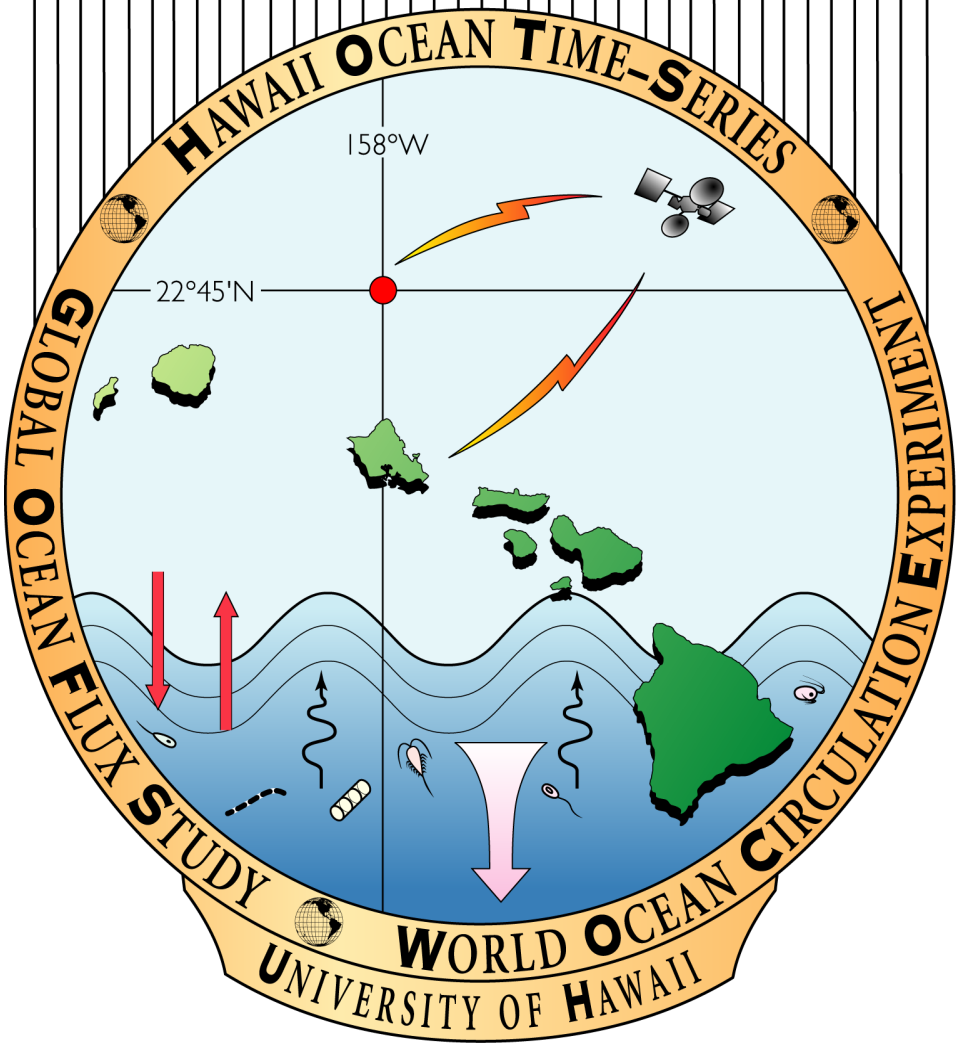
Hawaii Ocean Time-series Program

HOT-190



HOT-190 MARCH 19-23

Loading 3/16/07 KOK

1800

CTD CONFIGURATION

840

CTD - 43777-850
DECK UNIT - 111361
PRESSURE - 1430

1115

T_1 - 2454	T_2 - 2907
C_1 - 2959	C_2 - 3162
O_1 - 262	O_2 - 918
P_1 - 492	P_2 - 494

2255

FLUOMETER - 2840

2231

ISUS - 97
ALTIMETER - 1219

2341

Science Personnel

K. Bjorkman	C. Mahaffey
K. Doggett	D. Sadler
L. Fujieki	B. Watkins
E. Grabowski	D. Viviani
A. Harlan	R. Lethaby

F. Santiago-M - chief scientist
J. Snyder
J. Yeh
Binglin Li - Grad. Student UH/BEACH
Scott Oberg - Teacher - Makaha Elementary/CMORE
K. Velallos - OTG
S. Tottori - OTG

HOT - 190 19 March 2007

1800 Depart from Snug Harbor

1840 Abandon ship, fire drills
Science meeting.

2115 Arrived at Kahe
Weight cast

2+15 PRR Cast.

2+31 Start Sta 1 cast 1

Tension with package on air 715 16

2341 End of cast. 24 marks OK

Depart to depoy J. Yeh's camera

Bottle 3 leaking from bottom cap.
o-ring not seating correctly
Reseated.

Pinger battery almost dead
when it reached the surface.
Recharging it.

Slightly noisy Seconds O2 trace
at 750 and 1000 dbar.

ISUS power now provided by CTD.
Cable fabricated by J. Snyder

3/19/07 ISUS CAL 243

.0012
.1306
4.0037

10 MIN WARM UP

.0018
.1306 1202
4.0037

NITRATE VALUES AFTER NEW CAL

-4.801
+100.265 2:52:16

1304

1326

13:59

14:21

14:53

15:15

15:50

16:06

HOT-190 20 March 2007

1743	Deployed benthic camera 21° 42.86'N, 158° 20.03'W
	Ship slowed to check on engine problems. Making < 7 knots.
1202	Arrive Stn ALOHA
	Deploy Sediment traps.
12:52:16	SED TRAP DEPLOYED 22 45.55 N 157 58.58 W
1304	Start Sta 2 cast 1
	Secondary fluorescence max. at 160 dbar, below main max.
1326	End of cast 21 marks OK
13:59	Start Sta 2 cast 2
14:21	End of cast, 21 marks OK
14:53	Start Sta 2 cast 3
15:15	End of cast, 20 marks OK
15:50	Deployed gas array Removed ISUS, installed pinger on CTD
16:06	Start Sta 2 cast 4

Need spare battery for thermoseal clock.

1744

1932

2000

HOT-190 20 March 2007

Altimetr noise depths ~ 900 - 950 dbar
(Signal jumps to 10 m then goes up to 98.486m)
1150 - 1180
1240 - 1280
1370 - 1400
1640 - 1690
1715 - 1770
1790 - 1840
2040 - 2080
2140 - 2180
2195 - 2227
Decreasing from 98 to 5 3620 - 3675
3780 - 3945
4040 - 4217
Glitch in second 02 3880 dbar downcast

Decreasing 98 to 5 4750 - 4790
3782 - 3625 upcast.

1744 10 m off the bottom. Altimetr locked in at about 25 m

22°44.79'N, 158°0.29'W

Secondary fluorescence max at 160 dbar

19:32 End of cast, 24 marks OK

Noise in second 02 sensor fluctuating with pressure, apparently corresponding with altimeter noise

2000 Net tow

		1057
		1209
		1230
		1356
		0057
*	Lost vent knob off bottle #2 Replaced with spare.	0239
		0355
		0559
		0702
		0800
		0859
		1022
		1100
		1158

HOT-190 20 March 2007

2057 Start Sta 2 cast 5

2109 End of cast, 24 marks OK

2230 Net tow

Installed IJUS in rosette

2356 Start Sta 2 cast 6

21 March 2007

0057 End of Cast 20 marks OK

0239 Start Stn 2 Cast 7

0355 End of Cast. 24 marks OK

0559 Start Stn 2 Cast 8

0702 End of Cast 22 marks OK

0800 Net tow

0859 Start Stn 2 Cast 9

Missed stop at 90 dbar went to 46 dbar before returning.

1022 End of Cast. 23 marks OK

1100 Net tow

1158 Start Stn 2 Cast 10

301

423

510

540

747

908

958

020

2105

2203

2210

2359

0055

HOT-190 21 March 2007

1301 End of cast, 22 marks OK.

1423 Start Sta 2 cast 11

1510 End of cast, 3 marks OK

1540 Deployed PP array
22° 49.6' N, 157° 58.9' W

1747 Recovered gas array
22° 40.16' N, 158° 14.19' W
14 nm SW from ALOHA.

1908 Start Sta 2 cast 12

Secondary fluorescence max
at 200 dbar

1958 End of cast. 18 marks OK

2020 Net tow

2105 Start Sta 2 cast 13

2203 End of cast, 16 marks OK
2210 PRR/Acq/Free
2359 Start Sta 2 cast 14

22 March 2007

0055 End of cast, 14 marks OK

025

040

04

045

060

0712

0922

HOT-190 22 March 2007

MOVED T-C PAIRS TO OUTSIDE OF CTD CAGE. PLUMBING TUBE BETWEEN CONDUCTIVITY CELL AND OXYGEN SENSOR IS NOW LONGER.

0259 Start Stn 2 Cast 15 close to edge of circle

0400 End of Cast 16 maths OK

0429 Raining about 5 nm from ship.

Primary production on board

0456 22° 41.85'N 158° 8.27'W

8 nMiles SE of ALOHA.

Transit to center

0607 Start Stn 2 Cast 16

Raining on Station.

0712 End of Cast. 18 maths OK

ISUS Removed from rosette and Pinger mounted.

Net tow.

0922 Start Stn 2 Cast 17

1055

1235

1300

1345

1415

1457

5:19

5:40

915

HOT-190 22 March 2007

1055	6m off the bottom. 22 45.04N 157 59.76W Pot. temp. 1.104°C
1235	End of Cast. 20 marks OK
	Spigots 2, 3, 4, 5 were found open on recovery. Bottles not leaking
1300	AC9/Frrf cast
1345	Raining heavily
1415	End AC9/Frrf transit to WHOTS buoy
1457	Start Sta 50 cast 1
	Secondary fluorescence max at 160 dbar
1519	End of cast, 11 marks OK
	Transit to recover sediment traps
1840	Retrieving sediment traps array 22°39.81 N, 158° 28.31 W ~27 nm from ALOHA
1915	Finished recovery. Trap cylinders were almost empty due to steep angle in recovery line, traps were almost horizontal during recovery. Strong wind and current. Raining nearby

1970

2+95

0025

0850

0920

1000

1730

HOT-190 22 March 2007

1920 Transit to MOSEAN mooring

2145 DRR cast.
ACS/Irrf cast
ACS was not working when it came out of the water.
Cancelled second ACS cast

23 March 2007

0025 Transit to retrieve benthic camera.

0850 Release camera. Fired acoustic release

0920 Camera at the surface

1000 Retrieve benthic camera.

Transit to Snug harbour.

1730 Arrived at Snug. End of cruise.

Hawaiian Ocean Time-Series

HOT-**190**

KAHE Station Data Sheet

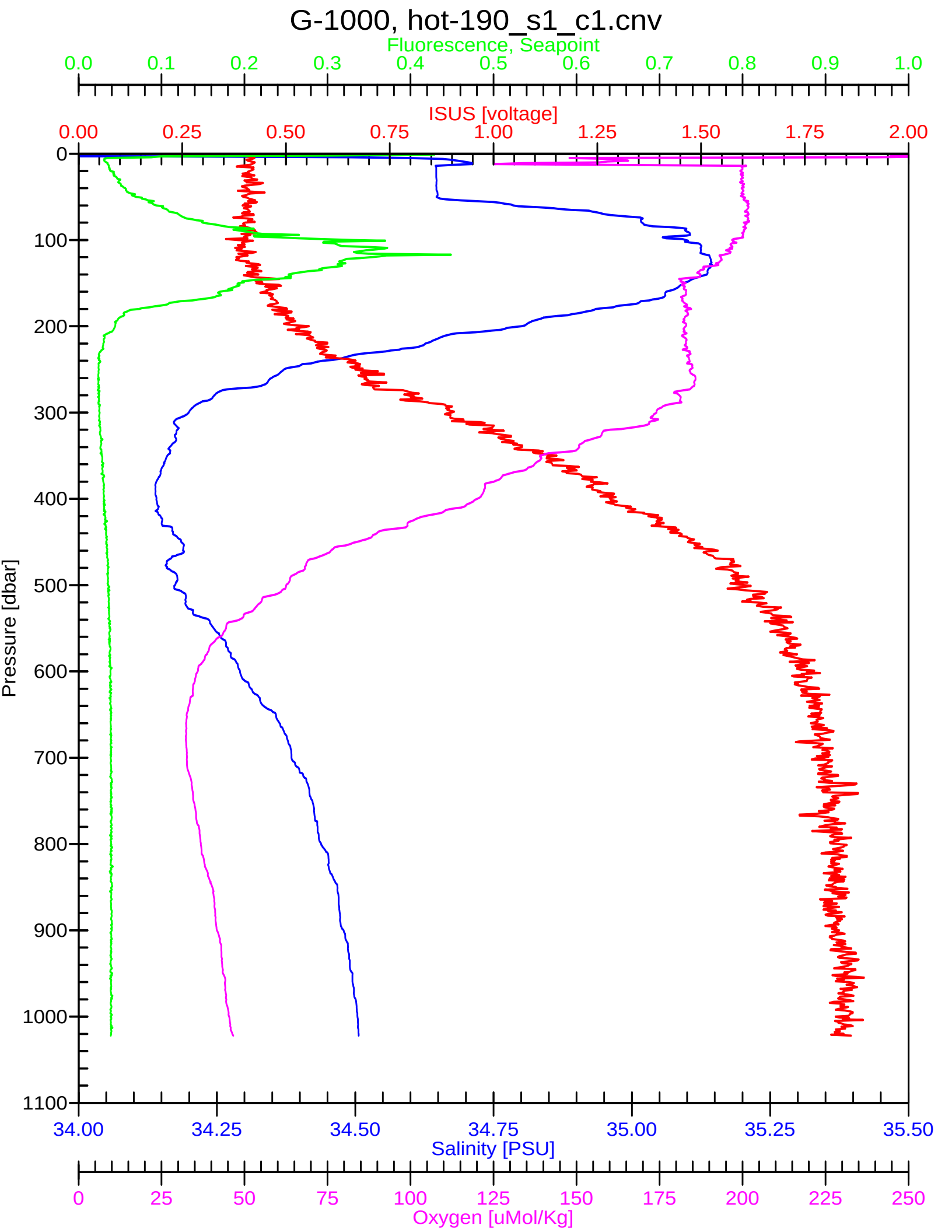
Station # 1 Date: 3-19-07 (HST)

Cast # 1 Time: 1230 (HST)

Operator(s): AH,KD,LF,EG,BL

Rosette Position	Desired Depth	Oxygen	Sample Temp.	Nuts	DIC/ Alk	pH	DOC	LLN/ LLP	Chl *a*	FCM
1	**1000**	10	6.6	1						
2	**900**	11	6.8	2						
3	**800**	12	8.3	3						
4	**750**	13,14,15	7.6	4A-B						
5	**700**	16	7.6	5						
6	**600**	17	7.8	6						
7	**500**	18	9	7			7			
8	**400**	19	9.9	8						
9	**350**	20	10.8	9A-B			9			
10	**300**	21	12	10						
11	**250**	22	15.6	11						
12	**225**	23	17.1	12						
13	**200**	24	18.8	13			13			
14	**175**	25	20	14			14		14	14A-B
15	**150**	26	21.4	15			15	15	15	15A-B
16	**125**	27	22.4	16A-B			16		16	16A-B
17	**115**	28	22.7	17						
18	**100**	**29,30 ,31**	23.4	18			18	18	18A-B	18A-B
19	**75**	32	23.8	19			19		19	19A-B
20	**60**	33	24.1	20						
21	**45**	34	24.4	21	21	1	21	21	21	21A-B
22	**25**	35	24.3	22	22	2	22		22A-B	22A-B
23	**5**	36	24.6	23	23	3,4,5	23	23	23	23A-B
24	**5**	QC	24.6							

Notes: FCM 30ul 10% PFA/tube (2ml)
Niskin #3 leaking


G-1000, hot-190_s1_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

Gas Array Experiment Data Sheet

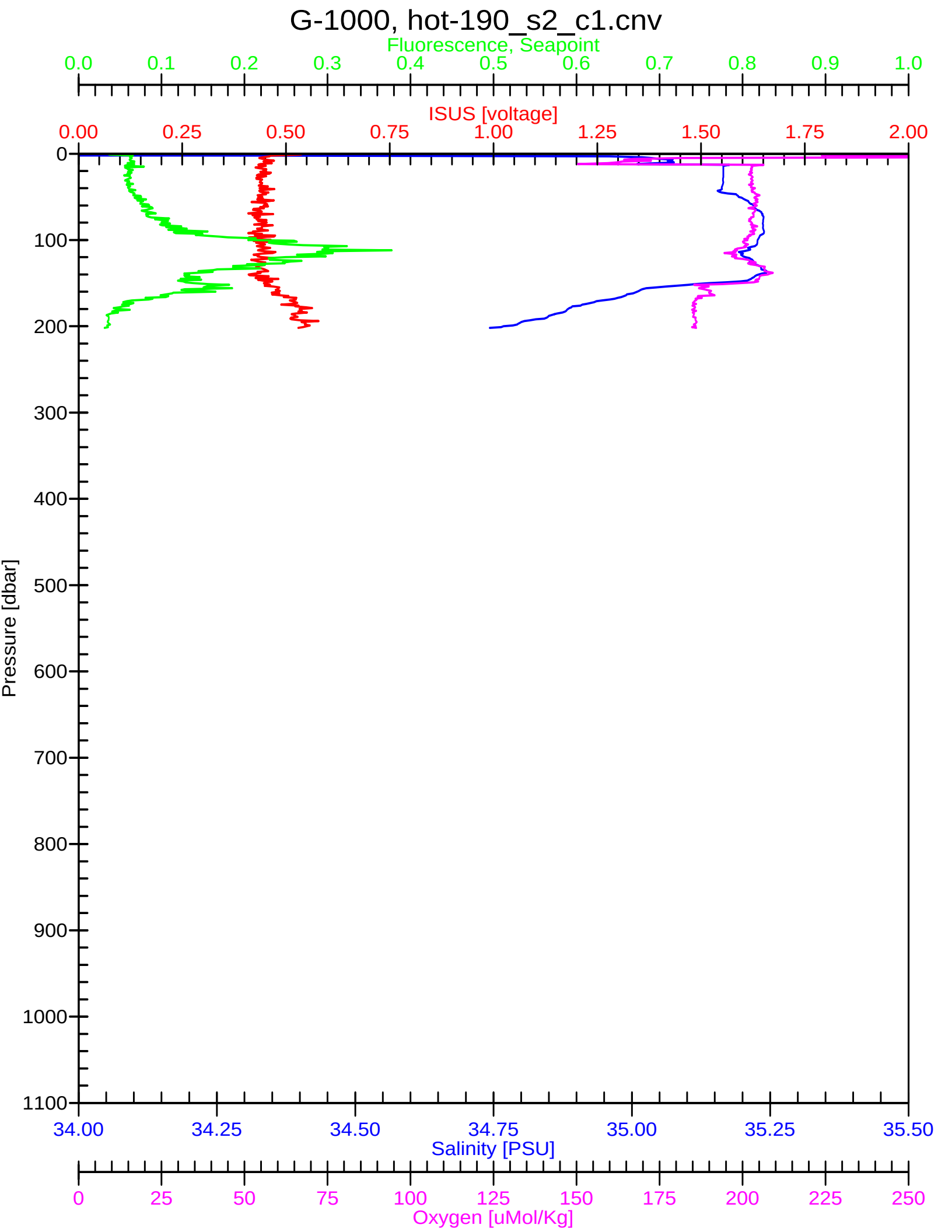
Station # 2 Date: 3/20/07 (HST)

Cast # 1 Time: 0300 (HST)

Operator(s): KB, SD, DV

Rosette Position	Desired Depth	O2	15N2	T-SPIKE	TIME	FILTERED	
1	**45**	X					
2	**45**	X					
3	**45**	X					
4	**45**		X	6-1	0401	0800	
5	**45**		X	6-2	0402	0800	
6	**45**		X				
7	**45**		X				
8	**25**	X					
9	**25**	X					
10	**25**	X					
11	**25**		X	7-1	0400	0800	
12	**25**		X	7.2	0401	0800	
13	**25**		X				
14	**25**		X				
15	**5**	X					
16	**5**	X					
17	**5**	X					
18	**5**		X	8-1	0358	0800	
19	**5**		X	8-2	0359	0800	
20	**5**		X				
21	**5**		X				
22							
23							
24							

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

Gas Array Experiment Data Sheet

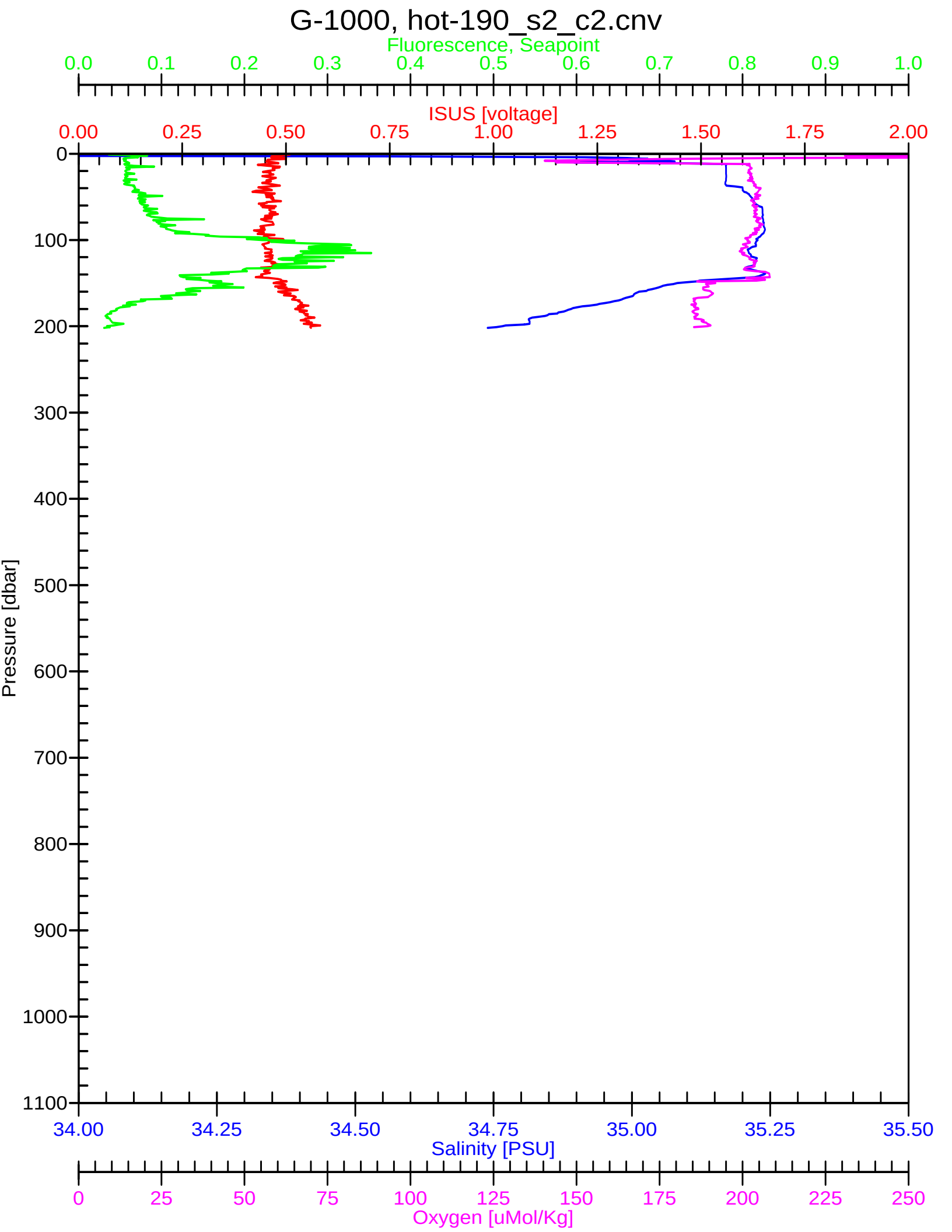
Station # 2 Date: 3-20-07 (HST)

Cast # 2 Time: 340 (HST)

Operator(s): AH,KD,LF,EG,BL

Rosette Position	Desired Depth	O2	15N2		time	FILTERED	
1	**125**	X					
2	**125**	X					
3	**125**	X					
4	**125**		X	3-1	0443	0825	
5	**125**		X	3-2	0443	0850	
6	**125**		X				
7	**125**		X				
8	**100**	X					
9	**100**	X					
10	**100**	X					
11	**100**		X	4-1	0444	0825	
12	**100**		X	4-2	0445	0915	
13	**100**		X				
14	**100**		X				
15	**75**	X					
16	**75**	X					
17	**75**	X					
18	**75**		X	5-1	0445	0824	
19	**75**		X	5-2	0446	0922	
20	**75**		X				
21	**75**		X				
22							
23							
24							

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

OPEN CAST Data Sheet

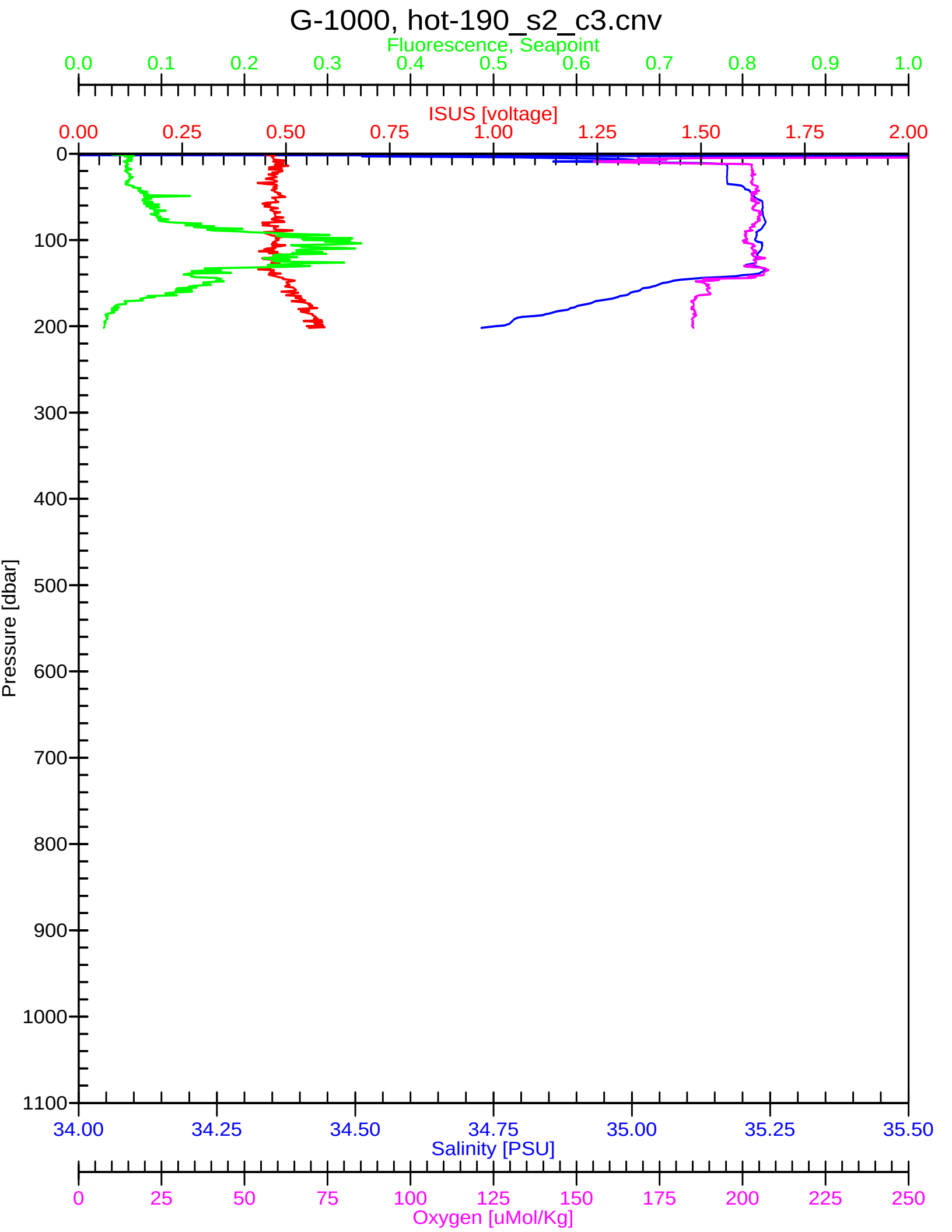
Station # 2 Date: 3-20-07 (HST)

Cast # 3 Time: 455 (HST)

Operator(s): Ah,kd,eg,lf,bl,dv

Rosette Position	Desired Depth	Donn	Ben				
1	**125**	1					
2	**100**	2					
3	**75**	3					
4	**75**	4					
5	**45**	5					
6	**45**	6					
7	**45**	7					
8	**45**		X				
9	**45**		X				
10	**45**		X				
11	**45**		X				
12	**45**		X				
13	**45**		X				
14	**25**	8					
15	**25**	9					
16	**25**	DO					
17	**25**	DO					
18	**5**	10					
19	**5**	11					
20	**5**	12					
21							
22							
23							
24							

Notes: Donn has 2 depths TBA


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT-**190**

WOCE Deep Data Sheet

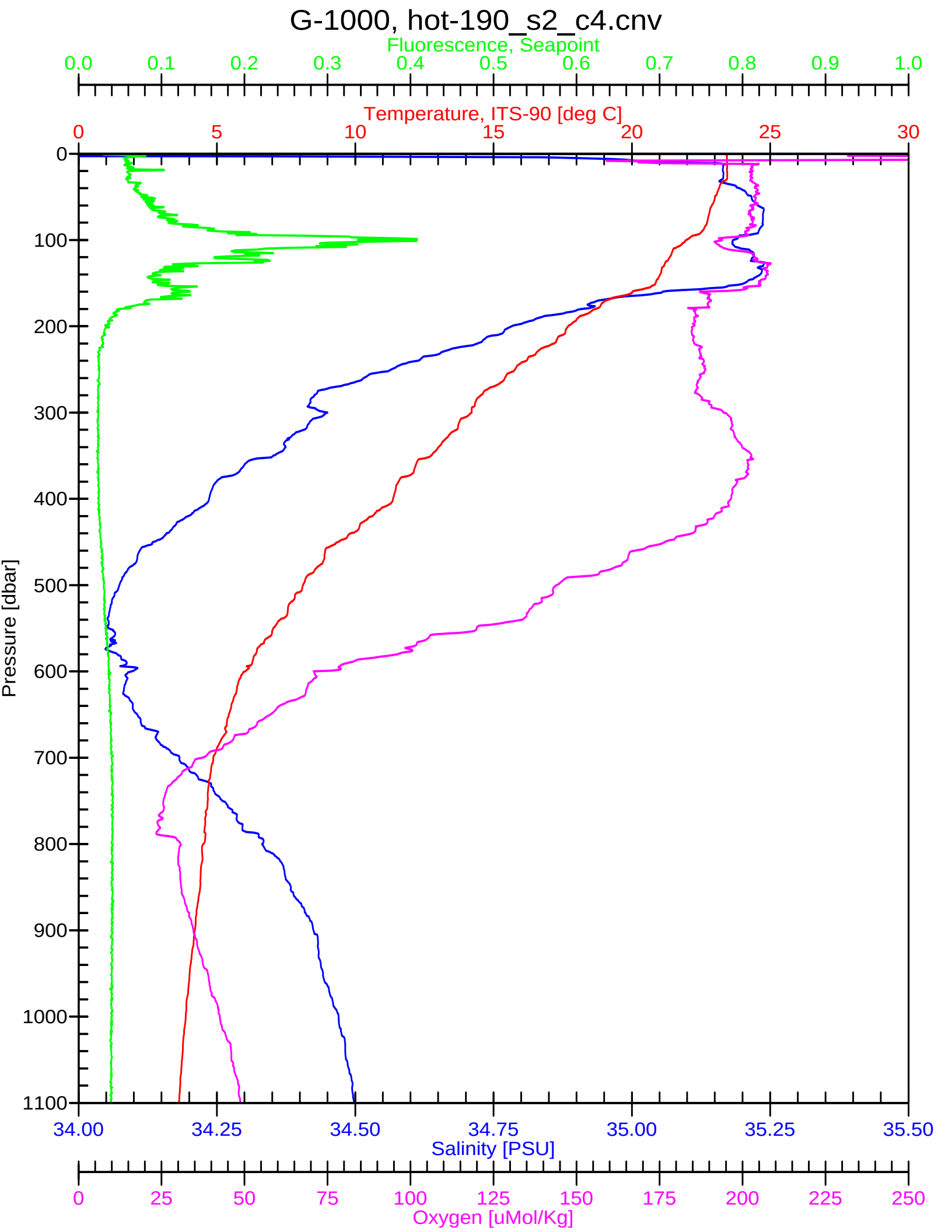
Station # 2 Date: 3-2-07 (HST)

Cast # 4 Time: 0605 (HST)

Operator(s): Ah,kd,lf,eg,bl

Rosette Position	Desired Depth	Oxygen	Sample Temp.	Nutrient	Refridg. Si	DOC	DIC/ Alk	pH
1	**4800**	37	2.6	1	1			
2	**4600**	38	2.6	2	2			
3	**4500**	39,40,69	2.9	3A-B	3A-B	3A-B	3a,b	1,2,3
4	**4400**	70	2.7	4	4			
5	**4200**	43	2.8	5	5			
6	**4000**	44,45,46	2.9	6A-B	6A-B	6A-B		
7	**3800**	47	2.8	7	7			
8	**3600**	48	2.7	8	8			
9	**3400**	49	2.9	9	9			
10	**3200**	50	3.2	10	10			
11	**3000**	51,52,53	3.4	11A-B	11A-B	11A-B	11	4
12	**2800**	54	3.3	12	12			
13	**2600**	55	3.3	13	13			
14	**2400**	56	3.3	14	14			
15	**2200**	57	3.4	15	15			
16	**2000**	58,59,60	4.2	16A-B	16A-B	16A-B	16	5
17	**1800**	61	3.9	17	17			
18	**1600**	62	4.3	18	18			
19	**1400**	63	4.3	19	19			
20	**1200**	64	4.6	20	20			
21	**1000**	65	5.2	21				
22	**750**	66	5.9	22				
23	**500**	67	7.8	23				
24	**5**	68	23.0	24				

Notes: Bottle #19 and 20 top valve opened before sampling


G-1000, hot-190_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
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT-**190**

PO Shallow Data Sheet

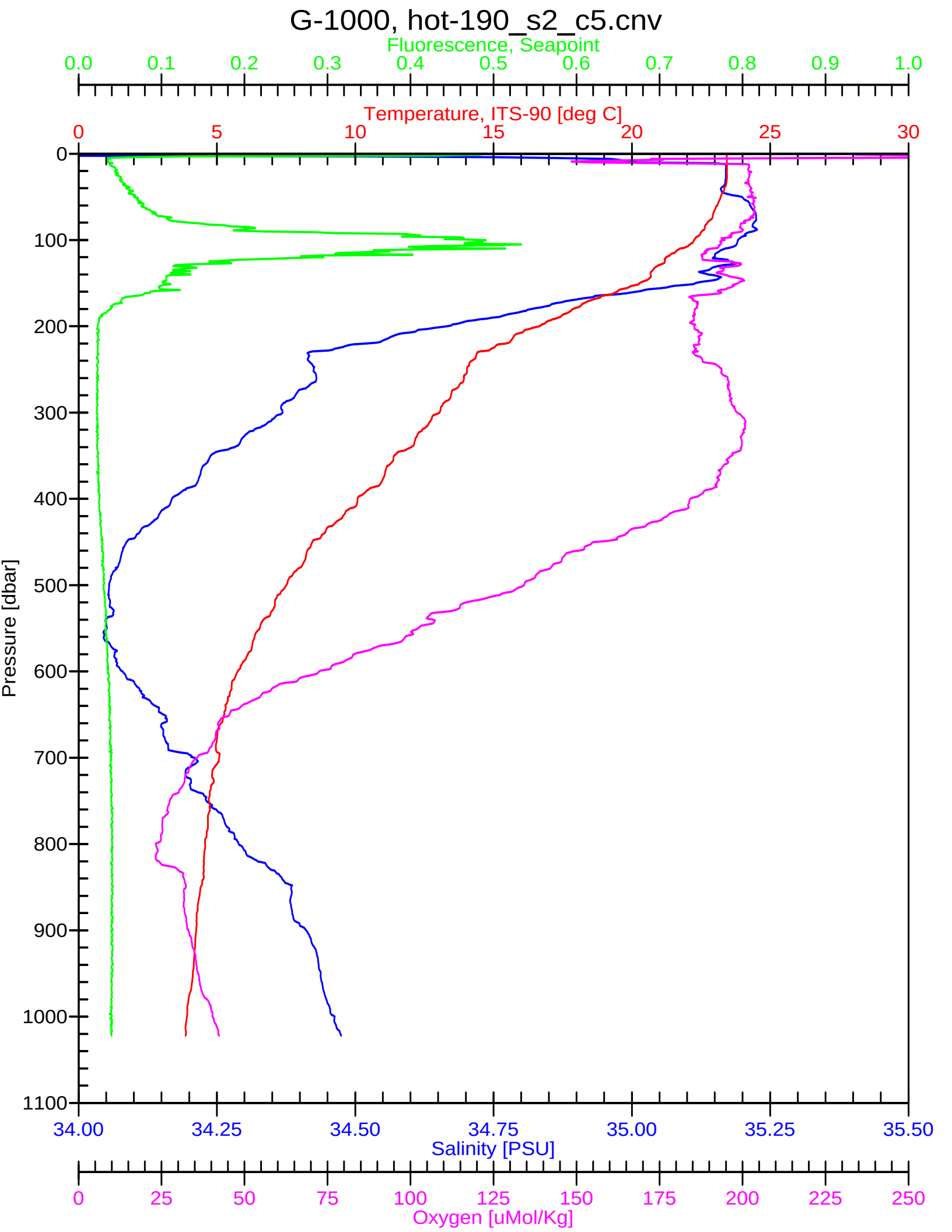
Station # 2 Date: 3-20-07 (HST)

Cast # 5 Time: 1100 (HST)

Operator(s): Ah,kd,eg,lf

Rosette Position	Desired Depth	Oxygen	Sample Temp.	Nutrient	Refridg. Si	DIC/ Alk	pH	DOC	
1	**1020**	71,72,73	5.7	1A-B	1A-B	1	1	1	
2	**996**	74	5.6	2	2				
3	**960**	75	5.8	3	3				
4	**923**	76	5.9	4	4				
5	**887**	77	6.3	5	5				
6	**850**	78,79,80	6.3	6	6				
7	**794**	81	6.2	7	7				
8	**748**	82	6.3	8	8	8	2	8	
9	**702**	83	6.6	9	9				
10	**667**	84	6.9	10	10				
11	**631**	85	6.9	11A-B	11A-B				
12	**592**	86	7.4	12	12	12	3	12	
13	**544**	87,88,89	8.2	13	13				
14	**504**	90	8.7	14	14	14	4	14	
15	**468**	91	9.4	15	15				
16	**432**	92	10.2	16	16				
17	**385**	93	11.2	17	17	17A-B	**5**	17	
18	**322**	94,95,96	13.2	18	18				
19	**266**	97	14.2	19	19	19	6	19	
20	**209**	98	16	20A-B					
21	**163**	99	18.3	21					
22	**110**	100	21.4	22					
23	**58**	10	22.7	23					
24	**5**	11	23.2	24					

Notes:


G-1000, hot-190_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
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- 190

ATP Data Sheet

Station # 2 Date: 3/20/07 (HST)

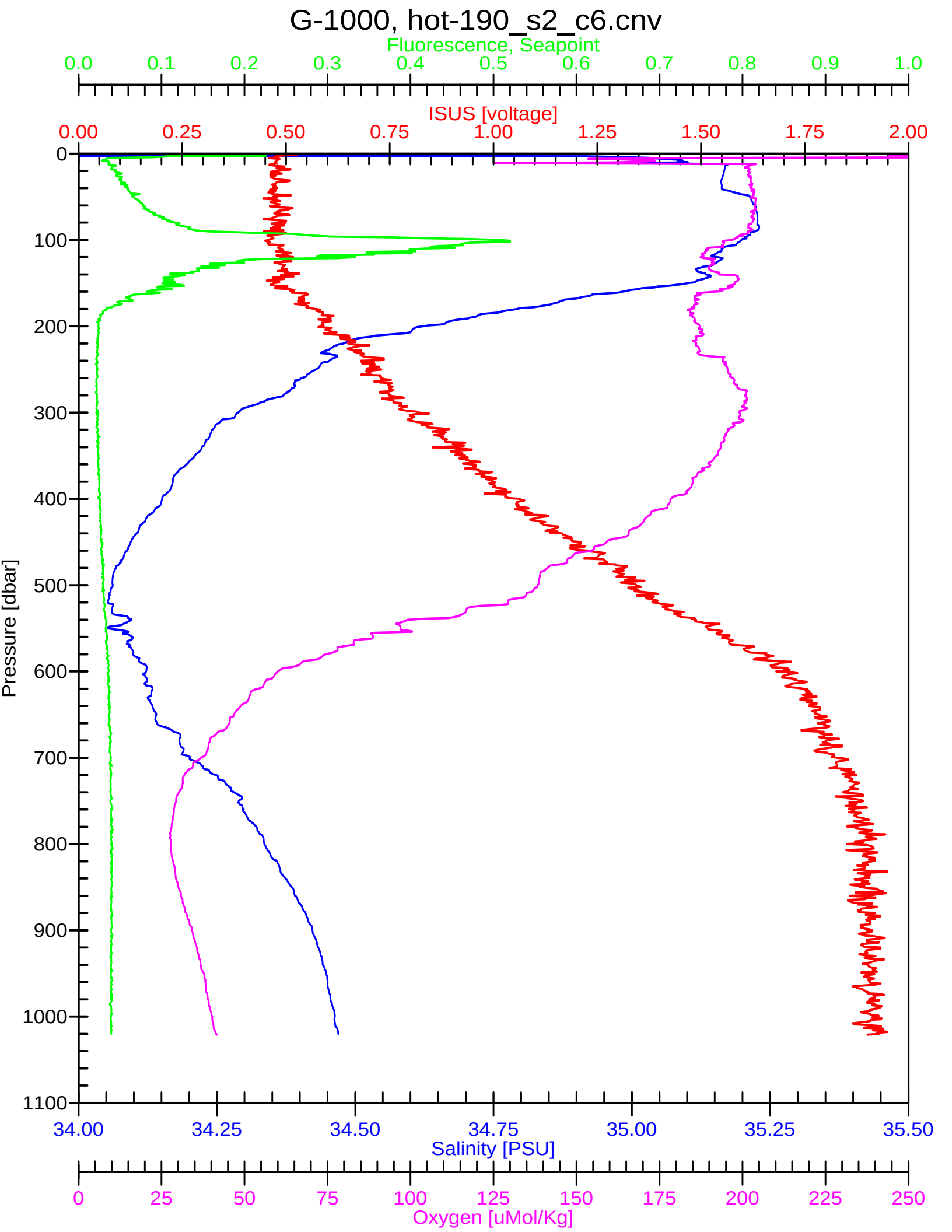
Cast # 6 Time: 1400 (HST)

Operator(s): KB,DS,CM,DV Pre-screen mesh size: 202um

Blank #'s 28, 29, 30

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	KB	MC	
1	**1000**						
2	**770**					×	
3	**Sal min**						
4	**500**					×	
5	**350**	1 - 3	3x2	1			
6	**300**				×		
7	**300**					×	
8	**250**	4 - 6	3x2	2			
9	**200**					×	
10	**200**				×		
11	**150**	7 - 9	3x1	7			
12	**150**				X		
13	**125**	10 - 12	3x1	8			
14	**125**				X		
15	**100**	13 - 15	3x1	9			
16	**100**				X		
17	**75**	16 - 18	3x1	10			
18	**45**	19 - 21	3x1	11			
19	**25**	22 - 24	3x1	12			
20	**5**	25 - 27	3x1	13			
21							
22							
23							
24							

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT-**190**

Phycoerythrin Data Sheet

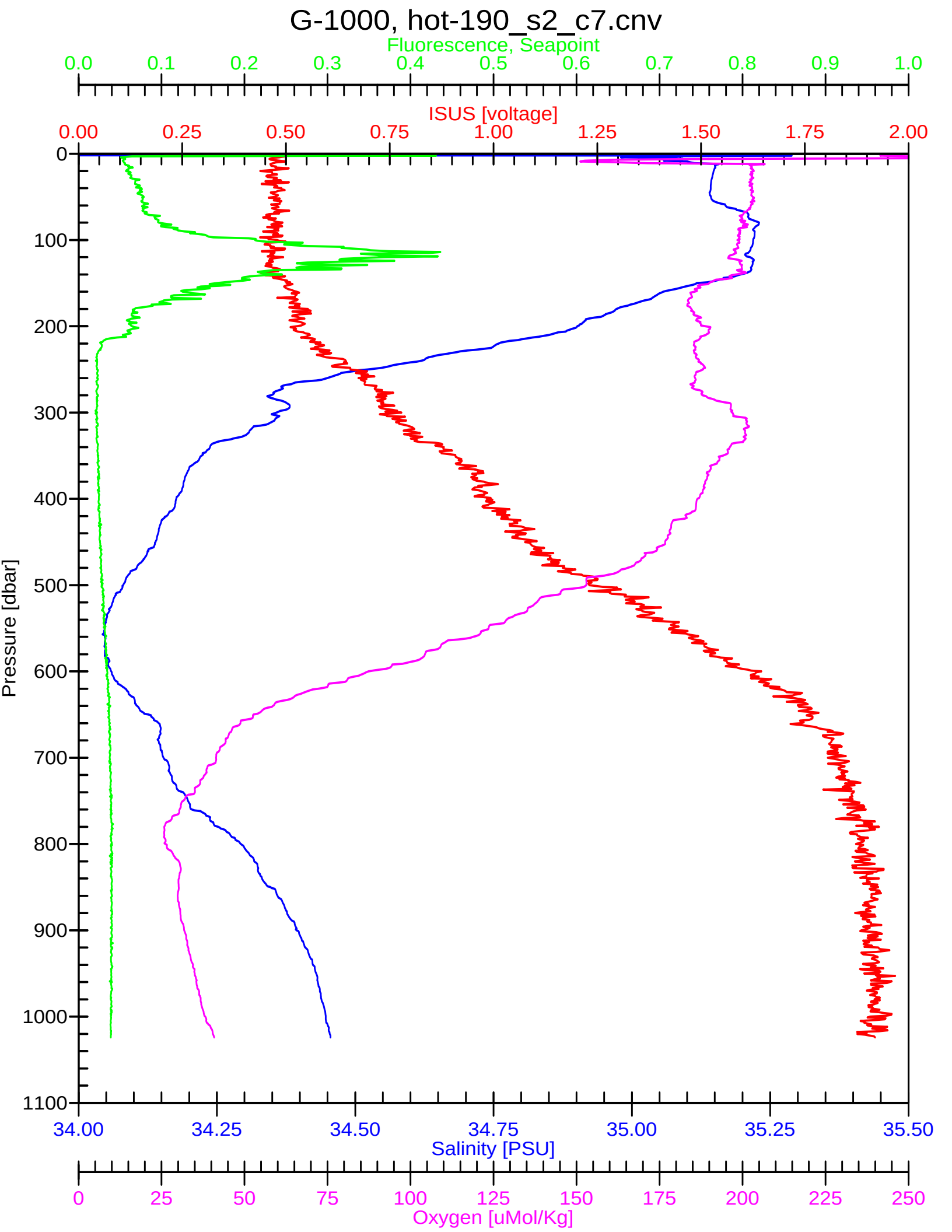
Station # 2 Date: 3/20/07 (HST)

Cast # 7 Time: 1700 (HST)

Operator(s): KB,DS,DV,CM Pre-screen mesh size: None

Rosette Position	Desired Depth	Carboy #	Total Volume	10um	5um	.4um	MC	KB
1	**1000**							
2	**Sal min**							
3	**175**	1	10	1	2	3		
4	**175**						X	
5	**150**	2	10	4	5	6		
6	**150**						X	
7	**125**	3	10	7	8	9		
8	**125**						X	
9	**100**	4	10	10	11	12		
10	**100**						X	
11	**75**	5	10	13	14	15		
12	**75**						X	
13	**75**							X
14	**60**	6	10	16	17	18		
15	**45**	7	10	19	20	21		
16	**45**						X	
17	**45**							X
18	**35**	8	10	22	23	24		
19	**35**	9	10	25	26	27		
20	**25**	10	10	28	29	30		
21	**25**						X	X
22	**15**	11	10	31	32	33		
23	**5**	12	10	34	35	36		
24	**5**						X	X
Blanks				37	38	39		

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT-**190**

HPLC & Chl *a*. Bottle Data Sheet

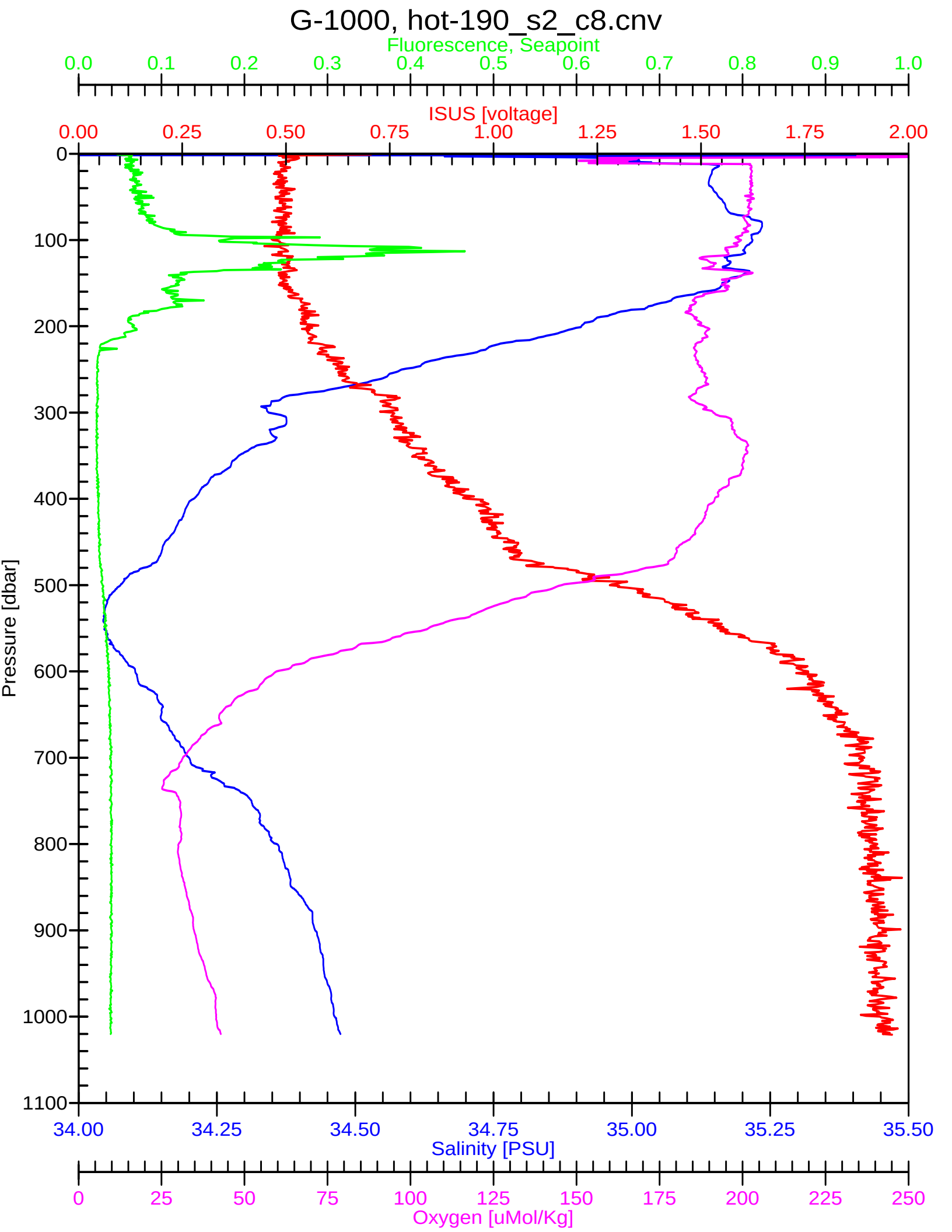
Station # 2 Date: 3/20/07 (HST)

Cast # 8 Time: 2000 (HST)

Operator(s): KB, DS, DV

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

Notes: DO NOT PRE-SCREEN


G-1000, hot-190_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]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT-**190**

BEACH Shallow Data Sheet

Station # 2 Date: 3/20/07 (HST)

Cast # 9 Time: 2300 (HST)

Operator(s): DS, KB, DV

Rosette Position	Desired Depth	Oxygen	Sample Temp.	Nutrient	Refridg. Si	DOC	LLN	LLP/ LLSi
1	**1000**	12	7.8					
2	**O_2 min**	13	8.3					
3	**Sal min**	14	9.9					
4	**200**	15	17.9	4	4	4		
5	**175**	16	19.1	5		5	5	5
6	**165**	17	19.3				6	
7	**150**	18	20.3	7		7	7A-B	7
8	**130**						8	
9	**125**	19	21.1	9A-B		9	9	9
10	**115**	20	21.4				10	10
11	**110**						11	
12	**100**	21,22, 23	22.1	12		12	12A-B	12
13	**90**						13	
14	**85**	24	22.4				14	14
15	**75**	25	22.8	15		15	15	15
16	**60**			16		16	16	16
17	**45**	26	23.0	17A-B		17	17	17
18	**35**			18		18	18	
19	**25**	27	23.0	19		19	19	19
20	**25**							
21	**15**			21		21	21	
22	**5**	28	23.3	22		22	22A-B	22
23	**5**							
24								

Notes: Keeling 20A 0034, 20B 0036, 23A 0038, 23B 0040

Hawaiian Ocean Time-series

HOT-**190**

BEACH Carbon Data Sheet

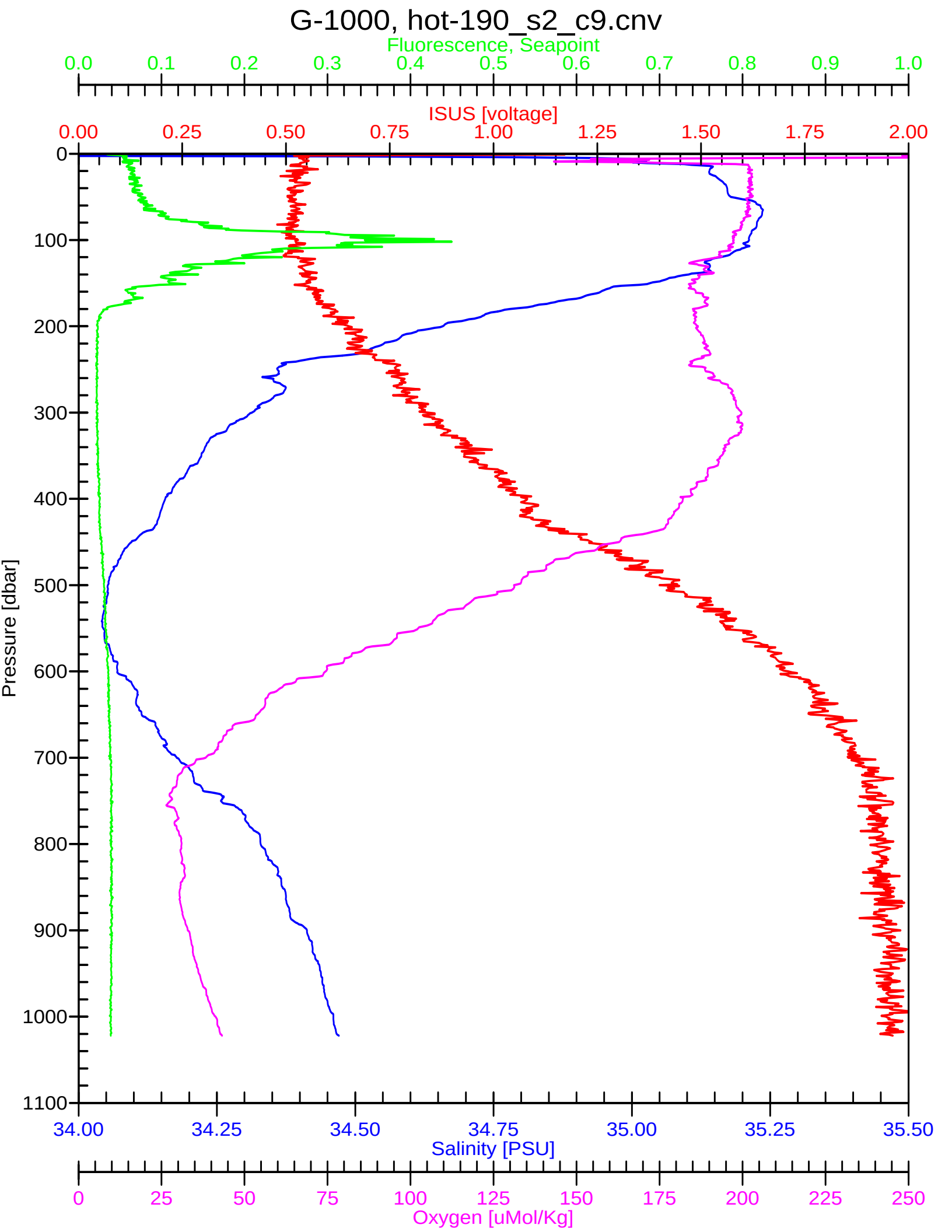
Station # 2 Date: 3/20/07 (HST)

Cast # 9 Time: 2300 (HST)

Operator(s): DS, KB, DV

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

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT-**190**

Primary Production Data Sheet

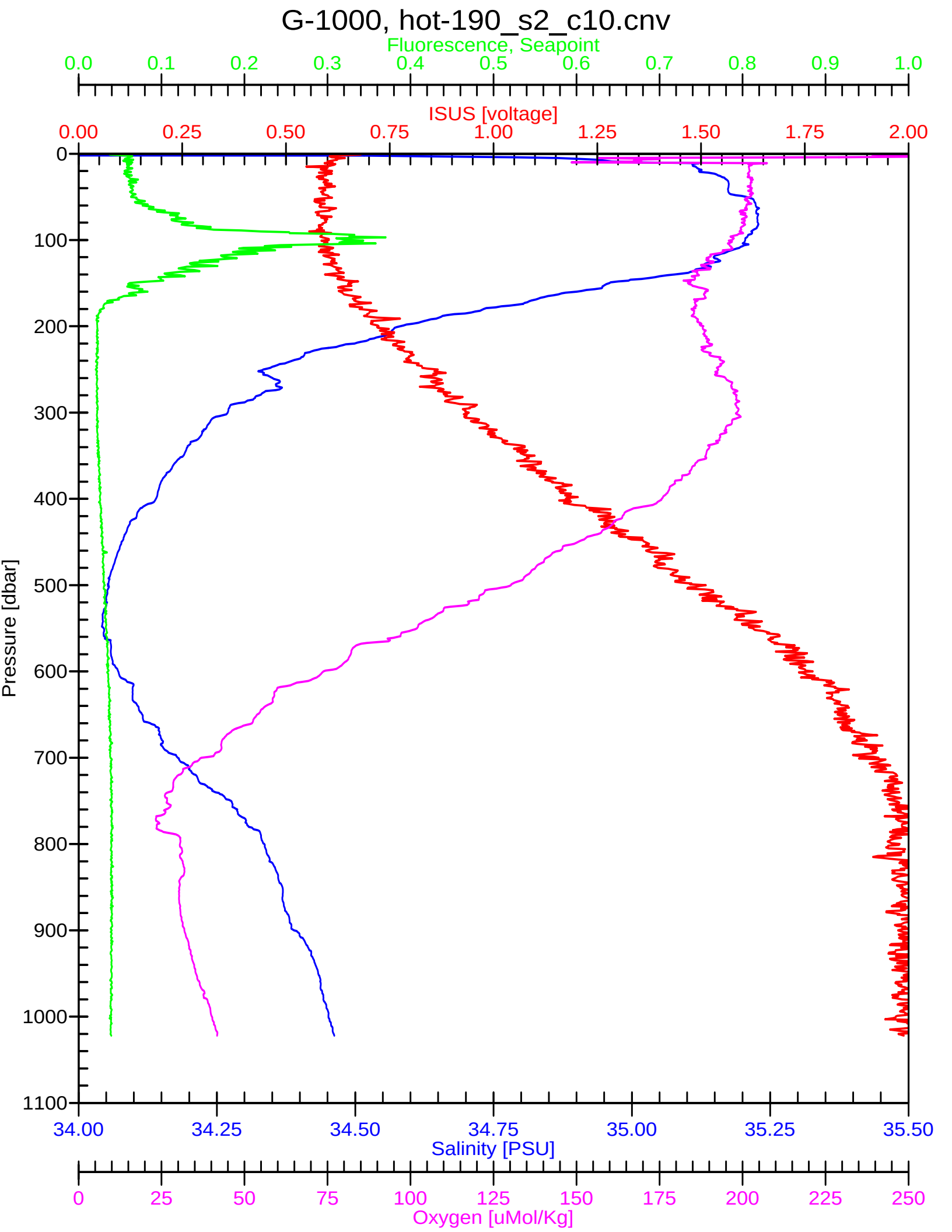
Station # 2 Date: 3/21/07 (HST)

Cast # 10 Time: 0200 (HST)

Operator(s): KB, DS, DV

Rosette Position	Desired Depth	Light Bottle	Chl *a*	FCM	**Size fractionated Chl a**	**Size fractionated 14C-PP**	
1	**1000**						
2	**Sal min**						
3	**175**		3A-B	3A-B	1		
4	**150**		4A-B	4A-B	2		
5	**125**	3-1	5	5	3	3T=0/3-4	
6	**125**	3-2	6	6		3-5	
7	**125**	3-3	7	7		3-6	
8	**100**	4-1	8	8	4	4T=0/4-4	
9	**100**	4-2	9	9		4-5	
10	**100**	4-3	10	10		4-6	
11	**75**	5-1	11	11	5	5T=0/5-4	
12	**75**	5-2	12	12		5-5	
13	**75**	5-3	13	13		5-6	
14	**45**	6-1	14	14	6	6T=0/6-4	
15	**45**	6-2	15	15		6-5	
16	**45**	6-3	16	16		6-6	
17	**25**	7-1	17	17	7	7T=0/7-4	
18	**25**	7-2	18	18		7-5	
19	**25**	7-3	19	19		7-6	
20	**5**	8-1	20	20	8	8T=0/8-4	
21	**5**	8-2	21	21		8-5	
22	**5**	8-3	22	22		8-6	
23							
24							

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

OPEN CAST Data Sheet

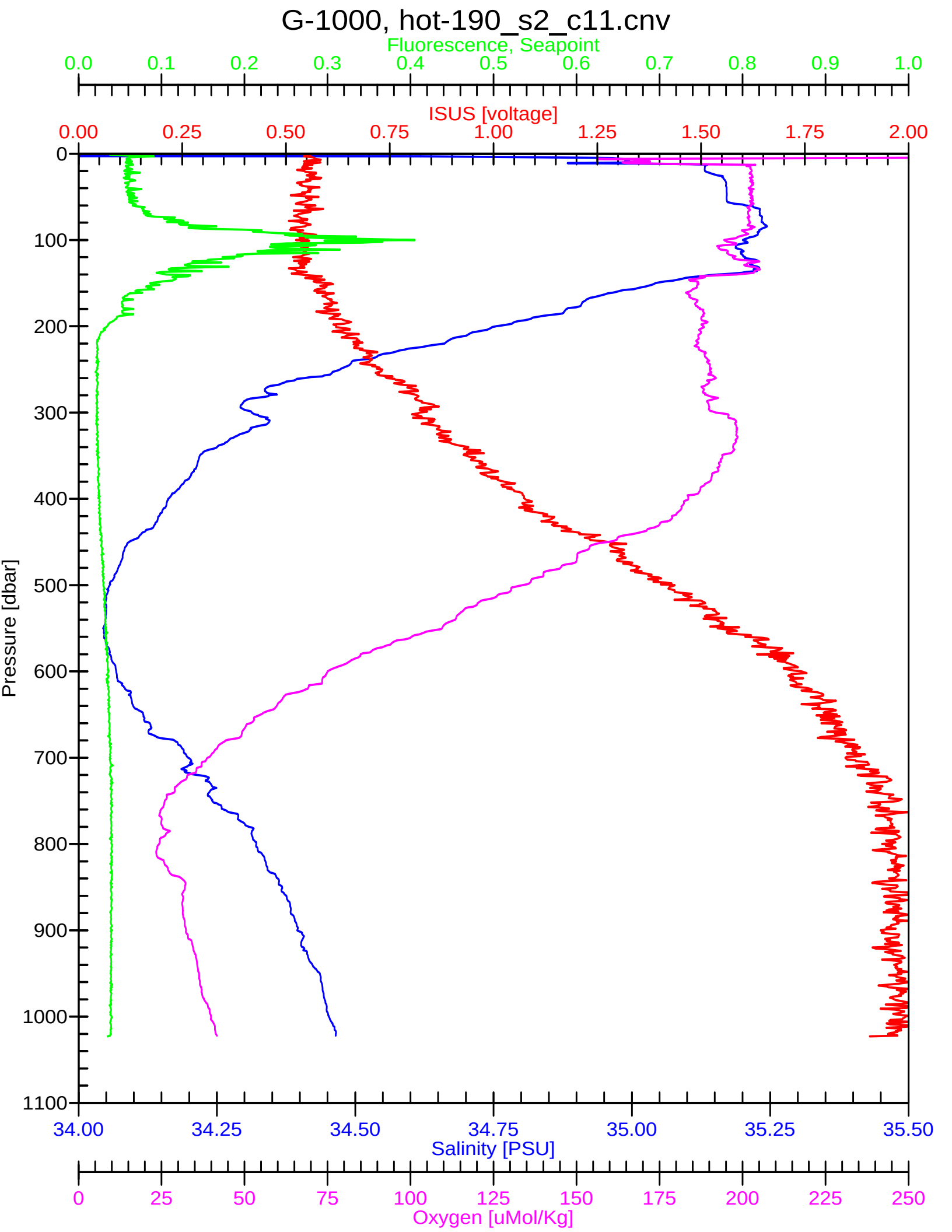
Station # 2 Date: _____ (HST)

Cast # 11 Time: _____ (HST)

Operator(s): _____

Rosette Position	Desired Depth						
1	**1000**						
2	**Sal min**						
3	**5**						
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

Particulate Silica Data Sheet

Station # 2 Date: 3-21-07 (HST)

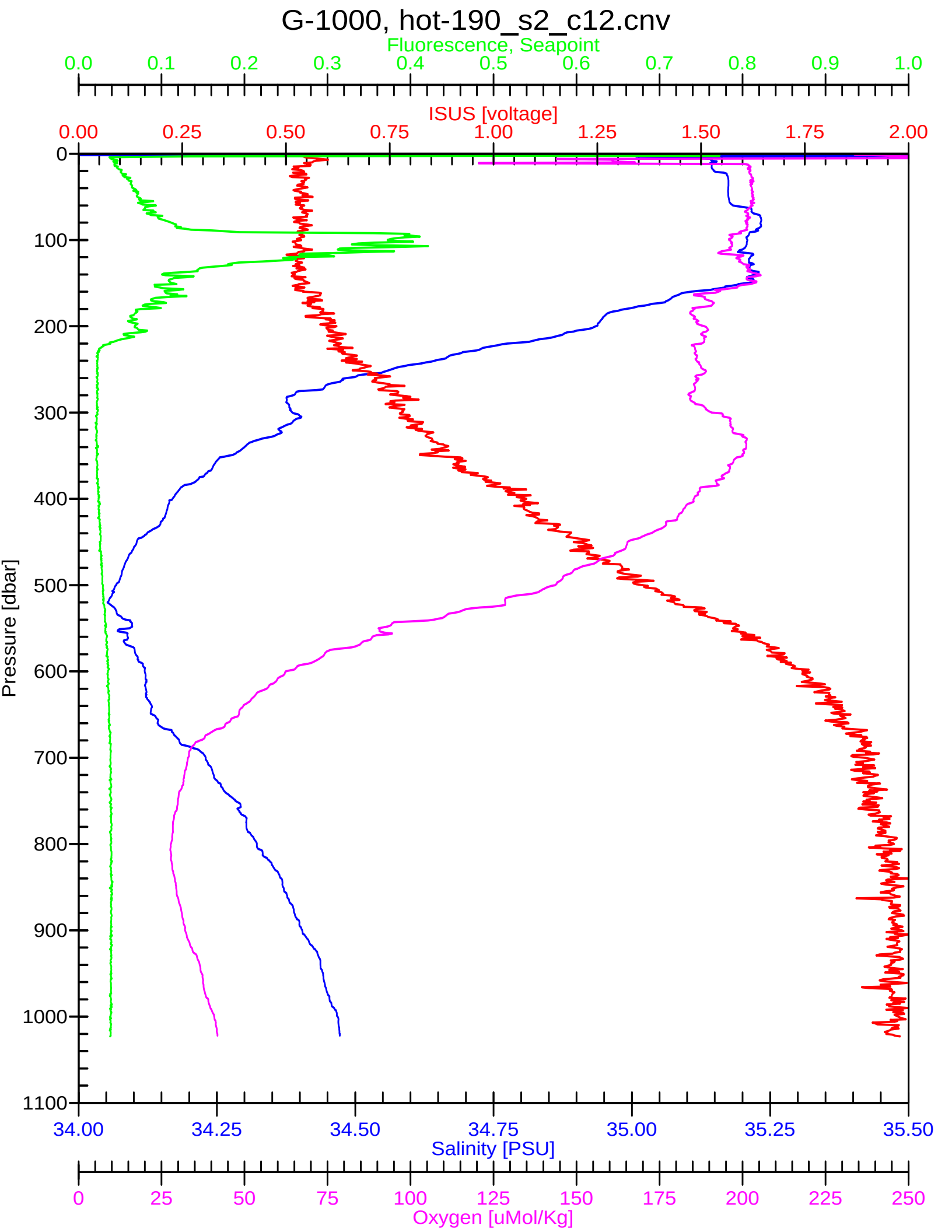
Cast # 12 Time: (HST)

Operator(s): Ah,kd,lf,eg,bl Pre-screen mesh size: none

Blank # **B1,B2,B3**

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

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

MIT Data Sheet

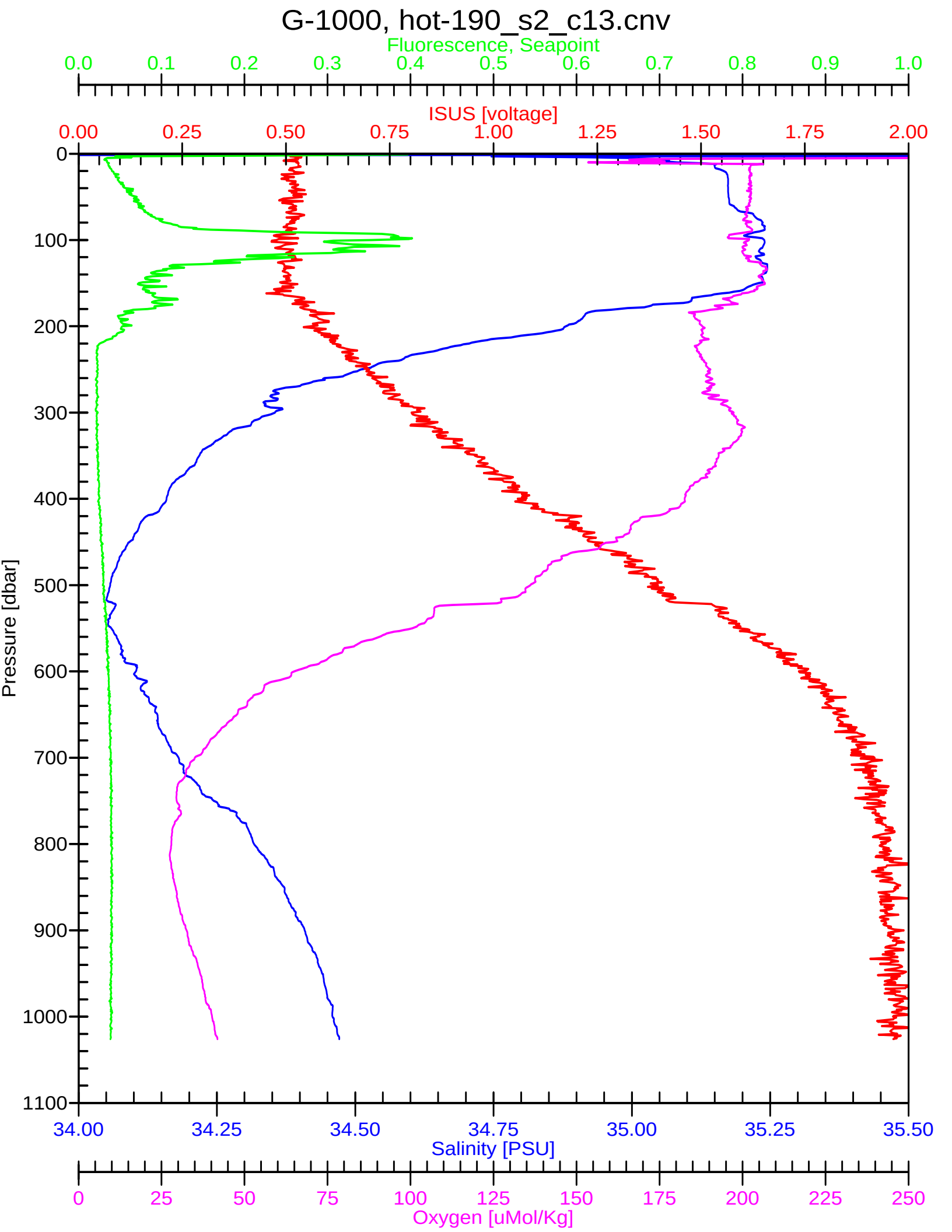
Station # 2 Date: 3-21-07 (HST)

Cast # 13 Time: _____ (HST)

Operator(s): AH,KD,LF,EG,LB

Rosette Position	Desired Depth	MIT					
1	**1000**						
2	**Sal min**						
3	**250**	1					
4	**225**	2					
5	**200**	3					
6	**175**	4					
7	**150**	5					
8	**125**	6					
9	**115**	7					
10	**100**	8					
11	**85**	9					
12	**75**	10					
13	**60**	11					
14	**45**	12					
15	**25**	13					
16	**5**	14					
17							
18							
19							
20							
21							
22							
23							
24							

Notes:


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

PC/PN Data Sheet

Station # 2 Date: 3/21/07 (HST)

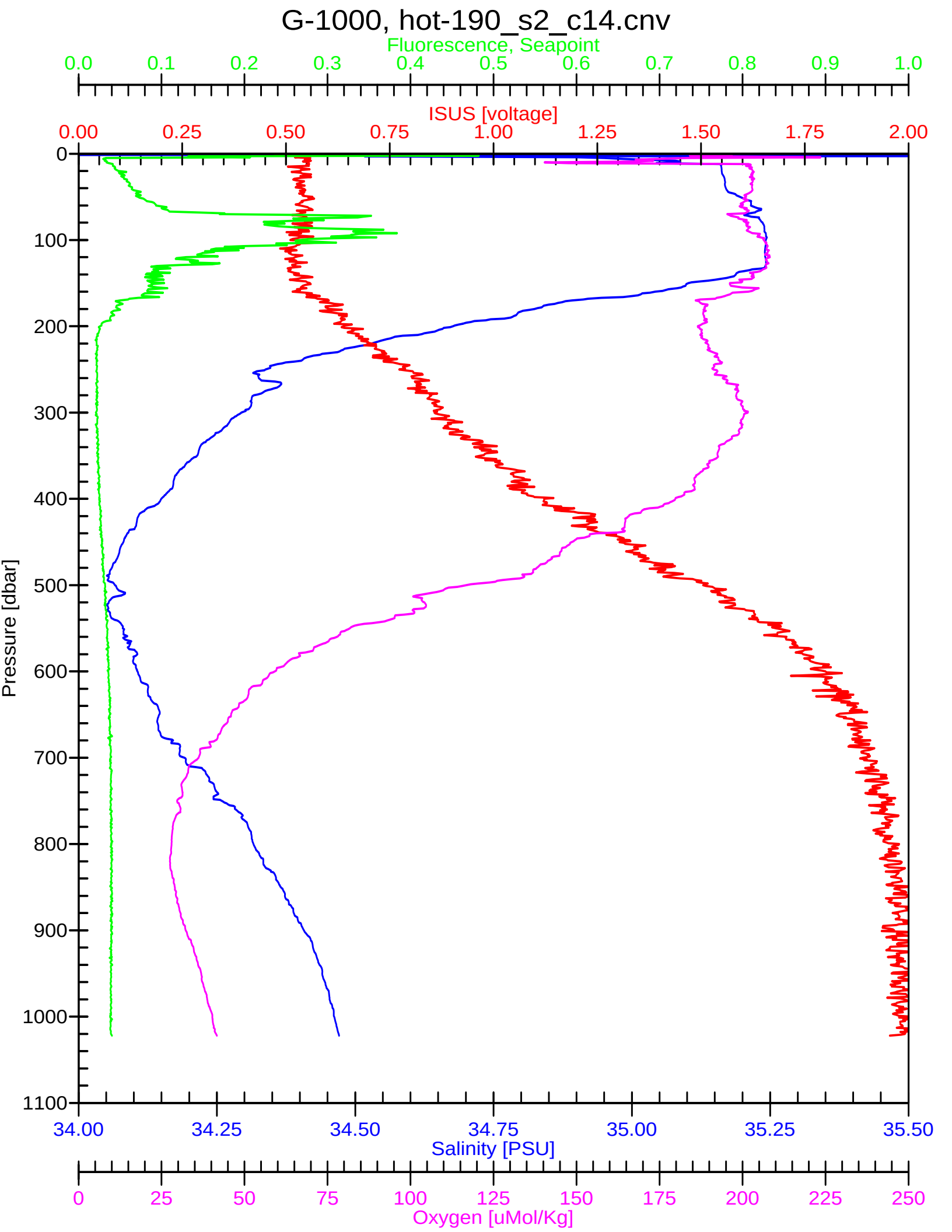
Cast # 14 Time: 1400 (HST)

Operator(s): KD, LF, EG, AH Pre-screen mesh size: 202 um

Blank #'s **___B1___ ___B2___ ___B3___**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #			
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	4,3.5	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	**5**	14	4	14			
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes: sample 190-2-14-11,12 filter busted, # 10 dropped on counter


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

Particulate Phosphorus Data Sheet

Station # 2 Date: 3/21/07 (HST)

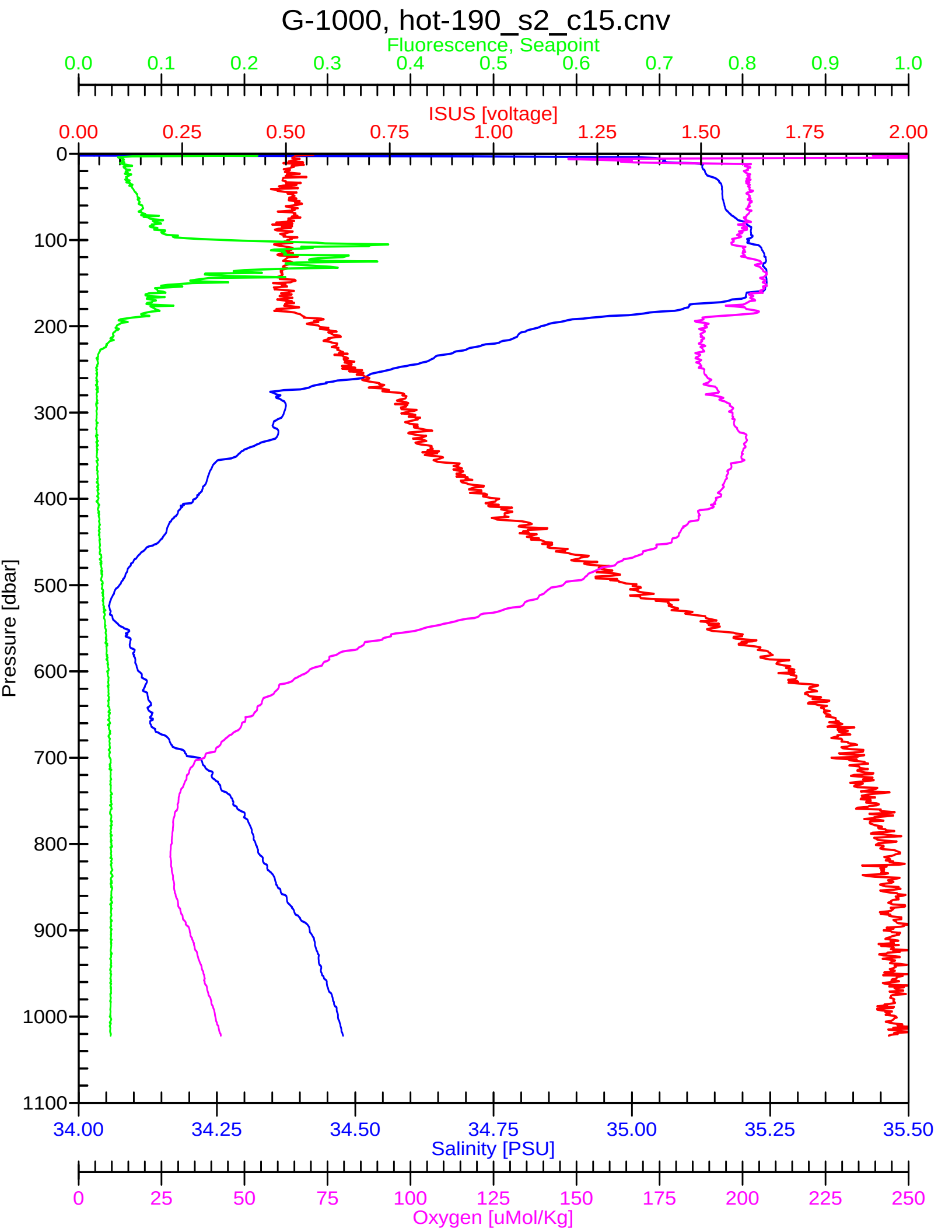
Cast # 15 Time: 1700 (HST)

Operator(s): KB,DS,DV Pre-screen mesh size: 202 um

Blank #'s **___B1___ ___B2___ ___B3___**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DV		
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**				X		
15	**25**				X		
16	**5**	14	4	14			
17							
18							
19							
20							
21							
22							
23							
24							

Notes: 190-2-15-11 filtered fast, filter askew?


G-1000, hot-190_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
ISUS [voltage]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT-**190** Data Sheet

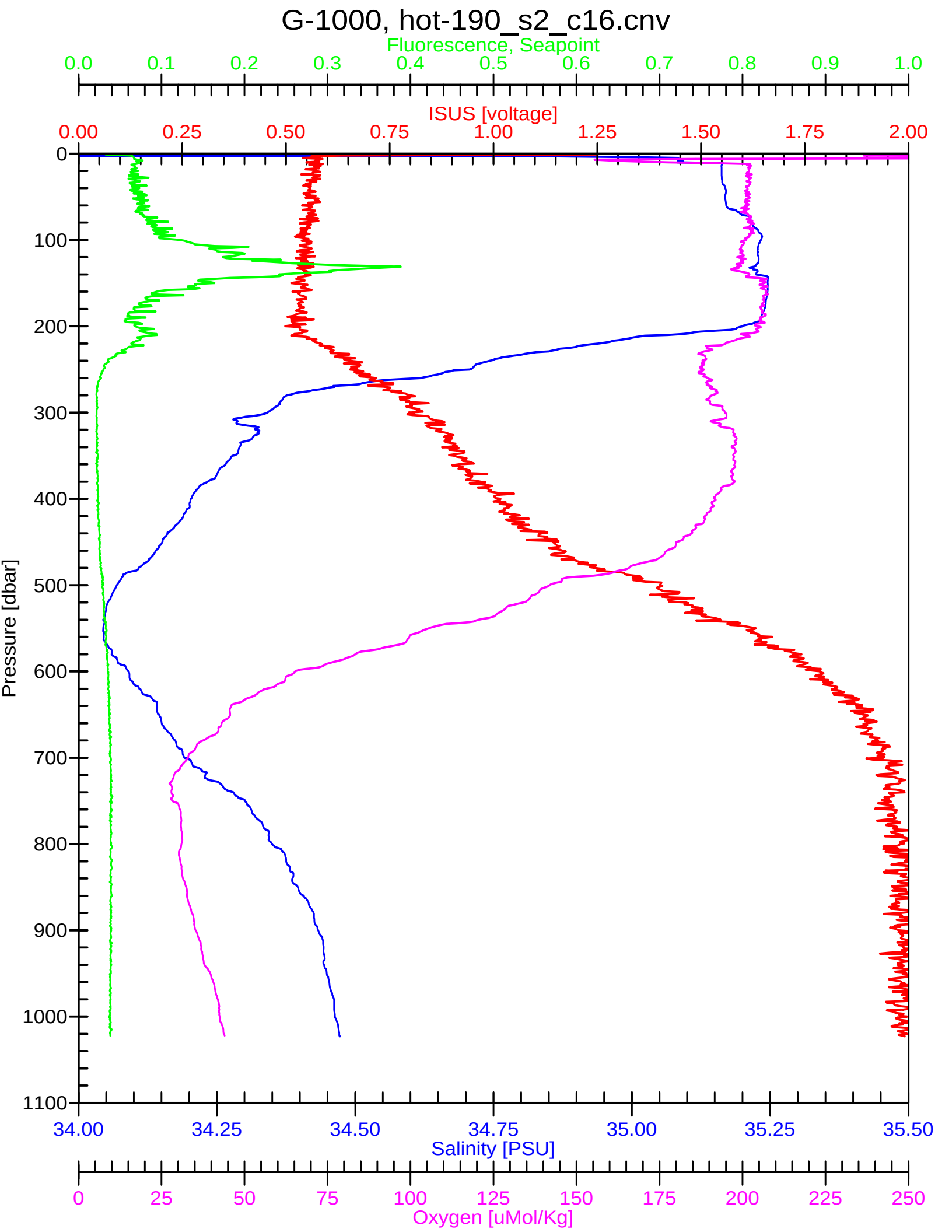
Station # 2 Date: 3/21/07 (HST)

Cast # 16 Time: 2000 (HST)

Operator(s): KB, DS, DV

Rosette Position	Desired Depth	Carboy #	Total Volume	PUR	DV			
1	**1000**							
2	**770**				X			
3	**770**				X			
4	**770**				X			
5	**770**				X			
6	**Sal min**							
7	**175**	1	10	7				
8	**150**	2	10	8				
9	**135**	7	4	9				
10	**125**	8,9	4,4	10A-B				
11	**115**	10	4	11				
12	**100**	11	4	12				
13	**85**	12	4	13				
14	**75**	13	4	14				
15	**60**	14	4	15				
16	**45**	15,16	4,4	16A-B				
17	**25**	3	10	17				
18	**5**	4	10	18				
19								
20								
21								
22								
23								
24								

Notes:


G-1000, hot-190_s2_c16.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]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT-**190**

WOCE Deep 2 Data Sheet

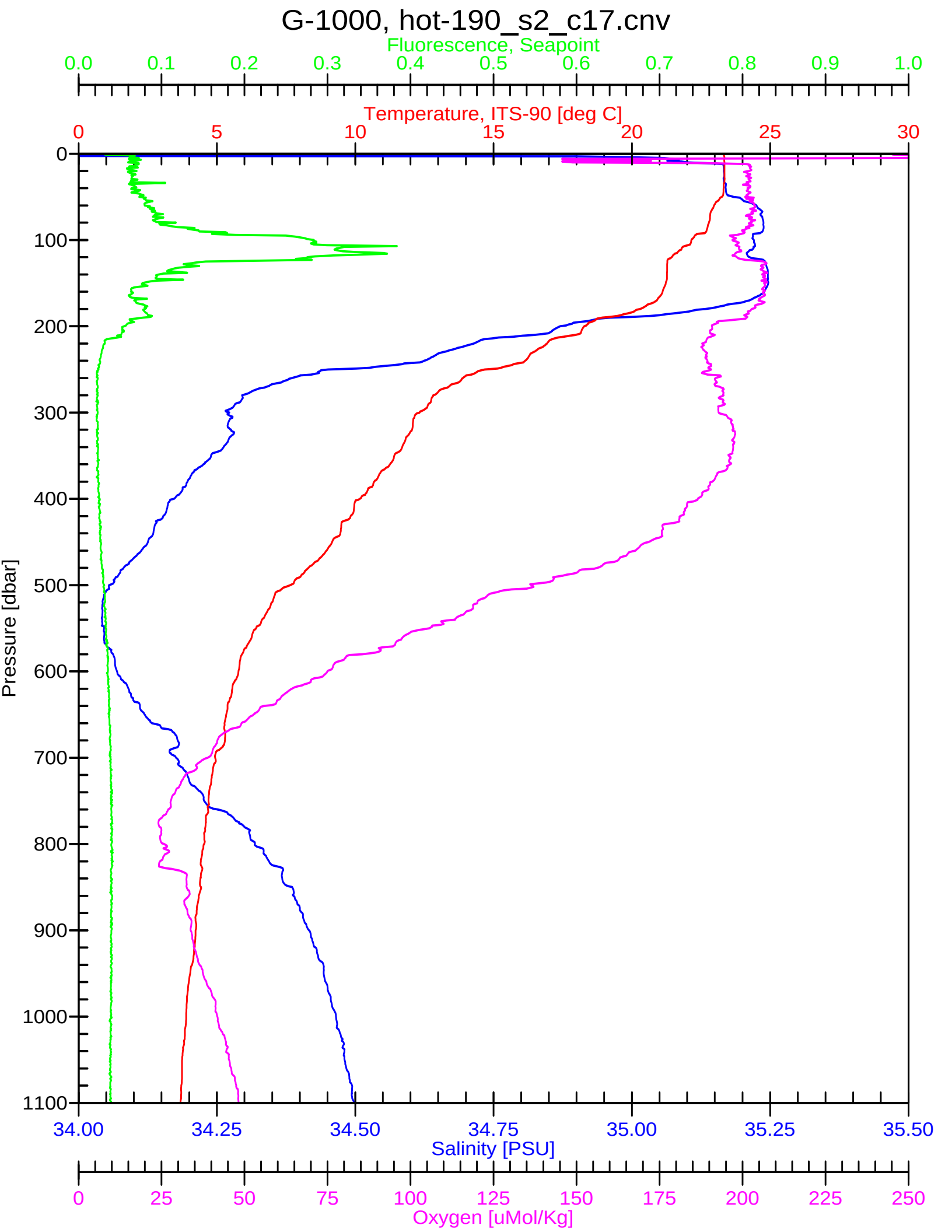
Station # 2 Date: 3/21/07 (HST)

Cast # 17 Time: 2300 (HST)

Operator(s): KB, DS, DV

Rosette Position	Desired Depth	Oxygen	Sample Temp.	MC	CM			
1	**4800**	51	3.1					
2	**4000**	52	3.6					
3	**4000**			X				
4	**4000**							
5	**4000**							
6	**3000**	53	3.4					
7	**3000**			X				
8	**2000**	54	4.3					
9	**2000**			X				
10	**1000**			X				
11	**O2 min**	55	5.9					
12	**Sal min**	56	7.7					
13	**O2 max**	57	19.8					
14	**30**				X			
15	**30**				X			
16	**30**				X			
17	**30**				X			
18	**30**				X			
19	**30**				X			
20	**5**	58	22.8					
21								
22								
23								
24								

Notes: Niskin spigots open on #2,3,4,5


G-1000, hot-190_s2_c17.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
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]

Hawaiian Ocean Time-series

HOT- **190**

STATION 50 Data Sheet

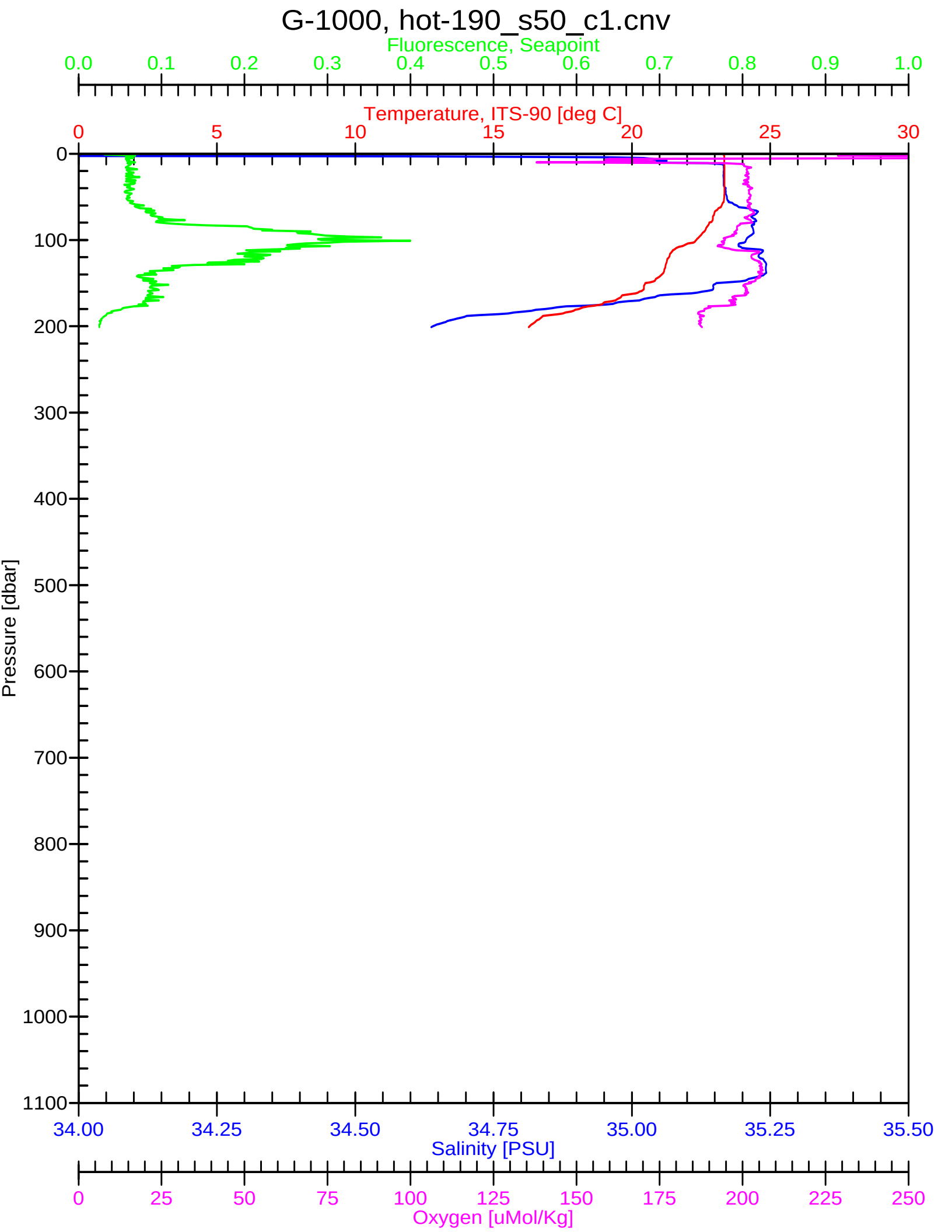
Station # 50 Date: 3-22-07 (HST)

Cast # 1 Time: 0500 (HST)

Operator(s): Ah,kd,lf,eg

Rosette Position	Desired Depth	Ben	JZ			
1	**175**	X				
2	**150**	X				
3	**125**	X				
4	**100**	X				
5	**75**	X				
6	**75**		x			
7	**45**	X				
8	**45**		x			
9	**45**			x		
10	**25**	X				
11	**5**	X				
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Notes:


G-1000, hot-190_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
34.00
34.25
34.50
34.75
35.00
35.25
35.50
Salinity [PSU]
0
25
50
75
100
125
150
175
200
225
250
Oxygen [uMol/Kg]