2	Cast: 7
Latitude start: 22° 44.9889' N end: 22° 44.9722' N	Longitude start: 157° 59.8618' W end: 157° 59.8141' W
Depth of water: 4739 meters	Date (GMT): 2 / 20 / 19
Pressure on Deck	Time:
Begin: 0.4029 End: 0.0161	Start Log: 20:58 In Water: 21:06
Max cast pressure: 1021 dbar	Out of Water: 22:18

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	21:42:30	21:42:50	1021	1000	
2		:42:53	1019	1000	
3		56:30	401	400	
4		58:40	351	350	
5		58:45	350	350	
6		22:02:18	250	250	
7		04:18	202	200	
8		05:33	174	175	
9		06:50	150	150	
10		08:09	125	125	
11		09:20	102	100	
12		10:45	74	75	
13		12:40	45	45	
14		13:57	25	25	
15		14:10	25	25	
16		15:35	15	15	
17		17:10	5	5	
18		17:14	5	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 7	Box #: 8,9
Salinity Sample Log Sheet			Cruise #: HOT- 310		Sampler: TR, JS, SS, AM
Niskin #	Depth	Serial #	Comments		
1	1020	186			
2	1020	187			
3	400	188			
4	350	189			
5	350	190			
6	250	191			
7	200	192			
8	175	193			
9	150	194			
10	125	195			
11	100	196			
12	75	197			
13	45	198			
14	25	199			
15	X				
16	X				
17	5	200			
18	X				
19	X				
20	X				
21	X				
22	X				
23	X				
24	X				

HOT- 310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GPS	12L	23.45	TR, FSM

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECOV2 Fluorometer

MLD: 80
DCM: 110
S_{MIN}: 390

Station: 2	Cast: 8
Latitude start: 22° 45.4144 end: 22 45.429	Longitude start: 157° 59.5450 end: 157 59.577
Depth of water: 4733 meters	Date (GMT): 2 / 21 / 19
Pressure on Deck	Time:
Begin: 0.4930 End: 0.00	Start Log: 00:29 In Water: 00:33
Max cast pressure: 1020 dbar	Out of Water: 01:56

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	1:11:25	11:55	1020	1020	
2	21:05	21:35	772	770	
3	31:00	31:30	498	500	
4	34:20	34:50	401	400	S_{MIN}
5		00	401	400	
6	36:35	37:05	351	350	
7	39:15	39:45	298	300	
8	41:40	42:10	249	250	
9	44:40	45:10	150	150	
10	46:05	46:35	122	125	
11	47:55	48:25	98	100	
12	49:25	49:55	75	75	
13	51:05	51:35	43	45	
14	53:00	52:30	25	25	
15		40	25	25	
16	54:45	55:15	5	5	
17		25	5	5	
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 8	Box #: 9
Salinity Sample Log Sheet			Cruise #: HOT- 310	Sampler: DF, TR, AM, FS-M	
Niskin #	Depth	Serial #	Comments		
1	1020	201			
2	X				
3	X				
4	400	202	Smin		
5	X				
6	350	203			
7	X				
8	250	204			
9	150	205			
10	125	206			
11	100	207			
12	75	208			
13	45	209			
14	25	210			
15	X				
16	5	211			
17	X				
18	X				
19	X				
20	X				
21	X				
22	X				
23	X				
24	X				

HOT-310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12 L	23.41	ES-M

OPEN CAST

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☑ Eco V2 fluorometer

MLD = 80
DCM = 130
SMIN = 390

Station: 2	Cast: 9
Latitude start: 22 45.461 end: 22 45.530	Longitude start: 157 59.614 end: 157 59.654
Depth of water: 4732 meters	Date (GMT): 2/21/19
Pressure on Deck	Time:
Begin: 0.50 End: 0.10	Start Log: 02:59 In Water: 03:09
Max cast pressure: 1020 dbar	Out of Water: 4:21

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	03:41:10	03:41:40	1018	1020	✓
2	46:45	47:15	802	800	
3	52:05	52:35	601	600	
4	57:30	58:00	400	400	SAL/MIN ✓
5		10	400	400	
6	00 50	01:20	301	300	
7	4:10	4:40	400	200	
8	6:20	6:50	176	175	
9	8:05	8:35	152	150	
10	9:50	10:20	125	125	
11	11:25	11:55	102	100	
12	13:10	13:40	75	75	✓
13	14:50	15:20	44	45	
14	16:15	16:45	24	25	
15		55	24	25	
16	17:45	18:15	15	15	
17	19:05	19:35	6	5	✓
18		45	6	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 9	Box #:
Salinity Sample Log Sheet			Cruise #: HOT-310	Sampler: DF, TR, AM	
Niskin #	Depth	Serial #	Comments		
1	1020	212			
2	—	—			
3	—	—			
4	400	213	5-min		
5	—	—			
6	—	—			
7	—	—			
8	—	—			
9	—	—			
10	125	214			
11	—	—			
12	—	—			
13	—	—			
14	—	—			
15	—	—			
16	—	—			
17	—	—			
18	5	215			
19					
20					
21					
22					
23					
24					

HOT-310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12 L	23.32	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☑ Eco U2F fluorometer

MLD: 65m
DCM: 120 m
S-Max: 150 m

Station: 2	Cast: 10
Latitude start: 22 45.338 end: 22 45.391	Longitude start: 157 56.678 end: 157 56.704
Depth of water: 4720 meters	Date (GMT): 2/21/19
Pressure on Deck	Time:
Begin: 0.50 End: 0.20	Start Log: 05:58
Max cast pressure: 1023 dbar	In Water: 06:02 Out of Water: 07:34

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	6:42:05	42:35	1023	1020	
2	3:40	4:10	371	370	S-min
3	9:35	9:05	277	275	
4	10:25	10:55	248	250	
5	12:20	12:50	227	225	
6	14:20	14:50	201	200	
7	16:00	16:30	175	175	
8		40	175	175	
9	17:50	18:20	150	150	
10		30	150	150	
11	19:25	19:55	135	135	
12	20:40	21:10	125	125	
13		20	125	125	
14	22:00	22:30	115	115	
15	23:25	23:55	100	100	
16	24:55	25:25	85	85	
17	26:15	26:45	75	75	
18	27:45	28:15	60	60	
19	29:15	29:45	45	45	
20		55	45	45	
21	30:55	31:25	25	25	
22		35	25	25	
23	32:45	33:15	5	5	
24		25	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 10	Box #: 9-10
Salinity Sample Log Sheet			Cruise #: HOT-310	Sampler: DF, TR, FS-M	
Niskin #	Depth	Serial #	Comments		
1	1020	216			
2	390	217			
3	—	—			
4	—	—			
5	—	—			
6	—	—			
7	—	—			
8	175	218			
9	—	—			
10	150	219			
11	135	220			
12	—	—			
13	125	221			
14	115	222			
15	100	223			
16	85	224			
17	75	225			
18	60	226			
19	—	—			
20	45	227			
21	—	—			
22	25	228	No water left for salinity		
23	5	229	"	"	"
24	—	—			

HOT- 310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-5000	12L	23.19	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☑ EcoV2 fluorometer

MLD: 80 db
DCM: 125 db
S_{min}: 390 db

Station: 2	Cast: 11
Latitude start: 22 45.021 end: 22 45.0348	Longitude start: 158 0.055 end: 158 00.0824
Depth of water: 4741 meters	Date (GMT): 2/12/19
Pressure on Deck	Time:
Begin: 0.35 End: -0.2173	Start Log: 10:17 In Water: 10:28
Max cast pressure: 4804 dbar	Out of Water: 14:26

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		12:42:00	4804	4800	
2		59:40	4002	4000	
3		59:47	4002	4000	
4		59:55	4002	4000	
5		13:00:12	4002	4000	
6		21:20	3002	3000	
7		21:24	2999	3000	
8		40:25	2000	2000	
9		40:30	2000	2000	
10		58:47	1000	1000	
11		14:05:10	651	650	O2-min
12		12:43	378	378	S-min
13		17:56	119	120	S-max
14		20:30	49	50	O2-max
15		22:30	15	15	
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 11	Box #: 10
Salinity Sample Log Sheet			Cruise #: HOT- 310	Sampler: JS, SS	
Niskin #	Depth	Serial #	Comments		
1	4800	228			
2	—	—			
3	—	—			
4	4000	229			
5	—	—			
6	3000	230			
7	—	—			
8	2000	231			
9	—	—			
10	—	—			
11	650	232	02-min		
12	390	233	5-min		
13	120	234			
14	50	235			
15	—	—			
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-310

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G2000PS	12L	23.51	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECOV2 Fluorometer

MLD: 73
DCM: 99

YOYO: NTT

Station: 50	Cast: 1
Latitude start: 22° 46.3776'N end: 22° 46.3312'N	Longitude start: 157° 55.5890'W end: 157° 55.5615'W
Depth of water: 4707 meters	Date (GMT): 2 / 21 / 19
Pressure on Deck	Time:
Begin: 0.2918 End: 0.2298	Start Log: 23:02 In Water: 23:05
Max cast pressure: 204 dbar	Out of Water: 00:19

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:07:50	00:08:10	99	100	
2		00:09:58	75	75	
3		00:12:27	24	25	
4		00:17:50	5	5	
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-310 KM 19-03

CTD configuration:

CTD: 91361 (Beta)

Deck Unit: 112060 (Secondary)

Pressure: 75434

Carousel: 1261 (New)

T_1: 1416 T_2: 5519

C_1: 4687 C_2: 3984

O_1: 43918 O_2: 1601

$Pump_1$: 968 $Pump_2$: 494

Fluorometer: 3831

Altimeter: 7769

Bucket Thermometer: 3622

Transmissometer: 1192DR

Cruise Participants:

K. Babcock
K. Björkman
M. Burgos
J. Diehl
J. Koch
R. Palomares
} OTG

T. Burrell

T. Clemente - Chief Sci

M. Dugenne

D. Fitzgerald

C. Funkey

Tom Iwanicki (Grad student/UH)

Geir Johnsen (Scientist/NTNU/TBS)

A. Mincer

Tess Rigler (Undergrad Volunteer/UH)

T. Rohrer

D. Sadler

Sienna Santiago (Undergrad Volunteer/UH)

F. Santiago-Mandujano

J. Snyder

~~R. Tabata~~ (ILLNESS)

B. Watkins

295 WIRE TAPE
CLEAR CONDUCTOR 260 Ω

WEIGHT AIR 1250 lbs
WATER 1025 lbs

ROSETTE AIR 1100 lbs
WATER 550 lbs

EcoV2 Wetlabs fluorometer attached to one of the rosette poles. Recording internally

Salinity differences for S1C1 ~ 0.0048, (a little high)

:40 R
:42 D
0:00 S
0:30 A
50
:30 AR
1:42 BE
2:33 EN
2:45 BEG
23:25 END
23:30 TRA
23:40 BEG
0058 F
0010 T

HOT-310 FEB 18, 2019

17:40 RESET ACQ1 + PROC1 CLOCKS to CURRENT UTC TIME

18:42 DEPART UH MARINE CENTER

20:00 safety briefing

20:30 Abandon ship, fire drills

20:50 OTG deploying XBT

21:30 ARRIVE STATION KAHE

21:42 BEGIN WEIGHT CAST - 21° 20.4366' N, 158° 16.3220' W
22:33 END WEIGHT CAST

22:45 BEGIN HYPERPRO - 21° 20.3662'N, 158° 16.1417' W
23:25 END HYPERPRO - 21° 20.3788'N, 158° 16.1279' W

23:30 TRANSIT TO KAHE WAYPOINT

23:40 BEGIN STATION 1, CAST 1 - G1000GPS
21° 20.5700'N, 158° 16.3696'W
Fluorescence data dropped to zero once during downcast at 400-500m, and once on upcast around 250m.

19 February 2019

0058 End of cast 15 marks OK
Bottles 16 to 24 fired for vacuum testing, but not marked.

0010 Transit to ALOHA Sta.

0904 AR

0920 BE

09:29 EN
2
15

09:34 TR
(

09:58 BE
2
1

10:31 END
2
14

10:46 BEG
22°
158'

11:29 END
22
15

1159 Sta
CT
b

HOT 310 19 February 2019

0904 Arrived at ALOHA Station

0920 BEGIN WIREWALKER DEPLOYMENT
22° 45.0105'N
158° 03.2153'W

09:29 END WIREWALKER DEPLOYMENT
22° 45.0173'
158° 03.2227'

09:34 TRANSIT to SED TRAP DEPLOYMENT
@ 2 miles W of center.

09:58 BEGIN SED TRAP DEPLOYMENT
22 45.0695'N
158 02.1002'W

10:31 END SED TRAP DEPLOYMENT
22° 45.0732'N
158° 02.0966'W

10:46 BEGIN NET TOW for Gene Johnson + Tom Iwanicki
22° 45.0775'N
158° 00.9970'W

11:29 END NET TOW (GJ, TI)
22° 45.1165'N
158° 00.7571'W

1159 Start Station 2 cast 1
CTD winch making strange noises before deployment

349 WIRE TAPE

HOT-310 19 February 2019

12:14 214 Aborting cast. CTD wire needs to be reterminated. Wire got damaged in the drum.

14:15 Retermination complete. On station for deep cast.

14:39 BEGIN S2C1 (cast number revised), G5000GPS.
22° 44.9923' N, 158° 00.0037' W
SLOW PROGRESS DUE TO SWELL.

16:54 BOTTOM TARGET DEPTH REACHED - 4809 db, ~7m off bottom
22° 45.0241' N, 157° 59.9899' W
RAIN SQUALL PASSED THROUGH, 29 KT WINDS

18:55 END S2C1, 24 MARKS OK
22° 45.0288' N, 158° 00.0137' W

20:07 OPERATIONS SUSPENDED DUE TO CONDITIONS.
WINDS GUSTING TO 37 kts.

20-FEBRUARY, 2019

0000 Ship is conducting speed log calibrations while science ops are on WEATHER-DELAY. At the end of calibration, the ship will leave the circle to pump tanks, then return to the center of Station ALOHA to resume science ops.

02:10 210 Start S2C2 G-1000GPS
Very slow descent because of negative wire tensions, ~20-25 m/min

06 E

420 Th
C

554 S

R
6

(*) 2
a

0603 St
in

0620 C
Sl
o

0710 wi
st

S
Nea
w

0806 R

HOT-310 20 February 2019

0406 End of cast, 24 marks OK. (*)

0420 Transit to locate sed. traps array, whose location was uncertain.

0554 Start S2C3 6-1000

Problems with the traction winch before deployment.

(*) 2 bends found on the CTD cable after the previous cast (S2C2) 4 and 6 m from the package respectively.

0603 Stop CTD, engineers need to look into the winch and wire.

0620 CTD WIRE is tangled on the traction sheaves → SHIP'S CREW is WORKING on UNTangling; wire appears undamaged.

0710 winch problem fixed, restart cast Start S2C3 @ 1000 dbs

Slow descending speed < 25 m/min Negative tensions even at 800 m wire out.

0806 Raining on station

TWO PEOPLE FROM THE SCIENCE PARTY CAME DANGEROUSLY CLOSE TO SEVERE INJURY DURING THE GAS ARRAY DEPLOYMENT, THIS NEAR MISS INCIDENT HAPPENED WHEN THE CTD .322 WIRE BECAME TAUGHT BETWEEN THE MOVING A-FRAME AND THE ROSETTE LOCATED IN THE STAGING BAY.

MACARENA BURGOS WAS OBSERVING THE GAS ARRAY DEPLOYMENT FROM INSIDE THE STAGING BAY WHEN THE TIGHTENING WIRE BENT DOWN TWO S.S. HOOKS IT WAS RESTING ON AND SNAPPED AGAINST HER SAFETY HARD HAT. UNAWARE OF WHAT HAD HIT HER, SHE LET OUT A LOUD SCREAM WHEN SHE WAS HIT.

JEFREY SNYDER WAS ALSO IN THE STAGING BAY, PREPARING THE ROSETTE FOR THE NEXT CTD CAST. WHILE BENT OVER DRAINING WATER FROM THE BOTTOM BOTTLE CAP THERE WAS A LOUD NOISE ABOVE HIM AS THE TIGHTENING WIRE SCRAPED ACROSS THE TOP CAPS OF THE BOTTLES. HE THEN HEARD A LOUD SCREAM AS THE ROSETTE AND PALLET BEGAN MOVING TOWARDS HIM SCRAPPING ACROSS THE DECK. HE QUICKLY STOOD UP AND SAW THE WIRE TAUGHT NEXT TO HIS HEAD AND NECK AREA AS THE A-FRAME STOPPED MOVING DUE TO THE LOUD WARNING SCREAM.

T.S. 2/20/19

0852 En
0911 St
0940 END
BE
1010 EN
1015 BE
1057 END
1106 TRA
1111 POS
1151 THE
1155 POS
1200 St
2
13:33 END
22
13:42 TRANS
←
14:42 BEGIN
2
15:04 END GI

HOT-310 20 February 2019

0852 End of cast, 24 marks OK

0911 Start net tow

0940 END NET TOW - HOT
BEGIN 2ND NET TOW - HOT

1010 END HOT NET TOW

1015 BEGIN NET TOW (GJ + TI)
1057 END NET TOW (GJ + TI)

1106 TRANSITING TO PUMP TANKS

1111 POS-MV° SYSTEM CRASHED → NO GPS or ADCP

1151 THERMOSAL DISPLAY FROZEN SINCE 08:49.
ADCP

1155 POSMV and thermosal display back on line. Thermosal ~2 hour missing data

1200 Start S2 C4 G-1000 GPS
22° 41.486' N, 157° 56.578' W

13:33 END S2 C4, 24 marks OK.
22° 41.5247' N, 157° 56.8378' W

13:42 TRANSIT TO GAS ARRAY DEPLOYMENT SITE
←

14:42 BEGIN GAS ARRAY DEPLOYMENT
22° 41.5063' N, 157° 59.0021' W

15:04 END GAS ARRAY DEPLOYMENT - 22° 41.5147' N, 157° 58.9966' W

NOTE: BOTTLE 4 (NISKIN) STILL USING END CAPS FROM BOTTLE B23. NEEDS NEW END CAPS + NEW SPRING.

15:07	TRANS
15:40	BEGIN
16:55	END
18:02	BEGIN
	22
19:13	END
	22
19:20	TRANSI
21:00	BEGIN
	22°
	LAN
	SW
22:18	END S
	22
22:30	BEGIN
23:04	BEGIN
23:30	END N
23:40	BEGIN
00:17	END HY
00:33	BEGIN
	22°

HOT-310

20-FEB-2019

15:07 TRANSIT 1 NM NORTH TOWARDS ALOHA CENTER FOR CTD

15:40 BEGIN S2C5 - PARTICULATE SILICA CAST, G1000GPS
22° 42.4792' N, 157° 59.2667' W

16:55 END S2C5 - 24 MARKS OK
22° 42.4745' N, 157° 59.2474' W

18:02 BEGIN S2C6 - PC/PN CAST, G1000GPS
22° 42.3539' N, 157° 59.0515' W

19:13 END S2C6 - 21 Marks OK
22° 42.3524' N, 157° 59.0387' W

19:20 TRANSIT TO PUMP TANKS

21:00 BEGIN S2C7 - PPD_4 CAST, G1000GPS
22° 44.9889' N, 157° 59.8618' W
LANYARD ON NISKIN #4 BROKE JUST BEFORE DEPLOYMENT.
SWAPPED IN NEW BOTTOM CAP LANYARD.

22:18 END S2C7, 18 MARKS OK
22° 44.9722' N, 157° 59.8141' W

22:30 BEGIN NET TOW 1

23:04 BEGIN NET TOW 2

23:30 END NET TOWS

23:40 BEGIN HYPERPRO - 22° 45.5982' N, 157° 59.3866' W

00:17 END HYPERPRO 21-FEB-2019

00:33 BEGIN S2C8, ATP CAST, G1000 GPS
22° 45.4144' N, 157° 59.5450' W

0156 En

0259 St
R
wi
d

0421 En

0430 TR

0558 Sta

0734 En

0800 St

0834 En

0838 St

0923 EN

1017 Sta

1242 9 m
2

14:26 END
22

HOT-310

21-FEB-2019

0156 End S2C8, 17 marks OK

0259 Start S2C9 G-1000 GPS
Removing some twists in the CTD wire by rotating the rosette on deck before deployment.

0421 End of cast, 18 marks OK

0430 TRANSITING TO PUMP TANKS.

0558 Start S2C10, G-1000 GPS

0734 End of cast, 24 marks OK

0800 Start net tow

0834 End net tow

0838 Start net tow (GJ, TI)

0923 END NET TOW (GJ, TI)

1017 Start S2C11, G 5000 GPS

1242 9 m above the bottom
22° 45.0277'N, 158° 0.080'W

14:26 END S2C11, 15 MARKS OK
22° 45.0348'N, 158° 00.0824'W

14:45

15:19

15:25

16:00

16:10 T

7:00 A
Z

17:20 BEG

17:40 E

17:45 -

18:55 ARR

19:05 BEGIN
19:28 END

19:32 TRANS

20:04 BEGIN
2

20:17 END

HOT-310

21-FEB-2019

14:45 START OPTICS CAST
22° 45.04 158° 00.08

15:19 END OPTICS CAST 1

15:25 START OPTICS CAST 2

16:00 END OPTICS CAST 2

16:10 TRANSIT TO GAS ARRAY

17:00 ARRIVE AT GAS ARRAY
22° 35.05 157° 58.71

17:20 BEGIN RECOVERY GAS ARRAY

17:40 END RECOVERY

17:45 TRANSIT TO SEDIMENT TRAPS

18:55 ARRIVE SEDIMENT TRAP ARRAY
22° 44.0812' N, 158° 05.0391' W

19:05 BEGIN RECOVERY SEDIMENT TRAP ARRAY
19:28 END RECOVERY

19:32 TRANSIT TO WIREWALKER

20:04 BEGIN WIREWALKER RECOVERY
22° 44.6696' N, 158° 06.1276' W

20:17 END WIREWALKER RECOVERY

TRANSMISSOMETER CAL

AIR 4.62715
DARK .07570

20:20	TRANS
2117	2
	na
	c
22:00	BEGIN
22:45	END
23:05	BEGIN
23:21	END
23:34	END
23:46	END
23:57	END
00:19	END
00:20	HOLDIN
	TRANSI
0220	Sto
0240	TOP
	22
0414	ANC
	(PO
	~ 2
	15
0500	SU

HOT-310

21-FEB-2019

20:20 TRANSIT TO WHOTS MOORING

2117 2 hour data gap in raw ship met and thermosal data at ~ 20:00

22:00 BEGIN HYPERPRO
22:45 END HYPERPRO

23:05 BEGIN S50C1 - YOYO, G200GPS - 22° 46.3776'N, 157°55.5890'W

23:21 END CYCLE 1, BEGIN CYCLE 2 - 22° 46.3814'N, 157° 55.5908'W
23:34 END CYCLE 2, BEGIN CYCLE 3 - 22° 46.3751'N, 157° 55.5881'W
23:46 END CYCLE 3, BEGIN CYCLE 4 - 22° 46.3620'N, 157° 55.5798'W
23:57 END CYCLE 4, BEGIN CYCLE 5 - 22° 46.3491'N, 157° 55.5725'W

00:19 END S50C1, 4 MARKS OK 22-FEB-2019

00:20 HOLDING STATION FOR ADCP INTERCOMPARISON

TRANSIT TO DEEP SEDIMENT TRAP DEPLOYMENT SITE

0220 Start sed trap mooring operations

0240 TOP FLOAT IN THE WATER
22° 50.0077'N, 157° 55.9900'W

0414 ANCHOR RELEASED
(Pos-MV not working)
~ 22° 50.7362'N } from Furuno GPS
157° 55.0601'W } @ 04:46:57

500 survey to triangulate anchor location

0640 EM

0641 TR

0812 →

1815 A

HOT-310 22 February 2019

0640 END OF TRIANGULATION SURVEY

0641 TRANSITING TO HONOLULU HARBOR.

0812 → NO THSL DATA AVAILABLE
VIA TV OR NETWORK
but looks like it is logging in Comp LAB.

1815 ARRIVING AT PIER 35, UH MARINE CENTER