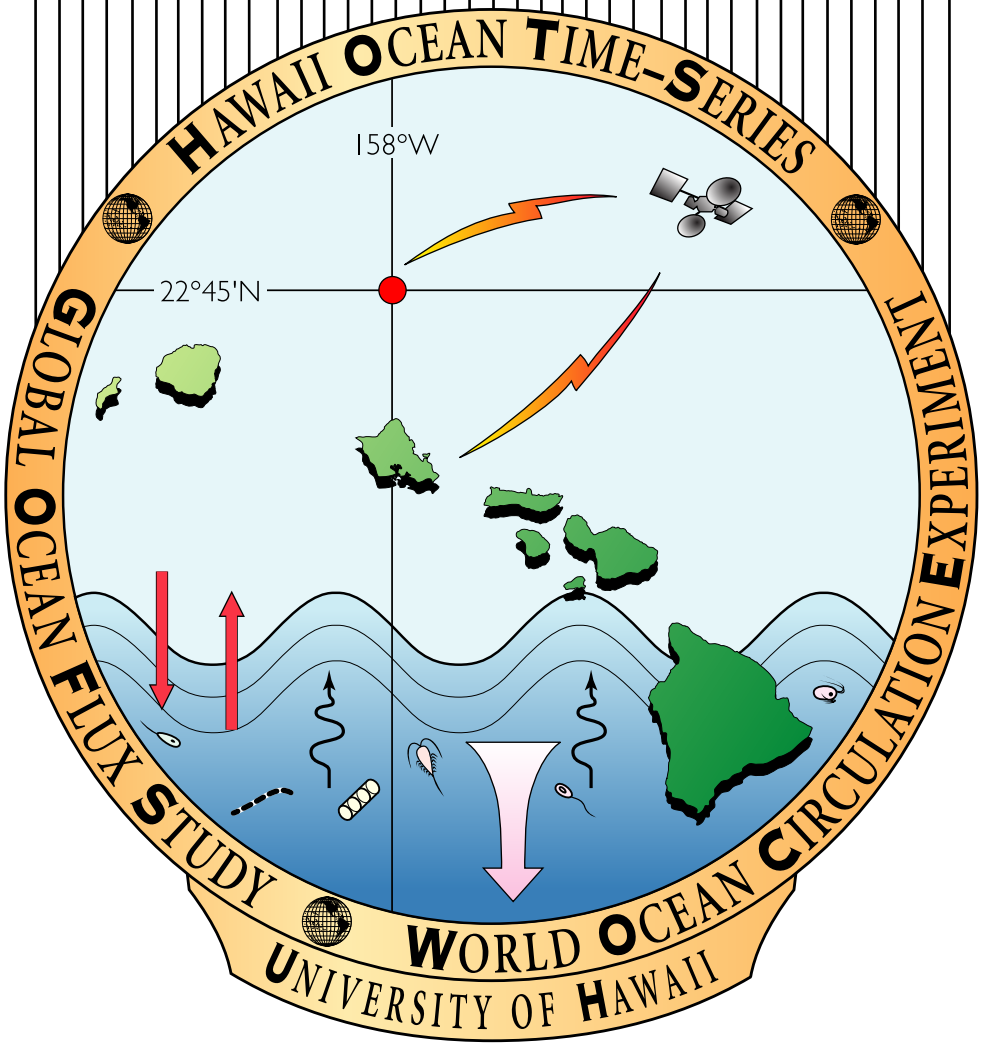
Hawaii Ocean Time-series Program

HOT 304



Hawaii Ocean Time-Series

HOT-**304**

KAHE Station Data Sheet

Station # 1 Date: 7/23/18 (HST)

Cast # 1 Time: 1220 (HST)

Operator(s): DS,CF,ES

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	6.1						
2	**750**	2,3,4	7.1						
3	**500**	5	8.8						
4	**350**	6	11.4			4			
5	**250**	7	14.4			5			
6	**200**								
7	**175**							7	
8	**150**	8	20.4			8	8	8	
9	**125**							9	
10	**100**	9,10,11	23.4			10	10	10A-B	
11	**75**							11	
12	**45**	12	26.2	12	1	12	12	12	
13	**25**	13	26.6	13	2			13A-B	
14	**5**	14	26.9	14	3,4,5	14	14	14	
15	**5**	QC	27.1						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-Series
HOT-**304**
KAHE Station Data Sheet

Station # 1 Date: 7/23/18 (HST)
Cast # 1 Time: (HST)
Operator(s): DS RT CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	6.1						
2	**750**	2,3,4	7.1						
3	**500**	5	8.8						
4	**350**	6	11.4			4			
5	**250**	7	14.4			5			
6	**200**								
7	**175**							7	
8	**150**	8	20.4			8	8	8	
9	**125**							9	
10	**100**	9,10,11	23.4			10	10	10A-B	
11	**75**							11	
12	**45**	12	26.2	12	1	12	12	12	
13	**25**	13	26.6	13	2			13A-B	
14	**5**	14	26.9	14	3,4,5	14	14	14	
15	**5**	QC	27.1						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-series

HOT-**304** Primary Production Data Sheet

Station # 2 Date: 7/24/18 (HST)

Cast # 1 Time: 0130 (HST)

Operator(s): KMB, KKB, ES

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

Notes:

Hawaii Ocean Time-series
HOT-**304** Primary Production Data Sheet

Station # 2 Date: 7/24/18 (HST)
Cast # 1 Time: 1:30 (HST)
Operator(s): KB, ES, K+B

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

Notes:

Hawaii Ocean Time-series

HOT-**304**

WOCE Deep Data Sheet

Station # 2 Date: 7/24/2018 (HST)

Cast # 2 Time: 5:55 (HST)

Operator(s): DS, RT, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	3.7				1	1	
2	**4600**	16	4.1				2	2	
3	**4500**	17,18,19	4.2	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	3.8				4	4	
5	**4200**	21	3.8				5	5	
6	**4000**	22	4.0				6	6	
7	**3800**	23,24,25	4.5			7ABC	7A-B	7A-B	
8	**3600**	26	4.0				8	8	
9	**3400**	27	4.1				9	9	
10	**3200**	28	4.1				10	10	
11	**3000**	29,30,31	4.5	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	4.1				12	12	
13	**2600**	33	4.2				13	13	
14	**2400**	34	4.3				14	14	
15	**2200**	35	4.4				15	15	
16	**2000**	36	4.7	16	5	16ABC	16A-B	16A-B	
17	**1800**	37,38,39	5.2				17	17	
18	**1600**	150	5.0				18	18	
19	**1400**	41	5.4				19	19	
20	**1200**	42	5.7				20	20	
21	**1000**	43	6.2				21	21	
22	**750**	44	6.9				22	22	
23	**500**	45	8.8				23	23	
24	**5**	46	25.3				24		

Notes:

Hawaii Ocean Time-series
HOT-**304**
WOCE Deep Data Sheet

Station # 2 Date: 7/24/2018 (HST)
Cast # 2 Time: 0555 (HST)
Operator(s): DS, RT, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	3.7				1	1	
2	**4600**	16	4.1				2	2	
3	**4500**	17,18,19	4.2	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	3.8				4	4	
5	**4200**	21	3.8				5	5	
6	**4000**	22	4.0				6	6	
7	**3800**	23,24,25	4.5			7ABC	7A-B	7A-B	
8	**3600**	26	4.0				8	8	
9	**3400**	27	4.1				9	9	
10	**3200**	28	4.1				10	10	
11	**3000**	29,30,31	4.5	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	4.1				12	12	
13	**2600**	33	4.2				13	13	
14	**2400**	34	4.3				14	14	
15	**2200**	35	4.4				15	15	
16	**2000**	36	4.7	16	~~5~~ 6	16ABC	16A-B	16A-B	
17	**1800**	37,38,39	5.2				17	17	
18	**1600**	150	5.0				18	18	
19	**1400**	41	5.4				19	19	
20	**1200**	42	5.7				20	20	
21	**1000**	43	6.2				21	21	
22	**750**	44	6.9				22	22	
23	**500**	45	8.8				23	23	
24	**5**	46	25.3				24		

Notes:

Hawaii Ocean Time-series

HOT-**304**

PO Shallow Data Sheet

Station # 2 Date: 7/24/2018 (HST)

Cast # 3 Time: 11:16 (HST)

Operator(s): DS, RT, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	**1020**	**47,48,49**	**6.3**	**1**	**1**	**1**	**1A-B**	**1A-B**	**1020**
2	**987**	50	6.0				2	2	
3	**915**	51	6.3				3	3	
4	**842**	52	6.5				4	4	
5	**802**	53	6.6				5	5	
6	**762**	54	6.8				6	6	
7	**745**	55,56,57	7.3	7	2	7	7	7	**750**
8	**673**	58	**7.0**				**8**	**8**	
9	**615**	59	7.5	9	3	9	9	9	**600**
10	**562**	60	7.9				10	10	
11	**522**	61	**8.5**				**11A-B**	**11A-B**	**525**
12	**485**	62,63,64	9.3	12	4	12	12	12	**500**
13	**456**	65	9.4				**13**	**13**	
14	**423**	66	10.0				14	14	
15	**374**	67	**11.6**				**15**		
16	**323**	68	12.9	16AB	5,6	16	16		**350**
17	**287**	69	**14.3**				**17**		
18	**250**	70	15.5				18		
19	**223**	**71,72,73**	**16.6**	**19**	**7**	**19**	**19**		**225**
20	**168**	74	19.2				20 A-B		**150**
21	**107**	**75**	**21.9**				**21**		
22	**91**	76	22.6				22		
23	**71**	77	23.6				23		
24	**57**	78	24.5				24		

Notes: Oxygen 58 was not sampled.

Hawaii Ocean Time-series
HOT-**304**
PO Shallow Data Sheet

Station # 2 Date: 7/24/18 (HST)
Cast # 3 Time: 11:16 (HST)
Operator(s): DS, RT, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	1020	**47,48,49**		**1**	**1**	**1**	**1A-B**	**1A-B**	**1020**
2	987	50					2	2	
3	915	51					3	3	
4	842	52					4	4	
5	802	53					5	5	
6	762	54					6	6	
7	745	55					7	7	
8	673	**56,57,58**		**8**	**2**	**8**	**8**	**8**	**750**
9	615	59					9	9	
10	562	60					10	10	
11	522	**61**		**11**	**3**	**11**	**11**	**11**	**600**
12	485	62					12	12	
13	456	63					**13A-B**	**13A-B**	**525**
14	423	64		14	4	14	14	14	
15	374	**65,66,67**					**15**	**15**	**500**
16	323	68					16	16	
17	287	**69**		**17A-B**	**5,6**	**17**	**17**	**17**	**350**
18	250	70					18	18	
19	223	**71,72,73**		**19**	**7**	**19**	**19**	**19**	**225**
20	168	74					20	20	
21	107	**75**					**21A-B**		**150**
22	91	76					22		
23	71	77					23		
24	57	78					24		

Notes:

Hawaii Ocean Time-series
HOT-**304**
PO Shallow Data Sheet

Station # 2 Date: 7/24/2018 (HST)
Cast # 3 Time: 11:16 (HST)
Operator(s): DS, RT, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	**1020**	**47,48,49**	6.3	**1**	**1**	**1**	**1A-B**	**1A-B**	**1020**
2	**987**	50	6.0				2	2	
3	**915**	51	6.3				3	3	
4	**842**	52	6.5				4	4	
5	**802**	53	6.6				5	5	
6	**762**	54	6.8				6	6	
7	**745**	55,56,57	7.3	~~8~~ 7	2	~~8~~ 7	7	7	**750**
8	**673**	58	7.0				**8**	**8**	
9	**615**	59	7.5	~~11~~ 9	3	~~11~~ 9	9	9	**600**
10	**562**	60	7.9				10	10	
11	**522**	61	8.5				**11A-B**	**11A-B**	**525**
12	**485**	62,63,64	9.3	~~14~~ 12	4	~~14~~ 12	12	12	**500**
13	**456**	65	9.4				**13**	**13**	
14	**423**	66	10.0				14	14	
15	**374**	67	11.6	16	5,6	16	**15**	~~15~~	
16	**323**	68	12.9	~~17~~AB	~~6,7~~	~~17~~	16	~~16~~	**350**
17	**287**	69	14.3				**17**	~~17~~	
18	**250**	70	15.5				18	~~18~~	
19	**223**	**71,72,73**	16.6	**19**	~~7~~	**19**	**19**	~~19~~	**225**
20	**168**	74	19.2				20 A-B	~~20~~	**150**
21	**107**	**75**	21.9				**21**		
22	**91**	76	22.6				22		
23	**71**	77	23.6				23		
24	**57**	78	24.5				24		

Notes: Oxygen 58 not sampled?

Hawaii Ocean Time-series

HOT- **304**

PC/PN Data Sheet

Station #	2	Date:	7/24/2018	(HST)
Cast #	4	Time:	1520	(HST)
Operator(s):	SD, CF, RT	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	6	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: 304-2-4-10a filter busted (filtered fast), -11 filter busted
304-2-4-6 brownred filter 6L filtered (aborted at 1745)

Hawaii Ocean Time-series
HOT- **304**
PC/PN Data Sheet

Station # 2 Date: 7/24/2018 (HST)
Cast # 4 Time: (HST)
Operator(s): KB, ES, kBB 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	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: 304-2-4-6 - Brownell ~6L filter
304-2-4-10A - (filtered last) filter Rinnell
" - (filter on)

Hawaii Ocean Time-series

HOT- **304**

Particulate Phosphorus Data Sheet

Station #	2		Date:	7/24/18	(HST)
Cast #	5		Time:	1708	(HST)
Operator(s):	KMB, KKB, ES	Pre-screen mesh size:		202 um	
Blank #'s	**___B1___**	**___B2___**	**___B3___**		

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	O2 SF-S	Temp	
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	**175**							
9	**150**	6	10	9				
10	**150**							
11	**125**	7,8	4,4	11A-B				
12	**125**							
13	**100**	9	4	13				
14	**100**							
15	**75**	10	4	15				
16	**45**	11	4	16				
17	**25**	12,13	4,4	17A-B				
18	**25**				18 A,B			
19	**15**					X		
20	**5**	14	4	20				
21	**5**				21 A,B			
22								
23								
24								

Notes: 2-5-6 filter busted at end

Hawaii Ocean Time-series
HOT- **304**
Particulate Phosphorus Data Sheet

Station # 2 Date: 7/24/18 (HST)
Cast # 5 Time: 1708 (HST)
Operator(s): KMB, KKB, ES Pre-screen mesh size: 202 um
Blank #'s **___B1___ ___B2___ ___B3___**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	O2 SF-S	Temp	DNA
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	**175**							X
9	**150**	6	10	9				
10	**150**							X
11	**125**	7,8	4,4	11A-B				
12	**125**							X
13	**100**	9	4	13				
14	**100**							X
15	**75**	10	4	15				
16	**45**	11	4	16				
17	**25**	12,13	4,4	17A-B				
18	**25**				18 A,B			
19	**15**					X		
20	**5**	14	4	20				
21	**5**				21 A,B			
22								
23								
24								

Notes: 2-5-6 filter busted @ end

Hawaii Ocean Time-series

HOT-**304**

BEACH Shallow Data Sheet (1/2)

Station #	2	Date:	7/24/18 (HST)
Cast #	6	Time:	2005 (HST)
Operator(s):	KMB, KKB, ES		

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	6.7						
2	**O_2 min**	80	7.5						
3	**Sal min**	81	9.9						
4	**200**	82	17.5	4				1	4
5	**175**	83	18.6						5
6	**165**	84	19.2						
7	**150**	85	20.1	7				2	7
8	**130**								
9	**125**	86	21.1						9
10	**115**	87	21.3						
11	**100**	88,89,90	21.9	12				3	12
12	**110**								
13	**90**								
14	**85**	91	22.4						
15	**75**	92	22.8	15				4	15
16	**60**								16
17	**45**	93	25.2	17				5	17
18	**35**								18
19	**25**	94	25.5	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	25.7	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling A 2132, B 2133
Niskin 11 tripped at 100 m,Niskin 12 at 110 m
Labels NOT changed, but 100 m samples from Niskin 11

Hawaii Ocean Time-series
HOT-**304**
BEACH Shallow Data Sheet (2/2)

Station # 2 Date: 7/24/18 (HST)
Cast # 6 Time: 2005 (HST)
Operator(s): KMB, KKB, ES

Rosette Position	Desired Depth	Nutrient	LLN	LLP				
1	**1000**							
2	**O_2 min**							
3	**Sal min**							
4	**200**	4						
5	**175**	5	5	5				
6	**165**		6					
7	**150**	7	7A-B	7				
8	**130**		8					
9	**125**	9A-B	9	9				
10	**115**		10	10				
11	**100**	12	12A-B	12				
12	**110**		11					
13	**90**		13					
14	**85**		14	14				
15	**75**	15	15	15				
16	**60**	16	16	16				
17	**45**	17A-B	17	17				
18	**35**	18	18					
19	**25**	19	19	19				
20	**25**							
21	**15**	21	21					
22	**5**	22	22A-B	22				
23	**5**							
24	**5**							

Notes: Niskin 11 tripped at 100 m,Niskin 12 at 110 m
Labels NOT changed, but 100 m samples from Niskin 11

Hawaii Ocean Time-series
HOT-**304**
BEACH Shallow Data Sheet (1/2)

Station # 2 Date: 7/24/18 (HST)
Cast # 6 Time: 2005 (HST)
Operator(s): KMB, KKB, ES

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	6.7						
2	**O_2 min**	80	7.5						
3	**Sal min**	81	9.9						
4	**200**	82	17.5	4				1	4
5	**175**	83	18.6						5
6	**165**	84	19.2						
7	**150**	85	20.1	7				2	7
8	**130**								
9	**125**	86	21.1						9
10	**115**	87	21.3						
11	**110**		21.9						
12	**100**	88,89,90		12				3	12
13	**90**								
14	**85**	91	22.4						
15	**75**	92	22.8	15				4	15
16	**60**								16
17	**45**	93	25.2	17				5	17
18	**35**								18
19	**25**	94	25.5	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	25.7	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Labels not Changed A 2132
B 2133

Notes: Keeling

Niskin 11 = 100 m Niskin 12 = 110 m

Hawaii Ocean Time-series

HOT-**304**

PUR Data Sheet

Station # 2 Date: 7/24/2018 (HST)

Cast # 7 Time: 2315 (HST)

Operator(s): KMB, KKB, ES

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

Notes: 2-7-13a filtered fast (filter askew?). -14 filtered slowly

Hawaii Ocean Time-series
HOT-**304**
PUR Data Sheet

Station # 2 Date: 5/15/2018 (HST)
Cast # 7 Time: 2215 (HST)
Operator(s): KM, KS, ES

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

Notes: 2-7-13A - filtered fast
14 filt slow (caskew)

Hawaii Ocean Time-series

HOT- **304**

Gas Array Experiment Data Sheet

Station # 2 Date: 7/25/18 (HST)

Cast # 8 Time: 0205 (HST)

Operator(s): DS, RT, CF

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

Notes:

Hawaii Ocean Time-series

HOT- **304**

OPEN Data Sheet

Station #	2	Date:	7/25/2018 (HST)
Cast #	9	Time:	4:47 (HST)
Operator(s):	DS, RT, CF		

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**			X				
8	**150**			X				
9	**125**			X				
10	**DCM**							
11	**100**			X				
12	**75**			X				
13	**45**			X				
14	**25**			X				
15	**25**		X					
16	**15**					#		
17	**5**		X		X			
18	**5**			X				
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT- **304**
OPEN Data Sheet

Station # 2
Cast # 9
Operator(s): DS, RT, CF

Date: 7/25/2018 (HST)
Time: 4:47 (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**			X				
8	**150**			X				
9	**125**			X				
10	**DCM**		X					
11	**100**			X				
12	**75**			X				
13	**45**			X				
14	**25**			X				
15	**25**		X					
16	**15**					#		
17	**5**		X		X			
18	**5**			X				
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series

HOT- **304**

Particulate Silica Data Sheet

Station #	2		Date:	7/25/2018	(HST)
Cast #	10		Time:	7:55	(HST)
Operator(s):	DS, CF	Pre-screen mesh size:		none	
Blank #	**B1, B2, B3**				

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #		Salts	SF-S	
1	**1000**					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			X	
10	**5**	16	4	10		X	X	
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes: Filter 16 (depth 5m) ripped because of back pressure.

Hawaii Ocean Time-series
HOT- **304**
Particulate Silica Data Sheet

Station # 2 Date: 7/25/2018 (HST)
Cast # 10 Time: 7:55 (HST)
Operator(s): DS, RT, CF Pre-screen mesh size: none
Blank # **B1, B2, B3**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #		Salts	SF-5	
1	**1000**					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			X	
10	**5**	16	4	10		X	X	
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes: Filter 16 ripped, because of back pressure

Hawaii Ocean Time-series

HOT- **304**

OPEN Data Sheet

Station # 2 Date: 7/25/2018 (HST)

Cast # 11 Time: 11:06 (HST)

Operator(s): RT, CF, MB

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

Notes:

Hawaii Ocean Time-series
HOT- **304**
OPEN Data Sheet

Station # 2 Date: 7/25/2018 (HST)
Cast # 11 Time: 11:06 (HST)
Operator(s): ~~DS~~, RT, CF, MB

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

Notes:

Hawaii Ocean Time-series

HOT- **304**

ATP Data Sheet

Station # 2 Date: 7/25/2018 (HST)

Cast # 12 Time: 1400 (HST)

Operator(s): DS, RT, CF Pre-screen mesh size: 202um

Blank #'s 28, 29, 30

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	ML
1	**1020**						
2	**770**					X	
3	**500**					X	
4	**Sal min**						
5	**400**					X	
6	**350**	1 – 3	3x2	1			
7	**300**					X	
8	**250**	4 – 6	3x2	2			
9	**150**	7 – 9	3x1	7			
10	**125**	10 – 12	3x1	8			
11	**100**	13 – 15	3x1	9			
12	**75**	16 – 18	3x1	10			
13	**45**	19 – 21	3x1	11			
14	**25**	22 – 24	3x1	12			
15	**25**				15A,B		
16	**5**	25 - 27	3x1	13			
17	**5**				17A,B		
18							
19							
20							
21							
22							
23							
24							

Notes: 30402 filter askew. 30404 and 05 swapped

Hawaii Ocean Time-series
HOT- **304**
ATP Data Sheet

Station # 2
Cast # 12
Operator(s):
Blank #'s 28, 29, 30

Date: 7/25/2018 (HST)
Time: (HST)
Pre-screen mesh size: 202um

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	ML
1	**1020**						
2	**770**					X	
3	**500**					X	
4	**Sal min**						
5	**400**					X	
6	**350**	1 – 3	3x2	1			
7	**300**					X	
8	**250**	4 – 6	3x2	2			
9	**150**	7 – 9	3x1	7			
10	**125**	10 – 12	3x1	8			
11	**100**	13 – 15	3x1	9			
12	**75**	16 – 18	3x1	10			
13	**45**	19 – 21	3x1	11			
14	**25**	22 – 24	3x1	12			
15	**25**				15A,B		
16	**5**	25 - 27	3x1	13			
17	**5**				17A,B		
18							
19							
20							
21							
22							
23							
24							

Notes:

3040 2 filled carboys

ATP 04+05 are switched

Hawaii Ocean Time-series
HOT-**304**
OPEN CAST Data Sheet

Station #	2	Date:	6/27/18 (HST)
Cast #	13	Time:	1700 (HST)
Operator(s):	KMB, KKB, ES		

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp		
1	**1000**						
2	**800**	X					
3	**600**	X					
4	**Sal Min**						
5	**400**	X					
6	**300**	X					
7	**250**	X					
8	**175**	X					
9	**150**	X					
10	**125**	X					
11	**100**	X					
12	**75**	X					
13	**45**	X					
14	**25**	X					
15	**25**		15A,B				
16	**15**			X	25.8		
17	**5**	X	17A,B				
18	**5**						
19							
20							
21							
22							
23							
24							

Notes: Niskin #4 did not trip

Hawaii Ocean Time-series
HOT-**304**
OPEN CAST Data Sheet

Station # 2 Date: 6/27/18 (HST)
Cast # 13 Time: 1700 (HST)
Operator(s): KMB, KKB, ES

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp		
1	**1000**						
2	**800**	X					
3	**600**	X					
4	**Sal Min**						
5	**400**	X					
6	**300**	X					
7	**250**	X					
8	**175**	X					
9	**150**	X					
10	**125**	X					
11	**100**	X					
12	**75**	X					
13	**45**	X					
14	**25**	X					
15	**25**		15A,B				
16	**15**			X	25.8		
17	**5**	X	17A,B				
18	**5**						
19							
20							
21							
22							
23							
24							

Notes:

Niskin 4 did not close

Hawaii Ocean Time-series

HOT-**304**

HPLC & Chl *a*. Bottle Data Sheet

Station #	2	Date:	7/25/18 (HST)
Cast #	14	Time:	2000 (HST)
Operator(s):	KMB, KKB, ES		

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	14	14			
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes carboy #1 leaked a lot from cap

Hawaii Ocean Time-series
HOT-**304**
HPLC & Chl *a*. Bottle Data Sheet

Station # 2 Date: 7/25/18 (HST)
Cast # 14 Time: 2007 (HST)
Operator(s): KMB, KKB, ES

Rosette Position	Desired Depth	Carboy #	Total Volume	HPLC	Chl *a*.	~~DNA~~		
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	14	14			
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes

carboy #1 leaking alot

Hawaii Ocean Time-series

HOT-**304** WOCE Deep 2 Data Sheet

Station # 2 Date: 7/25/18 (HST)

Cast # 15 Time: 2300 (HST)

Operator(s): KMB, KKB, ES

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	RC			
1	**4800**	96	2.5		X			
2	**4000**	97	2.8		X			
3	**4000**			X				
4	**3000**	98	2.9		X			
5	**3000**			X				
6	**2000**	99	3.3		X			
7	**2000**			X				
8	**1000**			X	X			
9	**O2 min**	100	5.6		X			
10	**Sal min**	91	8.5		X			
11	**O2 max**	92	13.3		X			
12	**5**	93	25.4		X			
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT-**304** WOCE Deep 2 Data Sheet

Station # 2
Cast # 15
Operator(s): KMB, KKB, ES

Date: 7/25/18 (HST)
Time: 2300 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	RC			
1	**4800**	96	2.5		X			
2	**4000**	97	2.8		X			
3	**4000**			X				
4	**3000**	98	2.9		X			
5	**3000**			X				
6	**2000**	99	3.3		X			
7	**2000**			X				
8	**1000**			X	X			
9	**O2 min**	100	5.6		X			
10	**Sal min**	101	8.5		X			
11	**O2 max**	102	12.3		X			
12	**5**	103	23.4		X			
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series

HOT- **304**

STATION Kaena Data Sheet

Station # 6 Date: 7/26/18 (HST)

Cast # 1 Time: 2145 (HST)

Operator(s): KMB, KKB, ES

Rosette Position	Desired Depth	Chl a.				
1	**2500**					
2	**2000**					
3	**1500**					
4	**1000**					
5	**500**					
6	**175**	6				
7	**150**	7				
8	**125**	8				
9	**100**	9				
10	**75**	10				
11	**45**	11				
12	**25**	12				
13	**5**	13				
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Notes:

Hawaii Ocean Time-series
HOT- **304**
STATION Kaena Data Sheet

Station # 6
Cast # 1
Operator(s): KMB, KKB, ES

Date: 7/26/18 (HST)
Time: 2145 (HST)

Rosette Position	Desired Depth	Chl a.				
1	**2500**					
2	**2000**					
3	**1500**					
4	**1000**					
5	**500**					
6	**175**	6				
7	**150**	7				
8	**125**	8				
9	**100**	9				
10	**75**	10				
11	**45**	11				
12	**25**	12				
13	**5**	13				
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Notes:

Hawaii Ocean Time-series

HOT- **302**

STATION 52 Data Sheet

Station # 52 Date: 7/26/2018 (HST)

Cast # 1 Time: 13:23 (HST)

Operator(s): RT, 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- **302**
STATION 52 Data Sheet

Station # 52
Cast # 1
Operator(s): DS, RT, CF

Date: 7/26/2018 (HST)
Time: 13:23 (HST)

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 304
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #
7/23/18	1607	Transit ALOHA	1
	2005	"	2
7/24/18	0612	Stn ALOHA	3
	1116	"	4
	1636	"	5
	2359	"	6
7/25/18	0722	"	7
	1325	"	8
	2005	"	9
7/26/18	0605	"	10
	1710	Transit Kaena	11
	2347	Kaena	12

Hawaii Ocean Time-series
HOT 304
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #	
7/23/18	1607	Transit to Aloha	1	
"	2005	"	2	
7/24/2018	6:12	Stn Aloha	3	
7/24/2018	11:16	"	4	Bottle #1
"	16:36	"	5	
"	2359	"	6	
7/25/2018	7:22	Stn Aloha	7	
"	13:25	"	8	
"	2005	"	9	
7/26/2018	6:05	Stn Aloha	10	
"	1710	→ Kaena	"	
7/26/18	2347	Kaena	11	

Hawaii Ocean Time-series
HOT 304
Argos Fix Log Sheet

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

59100
50200, XEOS 4
XEOS 1, 5

UTC

Date	Time	Platform	Position	Initials	Array Name
7/24	2145	XEOS 5	22.762 158.055	TS	WW1
"	2155	0200	22.742 158.050	"	TP 1
"	2132	WW	22.773 158.067	"	ST 1
7/25	0138	ST	22.76958 158.02564	FSM	ST 2
"	0155	PP	22.73875 158.05879	"	PP 2
"	0145	WW	22.76010 158.06628	"	WW 2
"	0854	ST	22.75022 158.09276	"	ST 3
"	0845	WW	22.74021 158.08405	"	WW 3
7/25	22:20	59100	22.72292 158.13683	JS	ST 4
7/25	22:00	XEOS_04	22.7369 158.02754	JS	GA 1
7/25	22:00	XEOS_01	22.70977 158.13896	JS	WW 4
7/26	8:56	59100	22.7060 158.1590	FSM	ST 5
"	8:45	XEOS-04	22.7139 158.05096	"	GA 2
"	8:45	XEOS-05	22.69164 158.16701	"	WW 5
7/26	13:30	XEOS-4	22.69987 158.07161	JS	GA 3
7/26	14:45	XEOS-4	22.69963 158.07509	JS	GA 4
7/26	15:20	59100	22.69530 158.18515	JS	ST 6
7/26	17:50	XEOS-5	22.67714 158.20522	JS	WW 6

Hawaii Ocean Time-series
HOT-304
In Situ Primary Production Data Sheet

Operators: BW, DS, RT, CF
Date in: 7/24/2018 Time in: 0530 (HST)

Date out: 7/24/18 Time out: 1930 (HST)

Incubation Depth	✓	Insertion Depth	Owner
175	✓		
150	✓		
125	✓		
100	✓		
75	✓		
45	✓		
25	✓		
5	✓		

Position in: 22° 45.21 ' N 158° 01.83'W
Position out: 22° 44.02 ' N 158° 04.087'W

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

Notes:

Begin Inoculation _____ End Inoculation _____
Filtration time _____

Hawaii Ocean Time-series
HOT-304
In Situ Primary Production Data Sheet

Operators: BW, DS, RT, CF
Date in: 7/24/2018 Time in: 5:30 (HST)

Date out: 7/24/18 Time out: 1927 (HST)

Incubation Depth	✓	Insertion Depth	Owner
175	✓		
150	✓		
125	✓		
100	✓		
75	✓		
45	✓		
25	✓		
5	✓		

Position in: 22° 45.09 ' N 158° 02.72'W
Position out: 22° 46.00 ' N 158° 03.20'W
44.02N 4087

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

Notes:

Begin Inoculation _____ End Inoculation _____
Filtration time _____

Hawaii Ocean Time-series
HOT-304 Sediment Trap Data Sheet

Type of traps:	PIT for HOT and McCarthy	Date:	7/24/2018
Operator(s):	BW, DS, RT, CF	Wind:	14 Knots from East
Position in:	22° 47.04' 158° 03.01	Sea State:	2-4'

Time in: 150 m 4:20 (HST)

Time released: 4:30
Time started:

Operator(s):	BW, DS, RT, CF	Date:	7/26/2018
Position out:	22° 41.66' 158° 11.04	Wind:	~ 13 Knots from N.E.
Overall sea state:		Sea state:	1-3'

Time Out: 150 m 08:27 (HST)

Notes:

Hawaii Ocean Time-series
HOT-304 Sediment Trap Data Sheet

Type of traps: PIT for HOT and McCarthy
Operator(s): Bw, ds, cf, rt
Position in: 22°46.918' 158 02.870
22 47.04
158 03.01

Date: 7/24/2018
Wind: 14 KTS ~~from 104°~~ E
Sea State: 2-4'

Time in: 150 m 0420
(HST)

Time released: 0480
Time started:

Operator(s): BW, DS, CF, RT
Position out: ~~22 42.9266 158 10.224~~
22.4166 158 11.40
Overall sea state:

Date: 7/26/2018
Wind: ~~to~~ 13 kts from NE
Sea state: 1-3'

Time Out: 150 m ~~0741~~ 8:27
(HST)

Notes:

Data Sheet for Sediment Trap Volumes

Cruise #: 304
Analyst: DS, RT, CF

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

Trap Name	Depth (m)	Height (cm) at Line #2 (Top Line)
A	150	35.0
B	150	
C	150	
D	150	
E	150	
F	150	
G	150	
H	150	
I	150	
J	150	
K	150	
L	150	

± 1 cm

Data Sheet for Sediment Trap Volumes

Cruise #: 304 - McCarthy
Analyst: JS, CF, RT

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	36.5	
B	150	38.0	
C	150	34.7	
D	150	39.0	
E	150	39.0	
F	150	38.8	
G	150	40.3	
H	150	39.9	
I	150	38.0	
J	150	35.5	
K	150	38.5	
L	150	39.2	

Hawaii Ocean Time-series
HOT-304
In Situ Gas Array Data Sheet

Operators: BW, DS, CF, RT	**Operators: BW, DS, CF, RT**
Date Deployed : 7/25/2018	**Date Recovered: 7/26/2018**
Time (HST): 4:30	**Time (HST): 6:34**
Position: 22° 45.237 158° 01.049	**Position: 22° 41.93 158° 04.64**

Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
3-1	**7/25/2018**	**Start 3:20**	**7/26/2018**	**7:58**		
3-2				**8:26**		
3-3				**8:26**		
4-1				**7:58**		
4-2				**7:58**		
4-3				**7:58**		
5-1				**7:55**		
5-2				**7:57**		
5-3				**7:57**		
6-1				**7:08**		
6-2				**7:08**		
6-3				**End 7:55**		
7-1						
7-2						
7-3						
8-1						
8-2						
8-3		**End 3:30**		**Start 7:08**		

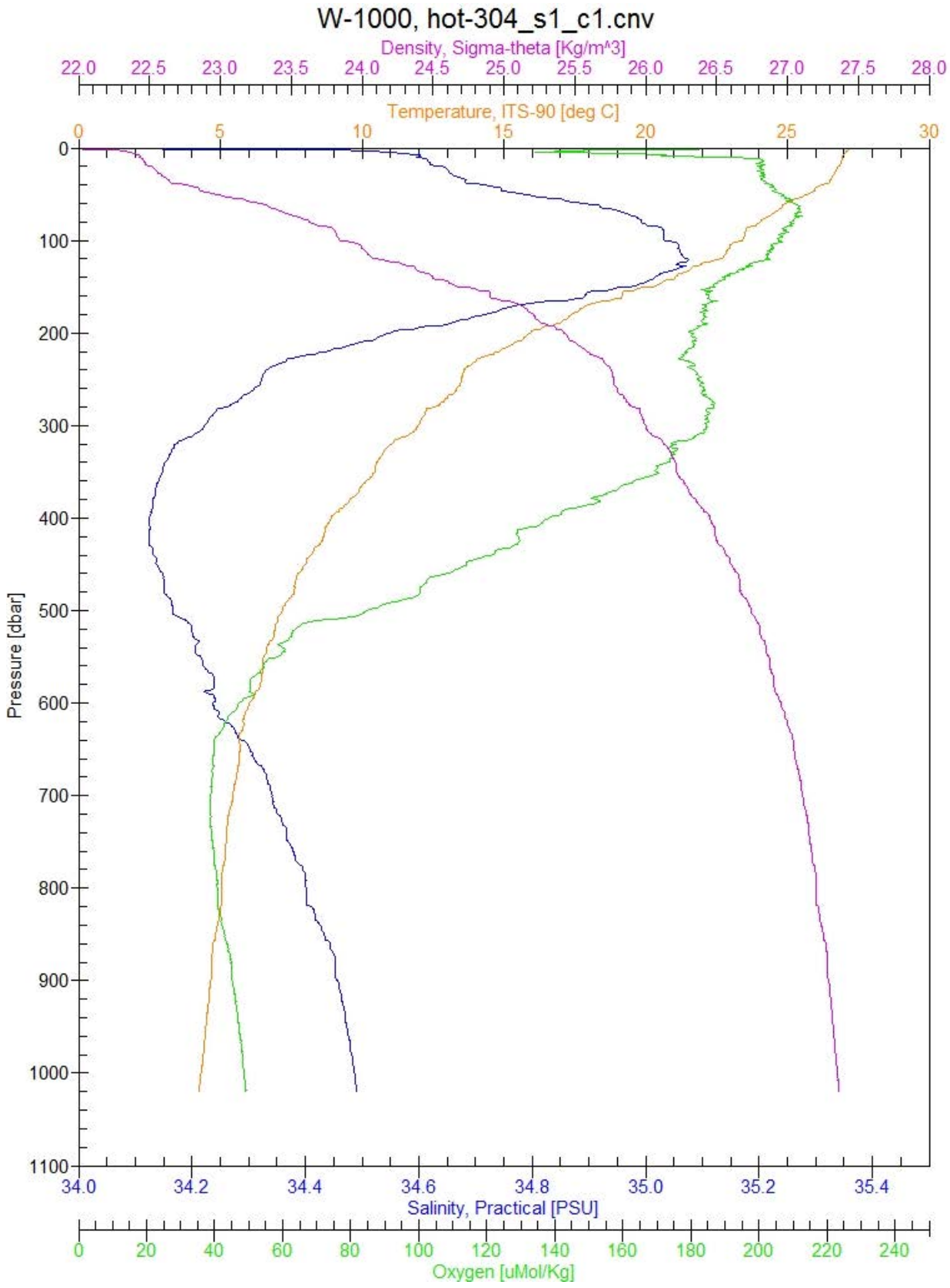
Hawaii Ocean Time-series
HOT-304
In Situ Gas Array Data Sheet

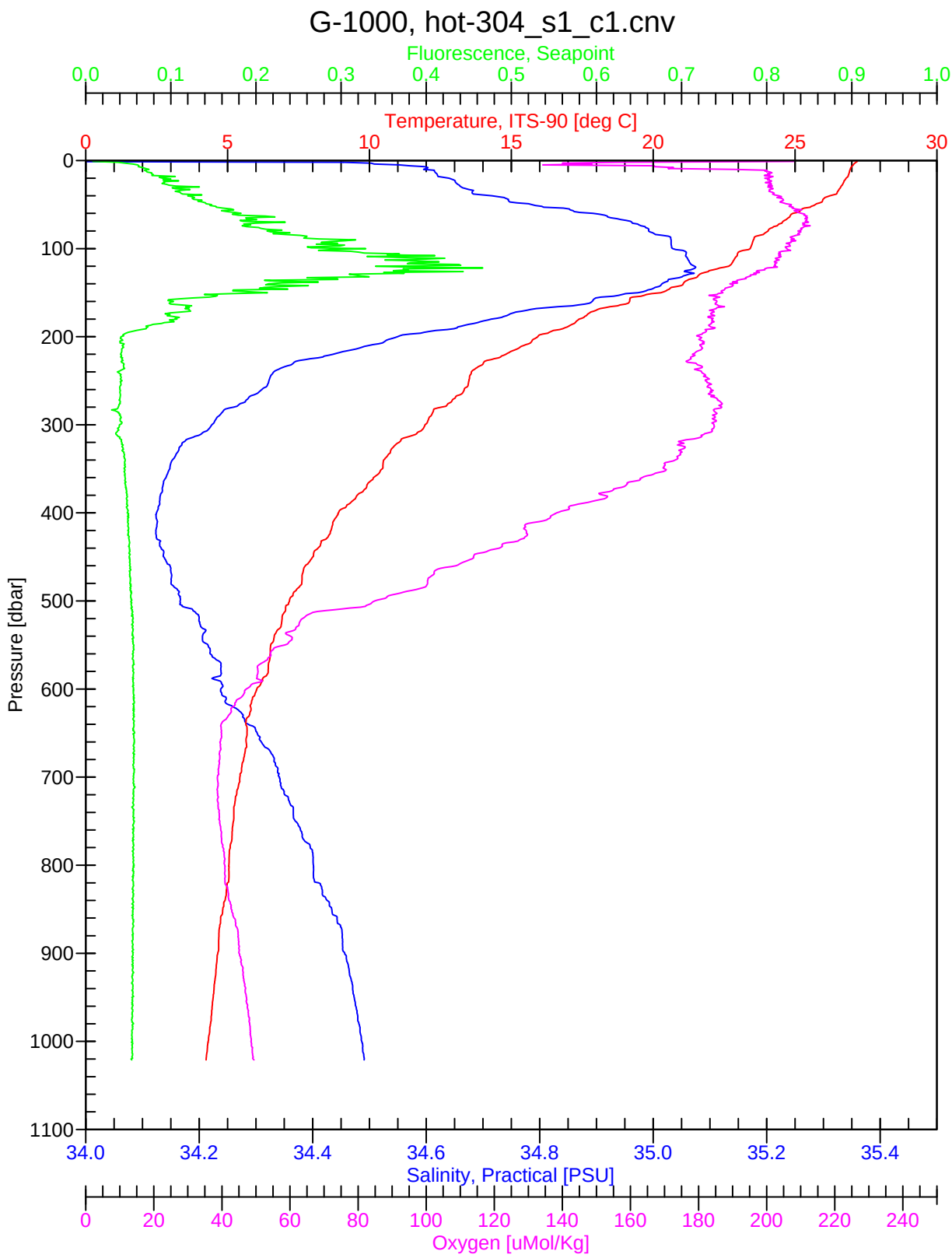
Operators: BW, DS, CF, RT	**Operators:** ~~BW~~ DS, CF
Date Deployed : 7/25/2018	**Date Recovered:** 7/26/2018
Time (HST): 4:30	**Time (HST):** 6:34
Position: 22 45.~~436~~ 158 ~~02.197~~	**Position: 22 ~~42.45~~ 158 ~~05.01~~**
237 01.049	41.93 04.614

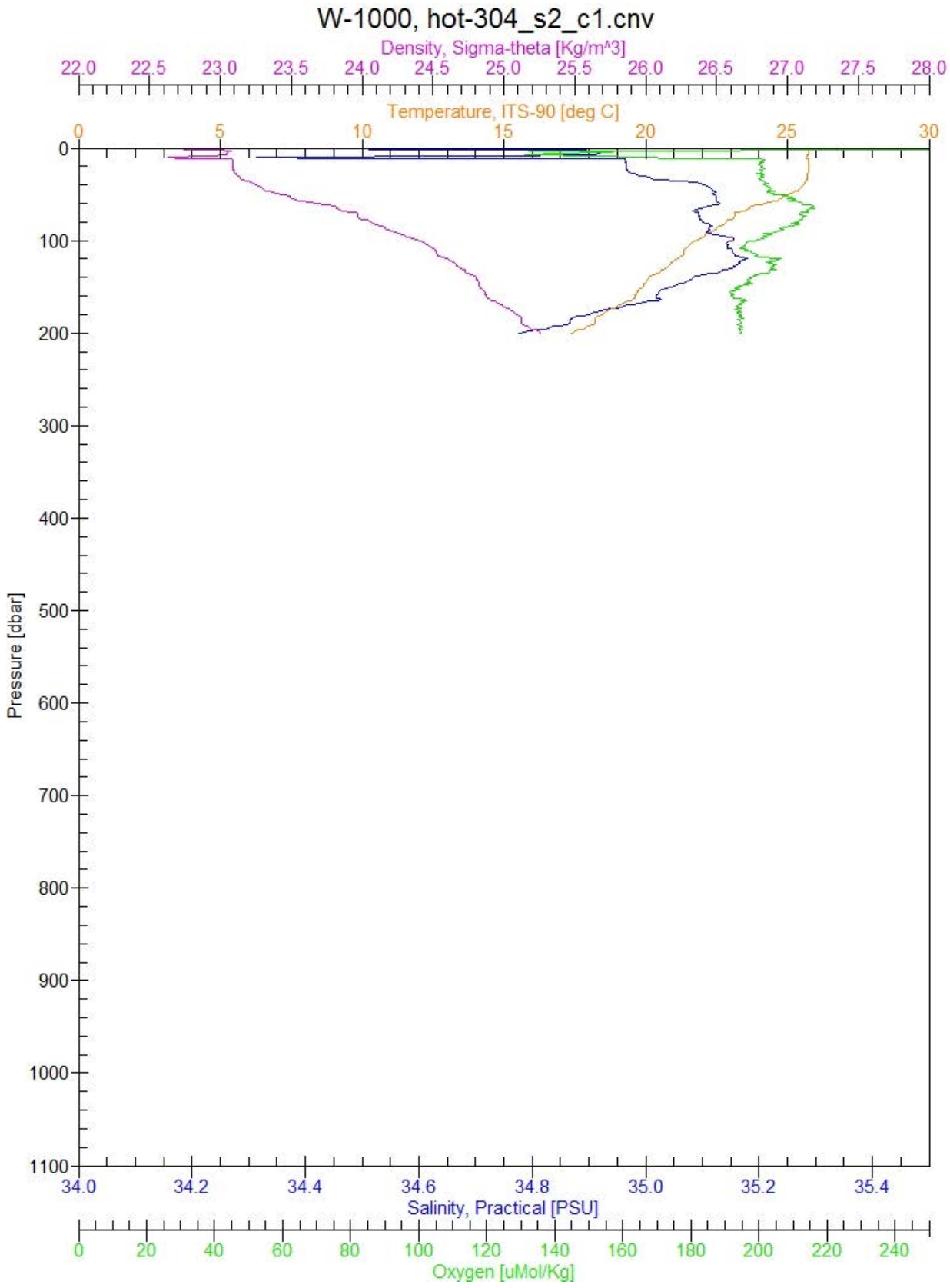
Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
3-1	7/25/2018	3:20	7/26	7:58		
3-2				8:26		
3-3						
4-1				7:58		
4-2						
4-3						
5-1				7:55		
5-2				7:57		
5-3						
6-1				7:08		
6-2						
6-3				7:53		
7-1						
7-2						
7-3						
8-1						
8-2						
8-3		3:30		7:08		

Stopped @ 7:47


W-1000, hot-304_s1_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
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-304_s1_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
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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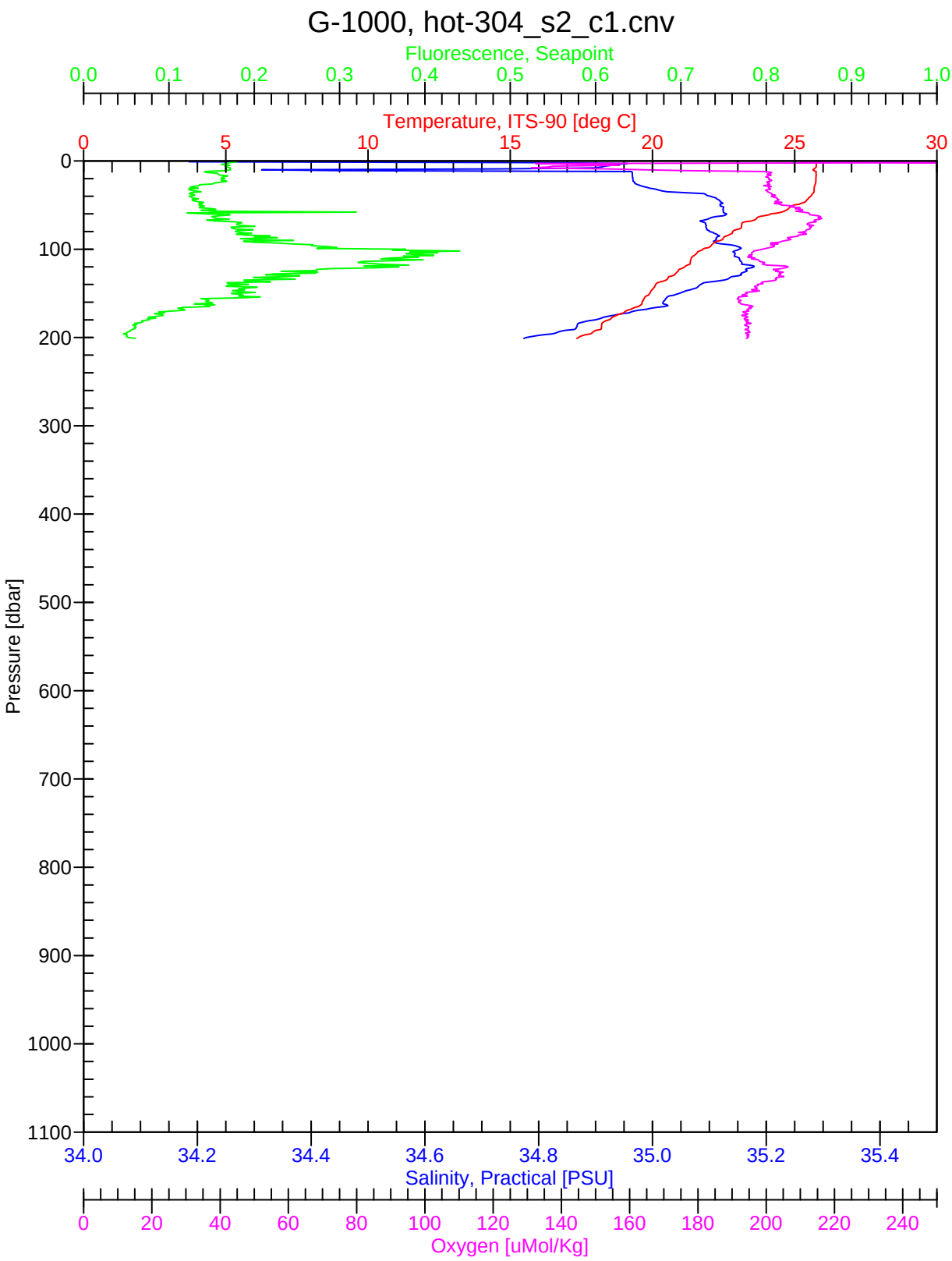
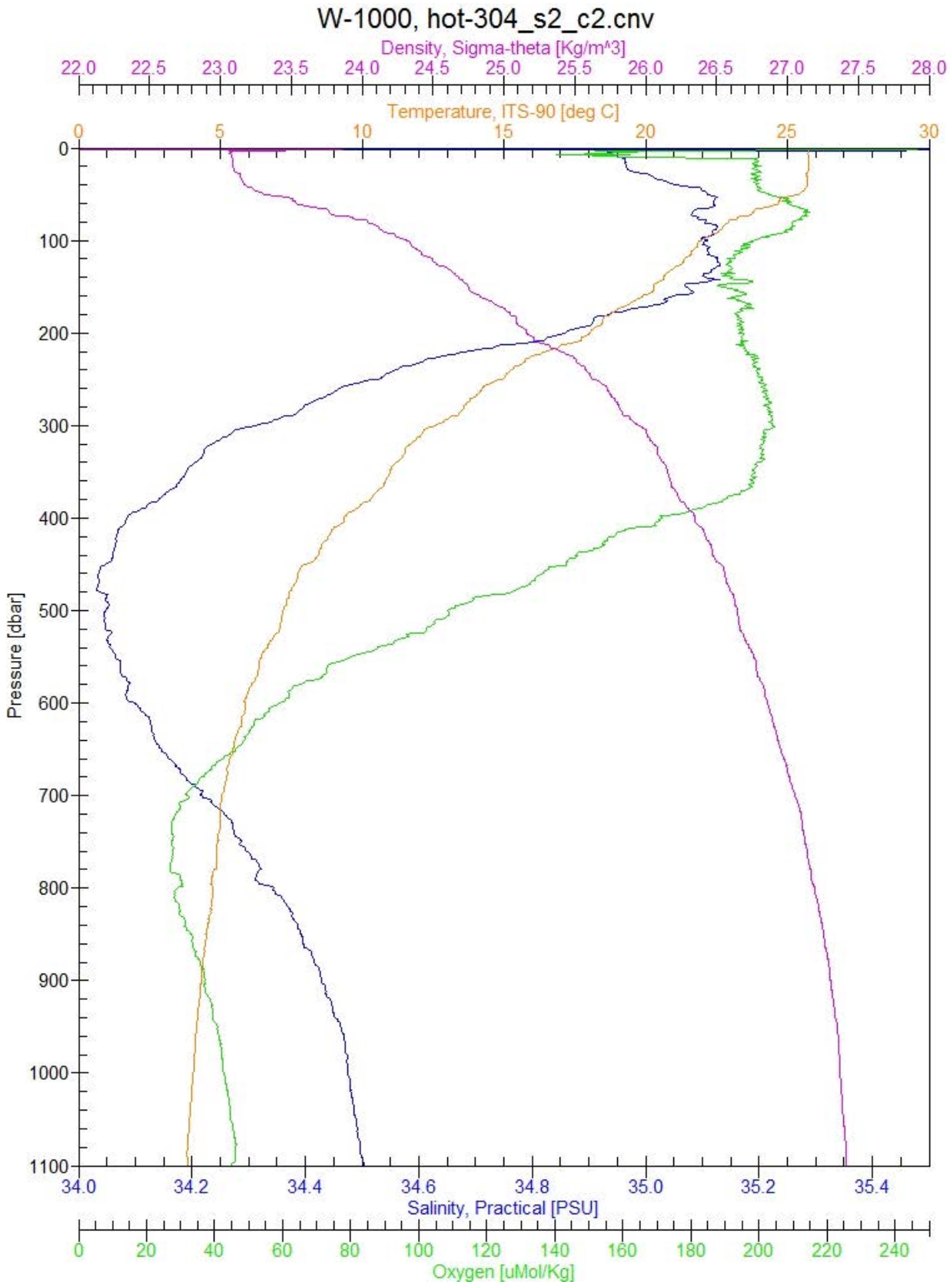
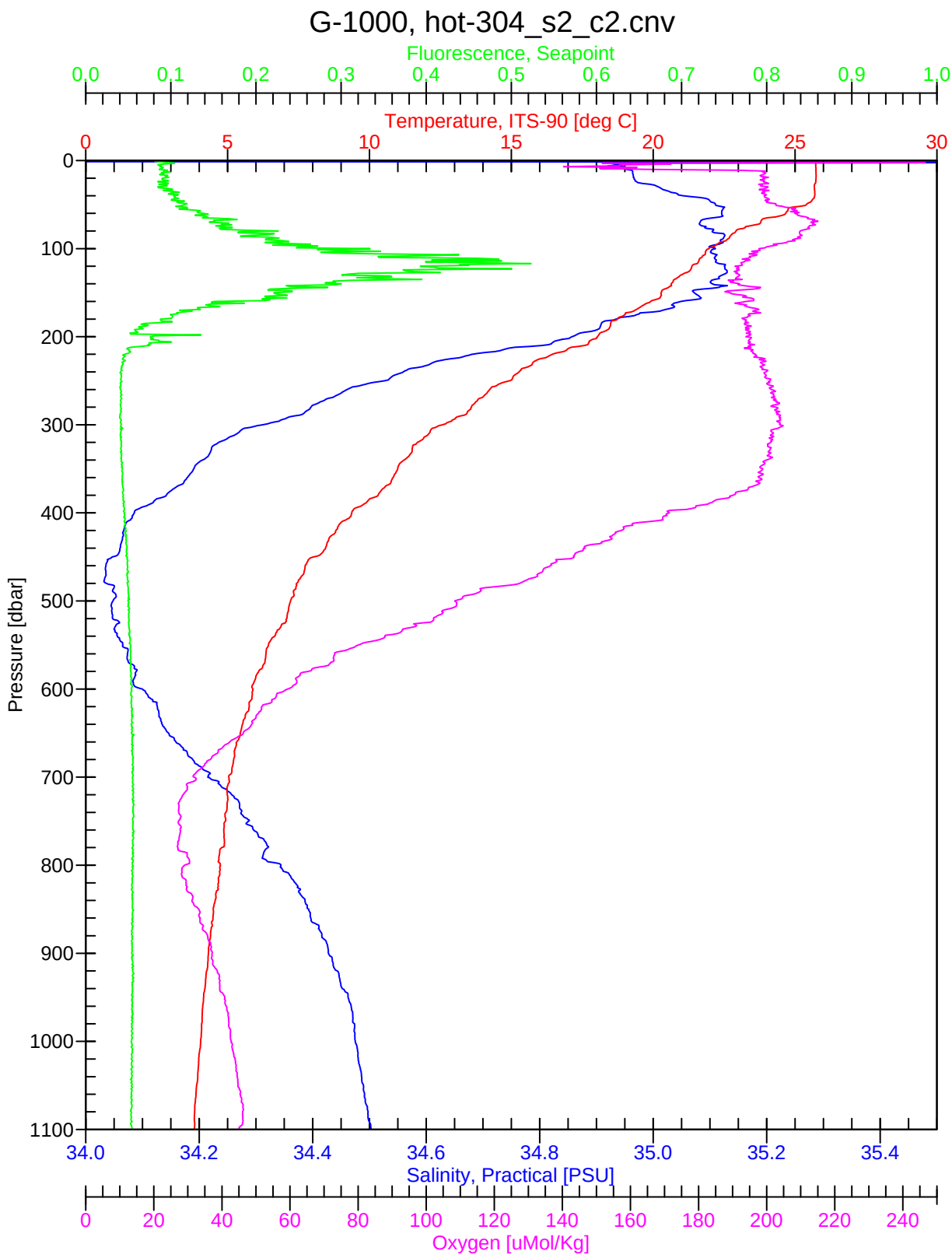
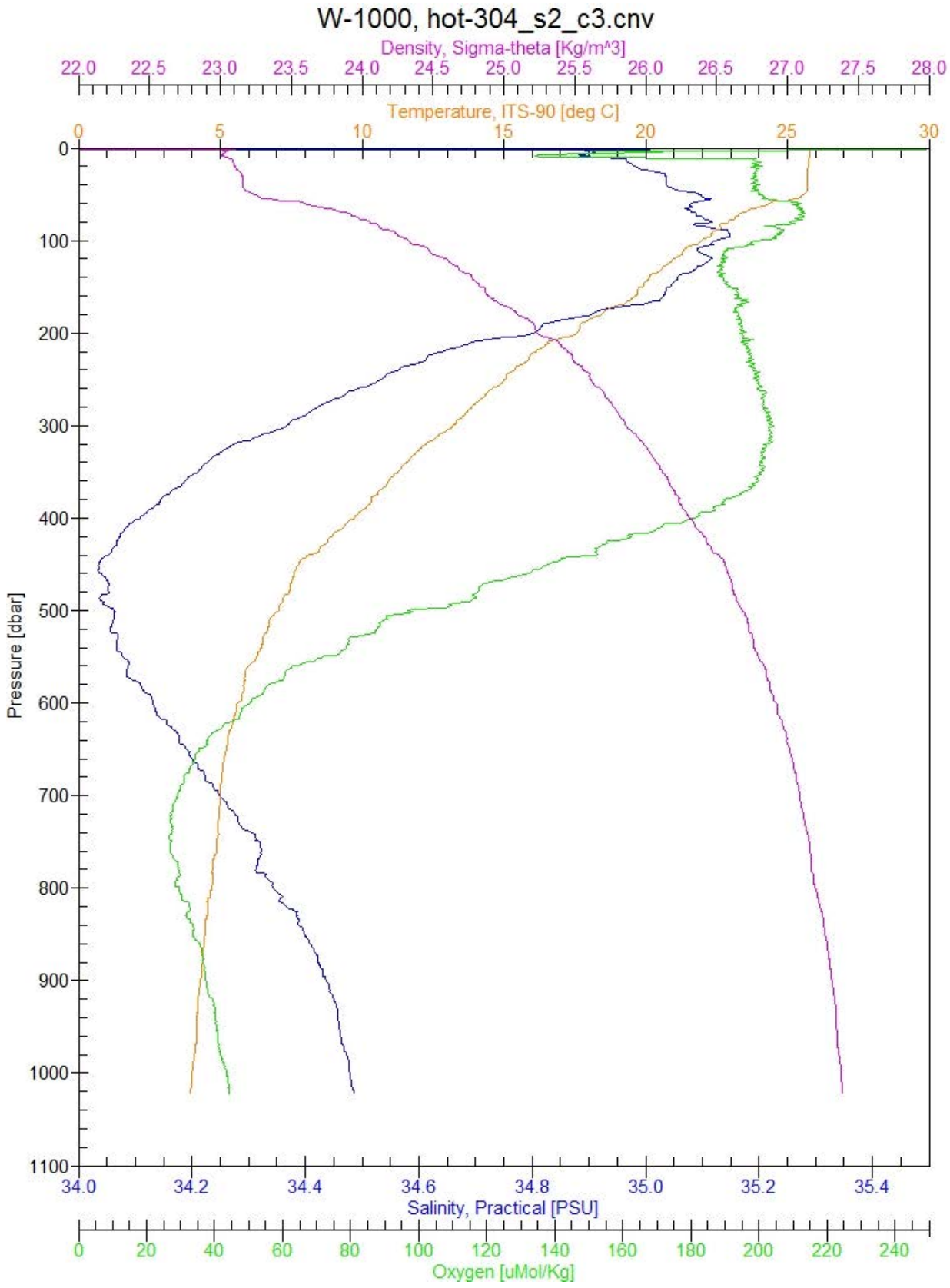
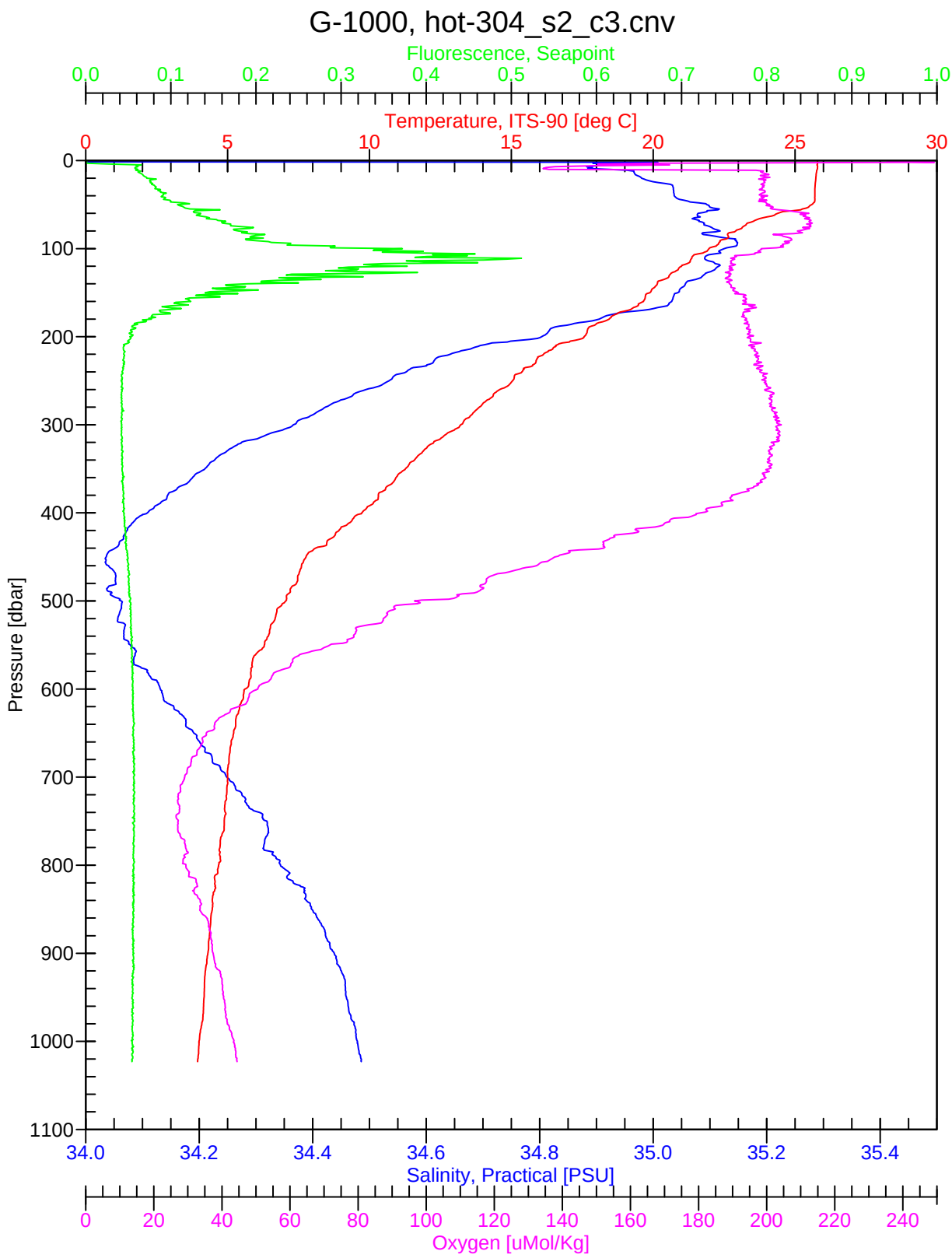
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

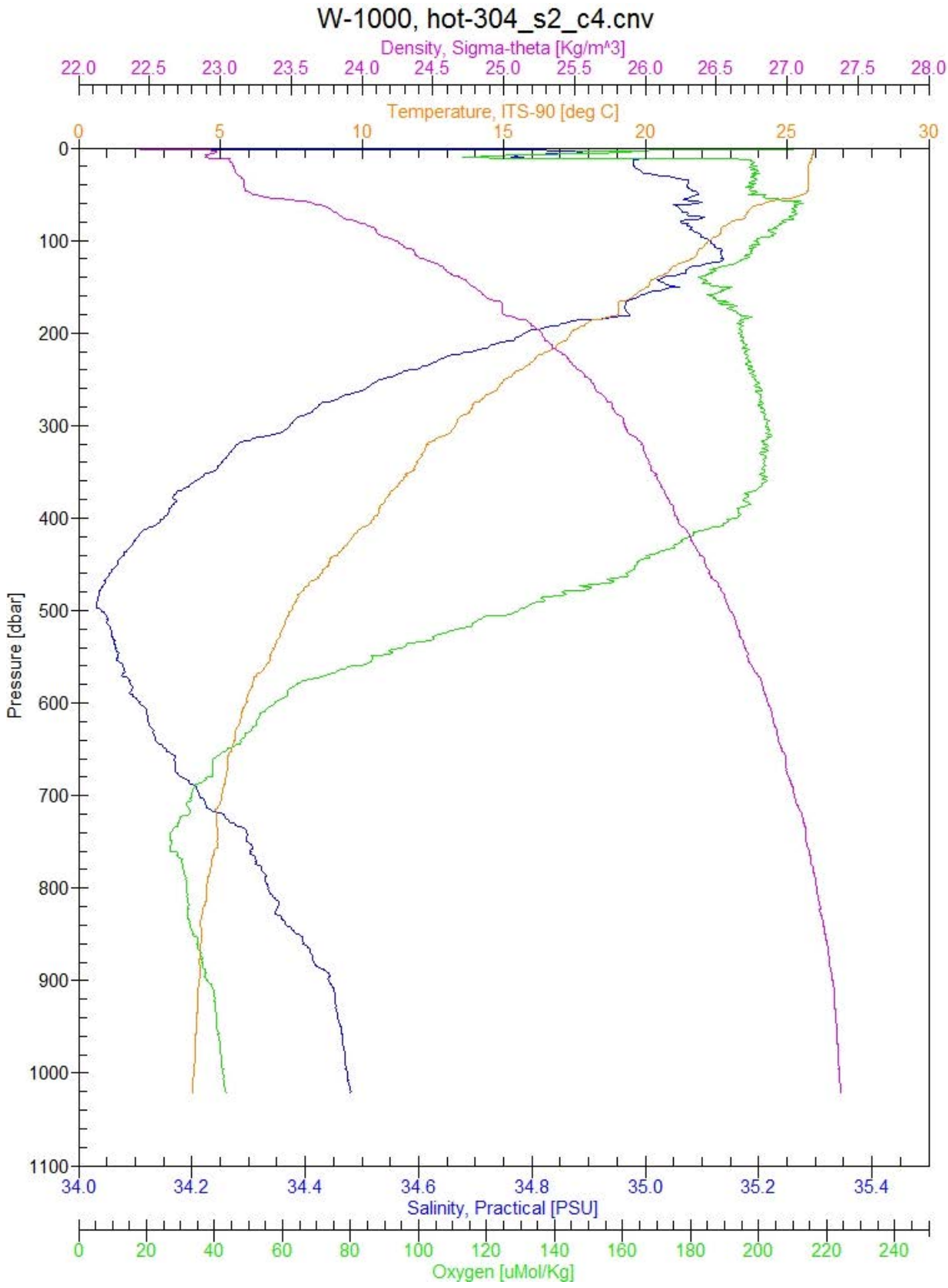

G-1000, hot-304_s2_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

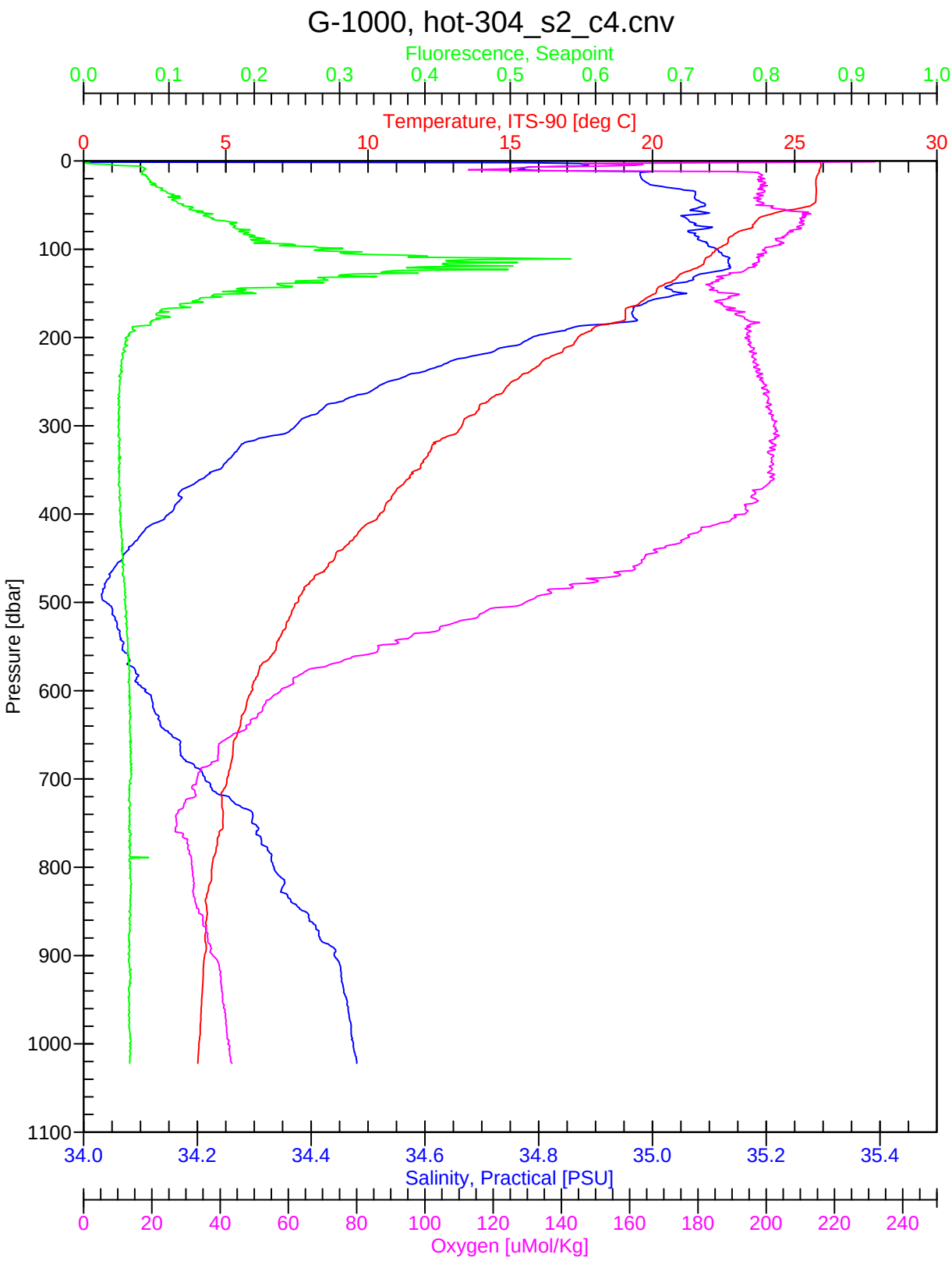

W-1000, hot-304_s2_c2.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

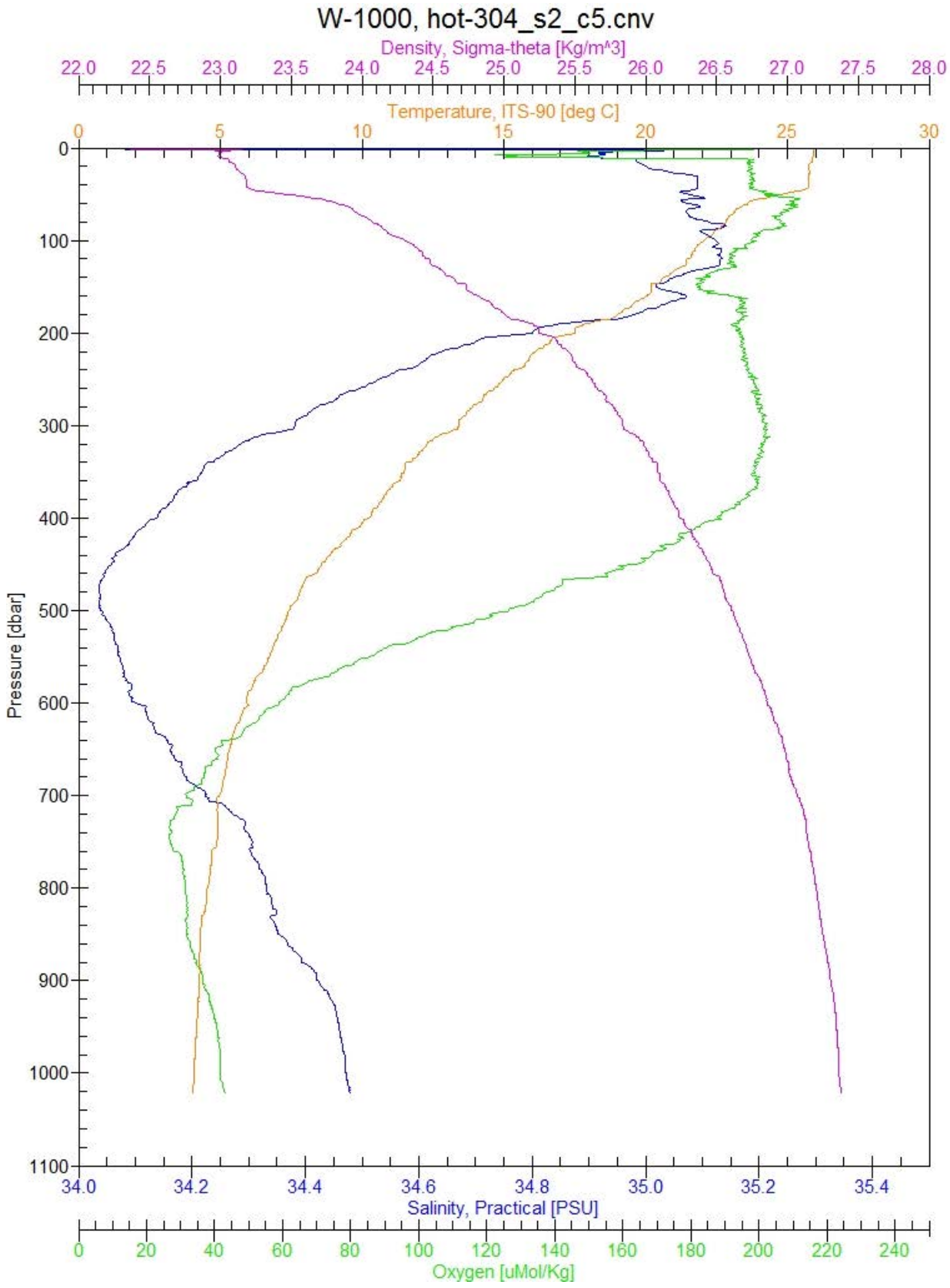

G-1000, hot-304_s2_c2.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

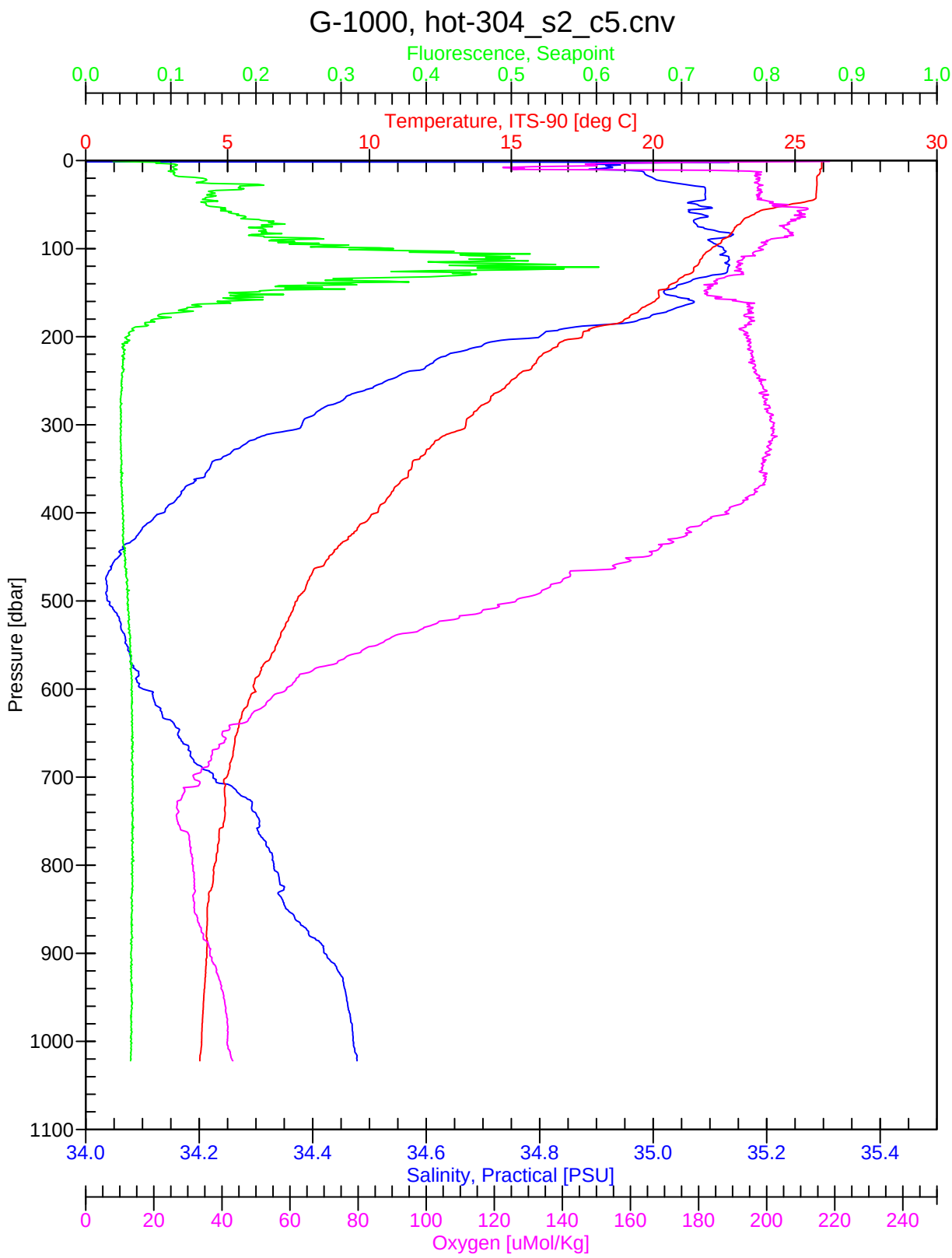

W-1000, hot-304_s2_c3.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

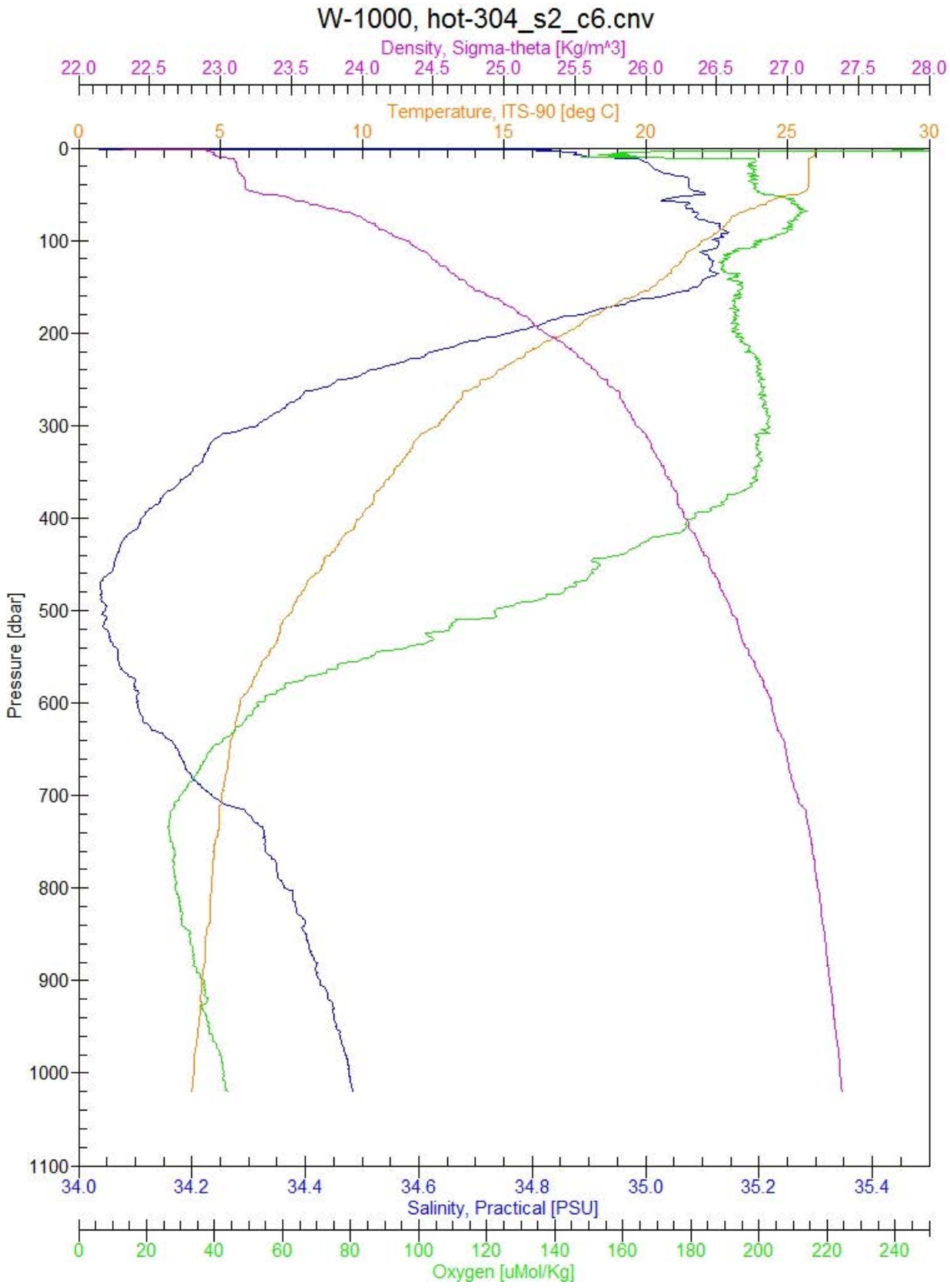

G-1000, hot-304_s2_c3.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

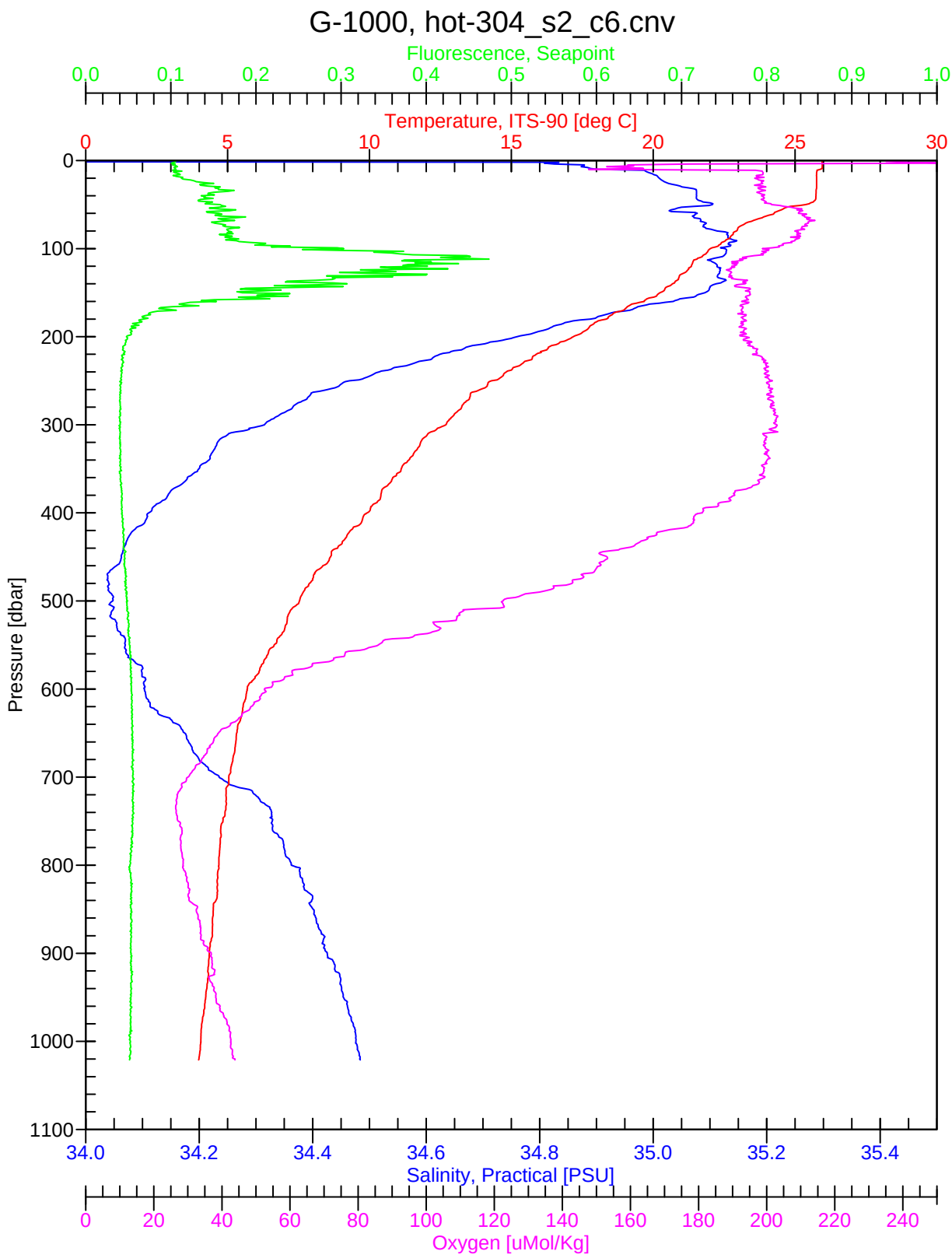

W-1000, hot-304_s2_c4.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

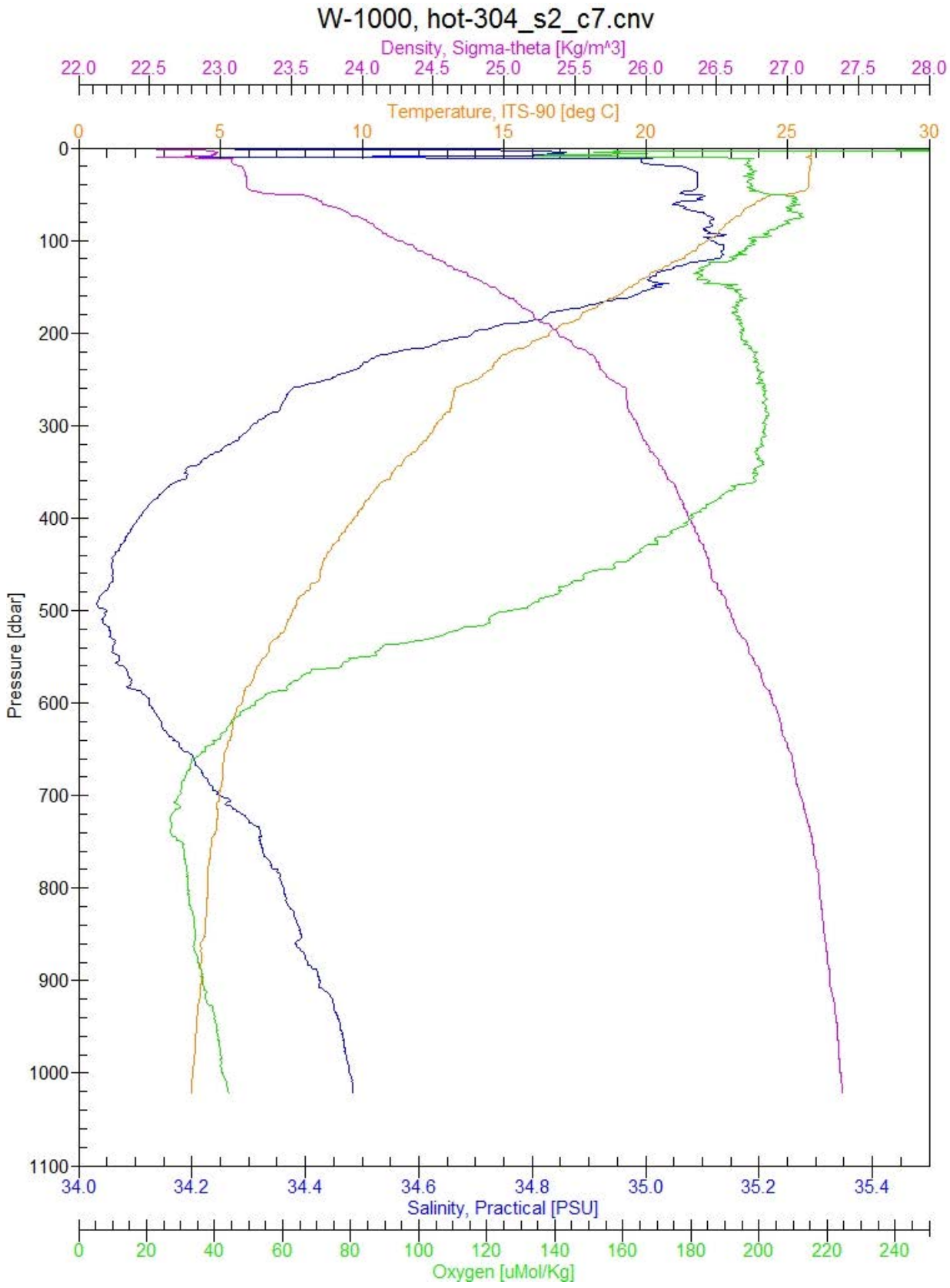

G-1000, hot-304_s2_c4.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

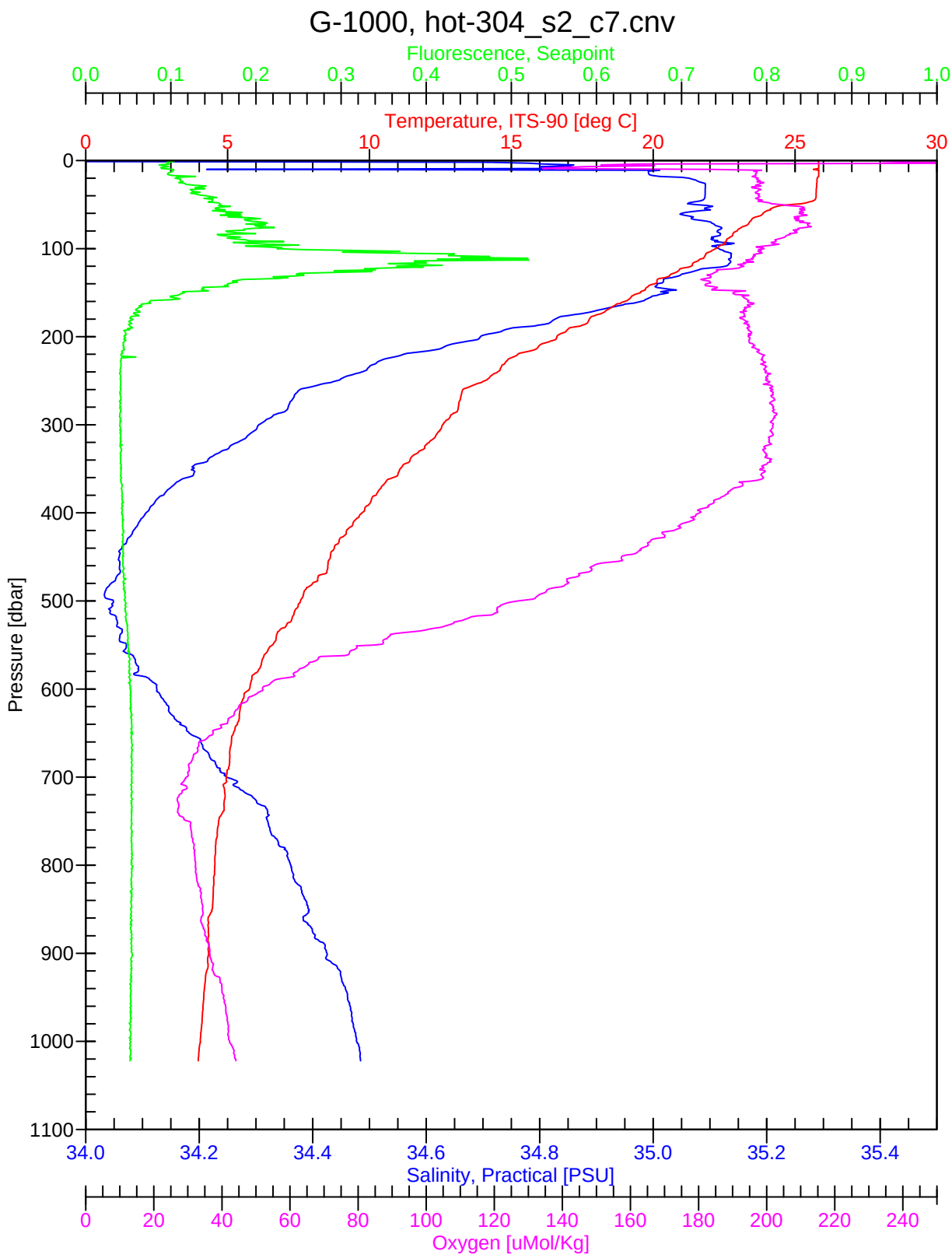

W-1000, hot-304_s2_c5.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

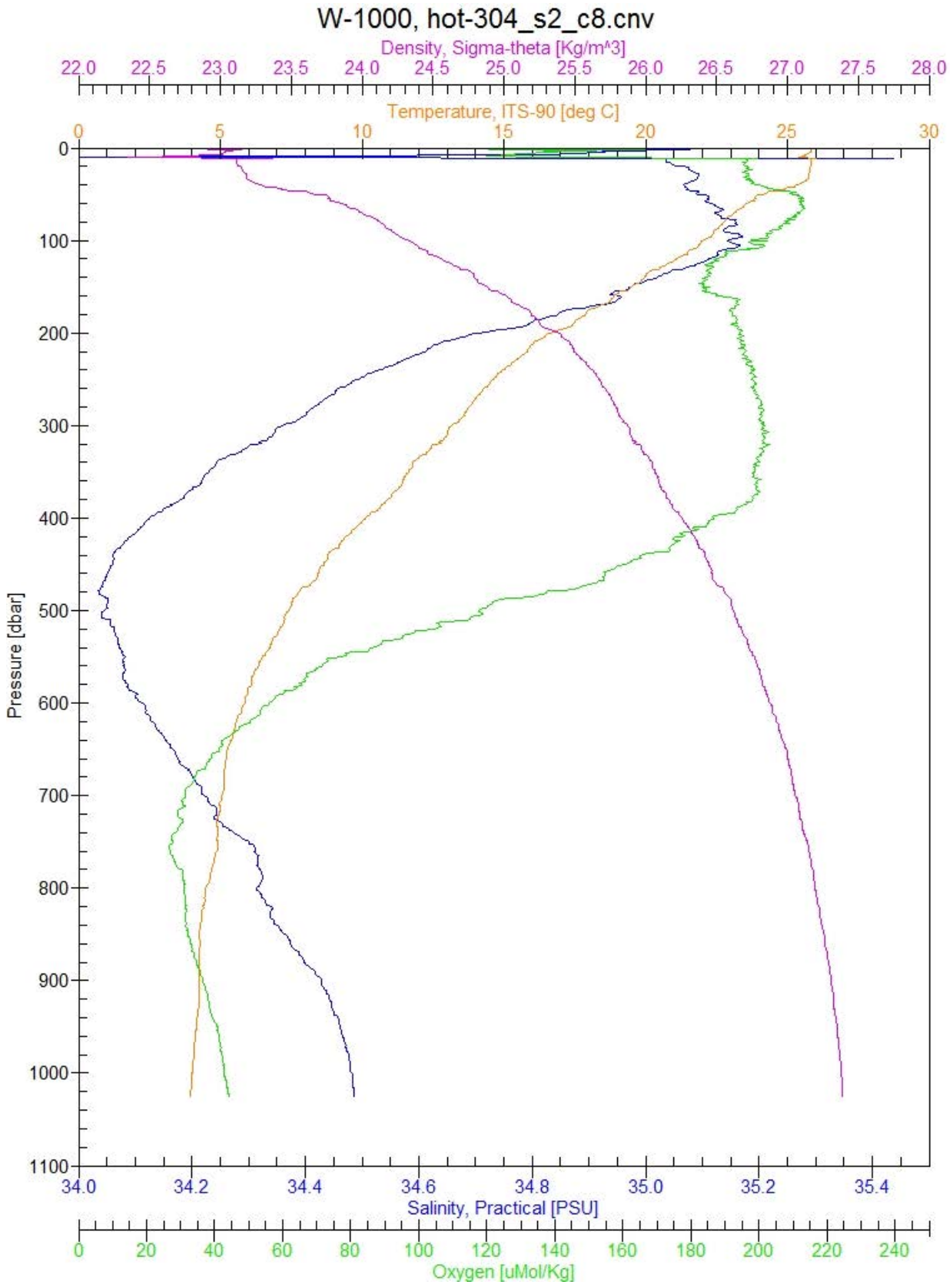

G-1000, hot-304_s2_c5.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

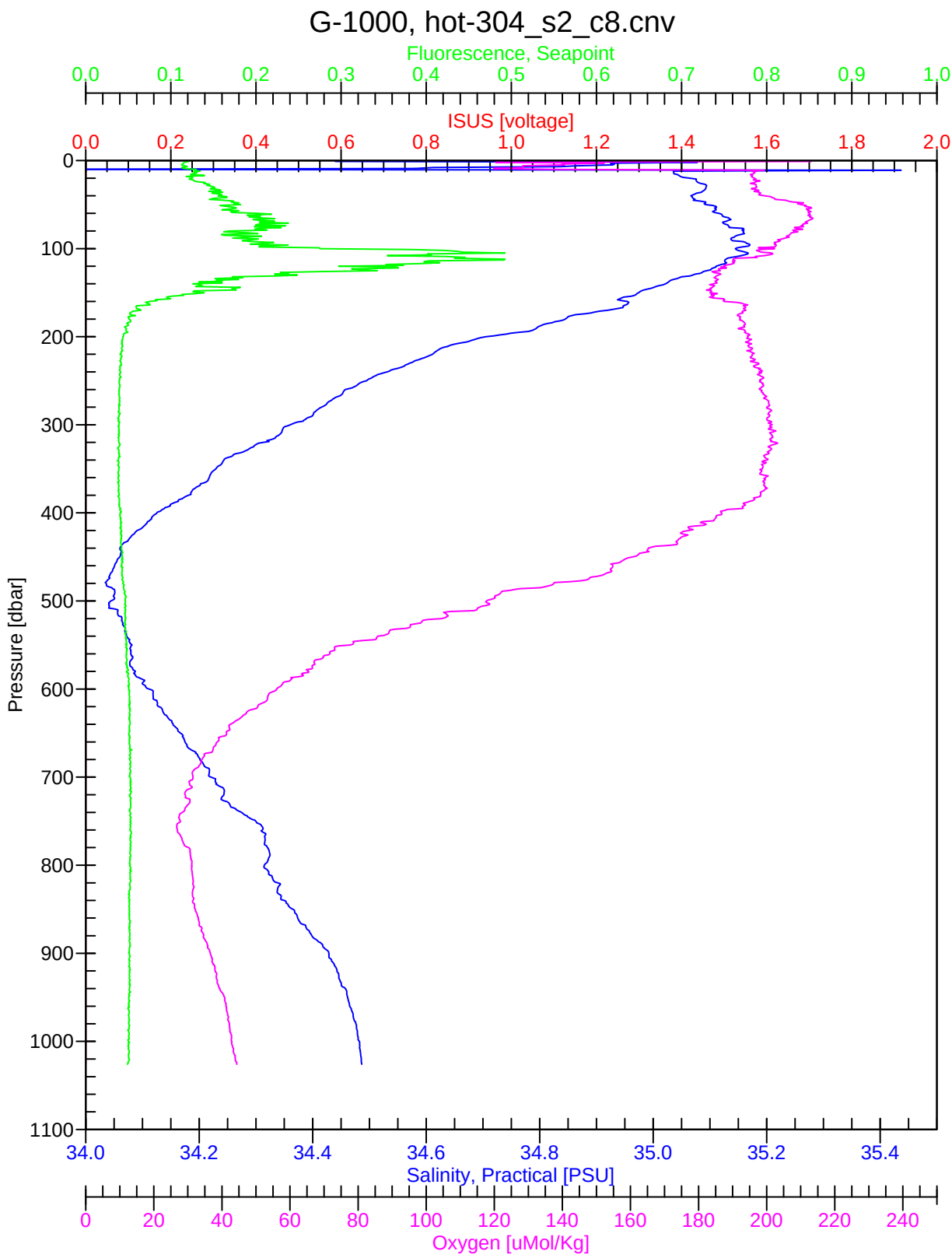

W-1000, hot-304_s2_c6.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

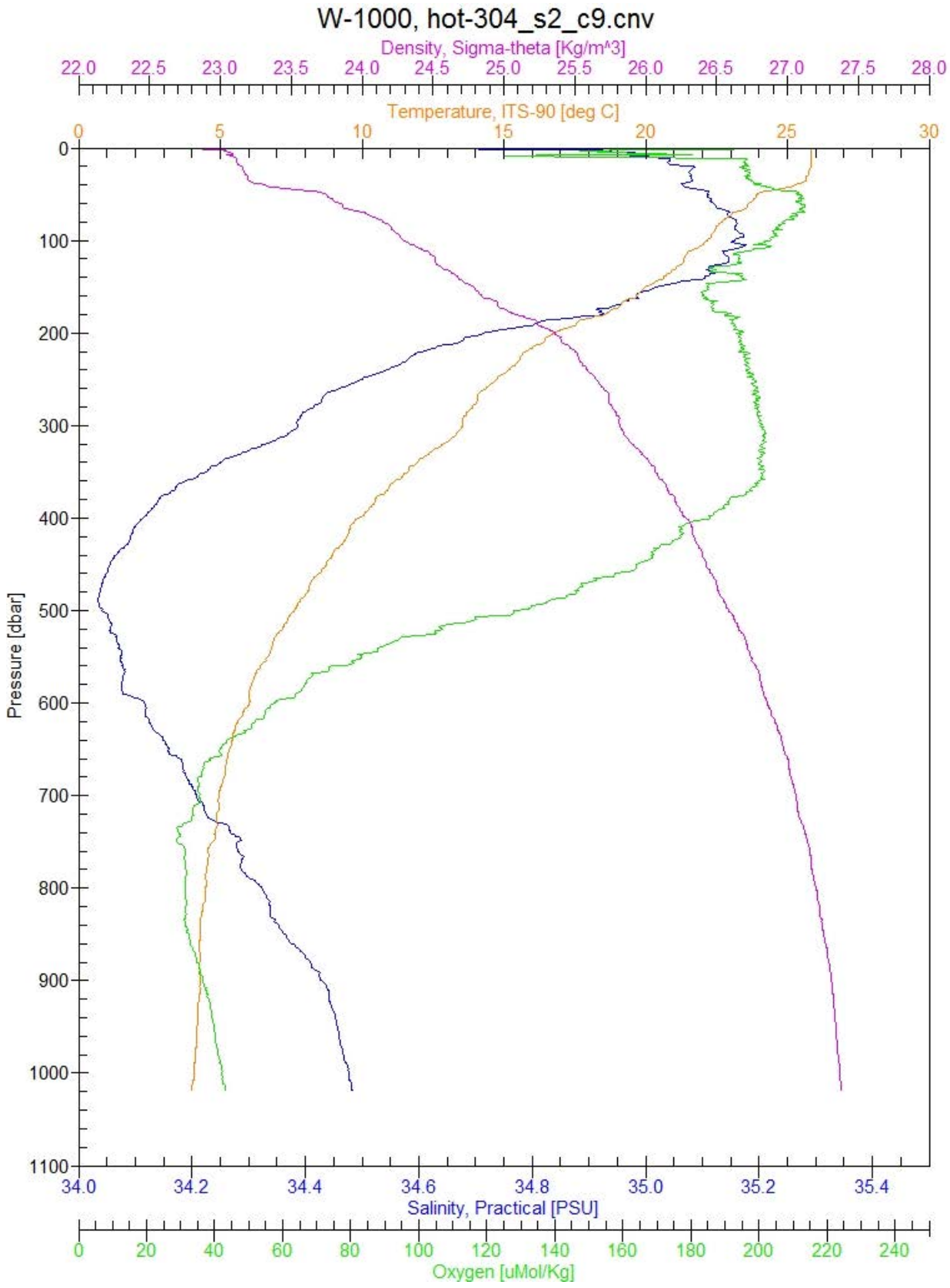

G-1000, hot-304_s2_c6.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

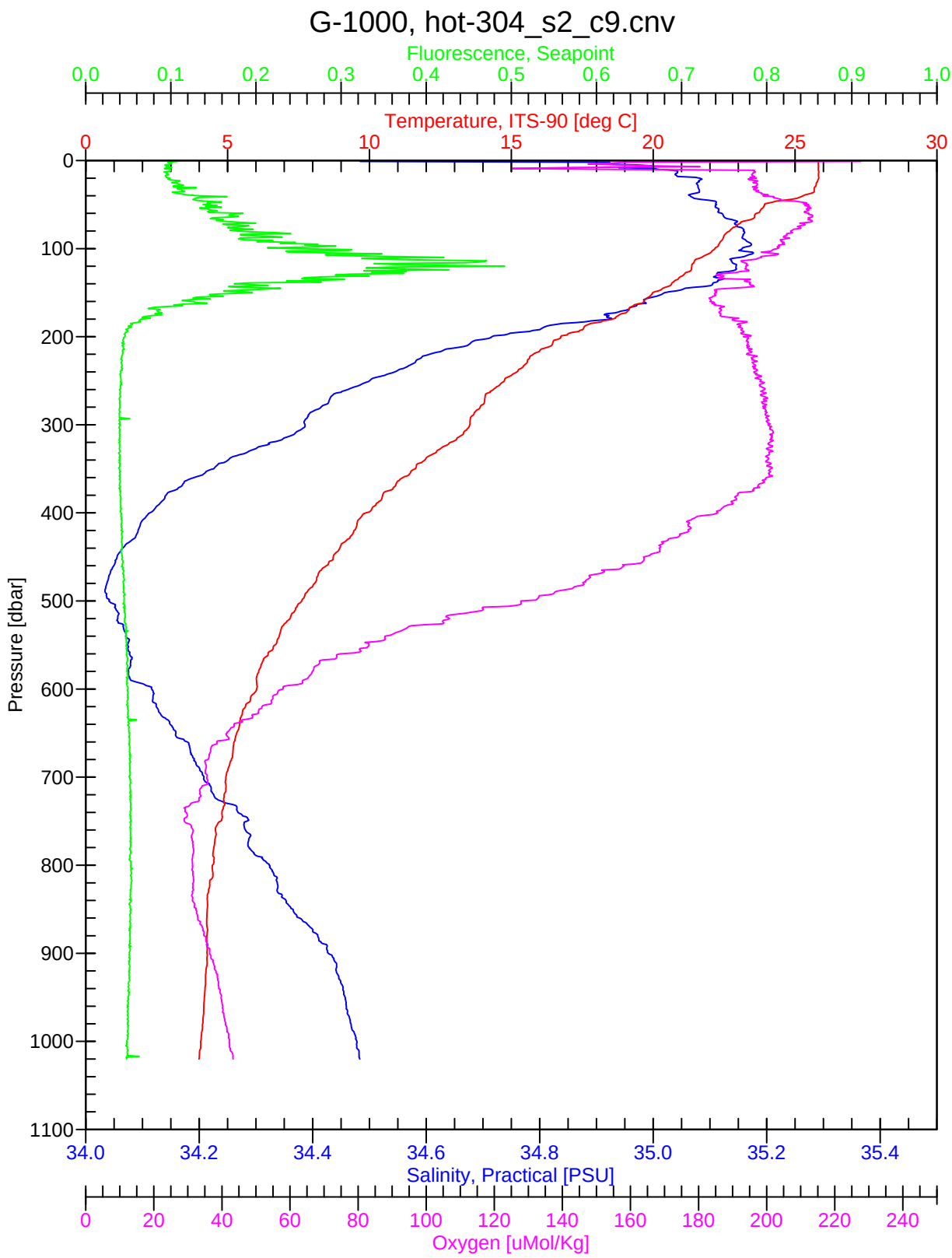

W-1000, hot-304_s2_c7.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

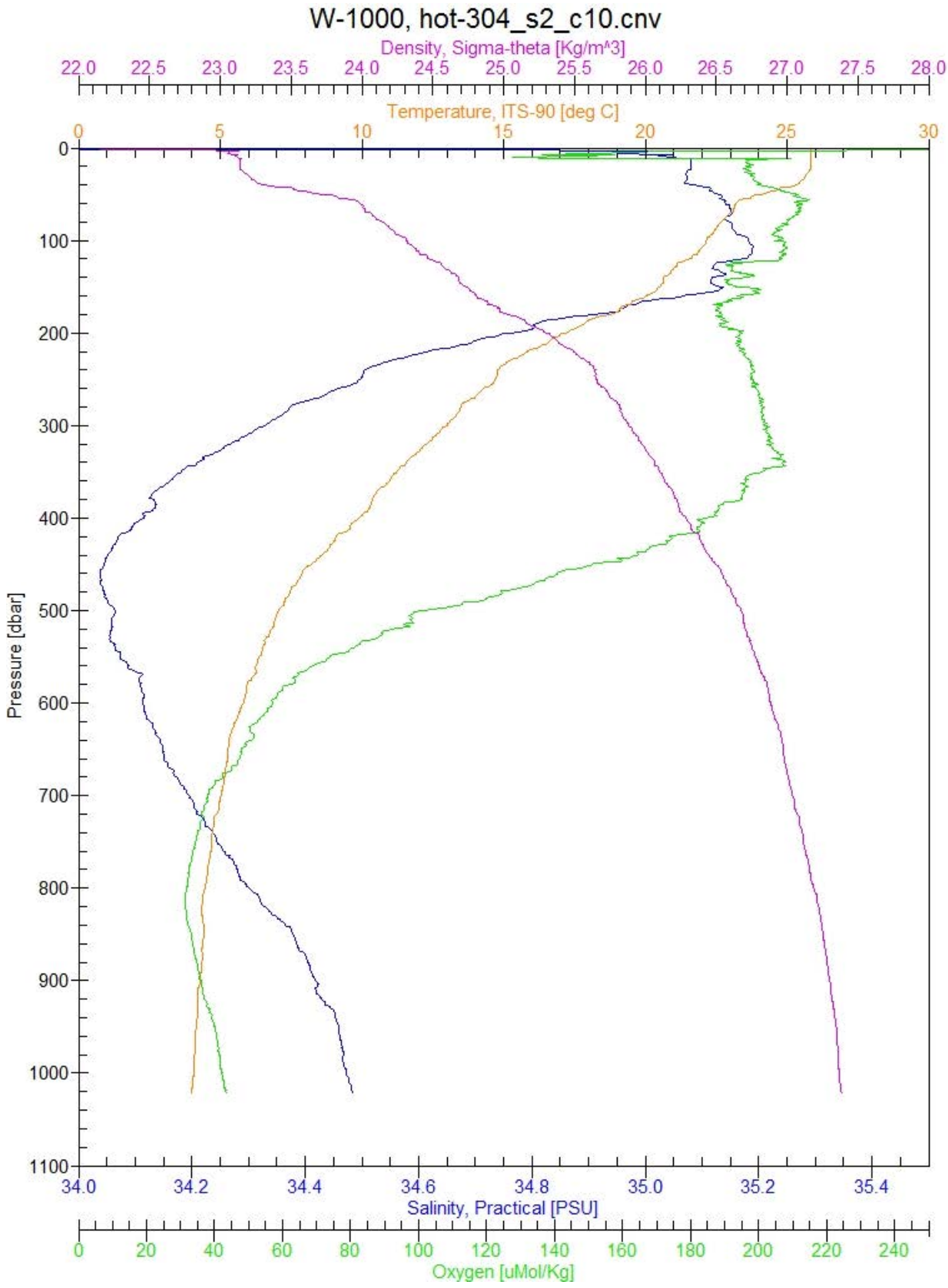

G-1000, hot-304_s2_c7.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

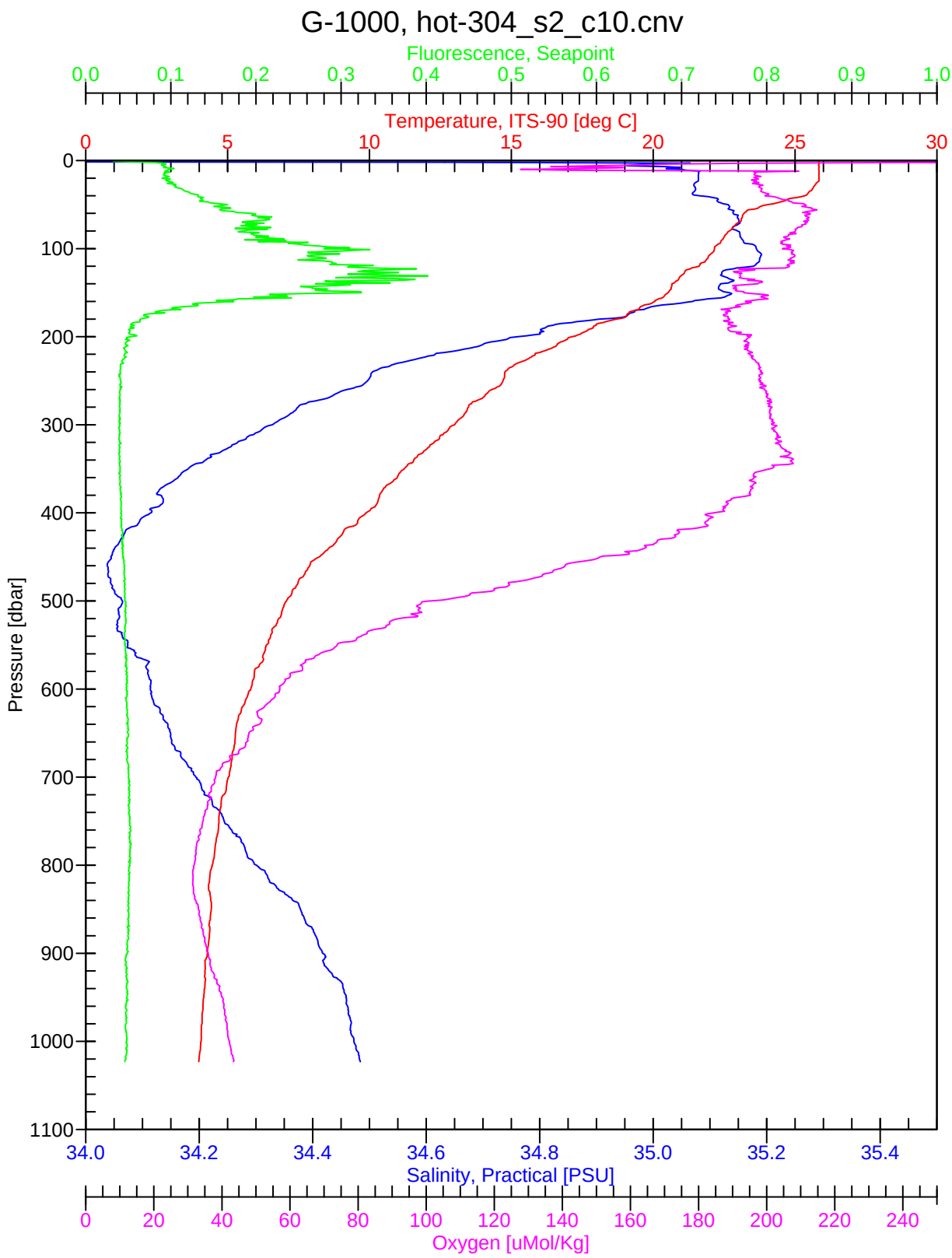

W-1000, hot-304_s2_c8.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

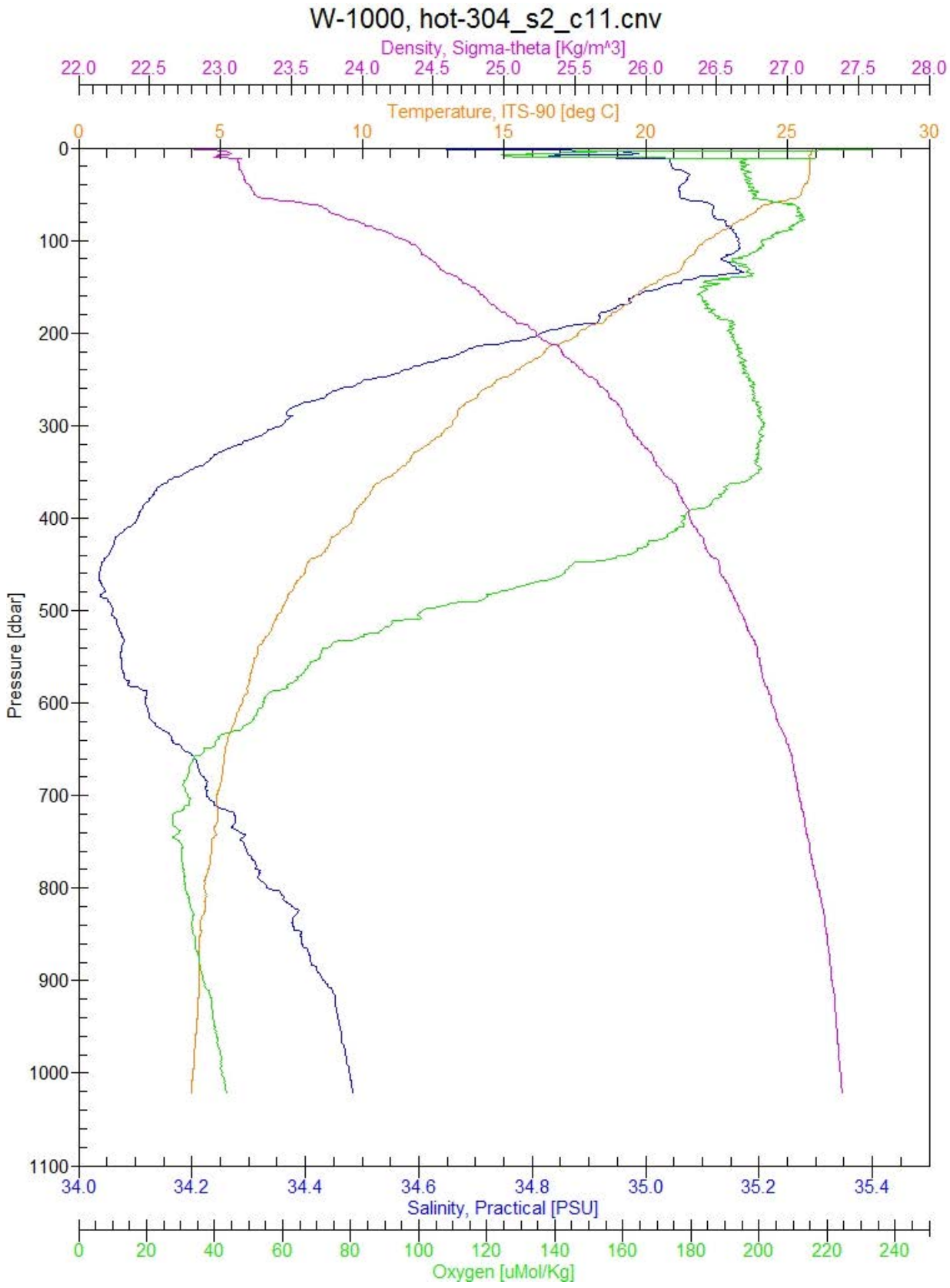

G-1000, hot-304_s2_c8.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
ISUS [voltage]
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

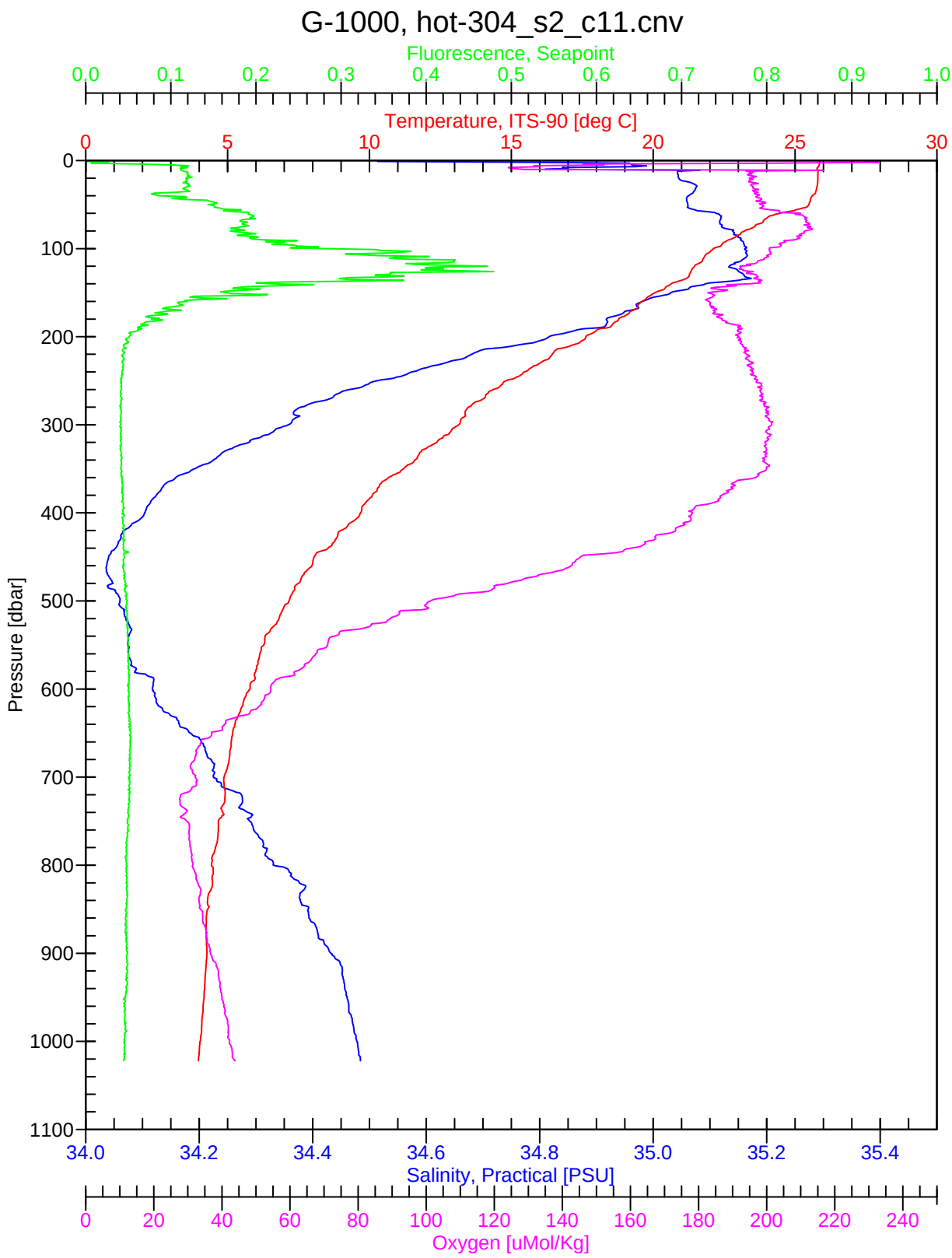

W-1000, hot-304_s2_c9.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

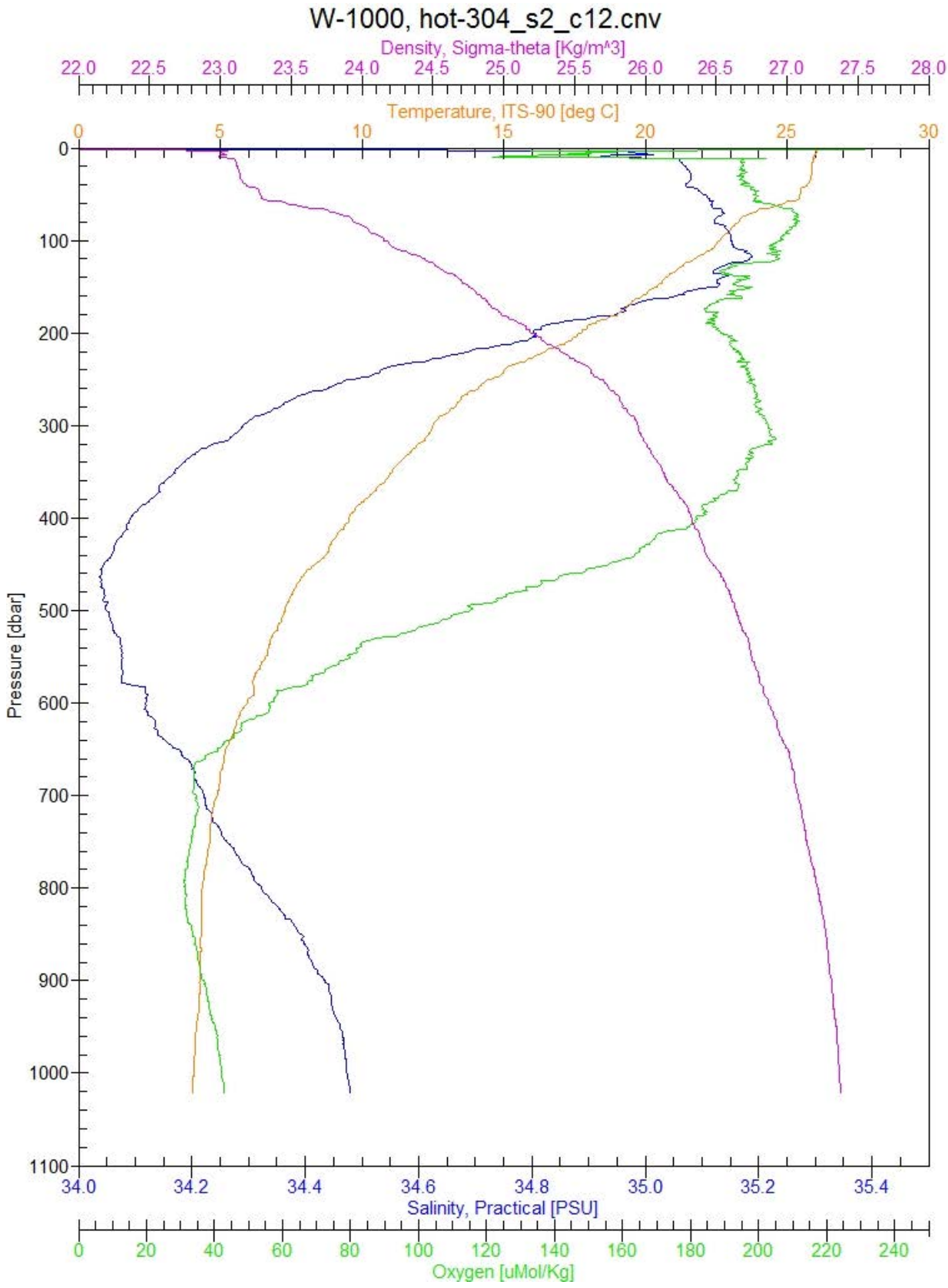

G-1000, hot-304_s2_c9.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

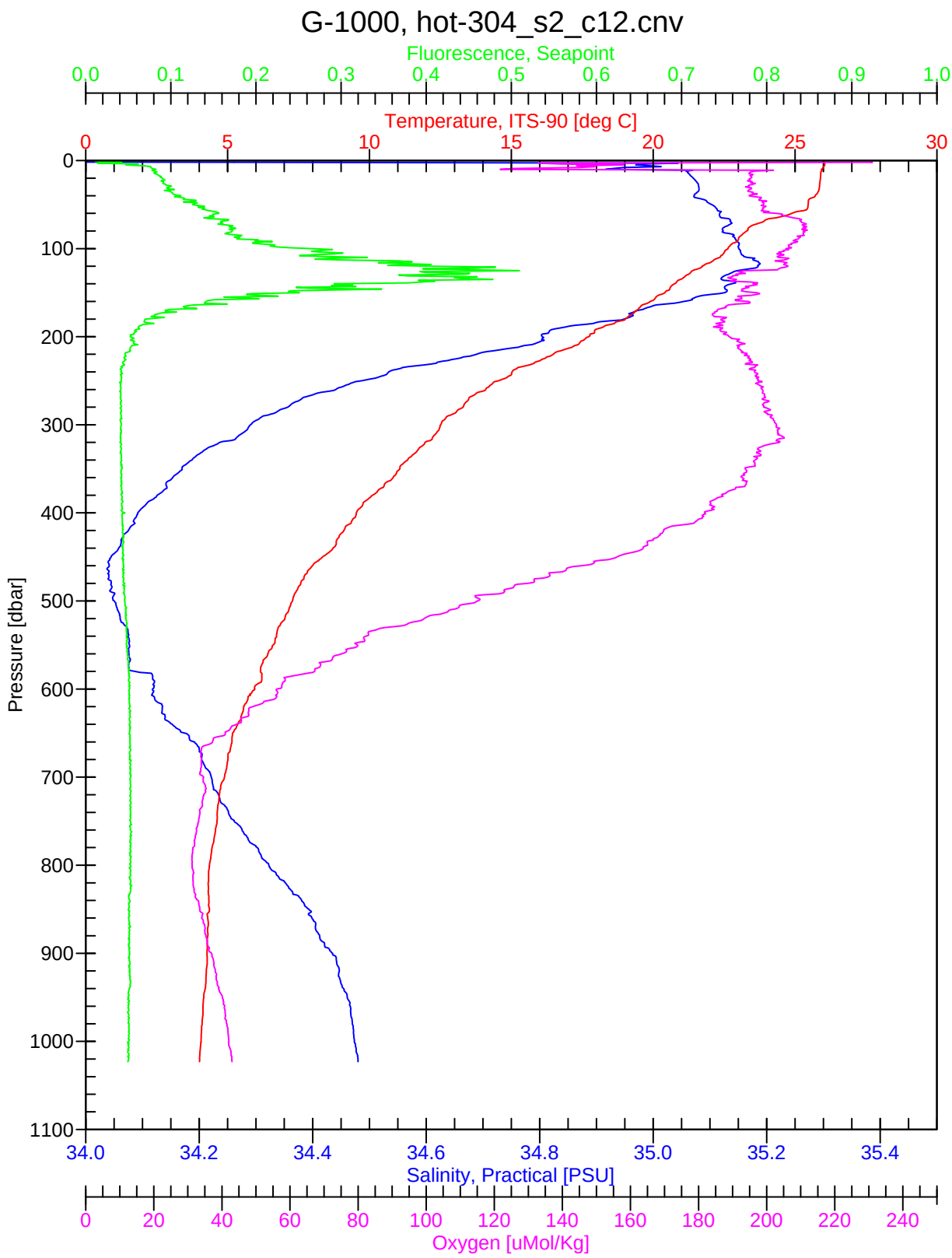

W-1000, hot-304_s2_c10.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

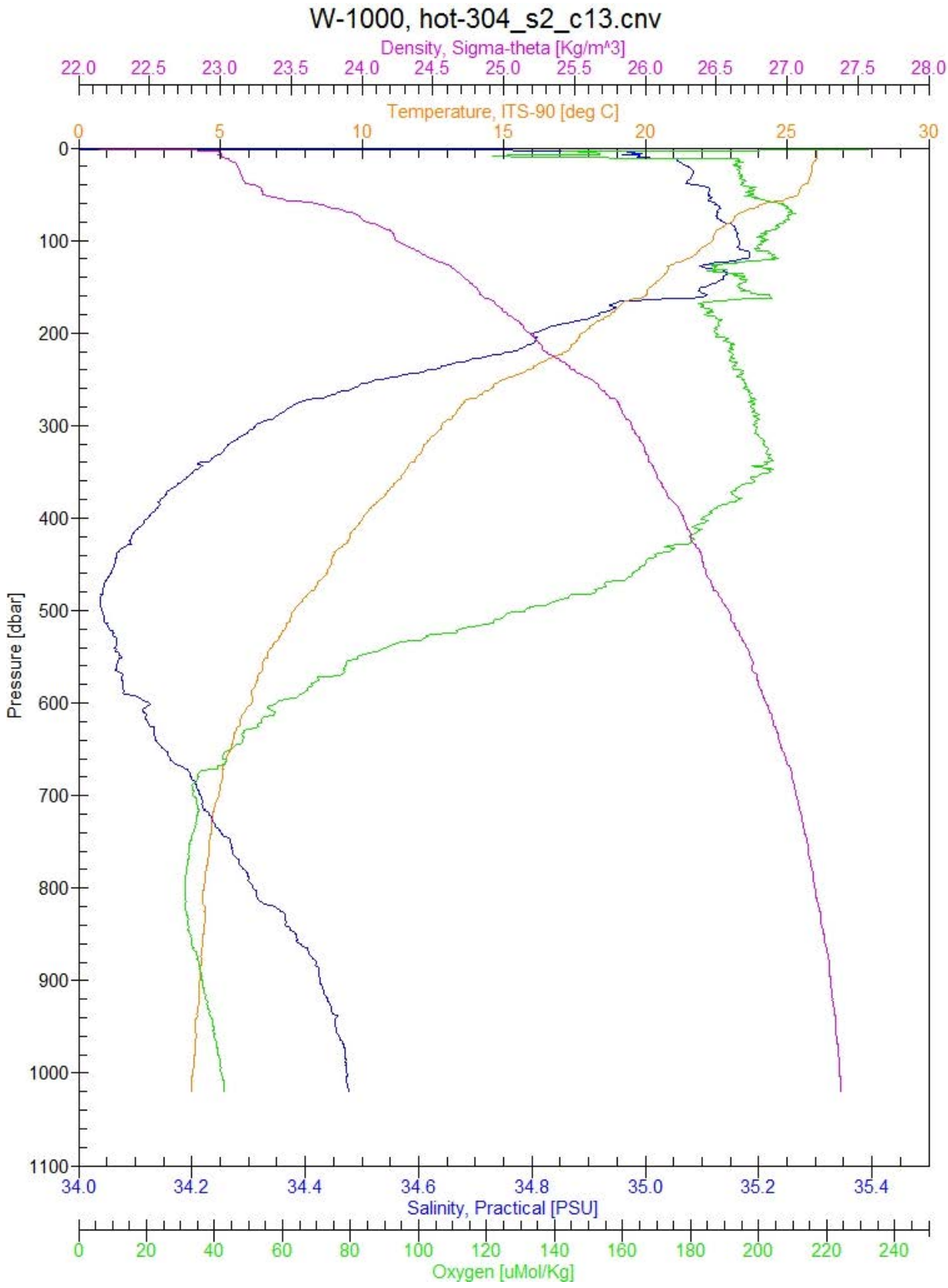

G-1000, hot-304_s2_c10.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

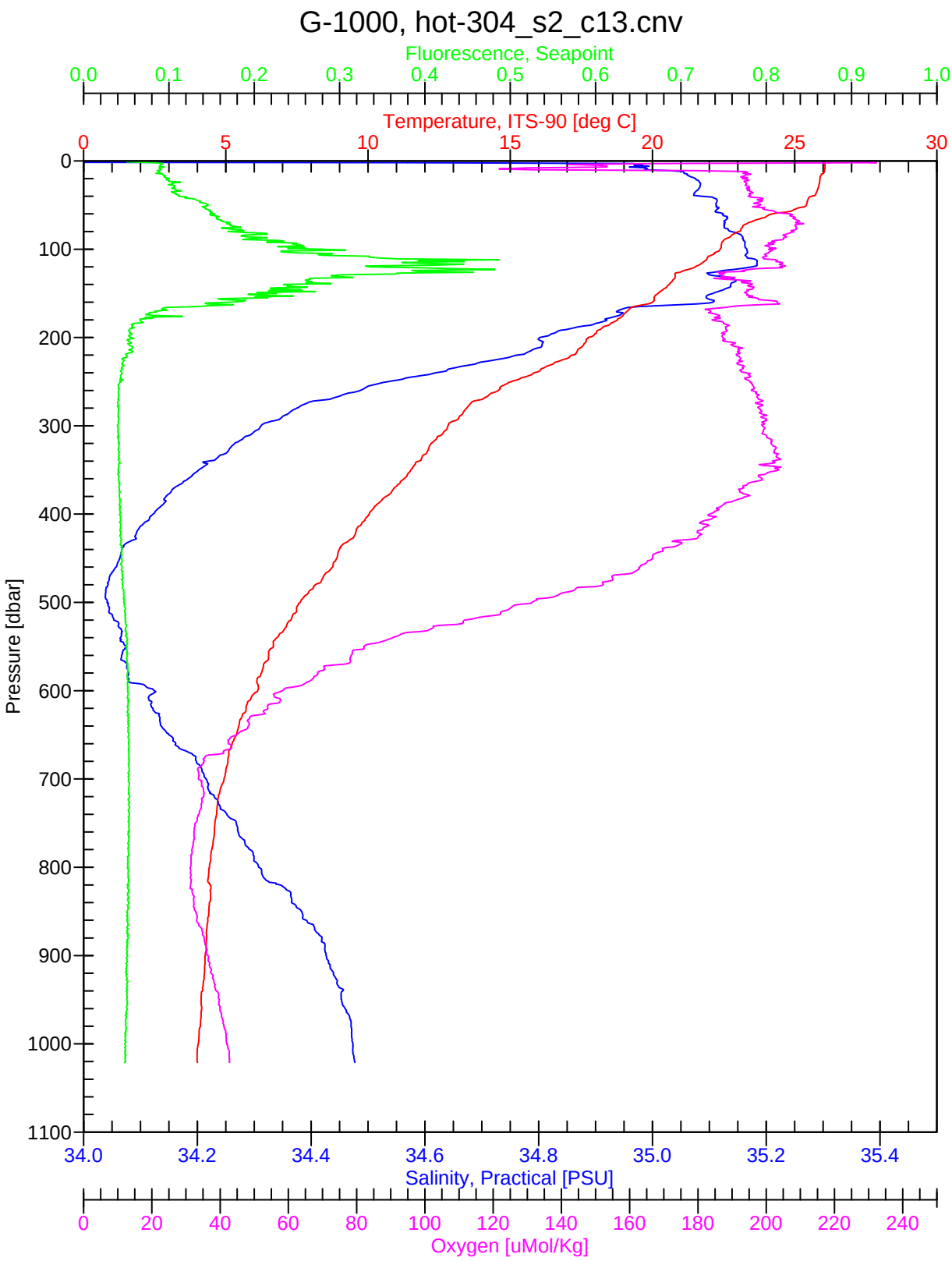

W-1000, hot-304_s2_c11.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

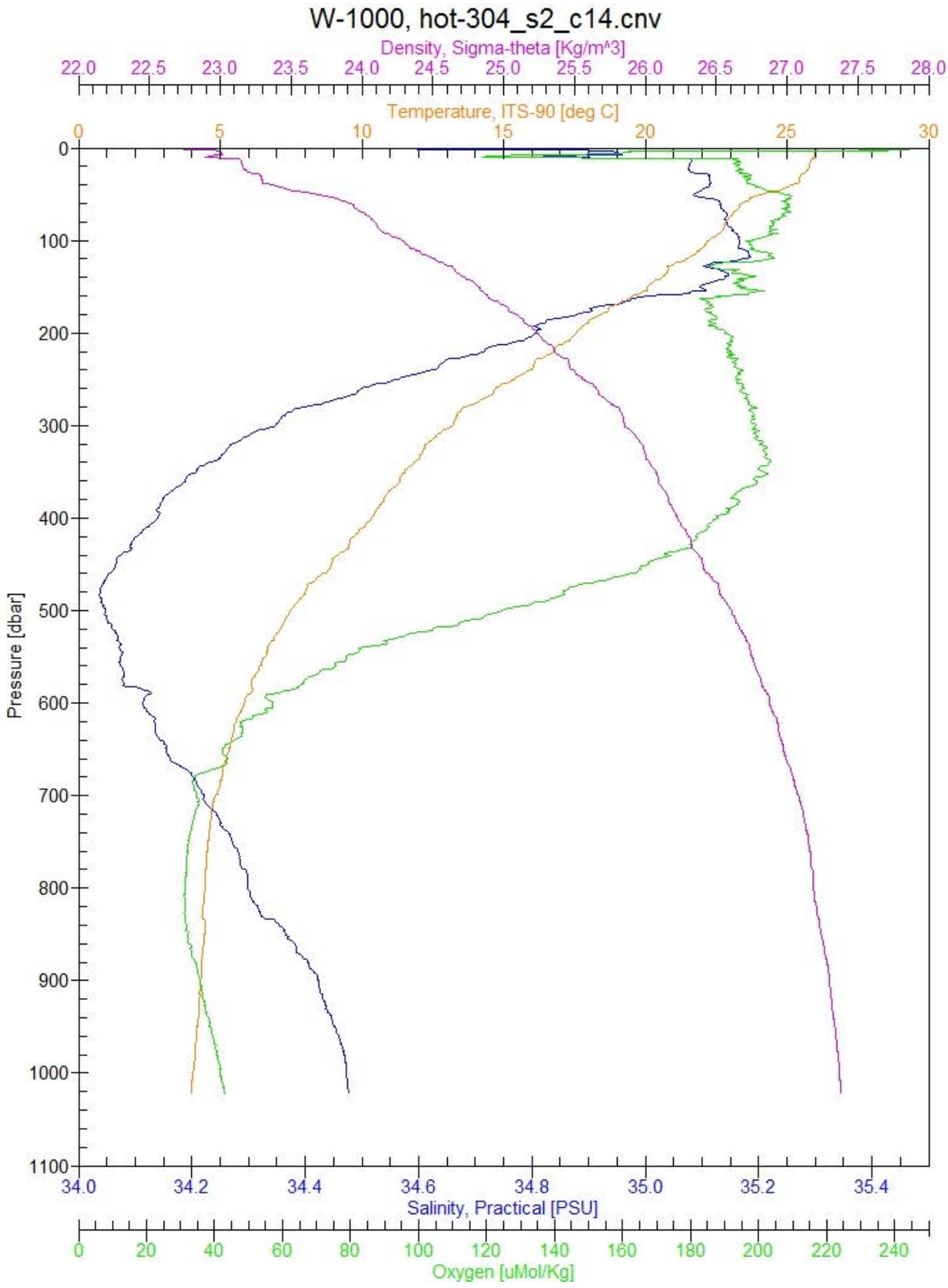

G-1000, hot-304_s2_c11.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

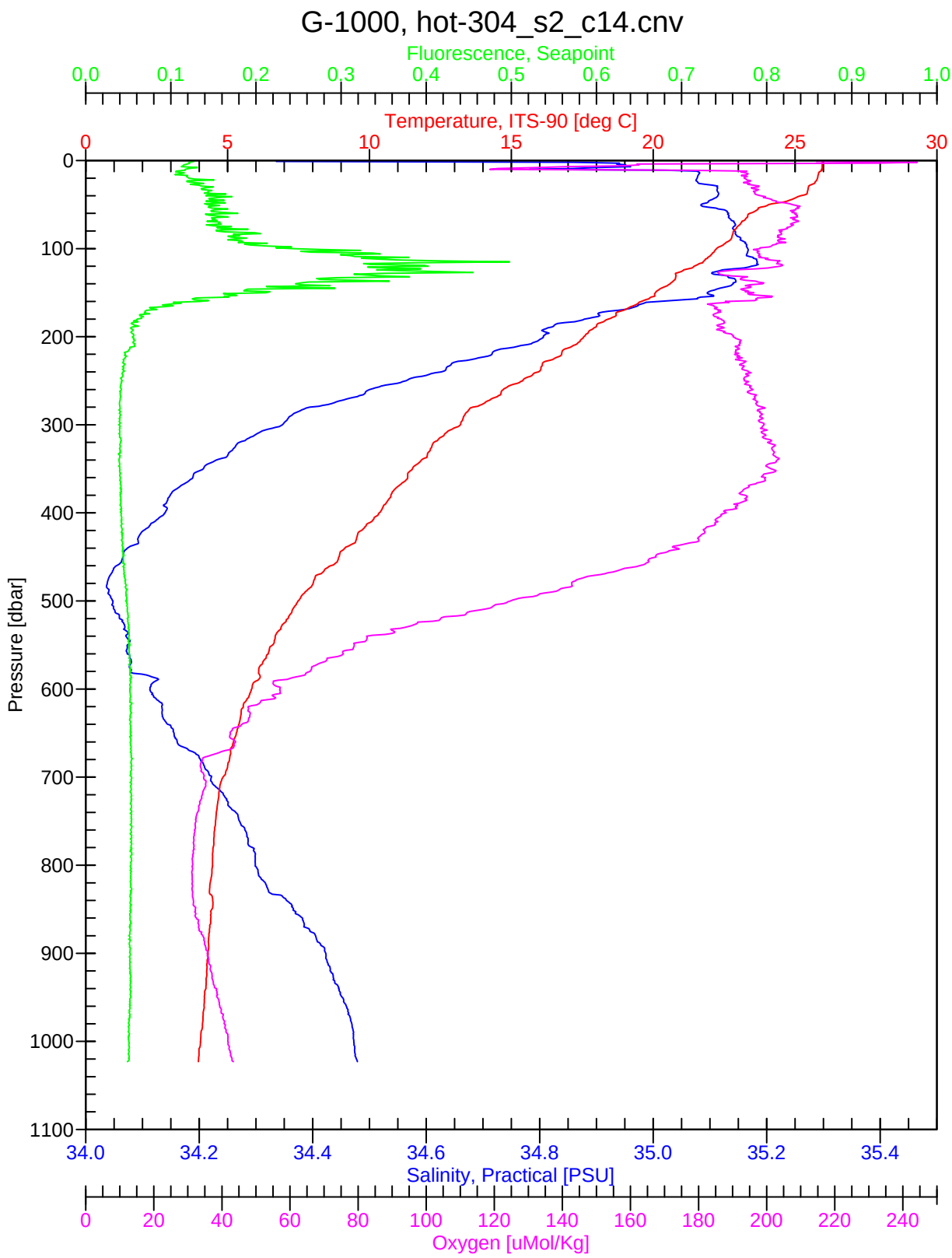

W-1000, hot-304_s2_c12.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

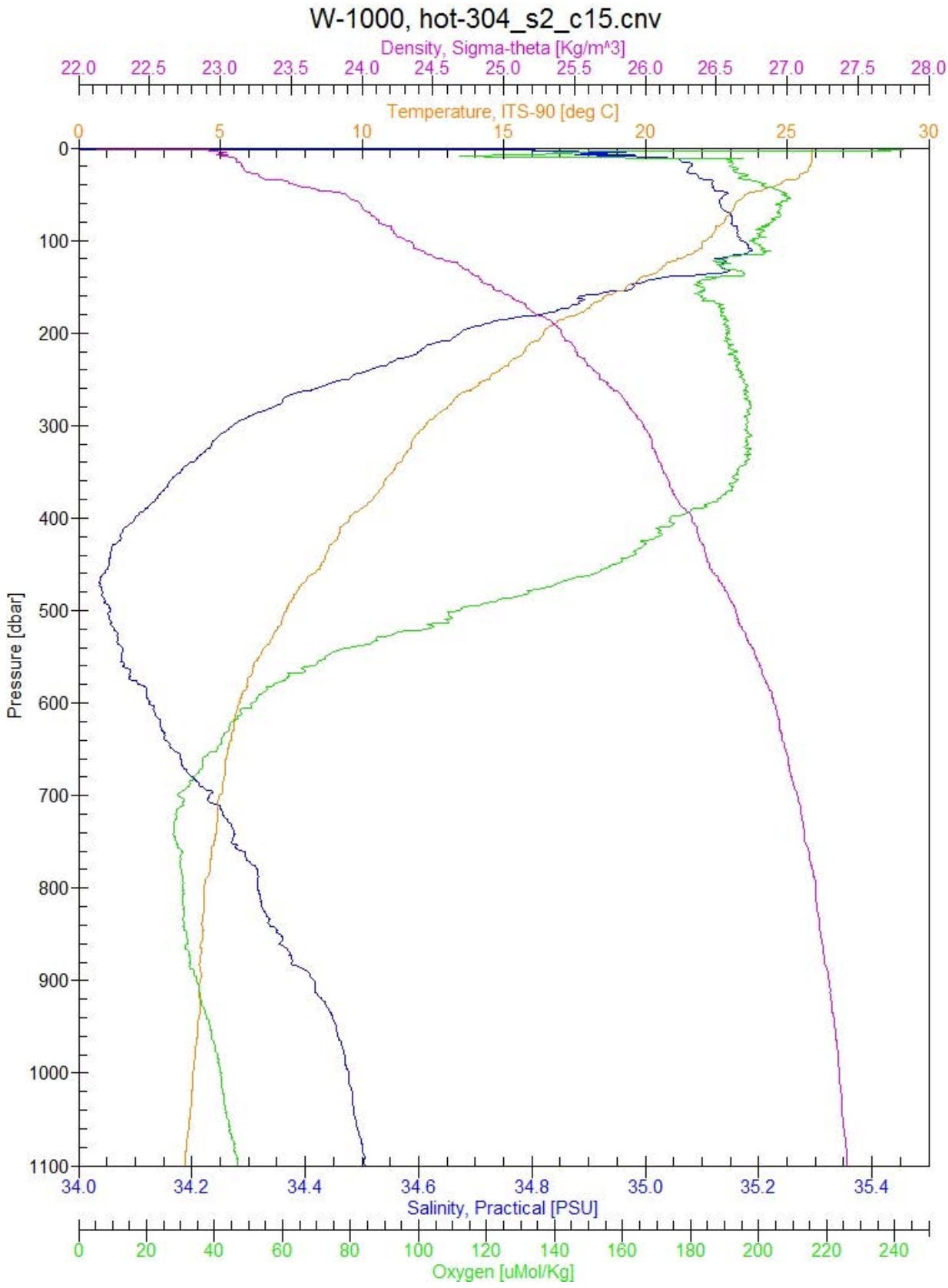

G-1000, hot-304_s2_c12.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

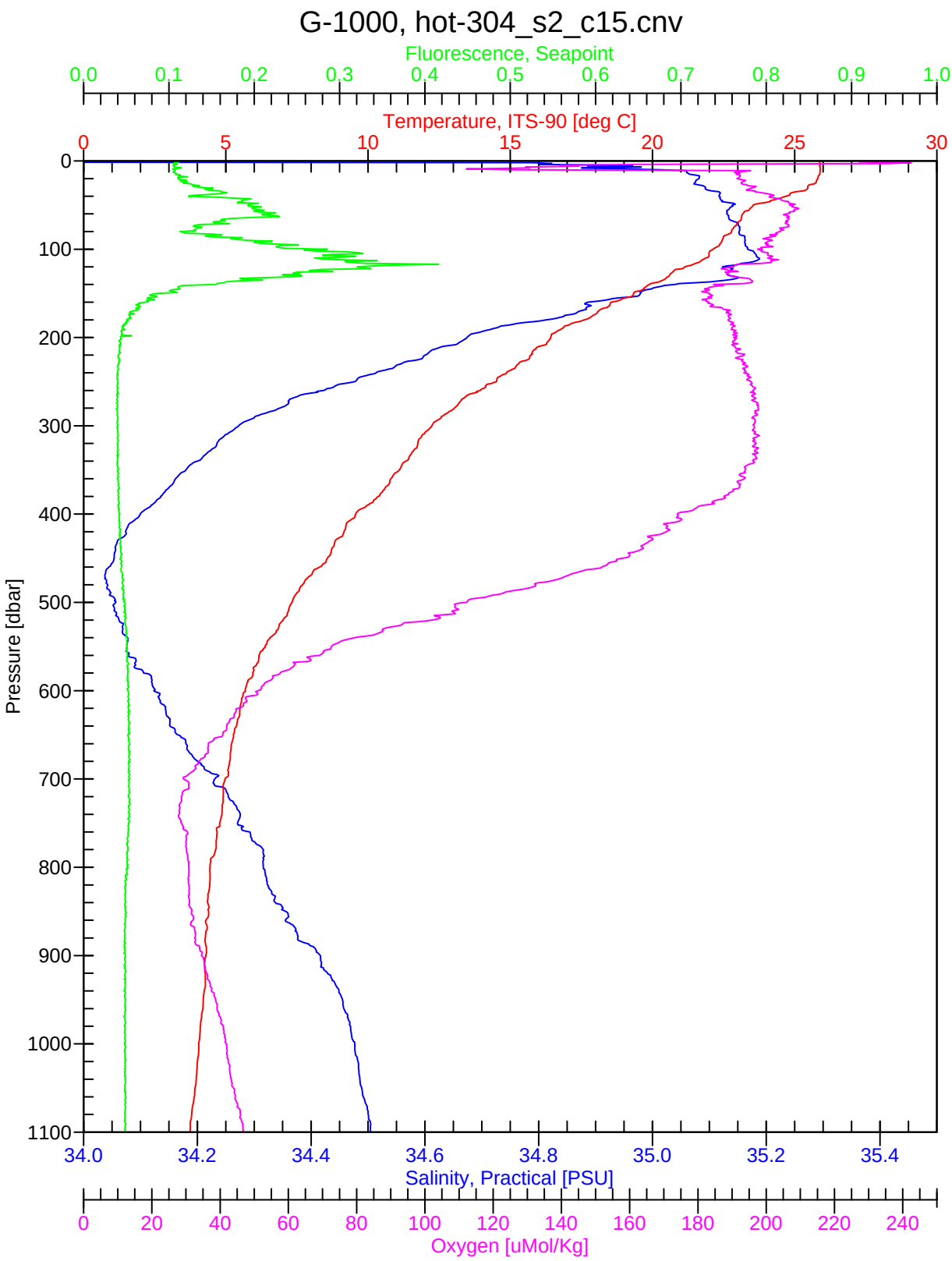

W-1000, hot-304_s2_c13.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

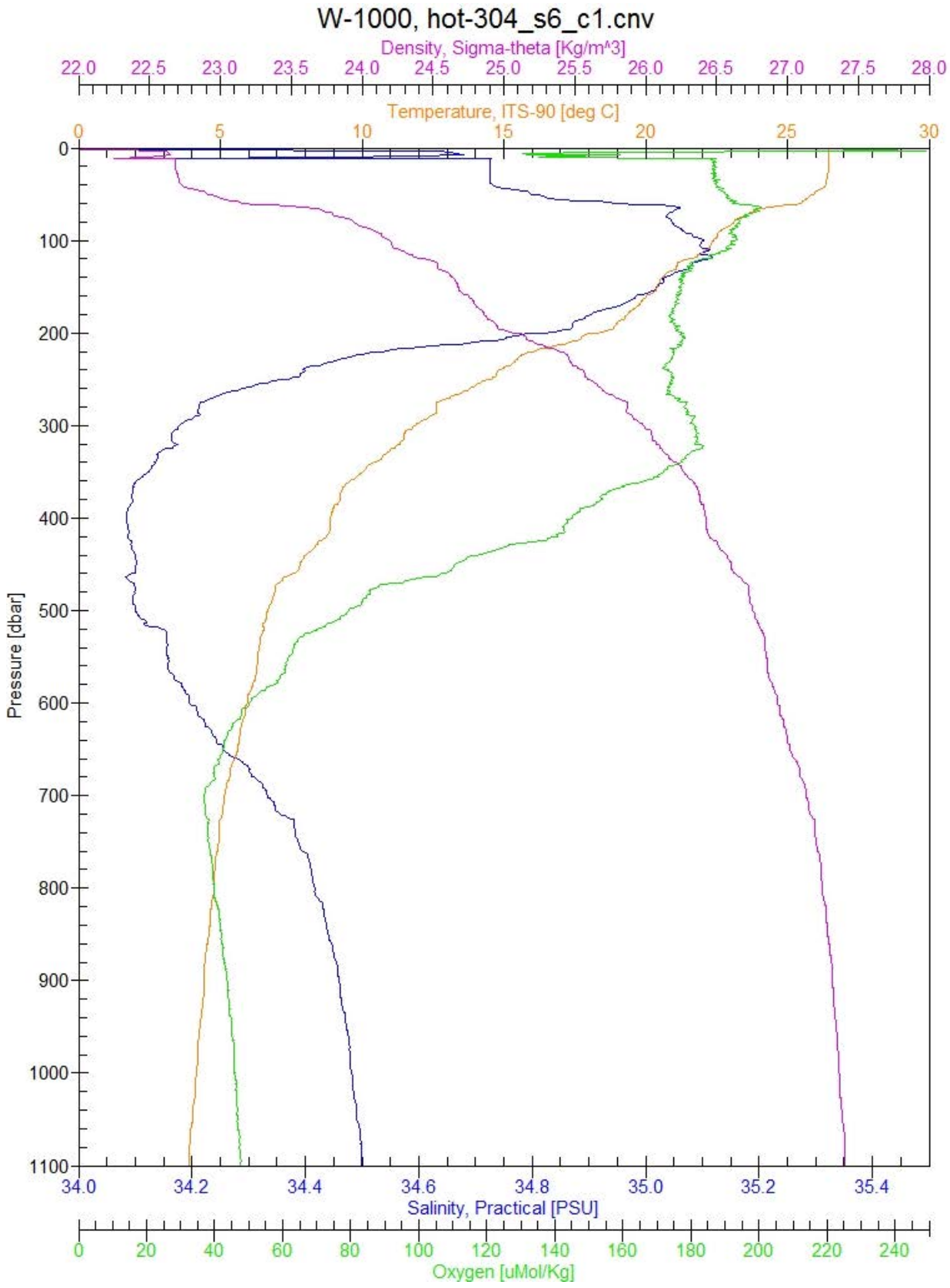

G-1000, hot-304_s2_c13.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

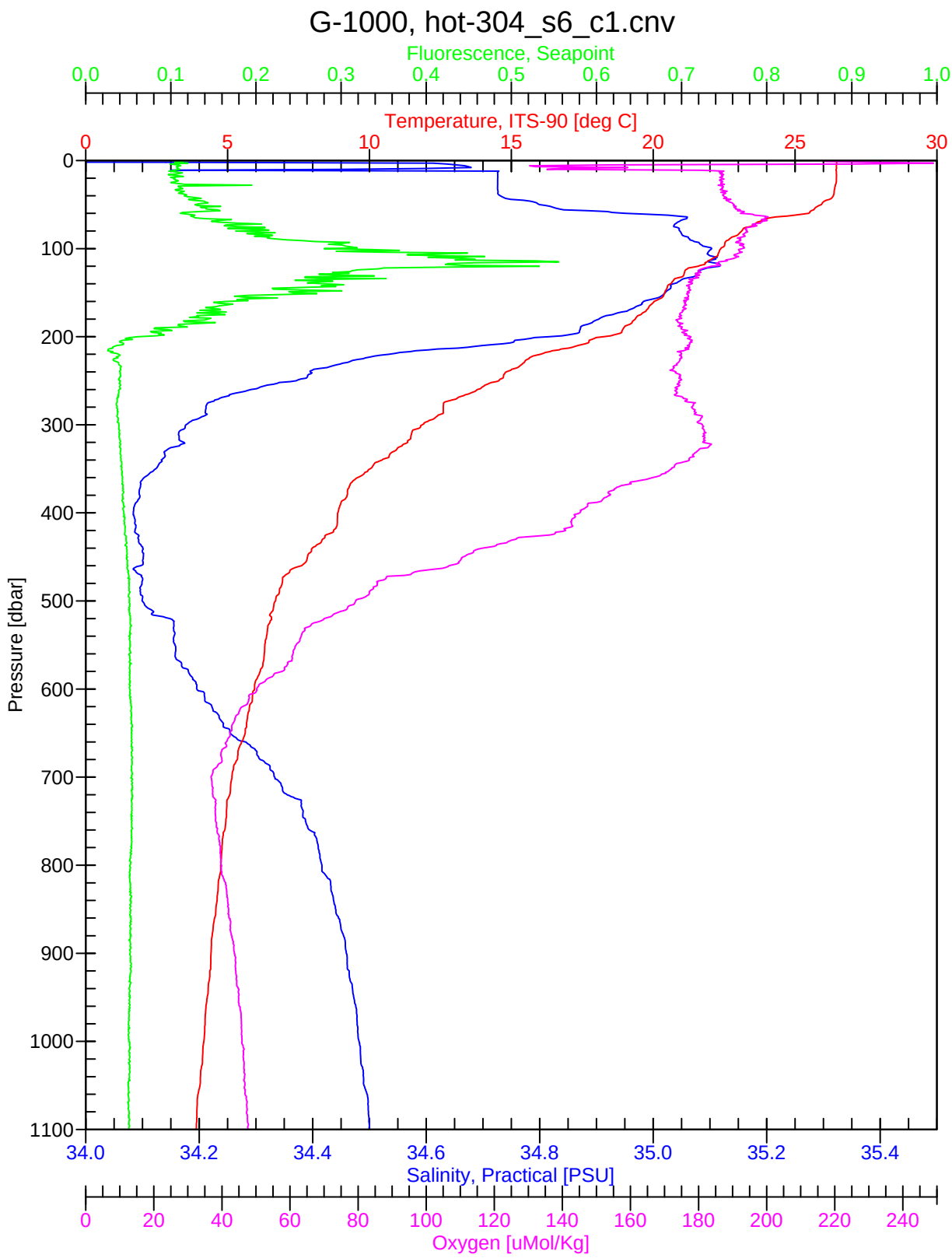

W-1000, hot-304_s2_c14.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

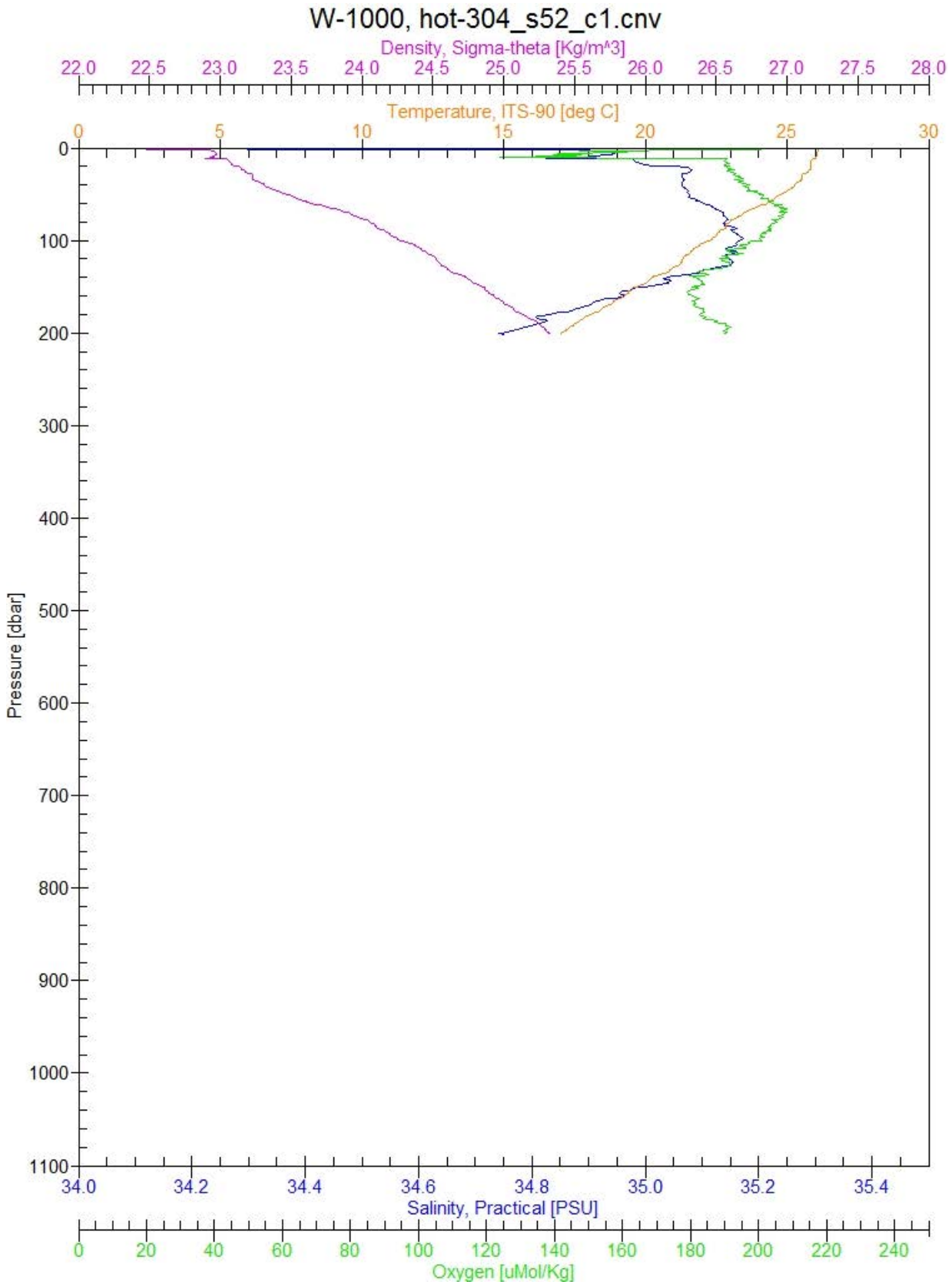

G-1000, hot-304_s2_c14.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

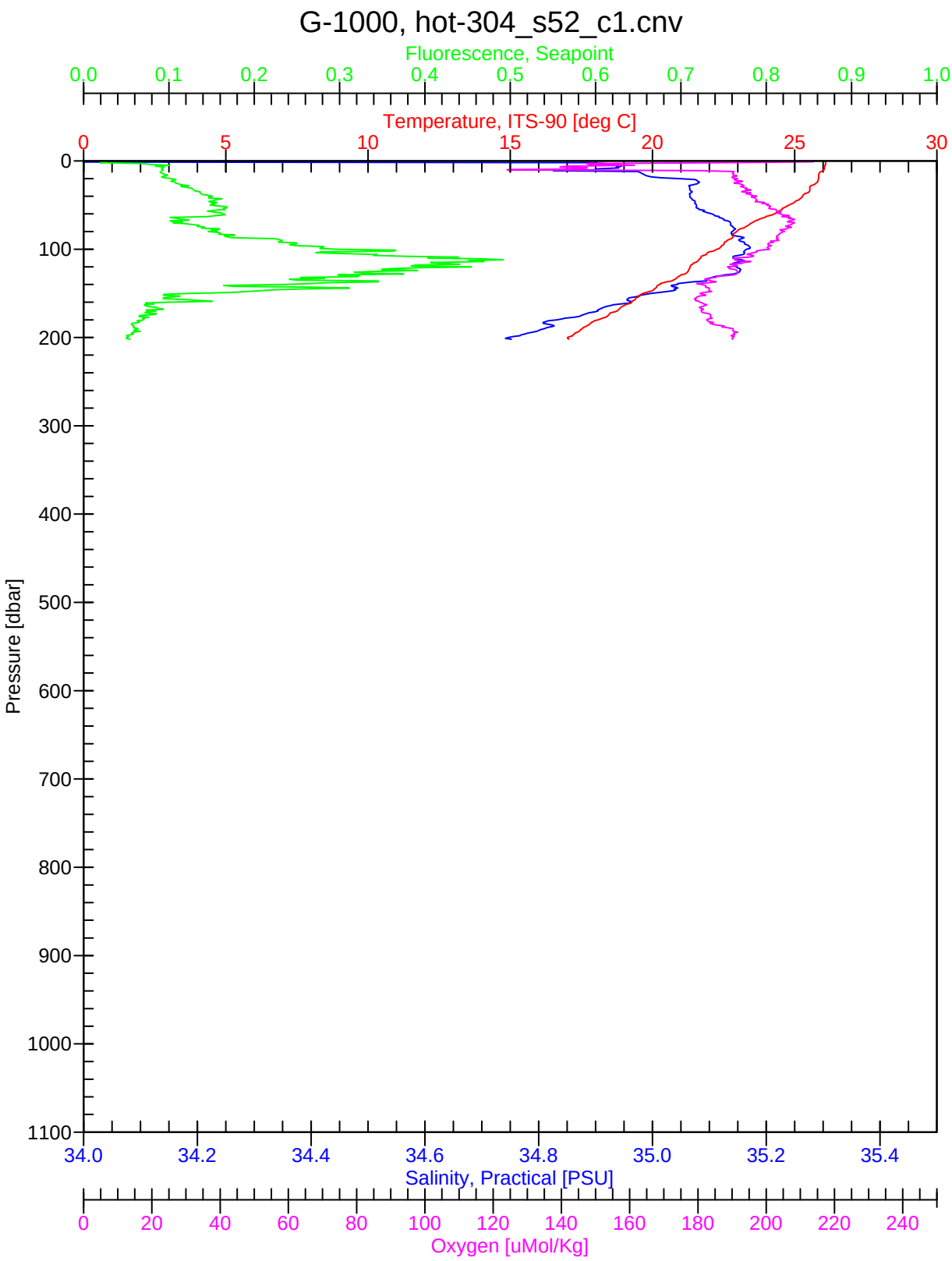

W-1000, hot-304_s2_c15.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240


G-1000, hot-304_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-304_s6_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-304_s6_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]


W-1000, hot-304_s52_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-304_s52_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- 304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GS	12L	27.55	KT

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

MLD 38
5-min 423
DCM 120

Station: 1	Cast: 1
Latitude start: 22° 20.6680 end: 22° 21.53	Longitude start: 158° 16.2072 end: 158° 16.01
Depth of water: 1473 meters	Date (GMT): 7 / 23 / 18
Pressure on Deck	Time:
Begin: -0.4457 End: -0.2961	Start Log: 22:21:30 In Water: 22:30:33
Max cast pressure: 1019 dbar	Out of Water: 23:29:29

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	22:54:55	22:55:15	1019	1020	Modulo Error right at firing bottle
2	23:01:00	23:01:20	751	750	
3	06:15	06:35	501	500	
4	09:50	10:10	354	350	
5	13:00	13:15	253	250	
6	15:00	15:20	201	200	
7	16:25	16:45	175	175	
8	17:50	18:10	149	150	
9	19:15	19:35	125	125	
10	20:35	20:55	100	100	
11	21:55	22:15	75	75	
12	23:05	23:25	45	45	
13	24:20	24:40	24	25	
14	35	25:55	5	5	
15		26:05	5	5	
16		26:10			
17		26:20			
18		26:30			
19		26:40			
20		26:50			Test Fire @ 5 dbar
21		27:00			
22		27:10			
23		27:20			
24		27:30			

Hawaii Ocean Time Series			Station #: 1	Cast #: 1	Box #: 2
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: KT, KT, JS	
Niskin #	Depth	Serial #	Comments		
1	1020	25			
2	750	26			
3	500	27			
4	350	28			
5	250	29			
6	200	30			
7	175	31			
8	150	32			
9	125	33			
10	100	34			
11	75	35			
12	45	36			
13	25	37			
14	5	38			
15	5	39			
16					
17					
18					
19			Test Fire		
20					
21					
22					
23					
24					

HOT- 304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G200 GPS	12L	25.80	SN

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

Station: 2	Cast: 1
Latitude start: 22° 43.2001 end: 22° 43.7148	Longitude start: 158° 00.7827 end: 158° 00.8738
Depth of water: 4710 meters	Date (GMT): 07124118
Pressure on Deck	Time:
Begin: -0.39 End: -0.37	Start Log: 11:28 In Water: 11:35
Max cast pressure: 199 dbar	Out of Water: 12:04

PA: 110 db

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		11:47:00	199	200	
2		48:05	194	200	
3		48:40	175	175	
4		50:05	150	150	
5		51:40	125	125	
6		:45	125	125	
7		:50	126	125	
8		53:55	100	100	
9		54:00	99	100	
10		:05	101	100	
11		56:00	78	75	
12		:05	75	75	
13		:10	75	75	
14		58:10	45	45	
15		:15	45	45	
16		:20	46	45	
17		12:00	25	25	
18		05	26	25	
19		10	26	25	
20		12:01:20	15	15	
21		02:30	5	5	
22		:35	5	5	
23		:40	5	5	
24		:45	6	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 1	Box #: 3
Salinity Sample Log Sheet			Cruise #: HOT-304	Sampler: SN, FSM	
Niskin #	Depth	Serial #	Comments		
1	200	40			
2	200	41			
3	175	42			
4	150	43			
5	125	44			
6	125	45			
7	125	46			
8	100	47			
9	100	48			
10	100	49			
11	75	50			
12	75	51			
13	75	52			
14	45	53			
15	45	54			
16	45	55			
17	25	56			
18	25	57			
19	25	58			
20	15	59			
21	5	60			
22	5	61			
23	5	62			
24	5	63	EMPTY NISKIN, NO SAMPLING		

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G5000GPS	12L	25.81	KT

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

PO-1

MLD 25
DCM 115
S-min 478

Station: 2	Cast: 2
Latitude start: 22° 44.96 end: 22° 45.80	Longitude start: 158° 00.07 end: 157° 59.10
Depth of water: 4705 meters	Date (GMT): 7 / 24 / 18
Pressure on Deck	Time:
Begin: −0.42	Start Log: 15:51:00
End: −0.33	In Water: 15:55:30
Max cast pressure: 4805 dbar	Out of Water: 19:23:19

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	17:33:00	17:33:20	4803	4800	8 m off bottom
2	38:35	38:55	4599	4600	
3	42:30	42:50	4498	4500	
4	45:25	45:45	4400	4400	
5	50:15	50:35	4202	4200	
6	55:05	55:25	4001	4000	
7	59:25	59:45	3799	3800	
8	18:04:00	18:04:20	3600	3600	
9	08:20	08:40	3400	3400	
10	12:45	13:05	3201	3200	
11	17:00	17:20	3000	3000	
12	21:20	21:40	2800	2800	
13	26:50	27:10	2600	2600	
14	30:15	30:35	2400	2400	
15	34:35	34:55	2200	2200	
16	38:50	39:10	2000	2000	
17	43:15	43:35	1799	1800	
18	47:40	48:00	1600	1600	
19	52:00	52:20	1398	1400	
20	56:15	56:35	1199	1200	
21	19:00:30	19:00:50	1001	1000	
22	05:30	05:50	750	750	
23		11:15	499	500	went 8m past 500 dbar and then back up
24	21:55	21:15	9	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 2	Box #: 4
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: KT, KT, JS	
Niskin #	Depth	Serial #	Comments		
1	4800	73			
2	4600	74			
3	4500	75			
4	4400	76			
5	4200	77			
6	4000	78			
7	3800	79			
8	3600	80			
9	3400	81			
10	3200	82			
11	3000	83			
12	2800	84			
13	2600	85			
14	2400	86			
15	2200	87			
16	2000	88			
17	1800	89			
18	1600	90			
19	1400	91			
20	1200	92			
21	1000	93			
22	750	94			
23	500	95			
24	5	96			

DUPLICATES

Hawaii Ocean Time Series			Station #: 2	Cast #: 2 | BOX: 5
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: KT, KT, JS
Niskin #	Depth	Serial #	Comments	
1	4800	97		
2	4600	98		
3	4500	99		
4	4400	100		
5	4200	101		
6	4000	102		
7	3800	103		
8	3600	104		
9	3400	105		
10	3200	106		
11	3000	107		
12	2800	108		
13	2600	109		
14	2400	110		
15	2200	111		
16	2000	112		
17	1800	113		
18	1600	114		
19	1400	115		
20	1200	116		
21	1000	117		
22	750	118		
23	500	119		
24	5	120		

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	25.86	KT

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

PO-2 (SHALLOW)

MLD 16
DCM 110
S-min 456

Station: 2	Cast: 3
Latitude start: 22° 44.83 end: 22° 45.38	Longitude start: 158° 00.06 end: 157° 59.75
Depth of water: 4703 meters	Date (GMT): 7/24/18
Pressure on Deck	Time:
Begin: -0.48 End: -0.37	Start Log: 21:06:13 In Water: 21:11:26
Max cast pressure: 1023 dbar	Out of Water: 22:25:40

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	21:40:00	21:40:25	1022	1020	
2	41:50	42:10	986	987	
3	44:05	44:25	913	915	
4	46:30	46:50	842	842	
5	48:10	48:30	802	802	
6	50:00	50:20	760	762	
7	51:44	51:35	745	745	
8	54:30	54:50	674	673	
9	56:35	56:55	616	615	
10	59:10	59:30	561	562	
11	22:00:50	22:01:20	521	522	
12	02:50	03:10	485	485	
13	04:25	04:45	456	456	
14	06:00	06:30	423	423	
15	07:50	08:10	375	374	
16	09:35	09:55	322	323	
17	11:50	12:10	287	287	
18	13:25	13:45	249	250	
19	14:45	15:05	222	223	
20	16:40	17:00	168	168	
21	18:30	18:50	106	107	
22	19:30	19:50	91	91	
23	20:45	21:05	72	71	
24	22:05	22:25	58	57	

Hawaii Ocean Time-Series

HOT - 304

Station:	2	Cast:	3
Latitude:	22° 45.83	Longitude:	158° 00.06
Date:	7/24/18	Time (GMT):	21:11
Operator:	KT		

δ_θ	σ_θ	Depth
700	20.76	
650	21.28	
600	21.80	
550	22.33	
500	22.85	
450	23.37	57
400	23.90	71
350	24.42	107
300	24.95	168
250	25.47	223
200	26.00	323
180	26.21	374
160	26.42	423
140	26.63	485
130	26.73	522
120	26.84	562
110	26.94	615
100	27.05	673
90	27.16	762
80	27.26	842
70	27.37	987

S_{max}	91
S_{min}	456
S_{max}	
S_{min}	

O_{max}	70
O_{min}	745
O_{max}	
O_{min}	
O_{max}	

F_{max}	110
F_{min}	250
F_{max}	
F_{min}	
F_{max}	

Bottle	Depth
1	1020
2	987
3	915
4	842
5	802
6	762
7	745
8	673
9	615
10	562
11	522
12	485
13	456
14	423
15	374
16	323
17	287
18	250
19	223
20	168
21	107
22	91
23	71
24	57

Hawaii Ocean Time Series			Station #: 2	Cast #: 3 | Box #: 6
Salinity Sample Log Sheet			Cruise #: HOT-304	Sampler: KT, KT, JS
Niskin #	Depth	Serial #	Comments	
1	1020	121		
2	987	122		
3	915	123		
4	842	124		
5	802	125		
6	762	126		
7	745	127		
8	673	128		
9	615	129		
10	562	130		
11	522	131		
12	485	132		
13	456	133		
14	423	134		
15	374	135		
16	323	136		
17	287	137		
18	250	138		
19	223	139		
20	168	140		
21	107	141		
22	91	142		
23	71	143		
24	57	144		

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	26.96	KT

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

MLD 19
~~DCM~~ 110
S-min 492

01:16:39

Station: 2	Cast: 4
Latitude start: 22° 46.112 end: 22° 466798	Longitude start: 157° 58.10 end: 157° 57.9555
Depth of water: 4682 meters	Date (GMT): 7/25/18
Pressure on Deck	Time:
Begin: −0.46 End: −0.28	Start Log: 00:12:45 In Water: 00:17:42
Max cast pressure: 1020 dbar	Out of Water: 01:16

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:42:15	00:42:35	1020	1020	
2		50:00	704	700	
3		55:20	489	490	S-min
4		59:10	350	350	
5		:15	351	350	
6		01:02:10	250	250	
7		04:00	201	200	
8		05:20	176	175	
9		06:55	150	150	
10		08:30	122	125	
11		09:45	100	100	
12		11:00	74	75	
13		:05	73	75	
14		12:40	46	45	
15		:45	45	45	
16		14:00	25	25	
17		:05	25	25	
18		15:10	5	5	
19		:15	4	5	Modulo error on recovery
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 4 | Box: 7
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: ~~KT~~, ~~KT~~, JS
Niskin #	Depth	Serial #	Comments	
1	1020	145		
2	~~700~~	146		
3	490	147	5-min	
4	350	148		
5	350	149		
6	250	150		
7	200	151		
8	175	152		
9	150	153		
10	125	154		
11	100	155		
12	75	156		
13	75	—		
14	45	157		
15	45	—		
16	25	158		
17	25	—		
18	5	159		
19	5	—		
20				
21				
22				
23				
24				

HOT- 304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GPS	12L	25.95	SN/FSM

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

MLD: 18
PCM: 110
5min: 490

Station: 2	Cast: 5
Latitude start: 22° 46.2896 end: 22° 46.9046	Longitude start: 157° 59.4162 end: 157° 58.9701
Depth of water: 4682 meters	Date (GMT): 7 / 25 / 18
Pressure on Deck	Time:
Begin: -0.38 End: -0.28	Start Log: 3:00 In Water: 03:08
Max cast pressure: 1020 dbar	Out of Water: 04:16

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	3:35:40	36:10	1020	1020	
2		03:48:20	490	490	5-min
3		52:40	350	350	
4		:45	351	350	
5		56:10	251	250	
6		58:20	201	200	
7		04:00:10	175	175	
8		:05	174	175	
9		02:10	149	150	
10		:15	150	150	
11		04:10	126	125	
12		:15	126	125	
13		06:10	100	100	
14		:15	100	100	
~~15~~		08:00	74	75	
16		09:45	45	45	
17		11:10	24	25	
18		:15	25	25	
19		12:35	15	15	
~~20~~		14:30	5	5	
21		:35	4	5	
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 5	Box #: 7 8
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: SM, R, FJM	
Niskin #	Depth	Serial #	Comments		
1	1000	160			
2	490	161	5 min		
3	350	162			
4	350	163			
5	250	164			
6	200	165			
7	175	166			
8	175	167			
9	150	168			
10	150	169			
11	125	170			
12	125	171			
13	100	172			
14	100	173			
15	75	174			
16	45	175			
17	25	176			
18					
19					
20	5	177			
21					
22					
23					
24					

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	25.90	SN

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

Beach

MLD: 10
Smin: 480
Dcm: 120

Station: 2	Cast: 6
Latitude start: 22° 44.0803 end: 22° 44.698	Longitude start: 158° 04.1179 end: 158° 04.032
Depth of water: 4726 meters	Date (GMT): 7 / 25 / 18
Pressure on Deck	Time:
Begin: -0.40 End: -0.28	Start Log: 05:53 In Water: 06:04
Max cast pressure: 118 dbar	Out of Water: 07:12

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		06:31:45	1018	1020	
2		37:45	719	720	O_2 min
3		42:55	480	480	S-min
4		48:45	200	200	
5		50:05	174	175	
6		51:05	166	165	
7		52:10	150	150	
8		52:20	131	130	
9		54:20	125	125	
10		55:30	115	115	
11		56:45		110	100 skipped this bottle went to 100 then came back to 110
12				100	110
13		07:01:10	90	90	
14		02:10	84	85	
15		03:20	74	75	
16		04:20	60	60	
17		05:45	44	45	
18		06:40	35	35	
19		07:45	25	25	
20		:50	24	25	
21		09:10	15	15	
22		10:10		5	
23		:15		5	
24		:20		5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 6	Box #: 8 9
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: SM, FSH, R	
Niskin #	Depth	Serial #	Comments		
1	1020	178			
2	720	179	O_2 mm		
3	480	180	S mm		
4	200	181			
5	175	182			
6	165	183			
7	150	184			
8	130	185			
9	125	186		9	186
10	115	187	reversed	11	188
11	110	188		10	187
12	100	189		12	189
13	90	190			
14	85	191			
15	75	192			
16	60	193			
17	45	194			
18	35	195			
19	25	196			
20					
21	15	197			
22	5	198			
23	5	199			
24					

HOT- 304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G 1000 GPS	12L	25.75	SN

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

Smin: 490
DCM: 110
MLD: 10

Station: 2	Cast: 7
Latitude start: 22° 44.8690 end: 22° 45.1205	Longitude start: 157° 59.817 end: 157° 59.795
Depth of water: 4708 meters	Date (GMT): 7 12 18
Pressure on Deck	Time:
Begin: -0.36 End: -0.24	Start Log: 09:12 In Water: 09:14
Max cast pressure: 1020 dbar	Out of Water: 10:09

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		09:40:30	1020	1020	
2		50:50	491	490	Smin
3		56:20	250	250	
4		58:40	175	175	
5		:45	175	175	
6		10:01:10	150	150	
7		:15	150	150	
8		01:40	124	125	
9		:45	125	125	
10		03:05	99	100	
11		:10	100	100	
12		04:40	75	75	
13		06:05	45	45	
14		07:10	25	25	
15		15	24	25	
16		08:35	5	5	
17		40	5	5	
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 7	Box #: 9
Salinity Sample Log Sheet			Cruise #: HOT-304	Sampler: JM, SN	
Niskin #	Depth	Serial #	Comments		
1	1020	200			
2	490	201	5 min		
3	250	202			
4	175	203			
5					
6	150	204			
7					
8	125	205			
9					
10	100	206			
11					
12	75	207			
13	45	208			
14	25	209			
15					
16	5	210			
17					
~~18~~					
19					
20					
21					
22					
~~23~~					
24					

HOT- 304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	25.75	SN/KT

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

MLD: 15
Smin: 480
DCM: 120

Station: 2	Cast: 8
Latitude start: 22° 45.8011 end: 22° 46.4996	Longitude start: 157° 58.8281 end: 157° 59.7540
Depth of water: 4695 meters	Date (GMT): 7 / 25 / 18
Pressure on Deck	Time:
Begin: -0.39 End: -0.31	Start Log: 11:56 In Water: 12:03
Max cast pressure: 1022 dbar	Out of Water: 13:01:27

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		12:30:40	1022	1020	
2		40:35	478	480	5 min
3		48:05	132	125	
4		:10	132	125	
5		:15	133	125	
6		50:25	100	100	
7		:30	100	100	
8		:35	101	100	
9	51:30	52:10	74	75	
10		20	75	75	
11		30	75	75	
12	53:55	54:05	46	45	
13		15	46	45	
14		25	47	45	
15	55:35	55:55	26	25	
16		56:05	26	25	Modulo Error
17		:45	26	25	
18		[illegible]	27	25	
19	57:55	58:15	5	5	
20		25	5	5	
21		35	5	5	
22		45	5	5	
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 8	Box #: 9.10
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: KT, J, KT	KT3
Niskin #	Depth	Serial #	Comments		
1	1020	211			
2		212	5 min		
3	125	213			
4	125	214			
5	125	215			
6	100	216			
7	100	217			
8	100	218			
9	75	219			
10	75	220			
11	75	221			
12	45	222			
13	45	223			
14	45	224			
15	25	225			
16	25	226			
17	25	227			
18					
19	5	228			
20	5	229			
21	5	230			
22					
23					
24					

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12 L	25.83	KT

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

OPEN

MLD 18
DCM 115
S-min 489
S-max 105

Station: 2	Cast: 9
Latitude start: 22° 46.47 end: 22° 47.07	Longitude start: 158° 00.02 end: 157° 59.95
Depth of water: 4698 meters	Date (GMT): 7 / 25 / 18
Pressure on Deck	Time:
Begin: −0.35	Start Log: 14:47:33
End: −0.32	In Water: 14:59:15
Max cast pressure: 1020 dbar	Out of Water: 16:07:05

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	15:28:20	15:28:40	1018	1020	
2	40:55	41:15	491	490	S-min
3	47:10	47:30	276	275	
4	48:40	49:00	249	250	
5	50:00	50:20	224	225	
6	51:20	51:40	199	200	
7	52:45	53:05	175	175	
8	54:30	54:50	150	150	
9	55:50	56:10	125	125	
10	57:00	57:30	113	115	DCM
11	58:15	58:35	99	100	closest to S-max
12	59:35	59:55	75	75	
13	16:01:10	16:01:30	45	45	
14	02:25	02:45	25	[25	
15		02:55	25	[25	
16	04:00	04:20	15	15	
17	05:05	05:25	4	[5	
18		05:35	4	[5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 9	Box #: 10
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: KT, KT, JS	
Niskin #	Depth	Serial #	Comments		
1	1020	231			
2	490	232	S-min		
3	275	—			
4	250	—			
5	225	—			
6	200	—			
7	175	—			
8	150	—			
9	125	—			
10	115	—	DCM		
11	100	233	closest to fmax		
12	75	—			
13	45	—			
14	25	—			
15	25	—			
16	15	—			
17	5	234			
18	5	—			
19					
20					
21					
22					
23					
24					

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	25.87	KT

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

PSI

MLD 23
DCM 123
S-min 460

Station: 2	Cast: 10
Latitude start: 22° 48.53 end: 22° 48.90	Longitude start: 157° 57.30 end: 157° 56.93
Depth of water: 4654 meters	Date (GMT): 7 / 25 / 18
Pressure on Deck	Time:
Begin: −0.38	Start Log: 17:55:03
End: −0.27	In Water: 18:00:57
Max cast pressure: 1021 dbar	Out of Water: 18:53:51

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	18:26:45	18:27:05	1021	1020	
2	37:10	37:30	459	460	S-min
3	43:15	43:35	175	175	
4	44:35	44:55	150	150	
5	46:00	46:20	126	125	
6	47:15	47:35	100	100	
7	48:30	48:50	75	75	
8	49:45	50:05	44	45	
9	51:00	51:20	25	25	
10	52:25	52:45	4	5	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

10 (6 bottles)

Hawaii Ocean Time Series			Station #: 2	Cast #: 10	Box #: 11 (4 bottles)
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: KT, KT, JS	
Niskin #	Depth	Serial #	Comments		
1	1020	235			
2	490	230	5-min		
3	175	237			
4	150	238			
5	125	239			
6	100	240			
7	75	241			
8	45	242			
9	25	243			
10	5	244			
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	25.88	KT

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

OPEN

MLD 18
DCM 115
S-min 460

Station: 2	Cast: 11
Latitude start: 22° 45.70 end: 22° 45.69	Longitude start: 157° 59.98 end: 157° 59.70
Depth of water: 4697 meters	Date (GMT): 7 / 25 / 18
Pressure on Deck	Time:
Begin: -0.38	Start Log: 21:06:34
End: -0.27	In Water: 21:10:55
Max cast pressure: 1021 dbar	Out of Water: 21:56:26

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	21:34:00	21:34:20	1021	1020	
2	44:45	45:05	457	460	S-min
3	53:10	53:30	25	25	
4	54:35	54:55	4	5	
5		55:05	4	5	} for Seabird
6		55:15	4	5	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 11	Box #: 11 (36 bottles)
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: KT, KT, JS	
Niskin #	Depth	Serial #	Comments		
1	1020	245			
2		246	5min		
3	25	—			
4	5	247			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
911000GPS	12L	26.08	KT/SN

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

MLD 43
DCM 130
S-min 464

Station: 2	Cast: 12
Latitude start: 22° 46.7974 end: 22° 47.3060	Longitude start: 157° 57.7125 end: 157° 57.2150
Depth of water: 4674 meters	Date (GMT): 7 1 25 18
Pressure on Deck	Time:
Begin: −0.40 End: −0.26	Start Log: 23:54:32
Max cast pressure: 1022 dbar	In Water: (7/26/18) 00:02:55 Out of Water: (7/26/18) 01:03

01:03

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:29:05	00:29:25	1020	1020	
2	34:15	34:35	770	770	
3	41:10	41:30	500	500	
4	42:30	42:50	463	465	S-min
5	44:20	44:40	400	400	
6		46:35	353	350	
7		48:50	301	300	
8		50:25	248	250	
9		43:00	149	150	
10		54:40	126	125	
11		56:10	101	100	
12		57:30	74	75	
13		58:50	43	45	
14		01:01:10	27	[25	
15		:15	27	25]	
16		02:05	4	[5	
17		:10	5	5]	
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 12	Box #: 11
Salinity Sample Log Sheet			Cruise #: HOT-304	Sampler: STV, FSV	
Niskin #	Depth	Serial #	Comments		
1	1020	248			
2	770	—			
3	500	—			
4		249	S-min		
5	400	—			
6	350	250			
7	300	—			
8	250	251			
9	150	252			
10	125	253			
11	100	254			
12	75	255			
13	45	256			
14	25	257			
15	25	—			
16	5	254			
17	5	—			
18					
19					
20					
21					
22					
23					
24					

HOT- 304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GPS	12L	26.05	SM / FSM

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

MLD: 10
DCM: 120
Smin: 490

Station: 2	Cast: 13
Latitude start: 22° 47.3373 end: 22° 48.1440	Longitude start: 157° 58.5911 end: 157° 58.5712
Depth of water: 4676 meters	Date (GMT): 7 / 26 / 18
Pressure on Deck	Time:
Begin: -0.46 End: 0.33	Start Log: 02:55 In Water: 03:01
Max cast pressure: 1020 dbar	Out of Water: 04:08

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	3:27:00	27:30	1017	1020	
2	33:05	33:35	802	800	
3	38:50	39:20	603	600	
4	42:45	43:15	493	490	Smin
5	46:10	46:40	403	400	
6	50:10	51:40	301	300	
7		52:40	251	250	
8		55:40	174	175	
9		57:05	149	150	
10		58:35	126	125	
~~11~~		04:01:10	100	100	
~~12~~		01:40	75	75	
13		03:10	45	45	
14		04:40	26	25	
15		:45	26	25	
16		05:55	15	15	
17		07:05	4	5	
18		:10	4	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 13	Box #: 11
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: SN, FSM, RC	
Niskin #	Depth	Serial #	Comments		
1	1020	259			
2					
3					
4	490	260	Smpy Bottle didn't close		
5					
6					
7					
8					
9					
10					
11	100	261	S-MAX		
12					
13					
14					
15					
16					
17					
18	5	262			
19					
20					
21					
22					
23					
24					

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6,1000 GPS	12L	25.88	SN

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

MLD: 10
Smin: 490
DCM: 120

Station: 2	Cast: 14
Latitude start: 22° 47.3402 end: 22° 47.5286	Longitude start: 157° 58.4386 end: 157° 58.3045
Depth of water: 4678 meters	Date (GMT): 7/26/18
Pressure on Deck	Time:
Begin: -0.34 End: -0.25	Start Log: 05:59 In Water: 06:03
Max cast pressure: 1020 dbar	Out of Water: 6:58

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		06:27:15	1020	1020	
2	-	37:30	489	490	Smin
3		43:50	174	175	
4		45:20	148	150	
5		46:45	135	135	
6		47:55	124	125	
7		49:00	114	115	
8		50:10	99	100	
9		51:20	85	85	
10		52:25	75	75	
11		53:25	60	60	
12		54:30	45	45	
13		55:50	25	25	
14		57:30	5	5	
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 14	Box #: 11, 12
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler: SM, RC	
Niskin #	Depth	Serial #	Comments		
1	1020	263			
2		264	S-mis		
3	175	265			
4	150	266			
5	135	267			
6	125	268			
7	115	269			
8	100	270			
9	85	271			
10	75	272			
11	60	273			
12	45	274			
13	25	275			
14	5	276			
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
45000 GPS	12L	25.80	SN / KT / Hope

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

MLD: 10
Smin: 480
DCM: 120

Station: 2	Cast: 15
Latitude start: 22° 44.9914 end: 22° 46.0829	Longitude start: 157° 59.9094 end: 158° 00.1271
Depth of water: 4707 meters	Date (GMT): 7/26/18
Pressure on Deck	Time:
Begin: -0.32 End: -0.46	Start Log: 08:56 In Water: 09:00
Max cast pressure: 4807 dbar	Out of Water: 12:22

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1			4807	4800	≈6m off bottom
2		11:01:10	3999	4000	
3		:05	3998	4000	X
4		19:10	3000	3000	
5		:15	3000	3000	X
6		38:00	2000	2000	bottle #6 missing mark here
7		:10	2001	2000	X
8	11:56:20	56:50	1002	1000	X
9	12:2:15	2:45	740	740	O_2 min
10		12:08:40	482	480	S min ~~Maybe missing mark~~
11		13:40	302	300	O_2 max
12		21:10		5	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 15	Box #: 12
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler:	
Niskin #	Depth	Serial #	Comments		
1	4800	277			
2	4000	278			
3					
4	3000	279			
5					
6	2000	280			
7					
8					
9		281	On mark		
10		282	S mark		
11		283	On mark		
12	5	284			
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT- 304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G200GPS	12L	26.11	KT

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer 4040
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

MLD 18

Station: 52	Cast: 1
Latitude start: 22° 38.8520 end:	Longitude start: 157° 58.4288 end:
Depth of water: 4721 meters	Date (GMT): 7 / 26 / 18
Pressure on Deck	Time:
Begin: -0.40	Start Log: 22:07:08
End: -0.32	In Water: 22:15:35
Max cast pressure: 202 dbar	Out of Water: 23:13:13

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1			—	200	CYCLE 1
2			—	5	"
3			—	200	CYCLE 2
4			—	5	"
5			—	200	CYCLE 3
6			—	5	"
7			—	200	CYCLE 4
8			—	5	"
9			—	200	CYCLE 5
10	23:11:25	23:11:45	4	5	"
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT- 304

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G5000GPS	12 L	26.45	SN

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐ MLD: 40
  Smin: 396
  DCM: 115

Station: 6	Cast: 1
Latitude start: 21° 50.8605 end: 21° 51.4588	Longitude start: 158° 21.7881 end: 158° 21.4096
Depth of water: 2452 meters	Date (GMT): 7/27/17
Pressure on Deck	Time:
Begin: -0.36 End: -0.32	Start Log: 7:40 In Water: 7:45
Max cast pressure: 2483 dbar	Out of Water: 09:35

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		08:43:55	2483	2500	≈ 12 m off bottom
2		08:52:55	2000	2000	
3		09:02:15	1499	1500	
4		11:40	998	1000	
5		20:55	498	500	
6		27:15	174	175	
7		28:10	149	150	
8		29:15	125	125	
9		30:15	100	100	
10		31:15	75	75	
11		32:15	44	45	
12		33:10	25	25	
13		34:20	5	5	
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 6	Cast #: 1	Box #: 12, 13
Salinity Sample Log Sheet			Cruise #: HOT- 304	Sampler:	
Niskin #	Depth	Serial #	Comments		
1	2500	285			
2	2000	286			
3	1500	287			
4	1000	288			
5	500	289			
6	175	290			
7	150	291			
8	125	292			
9	100	293			
10	75	294			
11	45	295			
12	25	296			
13	5	297			
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-304 KOK1807

CTD configuration

CTD: 850

Deck Unit: 112060 (secondary)

Pressure: 1430

Carousel: 518

T_1: 1416 T_2: 5519

C_1: 4687 C_2: 3162

O_1: 1601 O_2: 43918

$Pump_1$: 968 $Pump_2$: 494

Flurometer: SCF 3831

Altimeter: 7769

Bucket Thermometer: 3622

Transmissometer: 1192

No ISUS on CTD

Cruise Participants

J. Snyder

K. Trifonova

Kellie Teague - HPU grad student

D. Sadler - Chief Scientist

C. Funkey

E. Shimabukuro

K. Björkman

F. Santiago-Mandujano

S Natarov

Robert Cacace - Undergrad student Stockton Univ.

K. Brooks

R. Tabata

Michelle Smith - WCC Lecturer

B. Watkins

M. Burgos

Fernanda Henderikx Freitas (UH Post Doc)

J. Koch OTG

S. Tottori OTG

July 20 Loading day
6798 m ON WIRE
115 METER CUT OFF
195 Ω RED CONDUCTOR

weight cast
dry weight: 133 lbs
wet weight: 169 lbs
} weight offset: 285 lbs

weight rosette
dry weight:
wet weight:

HOT-304 23 July 2018

1700 Departed from Pier 35

20:20 Arrived at Station Kahe
21° 20.4723 158° 16.2340

20:23 start weight cast, ~400 lbs weight
20:48 end weight cast

21:13 start Hyperpro
21° 20.6567 N 158° 15.8772 W
21:58 end Hyperpro
21° 20.9321 N 158° 15.0461 W

22:21 start Station 1 cast 1
21° 20.6680 N 158° 16.2072 W
22:55 MODULO ERROR @ 1020 dbar (bottom when firing first bottle)
23:29 end Station 1 cast 1 24 marks ok!

23:40 Transit to ALOHA

24 July 2018

1005 22° 35.49 N, 158° 2.95' W
Apex float deployed.

11:30 START Station 2 cast 1
G200 GPS 22° 43.20 N 158° 00.78 W

12:05 End Station 2 cast 1.
24 Marks OK 22° 43.71 N 158° 00.87 W

HOT-304 24 July 2018

12:55 START WIRE WALKER DEPLOYMENT
22° 46.23 158° 01.79

13:20 FINISH W.W.
TRANSIT TO S.T.

B:53 START SEDIMENT TRAP DEPLOYMENT

14:30 FINISH ST. DEPLOYMENT
22°47.04 158° 03.01

[illegible]:59 START PP ARRAY DEPLOYMENT

[illegible]5:30 FINISH PP DEPLOYMENT
22° 45.21 158° 01.83

15:55 START STATION 2 CAST 2 (PO-1)
22° 44.96 158° 00.07

18:24 X-spike @ 2683 dbar (TRANSMISSOMETER)

19:12 Winch missed stop @ 500 dbar, was going down until got stopped @ 492, and then went up to ~~target~~ depth 8m off bottom

19:26 End STATION 2 CAST 2 - 24 MARKS OK!
22° 45.80 157° 59.10

21:06 START STATION 2 CAST 3
22° 44.83 158° 00.06

22:26 Modulo ERROR when ~~tagging~~ ROSETTE

22:27 END STATION 2 CAST 3 - 24 MARKS OK!
22° 45.80 157° 59.75

22:35 START NET TOW

22:05 END NET TOW

SEVERE CABLE TWISTING →
OBSERVED AFTER STZ CAST 3 →
DISCONNECT ROSETTE TO UNTWIST.

7/24/2018

HOT-304

23:10 START HYPER PRO
22° 45.677 158° 59.350

00:01 END HYPER PRO 7/25/2018
22° 45.997 157° 58.316

00:12 START STATION 2 CAST 4
22° 46.12 157° 58.10

01:16 End station 2 cast 4. 19 marks OK.
Modulo error @ 01:16:39 when rosette was out of the water.
22° 46.6798 157° 57.9555

03:08 Begin station 2 Cast 5 G1000 GPS.
22° 46.2896 157° 59.4162

04:16 End Station 2 cast 5.
21 marks OK.
22° 46.9046 157° 58.9701

04:17 Transit to PP array.

0527 Recovered PP array
22 44.02'N, 158 4.087

06:04 Begin Station 2 cast 6
G1000 GPS. 22° 44.0803 158° 04.1129

07:12 End station 2 cast 6
24 marks OK. 22° 44.69 158° 04.03

1800 Start net tows

1830 End net tows

HOT-294 25 July 2018

8:33 Start net tow.

09:00 End net tow.

09:13 Start station 2 cast 7
G,1000 GPS 22° 44.8690 157° 598717

10:09 End Station 2 cast 7
17 marks OK. 22° 45.1205 157° 59.7951

11:56 START STATION 2 CAST 8

12:56 Modulo Error @ 25dbar 22° 45.8011 157° 59.8281

13:03 End STATION 2 CAST 8
22 MARKS OK 22° 46.4996 157° 59.7540

14:08 START GAS ARRAY DEPLOYMENT

14:27 END GAS ARRAY DEPLOYMENT
22° 45.2371 158° 01.0499

14:47 START Station 2 Cast 9
22° 46.47 158° 00.02

15:17 Fl-spikes @ 208 & 293 dbar downcast & 1016 dbar upcast

16:10 End Station 2 cast 9
18 MARKS OK 22° 47.07 157° 59.95

17:55 Start Station 2 cast 10 22° 48.53 157° 57.30

18:55 End Station 2 cast 10
10 Marks OK!
22° 48.90 157° 56.93

HOT-304 7/25/18

19:08 Transit to pump tanks

21:03 Arrival back on station Aloha

21:06 Start Station 2 Cast 11
22° 45.70 157° 59.98

21:57 Modulo Error when logging rosette

21:59 End Station 2 cast 11
6 Marks OK! 22° 45.69 157° 59.70

22:03 Start Net Tow
22° 45.69 N 157° 59.55 W

22:40 START NET TOW 2
22°45.90 157°58.93

23:05 END NET TOW

23:54 Start Station 2 Cast 12
22° 46.79 157° 57.71

HOT-304 7/26/18

01:03 End Station 2 cast 12.
17 marks OK.
Modulo error occured on recovery (when CTD was out of the water)

Strings of biological material (jelly fish) removed from the lanyards and CTD cable

HOT-304 26 July 2018

03:00 Begin station 2 cast 13, G1000 GPS.

04:08 End station 2 cast 13. 18 marks OK. Modulo error on recovery when CTD was out of water.

Bottle 4 did not close. Latch did not fire. Not stuck or anything like that

Testes firing bottles 1 to 5 on deck Bottle 4 fired fine. Poured fresh water on latch.

06:00 Start station 2 cast 14 G1000 GPS

06:58 End station 2 cast 14. 14 marks OK.

08:00 Start net tow.

08:29 End net tow.

08:58 Start station 2 cast 15 G5000 GPS.

0950 High fluorescence glitch at 2270 dbar downcast.

10:47 22° 45.3644 157° 59.9074 ≈ 6 m off bottom

KOT-304 Jul 26, 2018

12:22 End station 2 cast 15
1 mark missing at 2000 dbar

13:06 Start Optics package 1
22° 46.69 157° 59.64

13:46 End Optics package 1
22° 46.99 157° 59.79

14:38 Start Optics package 2
22° 47.45 157° 59.86

15:15 End Optics package 2
22° 47.51 157° 59.68

15:18 Transit to gas array (GA)

16:17 Arrived at gas array

16:34 Start gas array recovery
22° 41.93 158° 04.64

16:49 End gas array recovery

Transit to sediment traps (ST)

17:45 ARRIVE AT S.T.

18:03 start sediment trap recovery
22° 41.52 158° 11.44

X-missometer Cal

Full Low : 0.18071
Full high : 4.49050

HOT-304 July 26, 2018

18:27 End ST recovery
22° 41.66 158° 11.40

18:49 ARRIVAL AT WIRE WALKER (WW)

19:21 Start WW Recovery
22° 40.29 158° 12.77

19:35 End WW Recovery

19:37 Transit to Station 52 - Whots-14

22:07 Start Station 52 Cast 1 GROO GPS - YOYO
22° 38.85 157° 58.42

CYCLE 1: 22:15 - 22:29

CYCLE 2: 22:29 - 22:39

CYCLE 3: 22:39 - 22:50

CYCLE 4: 22:50 - 23:01

CYCLE 5: 23:01 - 23:12

23:23 End Station 52 Cast 1

23:36 Start HyperPro
22° 40.32 157° 58.46

July 27, 2018

00:12 End HyperPro
22° 40.23 157° 58.39

THSL/GPS clock drift 7/27/2018

	15:35:00	GPS
-	15:35:21	THSL
+	0:00:21	T-cal

HOT-304 July 27, 2018

00:14 Transit to Kaena – Station 6

07:40 Start Station 6 cast 1; 6,5000 GPS

09:35 End Station 6 cast; 13 marks OK.

09:40 Transit To Honolulu.

755 Arrived at Pier 35