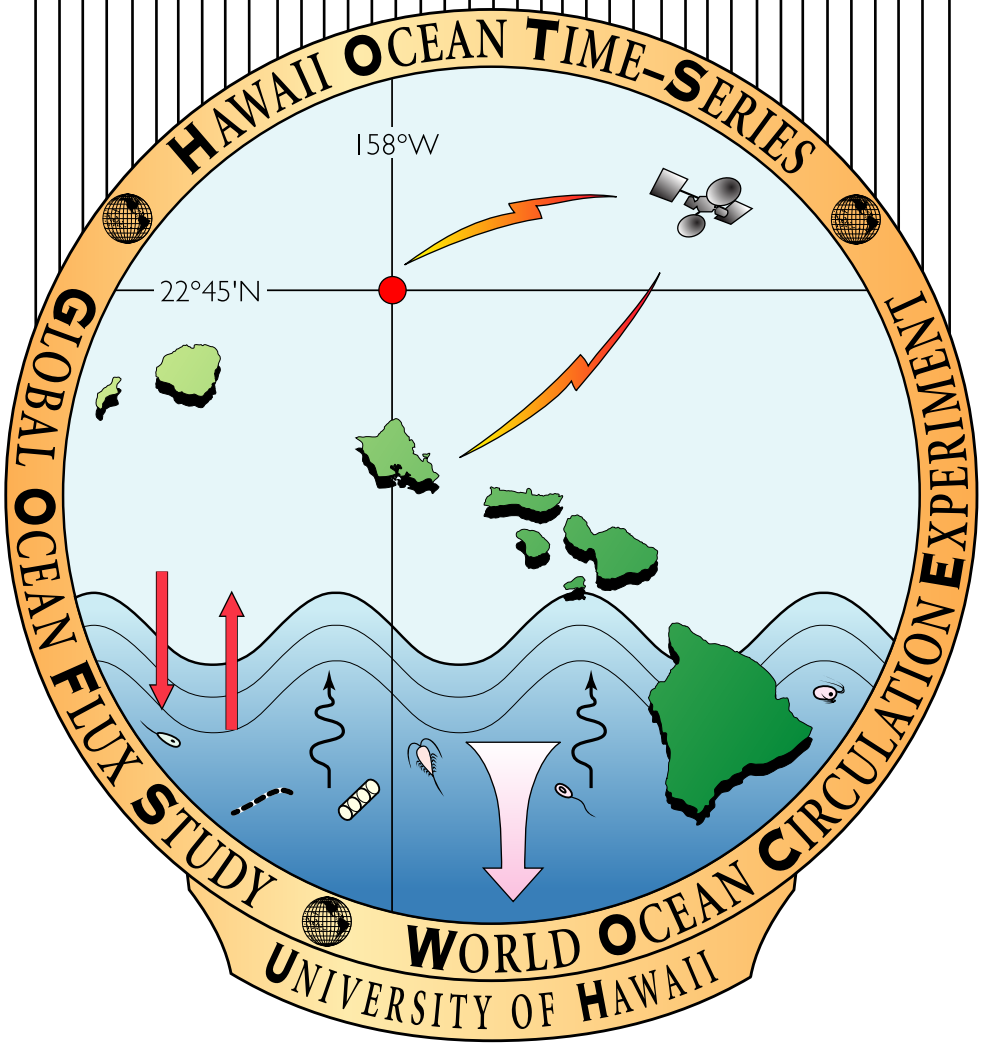
Hawaii Ocean Time-series Program

HOT 309



Hawaii Ocean Time-Series

HOT-**309**

KAHE Station Data Sheet

Station # 1 Date: 1/14/2018 (HST)

Cast # 1 Time: 14:14 (HST)

Operator(s): DS, MB, TB, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	7.1						
2	**750**	2,3,4	8.2						
3	**500**	5	9.1						
4	**350**	6	11.8			4			
5	**250**	7	15.0			5			
6	**200**								
7	**175**							7	
8	**150**	8	20.3			8	8	8	
9	**125**							9	
10	**100**	9,10,11	24.0			10	10	10A-B	
11	**75**							11	
12	**45**	12	24.9	12	1	12	12	12	
13	**25**	13	25.0	13	2			13A-B	
14	**5**	14	25.1	14	3,4,5	14	14	14	
15	**5**	QC	25.1						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-Series
HOT-**309**
KAHE Station Data Sheet

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

Date: 1/14/2018 (HST)
Time: _____ (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	7.1						
2	**750**	2,3,4	8.2						
3	**500**	5	9.1						
4	**350**	6	11.8			4			
5	**250**	7	15.0			5			
6	**200**								
7	**175**							7	
8	**150**	8	20.3			8	8	8	
9	**125**							9	
10	**100**	9,10,11	24.0			10	10	10A-B	
11	**75**							11	
12	**45**	12	24.9	12	1	12	12	12	
13	**25**	13	25.0	13	2			13A-B	
14	**5**	14	25.1	14	3,4,5	14	14	14	
15	**5**	QC	25.05						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-series
HOT-**309**
Primary Production Data Sheet

Station # 2 Date: 1/15/19 (HST)
Cast # 1 Time: 02:11 (HST)
Operator(s): RT, KB, KKB

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

Notes: About 20 mL of seawater lost in Chl a Bottle #9

Hawaii Ocean Time-series
HOT-**309**
Primary Production Data Sheet

Station # 2
Cast # 1
Operator(s): RT, KB, KKB

Date: 1/15/19 (HST)
Time: 2:11 (HST)

Rosette Position	Desired Depth	Light Bottle	Chl *a*	FCM	SFS	SF-S O2	Temp
1	**200**						
2	**Sal min**						
3	**175**		3A-B	3A-B			
4	**150**		4A-B	4A-B			
5	**125**	3-1	5	5	X		
6	**125**	3-2	6	6	X		
7	**125**	3-3	7	7	X		
8	**100**	4-1	8	8	X		
9	**100**	4-2	9	9	X		
10	**100**	4-3	10	10	X		
11	**75**	5-1	11	11	X		
12	**75**	5-2	12	12	X		
13	**75**	5-3	13	13	X		
14	**45**	6-1	14	14	X		
15	**45**	6-2	15	15	X		
16	**45**	6-3	16	16	X		
17	**25**	7-1	17	17	X		
18	**25**	7-2	18	18	X		
19	**25**	7-3	19	19	X		
20	**15**					121,122,123	24.0
21	**5**	8-1	21	21	X		
22	**5**	8-2	22	22	X		
23	**5**	8-3	23	23	X		
24	**5**						

Notes: About 20mL of liquid lost Chla Bottle #9

Hawaii Ocean Time-series

HOT-**309**

WOCE Deep Data Sheet

Station # 2 Date: 1/15/2018 (HST)

Cast # 2 Time: 5:31 (HST)

Operator(s): DS, TB, MB, AS, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	3.2				1	1	
2	**4600**	16	3.4				2	2	
3	**4500**	17,18,19	3.6	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	3.4				4	4	
5	**4200**	21	3.5				5	5	
6	**4000**	22	3.5				6	6	
7	**3800**	23,24,25	3.9			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	4.1	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	3.6				12	12	
13	**2600**	33	3.7				13	13	
14	**2400**	34	3.9				14	14	
15	**2200**	35	3.9				15	15	
18	**1600**	150	4.5				18	18	
19	**1400**	41	4.8				19	19	
20	**1200**	42	5.2				20	20	
21	**1000**	43	5.6				21	21	
22	**750**	44	6.1				22	22	
23	**500**	45	8.1				23	23	
24	**5**	46	23.8				24		

Notes: Nidkin # 16 and 17 did not fire. * Labeled at 309-2-1

Hawaii Ocean Time-series
HOT-**309**
WOCE Deep Data Sheet

Station # 2
Cast # ~~1~~ 2
Operator(s): DS, TB, MB, AS, CF

Date: 1/15/2018 (HST)
Time: 5:31 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	3.2				1	1	
2	**4600**	16	3.4				2	2	
3	**4500**	17,18,19	3.6	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	3.4				4	4	
5	**4200**	21	3.5				5	5	
6	**4000**	22	3.5				6	6	
7	**3800**	23,24,25	3.9			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	4.1	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	3.6				12	12	
13	**2600**	33	3.7				13	13	
14	**2400**	34	3.9				14	14	
15	**2200**	35	3.9				15	15	
X 16	**2000**	36		16	5	16ABC	16A-B	16A-B	
X 17	**1800**	37,38,39					17	17	
18	**1600**	150	4.5				18	18	
19	**1400**	41	4.8				19	19	
20	**1200**	42	5.2				20	20	
21	**1000**	43	5.6				21	21	
22	**750**	44	6.1				22	22	
23	**500**	45	8.1				23	23	
24	**5**	46	23.8				24		

Notes:

Niskin #16 + 17 didn't fire!

Hawaii Ocean Time-series

HOT-**309**

PO Shallow Data Sheet

Station # 2 Date: 1/15/2018 (HST)

Cast # 3 Time: 12:02 (HST)

Operator(s): DS, TB, MB, AS, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	**1020**	47,48,49	6.7	1	1	1	1A-B	1A-B	**1020**
2	**980**	50	6.3				2	2	
3	**911**	51	6.4				3	3	
4	**842**	52	6.8				4	4	
5	**749**	53	6.9				5	5	
6	**746**	54	6.9	6	2	6	6	6	**750**
7	**708**	55,56,57	7.5				7	7	
8	**682**	58	7.4				8	8	
9	**623**	59	7.6	9	3	9	9	9	**600**
10	**571**	60	8.4				10	10	
11	**525**	61	8.5				11A-B	11A-B	**525**
12	**490**	62	9.0	12	4	12	12	12	**500**
13	**479**	63	9.2				13	13	
14	**425**	64,65,66	8.8				14	14	**450**
15	**379**	67	11.1				15		
16	**323**	68	12.9	16AB	5, 6	16	16		**350**
17	**306**	69	13.2				17		
18	**238**	70	16.2	18	7	18	18		**250**
19	**189**	71,72,73	19.0				19		**225**
20	**151**	74	20.5				20 A-B		**150**
21	**123**	75	22.3				21		
22	**112**	76	22.6				22		
23	**59**	77	23.9				23		
24	**5**	78	24.0				24		

Notes:

Hawaii Ocean Time-series
HOT-**309**
PO Shallow Data Sheet

Station # 2
Cast # 3
Operator(s): DS, TB, MB, AS, CF

Date: 1/15/2018 (HST)
Time: 12:02 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	**1020**	47,48,49	6.7	1	1	1	1A-B	1A-B	**1020**
2	**980**	50	6.3				2	2	
3	**911**	51	6.4				3	3	
4	**842**	52	6.8				4	4	
5	**749**	53	6.9				5	5	
6	**746**	54	6.9	6	2	6	6	6	**750**
7	**708**	55,56,57	7.5				7	7	
8	**682**	58	7.4				8	8	
9	**623**	59	7.6	9	3	9	9	9	**600**
10	**571**	60	8.4				10	10	
11	**525**	61	8.5				11A-B	11A-B	**525**
12	**490**	62	9.0	12	4	12	12	12	**500**
13	**479**	63	9.2				13	13	
14	**425**	64,65,66	8.8				14	14	**450**
15	**379**	67	11.1		5,6)		15		
16	**323**	68	12.9	16AB	~~5A-B~~	16	16		**350**
17	**306**	69	13.2				17		
18	**238**	70	16.2	18	~~6~~ 7	18	18		**250**
19	**189**	71,72,73	19.0				19		**225**
20	**151**	74	20.5				20 A-B		**150**
21	**123**	75	22.3				21		
22	**112**	76	22.6				22		
23	**59**	77	23.9				23		
24	**5**	78	24.0				24		

Notes:

Hawaii Ocean Time-series

HOT- **309**

PC/PN Data Sheet

Station #	2	Date:	1/15/2019	(HST)
Cast #	4	Time:	15:14	(HST)
Operator(s):	RT, KB, KKB	Pre-screen mesh size:	202 um	
Blank #'s	**___B1___**	**___B2___**	**___B3___**	

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DNA		
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	**150**	6	10	9			
10	**125**	7,8	4,4	10A-B			
11	**100**	9	4	11			
12	**75**	10	4	12			
13	**75**				X		
14	**45**	11	4	14			
15	**45**				X		
16	**25**	12,13	4,4	16A-B			
17	**25**				X		
18	**5**	14	4	18			
19	**5**				X		
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT- **309**
PC/PN Data Sheet

Station # 2 Date: 1/15/2019 (HST)
Cast # 4 Time: 1514 (HST)
Operator(s): UB, KB, RT Pre-screen mesh size: 202 um
Blank #'s **B1** **B2** **B3**

490 dbar

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DNA		
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	**150**	6	10	9			
10	**125**	7,8	4,4	10A-B			
11	**100**	9	4	11			
12	**75**	10	4	12			
13	**75**				X		
14	**45**	11	4	14			
15	**45**				X		
16	**25**	12,13	4,4	16A-B			
17	**25**				X		
18	**5**	14	4	18			
19	**5**				X		
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series

HOT- **309**

Particulate Phosphorus Data Sheet

Station #	2		Date:	1/15/19	(HST)
Cast #	5		Time:	17:24	(HST)
Operator(s):	RT, KB, KKB	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	
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	**45**	11	4	12				
13	**25**	12,13	4,4	13A-B				
14	**25**				14 A,B			
15	**15**							
16	**5**	14	4	16				
17	**5**							
18	**5**				18 A,B			
19								
20								
21								
22								
23								
24								

Notes: Bottle 17 didn't trip. 309-2-5-9A (7) dropped on counter
-14 (14) filtered fast (filter askew?)

Hawaii Ocean Time-series
HOT- **309**
Particulate Phosphorus Data Sheet

Station # 2 Date: 1/15/19 (HST)
Cast # 5 Time: (HST)
Operator(s): RT, KB, KKB 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	
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	**45**	11	4	12				
13	**25**	12,13	4,4	13A-B				
14	**25**				14 A,B			
15	**15**							
16	**5**	14	4	16				
~~17~~	~~**5**~~					DID NOT TRIP		
18	**5**				18 A,B			
19								
20								
21								
22								
23								
24								

Notes: # 309-2-5 9A - dropped on counter (7)
-14(14) filtered fast filter askew?

Hawaii Ocean Time-series

HOT-**309**

BEACH Shallow Data Sheet (1/2)

Station # 2 Date: 1/15/19 (HST)

Cast # 6 Time: 20:50 (HST)

Operator(s): RT, KB, KKB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	6.9						
2	**O_2 min**	80	7.4						
3	**200**	82	18.8	3				1	3
4	**175**	83	19.5						4
5	**165**	84	19.9						
6	**150**	85	20.9	6				2	6
7	**130**								
8	**125**	86	21.8						8
9	**115**	87	22.6						
10	**110**								
11	**100**	88,89,90	23.6	11				3	11
12	**90**								
13	**85**	91	23.8						
14	**75**	92	23.9	14				4	14
15	**60**								15
16	**45**	93	23.9	16				5	16
17									
18	**35**								18
19	**25**	94	24.0	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	24.0	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling 22:53, 22:54
Bottle #17 not tripped

Hawaii Ocean Time-series
HOT-**309**
BEACH Shallow Data Sheet (1/2)

Station # 2
Cast # 6
Operator(s):

Date: 1/15/19 (HST)
Time: 20:50 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	6.9						
2	**O_2 min**	80	7.4						
3	**200**	82	15.5	3				1	3
4	**175**	83	19.5						4
5	**165**	84	19.9						
6	**150**	85	20.9	6				2	6
7	**130**								
8	**125**	86	21.5						8
9	**115**	87	22.6						
10	**110**								
11	**100**	88,89,90	23.6	11				3	11
12	**90**								
13	**85**	91	23.8						
14	**75**	92	23.9	14				4	14
15	**60**								15
16	**45**	93	23.9	16				5	16
17									
18	**35**								18
19	**25**	94	24.0	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	24.0	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling 22:53, 22:54
Bottle #17 not tripped

Hawaii Ocean Time-series

HOT-**309**

BEACH Shallow Data Sheet (2/2)

Station #	2	Date:	1/15/19 (HST)
Cast #	6	Time:	20:50 (HST)
Operator(s):	RT, KB, KKB		

Rosette Position	Desired Depth	Nutrient	LLN	LLP			
1	**1000**						
2	**O_2 min**						
3	**200**	3					
4	**175**	4	4	4			
5	**165**		5				
6	**150**	6	6A-B	6			
7	**130**		7				
8	**125**	8A-B	8	8			
9	**115**		19	9			
10	**110**		10				
11	**100**	11	11A-B	11			
12	**90**		12				
13	**85**		13	13			
14	**75**	14	14	14			
15	**60**	15	15	15			
16	**45**	16A-B	16	16			
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: Bottle #17 not tripped.

Hawaii Ocean Time-series
HOT-**309**
BEACH Shallow Data Sheet (2/2)

Station # 2
Cast # 6
Operator(s): RT, KB, KKB

Date: 1/15/19 (HST)
Time: 20:50 (HST)

Rosette Position	Desired Depth	Nutrient	LLN	LLP			
1	**1000**						
2	**O_2 min**						
3	**200**	3					
4	**175**	4	4	4			
5	**165**		5				
6	**150**	6	6A-B	6			
7	**130**		7				
8	**125**	8A-B	8	8			
9	**115**		9	9			
10	**110**		10				
11	**100**	11	11A-B	11			
12	**90**		12				
13	**85**		13	13			
14	**75**	14	14	14			
15	**60**	15	15	15			
16	**45**	16A-B	16	16			
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: Bottle #17 not tripped.

Hawaii Ocean Time-series

HOT-**309**

PUR Data Sheet

Station # 2 Date: 1/16/19 (HST)

Cast # 7 Time: 00:05 (HST)

Operator(s): RT, KB, KKB

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

Notes:

Hawaii Ocean Time-series
HOT-**309**
PUR Data Sheet

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

Date: 1/16/18 (HST)
Time: 00:05 (HST)

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

500

Notes: #12 filter ripped but filtered normally.

Hawaii Ocean Time-series

HOT- **309**

Gas Array Experiment Data Sheet

Station #	2	Date:	1/16/19	(HST)
Cast #	8	Time:	2:29	(HST)
Operator(s):	DS, TB, CF			

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

Notes:

Hawaii Ocean Time-series
HOT- **309**
Gas Array Experiment Data Sheet

Station # 2
Cast # 8
Operator(s): DS, TB, CF

Date: 1/16/19 (HST)
Time: 2129 (HST)

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

Notes:

Hawaii Ocean Time-series
HOT- **309**
OPEN Data Sheet

Station # 2 Date: 1/16/2019 (HST)
Cast # 9 Time: 5:23 (HST)
Operator(s): DS, TB, CF, MB, AS

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

Notes:

Hawaii Ocean Time-series
HOT- **309**
OPEN Data Sheet

Station # 2
Cast # 9
Operator(s): DS, TB, CF, MB, AS

Date: 1/16/2019 (HST)
Time: 5:23 (HST)

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

Notes:

Hawaii Ocean Time-series

HOT- **309**

Particulate Silica Data Sheet

Station #	2	Date:	1/16/2019 (HST)
Cast #	10	Time:	8:04 (HST)
Operator(s):	DS, TB,MB, AS, CF	Pre-screen mesh size:	none
Blank #	**B1, B2, B3**		

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

Notes: Samples 5B and 8 were in leaky filter holders.

Hawaii Ocean Time-series
HOT- **309**
Particulate Silica Data Sheet

Station # 2 Date: 1/16/2019 (HST)
Cast # 10 Time: 8:04 (HST)
Operator(s): DS, TB,MB, AS, CF Pre-screen mesh size: none
Blank # **B1, B2, B3**

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

Notes: Leaks filter holder carboy #10, 13

Hawaii Ocean Time-series

HOT- **309**

OPEN Data Sheet

Station #	2	Date:	1/16/19 (HST)
Cast #	11	Time:	10:55 (HST)
Operator(s):	DS, MB, TB, AS, CF		

Rosette Position	Desired Depth	Salts	SF-S Gas	PC/PN Carboy #	Total Volume	Sample #	Filtration
1	**1000**	X					
2	**500**						
3	**Sal Min**	X					
4	**175**			1	10	4	Pressure
5	**175**			2	10	5	Pressure
6	**175**			3	10	6	Pressure
7	**175**			4	10	7	Pump
8	**175**			5	10	8	Pump
9	**175**			6	10	9	Pump
10	**DCM**			7	4	10	Pressure
11	**DCM**			8	4	11	Pressure
12	**DCM**			9	4	12	Pressure
13	**DCM**			10	4	13	Pump
14	**DCM**			11	4	14	Pump
15	**DCM**			12	4	15	Pump
16	**25**			13	4	16	Pressure
17							
18	**25**			14	4	18	Pressure
19	**25**			15	4	19	Pressure
20	**25**			16	4	20	Pump
21	**25**			17	4	21	Pump
22	**25**			18	4	22	Pump
23	**25**		15AB				
24	**5**	X	16AB				

Notes: Only collected 8 L for sample #4 (carboy 1). On average 4L pressure took 20 minute, 10 L pressure took 30 minutes, 4 L pump took 25 minutes, 10 L pump took 68 minutes

Hawaii Ocean Time-series
HOT- **309**
OPEN Data Sheet

Station # 2
Cast # 11
Operator(s): DS, MB, TB, AS, CF

Date: 1/16/19 (HST)
Time: 10:55 (HST)

Rosette Position	Desired Depth	Salts	SF-S Gas	PC/PN Carboy #	Total Volume	Sample #	Filtration
1	**1000**	X					
2	**500**						
3	**Sal Min**	X					
4	**175**			1	10	4	Pressure
5	**175**			2	10	5	Pressure
6	**175**			3	10	6	Pressure
7	**175**			4	10	7	Pump
8	**175**			5	10	8	Pump
9	**175**			6	10	9	Pump
10	**DCM**			7	4	10	Pressure
11	**DCM**			8	4	11	Pressure
12	**DCM**			9	4	12	Pressure
13	**DCM**			10	4	13	Pump
14	**DCM**			11	4	14	Pump
15	**DCM**			12	4	15	Pump
16	**25**			13	4	16	Pressure
17							
18	**25**			14	4	18	Pressure
19	**25**			15	4	19	Pressure
20	**25**			16	4	20	Pump
21	**25**			17	4	21	Pump
22	**25**			18	4	22	Pump
23	**25**		15AB				
24	**5**	X	16AB				

Notes: 4L Pressure start @ 12:22 - 12:46
10L start @ 12:25 13:04
② 12:31 13:01

Cycle collected @ 4m sample #5 4L Pump 25 min.

Hawaii Ocean Time-series

HOT- **309**

ATP Data Sheet

Station #	2	Date:	1/16/2019 (HST)
Cast #	12	Time:	14:01 (HST)
Operator(s):	TB, CF, DS	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**				16A,B		
16	**5**	25 - 27	3x1	13			
17							
18	**5**				18AB		
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT- **309**
ATP Data Sheet

Station # 2 Date: 1/16/2019 (HST)
Cast # 12 Time: 14:01 (HST)
Operator(s): TB, CF, DS 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**				16A,B		
16	**5**	25 - 27	3x1	13			
17							
18	**5**				18AB		
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT-**309**
OPEN CAST Data Sheet

Station #	2	Date:	1/16/19 (HST)
Cast #	13	Time:	17:03 (HST)
Operator(s):	RT, 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	24.0		
17							
18	**5**	18 A,B					X
19	**5**		19A,B				
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT-**309**
OPEN CAST Data Sheet

Station # 2
Cast # 13
Operator(s): RT, KB, KKB

Date: 1/16/19 (HST)
Time: 17:03 (HST)

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp		SALTS
1	**1000**						
2	**800**	2					X
3	**600**	3					
4	**Sal Min**						
5	**400**	5					X
6	**300**	6					
7	**200**	7					
8	**175**	8					
9	**150**	9					
10	**125**	10					
11	**100**	11					
12	**75**	12					
13	**45**	13					X
14	**25**	14 A, B					
15	**25**		15A,B				
16	**15**			130,131,132	24.0		
17							
18	**5**	18 A,B	~~18A,B~~				
19	**5**		19 A,B				X
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series

HOT-**309**

HPLC & Chl *a*. Bottle Data Sheet

Station #	2	Date:	1/16/19 (HST)
Cast #	14	Time:	20:01 (HST)
Operator(s):	RT, KB, KKB		

Rosette Position	Desired Depth	Carboy #	Total Volume	HPLC	Chl *a*.			
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	**115**	10	4	7	7			
8	**100**	11	4	8	8			
9	**85**	12	4	9	9			
10	**75**	13	4	10	10			
11	**60**	14	4	11	11A-B			
12	**45**	15,16	4,4	12A-B	12			
13	**25**	3	10	13	13			
14	**5**	4	9	14	14			
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes: Vent open on niskin #12
Carboy 4 (sample #14) filtered very slow so 1L was disgarded
Carboy 3 lost some volume while filtering and filter was split
12A tricho tuft on filter
12B tricho puffs an dtufts on two each

Hawaii Ocean Time-series
HOT-**309**
HPLC & Chl *a*. Bottle Data Sheet

Station # 2
Cast # 14
Operator(s): RT, KB, KKB

Date: 1/16/19 (HST)
Time: 20:01 (HST)

Rosette Position	Desired Depth	Carboy #	Total Volume	HPLC	Chl *a*.			
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	**115**	10	4	7	7			
8	**100**	11	4	8	8			
9	**85**	12	4	9	9			
10	**75**	13	4	10	10			
11	**60**	14	4	11	11A-B			
12	**45**	15,16	4,4	12A-B	12			
13	**25**	3	10	13	13			
14	**5**	4	~~10~~ 9	14	14			
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes: Vent open on niskin #12

#14 (carboy 4)
9L
filtered slow
-emptied remaining 1l

#3 lost some volume during filtering + filter was split.
HPLC carboy
12A tricho tuft on filter
12B " puffs + tufts of two each

Hawaii Ocean Time-series

HOT-**309** WOCE Deep 2 Data Sheet

Station # 2 Date: 1/16/19 (HST)

Cast # 15 Time: 23:00 (HST)

Operator(s): RT, KB, KKB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	PO		
1	**4800**	96	3.4				
2	**4600**				X		
3	**4400**				X		
4	**4000**	97	3.6				
5	**4000**			X			
6	**3600**				X		
7	**3400**				X		
8	**3000**	98	3.6				
9	**3000**			X			
10	**2600**				X		
11	**2400**				X		
12	**2000**	99	5.4	X			
13	**1600**				X		
14	**1400**				X		
15	**1000**				X		
16	**1000**			X			
17							
18	**O2 min**	100	6.4				
19	**Sal min**	101	8.6				
20	**Salmax**						
21	**O2 max**	102	23.8				
22	**25**						
23	**5**	103	24.0				
24							

Notes: * Oxygen for Niskin 12 was taken inbetween DNA sampling. Should have a separate Niskin for this.

Hawaii Ocean Time-series
HOT-**309** WOCE Deep 2 Data Sheet

Station # 2
Cast # 15
Operator(s): RT, KB, KKB

Date: 1/16/19 (HST)
Time: 2305 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	PO		
1	**4800**	96	3.4				
2	**4600**				X		
3	**4400**				X		
4	**4000**	97	3.6				
5	**4000**			X			
6	**3600**				X		
7	**3400**				X		
8	**3000**	98	3.6				
9	**3000**			X			
10	**2600**				X		
11	**2400**				X		
12	**2000**	99	5.4	X			
13	**1600**				X		
14	**1400**				X		
15	**1000**				X		
16	**1000**			X			
17							
18	**O2 min**	100	6.4				
19	**Sal min**	101	8.6				
20	**Salmax**						
21	**O2 max**	102	23.8				
22	**25**						
23	**5**	103	24.0				
24							

Hawaii Ocean Time-series

HOT- **309**

STATION 50 Data Sheet

Station # 50 Date: 1/17/2019 (HST)

Cast # 1 Time: 18:13 (HST)

Operator(s): RT, KB, KKB

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

Notes:

Hawaii Ocean Time-series
HOT- **309**
STATION 50 Data Sheet

Station # 50
Cast # 1
Operator(s): ~~DS, TB, CF~~ KKB, RT, KB

Date: 1/17/2019 (HST)
Time: ~~10~~ 18:13 (HST)

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

Notes:

Hawaii Ocean Time-series
HOT 309
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #
1/14/19	12:07	Kahe	1
1/14/19	16:31	Transit to ALOHA	2
1/14/19	19:54	Transit to ALOHA	3
1/15/19	06:18	Station ALOHA	4
1/15/19	14:16	Station ALOHA	5
1/15/19	21:06	Station ALOHA	6
1/16/19	01:53	Station ALOHA	7
1/16/19	08:31	Station ALOHA	8
1/16/19	13:06	Station ALOHA	9
1/16/19	16:53	Station ALOHA	10
1/16/19	23:09	Station ALOHA	11
1/17/19	07:01	Station ALOHA	12
1/17/19	13:00	WHOTS	13

Hawaii Ocean Time-series
HOT 309
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #
1/14/2019	12:07	Kahe	1
1/14/2019	16:31	transit to ALOHA	2
1/14/0019	19:54	- " -	3
1/15/2019	6:18	Stn Aloha	4
"	14:16	"	5
1/15/19	2106	"	6
1/16/19	0153	"	7
"	8:31	"	8
	13:06	"	9
"	16:53	"	10
"	2309	"	11
1/17/19	7:01	"	12
"	13:00	Watts	13

Hawaii Ocean Time-series
HOT 309
Argos Fix Log Sheet

Array	Platform #	Platform #
Sediment Trap	**84857**	**59100**
PP/Gas Array	**60484**	**50030 (78)**
Wirewalker		**51020(77)**

Date	Time	Platform	Position	Initials	Array Name
1/14	00:07		22°45.056 N 158°03.2346 W		WW0
	00:55		22°45.001 N 158°02.093 W		ST0
1/15	4:41		22°44.955 N 158°01.0712 W		PP0
	GMT 14:30		22°46.234 N 158°02.992 W		WW1
	15:40		22°45.928 N 158°01.967 W		ST1
	14:00		22°44.998 N 158°01.069 W		PP1
	16:00		22°45.002 N 158°01.146 W		PP2
	21:00		22°46.685 N 158°02.932 W		WW2
	21:02		22°46.128 N 158°02.039 W		ST2
	21:00		22°45.035 N 158°01.206 W		PP3
	0:30		22°47.433 N 158°02.772 W		WW3
	23:00		22°45.310 N 158°01.102 W		PP4
1/16	00:46		22°46.925 N 158°01.824 W		ST3
	1:10		22°47.020 N 158°01.778 W		ST4
	1:00		22°47.543 N 158°02.743 W		WW4
	7:50		22°47.865 N 158°01.304 W		ST5
	7:30		22°48.602 N 158°02.366 W		WW5
	HST 5:03		22°42.902 N 158°02.975 W		GA0
	GMT 20:00		22°50.378 N 158°01.780 W		WW6

Hawaii Ocean Time-series
HOT 309
Argos Fix Log Sheet

Array	Platform #	Platform #
Sediment Trap	**84857**	**59100**
PP/Gas Array	**60484**	**50030 (78)**
Wirewalker		**51020(77)**

Date	Time	Platform	Position	Initials	Array Name
1/16	20:06	100	22°48.813 N 158°01.067 W		ST6
	20:00	78	22°43.831 N 158°03.456 W		GA1
	23:00	78	22°45.036 N 158°3.200 W		GA2
1/17	2:24	100	22°50.855 N 158°0.430 W		ST7
	2:00	77	22°52.320 N 158°01.198 W		WW7
	2:00	78	22°46.145 N 158°2.251 W		PP1
	12:16	100	22°51.966 N 157°59.344 W		ST8
	12:00	77	22°53.390 N 158°0.049 W		WW8
	12:00	78	22°46.389 N 158°0.290 W		GA4
	14:00	77	22°54.114 N 157°59.993 W		WW9
	14:00	78	22°47.152 N 157°59.866 W		GA5
	14:16	100	22°52.768 N 157°59.158 W		ST9
	14:16	77	22°55.36 N 157°59.713 W		WW10

Hawaii Ocean Time-series
HOT 309
POSITION Argos Fix Log Sheet

ARGOS NOAA GOES PACIFIC GMT

Array	~~Platform #~~	~~Platform #~~
Sediment Trap	84857	IR 100
PP/Gas Array	60484	~~IR 200~~
Wirewalker		77

(59100) 50030(78) 51020(77) 100

Date	Time	Platform	Position	Initials	Array Name
1/14	00:07		22° 45.0561N 158° 03.2346W		WW0
1/14/19	00:55		22° 45.001 N 158° 02.093W		ST0
1/15/19	4:41		22° 44.955 N 158° 01.0712W		PP0
1/15	GMT 14:30		22° 46.234 158° 2.992		WW1
"	15:48		22° 45.928 158° 1.967		ST1
"	14:00		22° 44.998 158° 1.069		PP1
	16:00		22° 45.002 158° 1.146		PP2
"	21:00		22° 46.685 158° 2.932		WW2
	21:02		22° 46128 158° 2039		ST2
	21:00		22° 45.035 158 1.206		PP3
	0:30		22° 47.433 158° 2.772		WW3
	23:00		22° 45.310 158° 1.102		PP4
1/16	00:46		22° 46.925 158° 1.824		ST3
	1:10	100	22° 47.026 158° 1.778		ST4
	1:00	77	22° 47 593 158° 2.743		WW4
	7:50	100	22° 47.865 158° 1.304		ST5
	7:30	77	22 48.602 158° 2.366		WW5
	HST 5:03	78	22° 42.902 158° 2.975		GA0
	GMT 20:00	77	22° 50.378 158° 1.780		WW6
	20:06	100	22° 48.813 158° 1067		ST6
	20:00	78	22° 43.831 158° 3.456		GA1

Hawaii Ocean Time-series
HOT 309
Argos Fix Log Sheet

Array	Platform #	Platform #
Sediment Trap	84857	IR 100
PP/Gas Array	60484	~~IR 200~~
Wire walker		51020(~~77~~)

59100
50030(78)

Date	Time	Platform	Position	Initials	Array Name
1/16/19	23	78	22°45.036 158°3.200'		GA2
1/17/19 GMT	2:24	100	22°50.855 158°0.430		~~ST7~~
	2:00	77	22°52.320 158°1.198		~~WW7~~
	2:00	78	22.46.145 158 2.251		GA3
	12:16	100	22 51.966 157.59.344		ST8
	12:00	77	22 53.390 158 0.049		WW8
	12:00	78	22 46.389 158 0.290		GA4
	14:00	77	22° 54.114 157° 59.993		WW9
	14:00	78	22° 47.152 157 59.866		GA5
	14:16	100	22° 52.768 157 59.158		ST9
		77	22°55.316 157°59.713		WW10

Hawaii Ocean Time-series
HOT-309
In Situ Primary Production Data Sheet

Operators in: DS, CF, BW Out: RT, KB, BW, KKB

Date in: 1/15/2019 Time in: Start 4:20 (HST)
Release 4:41

Date out: 1/15/19 Time out: 19:25 (HST)

Incubation Depth	✓	Insertion Time	Owner
125	✓	4:26	
100	✓	:28	
75	✓	:30	
45	✓	:32	
25	✓	:34	
5	✓	:35	

Position in: 22° 44.9353 N, 158° 01.0712 W
Position out: 22° 46.5395 N, 158° 00.9576 W

Average weather condition during incubation: sunny, low winds, 3-6m swells
Average sea state during incubation: "

Notes:

Begin Inoculation 03:26 End Inoculation 03:30
Filtration time 20:20-20:40

Hawaii Ocean Time-series
HOT-309
In Situ Primary Production Data Sheet

Operators in: DS, CF, BW Out:
Date in: 1/15/2019 Time in: Start : 4:20 (HST)
Release 4:41

Date out: 1/15/19 Time out: 19:25 (HST)

Incubation Depth	✓		Insertion Depth	Owner
~~175~~	✓			
~~150~~	✓			
125	✓	3	4:26	
100	✓	4	28	
75	✓	5	30	
45	✓	6	32	
25	✓	7	34	
5	✓	8	35	

Position in: 22° 44.9353 N, 158° 01.0712 W 8.4
Position out: 22° N, 158° W
46.5395 00.9576

Average weather condition during incubation:
Average sea state during incubation:

Notes:

Begin Inoculation 3:26-3:30 End Inoculation ~~3:30~~
Filtration time 20:20-20:40

Hawaii Ocean Time-series
HOT-309 Sediment Trap Data Sheet

Type of traps:	PIT for HOT	Date:	1/14/19
Operator(s):	BW, RT, KB, KKB	Wind:	~6 knots
Position in:	22° 45.001 N, 158°02.093W	Sea State:	~3m

Time in:	150m McCarthy	00:54	Time released:	01:09
(HST)	150m HOT	00:55		
	175m EG	00:38		

Operator(s):	DS, TB, CF, BW	Date:	1/17/2019
Position out:	22° 53.968 N, 158°58.803W	Wind:	29 knots
Overall sea state:	Calm seas	Sea state:	3-5 meters

Time Out:			Notes:
(HST)	150m McCarthy	7:40	
	150m HOT	7:45	
	175m EG	7:50	

Hawaii Ocean Time-series
HOT-309 Sediment Trap Data Sheet

Type of traps: PIT for HOT

Date: 1/14/19

Operator(s): BW, KB, RT, KKB

Wind: 6 knots

Position in: 22° ~~00.000~~ N, 158°~~00.000~~W

Sea State: ~3m

22°45.001 158°02.093

HOT 00:55

Time in: 150 m

Time released:

~~Time started~~: 0109

(HST) McCarthy 150m 00:54

~~150m~~

EG 175m 0038

Operator(s): ~~DS, TC~~ DS, TB, CF, BW

Date: 1/17/2019 @ 7:35

Position out: ~~22° 00.000 N, 158°00.000W~~

Wind: 29 knots

Overall sea state: 22, 53.968 157° 58.803 Calm seas

Sea state:

Time Out:

Notes:

(HST) MC 150m 7:40

HOT 150m 7:45

175m 7:50

EG

Data Sheet for Sediment Trap Volumes

Cruise #: 309
Analyst: DS, KKB

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	37.1
B	150	37.2
C	150	37.4
D	150	37.1
E	150	37.6
F	150	37.3
G	150	33.4
H	150	38.0
I	150	38.2
J	150	35.8
K	150	38.0
L	150	37.0

Data Sheet for Sediment Trap Volumes

Cruise #: 309
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	37.1
B	150	37.2
C	150	37.4
D	150	37.1
E	150	37.6
F	150	37.3
G	150	33.4
H	150	38.0
I	150	38.2
J	150	35.8
K	150	38.0
L	150	37.0

Data Sheet for Sediment Trap Volumes

Cruise #: 309 - McCarthy
Analyst: DS, KKB

Directions: 1) Mark the traps with 2 lines
a) Line #1 is at the interface
b) Line #2 is 2" (5 cm) above the interface
2) Siphon off the top of the trap to Line #2 - 2" above the interface
3) Measure the distance from the bottom of the trap to Line #2 2" above the interface and record the result in this table.

Trap Name	Depth (m)	Height (cm) at Line #2 (Top Line)	
A	150	35.5	
B	150	39.4	
C	150	37.8	
D	150	38.0	
E	150	36.8	
F	150	37.0	
G	150	35.2	
H	150	40.0	
I	150	35.0	
J	150	38.0	
K	150	37.0	
L	150	40.2	

Data Sheet for Sediment Trap Volumes

Cruise #: 309 - McCarthy
Analyst: DS, KKB

Directions: 1) Mark the traps with 2 lines
a) Line #1 is at the interface
b) Line #2 is 2" (5 cm) above the interface
2) Siphon off the top of the trap to Line #2 - 2" above the interface
3) Measure the distance from the bottom of the trap to Line #2 2" above the interface and record the result in this table.

Trap Name	Depth (m)	Height (cm) at Line #2 (Top Line)	
A	150	35.5	
B	150	39.4	
C	150	37.8	
D	150	38.0	
E	150	36.8	
F	150	37cm	
G	150	35.2	
H	150	40	
I	150	35	
J	150	38	
K	150	37cm	
L	150	40.2	

Hawaii Ocean Time-series
HOT-309
In Situ Gas Array Data Sheet

Operators: DS, TB, CF, BW	**Operators: DS, TB, CF, BW**
Date Deployed : 1/16/2019	**Date Recovered: 1/17/2019**
Time (HST): 4:43-4:49	**Time (HST): 6:30**
Position: 22°42.902 N , 158° 02.975 W	**Position:** 22°47.926 N, 158° 59.183 W

Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
3-1	**1/16/2019**	**4:08**	**1/17/2019**	**6:42**		**1**
3-2		**4:08**		**6:42**		**2**
3-3		**4:10**		**6:42**		**3**
4-1		**4:10**		**6:42**		**4**
4-2		**4:11**		**6:42**		**5**
4-3		**4:12**		**6:42**		**6**
5-1		**4:13**		**6:42**		**7**
5-2		**4:14**		**6:42**		**8**
5-3		**4:15**		7:10		**1**
6-1		**4:14**		7:10		**2**
6-2		**4:13**		7:10		**3**
6-3		**4:12**		7:10		**4**
7-1		**4:11**		7:10		**5**
7-2		**4:11**		7:10		**6**
7-3		**4:10**		7:10		**7**
8-1		**4:10**		7:10		**8**
8-2		**4:09**		7:44		**1**
8-3		**4:08**		7:44		**2**

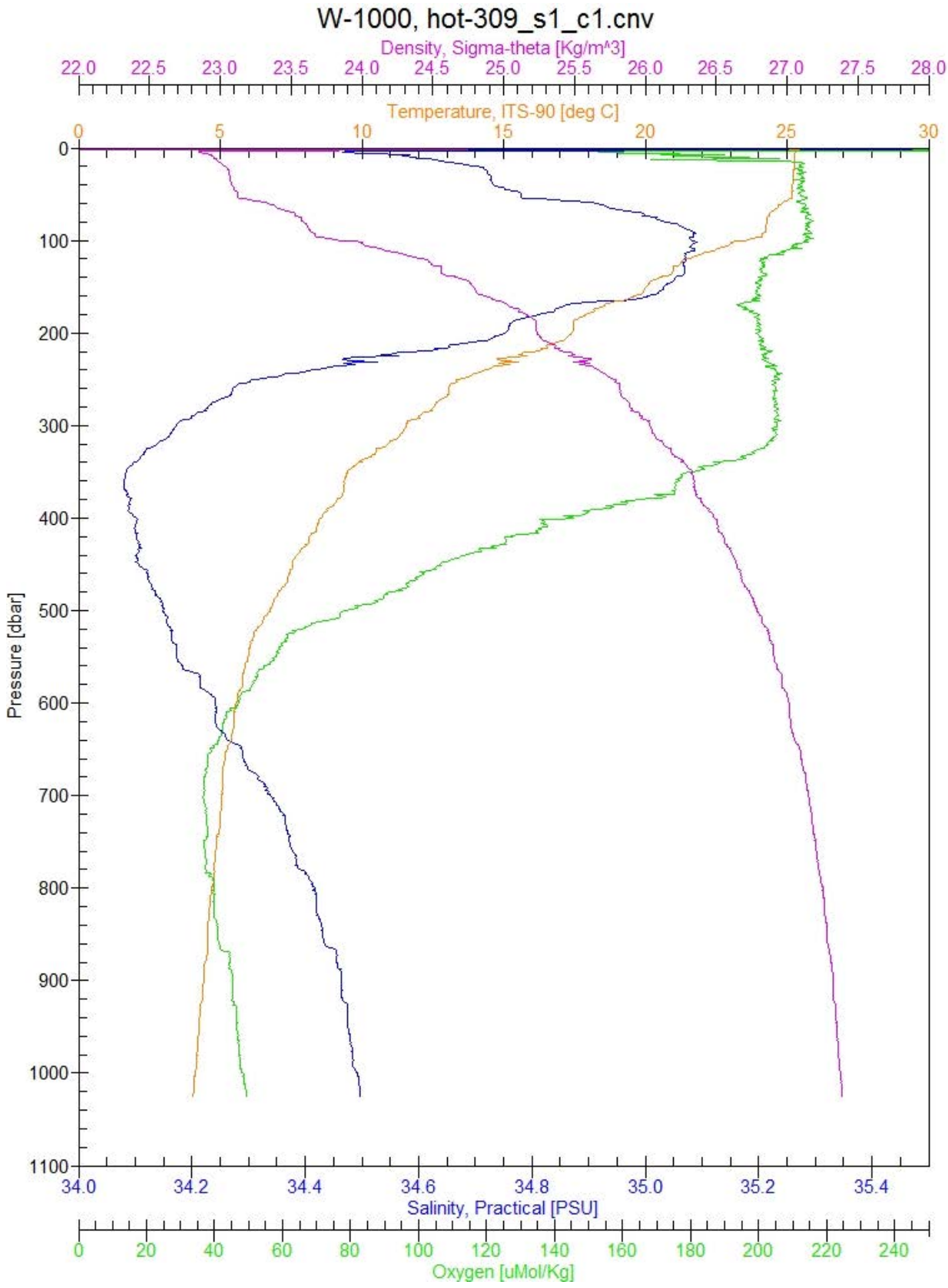
Hawaii Ocean Time-series
HOT-309
In Situ Gas Array Data Sheet

Operators: DS, TB, CF, BW	**Operators:** DS, TB, BW, CF
Date Deployed : 1/16/2019	**Date Recovered:** 1/17/2019
Time (HST): 4:43 – 4:49	**Time (HST):** ~~6:15~~ = 6:30
Position: 22°42.902, 158°02.975W	**Position:** 22°47.926N, 158°59.183W

Nitrogen Fixation Sample Processing Sheet

HTC

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
3-1	1/16/2019	4:08	1/17/2019			1
3-2		4:08				2
3-3		4:10				3
4-1		4:10		6:42		4
4-2		4:11				5
4-3		4:12				6
5-1		4:13				7
5-2		4:14				8
5-3		4:15		0710		1
6-1		4:14				2
6-2		4:13				3
6-3		4:12				4
7-1		4:11				5
7-2		4:11				6
7-3		4:10				7
8-1		4:10				8
8-2		4:09		7:44		21
8-3		4:08				2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Density, Sigma-theta [Kg/m^3]
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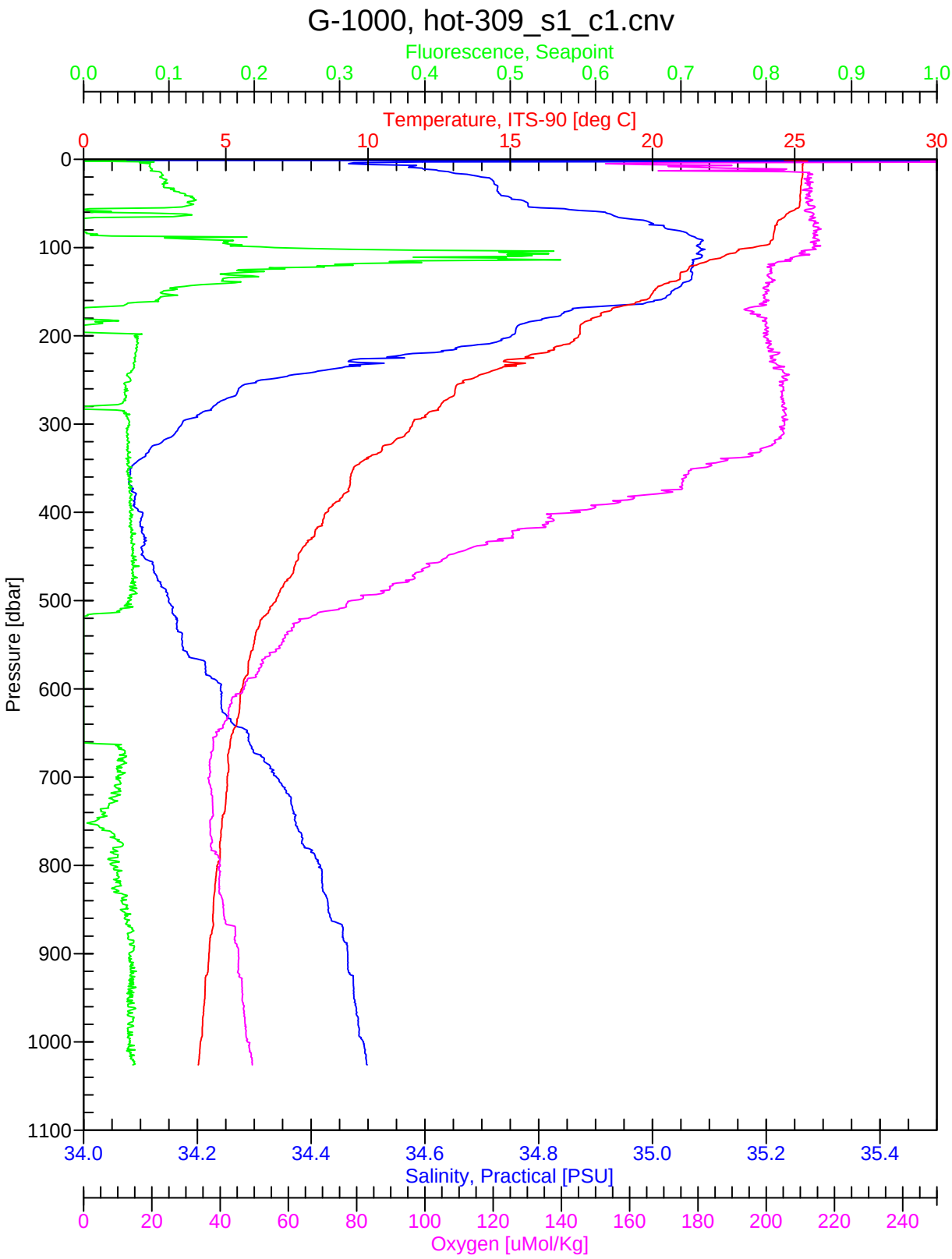
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]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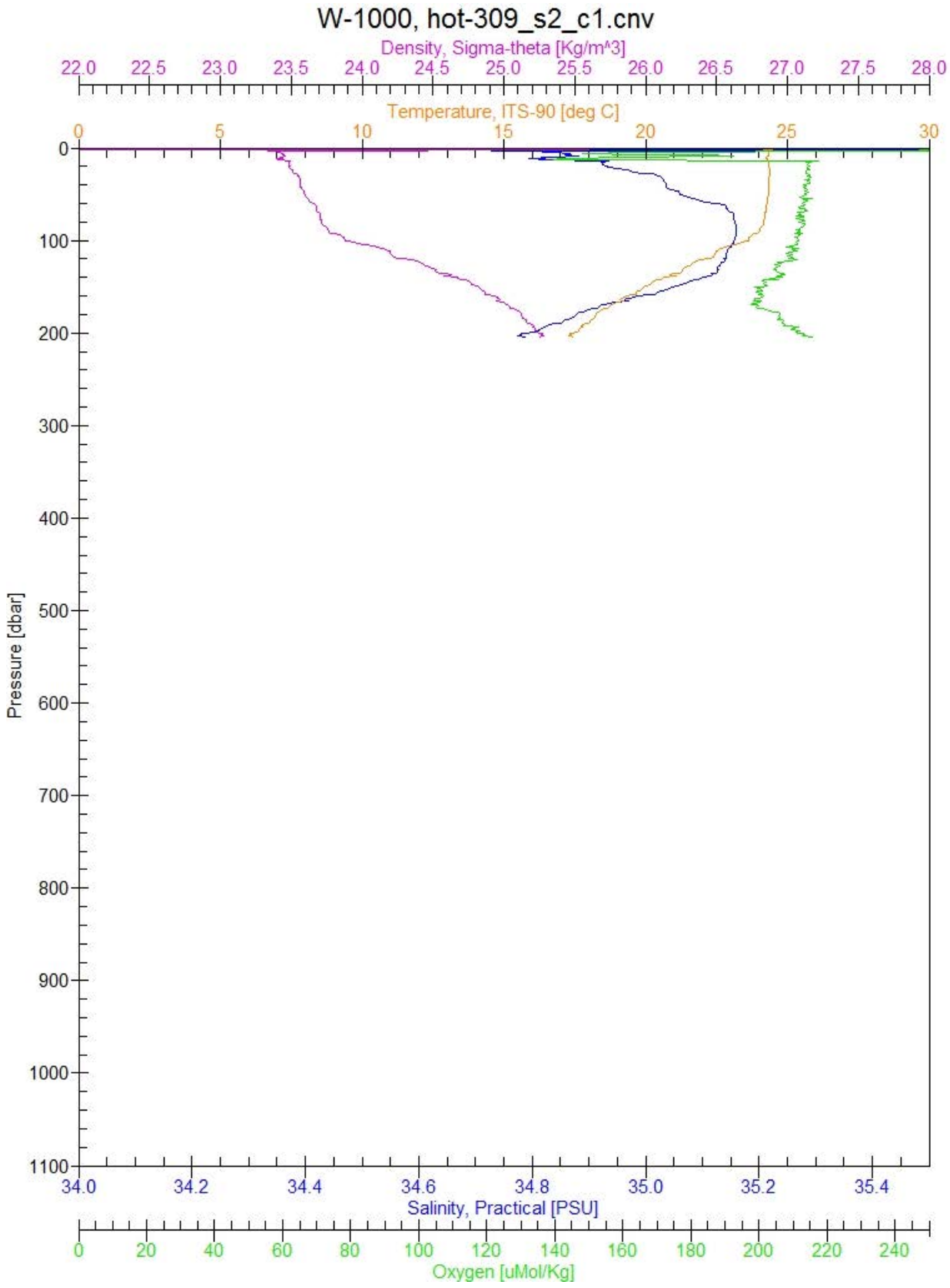
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]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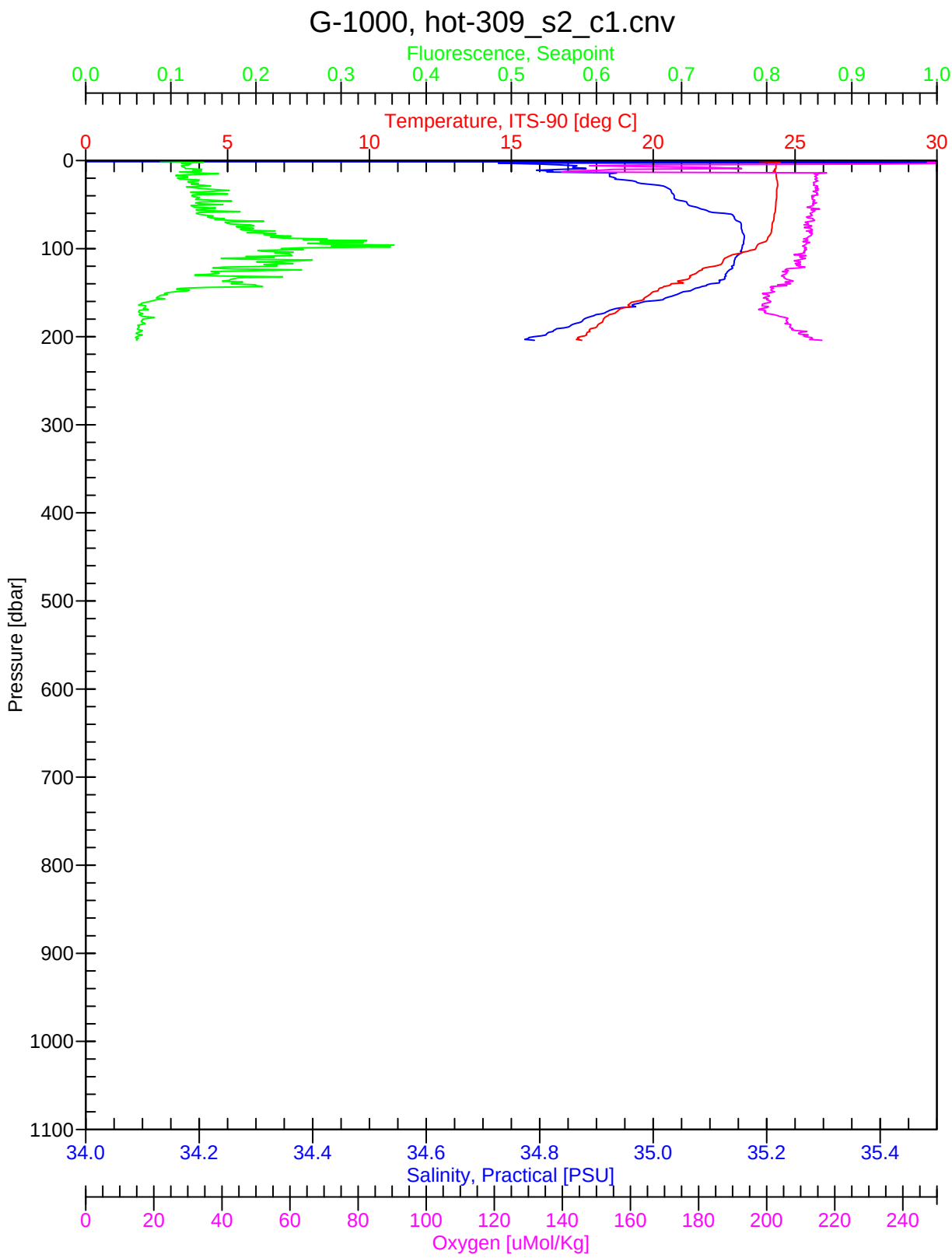
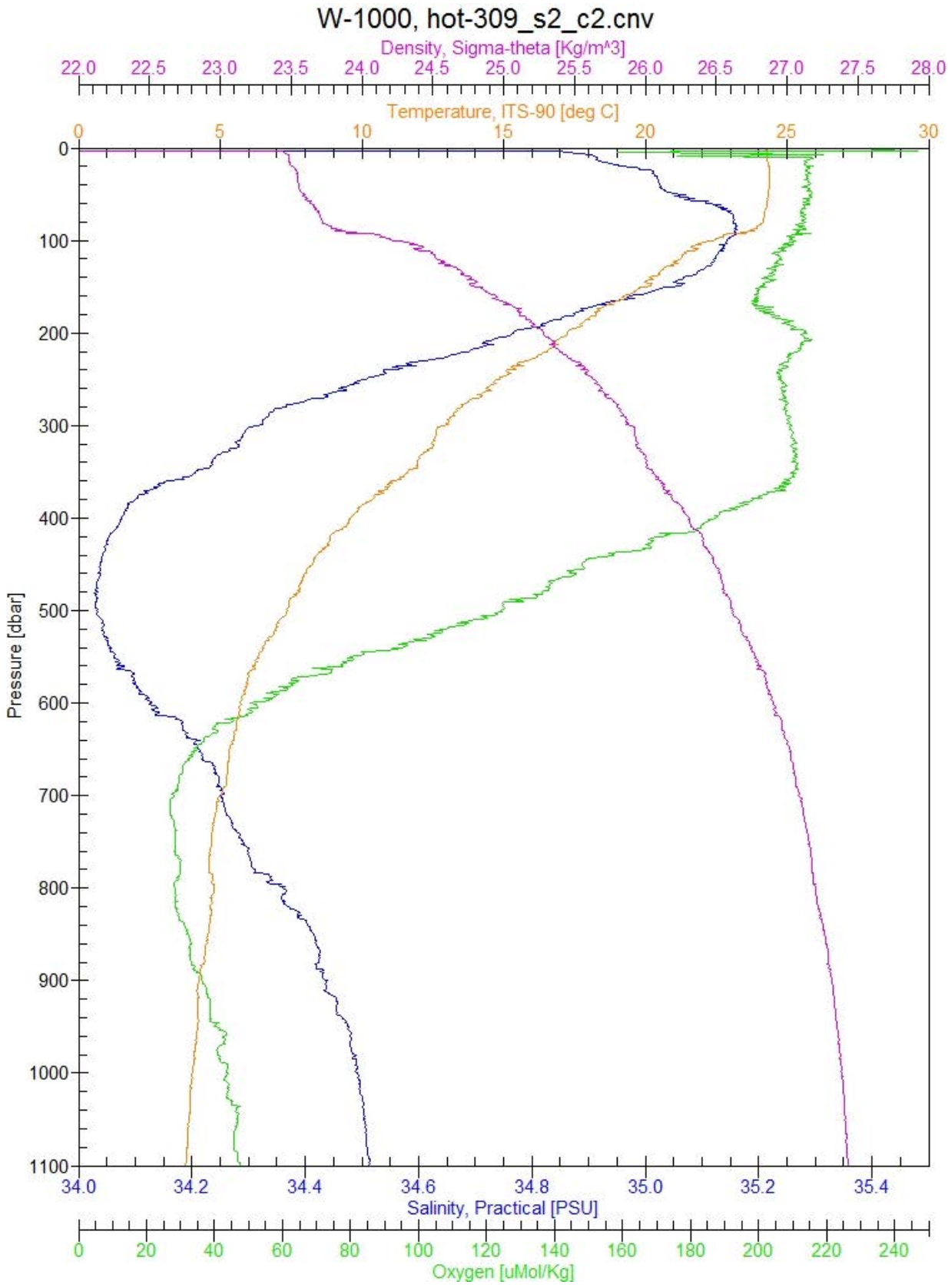
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]


G-1000, hot-309_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]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Density, Sigma-theta [Kg/m^3]
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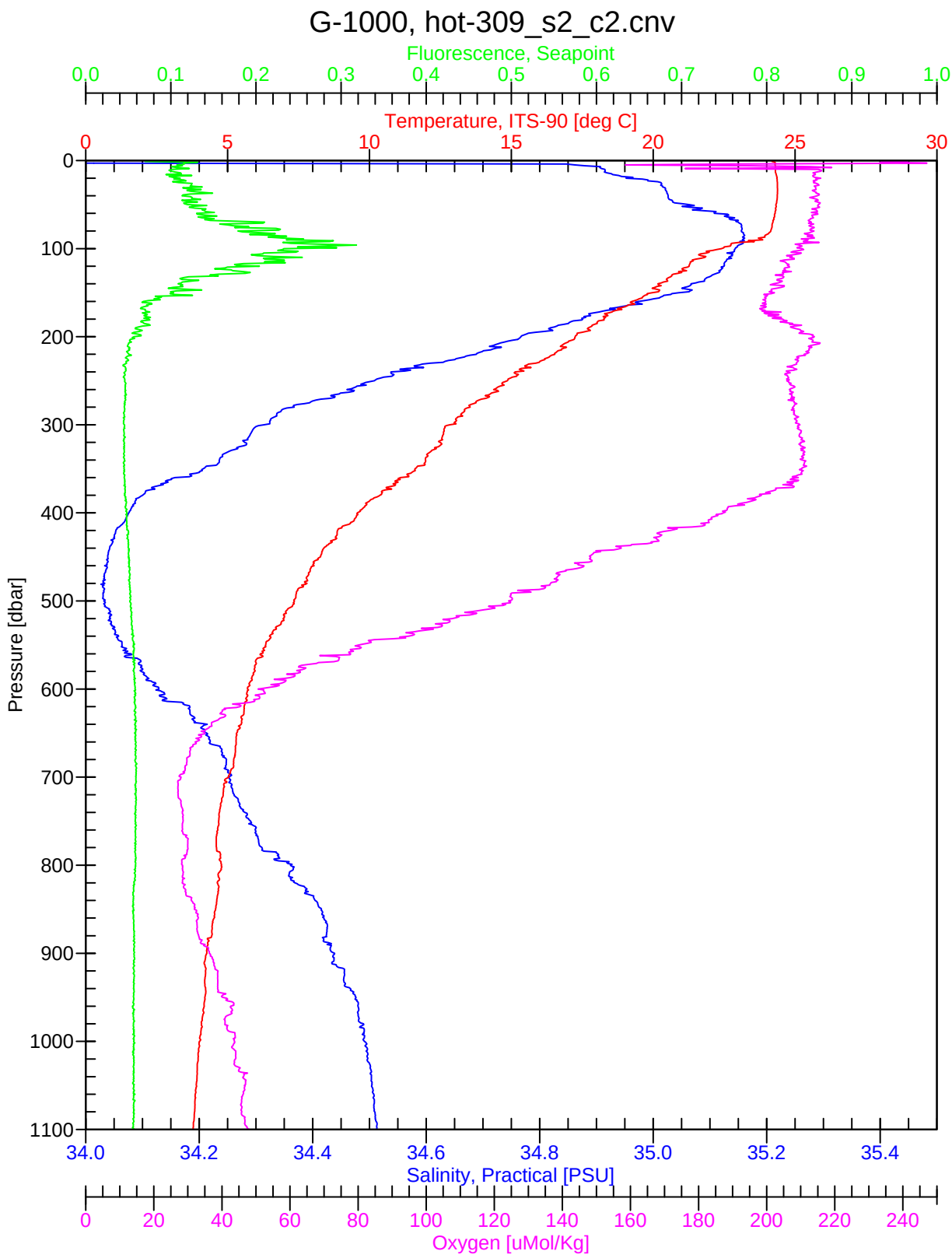
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]


G-1000, hot-309_s2_c2.cnv
Fluorescence, Seapoint
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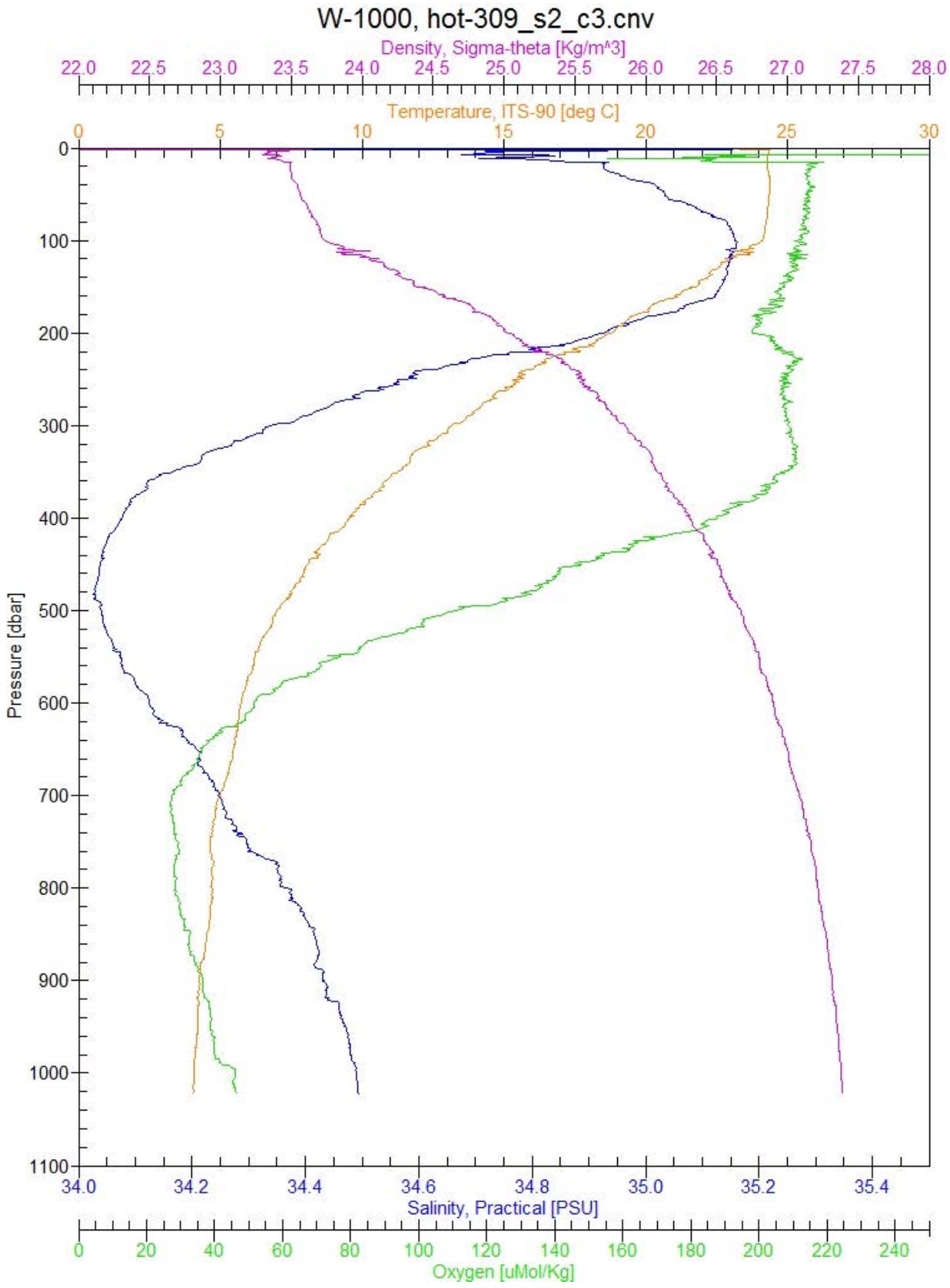
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]


W-1000, hot-309_s2_c3.cnv
Density, Sigma-theta [Kg/m^3]
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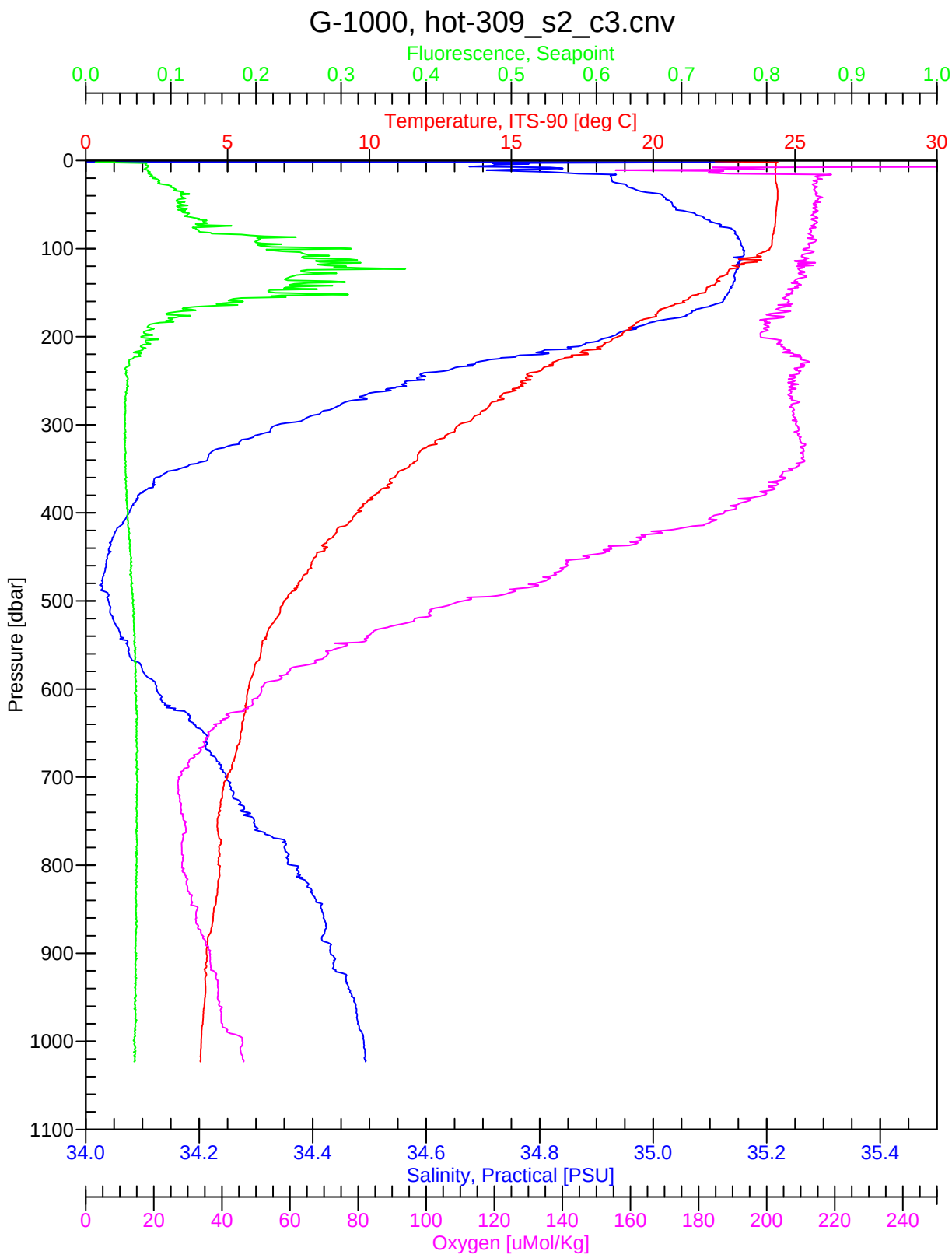
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240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Fluorescence, Seapoint
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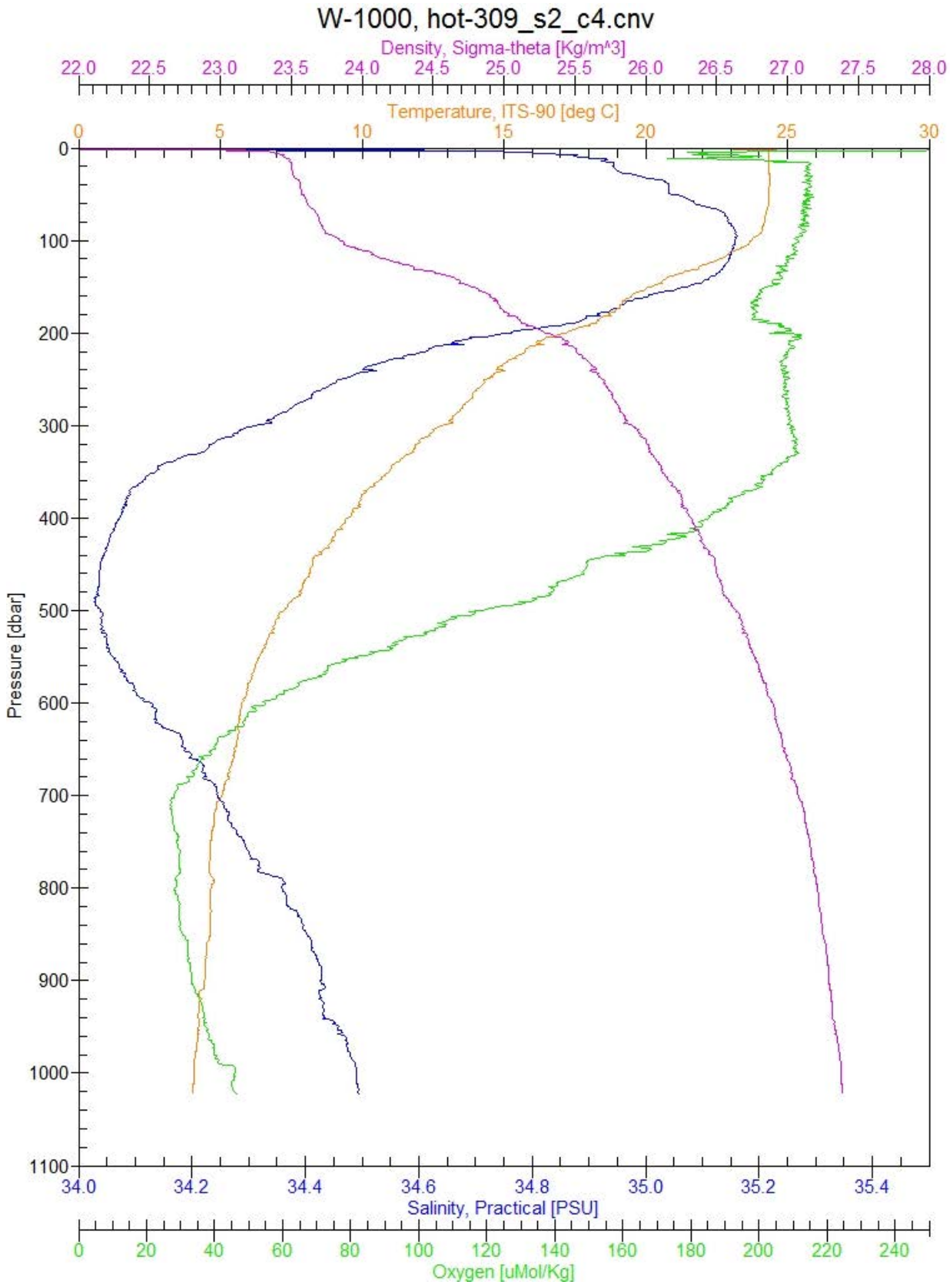
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]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Density, Sigma-theta [Kg/m^3]
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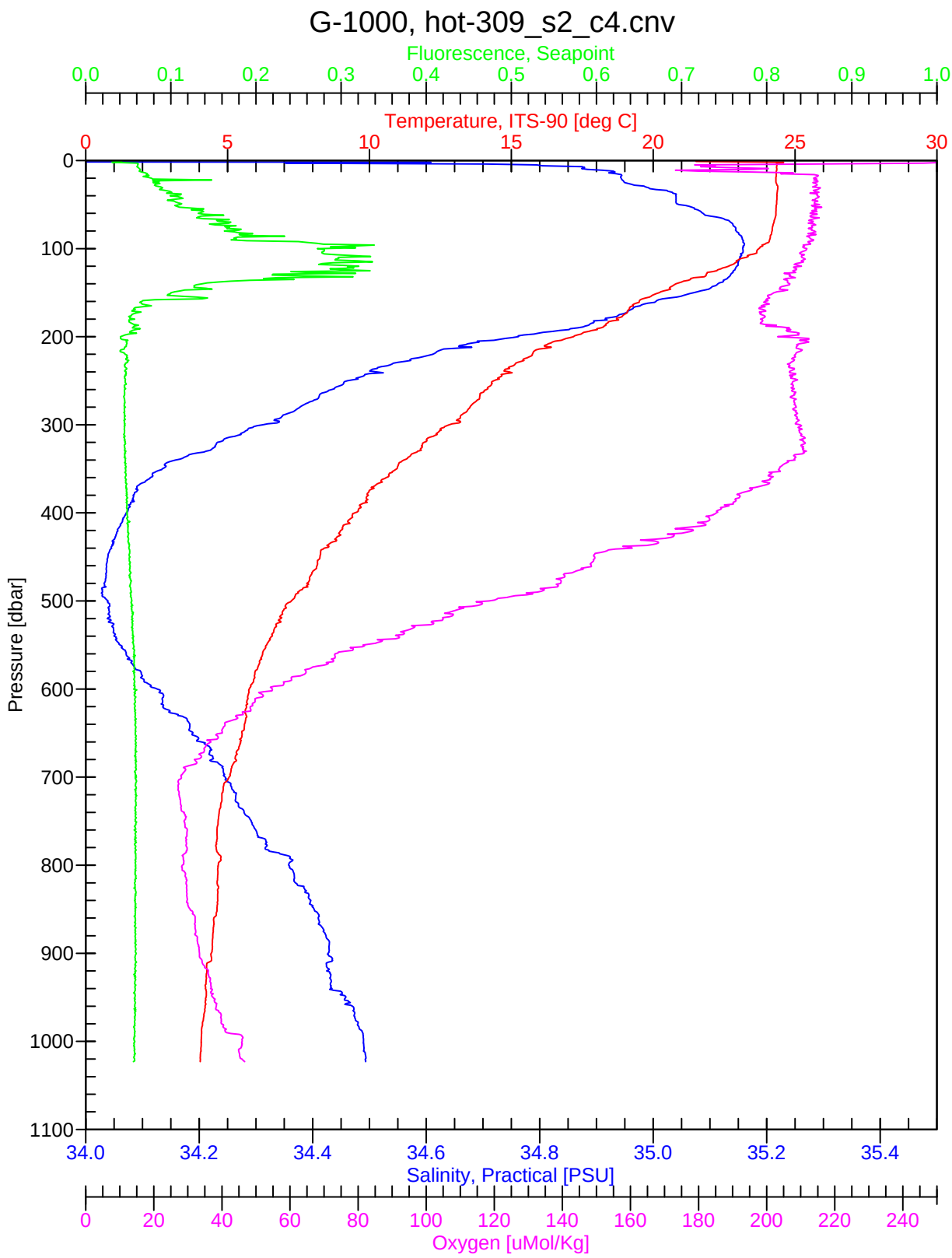
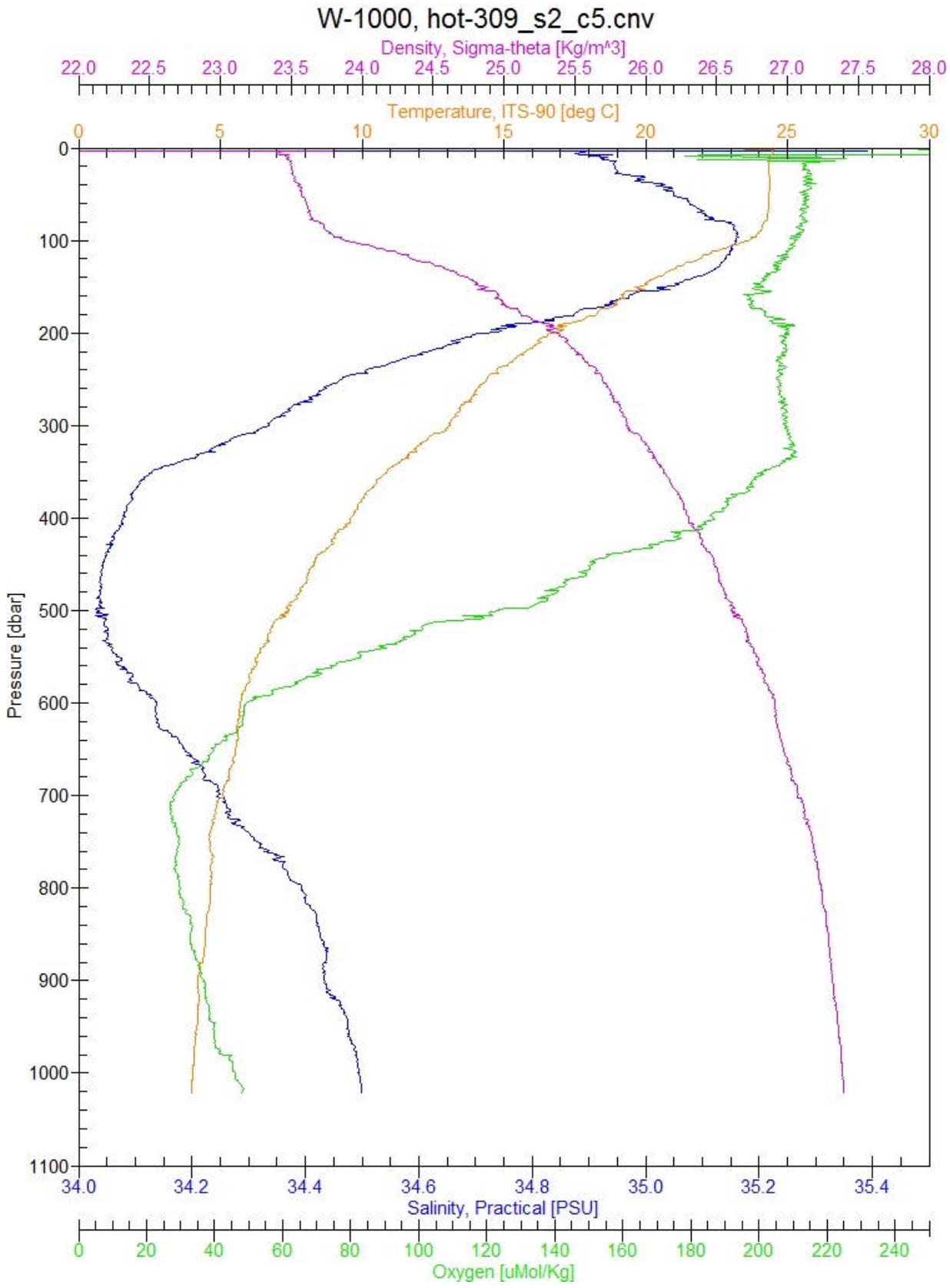
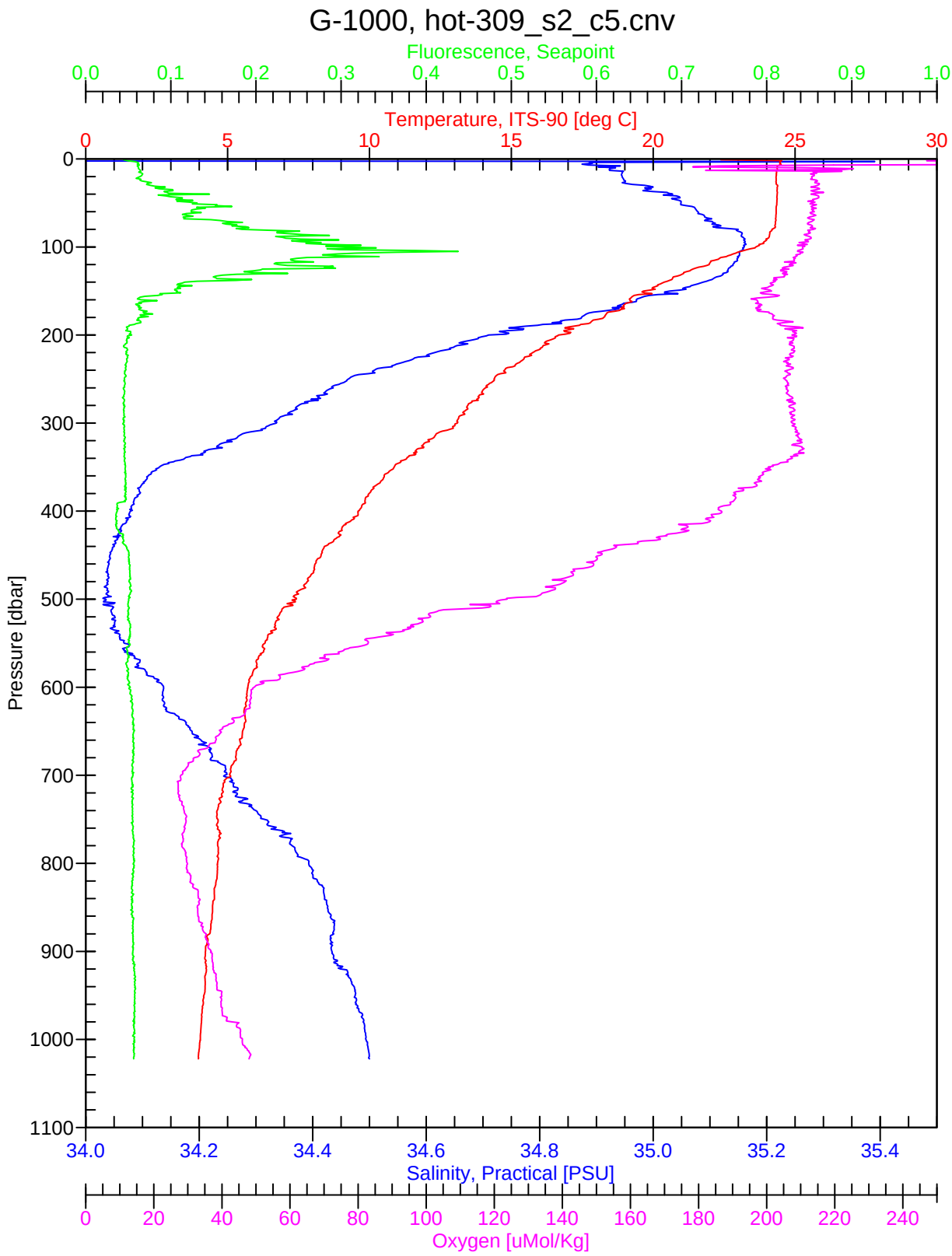
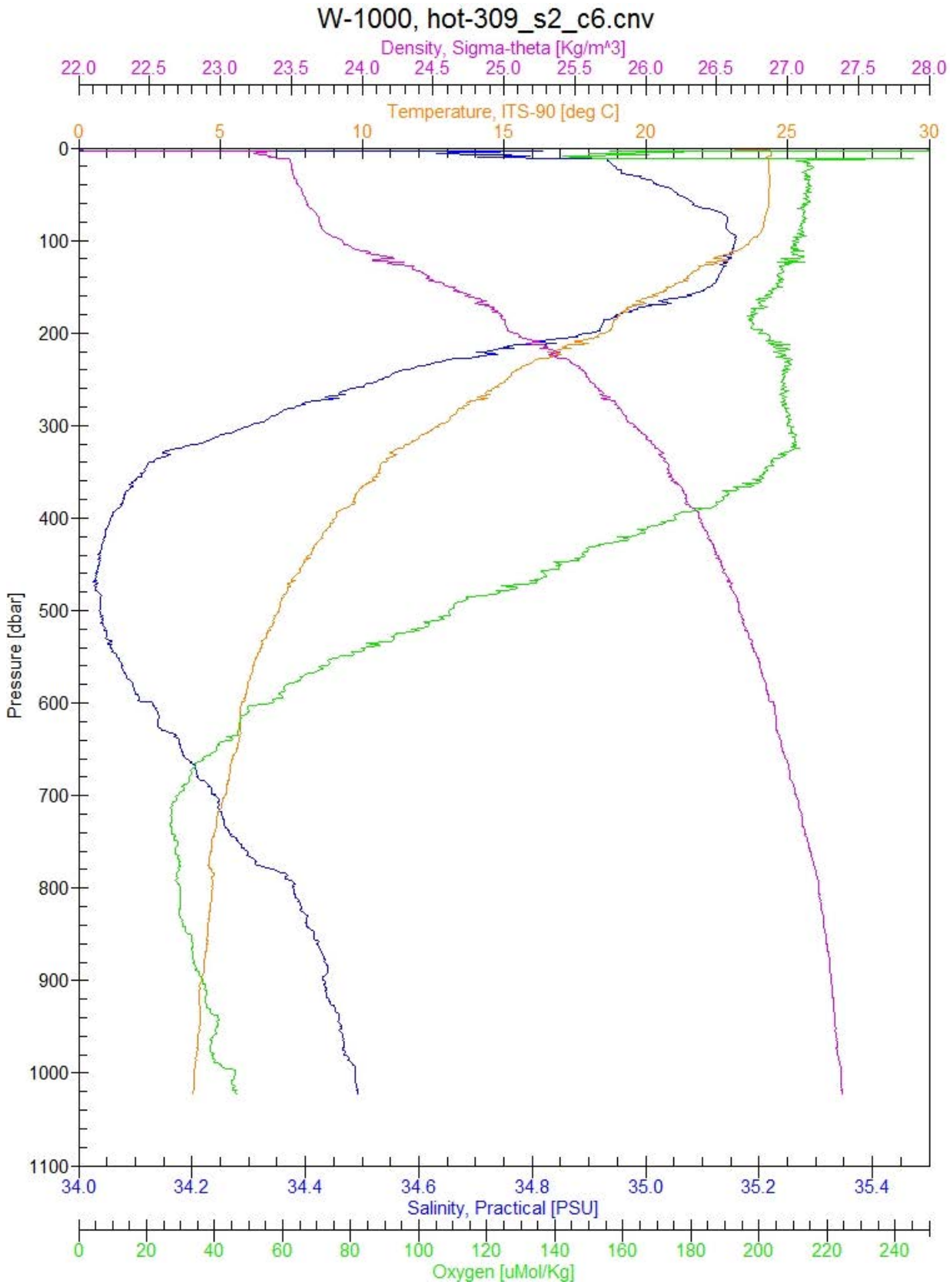
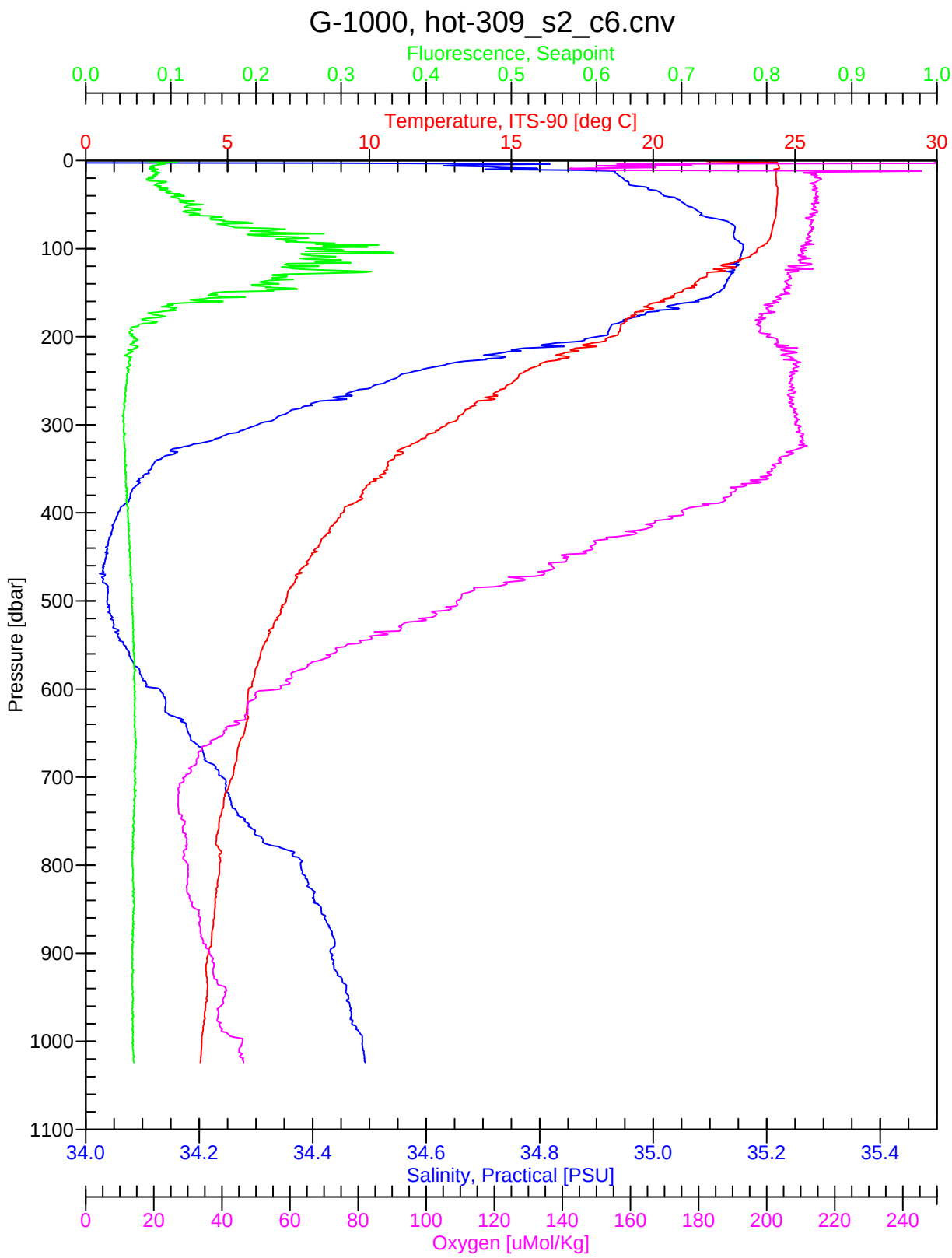
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

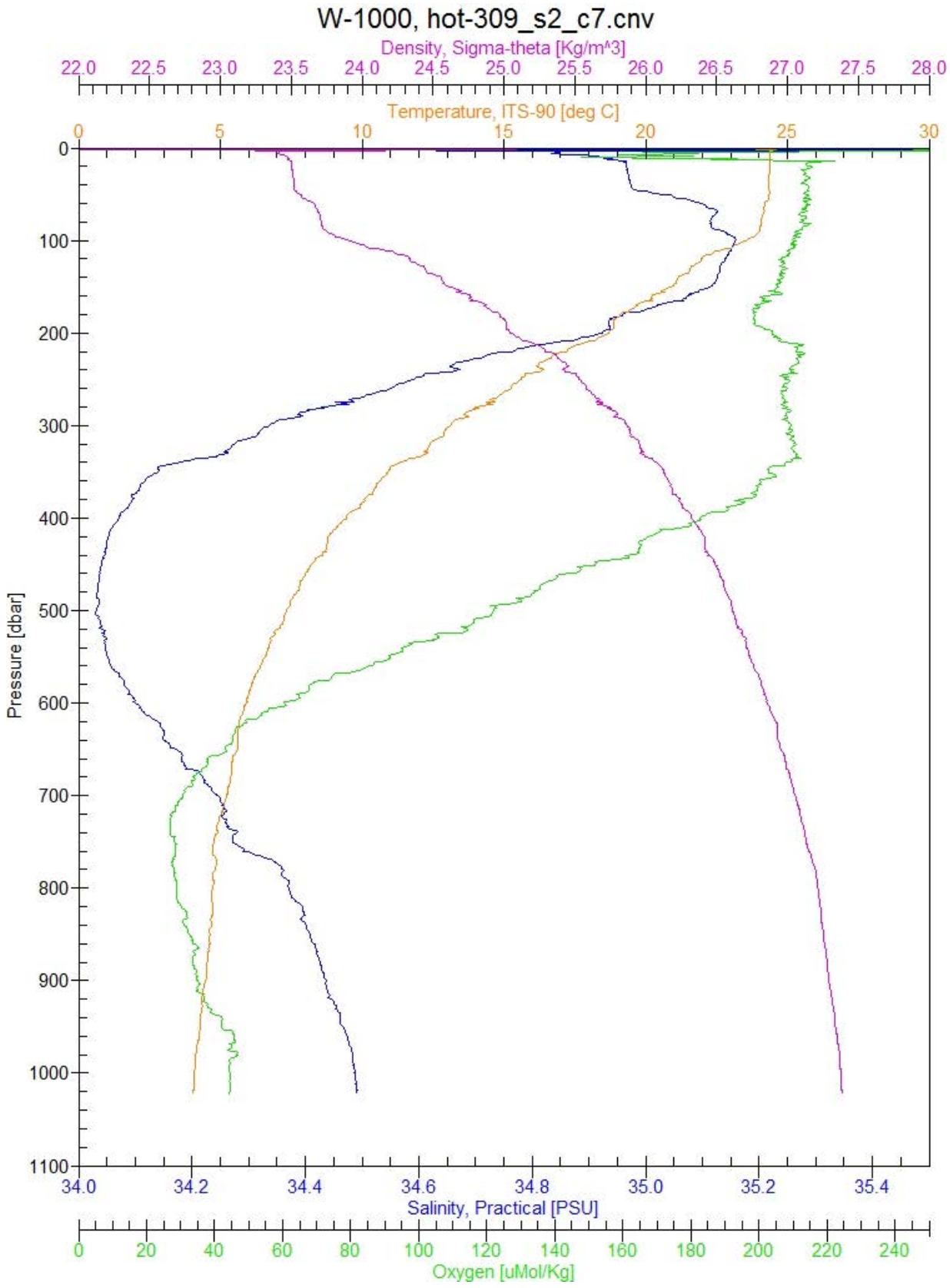

G-1000, hot-309_s2_c4.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

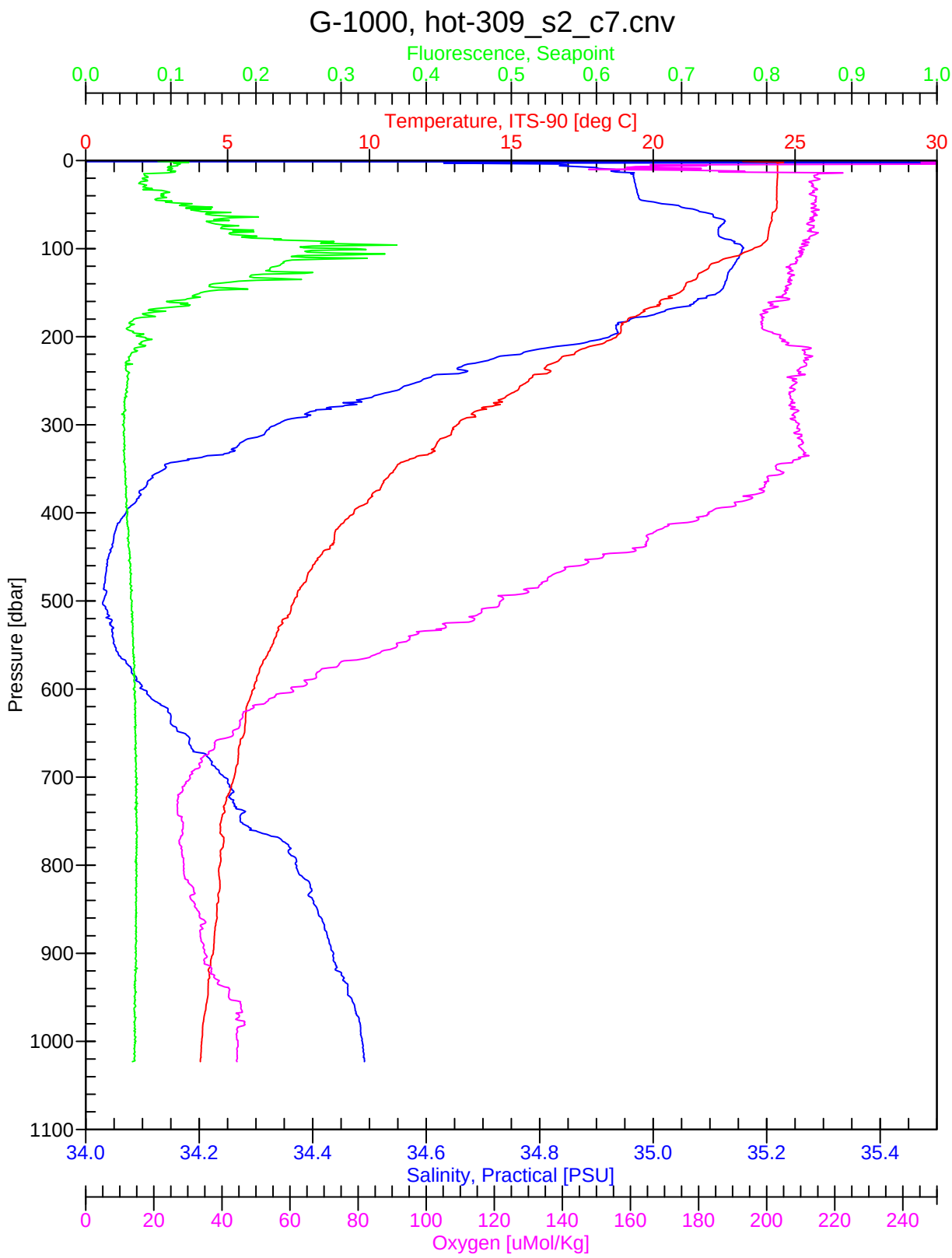

W-1000, hot-309_s2_c5.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

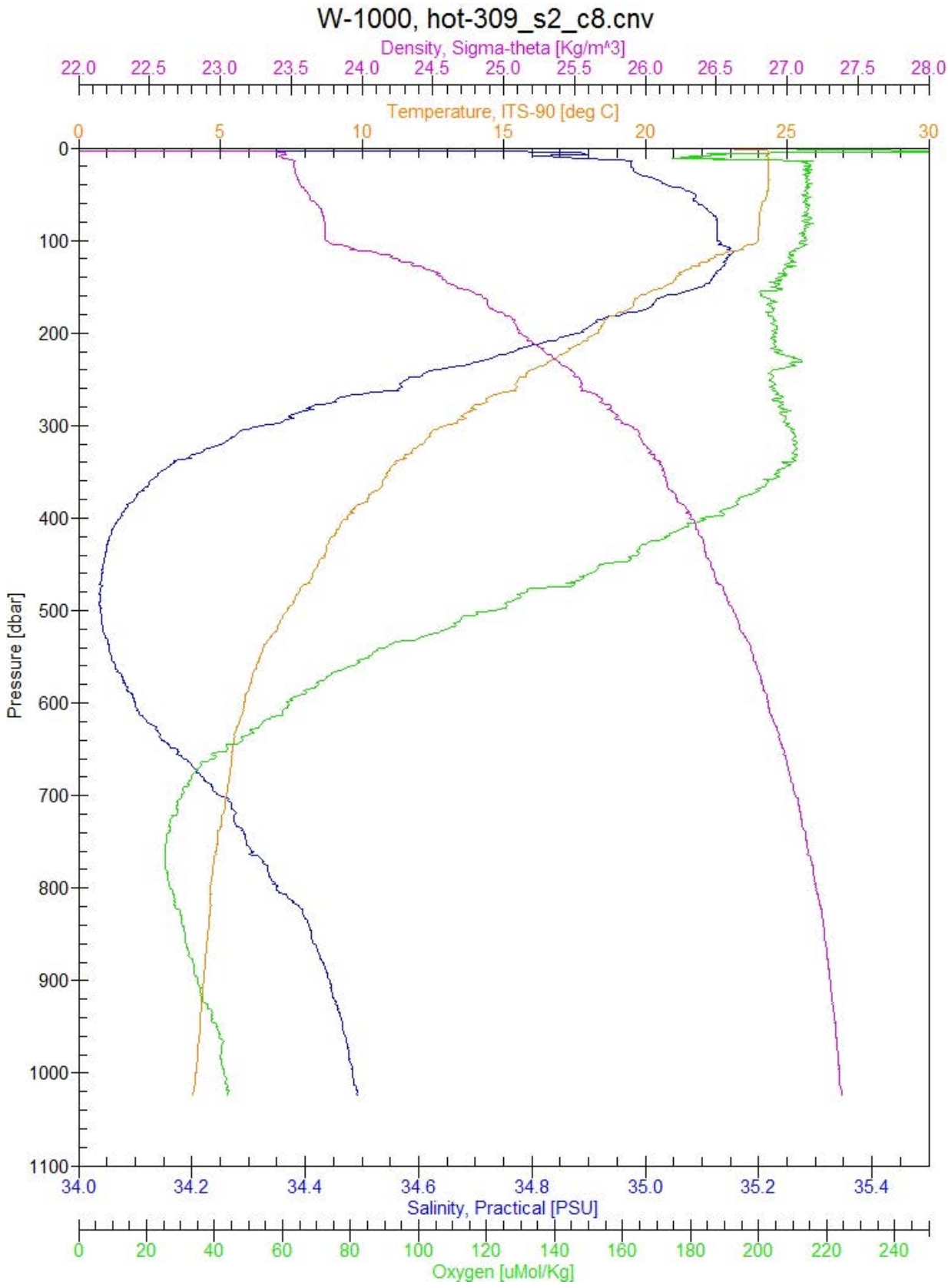

G-1000, hot-309_s2_c5.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

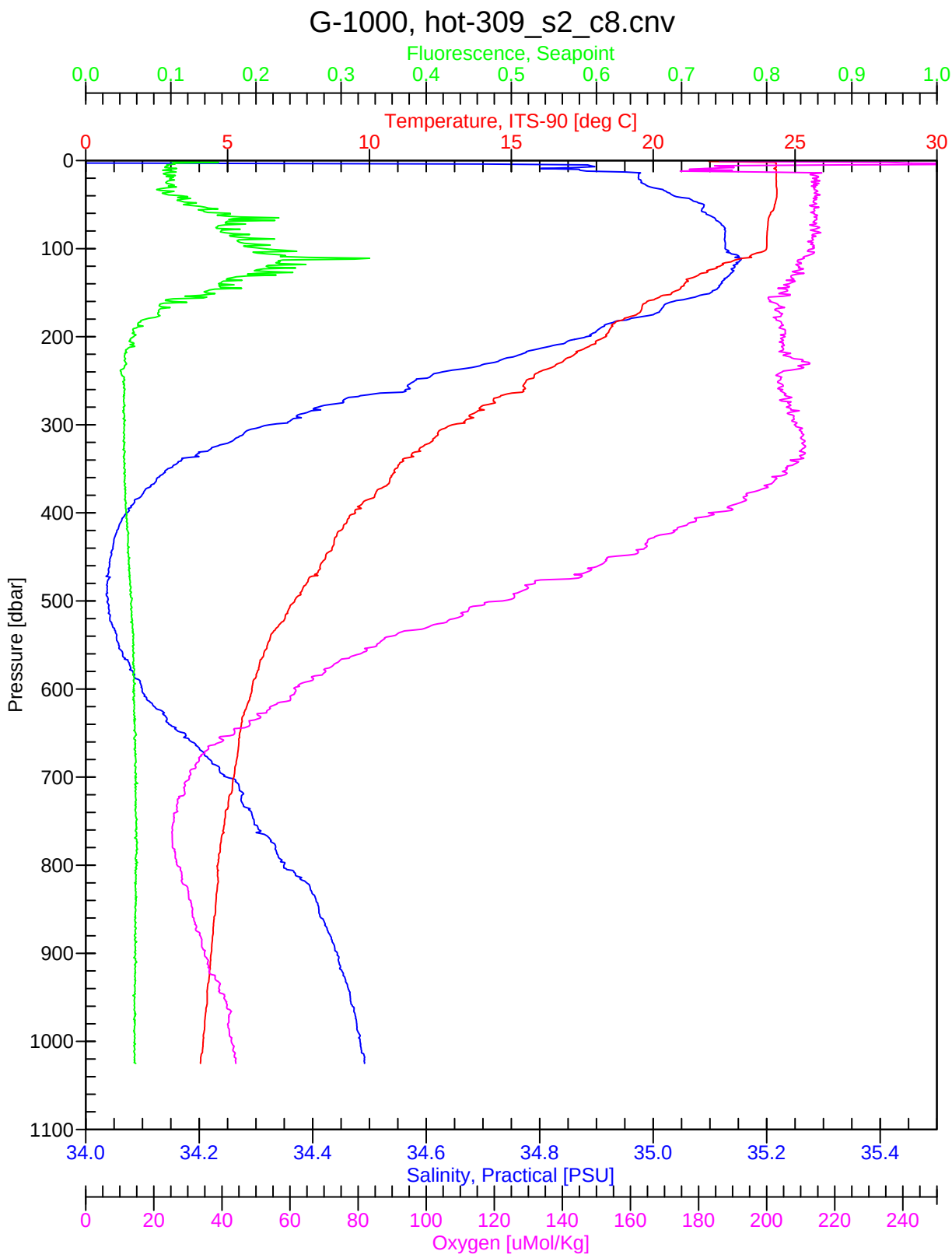

W-1000, hot-309_s2_c6.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

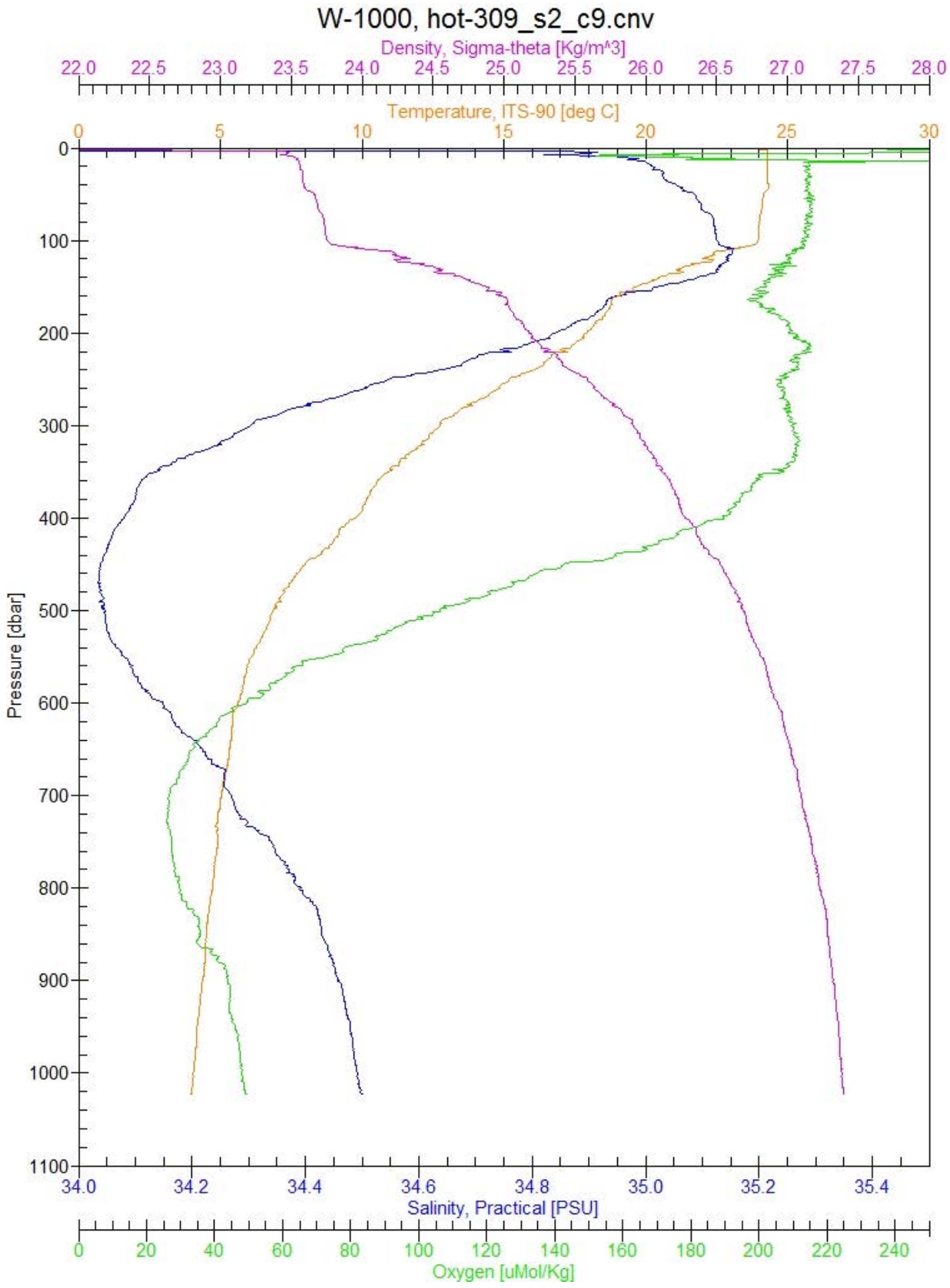

G-1000, hot-309_s2_c6.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

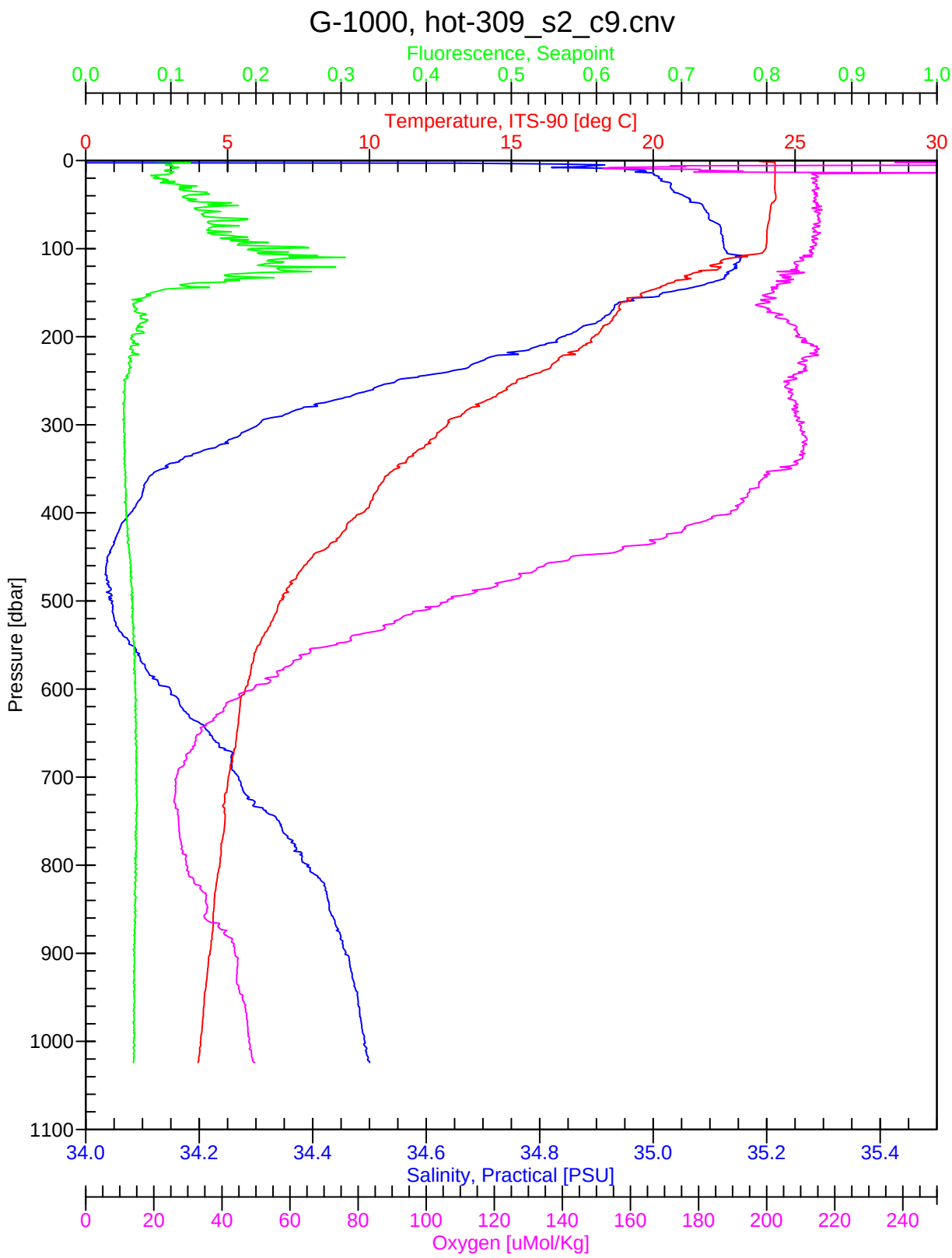

W-1000, hot-309_s2_c7.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

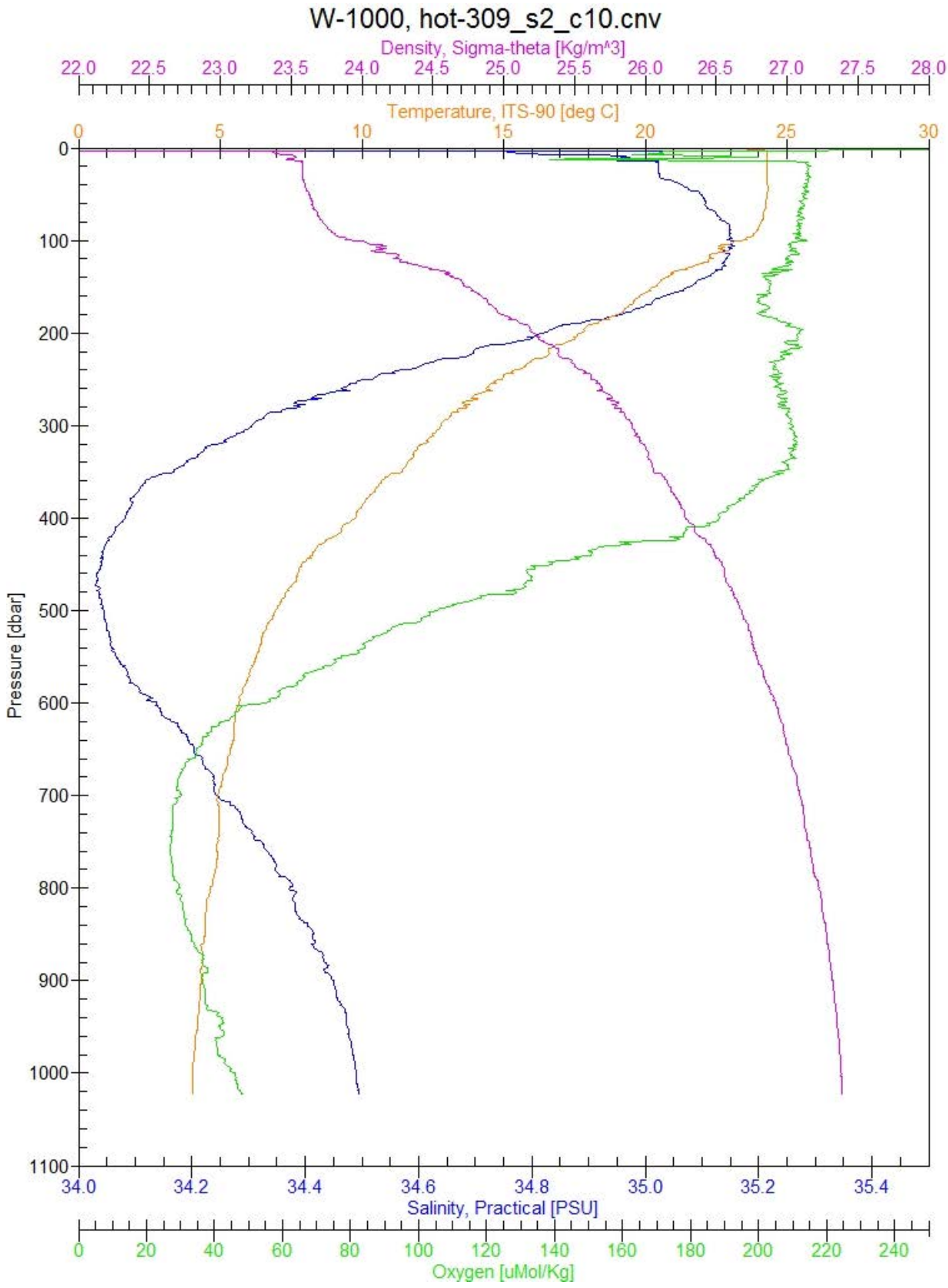

G-1000, hot-309_s2_c7.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

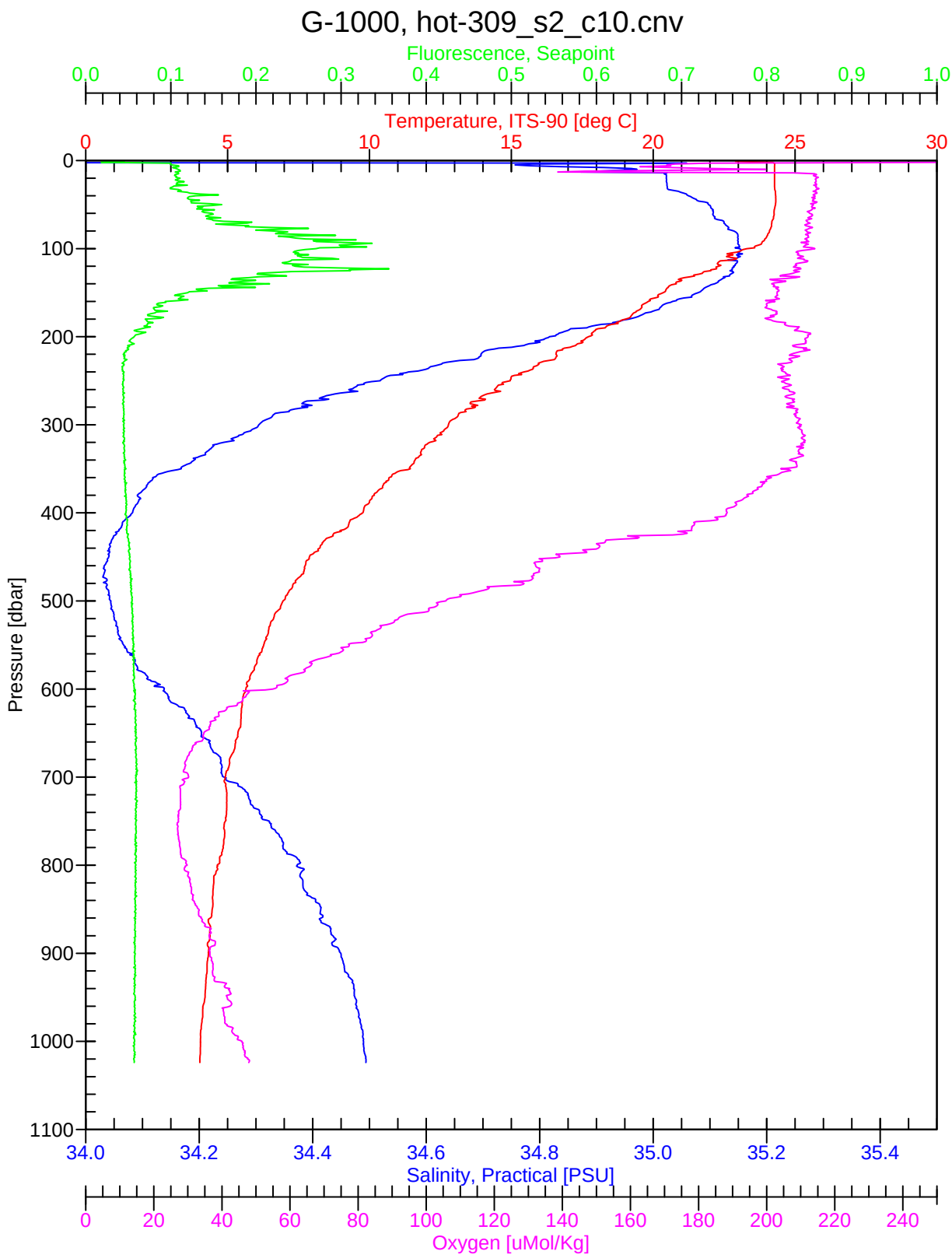

W-1000, hot-309_s2_c8.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

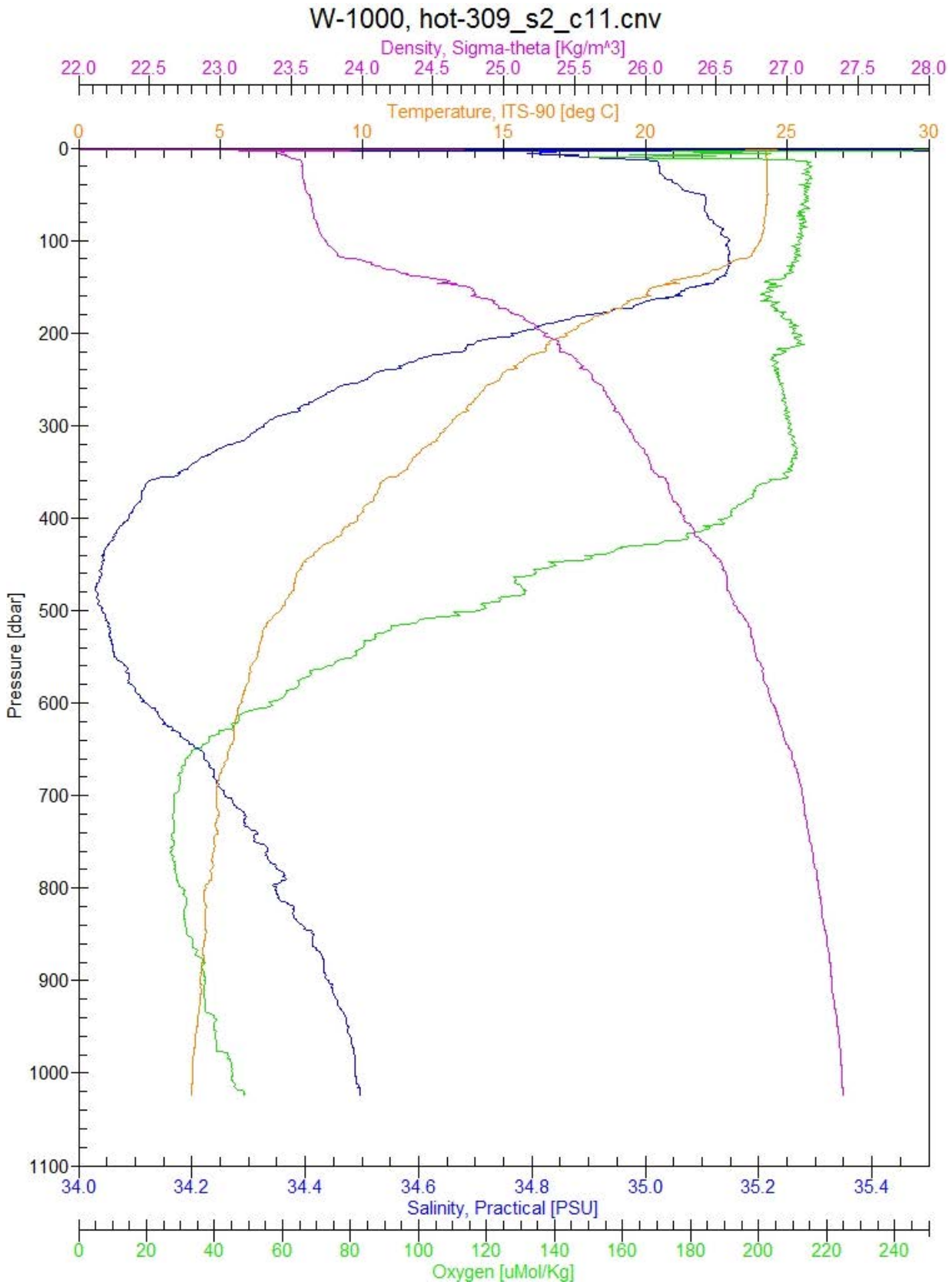

G-1000, hot-309_s2_c8.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

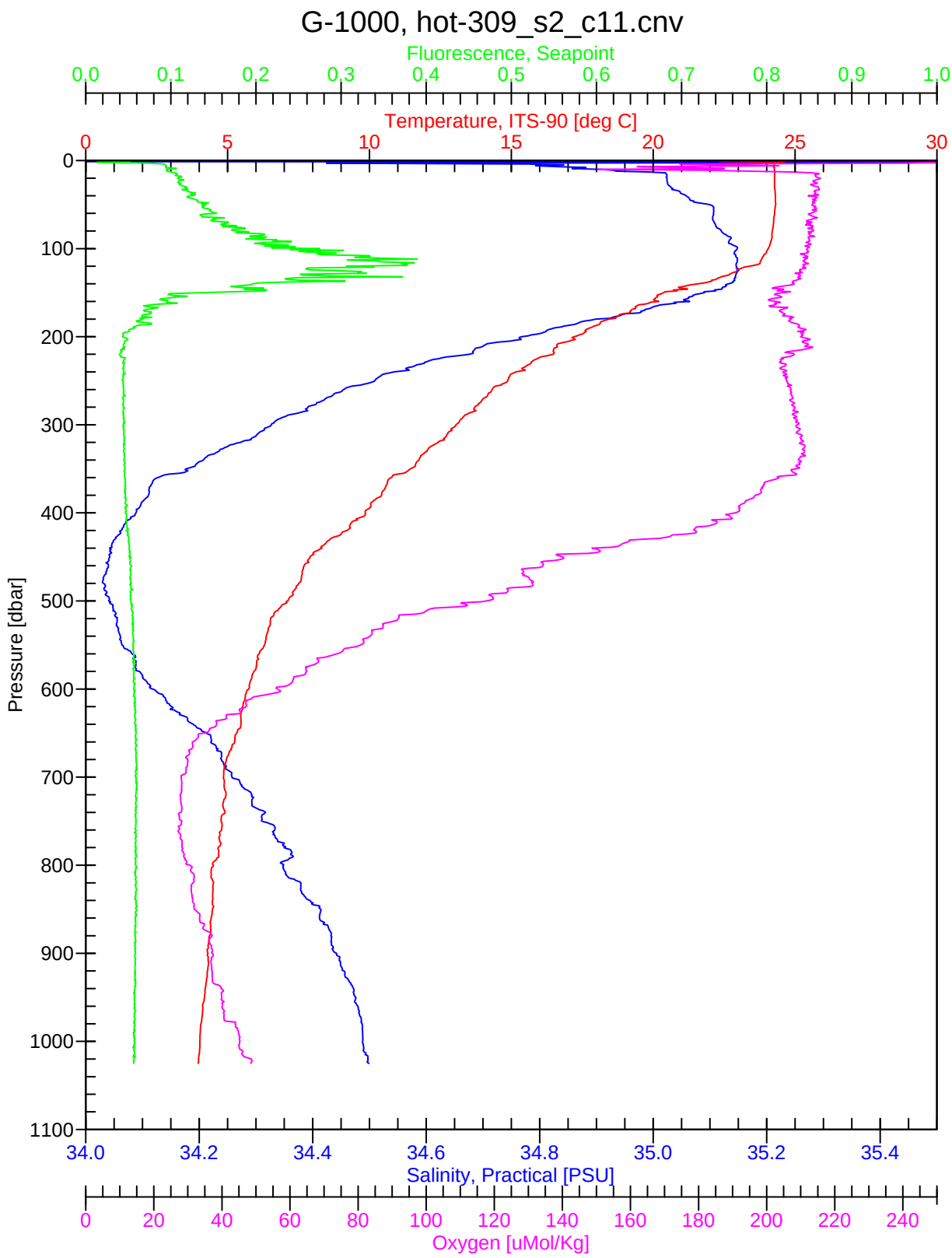

W-1000, hot-309_s2_c9.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

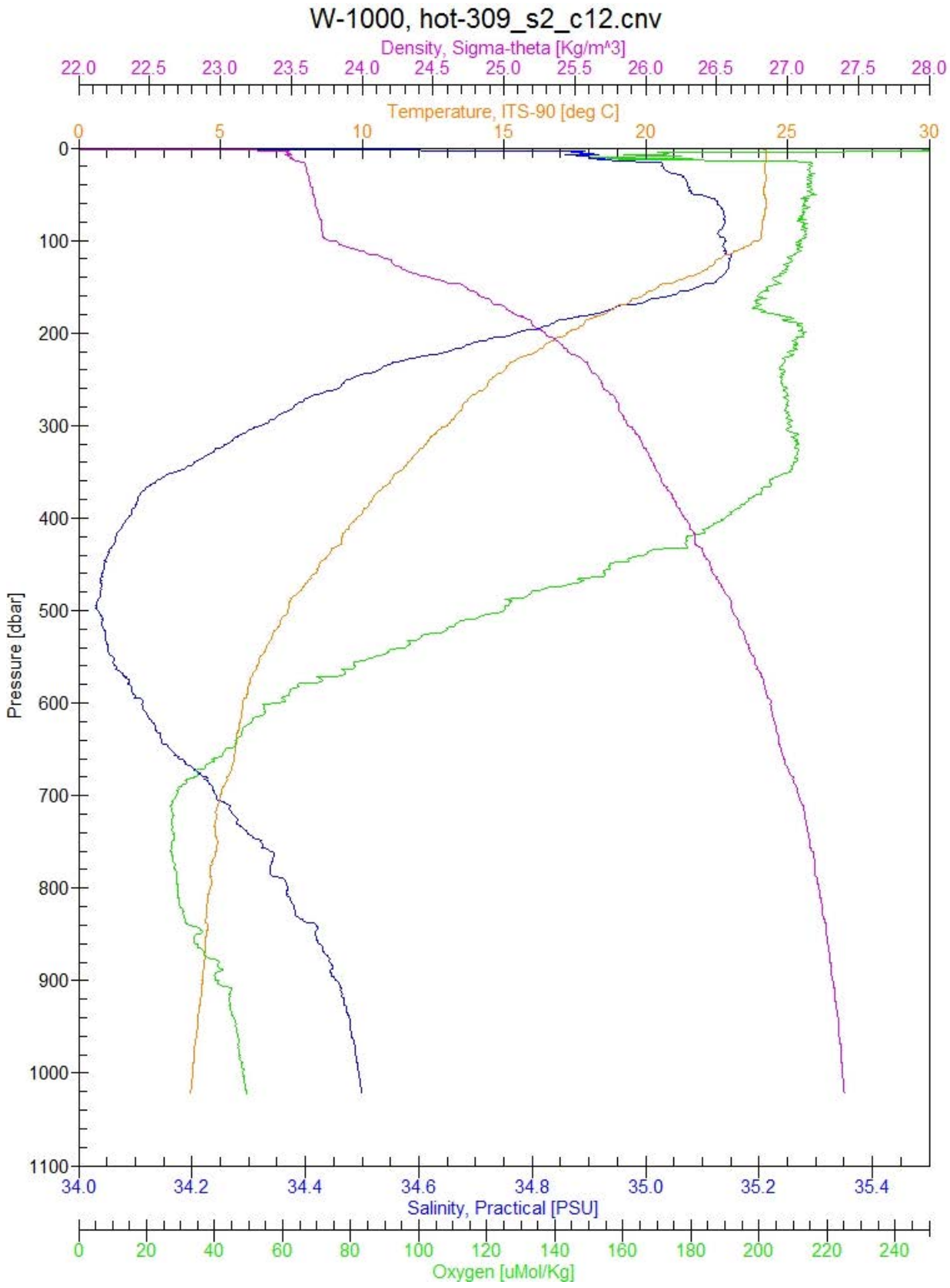

G-1000, hot-309_s2_c9.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

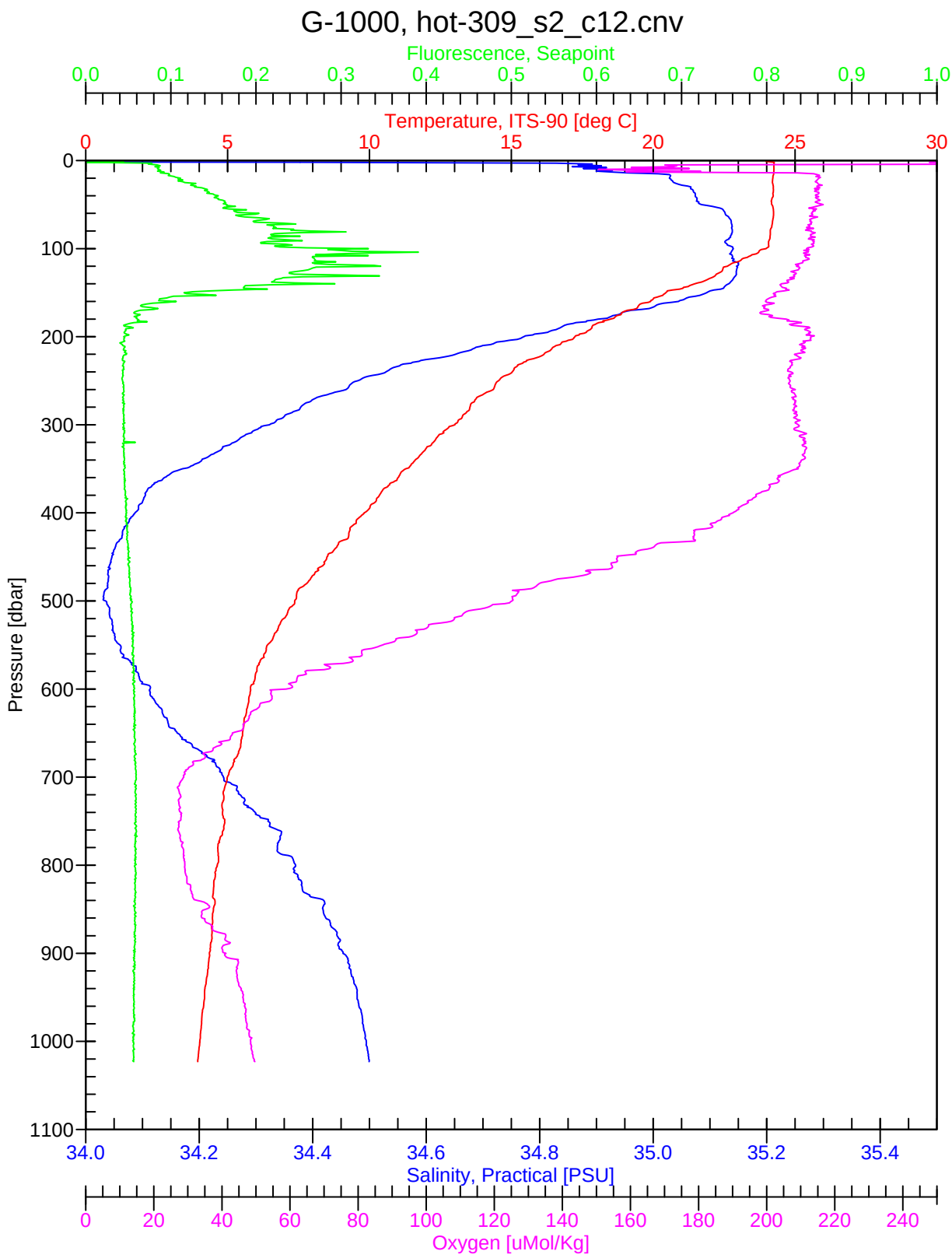

W-1000, hot-309_s2_c10.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

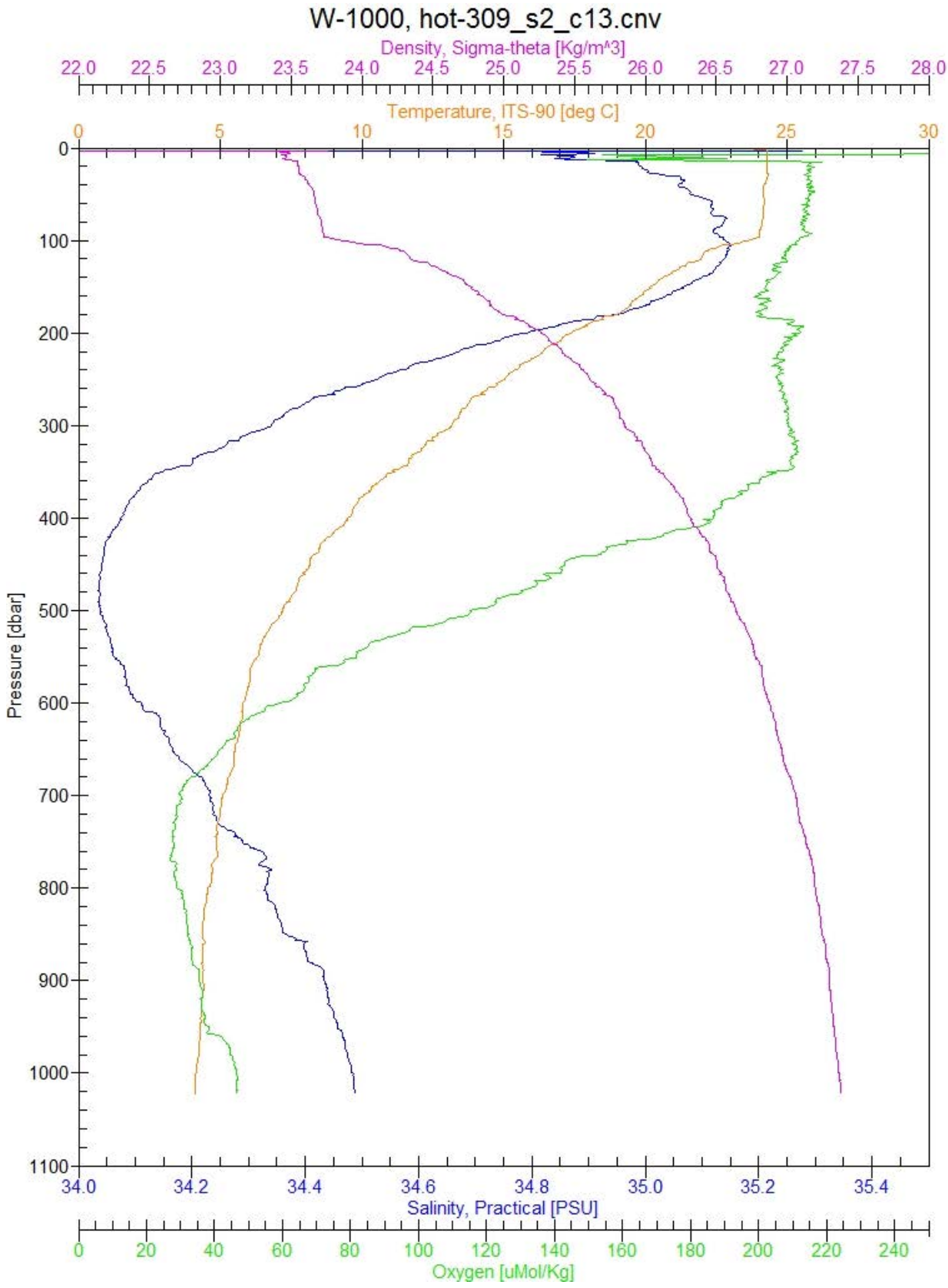

G-1000, hot-309_s2_c10.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

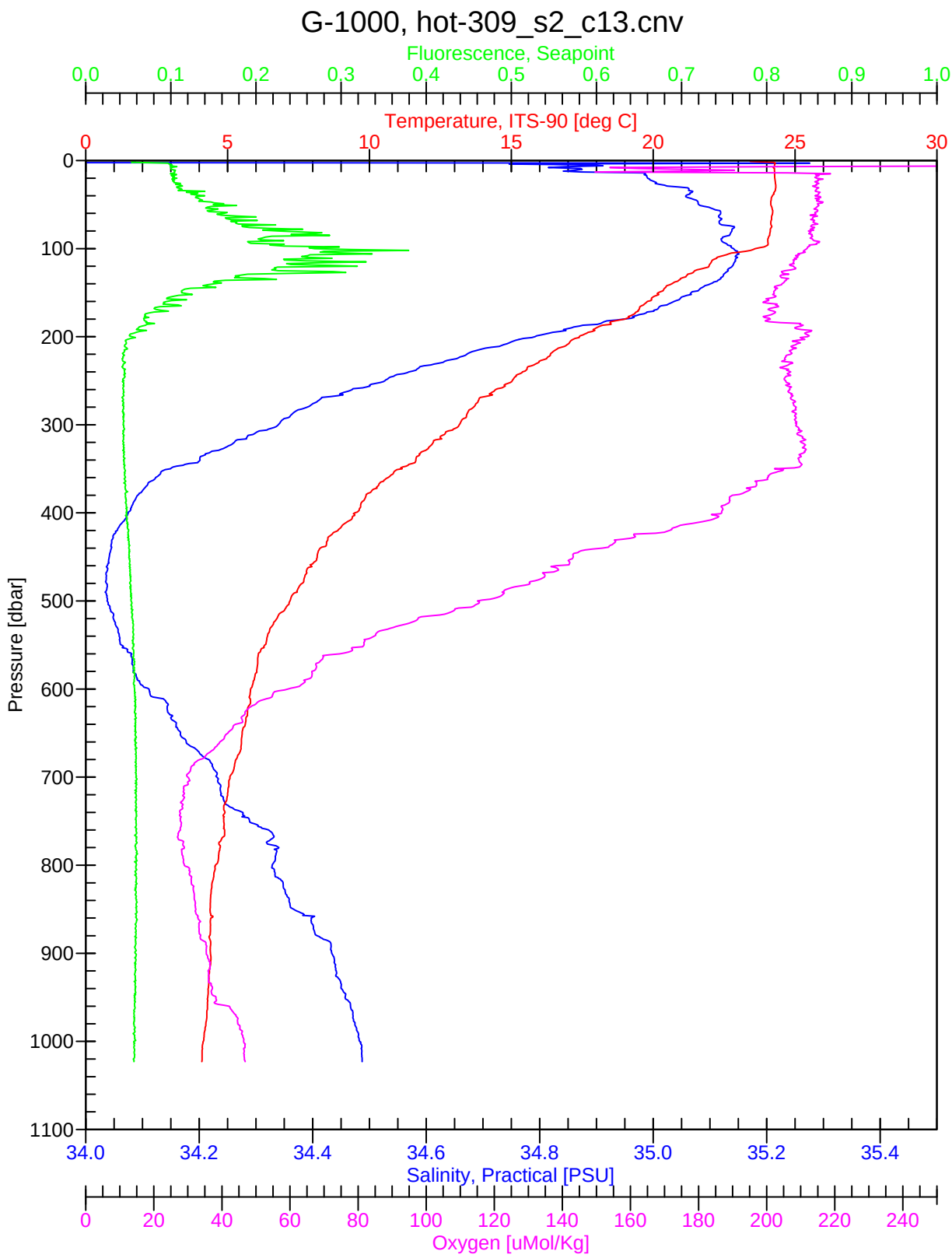

W-1000, hot-309_s2_c11.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

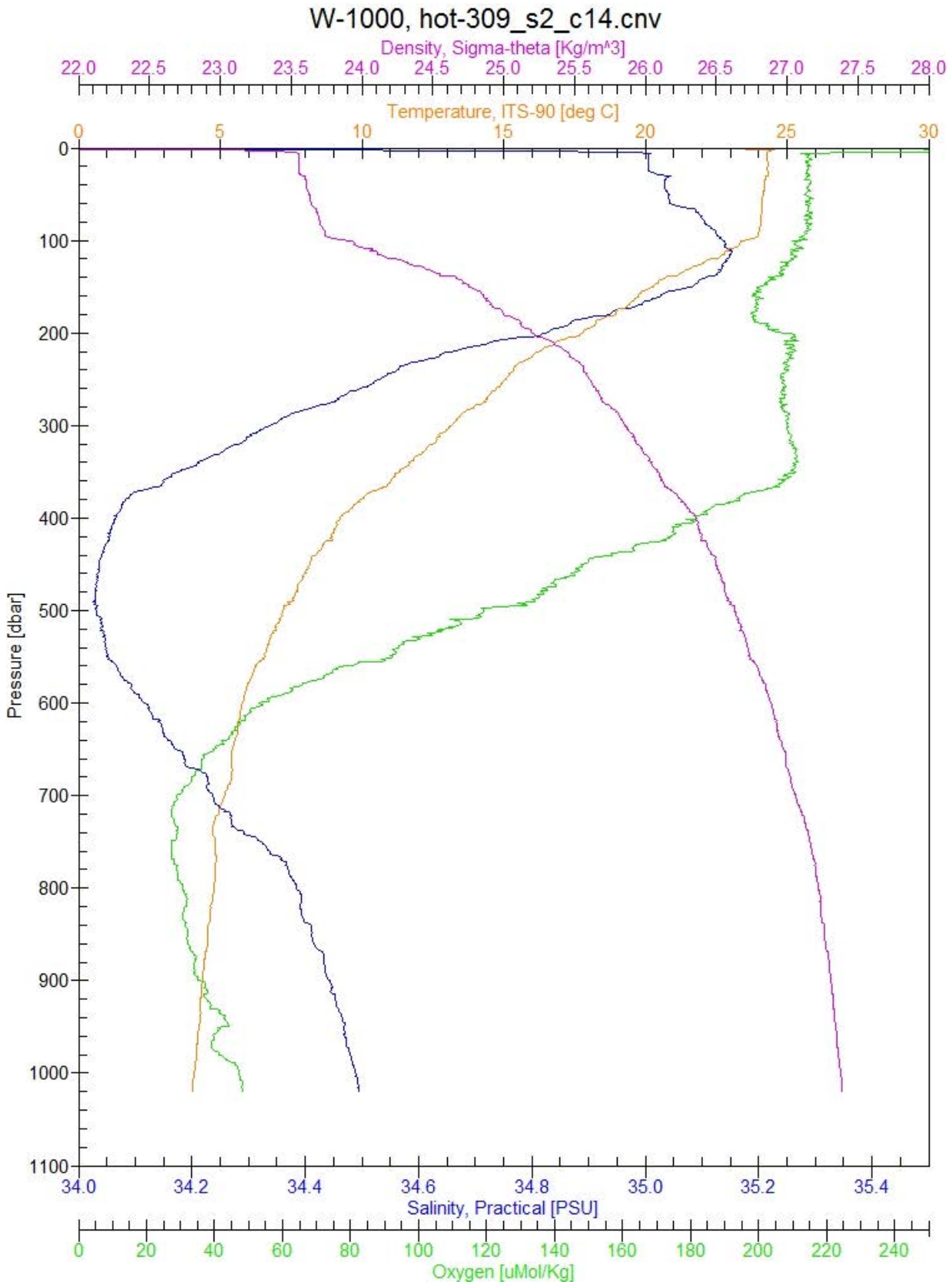

G-1000, hot-309_s2_c11.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

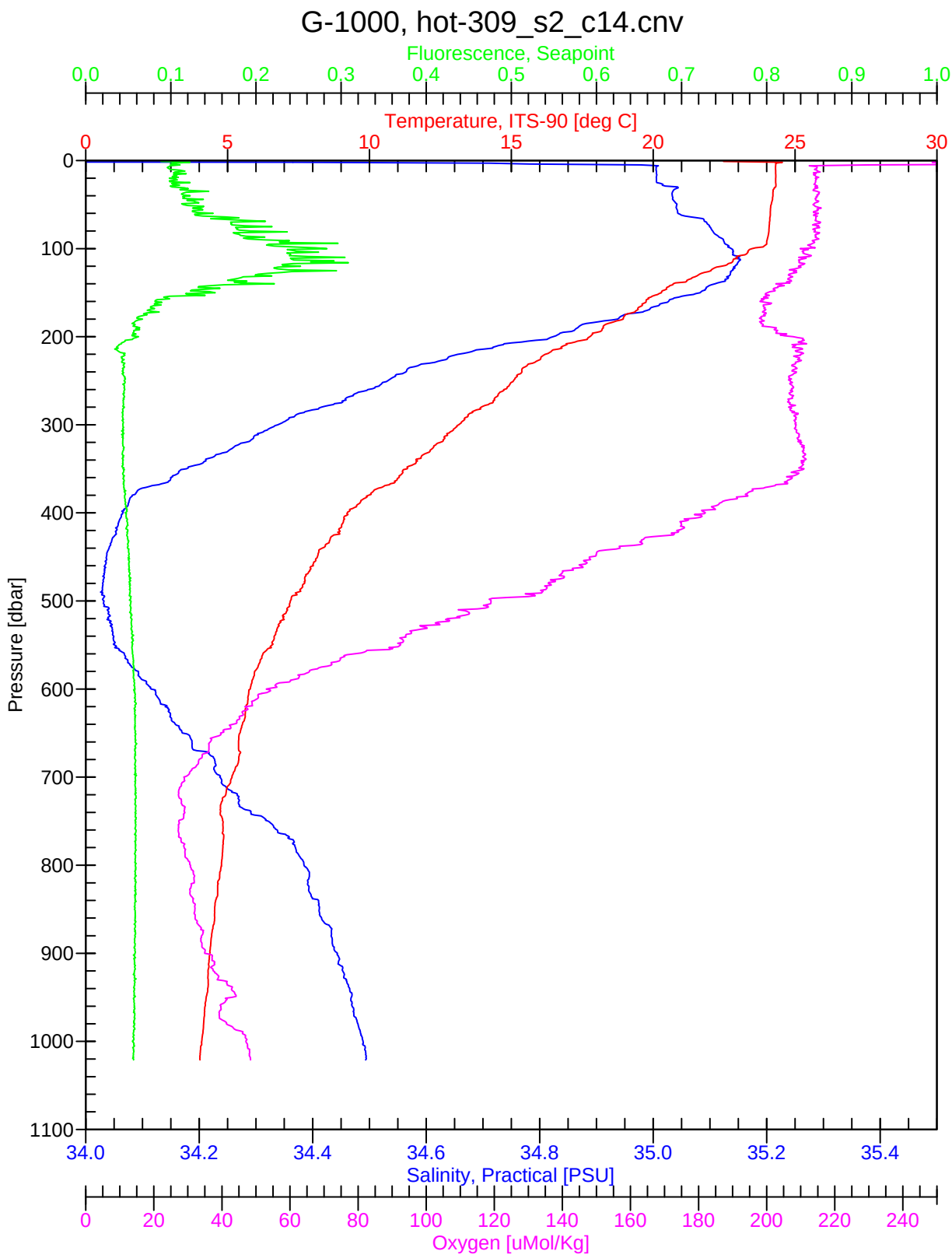

W-1000, hot-309_s2_c12.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

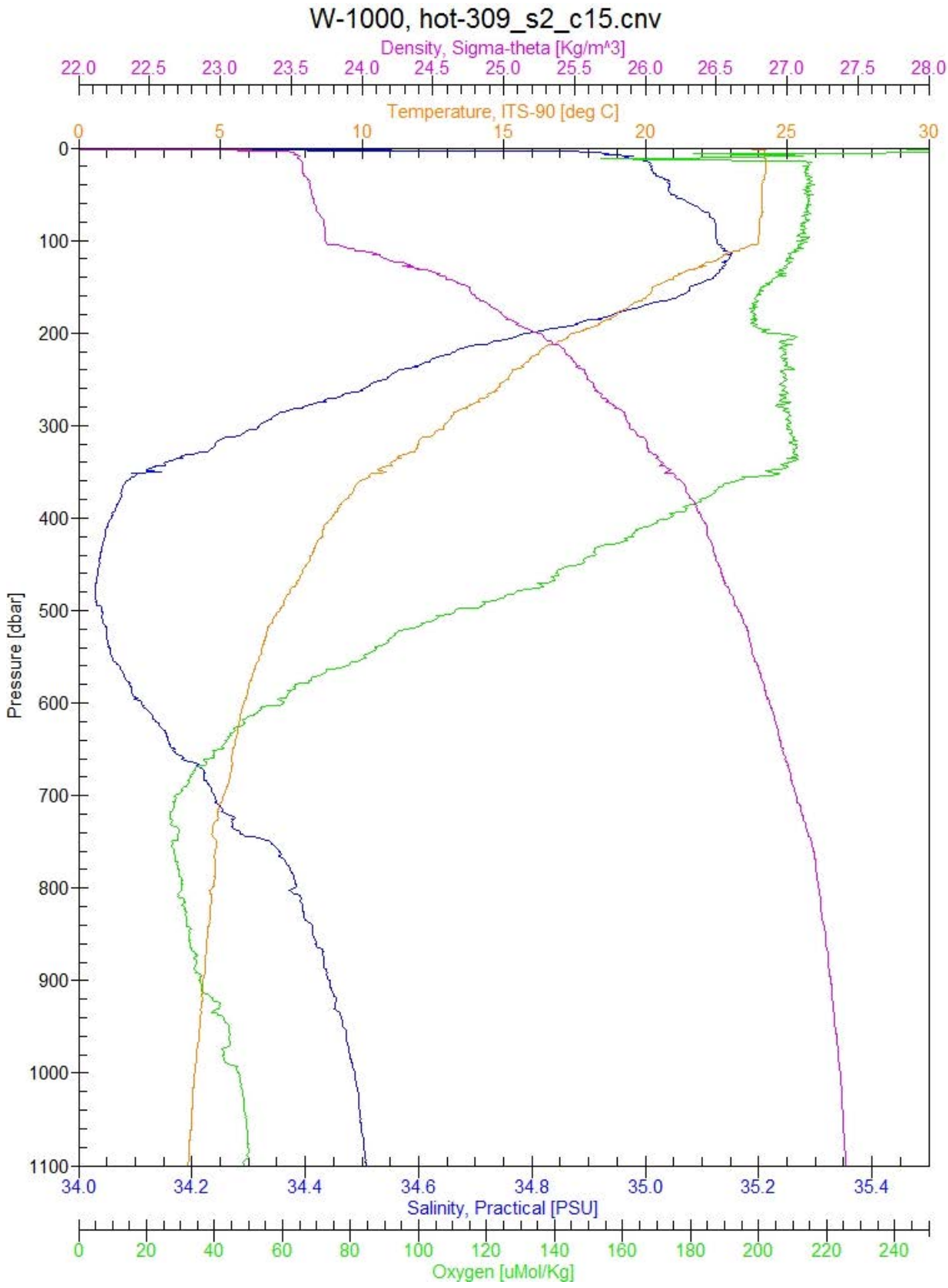

G-1000, hot-309_s2_c12.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

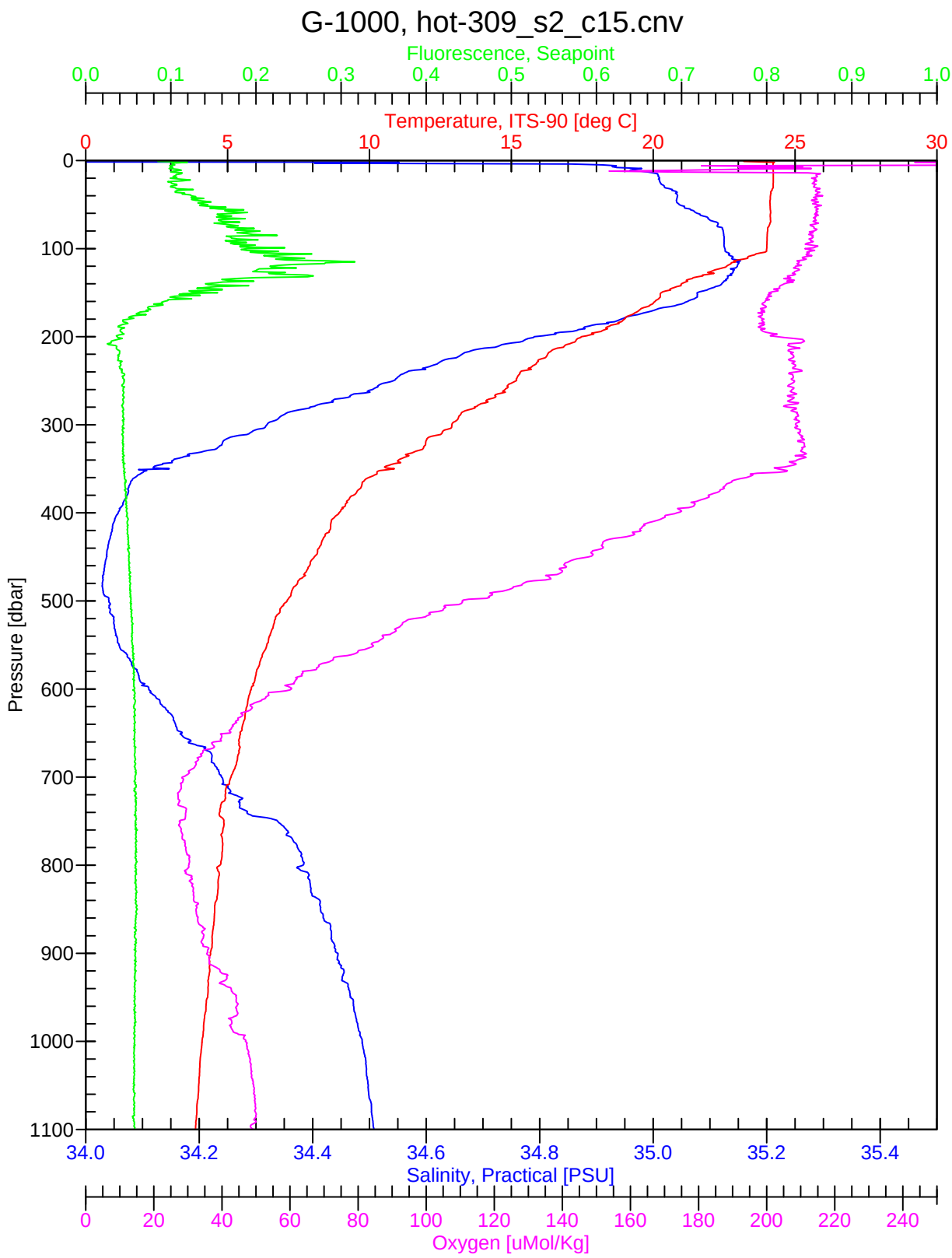

W-1000, hot-309_s2_c13.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

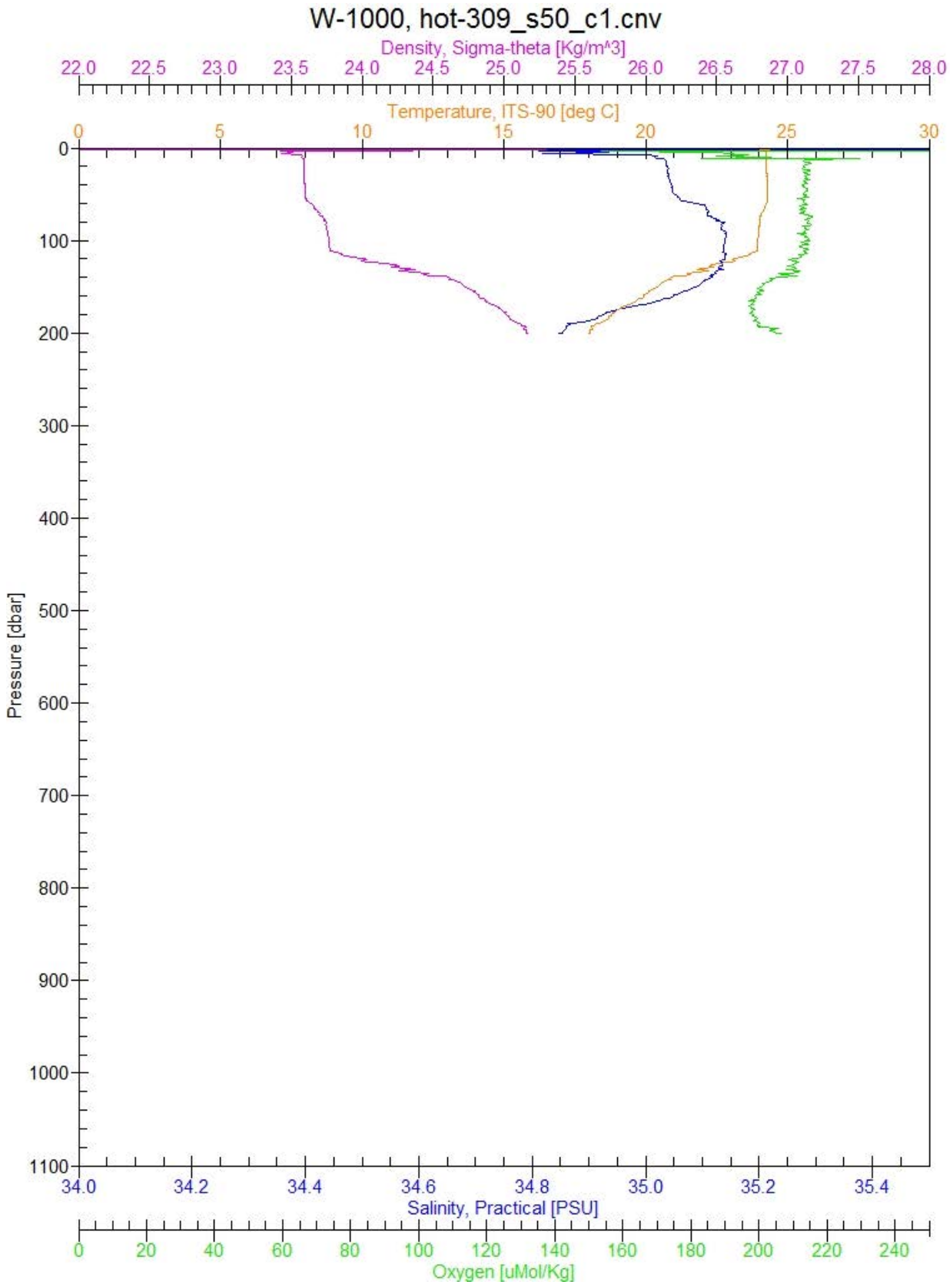

G-1000, hot-309_s2_c13.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

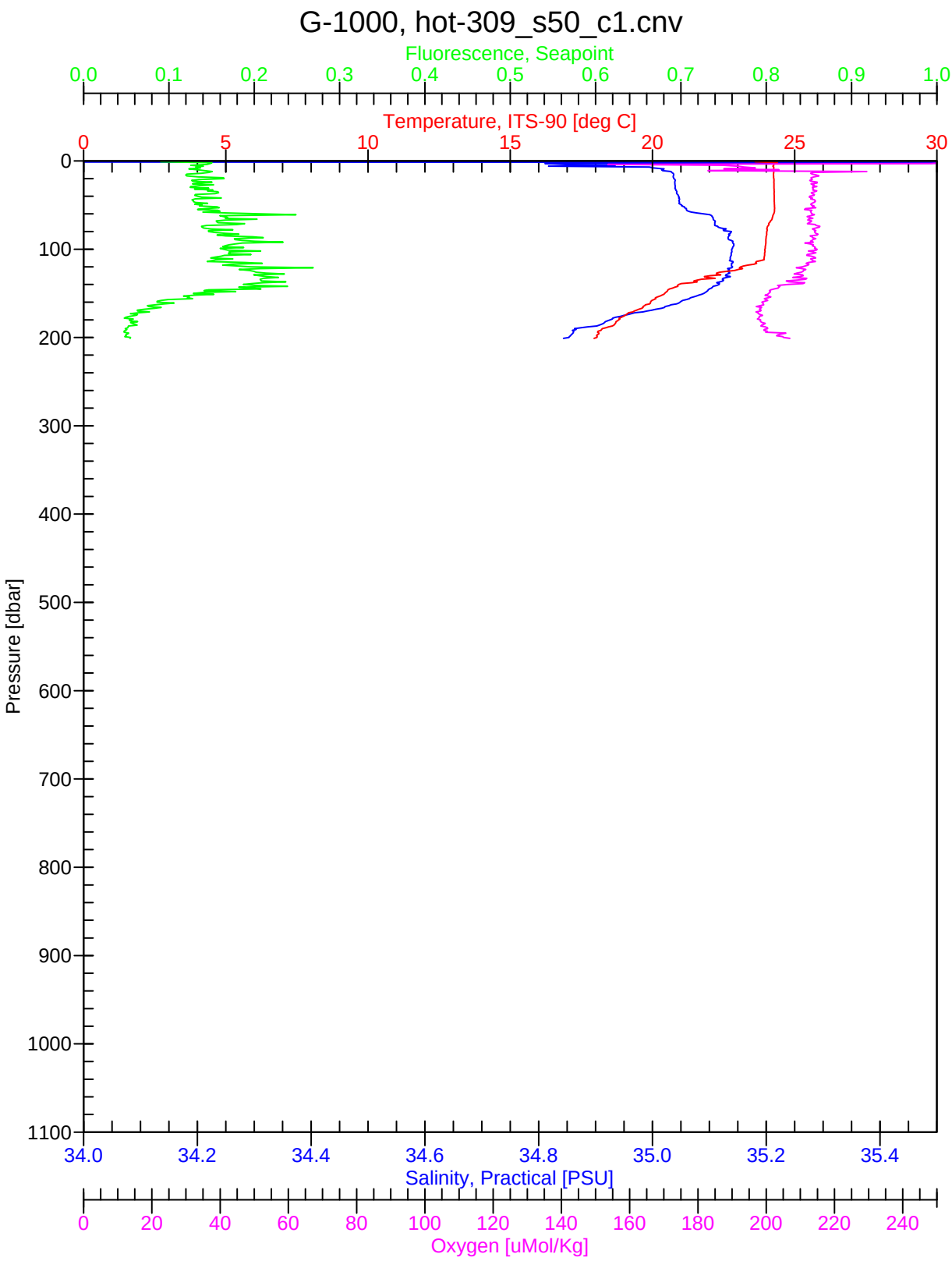

W-1000, hot-309_s2_c14.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240


G-1000, hot-309_s2_c14.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-309_s2_c15.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-309_s2_c15.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-309_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
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-309_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-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	25.48	TR → DF

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

DCM: 110 db
MLD: 56 db
S_{MIN}: 365 db

Station: 1	Cast: 1
Latitude start: 21° 20.5590' N end: 21° 20.5585' N	Longitude start: 158° 16.2524' W end: 158° 16.2534' W
Depth of water: 1496 meters	Date (GMT): 1 / 15 / 19
Pressure on Deck	Time:
Begin: 0.4017 End: 0.3223	Start Log: 00:06 In Water: 00:14
Max cast pressure: 1024 dbar	Out of Water: 01:50

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		00:58:00	1024	1020	
2		01:06:25	751	750	
3		01:13:50	500	500	
4		01:19:20	350	350	
5		01:24:50	250	250	
6		01:28:40	201	200	
7		01:31:15	176	175	
8		01:33:50	151	150	
9		01:35:45	125	125	
10		01:37:25	100	100	
11		01:40:15	75	75	
12		01:42:40	44	45	
13		01:44:30	25	25	
14		01:48:10	5	5	
15		01:48:15	5	5	
16					FIRED TO VERIFY CLOSURE, NO SAMPLE
17					NI MARKS
18					
19					
20					
21					
22					
23					
24					

* ALL BOTTLES PASSED VACUUM and leak tests

Hawaii Ocean Time Series			Station #: 1	Cast #: 1	Box #: 2
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: CM, AR, DF, FSM	
Niskin #	Depth	Serial #	Comments		
1	1024	25	ALL BOTTLES CLOSED CORRECTLY		
2	750	26	AND PASSED VACUUM/LEAK TESTS		
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	5	39	NO SAMPLE		
16			NO SAMPLE		
17					
18					
19					
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GPS	12L	24.35	DF, FSM

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

DCM = 100m
MLD = 20m

Station: 2	Cast: 1
Latitude start: 22 45.0013 end: 22 45.0018	Longitude start: 157 59.9982 end: 158 00.0128
Depth of water: 4740 meters	Date (GMT): 1/15/19
Pressure on Deck	Time:
Begin: 0.3990 End: 0.3252	Start Log: 11:57 In Water: 12:11
Max cast pressure: 202 dbar	Out of Water: 12:45

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		12:25:10	201	200	
2		12:26:56	175	175	
3		12:27:05	175	175	
4		12:28:40	148	150	
5		12:30:20	125	125	
6		12:30:30	125	125	
7		12:30:40	125	125	
8		12:32:30	100	100	
9		12:32:40	100	100	
10		12:32:50	100	100	
11		12:34:30	75	75	
12		12:34:40	75	75	
13		12:34:50	75	75	
14		12:37:45	45	45	
15		12:37:55	45	45	
16		12:38:05	45	45	
17		12:40:00	25	25	
18		40:10	25	25	
19		40:20	25	25	
20		42:00	16	15	
21		43:00	5	5	
22		43:10	↓	5	
23		43:20		5	
24		43:30		5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 1	Box #: 2, 3
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: TR, JS, AM	
Niskin #	Depth	Serial #	Comments		
1	200	40			
2					
3	175	41			
4	150	42			
5	125	43			
6	125	44			
7	125	45			
8	100	46			
9	100	47			
10	100	48			
11	75	49			
12	75	50			
13	75	51			
14	45	52			
15	45	53			
16	45	54			
17	25	55			
18	25	56			
19	25	57			
20					
21	5	58			
22	5	59			
23	5	60			
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G5000GBS	12L	24.32	TR, JS

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECO V2 BETA TEST
  - LOGGING INTERNALLY

MLD: 15 db
DCM: 99 db
S_{MIN}: 999 db

Station: 2	Cast: 2
Latitude start: 22° 44.9993' end: 22° 45.0190'	Longitude start: 158° 00.0064' end: 157° 59.9936'
Depth of water: 4744 meters	Date (GMT): 1 / 15 / 19
Pressure on Deck	Time:
Begin: 0.2921 End: −0.3119	Start Log: 15:27 In Water: 15:31
Max cast pressure: 4804 dbar	Out of Water: 20:01

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		18:00:20	4802	4800	
2		05:12	4599	4600	
3		08:07	4500	4500	
4		11:20	4400	4400	
5		15:51	4201	4200	
6		20:47	4001	4000	
7		25:43	3799	3800	
8		30:12	3600	3600	
9		35:36	3400	3400	
10		40:47	3198	3200	
11		45:35	3001	3000	
12		50:59	2800	2800	
13		55:57	2599	2600	
14		19:00:08	2401	2400	
15		06:24	2198	2200	
16		11:08	2000	2000	DID NOT CLOSE!
17		15:46	1801	1800	DID NOT CLOSE!
18		20:27	1599	1600	
19		25:18	1399	1400	
20		30:00	1201	1200	
21		35:07	1000	1000	
22		40:59	750	750	
23		47:33	500	500	
24		58:40	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 2	Box #: 4
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: JS, TR	
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	NO SAMPLE, ROSETTE BOTTLE DID NOT CLOSE		
17	1800	89	NO SAMPLE, ROSETTE BOTTLE DID NOT CLOSE		
18	1600	90			
19	1400	91			
20	1200	92			
21	1000	93			
22	750	94			
23	500	95			
24	5	96			

Hawaii Ocean Time Series			Station #: 2	Cast #: 2	Box #: 5
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: TR, JS	
Niskin #	Depth	Serial #	Comments		
1	4800	97	DUPLICATES		
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	NO SAMPLE, DID NOT CLOSE (ROSETTE BOTTLE)		
17	1800	113	NO SAMPLE, DID NOT CLOSE (ROSETTE BOTTLE)		
18	1600	114			
19	1400	115			
20	1200	116			
21	1000	117			
22	750	118			
23	500	119			
24	5	120			

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	24.38	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea-Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECO V2 Fluorometer BETA TEST
  - LOGGING INTERNALLY

MLD: 24
DCM: 123
S_{MIN}: 479

Station: 2	Cast: 3
Latitude start: 22° 45.0713' N end: 22° 45.0714' N	Longitude start: 158° 00.0009' W end: 157° 59.9615' W
Depth of water: 4739 meters	Date (GMT): 1 / 15 / 19
Pressure on Deck	Time:
Begin: 0.3947 End: -0.1618	Start Log: 21:56 In Water: 22:02
Max cast pressure: 1021 dbar	Out of Water: 23:26

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		22:43:20	1019	1020	
2		44:50	980	980	
3		46:55	910	911	
4		49:07	841	842	
5		51:00	793	794	
6		52:42	745	746	
7		54:45	709	708	O_{MIN}
8		57:02	683	682	
9		59:11	623	623	
10		23:00:53	570	571	
11		02:40	524	525	
12		04:20	490	490	
13		05:15	479	479	S_{MIN}
14		06:58	426	425	
15		08:38	379	379	
16		10:48	324	323	
17		11:54	306	306	F_{MIN}
18		13:57	239	238	O_{MAX} @ 228 db
19		15:45	190	189	LOWER DO FEATURE
20		17:23	150	151	
21		18:37	123	123	DCM
22		19:47	113	112	
23		21:55	60	59	
24		24:10	4	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 3	Box #: 6
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: JS, AM, LM	
Niskin #	Depth	Serial #	Comments		
1	1020	121			
2	980	122			
3	911	123			
4	842	124			
5	794	125			
6	746	126			
7	708	127			
8	682	128			
9	623	129			
10	571	130			
11	525	131			
12	490	132			
13	479	133			
14	425	134			
15	379	135			
16	323	136			
17	306	137			
18	238	138			
19	189	139			
20	151	140			
21	123	141			
22	112	142			
23	59	143			
24	5	144			

Hawaii Ocean Time-Series

HOT - 309

Station:	2	Cast:	3
Latitude:	22°45.0713'N	Longitude:	158°00.0009'W
Date:	1/15/19	Time (GMT):	22:02
Operator:	TR		

$\delta\theta$	$\sigma\theta$	Depth
700	20.76	
650	21.28	
600	21.80	
550	22.33	
500	22.85	
450	23.37	
400	23.90	112
350	24.42	151
300	24.95	189
250	25.47	238
200	26.00	323
180	26.21	379
160	26.42	425
140	26.63	490
130	26.73	525
120	26.84	571
110	26.94	623
100	27.05	682
90	27.16	746
80	27.26	842
70	27.37	980

S_{max}	115
S_{min}	479
S_{max}	
S_{min}	

O_{max}	228
O_{min}	708
O_{max}	
O_{min}	
O_{max}	

F_{max}	123
F_{min}	306
F_{max}	
F_{min}	
F_{max}	

MLD 24

Bottle	Depth
1	1020
2	980
3	911
4	842
5	794
6	746
7	708
8	682
9	623
10	571
11	525
12	490
13	479
14	425
15	379
16	323
17	306
18	238
19	189
20	151
21	123
22	112
23	59
24	5

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12 L	24.49	DF, FSM

- ☑ Pinger — PC/PN
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH~~ Sea Tech Fluorometer
- ☑ OTG Seapoint Fluorometer
- ☐ ~~ISUS~~
- ☐ ~~PO~~ Fluorometer
- ☑ ECO

16,19

MLD = 25 dbr
DCM = 115
SMAX = 115
SMIN = 490

Station: 2	Cast: 4
Latitude start: 22° 45.0591 N end: 22 45.0750	Longitude start: 157° 59.8380 W end: 157 59.9341
Depth of water: 4741 meters	Date (GMT): 01 116 119
Pressure on Deck Begin: 0.3934 End: 0.1967	Time: Start Log: 01:04z In Water: 01:14z
Max cast pressure: 1021 dbar	Out of Water: 02:38z

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		01:56:30	1019	1000	
2		02:04:30	703	700	
3		02:10:25	493	490	SMIN
4		14:45	350	350	
5		14:55	350	350	
6		17:50	252	250	
7		19:50	203	200	
8		21:40	173	175	
9		23:15	150	150	
10		24:50	124	125	
11		26:35	98	100	
12		28:15	75	75	
13		28:25	75	75	X NO SALTS (DNA)
14		30:25	46	45	
15		30:35	46	45	X NO SALTS (DNA)
16		32:25	25	25	
17		32:35	25	25	X NO SALTS (DNA) - DIDN'T FIRE
18		37:10	6	5	
19		37:20	6	5	X NO SALTS (DNA)
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 4	Box #: 7
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: FBM, CM, AR
Niskin #	Depth	Serial #	Comments		
1	1000	145			
2	700	146			
3	490	147			
4	350	148			
5	330	149			
6	250	150			
7	200	151			
8	175	152			
9	150	153			
10	125	154			
11	100	155			
12	75	156			
13		X			
14	45	157			
15	"	X			
16	25	158	NO WATER for SAMPLE		
17		X	→ DID NOT CLOSE		
18	18	159			
19		X			
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
CTD 1000 GPS	12L	24.165	DF

PP04

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

MLD = 25 dbar
DCM = 110
S_{MAX} = 100
S_{MIN} = 500

Station: 2	Cast: ~~5~~
Latitude start: 22 45.0066 end:	Longitude start: 157 59.9698 end:
Depth of water: 4743 meters	Date (GMT): 1 1 16 119
Pressure on Deck	Time:
Begin: 0.493 End: 0.143	Start Log: 03:14 In Water: 03:24
Max cast pressure: 1020 dbar	Out of Water: 04:50

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	4:10:30	4:11:00	1020	1020	
2	4:23:10	4:23:35	500	500	SMIN
3	27:30	27:50	349	350	
4		28:00	349	350	
5	30:40	31:10	249	250	
6	33:00	33:20	199	200	
7	34:30	35:00	175	175	
8	36:15	36:45	152	150	
9	37:57	38:15	124	125	
10	39:20	39:50	102	100	
11	41:15	41:45	74	75	
12	43:20	43:45	44	45	
13	45:05	45:35	25	25	
14		45:55	25	25	
15	47:30	47:50	15	15	
16	48:30	48:55	5	5	
17		49:05	5	5	→ NOT FIRING; FIRE #18 too.
18		49:15	5	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 5	Box #: 7&8
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: CM, AR, DF, FSM	
Niskin #	Depth	Serial #	Comments		
1	1000	160			
2	500	161			
3	350	162			
4	350	163			
5	250	164			
6	200	165			
7	175	166			
8	150	167			
9	125	168			
10	100	169			
11	75	170			
12	45	171			
13	25	172			
14	—	—			
15	—	—			
16	5	173			
17	—	—	NISKIN DID NOT CLOSE		
18	—	—			
19					
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-1000 GPS	12L	24.40	DF, FSM

BEACH

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

MLD = 20m
DCM = 110m
S_{min} = 475

Station: 2	Cast: 6
Latitude start: 22 45.0116 end: 22 44.9945'N	Longitude start: 157 59.9863 end: 157 59.9753
Depth of water: 4738 meters	Date (GMT): 1/16/19
Pressure on Deck	Time:
Begin: 0.408 End: 0.249	Start Log: 0650 In Water: 0700
Max cast pressure: 1028 dbar	Out of Water: 08:27

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	7:41:10	07:41:35	1022	1020	
2	50:15	50:45	730	725	O_2 - MIN
3	8:03:40	8:04:05	198	200	
4	8:05:35	8:06:00	175	175	
5	8:06:50	8:07:10	165	165	
6	8:08:02	8:08:30	147	150	
7	8:09:35	8:10:00	130	130	
8	8 10:30	10:50	125	125	
9	11:35	12:00	115	115	
10	12:30	12:55	110	110	
11	13:44	14:10	100	100	
12	14:45	15:10	90	90	
13	8:15:40	8:16:05	85	85	
14	8:17:00	8:17:25	75	75	
15	18:05	18:30	60	60	
16	19:20	19:45	45	45	
17	20:25	20:50			NON-FUNCTIONING
18		21:00	35	35	
19	8:21:50	22:20	25	25	
20		22:30	25	25	
21	08:23:23	23:45	15	15	
22	08:24:45	25:10	5	5	
23		25:20	5	5	
24		25:30	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 6	Box #: 8-9
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler:	
Niskin #	Depth	Serial #	Comments		
1	1000	174			
2	725	175	O_2 MINIMUM		
3	200	176			
4	175	177			
5	165	178			
6	150	179			
7	130	180			
8	125	181			
9	115	182			
10	110	183			
11	100	184			
12	90	185			
13	85	186			
14	75	187			
15	60	188			
16	45	189			
17			DID NOT CLOSE		
18	35	190			
19	25	191			
20	25	192			
21	15	193			
22	5	194			
23	5	195			
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-1000-GPS	12L	24.21	DF, FSM

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

PUR

MLD = 45
DCM = 100
S_{MIN} = 500

Station: 2	Cast: 7
Latitude start: 22 43.7987 end: 22 43.8086	Longitude start: 158 00.4184 end: 158 00.4367
Depth of water: 4742 meters	Date (GMT): 1 116 119
Pressure on Deck	Time:
Begin: 0.391 End: 0.272	Start Log: 09:57 In Water: 10:05
Max cast pressure: 1022 dbar	Out of Water: 11:23

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	10:34:25	10:34:45	1018	1020	
2	10:49:25	10:49:55	500	500	SMIN
3	11:01:25	11:01 55	173	175	x2
4		11:02 05	173	175	
5	11:04:00	11:04:30	150	150	2
6		04:40	150	150	
7	11:06:40	11:07:15	126	125	2
8		07:25	126	125	
9	11:10:10	11:10:40	100	100	
10		10:50	100	100	
11	11:13:00	11:13:30	76	75	
12	11:15:30	11:16:00	46	45	
13	11:17:50	11:18:20	24	25	
14		18:30	24	25	
15	11:20:53	11:21:20	5	5	
16		21:30	5	5	
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #:	Cast #: 7	Box #: 9
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler:	
Niskin #	Depth	Serial #	Comments		
1	1020	196			
2	500	197			
3	175	198			
4	—	—			
5	150	199			
6	—	—			
7	125	200			
8	—	—			
9	100	201			
10	—	—			
11	75	202			
12	45	203			
13	25	204			
14	—	—			
15	5	205			
16	—	—			
17					
18					
19					
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-1000-GPS	12L	24.20	DF

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☑ OTG Seapoint Fluorometer
- ☐ ISUS
- ☐ PO Fluorometer
- ☑ FCO V2 BETA TEST
  - ↳ LOGGING INTERNALLY

GAS

MLD = 20
DCM = 110
SMIN = 481

Station: 2	Cast: 8
Latitude start: 22 40.0595 end: 22 40.0510	Longitude start: 158 00.0769 end: 158 00.1620
Depth of water: 4751 meters	Date (GMT): 1/16/19
Pressure on Deck	Time:
Begin: 0.5064 End: 0.2121	Start Log: 12:24 In Water: 12:34
Max cast pressure: 1025 dbar	Out of Water: 13:41

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		13:03:05	1021	1020	
2		14:26	481	481	S-MIN
3		22:43	126	125	
4		23:03	125	125	
5		23:23	125	125	
6		25:04	101	100	
7		25:24	100	100	
8		25:44	100	100	
9		27:10	75	75	
10		27:20	75	75	
11		27:30	75	75	
12		30:10	45	45	
13		30:15	45	45	
14		30:20	45	45	
15		32:05	25	25	
16		32:08	25	25	
17		32:11	25		NISKIN NOT CLOSING
18		32:14	25	25	
19		32:17	25	25	
20		40:00	4	5	
21		40:02	5	5	
22		40:05	5	5	
23		40:08	5	5	
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 8	Box #: 9, 10
Salinity Sample Log Sheet			Cruise #: HOT- 309		Sampler: AM, JS, TR
Niskin #	Depth	Serial #	Comments		
1	1020	206			
2	500	207			
3	125	208			
4	125	209			
5	125	210			
6	100	211			
7	100	212			
8	100	213			
9	75	214			
10	75	215			
11	75	216			
12	45	217			
13	45	218			
14	45	219			
15	25	220			
16	25	221			
17	—	—			
18	~~25~~	—			
19	25	222			
20	5	223			
21	5	224			
22	5	225			
23	—	—			
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	23.20	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECOV2 Fluorometer Beta Test
  - ↳ LOGGING INTERNALLY

OPEN

MLD: 18 db
S_{MIN}: 478 db
DCM: 108 db

Station: 2	Cast: 9
Latitude start: 22° 42.9955' end: 22° 43.0001'	Longitude start: 158° 01.9354' end: 158° 01.9144'
Depth of water: 4748 meters	Date (GMT): 1 / 16 / 19
Pressure on Deck	Time:
Begin: 0.3201 End: 0.0391	Start Log: 15:18 In Water: 15:23
Max cast pressure: 1023 dbar	Out of Water: 16:34

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		15:56:45	1020	1020	
2		16:09:40	478	478	S_{MIN}
3		14:30	274	275	
4		16:10	248	250	
5		17:35	225	225	
6		19:12	199	200	
7		20:48	173	175	
8		22:12	149	150	
9		23:42	125	125	S_{MAX}
10		24:50	98	100	
11		26:15	73	75	
12		27:27	45	45	
13		28:40	25	25	
14		28:50	25	25	
15		29:49	15	15	
16		32:05	6	5	
17		32:15	6	—	NISKIN NOT FIRING
18		32:25	5	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 9	Box #: 10
Salinity Sample Log Sheet			Cruise #: HOT-309		Sampler: AM, TR, JS
Niskin #	Depth	Serial #	Comments		
1	1020	* 226			
2	478	* 227	S_{MIN}		
3	275	—	NO SAMPLES		
4	250	—			
5	225	—			
6	200	—			
7	175	—			
8	150	—			
9	125	* 228	S_{MAX}		
10	100	—	NO SAMPLES		
11	75	—			
12	45	—			
13	25	—			
14	25	—			
15	15	—			
16	5	—			
17	—	—			
18	5	* 229	MIXED LAYER		
19					
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	24.16	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECOV2 BETA TEST
  - ↳ LOGGING INTERNALLY

PSi

DCM: 99
MLD: 30
S_{MIN}: 480

Station: 2	Cast: 10
Latitude start: 22° 44.9995' end: 22° 45.0092'	Longitude start: 158° 05.4172' end: 158° 05.4941'
Depth of water: 4761 meters	Date (GMT): 1 / 16 / 19
Pressure on Deck	Time:
Begin: 0.4150 End: -0.0492	Start Log: 18:01 In Water: 18:04
Max cast pressure: 1023 dbar	Out of Water: 19:11

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		18:36:32	1020	1020	
2		:49:15	479	480	S_{min}
3		:57:40	176	175	
4		:59:27	150	150	
5		19:01:00	124	125	
6		02:40	101	100	
7		04:25	75	75	
8		06:30	45	45	
9		08:02	25	25	
10		08:12	25	25	
11		09:48	5	5	
12		09:55	5	5	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 10	Box #: 10 & 11
Salinity Sample Log Sheet			Cruise #: HOT-309	Sampler: TR, JS, AM	
Niskin #	Depth	Serial #	Comments		
1	1020	230			
2	480	231	S_{MIN}		
3	175	232			
4	150	233			
5	125	234			
6	100	235			
7	75	236			
8	45	237			
9	25	238			
10	25	—	NO SAMPLE		
11	5	—	NO SAMPLE		
12	5	239			
13			NO SAMPLE		
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	24.25	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECO V2 BETA TEST
  LOGGING INTERNALLY

OPEN

MLD: 32 db
DCM: 116 db
S_{MIN}: 478 db

Station: 2	Cast: 11
Latitude start: 22° 45.0126' N end: 22° 44.9788' N	Longitude start: 158° 05.4208' W end: 158° 05.3961' W
Depth of water: 4764 meters	Date (GMT): 1 / 16 / 19
Pressure on Deck	Time:
Begin: 0.4511 End: -0.1305	Start Log: 20:52 In Water: 20:55
Max cast pressure: 1025 dbar	Out of Water: 21:59

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	21:25:00	21:25:20	1023	1020	
2		36:50	498	500	
3		38:45	478	478	S_{MIN}
4	46:42	46:59	175	175	
5		47:05	175	175	
6		47:10	175	175	
7		47:15	175	175	
8		47:20	175	175	
9		47:32	176	175	
10		50:00	116	116	DCM
11		50:07	116	116	
12		50:15	116	116	
13		50:22	116	116	
14		50:27	116	116	
15		50:35	116	116	↓ S_{MAX}
16		54:39	25	25	
17		54:44	25	—	NISKIN NOT FIRING
18		54:49	25	25	
19		54:53	25	25	
20		54:56	25	25	
21		55:01	25	25	
22		55:04	25	25	
23		55:09	25	25	
24		57:36	6	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 11	Box #: 11
Salinity Sample Log Sheet			Cruise #: HOT-309	Sampler: JS, TR, AM	
Niskin #	Depth	Serial #	Comments		
1	1020	* 241			
2	500	–			
3	478	* 242	S_{MIN}		
4	175	–			
5	175	–			
6	175	–			
7	175	–			
8	175	–			
9	175	–			
10	116	–	DCM		
11	116	–			
12	116	–			
13	116	–			
14	116	–			
15	116	* 243	S_{MAX}		
16	25	–			
17	—	—	NISKIN NOT FIRING		
18	25	–			
19	25	–			
20	25	–			
21	25	–			
22	25	–			
23	25	–			
24	5	* 244			

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	24.31	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~OTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECO V2 FLUOROMETER BETA TEST
  - ↳ LOGGING INTERNALLY

MLD: 14db
DCM: 104 db
S_{MIN}: 493 db

Station: 2	Cast: 12
Latitude start: 22° 44.8904' N end: 22° 44.7821 N	Longitude start: 158° 04.0485' W end: 158° 03.9981' W
Depth of water: 4761 meters	Date (GMT): 1 / 16 / 19
Pressure on Deck	Time:
Begin: 0.3173 End: -0.1191	Start Log: 23:58 In Water: 00:01 on 1/17/19
Max cast pressure: 1022 dbar	Out of Water: 01:08

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:28:42	00:29:02	1020	1020	
2		35:45	771	770	
3		43:16	499	500	
4		44:18	493	493	S_{MIN}
5		47:00	400	400	
6		49:20	350	350	
7		51:20	300	300	
8		53:20	251	250	
9		56:40	150	150	
10		58:10	125	125	
11		59:35	101	100	
12		01:01:10	77	75	
13		01:03:30	46	45	
14		01:05:00	26	25	
15		05:10	26	25	
16		07:05	5	5	
17		:15	5	—	NISKIN ISN'T FIRING
18		:25	5	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 12	Box #: 11
Salinity Sample Log Sheet			Cruise #: HOT-309	Sampler: FSM, DF, CM	
Niskin #	Depth	Serial #	Comments		
1	1020	245			
2	770	–	DNA, NO SAMPLE		
3	500	–	DNA, NO SAMPLE		
4	493	246	SMIN		
5	400	–	DNA, NO SAMPLE		
6	350	247			
7	300	–	DNA, NO SAMPLE		
8	250	248			
9	150	249			
10	125	250			
11	100	251			
12	75	252			
13	45	253			
14	25	254			
15	25	–	SF-S, NO SAMPLE		
16	5	255			
17	–	–	NISKIN ISN'T FIRING		
18	5	–	SF-S, NO SAMPLE		
19					
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-1000-GPS	12L	24.36	DF

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea~~ Tech Fluorometer
- ☐ ~~OTG Seapoint~~ Fluorometer
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ Eco v2.

OPEN CAST

MLD = 20

DCM = 100

SM = 470

N

Station: 2	Cast: 13
Latitude start: 22 44.9706 end:	Longitude start: 158 05.4099 end:
Depth of water: 4758 meters	Date (GMT): 1 117 119
Pressure on Deck	Time:
Begin: 0.3506 End: -0.023	Start Log: 02:58 In Water: 03:04
Max cast pressure: 1023 dbar	Out of Water: 04:08

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	03:30:05	03:30:30	1021	1020	✓
2	35:40	36:10	800	800	
3	40:55	41:25	599	600	
4	44:30	45:00	468	470	5-MIN ✓
5	47:00	47:30	400	400	
6	50:00	50:30	298	300	
7	53:03	53:33	200	200	
8	54:38	55:08	175	175	
9	56:44	57:14	147	150	
10	58:10	58:40	122	125	
11	03:59:45	04:00:15	100	100	
12	04:01:20	01:50	76	75	✓
13	02:55	03:25	44	45	
14	04:20	04:50	24	25	]
15		05:00	24	25	]
16	05:55	06:25	15	15	
17	07:05	07:25	5		NISKIN NOT FIRING
18		07:35	5	5	]
19		04:07:45	5	5	] ✓
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 13	Box #: 11
Salinity Sample Log Sheet			Cruise #: HOT-309	Sampler:	
Niskin #	Depth	Serial #	Comments		
1	1000	256	✓ OPEN CAST - 1020, SMin, SMax, Sm		
2	800	—			
3	600	—			
4	S-MIN	257	SMIN		
5	400	—			
6	300	—			
7	200	—			
8	175	—			
9	150	—			
10	125	—			
11	100	258	SMAX		
12	75	—			
13	45	—			
14	25	—			
15	25	—			
16	15	—			
17	—	—	NOT FIRING		
18	5	259			
19	5	—	MIXED LAYER		
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-1000-GPS	12L	24.19	DF

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

HPLC

MLD=25

DCM=115

S_{MIN}=490

Station: 2	Cast: 14
Latitude start: 22 44.8761 N end: 22 44.8162	Longitude start: 158 00.1823 W end: 158 00.1630
Depth of water: 4745 meters	Date (GMT): 1117 119
Pressure on Deck	Time:
Begin: 0.377 End: 0.216	Start Log: 05:52 In Water: 06:02
Max cast pressure: 1021 dbar	Out of Water: 07:25

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	6:39:55	06:40:25	1020	1020	
2	54:44	55:14	491	490	S-MIN
3	7:04:52	7:05:22	177	175	
4		07:15	151	150	
5		08:30	135	135	
6		09:55	125	125	
7		11:00	115	115	
8		7:12:30	100	100	
9		13:45	85	85	
10		15:05	75	75	
11		16:30	60	60	
12		17:55	45	45	
13		19:30	25	25	
14		7:21:10	5	5	
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HPLC

Hawaii Ocean Time Series			Station #: 2	Cast #: 14	Box #: 11, 12
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: CM, AR, DF, FSM	
Niskin #	Depth	Serial #	Comments		
1	1020	260			
2	490	261			
3	175	262			
4	150	263			
5	135	264			
6	125	265			
7	115	266			
8	100	267			
9	85	268			
10	75	269			
11	60	270			
12	45	271			
13	25	272			
14	5	273			
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-5000-GB	12L	24.15	DF, FSM

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

PO-3
DEEP

MLD = 20
DCM = 115
O-MAX = 45
S-MAX = 120
S-MIN = 485
O-MIN = 730

Station: 2	Cast: 15
Latitude start: 22 44.9767 end: 22 44.9813	Longitude start: 157 59.9844 end: 157 59.9725 W
Depth of water: 4744 meters	Date (GMT): 1 1 17 119
Pressure on Deck	Time:
Begin: 0.361 End: −0.1991	Start Log: 08:52 In Water: 09:03
Max cast pressure: 4805 dbar	Out of Water: 12:53

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		10:51:25	4803	4800	10m FROM BOTTOM
2	10:57:04	10 57:30	4600	4600	
3		11:02:52	4400	4400	
4	11:11:33	11:12:00	4002	4000	
5		12:10	4002	4000	
6		11:21:20	3602	3600	
7		11:26:55	3401	3400	
8		36:40	3000	3000	
9		36:50	3000	3000	
10		45:25	2602	2600	
11		50:55	2402	2400	
12		12:00:15	1998	2000	
13		12:09:35	1601	1600	
14		12 15:15	1402	1400	
15		24:10	999	1000	
16		24:20	999	1000	
17		30:50			NISKIN NOT FIRING
18		12:31:00	728	730	O_2-MIN
19		36:50	484	485	S-MIN
20		12:45:00	120	120	S MAX
21		48:10	47	45	O_2-MAX
22		49:45	25	25	
23		12:51:50	5	5	
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 15	Box #: 13
Salinity Sample Log Sheet			Cruise #: HOT- 309	Sampler: CM, DF, FSM	
Niskin #	Depth	Serial #	Comments		
1	4800	274			
2	4600	275			
3	4400	276			
4	4000	277			
5	4000	—	x DNA - NO SAMPLE		
6	3600	278			
7	3400	279			
8	3000	280			
9	3000	—	x DNA - NO SAMPLE		
10	2600	281			
11	2400	282			
12	2000	—	x DNA - NO SAMPLE		
13	1600	283			
14	1400	284			
15	1000	285			
16	1000	—	x DNA - NO SAMPLE		
17					
18	O_2-MIN	286	O_2 MIN		
19	S-MIN	287	SAL-MIN		
20	S-MAX	288	S-MAX		
21	O-MAX	289	O_2-MAX		
22	25	290			
23	5	291			
24					

HOT-309

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G200GPS	12L	24.10	DF

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ ~~BEACH Sea Tech Fluorometer~~
- ☐ ~~QTG Seapoint Fluorometer~~
- ☐ ~~ISUS~~
- ☑ PO Fluorometer
- ☑ ECO V2 BETA TEST LOGGING INTERNALLY

Station: 50	Cast: 1
Latitude start: 22° 46.3046 'N end: 22 46.3560'N	Longitude start: 157° 51.9342'W end: 157 52.0135'W
Depth of water: 4689 meters	Date (GMT): 1 / 18 / 19
Pressure on Deck	Time:
Begin: 0.3126 End: 0.2548	Start Log: 04:00 In Water: 04:15
Max cast pressure: 201 dbar	Out of Water: 05:38

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	05:36:15	36:45	6	5	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-309 Km 1901

CTD configuration:

CTD: 91361 (Beta)

Deck Unit: 112060 (secondary)

Pressure: 75434

Carousel: 518

T_1: 1416 T_2: 4448

C_1: 4687 C_2: 2218

O_1: 43918 O_2: 1601

$Pump_1$: 968 $Pump_2$: 494

Fluorometer: 3831

Altimeter: 7769

Bucket Thermometer: 3622

Transmissometer: 1192

Cruise Participants:

Katherine Ackerman (undergrad / UH / Atmospheric Sci)

K. Babcock

K. Björkman

M. Burgos

T. Burrell

~~T. Clemente chief sci~~ not sailing

D. Fitzgerald

C. Funkey

T. Rohrer

Amanda Millin (Volunteer / Malama Loko Ea Foundation)

C. Morgan

Alyssa Rentena (Undergrad / UH)

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B. Watkins

J. Diehl - OTG

J. Koch - OTG

KM .322 WIRE
362 Ω CLEAR
270 METERS

KM installed new External Thermistor for underway flow-through system. SBE38 sn 0150.

CTD also has WETLABS ECO V2 Fluorometer/Backscatter sensor being beta-tested for Wetlabs installed. Sensor is recording internally, not connected to CTD, attached to one of the lower vertical bars of the rossete.

CTD .322 winch tension meter fixed and calibrated before the cruise

A frame counter weight fixed before the cruise.

KM's ORG rain gauge was replaced in December 2018.

KM1901

HOT-309 JAN 10, 2019

LOADING DAY

- ALL SYSTEMS GO

JAN 14, 2019

18:40 RESET PC TIMES ON ACQ1, PROC1

18:52 DEPARTING UH MARINE CENTER

19:30 SAFETY BRIEFING

20:02 ABANDON SHIP DRILL

21:45 ARRIVE STATION KAHE

1:49 BEGIN WEIGHT CAST - 21° 20.6161'N, 158° 16.3614'W
21:49
IN AIR: 1250 lbs
IN WATER: 1000lbs

2:28 END WEIGHT CAST
22:28

:44 BEGIN HYPERPRO - 21° 20.5960', 158° 16.3184'
22:44 1 Yo-Yo CAST, 2 PROFILES WITH HYPERPRO 0120 22:47-23:20
2 PROFILES WITH HYPERPRO 0207 23:26-23:50
:50 / END HYPERPRO - 21° 20.5643', 158° 16.2570'
23:50

12 BEGIN STATION 1, CAST 1 - G1000GPS JAN 15, 2019
00:12
IN AIR: 11001bs
IN WATER: 500 lbs
START LAT/LONG: 21° 20.5590'N, 158° 16.2524'W

Fluorometer voltage dropped to 0 intermittently.
- 1v channel (voltage-1) empty, but showing voltages in upper 150 m.

JAN 15, 2019 HOT-309, KM-1901

01:51Z CTD ON DECK, END SIC1, 15 Marks OK.
* ALL Bottles PASSED VACUUM/LEAK TESTS 21° 20.5585'N, 158° 16.2534'W

02:05Z DEPARTING STN KAHE

02:11Z DEPLOYED KITE while transiting.

0451 Retrieved kite.

0636 Deployed kite during transit.

0711 Recovered kite.

0933 ARRIVED AT STATION ALOHA
-3 miles West of center to deploy WIREWALKER.

0948 BEGIN WIREWALKER DEPLOYMENT
22° 45.0587'N, 158° 03.2336'W

0954 BOTTOM END IN WATER

1007 FINISHED DEPLOYING WIREWALKER
22° 45.0561'N, 158° 03.2346'W

1009 TRANSITING to SED TRAP DEPLOYMENT AREA
→ target = 2 miles West of CENTER

1030 BEGIN SED TRAP DEPLOYMENT
weight in the water

1108 SED TRAP RELEASED
22° 44.9803'N, 158° 02.0892'W

-TRANSITING TO PP site → 1 mile West of center

18

12:

13:

14:2

14:4

15:3

18:0

20:0

20:

21:0

21:4

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JAN 15, 2019

1211 BEGIN S2C1, PP ARRAY CAST to 200 dbar
SLOW DESCENT RATE DUE TO LOW TENSION
START LAT/LONG: 22° 45.0013', 157 59.9982'; G1000GPS

1245 END S2C1, 22° 45.0018' N, 158° 00.0128' W
24 Marks OK

13:00 Transit to PP Array deployment site.

14:20 Begin Primary Productivity Array Deployment
22° 44.9768' N, 158° 01.0931' W

14:41 End PP Array Deployment
22° 44.9373' N, 158° 01.0739' W

15:31 BEGIN S2C2 - WOCE DEEP CAST, G5000GPS
22° 44.9993' N, 158° 00.0064' W

18:00 REACHED MAX TARGET DEPTH, 10 m off bottom
22° 45.0140' N, 158° 00.0009' W

* Winch stopped for 1-2 min during downcast for maintenance around 1070 db.

20:01 END S2C2; 22° 45.0190' N, 157° 59.9936' W
24 Marks OK. Bottles 16+17 did not close.

20:06 TRANSIT TO PUMP TANKS

21:05 DEPLOY KITE DURING TRANSIT
21:41 RETRIEVE KITE

22:02 BEG

23:26 END

23:45

0054 EN

0114 ST
0238 1

& T

0323

Ver
du

0455 E

B

0500 TRA

0525 B
2

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22:02 BEGIN S2C3 PO-2; G1000GPS 1/15/19
22° 45.0713'N, 158° 00.0009'W

23:26 END S2C3, 24 MARKS OK.
22° 45.0714'N, 157° 59.9615'W

23:45 START HYPER-PRO
22°45.07 157°59.93

JAN 16, 2019

0054 END HYPERPRO
22° 45.0569'N 157° 59.8361'W

0114 START S2C4, PC/PN → 1020 dbar
0238 19 MARKS OKAY, CAST COMPLETE
9693 errors
& BOTTLE 17 DID NOT FIRE correctly.
latch did not fire

0323 BEGIN S2C5, PPOY ; G-1000 GPS

Very slow lowering speed ~ 5-30 m/m
due to large tension fluctuations

0455 END S2C5
18 MARKS OK, 12454 errors
BOTTLE-# 17 DID NOT FIRE

0500 TRANSITING TO PP ARRAY recovery

0525 BEGINNING PP ARRAY recovery
22° 46.5395'N 158° 00.9576'W

0550 P

0650 B

0829 EN
2

0842 BE
0915 END

0922
0948

0957

1124 E

1130 TRA

1222 BA

12:29 [illegible]

13:41 END S

13:50 TRANSIT

14:36 BEGIN
22°

14:57 RELEASE
22°

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0550 PP ARRAY recovery complete
NO PROBLEMS

0650 BEGINNING S2C6, BEACH, G-1000

0829 END S2C6
24 MARKS OK, 12791 errors
BOTTLE #17 DID NOT CLOSE

0842 BEGIN NET TOW 22° 44.9940'N, 158° 59.9496'W
0915 END NET TOW 22° 44.3787'N, 158° 00.1831'W

0922 BEGIN NET TOW
0948 END NET TOW

0957 BEGIN S2C7, PUR, G-1000-GPS

1124 END S2C7, 16 MARKS OK, 9526 errors

1130 TRANSITING TO PUMP TANKS

1222 BACK WITHIN STN ALOHA CIRCLE.

12:29 BEGIN S2C8, GAS Array cast, G-1000-GPS
22° 40.0595'N, 158° 00.0769'W
13:41 END S2C8, 23 MARKS OK.
22° 40.0510'N, 158° 00.1620'W

13:50 TRANSIT TO GAS ARRAY DEPLOYMENT SITE

14:36 BEGIN GAS ARRAY DEPLOYMENT
22° 42.9824'N, 158° 03.0110'W
14:57 RELEASE GAS ARRAY, END DEPLOYMENT
22° 42.9615'N, 158° 02.9993'W

15:01 TRA

15:23 BEGI

16:34 END

16:41 TRAN

18:04 BEGI

19:11 END

19:20 TRANS

20:40 BACK

20:55 BEGIN

20:46 POS-M
SI

21:10 SHIPBO

21:59 END

~22:00 POS-M

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15:01 TRANSIT TO CTD S2C9 SITE 1 NM E

15:23 BEGIN S2C9 - OPEN CAST, G1000GPS
22° 42.9955'N, 158° 01.9354'W

16:34 END S2C9, 18 Marks OK.
22° 43.0001'N, 158° 01.9144'W

16:41 TRANSIT TO S2C10 CAST SITE

18:04 BEGIN S2C10 - Particulate Silica Cast, G1000GPS
22° 44.9995'N, 158° 05.4172'W

19:11 END S_2C10, 12 Marks OK.
22° 45.9995'N, 158° 05.4941'W

19:20 TRANSIT TO PUMP TANKS

20:40 BACK ON STATION

20:55 BEGIN S2C11 - OPEN CAST, G1000GPS
22° 45.0126'N, 158° 05.4208'W

20:46 POS-MV CRASHED, SO NAV DATA MAY BE AFFECTED FOR SHIPBOARD ADCP, etc.

21:10 SHIPBOARD ADCP BACK UP AND RUNNING - MAY HAVE ~25 min gap

21:59 END S2C11, 24 MARKS OK.
22° 44.9788'N, 158° 05.3961'N

~22:00 POS-MV CRASHED AGAIN, ADCP DATA DISRUPTED

22:15	BEG
	GBS BA
20:30	ADCP
22:45	END
22:50	BEGIN
23:21	END
00:01	BEGIN
	2
01:10	END
	18
01:26	BE
	~
02:02	NE
02:30	EN
	R
0303	BE
	22
	→ ON
	→ T
	→
	→

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22:15 BEGIN NET TOW 1 (GPS unavailable with POS-MV down)
GPS Back-20 min in - 22° 45.1897'N, 158° 04.5667'W

~20:30 ADCP back with NAV Data

22:45 END NET TOW #1

22:50 BEGIN NET TOW #2 - 22° 45.3013'N, 158° 04.2508'W

23:21 END NET TOW #2

00:01 BEGIN S2C12 - ATP CAST, G1000GPS JAN 17, 2019
22° 44.8904'N, 158° 04.0485'W

01:10 END S2C12, 22° 44.7821'N, 158 03.9981'W
18 MARKS OK, 4644 errors
↳ Bottle #17 DID NOT FIRE

01:26 BEGIN KITE DEPLOYMENT 22° 44.7978'W, 158° 03.987'W

02:02 NETWORK TIME SERVERS RESET BY OTG.

02:30 END KITE DEPLOYMENT 22 45.0102
158 08.1564W
RETURNING TO STATION ALOHA

0303 BEGIN S2C13, OPEN, G-1000-GPS
22° 44.9706'N, 158° 05.4099'W
→ ON "PROC" PC, SEASAVE FAILED - CAN't open COM5.
→ rebooted Proc PC → cursor jumping around, so unplugged KEYSPAN USB → cursor stable
→ logged IN as PROC, reCONNECTED KEYSPAN.
→ SERIAL COMMS + SEASAVE WORKING CORRECTLY

04:10 ENJ
1

0415 +h

0601 BE
2:

07:28 EN

0800 BE

0830 7

0900 BE
22

10:38 ₹

1051 7 1
-C

1256 EN
2
Bottle

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04:10 END S2C13 19 MARKS OK, 5579 errors
NISKIN #17 NOT FIRING.

0415 transit to pump ship's tanks

06:01 BEGIN S2C14, HPLC, G-1000-GPS
22 44.8044'N, 158 00.1483'W

07:28 END S2C14, 22° 44.8162'N, 158° 00.1630'W
14 MARKS OK, 9304 errors

0800 BEGIN NET TOW, 22° 44.7733'N, 158° 00.1465'W

0830 END NET TOW
RETURNING TO CENTER OF STATION

0900 BEGIN S2C15, PO-3 (DEEP), G-5000-GPS
22 44.9588'N, 157 59.9561'W

1038 Z WINCH STOPPED BECAUSE of level WIND ISSUE.
CONDUCTIVITY SHOWING LARGE DIFFERENCE @ 4694 dbar ON DOWNCAST, ↘ ~0.001 S/M
↓ SECONDARY CONDUCTIVITY BAD

1051 Z 10m from Bottom 22 44.9898'N, 158° 00.0000'W
-COLD EVENT OCCURRING. Potential T @ 4803 dbar = 1.085 °C

1256 END S2C15, 22° 44.9813'N, 157° 59.9725'W
23 MARKS OK, 3781 errors
Bottle #17 did not close.

13:12	BEGI
14:41	E
16:13	BEGIN
16:36	END
16:44	TRANS
17:30	A
18:00	F
18:45	
19:07	END
19:17	TRAN
20:35	ARRN
22:15	22

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13:12 BEGIN OPTICS CAST
22° 44.9870'N, 157° 59.9799'W

14:41 END OPTICS CAST

16:13 BEGIN GAS ARRAY RECOVERY
22° 47.8848'N, 157° 59.2613'W

16:36 END GAS ARRAY RECOVERY

16:44 TRANSIT TO SEDIMENT TRAP ARRAY

17:30 ARRIVE AT SEDIMENT TRAP ARRAY
START RECOVERY
22° 53.968 157° 58.803

18:00 FINISH S.T. RECOVERY
TRANSIT TO WIRE WALKER

18:45 ARRIVE AT WIRE WALKER
START RECOVERY
22° 55.679 157° 59.590

19:07 END WIRE WALKER RECOVERY

19:17 TRANSIT TO STATION 50

20:35 ARRIVE STATION 50. WINDS TO 30kts, so begin assessment of conditions for CTD cast. Ship's .681 wire is unavailable for use due to excess counterweight on the block.

Begin Hyperpro #1 - 0120 (serial #)
22:15 22°45.997 157° 53.920

SD18
0402 TRANSMISSOMETER CAL

Voltage ? Light = 4.63248 V
DARK = 0.07082 V

★ NEED TO UPDATE DOCS ON PROC1-PC
→ NEED SALINITY v5, check that all are most recent versions,

2235 R

2243 D
2

23:20 E

23:25 FRON

0010 R

R
v
C

0204 BE
2

0255 BE
2

0335 Re
C

T

0413 B

0419 WI
to

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2235 Recovered hyperpro

2243 Deployed hyperpro #2-0207(Serial #)
22°45.870'N, 157°53.864'W

23:20 END HYPERPRO

23:25 FRONT PASSING THROUGH, GUSTS TO 35kts. STANDING BY FOR CONDITIONS TO IMPROVE.

18 January 2019

0010 Raining at station

Rain detected by the ship's OSG rain gauge. Instrument is working.

0204 BEGIN KITE DEPLOYMENT (near WHOTS)
22 44.8964'N, 157 51.8005'W

0255 BEGIN 2ND KITE DEPLOYMENT
22 45.2200'N, 157 51.5817'W

0335 Recovered kite. Finished kite operations.

Transit to WHOTS buoy

0413 BEGIN S50cl, Yo-Yo, g-200-gps.

0419 WINCH STOPPED → OTG requested Engineers to attend the 0.322 (CTD) WINCH.

0424 RES

0439 EN

0453 E

0507 EN

0520 END

0539 EN
I M
GO

0553 T
→ N

1738 ARR

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0424 RESUMED DOWN CAST, WINCH OK

0439 END CYCLE #1, BEGIN CYCLE #2
22 46.373'N, 157 52.008'W

0453 END CYCLE #2, BEGIN CYCLE 3; 22° 46.373'N
157° 52.009'W

0507 END CYCLE #3, BEGIN CYCLE #4 22° 46.369'N
157° 52.010'W

0520 END CYCLE #4, BEGIN CYCLE #5 22° 46.368'N
157° 52.009'W

0539 END S50C1 22 46.3560'N
1 MARK OK 157 52.0139'W
60508 ERRORS

0553 TRANSITING TO HONOLULU
→ NO KAENA (STN 6) CAST

1738 ARRIVAL HONOLULU UH MARINE CENTER
END HOT-309