Appendix 2.1-1

Daily Summary of Water Temperatures at PacifiCorp Monitoring Stations
April 1996 through February 1998

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
4/2/96	0						0						0						0					
4/3/96	0						0						0						0					
4/4/96	0						0						0						0					
4/5/96	0						0						0						0					
4/6/96	0						0						0						0					
4/7/96	0	Deployed: 4/08					0						0						0					
4/8/96	6	8.3	9.6	8.9	0.2	1.3	0						0						0					
4/9/96	24	7.2	8.1	7.7	0.1	0.9	0						0						0					
4/10/96	24	6.4	7.8	6.9	0.1	1.4	0						0						0					
4/11/96	24	5.6	6.6	6.2	0.1	1.0	0						0						0					
4/12/96	24	3.3	5.5	4.2	0.1	2.2	0						0						0					
4/13/96	24	4.1	7.8	5.6	0.3	3.7	0						0						0					
4/14/96	24	4.5	8.6	6.5	0.3	4.1	0						0						0					
4/15/96	24	5.8	7.8	6.7	0.2	2.0	0						0						0					
4/16/96	24	5.9	7.0	6.4	0.1	1.1	0						0						0					
4/17/96	24	5.2	6.7	5.8	0.1	1.5	0						0						0					
4/18/96	24	4.5	5.9	5.2	0.1	1.4	0						0						0					
4/19/96	24	5.0	6.2	5.4	0.1	1.2	0						0						0					
4/20/96	24	4.7	6.7	5.6	0.2	2.0	0						0						0					
4/21/96	24	5.2	6.6	5.9	0.1	1.4	0						0						0					
4/22/96	24	5.8	6.4	6.0	0.0	0.6	0						0						0					
4/23/96	24	6.1	6.7	6.5	0.0	0.6	0						0						0					
4/24/96	24	5.2	6.1	5.7	0.1	0.9	0						0						0					
4/25/96	24	5.2	5.8	5.5	0.0	0.6	0						0						0					
4/26/96	24	5.0	6.7	5.7	0.1	1.7	0						0						0					
4/27/96	24	4.8	7.9	6.1	0.2	3.1	0						0						0					
4/28/96	24	4.5	8.1	6.4	0.3	3.6	0						0						0	Deployed: 4/29				
4/29/96	24	6.4	9.8	7.7	0.2	3.4	0						0						8	6.3	7.0	6.7	0.1	0.7
4/30/96	24	5.8	8.1	7.0	0.2	2.3	0						0						24	6.2	6.7	6.4	0.0	0.5
5/1/96	24	6.2	8.1	7.0	0.1	1.9	0						0						24	6.0	6.5	6.3	0.0	0.5
5/2/96	24	5.6	7.5	6.4	0.1	1.9	0						0						24	6.0	6.3	6.2	0.0	0.3
5/3/96	24	5.2	7.3	6.2	0.2	2.1	0						0						24	6.2	6.5	6.3	0.0	0.3
5/4/96	24	5.3	8.7	6.8	0.3	3.4	0						0						24	6.3	7.0	6.6	0.0	0.7
5/5/96	24	5.5	8.4	6.8	0.2	2.9	0	Deployed: 5/06					0	Deployed: 5/06					24	6.7	7.4	7.1	0.0	0.7
5/6/96	24	5.3	9.6	7.2	0.3	4.3	10	9.3	12.5	10.6	0.4	3.2	8	8.7	11.2	9.9	0.3	2.5	24	6.8	7.6	7.2	0.0	0.8
5/7/96	24	5.8	7.9	6.6	0.2	2.1	24	8.5	11.0	9.4	0.1	2.5	24	7.8	9.5	8.5	0.1	1.7	24	6.5	7.4	7.0	0.1	0.9
5/8/96	24	4.5	7.8	6.0	0.2	3.3	24	7.9	10.5	9.1	0.2	2.6	24	7.0	9.2	8.1	0.2	2.2	24	6.5	7.0	6.8	0.0	0.5
5/9/96	24	4.5	8.9	6.6	0.3	4.4	24	7.7	11.1	9.2	0.2	3.4	24	6.9	10.8	8.7	0.3	3.9	24	6.8	7.4	7.1	0.0	0.6
5/10/96	24	5.5	9.5	7.2	0.3	4.0	24	8.3	12.2	9.8	0.3	3.9	24	7.7	10.9	9.1	0.2	3.2	24	7.1	7.7	7.4	0.0	0.6
5/11/96	24	6.6	8.4	7.5	0.1	1.8	24	9.3	10.5	9.8	0.1	1.2	24	8.3	9.5	8.9	0.1	1.2	24	7.6	8.0	7.8	0.0	0.4
5/12/96	24	7.2	9.5	8.4	0.2	2.3	24	9.4	11.4	10.3	0.2	2.0	24	8.4	10.5	9.4	0.2	2.1	24	8.0	8.0	8.0	0.0	0.0
5/13/96	24	7.9	9.3	8.5	0.1	1.4	24	9.9	11.1	10.3	0.1	1.2	24	8.9	10.0	9.4	0.1	1.1	24	7.7	8.7	8.0	0.0	1.0
5/14/96	24	7.6	10.3	8.7	0.2	2.7	24	9.7	11.9	10.6	0.1	2.2	24	8.9	10.6	9.7	0.1	1.7	24	7.6	8.0	7.9	0.0	0.4
5/15/96	24	7.6	8.6	8.0	0.1	1.0	24	9.9	11.3	10.4	0.1	1.4	24	9.1	10.0	9.5	0.1	0.9	24	7.7	8.0	7.9	0.0	0.3
5/16/96	24	6.9	9.6	8.2	0.2	2.7	24	9.6	13.0	10.9	0.2	3.4	24	8.6	11.4	9.7	0.2	2.8	24	7.7	8.7	8.3	0.1	1.0
5/17/96	24	7.3	8.1	7.7	0.0	0.8	24	9.9	11.0	10.4	0.1	1.1	24	8.7	9.5	9.2	0.0	0.8	24	8.0	9.0	8.3	0.0	1.0
5/18/96	24	6.9	7.8	7.2	0.1	0.9	24	9.6	11.1	10.2	0.1	1.5	24	8.6	9.7	9.0	0.1	1.1	24	7.7	9.9	8.2	0.1	2.2
5/19/96	24	6.2	8.3	7.1	0.1	2.1	24	9.4	11.6	10.3	0.1	2.2	24	8.3	9.5	8.8	0.1	1.2	24	7.7	9.0	7.9	0.1	1.3
5/20/96	24	6.1	8.9	7.3	0.2	2.8	24	9.3	12.1	10.4	0.2	2.8	24	8.0	10.0	8.7	0.1	2.0	24	7.6	9.4	7.9	0.1	1.8
5/21/96	24	6.1	7.5	6.8	0.1	1.4	23	9.4	10.3	9.7	0.1	0.9	24	8.0	8.9	8.4	0.1	0.9	24	7.6	8.7	8.2	0.1	1.1
5/22/96	24	6.4	8.1	7.2	0.1	1.7	24	9.1	10.2	9.5	0.1	1.1	24	8.1	8.9	8.4	0.1	0.8	24	7.7	8.7	8.0	0.1	1.0
5/23/96	24	6.1	8.4	7.1	0.2	2.3	24	8.8	11.4	9.9	0.2	2.6	24	7.8	9.8	8.7	0.1	2.0	24	7.6	8.0	7.7	0.0	0.4
5/24/96	24	6.2	11.2	8.5	0.4	5.0	24	9.4	14.7	11.7	0.4	5.3	24	8.1	11.7	9.7	0.3	3.6	24	7.6	8.8	8.2	0.1	1.2
5/25/96	24	7.5	12.1	9.7	0.4	4.6	24	10.5	15.6	12.7	0.4	5.1	24	8.9	12.8	10.6	0.3	3.9	24	8.2	9.3	8.6	0.0	1.1
5/26/96	24	8.1	12.1	9.7	0.3	4.0	24	11.3	14.7	12.4	0.2	3.4	24	9.4	12.3	10.5	0.2	2.9	24	7.7	8.5	8.2	0.1	0.8
5/27/96	24	7.6	10.1	8.7	0.2	2.5	24	10.5	13.3	11.5	0.2	2.8	24	9.1	11.2	9.9	0.1	2.1	24	7.4	8.8	7.8	0.1	1.4
5/28/96	24	6.9	9.6	8.1	0.2	2.7	24	10.2	11.9	10.8	0.1	1.7	24	8.9	10.3	9.5	0.1	1.4	24	7.6	8.4	7.9	0.1	0.8
5/29/96	24	6.9	10.0	8.1	0.2	3.1	24	10.0	11.7	10.6	0.1	1.7	24	8.7	10.1	9.4	0.1	1.4	24	7.7	9.7	8.2	0.1	2.0
5/30/96	24	7.2	8.9	7.9	0.1	1.7	24	9.7	11.6	10.6	0.1	1.9	24	8.7	10.1	9.4	0.1	1.4	24	7.6	8.7	8.1	0.1	1.1
5/31/96	24	6.7	11.5	8.8	0.4	4.8	24	9.4	14.2	11.6	0.3	4.8	24	8.4	12.8	10.3	0.3	4.4	24	8.4	9.4	8.8	0.1	1.0
6/1/96	24	7.9	12.1	9.9	0.3	4.2	24	10.8	15.0	12.7	0.3	4.2	24	9.5	13.1	11.2	0.3	3.6	24	8.5	10.5	9.2	0.1	2.0
6/2/96	24	8.6	12.6	10.5	0.3	4.0	24	11.4	15.5	13.4	0.3	4.1	24	10.0	13.9	11.8	0.3	3.9	24	8.8	10.2	9.6	0.1	1.4
6/3/96	24	9.2	13.1	10.9	0.3	3.9	24	12.1	15.5	13.6	0.2	3.4	24	10.6	14.2	12.1	0.2	3.6	24	9.0	9.9	9.4	0.1	0.9
6/4/96	24	9.0	12.0	10.3	0.2	3.0	24	11.9	14.5	12.9	0.2	2.6	24	10.5	13.1	11.6	0.2	2.6	24	7.9	12.8	9.1	0.2	4.9
6/5/96	24	7.8	12.8	10.1	0.4	5.0	24	11.1	16.1	13.3	0.3	5.0	24	10.0	14.0	11.8	0.3	4.0	24	8.7	10.1	9.4	0.1	1.4
6/6/96	24	8.4	14.1	10.9	0.4	5.7	24	11.7	16.3	13.9	0.3	4.6	24	10.5	15.1	12.6	0.3	4.6	24	8.5	11.3	9.9	0.2	2.8
6/7/96	24	9.0	14.3	11.2	0.4	5.3	24	12.2	16.1	13.8	0.3	3.9	24	10.9	15.0	12.6	0.3	4.1	24	7.9	10.5	8.6	0.1	2.6
6/8/96	24	8.7	13.2	10.6	0.3	4.5	24	11.9	16.1	13.7	0.3	4.2	24	10.6	14.8	12.5	0.3	4.2	24	8.0	10.1	9.0	0.1	2.1
6/9/96	24	8.4	12.1	9.9	0.3	3.7	24	11.7	14.2	12.7	0.2	2.5	24	10.6	12.9	11.5	0.1	2.3	24	8.4	9.0	8.6	0.0	0.6

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
6/10/96	24	7.8	12.8	10.0	0.4	5.0	24	11.0	15.5	13.0	0.3	4.5	24	9.7	14.7	11.8	0.3	5.0	24	8.4	10.7	9.2	0.1	2.3
6/11/96	24	8.4	13.4	10.5	0.4	5.0	24	11.6	16.1	13.6	0.3	4.5	24	10.6	14.8	12.5	0.3	4.2	24	7.9	10.1	9.1	0.1	2.2
6/12/96	24	7.9	13.8	10.6	0.4	5.9	24	11.4	16.4	13.7	0.3	5.0	24	10.3	15.3	12.5	0.3	5.0	24	8.4	10.2	9.1	0.1	1.8
6/13/96	24	8.6	14.0	10.9	0.4	5.4	24	12.1	16.1	13.7	0.3	4.0	24	10.8	15.3	12.6	0.3	4.5	24	7.9	12.1	9.7	0.2	4.2
6/14/96	24	8.6	14.1	10.9	0.4	5.5	24	11.9	16.1	13.5	0.3	4.2	24	10.6	14.8	12.3	0.3	4.2	24	8.2	10.5	9.3	0.2	2.3
6/15/96	24	8.4	14.1	10.8	0.4	5.7	24	11.7	16.1	13.6	0.3	4.4	24	10.6	15.1	12.6	0.3	4.5	24	8.5	9.1	8.7	0.0	0.6
6/16/96	24	7.9	11.4	9.6	0.2	3.5	24	11.4	13.9	12.5	0.2	2.5	24	10.5	12.6	11.4	0.1	2.1	24	8.5	8.7	8.7	0.0	0.2
6/17/96	24	7.9	9.5	8.7	0.1	1.6	24	10.8	12.1	11.4	0.1	1.3	24	9.8	11.1	10.5	0.1	1.3	24	8.7	9.9	9.2	0.1	1.2
6/18/96	13	7.3	10.1	7.9	0.2	2.8	24	10.5	13.6	11.7	0.2	3.1	24	9.5	12.8	10.9	0.2	3.3	24	8.0	12.4	8.8	0.2	4.4
6/19/96	0						24	10.3	15.6	12.7	0.4	5.3	24	9.5	14.7	11.9	0.4	5.2	24	8.0	11.3	9.2	0.2	3.3
6/20/96	0						24	11.3	16.1	13.5	0.3	4.8	24	10.5	15.3	12.5	0.3	4.8	24	8.0	11.4	9.7	0.2	3.4
6/21/96	0						24	11.7	13.9	12.5	0.1	2.2	24	10.9	12.5	11.6	0.1	1.6	24	8.0	11.0	9.6	0.1	3.0
6/22/96	0						24	11.3	13.9	12.2	0.2	2.6	24	10.6	12.0	11.2	0.1	1.4	24	8.7	9.1	8.9	0.0	0.4
6/23/96	0						24	11.6	13.3	12.2	0.1	1.7	24	10.6	11.9	11.1	0.1	1.3	24	8.5	8.7	8.6	0.0	0.2
6/24/96	0	Downloaded in office: 6/24					22	11.4	13.3	12.1	0.1	1.9	24	10.5	11.5	10.9	0.1	1.0	23	7.9	9.3	8.7	0.1	1.4
6/25/96	0						24	11.3	15.6	13.1	0.3	4.3	24	10.3	14.8	12.1	0.3	4.5	24	8.2	9.7	9.0	0.1	1.5
6/26/96	11	10.9	13.4	12.4	0.2	2.5	24	11.6	16.3	13.7	0.3	4.7	24	10.5	15.3	12.6	0.3	4.8	24	8.7	10.5	9.4	0.1	1.8
6/27/96	24	9.3	10.9	10.1	0.1	1.6	24	12.1	13.0	12.6	0.0	0.9	24	11.1	12.0	11.6	0.1	0.9	24	8.2	9.4	8.8	0.1	1.2
6/28/96	24	8.9	11.5	9.9	0.2	2.6	24	11.6	13.4	12.3	0.1	1.8	24	10.6	12.6	11.5	0.1	2.0	24	8.4	9.9	9.3	0.1	1.5
6/29/96	24	7.9	13.5	10.5	0.4	5.6	24	10.8	15.8	13.1	0.4	5.0	24	10.5	15.0	12.5	0.3	4.5	24	8.4	8.7	8.5	0.0	0.3
6/30/96	24	9.0	14.0	11.4	0.4	5.0	24	11.7	16.1	13.8	0.3	4.4	24	10.8	15.4	12.9	0.3	4.6	24	8.4	8.5	8.5	0.0	0.1
7/1/96	24	9.5	15.2	12.1	0.4	5.7	24	12.4	17.2	14.5	0.4	4.8	24	11.2	16.2	13.6	0.4	5.0	24	8.4	11.0	9.8	0.2	2.6
7/2/96	24	10.4	14.3	12.3	0.3	3.9	24	13.1	16.6	14.6	0.2	3.5	24	12.2	15.8	13.6	0.2	3.6	24	8.8	11.3	10.0	0.2	2.5
7/3/96	24	9.8	13.8	11.7	0.3	4.0	24	12.8	15.6	13.9	0.2	2.8	24	11.5	14.8	12.9	0.2	3.3	24	9.3	18.8	10.5	0.4	9.5
7/4/96	24	10.3	12.9	11.2	0.2	2.6	24	12.5	15.8	13.7	0.2	3.3	24	11.5	13.9	12.7	0.2	2.4	24	8.5	9.1	8.8	0.0	0.6
7/5/96	24	8.1	13.7	10.7	0.4	5.6	24	11.6	16.3	13.7	0.3	4.7	24	10.5	15.4	12.8	0.4	4.9	24	8.5	13.1	9.5	0.2	4.6
7/6/96	24	8.6	14.5	11.4	0.4	5.9	24	11.9	17.1	14.3	0.4	5.2	24	10.8	16.4	13.4	0.4	5.6	24	8.2	9.1	8.4	0.0	0.9
7/7/96	24	9.6	15.1	12.2	0.4	5.5	24	12.8	17.9	15.1	0.4	5.1	24	11.5	17.2	14.2	0.4	5.7	24	8.2	10.1	9.1	0.2	1.9
7/8/96	24	10.3	16.0	12.9	0.4	5.7	24	13.6	18.2	15.6	0.3	4.6	24	12.2	17.2	14.2	0.3	5.0	24	9.4	16.0	10.5	0.3	6.6
7/9/96	24	10.9	14.8	12.6	0.3	3.9	24	13.6	17.1	15.0	0.3	3.5	24	12.2	16.6	13.7	0.3	4.4	24	9.4	15.8	10.2	0.3	6.4
7/10/96	24	9.8	15.1	12.2	0.4	5.3	24	13.0	17.6	14.9	0.3	4.6	24	11.4	17.0	13.7	0.4	5.6	24	8.4	13.3	9.6	0.2	4.9
7/11/96	24	10.1	15.6	12.6	0.4	5.5	24	13.3	18.2	15.5	0.4	4.9	24	11.7	17.5	14.3	0.4	5.8	24	8.2	15.2	9.2	0.3	7.0
7/12/96	24	10.7	16.2	13.2	0.4	5.5	24	13.9	18.7	16.0	0.3	4.8	24	12.5	17.8	14.8	0.4	5.3	24	9.0	16.0	10.0	0.3	7.0
7/13/96	24	11.0	16.4	13.5	0.4	5.4	24	14.2	19.2	16.4	0.3	5.0	24	12.6	18.3	15.2	0.4	5.7	24	10.1	11.8	10.5	0.1	1.7
7/14/96	24	11.4	16.5	13.8	0.4	5.1	24	14.7	19.7	16.8	0.3	5.0	24	12.9	18.3	15.4	0.4	5.4	24	9.9	14.5	10.3	0.2	4.6
7/15/96	24	11.7	16.5	13.8	0.3	4.8	24	14.8	19.0	16.5	0.3	4.2	24	13.1	18.2	15.0	0.4	5.1	24	9.4	18.3	11.0	0.4	8.9
7/16/96	24	10.9	14.9	12.7	0.3	4.0	24	14.1	17.2	15.2	0.2	3.1	24	12.5	16.7	14.0	0.3	4.2	24	9.3	19.1	10.6	0.4	9.8
7/17/96	24	10.0	12.0	10.8	0.1	2.0	24	13.0	14.2	13.8	0.1	1.2	24	11.5	12.6	12.2	0.1	1.1	24	9.3	15.8	10.2	0.3	6.5
7/18/96	24	9.0	10.0	9.5	0.1	1.0	24	12.4	13.3	12.8	0.1	0.9	24	10.9	12.0	11.4	0.1	1.1	24	9.4	11.9	9.8	0.1	2.5
7/19/96	23	9.0	11.4	9.9	0.2	2.4	24	12.1	13.8	12.7	0.1	1.7	24	10.9	13.1	11.7	0.1	2.2	24	9.1	11.9	9.4	0.1	2.8
7/20/96	24	9.2	11.8	10.3	0.2	2.6	24	12.1	14.4	12.9	0.2	2.3	24	10.9	13.3	11.9	0.2	2.4	24	9.1	9.3	9.2	0.0	0.2
7/21/96	24	9.6	14.9	11.9	0.4	5.3	24	12.2	17.1	14.3	0.4	4.9	24	11.1	16.2	13.4	0.4	5.1	24	9.1	9.3	9.3	0.0	0.2
7/22/96	24	10.3	15.7	12.8	0.4	5.4	22	13.3	18.4	15.4	0.4	5.1	23	12.0	17.4	14.5	0.4	5.4	23	9.1	11.6	10.0	0.2	2.5
7/23/96	24	10.9	16.0	13.3	0.4	5.1	24	13.8	17.6	15.3	0.2	3.8	24	12.6	18.3	15.0	0.4	5.7	24	9.4	11.1	10.3	0.1	1.7
7/24/96	24	11.5	16.8	13.9	0.4	5.3	24	14.1	18.8	16.1	0.3	4.7	24	12.8	17.7	15.0	0.3	4.9	24	10.1	19.8	10.8	0.4	9.7
7/25/96	24	11.2	16.7	13.7	0.4	5.5	24	14.2	19.0	16.3	0.3	4.8	24	12.8	18.2	15.1	0.4	5.4	24	9.6	14.2	10.8	0.2	4.6
7/26/96	24	11.0	16.5	13.6	0.4	5.5	24	14.4	19.2	16.4	0.3	4.8	24	12.9	18.0	15.2	0.4	5.1	24	9.7	10.8	10.2	0.1	1.1
7/27/96	24	11.7	16.5	13.9	0.4	4.8	24	14.5	18.7	16.3	0.3	4.2	24	13.3	17.4	15.1	0.3	4.1	24	10.2	13.8	11.1	0.2	3.6
7/28/96	24	11.7	13.4	12.6	0.1	1.7	24	14.4	16.4	15.2	0.1	2.0	24	12.9	14.5	13.8	0.1	1.6	24	9.9	10.5	10.3	0.0	0.6
7/29/96	24	10.7	16.2	13.3	0.4	5.5	24	13.6	18.4	15.7	0.4	4.8	24	12.2	17.4	14.5	0.4	5.2	24	9.6	16.6	10.7	0.4	7.0
7/30/96	24	11.5	16.0	13.5	0.3	4.5	24	13.9	17.9	15.6	0.3	4.0	24	12.6	17.5	14.5	0.3	4.9	24	9.9	12.2	10.2	0.1	2.3
7/31/96	24	10.7	15.4	12.8	0.3	4.7	24	13.4	17.7	15.1	0.3	4.3	24	12.2	16.4	14.0	0.3	4.2	24	10.1	14.5	10.6	0.2	4.4
8/1/96	24	10.3	14.9	12.3	0.3	4.6	24	13.3	16.9	14.6	0.3	3.6	24	12.2	16.9	13.9	0.3	4.7	24	10.2	17.4	11.0	0.3	7.2
8/2/96	24	10.6	12.4	11.2	0.1	1.8	24	13.0	14.7	13.7	0.1	1.7	24	12.2	13.9	12.8	0.1	1.7	24	9.9	11.8	10.3	0.1	1.9
8/3/96	24	9.5	11.8	10.5	0.1	2.3	24	12.4	14.2	13.1	0.1	1.8	24	11.4	13.4	12.3	0.1	2.0	24	9.7	9.9	9.9	0.0	0.2
8/4/96	24	9.3	11.5	10.2	0.2	2.2	24	12.4	13.4	12.8	0.1	1.0	24	11.4	12.6	12.0	0.1	1.2	24	9.7	11.8	9.9	0.1	2.1
8/5/96	24	9.3	11.5	10.2	0.1	2.2	24	11.9	13.3	12.4	0.1	1.4	24	11.1	12.8	11.8	0.1	1.7	24	9.7	13.5	10.0	0.2	3.8
8/6/96	24	9.0	13.8	11.2	0.4	4.8	24	11.4	16.1	13.3	0.4	4.7	24	10.8	15.3	12.8	0.4	4.5	24	9.7	14.4	10.4	0.2	4.7
8/7/96	24	9.6	14.8	12.1	0.4	5.2	24	12.2	17.2	14.4	0.4	5.0	24	11.7	16.9	14.1	0.4	5.2	24	9.1	10.2	9.6	0.1	1.1
8/8/96	24	10.3	15.4	12.7	0.4	5.1	24	13.1	18.0	15.2	0.3	4.9	24	12.3	17.5	14.5	0.3	5.2	24	9.9	12.7	10.3	0.1	2.8
8/9/96	24	10.6	15.4	12.9	0.4	4.8	24	13.6	18.4	15.6	0.3	4.8	24	12.5	17.7	14.7	0.4	5.2	24	10.2	20.0	11.3	0.4	9.8
8/10/96	24	10.9	15.7	13.1	0.3	4.8	24	13.9	18.5	15.9	0.3	4.6	24	12.8	17.7	14.9	0.3	4.9	24	10.8	12.7	11.1	0.1	1.9
8/11/96	24	11.0	14.8	12.6	0.3	3.8	24	13.8	16.9	14.9	0.2	3.1	24	12.6	15.8	13.8	0.2	3.2	24	11.1	12.8	11.3	0.1	1.7
8/12/96	24	9.5	14.5	11.9	0.4	5.0	24	12.7	17.4	14.7	0.3	4.7	24	11.7	16.7	13.9	0.3	5.0	24	10.2	14.5	11.2	0.2	4.3
8/13/96	24	10.1	14.3	12.2	0.3	4.2	24	13.1	17.2	15.0	0.3	4.1	24	12.5	16.7	14.5	0.3	4.2	24	9.9	11.0	10.3	0.1	1.1
8/14/96	24	10.6	15.4	12.8	0.4	4.8	24	13.4	17.7	15.2	0.3	4.3	24	12.6	17.8	14.6	0.3	5.2	24	10.5	14.1	11.4	0.2	3.6
8/15/96	24	9.8	14.6	12.1	0.3	4.8	24	13.0	17.4	14.9	0.3	4.4	24	12.2	16.7	14.1	0.3	4.5	24	9.7	15.2	11.3	0.2	5.5
8/16/96	24	10.0	14.1	12.0	0.3	4.1	24	13.0	16.8	14.6	0.3	3.8	24	12.2	16.4	13.9	0.3	4.2	24	9.6	19.6	10.7	0.4	10.0
8/17/96	24	9.3	13.4	11.1	0.3	4.1	24	12.7	16.3	14.1	0.2	3.6	24	11.9	15.0	13.3	0.2	3.1	24	11.0	11.1	11.0	0.0	0.1

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
8/18/96	24	9.2	12.0	10.6	0.2	2.8	24	12.7	15.0	13.4	0.2	2.3	24	11.9	14.2	12.8	0.2	2.3	24	11.0	11.1	11.0	0.0	0.1
8/19/96	24	8.4	13.4	10.8	0.4	5.0	24	11.7	16.1	13.6	0.3	4.4	24	11.1	15.4	12.9	0.3	4.3	24	11.0	11.0	11.0	0.0	0.0
8/20/96	24	9.8	12.3	10.7	0.2	2.5	24	12.5	15.8	13.7	0.2	3.3	24	11.9	14.7	13.0	0.2	2.8	24	10.8	11.0	11.0	0.0	0.2
8/21/96	24	8.7	13.1	10.9	0.3	4.4	24	12.1	16.4	13.9	0.3	4.3	24	11.4	15.4	13.2	0.3	4.0	24	10.8	17.1	11.7	0.3	6.3
8/22/96	24	8.9	13.5	11.1	0.3	4.6	24	12.2	16.8	14.1	0.3	4.6	24	11.7	16.1	13.7	0.3	4.4	24	11.3	13.3	11.6	0.1	2.0
8/23/96	24	9.0	13.8	11.4	0.4	4.8	24	12.4	16.9	14.4	0.3	4.5	24	11.9	16.6	14.0	0.3	4.7	24	9.9	12.7	11.6	0.2	2.8
8/24/96	24	10.0	14.1	12.0	0.3	4.1	24	13.1	17.2	14.8	0.3	4.1	24	12.5	16.6	14.3	0.3	4.1	24	11.4	11.6	11.4	0.0	0.2
8/25/96	24	10.4	14.0	12.0	0.2	3.6	24	13.6	16.4	14.7	0.2	2.8	24	12.9	15.4	14.0	0.2	2.5	24	11.4	11.4	11.4	0.0	0.0
8/26/96	24	10.9	12.3	11.5	0.1	1.4	22	13.6	14.4	14.0	0.0	0.8	23	12.6	13.6	13.2	0.1	1.0	24	11.4	13.9	11.8	0.1	2.5
8/27/96	24	10.3	11.7	11.2	0.1	1.4	24	12.5	13.9	13.3	0.1	1.4	24	12.2	13.3	12.7	0.1	1.1	24	11.0	13.1	11.5	0.1	2.1
8/28/96	24	9.2	12.4	10.8	0.2	3.2	24	11.9	15.0	13.3	0.2	3.1	24	11.4	14.5	12.8	0.2	3.1	24	10.4	12.1	11.0	0.1	1.7
8/29/96	24	9.5	13.4	11.4	0.3	3.9	24	12.2	16.4	14.0	0.3	4.2	24	12.0	15.9	13.7	0.3	3.9	24	11.8	14.8	12.4	0.1	3.0
8/30/96	24	10.3	12.9	11.4	0.2	2.6	24	13.0	14.8	13.7	0.1	1.8	24	12.6	14.3	13.4	0.1	1.7	24	10.4	15.6	11.2	0.2	5.2
8/31/96	24	9.5	11.8	10.6	0.2	2.3	24	12.4	14.5	13.2	0.2	2.1	24	12.0	14.0	12.9	0.1	2.0	24	10.4	10.4	10.4	0.0	0.0
9/1/96	24	8.4	12.9	10.5	0.3	4.5	24	11.4	15.6	13.2	0.3	4.2	24	11.2	15.1	12.9	0.2	3.9	24	10.4	10.4	10.4	0.0	0.0
9/2/96	24	8.6	11.4	10.0	0.2	2.8	24	11.6	13.8	12.6	0.2	2.2	24	11.4	13.3	12.4	0.1	1.9	24	10.4	10.4	10.4	0.0	0.0
9/3/96	24	8.9	11.5	10.1	0.2	2.6	24	11.6	13.8	12.4	0.1	2.2	24	11.2	13.1	12.1	0.1	1.9	24	10.4	12.7	11.5	0.1	2.3
9/4/96	24	8.6	10.6	9.5	0.2	2.0	24	11.4	13.4	12.1	0.1	2.0	24	11.2	13.1	11.9	0.1	1.9	24	10.1	13.3	12.0	0.2	3.2
9/5/96	24	8.3	9.5	8.8	0.1	1.2	24	11.3	11.7	11.4	0.0	0.4	24	11.1	11.5	11.2	0.0	0.4	24	12.7	12.7	12.7	0.0	0.0
9/6/96	24	8.3	11.7	9.9	0.3	3.4	24	10.8	14.1	12.1	0.2	3.3	24	10.8	13.3	12.0	0.2	2.5	24	12.5	12.7	12.6	0.0	0.2
9/7/96	24	9.0	12.0	10.3	0.2	3.0	24	11.6	14.2	12.6	0.2	2.6	24	11.7	13.9	12.6	0.2	2.2	24	12.5	12.5	12.5	0.0	0.0
9/8/96	24	8.9	12.9	10.6	0.3	4.0	24	11.6	15.2	13.0	0.3	3.6	24	11.7	14.5	13.0	0.2	2.8	24	12.4	12.5	12.5	0.0	0.1
9/9/96	24	9.2	12.8	10.7	0.3	3.6	24	12.2	15.5	13.3	0.2	3.3	24	12.2	14.7	13.2	0.2	2.5	24	12.1	14.8	13.3	0.2	2.7
9/10/96	24	8.4	12.6	10.5	0.3	4.2	24	11.6	15.8	13.3	0.3	4.2	24	11.7	15.0	13.1	0.2	3.3	24	12.4	13.5	12.9	0.1	1.1
9/11/96	24	9.2	12.4	10.7	0.2	3.2	24	12.2	15.0	13.4	0.2	2.8	24	12.2	14.3	13.3	0.2	2.1	24	12.2	12.4	12.3	0.0	0.2
9/12/96	24	9.8	10.7	10.3	0.1	0.9	24	12.1	13.0	12.6	0.0	0.9	24	12.0	12.9	12.5	0.0	0.9	24	11.8	14.7	12.5	0.2	2.9
9/13/96	24	9.3	10.3	9.7	0.1	1.0	24	11.7	12.2	12.0	0.0	0.5	24	11.7	12.3	12.0	0.0	0.6	24	11.4	11.8	11.6	0.0	0.4
9/14/96	24	9.2	10.3	9.6	0.1	1.1	24	11.6	12.4	11.8	0.1	0.8	24	11.5	12.2	11.8	0.0	0.7	24	11.3	11.4	11.4	0.0	0.1
9/15/96	24	9.2	10.4	9.8	0.1	1.2	24	11.4	12.8	11.9	0.1	1.4	24	11.5	12.6	11.8	0.1	1.1	24	11.0	11.3	11.2	0.0	0.3
9/16/96	24	8.7	10.4	9.5	0.1	1.7	24	11.1	13.0	11.7	0.1	1.9	24	11.1	12.3	11.6	0.1	1.2	24	10.7	13.5	12.0	0.2	2.8
9/17/96	24	8.6	11.2	9.7	0.2	2.6	24	11.1	14.1	12.1	0.2	3.0	24	11.1	13.3	11.9	0.2	2.2	24	11.1	13.0	12.3	0.1	1.9
9/18/96	24	7.8	9.6	8.8	0.1	1.8	24	10.7	12.4	11.5	0.1	1.7	24	10.8	12.0	11.4	0.1	1.2	24	10.5	11.1	10.9	0.0	0.6
9/19/96	24	8.4	10.1	9.1	0.1	1.7	24	10.7	12.2	11.4	0.1	1.5	24	11.1	12.0	11.5	0.1	0.9	24	10.5	13.6	12.0	0.3	3.1
9/20/96	24	7.8	9.8	8.7	0.2	2.0	24	10.2	12.1	11.0	0.1	1.9	24	10.5	11.9	11.1	0.1	1.4	24	12.4	13.8	13.3	0.1	1.4
9/21/96	24	7.0	9.6	8.2	0.2	2.6	24	10.0	11.6	10.6	0.1	1.6	24	10.3	11.5	10.9	0.1	1.2	24	11.9	13.1	12.3	0.1	1.2
9/22/96	24	7.3	10.0	8.4	0.2	2.7	24	9.9	12.8	10.9	0.2	2.9	24	10.6	12.3	11.3	0.1	1.7	24	12.2	12.5	12.4	0.0	0.3
9/23/96	24	6.1	9.2	7.7	0.2	3.1	24	9.3	12.1	10.4	0.2	2.8	24	10.3	11.7	11.1	0.1	1.4	24	12.1	13.9	12.9	0.1	1.8
9/24/96	24	6.1	9.3	7.7	0.2	3.2	23	9.3	12.5	10.6	0.2	3.2	24	10.3	12.3	11.3	0.1	2.0	24	11.6	13.1	12.4	0.1	1.5
9/25/96	24	6.2	9.8	8.0	0.3	3.6	24	9.4	12.8	10.8	0.2	3.4	24	10.5	12.3	11.4	0.1	1.8	24	11.3	13.3	12.2	0.1	2.0
9/26/96	24	6.7	10.3	8.5	0.3	3.6	24	9.7	13.1	11.0	0.2	3.4	24	10.8	12.5	11.6	0.1	1.7	24	11.4	12.5	12.0	0.1	1.1
9/27/96	24	7.5	11.0	9.2	0.3	3.5	24	10.2	13.8	11.6	0.3	3.6	24	11.1	12.8	12.0	0.1	1.7	24	11.4	11.8	11.6	0.0	0.4
9/28/96	24	8.1	11.4	9.6	0.2	3.3	24	10.5	14.1	11.8	0.2	3.6	24	11.4	12.8	12.1	0.1	1.4	24	11.4	12.2	11.7	0.1	0.8
9/29/96	24	7.9	11.0	9.5	0.2	3.1	24	10.5	13.8	11.7	0.2	3.3	24	11.1	12.6	12.0	0.1	1.5	24	11.4	11.8	11.6	0.0	0.4
9/30/96	24	7.9	11.0	9.3	0.2	3.1	24	10.7	13.3	11.5	0.2	2.6	24	11.4	12.9	11.9	0.1	1.5	24	11.6	13.6	12.5	0.2	2.0
10/1/96	24	8.1	10.4	9.2	0.2	2.3	24	10.3	13.1	11.3	0.2	2.8	24	10.9	12.3	11.7	0.1	1.4	24	12.1	13.1	12.5	0.1	1.0
10/2/96	24	7.2	9.6	8.4	0.2	2.4	24	10.2	12.5	11.0	0.1	2.3	24	10.8	12.3	11.6	0.1	1.5	24	12.1	13.9	12.9	0.1	1.8
10/3/96	24	8.1	10.9	9.3	0.2	2.8	24	10.7	12.5	11.4	0.1	1.8	24	11.4	12.8	12.0	0.1	1.4	24	12.1	13.3	12.7	0.1	1.2
10/4/96	24	8.7	9.6	9.2	0.1	0.9	24	11.1	11.9	11.4	0.1	0.8	24	11.9	12.3	12.1	0.0	0.4	24	11.8	12.2	12.1	0.0	0.4
10/5/96	24	8.4	10.0	9.1	0.1	1.6	24	10.5	12.2	11.1	0.1	1.7	24	11.4	12.3	11.8	0.1	0.9	24	11.4	12.4	11.7	0.1	1.0
10/6/96	24	7.6	10.3	8.8	0.2	2.7	24	10.0	13.0	11.1	0.2	3.0	24	10.9	12.3	11.7	0.1	1.4	24	11.1	11.6	11.4	0.0	0.5
10/7/96	24	7.8	10.7	9.2	0.2	2.9	24	10.3	13.3	11.4	0.2	3.0	24	11.2	12.5	11.9	0.1	1.3	24	11.4	13.5	12.3	0.1	2.1
10/8/96	24	8.1	10.9	9.5	0.2	2.8	24	10.7	13.8	11.8	0.2	3.1	24	11.4	12.6	12.1	0.1	1.2	24	12.1	14.4	13.4	0.2	2.3
10/9/96	24	8.3	11.0	9.6	0.2	2.7	24	11.0	13.9	12.0	0.2	2.9	24	11.7	12.8	12.3	0.1	1.1	24	12.4	13.6	13.0	0.1	1.2
10/10/96	24	8.7	10.0	9.4	0.1	1.3	24	11.3	12.1	11.6	0.1	0.8	24	12.0	12.5	12.2	0.0	0.5	24	11.6	12.4	12.0	0.1	0.8
10/11/96	24	8.9	9.8	9.3	0.1	0.9	24	11.0	11.9	11.4	0.1	0.9	24	11.7	12.3	12.0	0.0	0.6	24	11.4	12.5	12.1	0.1	1.1
10/12/96	24	8.4	9.8	9.0	0.1	1.4	24	10.3	11.9	11.1	0.1	1.6	24	11.2	12.3	11.7	0.1	1.1	24	11.8	12.8	12.4	0.1	1.0
10/13/96	24	8.4	9.2	8.8	0.0	0.8	24	10.5	11.4	10.9	0.0	0.9	24	11.2	11.9	11.5	0.0	0.7	24	11.6	11.9	11.7	0.0	0.3
10/14/96	24	7.9	8.4	8.2	0.0	0.5	24	10.2	10.5	10.4	0.0	0.3	24	10.3	11.1	10.8	0.1	0.8	24	11.6	13.6	12.7	0.2	2.0
10/15/96	24	7.0	8.4	7.8	0.1	1.4	24	9.6	10.7	10.1	0.1	1.1	24	9.7	10.3	10.1	0.0	0.6	24	11.6	13.3	12.8	0.1	1.7
10/16/96	24	6.2	7.6	6.8	0.1	1.4	24	8.9	10.3	9.6	0.1	1.4	24	9.5	10.3	9.8	0.1	0.8	24	11.3	13.1	12.6	0.1	1.8
10/17/96	24	5.5	6.6	6.1	0.1	1.1	24	8.3	9.1	8.8	0.1	0.8	24	9.2	10.0	9.6	0.0	0.8	24	10.4	13.3	12.5	0.2	2.9
10/18/96	24	5.8	7.0	6.5	0.1	1.2	24	8.9	9.6	9.1	0.0	0.7	24	8.4	9.2	8.8	0.1	0.8	24	11.4	12.7	12.3	0.1	1.3
10/19/96	24	5.6	7.0	6.1	0.1	1.4	24	8.6	9.9	9.0	0.1	1.3	24	8.3	8.9	8.5	0.0	0.6	24	11.1	12.5	12.1	0.1	1.4
10/20/96	24	5.2	6.7	5.9	0.1	1.5	24	8.2	9.9	8.9	0.1	1.7	24	8.1	9.1	8.5	0.1	1.0	24	10.1	12.4	11.2	0.2	2.3
10/21/96	24	4.7	6.2	5.6	0.1	1.5	24	8.0	8.9	8.5	0.1	0.9	24	8.0	8.9	8.5	0.1	0.9	24	9.9	12.5	11.6	0.2	2.6
10/22/96	24	6.2	7.6	6.8	0.1	1.4	24	8.8	10.2	9.4	0.1	1.4	23	8.7	9.5	9.0	0.1	0.8	24	10.1	12.2	11.5	0.2	2.1
10/23/96	24	6.2	6.7	6.5	0.0	0.5	24	8.9	9.4	9.1	0.0	0.5	24	8.6	9.1	8.8	0.0	0.5	24	10.1	12.2	11.4	0.2	2.1
10/24/96	24	6.1	7.2	6.7	0.1	1.1	24	8.9	9.9	9.3	0.0	1.0	24	8.3	9.1	8.7	0.0	0.8	24	9.9	11.8	11.2	0.1	1.9
10/25/96	24	5.8	7.0	6.2	0.1	1.2	24	8.5	9.9	9.1	0.1	1.4	24	8.0	8.6	8.3	0.0	0.6	24	9.6	11.6	11.0	0.1	2.0

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
10/26/96	24	5.0	6.6	5.7	0.1	1.6	24	8.2	9.7	8.7	0.1	1.5	24	7.5	8.3	7.9	0.0	0.8	24	11.1	11.4	11.4	0.0	0.3
10/27/96	24	4.8	6.9	5.9	0.2	2.1	24	8.0	9.7	8.6	0.1	1.7	24	7.7	8.7	8.2	0.1	1.0	24	11.0	11.6	11.2	0.0	0.6
10/28/96	24	6.4	7.0	6.7	0.0	0.6	24	8.5	9.1	8.8	0.0	0.6	24	8.4	8.9	8.7	0.0	0.5	24	10.8	11.4	11.1	0.0	0.6
10/29/96	24	6.4	7.5	6.9	0.1	1.1	24	8.6	10.2	9.2	0.1	1.6	24	8.6	9.2	8.8	0.0	0.6	24	9.9	11.3	10.9	0.1	1.4
10/30/96	24	5.6	7.2	6.4	0.1	1.6	24	8.2	9.7	8.7	0.1	1.5	24	8.1	8.9	8.5	0.0	0.8	24	10.2	11.4	10.9	0.1	1.2
10/31/96	24	4.5	6.2	5.4	0.1	1.7	24	7.6	9.1	8.1	0.1	1.5	24	7.5	8.4	8.0	0.1	0.9	24	9.7	11.3	10.8	0.1	1.6
11/1/96	24	4.4	6.4	5.4	0.1	2.0	24	7.4	9.1	8.1	0.1	1.7	24	7.7	8.6	8.1	0.1	0.9	24	9.4	11.1	10.7	0.1	1.7
11/2/96	24	4.7	6.6	5.6	0.1	1.9	24	7.6	9.3	8.2	0.1	1.7	24	8.1	8.9	8.4	0.0	0.8	24	9.7	11.0	10.5	0.1	1.3
11/3/96	24	5.6	6.9	6.2	0.1	1.3	24	8.0	9.3	8.5	0.1	1.3	24	8.4	9.2	8.9	0.1	0.8	24	10.2	10.7	10.3	0.0	0.5
11/4/96	24	5.6	6.2	6.0	0.0	0.6	24	8.2	8.8	8.5	0.0	0.6	24	8.4	9.1	8.8	0.0	0.7	24	9.7	10.5	10.1	0.0	0.8
11/5/96	24	5.3	5.8	5.5	0.0	0.5	24	8.2	8.5	8.3	0.0	0.3	24	8.4	8.7	8.5	0.0	0.3	24	9.6	9.9	9.7	0.0	0.3
11/6/96	24	5.2	5.8	5.5	0.0	0.6	24	8.0	8.6	8.3	0.0	0.6	24	7.8	8.4	8.2	0.0	0.6	24	9.4	10.1	9.8	0.0	0.7
11/7/96	24	4.7	5.6	5.2	0.1	0.9	24	7.9	8.5	8.1	0.0	0.6	24	7.5	8.0	7.8	0.0	0.5	24	9.1	9.9	9.7	0.0	0.8
11/8/96	24	5.6	7.0	6.2	0.1	1.4	24	8.3	9.9	8.7	0.1	1.6	24	8.0	8.7	8.3	0.1	0.7	24	9.3	9.9	9.6	0.0	0.6
11/9/96	24	5.0	6.4	5.7	0.1	1.4	24	7.7	9.1	8.2	0.1	1.4	24	7.7	8.3	8.1	0.0	0.6	24	9.0	9.9	9.5	0.1	0.9
11/10/96	24	4.8	6.7	5.8	0.1	1.9	24	7.7	8.9	8.3	0.1	1.2	24	8.0	8.9	8.3	0.1	0.9	24	9.1	9.9	9.5	0.0	0.8
11/11/96	24	6.1	7.3	6.7	0.1	1.2	24	8.5	9.6	9.0	0.1	1.1	24	8.7	9.5	9.0	0.1	0.8	24	9.4	9.7	9.6	0.0	0.3
11/12/96	24	6.9	7.6	7.2	0.1	0.7	24	9.1	9.6	9.3	0.0	0.5	24	9.1	9.5	9.3	0.0	0.4	24	9.4	9.7	9.5	0.0	0.3
11/13/96	24	6.6	7.5	7.2	0.1	0.9	24	8.9	9.9	9.3	0.1	1.0	24	8.9	9.5	9.2	0.0	0.6	24	9.1	9.4	9.3	0.0	0.3
11/14/96	24	6.2	6.9	6.4	0.0	0.7	24	8.8	9.3	9.0	0.0	0.5	24	8.6	8.9	8.7	0.0	0.3	24	9.0	9.1	9.1	0.0	0.1
11/15/96	24	5.6	6.4	6.0	0.0	0.8	24	8.3	9.1	8.7	0.0	0.8	24	8.1	8.6	8.4	0.0	0.5	24	9.0	9.0	9.0	0.0	0.0
11/16/96	24	4.7	5.5	5.0	0.0	0.8	24	8.0	8.5	8.2	0.0	0.5	24	7.4	8.0	7.7	0.0	0.6	24	8.7	9.0	9.0	0.0	0.3
11/17/96	24	3.7	5.0	4.5	0.1	1.3	24	7.9	8.3	8.1	0.0	0.4	24	6.9	7.7	7.4	0.1	0.8	24	8.8	9.0	8.8	0.0	0.2
11/18/96	24	2.8	4.4	4.1	0.1	1.6	24	7.2	8.2	7.8	0.0	1.0	24	6.6	7.0	6.9	0.0	0.4	24	8.2	8.8	8.6	0.0	0.6
11/19/96	24	0.7	3.4	2.3	0.2	2.7	24	6.8	7.2	7.1	0.0	0.4	24	6.1	6.4	6.3	0.0	0.3	24	7.4	8.5	8.3	0.1	1.1
11/20/96	24	3.4	4.8	4.2	0.1	1.4	24	7.1	8.0	7.6	0.1	0.9	24	6.4	7.0	6.7	0.0	0.6	24	7.0	8.4	7.7	0.1	1.4
11/21/96	24	4.1	4.4	4.3	0.0	0.3	24	7.2	7.6	7.4	0.0	0.4	24	6.4	6.9	6.7	0.0	0.5	24	7.6	8.2	7.9	0.0	0.6
11/22/96	24	4.4	5.2	4.7	0.1	0.8	24	7.4	8.0	7.6	0.0	0.6	24	6.7	7.0	6.8	0.0	0.3	24	7.6	8.0	7.8	0.0	0.4
11/23/96	24	2.3	4.5	4.0	0.1	2.2	24	6.8	7.4	7.0	0.0	0.6	24	6.1	6.9	6.4	0.0	0.8	24	7.4	7.6	7.5	0.0	0.2
11/24/96	24	2.3	4.2	3.7	0.1	1.9	24	6.8	7.2	7.1	0.0	0.4	24	6.3	6.6	6.5	0.0	0.3	24	7.4	7.6	7.5	0.0	0.2
11/25/96	24	4.2	5.2	4.6	0.1	1.0	24	7.2	7.9	7.5	0.0	0.7	24	6.6	7.2	6.8	0.0	0.6	24	7.1	7.4	7.3	0.0	0.3
11/26/96	24	4.2	5.3	4.8	0.1	1.1	24	6.9	7.9	7.4	0.1	1.0	24	6.4	7.2	6.8	0.1	0.8	23	7.0	7.4	7.2	0.0	0.4
11/27/96	24	4.1	4.8	4.6	0.1	0.7	24	7.4	8.2	7.7	0.0	0.8	24	6.9	7.8	7.2	0.1	0.9	24	7.1	7.4	7.2	0.0	0.3
11/28/96	24	4.2	5.3	4.8	0.1	1.1	24	7.7	8.2	7.9	0.0	0.5	24	7.0	7.5	7.2	0.0	0.5	24	6.3	7.4	6.9	0.1	1.1
11/29/96	24	4.7	5.2	4.9	0.0	0.5	24	7.6	8.0	7.8	0.0	0.4	24	6.7	7.4	7.1	0.0	0.7	24	6.2	6.7	6.4	0.0	0.5
11/30/96	24	4.8	5.3	5.1	0.0	0.5	24	7.7	7.9	7.7	0.0	0.2	24	7.0	7.4	7.1	0.0	0.4	24	6.3	7.0	6.7	0.0	0.7
12/1/96	24	4.2	5.2	4.7	0.1	1.0	24	7.1	7.7	7.4	0.0	0.6	24	6.4	7.2	6.7	0.1	0.8	24	6.2	7.0	6.6	0.1	0.8
12/2/96	24	3.0	4.2	3.5	0.1	1.2	24	4.9	7.1	6.2	0.1	2.2	24	4.9	6.4	5.7	0.1	1.5	24	5.6	6.3	5.9	0.1	0.7
12/3/96	24	3.4	4.2	3.8	0.1	0.8	24	5.8	6.9	6.3	0.1	1.1	24	5.6	6.3	5.9	0.0	0.7	24	5.6	5.9	5.7	0.0	0.3
12/4/96	24	3.3	3.6	3.4	0.0	0.3	24	5.8	6.3	6.0	0.0	0.5	24	5.5	5.9	5.7	0.0	0.4	24	5.9	5.9	5.9	0.0	0.0
12/5/96	24	3.3	3.7	3.6	0.0	0.4	24	6.3	6.6	6.5	0.0	0.3	24	5.9	6.3	6.2	0.0	0.4	24	5.7	5.9	5.9	0.0	0.2
12/6/96	24	3.3	3.7	3.5	0.0	0.4	24	5.4	6.6	6.2	0.1	1.2	24	5.3	6.3	5.8	0.1	1.0	24	5.6	5.7	5.7	0.0	0.1
12/7/96	24	3.7	4.1	3.8	0.0	0.4	24	6.3	6.5	6.5	0.0	0.2	24	6.1	6.3	6.1	0.0	0.2	24	5.6	5.7	5.6	0.0	0.1
12/8/96	24	3.9	4.4	4.1	0.0	0.5	24	6.5	6.9	6.8	0.0	0.4	24	6.1	6.4	6.3	0.0	0.3	24	5.7	6.0	5.9	0.0	0.3
12/9/96	24	4.2	5.0	4.6	0.1	0.8	24	6.8	7.2	7.0	0.0	0.4	24	6.3	6.9	6.6	0.0	0.6	24	5.6	5.9	5.7	0.0	0.3
12/10/96	24	4.4	4.7	4.6	0.0	0.3	24	6.9	7.4	7.1	0.0	0.5	24	6.4	6.9	6.7	0.0	0.5	24	5.6	5.7	5.6	0.0	0.1
12/11/96	24	4.1	4.7	4.4	0.0	0.6	24	6.9	7.4	7.1	0.0	0.5	24	6.4	6.7	6.5	0.0	0.3	24	5.6	5.9	5.6	0.0	0.3
12/12/96	24	4.2	4.5	4.4	0.0	0.3	24	6.9	7.1	7.0	0.0	0.2	24	6.4	6.6	6.4	0.0	0.2	24	5.4	5.7	5.5	0.0	0.3
12/13/96	24	4.1	4.5	4.4	0.0	0.4	24	6.8	7.2	7.0	0.0	0.4	24	6.3	6.6	6.5	0.0	0.3	24	5.4	5.7	5.5	0.0	0.3
12/14/96	24	3.7	4.4	4.1	0.0	0.7	24	6.3	7.1	6.8	0.0	0.8	24	5.8	6.3	6.2	0.0	0.5	24	5.3	5.9	5.5	0.0	0.6
12/15/96	24	3.4	4.5	4.0	0.1	1.1	24	6.0	6.9	6.5	0.1	0.9	24	5.5	6.4	6.0	0.1	0.9	24	5.1	5.6	5.3	0.0	0.5
12/16/96	24	3.7	5.0	4.5	0.1	1.3	24	6.0	7.2	6.7	0.1	1.2	24	5.8	6.4	6.3	0.0	0.6	24	5.1	5.4	5.2	0.0	0.3
12/17/96	24	2.8	3.6	3.2	0.0	0.8	24	4.9	6.0	5.5	0.1	1.1	24	5.0	5.6	5.3	0.0	0.6	24	4.8	5.1	4.9	0.0	0.3
12/18/96	24	2.5	3.4	2.9	0.1	0.9	22	4.8	5.7	5.2	0.1	0.9	24	4.9	5.5	5.2	0.1	0.6	24	4.8	4.9	4.8	0.0	0.1
12/19/96	24	2.8	4.1	3.4	0.1	1.3	24	5.1	6.3	5.6	0.1	1.2	24	5.0	6.1	5.5	0.1	1.1	24	4.6	5.1	4.9	0.0	0.5
12/20/96	24	3.3	3.9	3.6	0.0	0.6	24	5.8	6.3	6.0	0.0	0.5	24	5.6	6.1	5.8	0.0	0.5	24	4.8	5.3	4.9	0.0	0.5
12/21/96	24	3.1	3.6	3.3	0.0	0.5	24	5.2	6.0	5.7	0.0	0.8	24	5.0	5.5	5.3	0.0	0.5	24	5.1	5.4	5.3	0.0	0.3
12/22/96	24	3.0	4.1	3.5	0.1	1.1	24	5.2	6.5	5.8	0.1	1.3	24	4.9	5.8	5.4	0.1	0.9	24	4.6	5.3	5.0	0.0	0.7
12/23/96	24	2.5	3.4	2.8	0.1	0.9	24	4.9	5.4	5.2	0.0	0.5	24	4.7	5.2	5.0	0.0	0.5	24	4.6	5.1	4.7	0.0	0.5
12/24/96	24	2.6	3.3	3.0	0.0	0.7	24	5.1	5.5	5.5	0.0	0.4	24	5.0	5.6	5.3	0.0	0.6	24	4.6	5.1	4.7	0.0	0.5
12/25/96	24	2.8	3.7	3.3	0.1	0.9	24	5.2	6.2	5.7	0.0	1.0	24	5.0	5.9	5.5	0.0	0.9	24	4.6	4.8	4.6	0.0	0.2
12/26/96	24	0.6	3.0	1.7	0.2	2.4	24	2.4	5.1	4.1	0.2	2.7	24	2.8	5.0	4.3	0.2	2.2	24	4.2	4.6	4.5	0.0	0.4
12/27/96	24	2.6	3.3	2.9	0.1	0.7	24	4.9	5.5	5.3	0.0	0.6	24	5.0	5.5	5.2	0.0	0.5	24	4.5	4.9	4.6	0.0	0.4
12/28/96	24	2.2	3.4	3.0	0.1	1.2	24	5.1	5.8	5.5	0.0	0.7	24	4.9	5.3	5.1	0.0	0.4	24	4.3	4.9	4.6	0.0	0.6
12/29/96	24	0.4	1.8	1.3	0.1	1.4	24	4.4	5.7	4.9	0.1	1.3	24	4.4	5.9	5.0	0.1	1.5	24	4.2	4.6	4.4	0.0	0.4
12/30/96	24	1.7	3.3	2.7	0.1	1.6	24	4.8	6.0	5.4	0.1	1.2	24	5.8	6.3	6.0	0.0	0.5	24	4.5	5.4	4.7	0.1	0.9
12/31/96	24	3.0	4.2	3.6	0.1	1.2	24	4.6	4.8	4.8	0.0	0.2	24	5.6	6.1	5.8	0.0	0.5	24	4.5	4.5	4.5	0.0	0.0
1/1/97	24	2.2	4.2	3.5	0.1	2.0	24	4.6	4.9	4.8	0.0	0.3	24	5.0	5.9	5.4	0.1	0.9	24	4.3	4.5	4.5	0.0	0.2
1/2/97	24	4.2	4.7	4.5	0.0	0.5	24	4.3	4.6	4.4	0.0	0.3	24	4.7	5.0	4.8	0.0	0.3	24	4.0	4.3	4.1	0.0	0.3

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
1/3/97	24	3.9	4.4	4.2	0.0	0.5	24	4.3	5.1	4.4	0.1	0.8	24	4.5	5.5	4.8	0.1	1.0	24	4.0	4.2	4.1	0.0	0.2
1/4/97	24	3.9	4.5	4.2	0.0	0.6	24	5.2	6.2	5.7	0.1	1.0	24	5.5	6.1	5.8	0.0	0.6	24	4.0	4.0	4.0	0.0	0.0
1/5/97	24	3.7	4.2	4.1	0.0	0.5	24	5.8	6.5	6.1	0.0	0.7	24	5.6	5.9	5.8	0.0	0.3	24	4.0	4.6	4.3	0.0	0.6
1/6/97	24	3.4	3.9	3.7	0.0	0.5	24	5.5	6.2	5.9	0.0	0.7	24	5.5	5.8	5.6	0.0	0.3	24	4.0	4.6	4.1	0.0	0.6
1/7/97	24	3.6	4.7	4.2	0.1	1.1	24	5.8	6.5	6.2	0.1	0.7	24	5.5	6.1	5.9	0.0	0.6	24	4.0	4.5	4.1	0.0	0.5
1/8/97	24	4.2	4.8	4.5	0.0	0.6	24	6.5	7.1	6.7	0.0	0.6	24	6.1	6.4	6.2	0.0	0.3	24	4.0	4.2	4.1	0.0	0.2
1/9/97	24	4.4	4.8	4.6	0.0	0.4	24	6.6	7.1	6.8	0.0	0.5	24	6.1	6.4	6.3	0.0	0.3	24	4.2	4.3	4.2	0.0	0.1
1/10/97	24	4.5	5.2	4.7	0.1	0.7	24	6.8	7.2	6.9	0.0	0.4	24	6.3	6.6	6.4	0.0	0.3	24	4.2	4.3	4.2	0.0	0.1
1/11/97	24	4.1	5.0	4.6	0.0	0.9	24	6.2	6.9	6.7	0.0	0.7	24	5.8	6.4	6.2	0.0	0.6	24	4.2	4.3	4.2	0.0	0.1
1/12/97	24	1.8	3.9	2.9	0.1	2.1	24	4.6	6.0	5.2	0.1	1.4	24	4.2	5.6	4.8	0.1	1.4	24	3.9	4.8	4.3	0.1	0.9
1/13/97	24	1.0	2.3	1.6	0.1	1.3	24	3.8	4.8	4.2	0.1	1.0	24	3.6	4.1	3.8	0.0	0.5	24	3.7	4.3	4.0	0.0	0.6
1/14/97	24	0.9	2.3	1.5	0.1	1.4	24	3.3	4.4	3.8	0.1	1.1	24	3.3	3.8	3.6	0.0	0.5	24	3.7	4.0	3.9	0.0	0.3
1/15/97	24	1.0	2.5	1.7	0.1	1.5	24	3.3	4.3	3.7	0.1	1.0	24	3.6	3.9	3.7	0.0	0.3	24	3.7	3.9	3.7	0.0	0.2
1/16/97	24	1.4	2.8	2.1	0.1	1.4	24	3.3	4.3	3.8	0.1	1.0	24	3.6	4.4	3.9	0.1	0.8	24	3.7	3.7	3.7	0.0	0.0
1/17/97	24	2.8	3.1	3.0	0.0	0.3	24	4.3	5.1	4.7	0.1	0.8	24	4.4	4.7	4.5	0.0	0.3	24	3.7	3.7	3.7	0.0	0.0
1/18/97	24	3.1	4.1	3.6	0.1	1.0	24	5.1	6.0	5.6	0.1	0.9	24	4.7	5.6	5.3	0.1	0.9	24	3.7	3.7	3.7	0.0	0.0
1/19/97	24	3.7	4.5	4.1	0.1	0.8	24	5.8	6.3	6.0	0.0	0.5	24	5.5	6.1	5.7	0.0	0.6	24	3.7	3.7	3.7	0.0	0.0
1/20/97	24	4.2	4.5	4.3	0.0	0.3	24	6.2	6.5	6.3	0.0	0.3	24	5.9	6.1	6.0	0.0	0.2	24	3.7	3.7	3.7	0.0	0.0
1/21/97	24	3.9	4.5	4.2	0.0	0.6	24	6.0	6.5	6.2	0.0	0.5	24	5.6	5.8	5.8	0.0	0.2	24	3.7	3.7	3.7	0.0	0.0
1/22/97	24	3.4	4.2	3.8	0.1	0.8	24	4.9	6.0	5.4	0.1	1.1	24	4.5	5.6	4.9	0.1	1.1	24	3.5	3.7	3.6	0.0	0.2
1/23/97	24	3.3	3.7	3.5	0.0	0.4	24	5.2	5.8	5.5	0.0	0.6	24	5.0	5.3	5.1	0.0	0.3	24	3.7	3.7	3.7	0.0	0.0
1/24/97	24	3.3	4.1	3.5	0.1	0.8	24	5.2	6.2	5.6	0.1	1.0	24	5.2	5.5	5.3	0.0	0.3	24	3.7	3.9	3.8	0.0	0.2
1/25/97	24	2.6	3.4	3.0	0.1	0.8	24	4.6	5.5	5.1	0.0	0.9	24	4.7	5.2	4.9	0.0	0.5	24	3.5	3.7	3.6	0.0	0.2
1/26/97	24	2.0	2.8	2.3	0.1	0.8	24	3.7	5.1	4.3	0.1	1.4	24	4.1	4.7	4.3	0.0	0.6	24	3.4	3.5	3.5	0.0	0.1
1/27/97	24	1.0	2.6	1.8	0.1	1.6	24	2.4	4.1	3.4	0.1	1.7	24	3.0	3.9	3.6	0.1	0.9	24	3.2	3.4	3.4	0.0	0.2
1/28/97	24	1.0	3.4	2.5	0.2	2.4	24	3.3	4.8	4.4	0.1	1.5	24	3.0	4.7	4.1	0.1	1.7	24	3.2	3.4	3.4	0.0	0.2
1/29/97	24	3.3	4.5	3.8	0.1	1.2	24	4.6	6.2	5.4	0.1	1.6	24	4.7	5.5	5.0	0.1	0.8	24	3.4	3.4	3.4	0.0	0.0
1/30/97	24	3.7	4.1	3.9	0.0	0.4	24	5.7	6.0	5.8	0.0	0.3	24	4.9	5.3	5.2	0.0	0.4	24	3.4	3.4	3.4	0.0	0.0
1/31/97	24	3.7	4.4	4.0	0.1	0.7	24	5.7	6.3	6.0	0.0	0.6	24	5.3	5.9	5.6	0.0	0.6	24	3.4	3.5	3.5	0.0	0.1
2/1/97	24	3.9	4.5	4.2	0.0	0.6	24	5.8	6.3	6.2	0.0	0.5	24	5.6	6.1	5.9	0.0	0.5	24	3.4	3.5	3.5	0.0	0.1
2/2/97	24	3.9	4.5	4.1	0.0	0.6	24	5.8	6.6	6.0	0.1	0.8	24	5.5	5.9	5.6	0.0	0.4	24	3.4	3.5	3.5	0.0	0.1
2/3/97	24	3.6	4.5	3.9	0.1	0.9	24	5.5	6.5	5.8	0.1	1.0	24	5.2	5.6	5.4	0.0	0.4	24	3.4	3.5	3.5	0.0	0.1
2/4/97	24	3.0	4.2	3.5	0.1	1.2	24	5.1	6.3	5.5	0.1	1.2	24	5.0	5.5	5.2	0.0	0.5	24	3.4	3.5	3.4	0.0	0.1
2/5/97	24	2.3	3.7	3.0	0.1	1.4	24	4.6	5.8	5.1	0.1	1.2	24	4.5	5.0	4.8	0.0	0.5	24	3.4	3.5	3.4	0.0	0.1
2/6/97	24	2.0	3.4	2.8	0.1	1.4	24	4.3	5.5	4.8	0.1	1.2	24	4.4	5.0	4.7	0.0	0.6	24	3.4	3.5	3.4	0.0	0.1
2/7/97	24	2.5	3.1	2.7	0.0	0.6	24	4.1	5.1	4.6	0.1	1.0	24	4.2	4.9	4.5	0.0	0.7	24	3.2	3.7	3.4	0.0	0.5
2/8/97	24	1.7	3.4	2.5	0.1	1.7	24	4.0	5.5	4.5	0.1	1.5	24	3.9	4.9	4.4	0.1	1.0	24	3.2	3.7	3.4	0.0	0.5
2/9/97	24	2.2	3.7	3.0	0.1	1.5	24	4.1	5.4	4.7	0.1	1.3	24	4.2	4.9	4.5	0.1	0.7	24	3.2	3.7	3.4	0.0	0.5
2/10/97	24	3.0	4.2	3.5	0.1	1.2	24	4.6	6.3	5.3	0.1	1.7	24	4.5	5.2	4.8	0.1	0.7	24	3.2	3.4	3.4	0.0	0.2
2/11/97	24	2.5	3.6	3.1	0.1	1.1	24	4.4	5.7	5.0	0.1	1.3	24	4.5	5.2	4.9	0.0	0.7	24	3.2	3.4	3.3	0.0	0.2
2/12/97	24	2.6	3.9	3.2	0.1	1.3	24	4.3	5.7	5.2	0.1	1.4	24	4.5	5.3	4.9	0.1	0.8	24	3.2	3.7	3.4	0.0	0.5
2/13/97	24	3.3	4.2	3.7	0.1	0.9	24	5.4	6.0	5.6	0.0	0.6	24	5.0	5.3	5.1	0.0	0.3	24	3.4	3.7	3.4	0.0	0.3
2/14/97	24	3.7	4.5	4.1	0.1	0.8	24	5.5	6.5	6.0	0.1	1.0	24	5.0	5.6	5.3	0.0	0.6	24	3.4	3.9	3.5	0.0	0.5
2/15/97	24	4.1	5.6	4.6	0.1	1.5	24	6.3	7.7	6.8	0.1	1.4	24	5.6	6.1	5.8	0.0	0.5	24	3.4	3.9	3.6	0.0	0.5
2/16/97	24	3.4	5.5	4.4	0.2	2.1	24	5.7	7.4	6.5	0.1	1.7	24	5.2	6.3	5.7	0.1	1.1	24	3.5	4.0	3.8	0.0	0.5
2/17/97	24	4.2	5.5	4.8	0.1	1.3	24	6.6	7.6	7.0	0.1	1.0	24	5.9	6.4	6.2	0.0	0.5	24	3.5	4.0	3.8	0.0	0.5
2/18/97	24	3.7	4.7	4.3	0.1	1.0	24	6.2	7.1	6.7	0.0	0.9	24	5.8	6.1	5.9	0.0	0.3	24	3.5	3.9	3.5	0.0	0.4
2/19/97	24	3.4	4.4	3.8	0.1	1.0	24	6.2	6.6	6.3	0.0	0.4	24	5.3	5.6	5.5	0.0	0.3	24	3.5	3.5	3.5	0.0	0.0
2/20/97	24	3.6	5.2	4.1	0.1	1.6	24	6.0	7.1	6.3	0.1	1.1	24	5.5	6.1	5.7	0.0	0.6	24	3.5	3.7	3.6	0.0	0.2
2/21/97	24	3.4	5.3	4.1	0.1	1.9	24	5.7	7.4	6.3	0.1	1.7	24	5.2	5.9	5.5	0.1	0.7	24	3.5	3.9	3.6	0.0	0.4
2/22/97	24	2.8	5.2	3.8	0.2	2.4	24	5.2	7.2	6.0	0.1	2.0	24	4.9	5.6	5.3	0.1	0.7	24	3.5	3.9	3.7	0.0	0.4
2/23/97	24	2.8	5.3	3.9	0.2	2.5	24	5.1	7.4	6.0	0.1	2.3	24	4.9	5.8	5.3	0.1	0.9	24	3.5	3.9	3.7	0.0	0.4
2/24/97	24	3.1	5.6	4.2	0.2	2.5	24	5.4	7.7	6.3	0.2	2.3	24	5.2	6.1	5.6	0.1	0.9	23	3.5	4.0	3.7	0.0	0.5
2/25/97	24	3.4	5.5	4.5	0.2	2.1	24	5.7	7.4	6.5	0.1	1.7	24	5.3	6.6	5.8	0.1	1.3	24	3.5	3.7	3.6	0.0	0.2
2/26/97	24	4.4	5.5	4.8	0.1	1.1	24	6.3	6.9	6.7	0.0	0.6	24	5.9	6.4	6.1	0.0	0.5	24	3.7	3.7	3.7	0.0	0.0
2/27/97	24	3.4	5.3	4.2	0.1	1.9	24	5.5	7.4	6.3	0.1	1.9	24	5.2	5.9	5.6	0.0	0.7	24	3.7	3.9	3.8	0.0	0.2
2/28/97	24	2.6	4.4	3.5	0.1	1.8	24	5.2	6.8	5.9	0.1	1.6	24	4.7	5.8	5.2	0.1	1.1	24	3.7	4.2	3.9	0.0	0.5
3/1/97	24	0.4	3.6	1.7	0.2	3.2	24	3.0	5.8	4.2	0.1	2.8	24	3.1	5.5	3.9	0.2	2.4	24	3.5	4.0	3.8	0.0	0.5
3/2/97	24	2.3	3.9	2.8	0.1	1.6	24	4.4	6.2	5.1	0.1	1.8	24	4.1	5.3	4.6	0.1	1.2	24	3.7	4.2	3.9	0.0	0.5
3/3/97	24	2.8	4.5	3.5	0.1	1.7	24	4.8	6.0	5.2	0.1	1.2	24	4.2	5.3	4.8	0.1	1.1	24	3.7	4.0	3.8	0.0	0.3
3/4/97	24	3.1	4.5	3.8	0.1	1.4	24	5.1	5.8	5.4	0.1	0.7	24	4.7	5.8	5.2	0.1	1.1	24	3.7	4.0	3.8	0.0	0.3
3/5/97	24	3.4	4.7	3.9	0.1	1.3	24	5.2	6.3	5.7	0.1	1.1	24	4.9	5.6	5.2	0.1	0.7	24	3.7	4.2	3.9	0.0	0.5
3/6/97	24	3.3	4.1	3.7	0.1	0.8	24	4.6	6.2	5.7	0.1	1.6	24	4.9	5.3	5.1	0.0	0.4	24	3.7	4.2	3.9	0.0	0.5
3/7/97	24	3.4	4.7	3.9	0.1	1.3	24	5.8	6.8	6.3	0.1	1.0	24	5.0	5.6	5.3	0.0	0.6	24	3.9	4.8	4.1	0.1	0.9
3/8/97	24	3.4	5.3	4.2	0.1	1.9	24	5.8	7.4	6.4	0.1	1.6	24	5.2	6.1	5.5	0.1	0.9	24	3.7	4.6	4.1	0.1	0.9
3/9/97	24	3.3	4.4	3.8	0.1	1.1	24	5.8	6.6	6.2	0.1	0.8	24	5.2	5.8	5.5	0.0	0.6	24	3.7	4.5	4.0	0.0	0.8
3/10/97	24	3.7	4.5	4.1	0.1	0.8	24	5.1	6.8	6.1	0.1	1.7	24	5.5	5.9	5.6	0.0	0.4	24	3.9	4.8	4.0	0.1	0.9
3/11/97	24	3.3	4.7	3.9	0.1	1.4	24	5.7	7.1	6.2	0.1	1.4	24	5.2	5.9	5.5	0.0	0.7	24	3.9	3.9	3.9	0.0	0.0
3/12/97	24	3.1	3.9	3.4	0.1	0.8	24	5.4	6.5	5.8	0.1	1.1	24	4.7	5.3	5.1	0.0	0.6	24	3.7	4.2	3.9	0.0	0.5

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
3/13/97	24	3.1	5.2	4.0	0.2	2.1	24	5.4	7.2	6.0	0.1	1.8	24	4.7	6.1	5.3	0.1	1.4	24	3.7	4.2	3.9	0.0	0.5
3/14/97	24	3.1	5.3	4.1	0.2	2.2	24	5.5	7.7	6.4	0.2	2.2	24	4.9	6.4	5.5	0.1	1.5	24	3.9	4.0	3.9	0.0	0.1
3/15/97	24	1.8	3.9	3.0	0.1	2.1	24	5.2	6.5	5.9	0.1	1.3	24	4.2	5.5	5.0	0.1	1.3	24	3.7	4.2	4.0	0.0	0.5
3/16/97	24	3.6	4.8	4.2	0.1	1.2	24	6.3	7.2	6.7	0.1	0.9	24	5.5	6.1	5.7	0.0	0.6	24	4.0	4.9	4.2	0.1	0.9
3/17/97	24	3.9	4.7	4.3	0.1	0.8	24	6.6	7.2	6.9	0.0	0.6	24	5.8	6.1	5.9	0.0	0.3	24	4.0	5.3	4.2	0.1	1.3
3/18/97	24	4.1	4.5	4.3	0.0	0.4	24	6.5	7.2	6.9	0.1	0.7	24	5.6	6.3	6.0	0.0	0.7	24	4.0	4.0	4.0	0.0	0.0
3/19/97	24	3.6	4.7	4.1	0.1	1.1	24	6.3	7.2	7.0	0.1	0.9	24	5.9	6.4	6.3	0.0	0.5	24	4.0	5.6	4.4	0.1	1.6
3/20/97	24	3.9	5.3	4.5	0.1	1.4	24	6.6	8.3	7.4	0.1	1.7	24	5.6	6.7	6.2	0.1	1.1	24	4.0	4.3	4.2	0.0	0.3
3/21/97	24	3.3	5.5	4.2	0.2	2.2	24	6.0	8.6	7.2	0.2	2.6	24	5.0	6.9	5.8	0.1	1.9	24	4.0	4.3	4.2	0.0	0.3
3/22/97	24	3.7	6.4	4.8	0.2	2.7	24	6.3	8.6	7.5	0.2	2.3	24	5.5	7.4	6.3	0.1	1.9	24	4.2	4.5	4.3	0.0	0.3
3/23/97	24	4.4	6.9	5.3	0.2	2.5	24	7.2	9.9	8.2	0.2	2.7	24	6.3	7.8	6.9	0.1	1.5	24	4.2	4.5	4.3	0.0	0.3
3/24/97	24	3.7	6.4	4.9	0.2	2.7	24	6.8	9.6	8.1	0.2	2.8	24	5.8	7.7	6.7	0.1	1.9	24	4.2	4.5	4.4	0.0	0.3
3/25/97	24	3.7	7.9	5.5	0.3	4.2	24	6.6	10.5	8.4	0.3	3.9	24	5.8	8.4	7.0	0.2	2.6	24	4.3	4.9	4.6	0.0	0.6
3/26/97	24	4.5	7.0	5.6	0.2	2.5	24	7.7	10.0	8.6	0.1	2.3	24	6.6	8.1	7.3	0.1	1.5	24	4.6	4.8	4.7	0.0	0.2
3/27/97	24	3.9	5.5	4.6	0.1	1.6	24	7.4	8.5	7.8	0.1	1.1	24	6.1	6.9	6.4	0.1	0.8	24	4.5	4.6	4.6	0.0	0.1
3/28/97	24	3.7	5.6	4.5	0.1	1.9	24	6.9	8.3	7.4	0.1	1.4	24	5.8	6.9	6.2	0.1	1.1	24	4.3	4.6	4.5	0.0	0.3
3/29/97	24	3.7	6.7	5.1	0.2	3.0	24	6.5	9.7	7.9	0.2	3.2	24	5.5	7.5	6.4	0.2	2.0	24	4.3	4.6	4.4	0.0	0.3
3/30/97	24	4.1	6.1	5.0	0.1	2.0	24	6.9	8.6	7.6	0.1	1.7	24	5.9	7.0	6.5	0.1	1.1	24	4.5	4.9	4.6	0.0	0.4
3/31/97	24	3.4	5.3	4.2	0.1	1.9	24	6.6	8.3	7.3	0.1	1.7	24	5.6	6.7	6.1	0.1	1.1	24	4.6	4.8	4.7	0.0	0.2
4/1/97	24	3.6	6.6	4.7	0.2	3.0	24	6.6	9.9	7.9	0.2	3.3	24	5.6	7.8	6.4	0.2	2.2	24	4.5	4.8	4.6	0.0	0.3
4/2/97	24	3.1	6.7	4.7	0.3	3.6	24	6.3	10.2	7.9	0.3	3.9	24	5.2	7.8	6.4	0.2	2.6	24	4.5	4.8	4.6	0.0	0.3
4/3/97	24	4.2	6.7	5.2	0.2	2.5	24	6.9	8.5	7.7	0.1	1.6	24	6.1	7.5	6.6	0.1	1.4	24	4.5	4.9	4.7	0.0	0.4
4/4/97	24	3.7	7.0	5.1	0.2	3.3	24	6.3	10.7	8.0	0.3	4.4	24	5.5	8.3	6.7	0.2	2.8	24	4.6	4.9	4.7	0.0	0.3
4/5/97	24	3.3	7.3	5.1	0.3	4.0	24	6.5	11.0	8.3	0.3	4.5	24	5.5	8.4	6.8	0.2	2.9	24	4.5	5.1	4.8	0.0	0.6
4/6/97	24	3.3	7.8	5.4	0.3	4.5	24	6.6	10.8	8.4	0.3	4.2	24	5.6	8.9	7.0	0.2	3.3	24	4.6	5.6	5.1	0.1	1.0
4/7/97	24	4.5	7.8	5.9	0.2	3.3	24	7.7	9.3	8.3	0.1	1.6	24	6.4	8.1	7.2	0.1	1.7	24	5.1	5.4	5.3	0.0	0.3
4/8/97	24	5.3	6.7	5.9	0.1	1.4	24	7.9	8.9	8.3	0.1	1.0	24	6.9	7.7	7.2	0.1	0.8	24	5.3	5.4	5.4	0.0	0.1
4/9/97	24	5.0	6.2	5.6	0.1	1.2	24	7.7	8.6	8.1	0.1	0.9	24	6.6	7.4	7.0	0.1	0.8	24	5.1	5.6	5.3	0.0	0.5
4/10/97	24	5.0	6.1	5.4	0.1	1.1	24	7.6	8.8	8.0	0.1	1.2	24	6.6	7.5	7.0	0.1	0.9	24	4.9	5.4	5.1	0.0	0.5
4/11/97	24	4.1	7.6	5.6	0.3	3.5	24	6.8	11.0	8.4	0.3	4.2	24	5.9	8.9	7.3	0.2	3.0	24	4.8	5.4	5.2	0.0	0.6
4/12/97	24	3.4	7.6	5.5	0.3	4.2	24	6.8	10.7	8.6	0.3	3.9	24	5.9	8.9	7.3	0.2	3.0	24	5.1	5.9	5.6	0.0	0.8
4/13/97	24	5.0	5.8	5.5	0.0	0.8	24	7.9	8.8	8.3	0.1	0.9	24	6.7	7.5	7.1	0.1	0.8	24	5.6	6.0	5.8	0.0	0.4
4/14/97	24	4.7	5.8	5.3	0.1	1.1	24	7.7	8.2	7.9	0.0	0.5	24	6.4	6.7	6.5	0.0	0.3	24	5.7	6.0	5.8	0.0	0.3
4/15/97	24	5.0	8.4	6.5	0.3	3.4	24	7.6	11.7	9.0	0.3	4.1	24	6.3	8.6	7.3	0.2	2.3	24	5.7	6.5	6.0	0.0	0.8
4/16/97	24	5.3	8.1	6.3	0.2	2.8	24	8.3	10.7	9.2	0.2	2.4	24	6.9	8.6	7.6	0.1	1.7	24	6.0	6.7	6.2	0.0	0.7
4/17/97	24	4.4	7.9	5.9	0.3	3.5	24	8.0	12.7	9.8	0.3	4.7	24	6.6	9.2	7.6	0.2	2.6	24	5.9	7.0	6.4	0.1	1.1
4/18/97	24	4.5	6.2	5.5	0.1	1.7	24	8.5	9.4	8.9	0.1	0.9	24	6.7	7.5	7.2	0.1	0.8	24	6.5	6.7	6.6	0.0	0.2
4/19/97	24	5.3	6.2	5.8	0.1	0.9	24	8.5	9.4	9.0	0.1	0.9	24	7.2	7.8	7.5	0.1	0.6	24	6.7	7.0	6.8	0.0	0.3
4/20/97	24	4.4	6.1	5.3	0.1	1.7	24	8.5	10.5	9.3	0.1	2.0	24	6.7	7.8	7.3	0.1	1.1	24	5.6	7.3	6.2	0.1	1.7
4/21/97	24	3.7	7.0	5.2	0.2	3.3	24	7.7	10.8	9.2	0.2	3.1	24	6.1	8.1	7.0	0.2	2.0	24	5.6	5.9	5.7	0.0	0.3
4/22/97	24	4.8	6.1	5.5	0.1	1.3	24	8.6	9.6	9.0	0.1	1.0	24	7.0	7.8	7.4	0.1	0.8	24	5.6	6.2	6.0	0.0	0.6
4/23/97	24	4.8	6.7	5.7	0.1	1.9	24	8.3	9.6	8.8	0.1	1.3	24	7.0	8.0	7.4	0.1	1.0	24	5.9	6.2	6.1	0.0	0.3
4/24/97	24	4.7	6.7	5.6	0.1	2.0	24	8.2	9.9	9.0	0.1	1.7	24	6.7	8.0	7.3	0.1	1.3	24	5.7	6.0	5.9	0.0	0.3
4/25/97	24	4.5	8.4	6.2	0.3	3.9	24	8.0	11.7	9.7	0.3	3.7	24	6.6	9.5	7.9	0.2	2.9	24	5.7	6.2	5.9	0.0	0.5
4/26/97	24	5.2	8.4	6.8	0.2	3.2	24	8.9	12.2	10.5	0.2	3.3	24	7.5	10.1	8.7	0.2	2.6	24	6.3	7.1	6.7	0.1	0.8
4/27/97	24	5.2	7.0	6.0	0.1	1.8	24	9.3	10.7	9.8	0.1	1.4	24	7.7	8.7	8.2	0.1	1.0	24	6.3	6.7	6.5	0.0	0.4
4/28/97	24	5.0	6.6	5.6	0.1	1.6	24	8.8	9.9	9.2	0.1	1.1	24	7.5	8.3	7.8	0.1	0.8	24	5.9	6.3	6.1	0.0	0.4
4/29/97	24	5.2	7.3	6.1	0.2	2.1	24	8.6	10.5	9.4	0.1	1.9	24	7.4	8.7	7.9	0.1	1.3	24	5.9	6.5	6.3	0.1	0.6
4/30/97	24	4.7	6.6	5.5	0.1	1.9	24	8.5	10.5	9.2	0.1	2.0	24	7.0	8.4	7.6	0.1	1.4	24	6.0	6.5	6.3	0.0	0.5
5/1/97	24	4.4	6.9	5.5	0.2	2.5	24	8.2	11.6	9.6	0.2	3.4	24	6.7	8.7	7.5	0.1	2.0	24	5.9	6.2	6.0	0.0	0.3
5/2/97	24	3.9	7.2	5.6	0.2	3.3	24	8.0	11.1	9.5	0.2	3.1	24	6.4	8.9	7.6	0.2	2.5	24	5.7	6.7	6.3	0.1	1.0
5/3/97	24	5.5	7.2	6.3	0.1	1.7	24	8.9	10.5	9.6	0.1	1.6	24	7.5	8.7	8.0	0.1	1.2	24	6.5	6.8	6.7	0.0	0.3
5/4/97	24	5.3	7.8	6.4	0.2	2.5	24	8.8	10.8	9.7	0.1	2.0	24	7.5	9.1	8.1	0.1	1.6	24	6.7	7.0	6.8	0.0	0.3
5/5/97	24	5.6	7.9	6.7	0.2	2.3	24	9.3	11.4	10.1	0.1	2.1	24	7.7	9.5	8.5	0.1	1.8	24	6.8	7.6	7.2	0.1	0.8
5/6/97	24	5.8	7.6	6.6	0.1	1.8	24	9.3	11.0	10.1	0.1	1.7	24	8.0	9.4	8.6	0.1	1.4	24	6.8	7.4	7.1	0.0	0.6
5/7/97	24	4.7	9.3	6.8	0.3	4.6	24	8.6	13.4	10.8	0.3	4.8	24	7.5	11.2	9.0	0.3	3.7	24	6.7	7.6	7.2	0.1	0.9
5/8/97	24	4.8	10.0	7.3	0.4	5.2	24	9.3	14.1	11.6	0.3	4.8	24	7.8	12.0	9.7	0.3	4.2	24	7.4	8.4	7.9	0.1	1.0
5/9/97	24	5.5	10.6	7.8	0.4	5.1	24	10.2	14.7	12.1	0.3	4.5	24	8.4	12.8	10.3	0.3	4.4	24	7.4	8.4	8.0	0.1	1.0
5/10/97	24	5.5	10.7	7.9	0.4	5.2	24	10.5	15.3	12.7	0.3	4.8	24	8.7	13.3	10.7	0.3	4.6	24	7.0	8.4	7.7	0.1	1.4
5/11/97	24	5.6	10.7	7.9	0.4	5.1	24	11.0	15.6	13.1	0.3	4.6	24	9.2	13.9	11.3	0.3	4.7	24	8.0	9.9	9.0	0.1	1.9
5/12/97	24	5.8	10.4	7.9	0.3	4.6	24	11.4	15.5	13.3	0.3	4.1	24	9.7	13.9	11.5	0.3	4.2	24	8.4	9.4	8.9	0.1	1.0
5/13/97	24	5.9	10.3	7.9	0.3	4.4	24	11.7	16.0	13.6	0.3	4.3	24	9.8	14.0	11.7	0.3	4.2	24	7.7	8.7	8.3	0.1	1.0
5/14/97	24	6.2	10.4	8.0	0.3	4.2	24	12.2	15.6	13.7	0.2	3.4	24	10.1	14.2	11.9	0.3	4.1	24	8.2	9.0	8.6	0.1	0.8
5/15/97	24	6.4	9.5	7.7	0.2	3.1	24	12.2	14.5	13.2	0.2	2.3	24	10.3	12.6	11.3	0.1	2.3	24	8.0	8.4	8.1	0.0	0.4
5/16/97	24	5.9	10.6	8.0	0.3	4.7	24	11.6	16.0	13.5	0.3	4.4	24	9.8	14.5	11.9	0.3	4.7	24	8.5	9.0	8.8	0.0	0.5
5/17/97	24	5.9	10.0	7.7	0.3	4.1	24	11.7	15.8	13.4	0.3	4.1	24	10.1	14.5	12.0	0.3	4.4	24	8.2	8.7	8.5	0.0	0.5
5/18/97	24	5.2	10.0	7.5	0.3	4.8	24	11.1	15.6	13.1	0.3	4.5	24	9.5	14.3	11.8	0.3	4.8	24	8.7	9.6	9.1	0.1	0.9
5/19/97	24	5.6	10.4	7.8	0.3	4.8	24	11.3	15.5	13.0	0.3	4.2	24	9.8	14.3	11.8	0.3	4.5	24	8.2	9.9	9.2	0.1	1.7
5/20/97	24	5.8	7.3	6.5	0.1	1.5	24	10.7	12.7	11.7	0.1	2.0	24	9.8	11.5	10.5	0.1	1.7	24	7.0	8.4	7.9	0.1	1.4

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
5/21/97	24	5.2	9.5	7.1	0.3	4.3	22	10.0	14.2	11.9	0.3	4.2	24	9.1	13.3	10.9	0.3	4.2	24	8.2	9.4	8.9	0.1	1.2
5/22/97	24	5.5	9.5	7.5	0.3	4.0	24	10.3	13.9	12.0	0.2	3.6	24	9.4	12.9	11.0	0.2	3.5	24	8.0	9.1	8.7	0.1	1.1
5/23/97	24	6.7	8.4	7.5	0.1	1.7	24	11.0	12.5	11.5	0.1	1.5	24	9.8	11.2	10.5	0.1	1.4	24	8.0	8.8	8.4	0.1	0.8
5/24/97	24	6.1	8.3	7.3	0.2	2.2	24	10.5	13.0	11.5	0.2	2.5	24	9.5	12.0	10.7	0.2	2.5	24	8.5	8.8	8.6	0.0	0.3
5/25/97	24	6.7	7.2	6.9	0.0	0.5	24	10.3	11.1	10.7	0.0	0.8	24	9.7	10.3	10.0	0.0	0.6	24	7.9	10.8	8.4	0.1	2.9
5/26/97	24	6.6	10.7	8.5	0.3	4.1	24	10.0	14.7	12.1	0.3	4.7	24	9.2	14.2	11.5	0.4	5.0	24	8.4	9.3	8.8	0.1	0.9
5/27/97	24	7.3	9.3	8.2	0.1	2.0	24	11.4	14.2	12.3	0.2	2.8	24	10.3	13.1	11.5	0.2	2.8	24	8.7	10.1	9.3	0.1	1.4
5/28/97	24	7.0	8.7	7.9	0.1	1.7	24	11.4	12.5	12.0	0.1	1.1	24	10.5	11.7	11.1	0.1	1.2	24	8.5	9.7	9.1	0.1	1.2
5/29/97	24	7.3	9.8	8.4	0.2	2.5	24	11.3	14.4	12.6	0.2	3.1	24	10.3	13.3	11.5	0.2	3.0	24	7.7	9.7	9.0	0.1	2.0
5/30/97	24	7.2	8.7	7.9	0.1	1.5	24	11.7	13.3	12.3	0.1	1.6	24	10.8	12.2	11.3	0.1	1.4	24	8.2	10.4	9.6	0.1	2.2
5/31/97	24	7.3	8.9	7.9	0.1	1.6	24	11.6	12.8	12.2	0.1	1.2	24	10.8	11.5	11.1	0.1	0.7	24	8.4	10.1	9.4	0.1	1.7
6/1/97	24	6.6	7.9	7.2	0.1	1.3	24	11.1	12.8	11.8	0.1	1.7	24	10.1	11.1	10.5	0.1	1.0	24	7.6	8.7	8.2	0.1	1.1
6/2/97	24	6.2	10.4	8.3	0.3	4.2	24	10.7	15.3	12.9	0.3	4.6	24	9.5	13.4	11.3	0.3	3.9	24	8.0	9.7	8.9	0.1	1.7
6/3/97	24	7.2	8.7	7.9	0.1	1.5	24	11.9	13.3	12.5	0.1	1.4	24	10.3	11.5	10.9	0.1	1.2	24	8.2	9.7	8.9	0.1	1.5
6/4/97	24	7.0	8.7	7.8	0.1	1.7	24	11.4	13.1	12.0	0.1	1.7	24	10.0	11.5	10.6	0.1	1.5	24	8.4	9.4	8.9	0.1	1.0
6/5/97	24	6.7	10.1	8.2	0.2	3.4	24	11.1	13.9	12.3	0.2	2.8	24	9.8	12.8	11.1	0.2	3.0	24	8.5	9.3	8.9	0.0	0.8
6/6/97	24	6.4	11.0	8.7	0.3	4.6	24	10.7	15.3	12.8	0.3	4.6	24	9.4	13.7	11.3	0.3	4.3	24	8.2	9.7	9.2	0.1	1.5
6/7/97	24	7.5	10.7	8.9	0.2	3.2	24	11.6	14.2	12.8	0.2	2.6	24	10.1	12.5	11.2	0.2	2.4	24	9.7	9.9	9.8	0.0	0.2
6/8/97	24	6.9	11.5	9.1	0.3	4.6	24	11.1	16.1	13.3	0.3	5.0	24	9.5	14.3	11.7	0.4	4.8	24	9.0	10.5	9.7	0.1	1.5
6/9/97	24	7.2	12.1	9.6	0.4	4.9	24	11.6	16.9	13.9	0.4	5.3	24	10.0	15.3	12.4	0.4	5.3	24	8.0	9.9	8.9	0.1	1.9
6/10/97	24	7.9	11.7	9.8	0.3	3.8	24	12.4	16.4	14.1	0.3	4.0	24	10.8	14.8	12.6	0.3	4.0	24	7.4	10.8	9.2	0.2	3.4
6/11/97	24	7.8	9.6	8.7	0.1	1.8	24	12.5	14.5	13.3	0.1	2.0	24	10.9	12.5	11.7	0.1	1.6	24	8.0	10.2	9.3	0.1	2.2
6/12/97	24	7.6	10.0	8.6	0.2	2.4	24	11.9	14.7	12.9	0.2	2.8	24	10.5	13.4	11.6	0.2	2.9	24	8.2	9.7	9.1	0.1	1.5
6/13/97	24	7.2	11.7	9.3	0.3	4.5	24	11.6	16.0	13.3	0.3	4.4	24	10.3	14.3	12.0	0.3	4.0	24	8.8	9.6	9.2	0.0	0.8
6/14/97	24	8.1	12.9	10.3	0.4	4.8	24	12.1	16.4	13.8	0.3	4.3	24	10.9	15.3	12.6	0.3	4.4	24	7.7	11.1	8.2	0.2	3.4
6/15/97	24	8.4	12.9	10.6	0.3	4.5	24	12.7	16.9	14.2	0.3	4.2	24	11.2	15.9	13.1	0.3	4.7	24	8.2	9.6	8.8	0.1	1.4
6/16/97	24	9.0	11.0	10.0	0.1	2.0	24	13.0	15.0	13.9	0.1	2.0	24	11.7	14.0	12.7	0.2	2.3	24	7.7	10.1	8.9	0.2	2.4
6/17/97	24	8.7	10.4	9.4	0.1	1.7	24	12.7	14.2	13.4	0.1	1.5	24	11.2	13.1	12.1	0.1	1.9	24	8.4	9.7	9.2	0.1	1.3
6/18/97	24	8.3	10.7	9.3	0.2	2.4	24	12.1	13.9	13.0	0.1	1.8	24	11.1	12.9	11.9	0.1	1.8	24	8.8	15.6	9.9	0.3	6.8
6/19/97	23	7.2	10.3	8.5	0.2	3.1	24	11.3	14.2	12.5	0.2	2.9	24	10.1	12.8	11.4	0.2	2.7	23	9.6	10.5	9.9	0.1	0.9
6/20/97	24	7.3	12.1	9.5	0.4	4.8	24	11.0	16.0	13.1	0.4	5.0	24	10.0	15.4	12.3	0.4	5.4	24	8.8	11.3	10.1	0.1	2.5
6/21/97	24	7.8	9.2	8.6	0.1	1.4	24	11.4	12.8	12.3	0.1	1.4	24	10.6	12.3	11.4	0.1	1.7	24	9.4	12.5	9.9	0.1	3.1
6/22/97	24	7.3	8.9	8.0	0.1	1.6	24	11.1	12.4	11.6	0.1	1.3	24	10.3	11.5	10.9	0.1	1.2	24	8.5	10.7	9.1	0.1	2.2
6/23/97	24	7.5	9.8	8.4	0.2	2.3	24	11.0	12.7	11.8	0.1	1.7	24	10.3	11.9	11.1	0.1	1.6	24	8.8	10.5	9.4	0.1	1.7
6/24/97	24	7.3	12.1	9.5	0.4	4.8	24	10.7	15.6	12.8	0.4	4.9	24	10.1	13.9	11.9	0.3	3.8	24	9.3	11.3	10.2	0.1	2.0
6/25/97	24	7.9	11.7	9.7	0.3	3.8	24	11.6	15.0	13.1	0.2	3.4	24	10.8	14.5	12.3	0.3	3.7	24	8.0	10.1	9.2	0.1	2.1
6/26/97	24	8.1	11.2	9.5	0.2	3.1	24	11.7	14.2	12.7	0.2	2.5	24	10.9	13.3	11.9	0.2	2.4	24	8.2	11.6	9.5	0.2	3.4
6/27/97	24	7.6	12.1	9.6	0.3	4.5	24	11.1	15.2	12.8	0.3	4.1	24	10.1	14.2	12.1	0.3	4.1	24	8.8	10.8	10.0	0.1	2.0
6/28/97	24	7.9	10.6	9.2	0.2	2.7	24	11.4	13.8	12.5	0.2	2.4	24	10.5	13.1	11.6	0.2	2.6	24	9.0	10.2	9.3	0.1	1.2
6/29/97	24	8.6	11.8	9.8	0.2	3.2	24	11.7	15.8	13.2	0.3	4.1	24	10.9	14.5	12.4	0.3	3.6	24	8.8	9.4	9.0	0.0	0.6
6/30/97	24	7.9	9.6	8.8	0.1	1.7	24	11.7	13.8	12.5	0.1	2.1	24	10.8	12.5	11.6	0.1	1.7	24	8.8	11.6	10.3	0.2	2.8
7/1/97	24	8.3	10.4	9.1	0.1	2.1	24	11.7	13.4	12.4	0.1	1.7	24	10.8	12.5	11.5	0.1	1.7	24	8.8	13.0	10.0	0.2	4.2
7/2/97	24	7.6	12.8	9.9	0.4	5.2	24	10.8	16.3	13.3	0.4	5.5	24	10.0	15.9	12.6	0.4	5.9	24	9.1	15.0	10.3	0.2	5.9
7/3/97	24	8.3	13.2	10.6	0.4	4.9	24	11.9	17.1	14.3	0.4	5.2	24	11.1	16.4	13.6	0.4	5.3	24	8.8	12.2	9.9	0.2	3.4
7/4/97	24	9.2	14.1	11.4	0.4	4.9	24	12.8	17.9	15.1	0.4	5.1	24	11.9	14.5	13.2	0.2	2.6	24	9.6	11.8	9.8	0.1	2.2
7/5/97	24	10.1	12.4	11.1	0.2	2.3	24	13.8	16.9	14.8	0.2	3.1	24	12.6	14.8	13.6	0.1	2.2	24	9.6	11.0	10.2	0.1	1.4
7/6/97	24	9.6	13.1	10.9	0.3	3.5	24	13.3	16.1	14.4	0.2	2.8	24	12.5	15.1	13.5	0.2	2.6	24	10.1	12.8	10.9	0.1	2.7
7/7/97	24	8.9	13.1	10.7	0.3	4.2	24	12.5	16.6	14.3	0.3	4.1	24	11.4	16.1	13.6	0.3	4.7	24	9.0	15.8	10.4	0.3	6.8
7/8/97	24	9.6	10.4	10.0	0.0	0.8	24	13.1	13.8	13.4	0.0	0.7	24	12.0	13.3	12.4	0.1	1.3	24	9.1	10.7	9.9	0.1	1.6
7/9/97	24	9.3	11.7	10.4	0.1	2.4	24	12.4	13.9	13.1	0.1	1.5	24	11.7	13.1	12.3	0.1	1.4	24	9.0	10.1	9.5	0.1	1.1
7/10/97	24	8.6	10.3	9.2	0.1	1.7	24	11.9	13.0	12.4	0.1	1.1	24	11.2	12.5	11.7	0.1	1.3	24	9.9	12.4	10.5	0.1	2.5
7/11/97	24	8.4	11.4	9.7	0.2	3.0	24	11.4	15.2	13.0	0.3	3.8	24	11.4	13.9	12.5	0.2	2.5	24	9.4	15.2	10.4	0.2	5.8
7/12/97	24	8.4	12.9	10.4	0.3	4.5	24	11.9	16.3	13.8	0.3	4.4	24	11.4	14.3	12.8	0.2	2.9	24	9.0	11.4	9.6	0.1	2.4
7/13/97	24	9.0	13.8	11.3	0.4	4.8	24	12.4	17.1	14.4	0.3	4.7	24	11.5	15.6	13.5	0.3	4.1	24	9.1	17.7	10.2	0.4	8.6
7/14/97	24	9.8	13.8	11.5	0.3	4.0	24	13.0	17.1	14.7	0.3	4.1	24	12.0	16.2	13.8	0.3	4.2	24	8.8	18.0	10.9	0.4	9.2
7/15/97	24	10.0	14.1	11.7	0.3	4.1	24	13.3	16.8	14.5	0.2	3.5	24	12.3	15.4	13.4	0.2	3.1	24	9.3	11.8	10.2	0.1	2.5
7/16/97	24	9.5	14.1	11.6	0.3	4.6	24	12.8	17.6	14.8	0.3	4.8	24	11.5	16.6	13.8	0.4	5.1	24	9.1	13.9	10.1	0.2	4.8
7/17/97	24	10.1	13.5	11.6	0.2	3.4	24	13.4	16.0	14.3	0.2	2.6	24	12.2	14.5	13.2	0.2	2.3	24	8.8	10.8	9.5	0.1	2.0
7/18/97	24	9.8	14.3	11.8	0.3	4.5	24	13.0	17.2	14.6	0.3	4.2	24	12.0	16.2	13.9	0.3	4.2	24	9.7	10.8	10.2	0.1	1.1
7/19/97	24	9.8	14.8	12.1	0.4	5.0	24	13.0	18.0	15.2	0.4	5.0	24	12.0	16.4	14.1	0.3	4.4	24	9.4	10.8	10.1	0.1	1.4
7/20/97	24	10.4	15.6	12.7	0.4	5.2	24	13.8	18.7	15.9	0.3	4.9	24	12.8	17.4	15.0	0.3	4.6	24	9.4	12.7	10.2	0.2	3.3
7/21/97	24	10.7	12.8	11.8	0.1	2.1	24	13.6	15.8	14.6	0.1	2.2	24	12.9	14.8	13.7	0.1	1.9	24	9.1	11.3	9.9	0.1	2.2
7/22/97	24	9.6	13.7	11.2	0.3	4.1	24	13.0	16.8	14.5	0.3	3.8	24	11.9	15.9	13.5	0.3	4.0	24	9.3	15.3	10.1	0.3	6.0
7/23/97	24	9.2	14.3	11.5	0.4	5.1	24	12.7	17.4	14.8	0.3	4.7	24	11.9	16.1	13.9	0.3	4.2	24	10.8	13.3	11.4	0.1	2.5
7/24/97	24	9.5	14.3	11.8	0.3	4.8	24	13.3	17.6	15.0	0.3	4.3	24	12.3	15.6	14.0	0.2	3.3	24	9.3	15.8	10.6	0.2	6.5
7/25/97	24	9.6	14.1	11.6	0.3	4.5	24	13.3	17.4	14.8	0.3	4.1	24	12.5	15.6	13.9	0.2	3.1	24	9.3	11.4	10.4	0.1	2.1
7/26/97	24	9.5	14.3	11.7	0.3	4.8	24	12.8	17.6	14.9	0.3	4.8	24	12.3	16.1	14.2	0.2	3.8	24	9.9	14.5	10.9	0.2	4.6
7/27/97	24	9.8	14.6	12.1	0.4	4.8	24	13.3	18.0	15.4	0.3	4.7	24	12.5	16.6	14.4	0.3	4.1	24	9.6	14.2	10.3	0.2	4.6
7/28/97	24	10.3	14.9	12.5	0.3	4.6	24	13.8	18.4	15.4	0.3	4.6	24	12.8	16.6	14.6	0.3	3.8	24	9.4	14.8	10.3	0.2	5.4

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
7/29/97	24	10.9	14.8	12.7	0.3	3.9	24	13.4	17.7	15.1	0.3	4.3	24	13.1	15.8	14.3	0.2	2.7	24	10.1	11.1	10.8	0.1	1.0
7/30/97	24	10.7	14.3	12.4	0.3	3.6	24	13.4	17.7	15.1	0.3	4.3	24	13.1	17.0	14.8	0.3	3.9	24	10.7	17.4	12.0	0.4	6.7
7/31/97	24	10.1	14.1	12.0	0.3	4.0	24	13.1	17.7	15.1	0.3	4.6	24	12.6	17.0	14.7	0.3	4.4	24	10.7	14.1	11.4	0.2	3.4
8/1/97	24	10.0	14.3	12.1	0.3	4.3	24	13.3	17.9	15.3	0.3	4.6	24	12.6	17.4	14.8	0.3	4.8	24	11.1	11.6	11.3	0.0	0.5
8/2/97	24	10.4	14.1	12.2	0.3	3.7	24	13.6	18.0	15.5	0.3	4.4	24	12.8	16.2	14.6	0.2	3.4	24	10.8	11.1	10.9	0.0	0.3
8/3/97	24	10.6	14.6	12.5	0.3	4.0	24	13.8	18.5	15.8	0.3	4.7	24	13.1	17.2	15.2	0.3	4.1	24	10.7	14.2	11.9	0.2	3.5
8/4/97	24	10.9	15.1	12.9	0.3	4.2	24	14.2	18.7	16.0	0.3	4.5	24	13.6	17.7	15.3	0.3	4.1	24	10.5	20.3	11.8	0.4	9.8
8/5/97	24	11.0	15.1	13.0	0.3	4.1	24	14.2	18.8	16.2	0.3	4.6	24	13.3	17.7	15.4	0.3	4.4	24	10.4	19.0	11.8	0.4	8.6
8/6/97	24	11.7	15.4	13.4	0.3	3.7	24	14.7	18.8	16.3	0.3	4.1	24	13.7	19.0	15.7	0.3	5.3	24	10.2	14.4	10.6	0.2	4.2
8/7/97	24	11.2	14.6	12.9	0.2	3.4	24	14.2	18.0	15.8	0.3	3.8	24	13.3	17.8	15.2	0.3	4.5	24	10.8	12.1	11.2	0.1	1.3
8/8/97	24	10.4	14.0	12.0	0.2	3.6	24	13.8	17.6	15.1	0.3	3.8	24	13.3	16.6	14.8	0.2	3.3	24	11.1	13.6	11.5	0.1	2.5
8/9/97	24	10.0	14.0	11.9	0.3	4.0	24	13.3	17.9	15.2	0.3	4.6	24	13.1	15.8	14.4	0.2	2.7	24	11.4	16.6	12.7	0.3	5.2
8/10/97	24	9.8	13.8	11.8	0.3	4.0	24	13.4	18.0	15.4	0.3	4.6	24	12.6	16.4	14.3	0.2	3.8	24	11.6	11.9	11.8	0.0	0.3
8/11/97	24	10.1	14.5	12.1	0.3	4.4	24	13.6	18.4	15.6	0.3	4.8	24	13.3	17.0	15.1	0.3	3.7	24	11.4	16.7	12.6	0.3	5.3
8/12/97	24	10.4	14.6	12.4	0.3	4.2	24	13.8	18.4	15.8	0.3	4.6	24	13.1	18.0	15.3	0.3	4.9	24	10.2	21.4	12.4	0.6	11.2
8/13/97	24	10.9	14.5	12.6	0.3	3.6	24	14.1	17.7	15.7	0.3	3.6	24	13.3	16.9	15.0	0.2	3.6	24	10.1	11.6	10.6	0.1	1.5
8/14/97	24	10.6	15.1	12.8	0.3	4.5	24	13.9	18.5	15.8	0.3	4.6	24	12.9	17.2	15.0	0.3	4.3	24	11.3	19.0	12.0	0.3	7.7
8/15/97	24	11.2	13.2	12.0	0.1	2.0	24	13.9	16.3	14.8	0.1	2.4	24	13.9	15.8	14.7	0.1	1.9	24	11.3	16.4	11.8	0.2	5.1
8/16/97	24	9.8	13.8	11.7	0.3	4.0	24	13.1	17.9	15.1	0.3	4.8	24	12.9	17.2	15.0	0.3	4.3	24	10.5	16.7	11.5	0.3	6.2
8/17/97	24	10.1	14.6	12.2	0.3	4.5	24	13.6	18.2	15.6	0.3	4.6	24	13.3	18.0	15.4	0.3	4.7	24	10.5	10.5	10.5	0.0	0.0
8/18/97	24	11.0	13.7	12.1	0.2	2.7	24	13.6	16.0	14.8	0.1	2.4	24	13.7	15.3	14.5	0.1	1.6	24	10.5	19.5	11.9	0.4	9.0
8/19/97	24	10.6	14.1	12.1	0.3	3.5	24	13.1	17.4	14.8	0.3	4.3	24	12.6	16.4	14.4	0.3	3.8	24	10.7	12.8	11.2	0.1	2.1
8/20/97	24	10.1	11.4	10.6	0.1	1.3	24	13.1	13.9	13.6	0.0	0.8	24	12.3	13.9	12.8	0.1	1.6	24	9.9	14.7	10.6	0.2	4.8
8/21/97	24	9.8	13.2	11.3	0.3	3.4	24	12.8	16.4	14.2	0.3	3.6	24	11.9	15.8	13.7	0.3	3.9	24	10.2	16.1	11.2	0.3	5.9
8/22/97	24	9.8	13.8	11.7	0.3	4.0	24	12.8	17.2	14.6	0.3	4.4	24	12.2	17.2	14.3	0.3	5.0	24	10.8	11.8	11.5	0.1	1.0
8/23/97	24	10.3	13.4	11.7	0.2	3.1	24	13.1	15.6	14.3	0.2	2.5	24	12.5	15.4	14.0	0.2	2.9	24	11.4	11.6	11.6	0.0	0.2
8/24/97	24	10.3	11.5	10.9	0.1	1.2	24	13.1	14.4	13.6	0.1	1.3	24	12.6	14.0	13.2	0.1	1.4	24	11.6	15.3	12.4	0.2	3.7
8/25/97	24	10.0	12.1	10.9	0.2	2.1	24	12.7	15.2	13.6	0.2	2.5	24	12.3	15.0	13.5	0.2	2.7	24	10.2	13.6	11.7	0.2	3.4
8/26/97	24	10.1	10.9	10.5	0.1	0.8	24	12.7	13.8	13.2	0.1	1.1	24	12.5	13.3	12.9	0.1	0.8	24	10.4	12.2	10.8	0.1	1.8
8/27/97	24	9.8	11.8	10.7	0.1	2.0	24	12.4	14.1	13.0	0.1	1.7	24	12.0	13.7	12.7	0.1	1.7	24	10.7	14.1	11.4	0.1	3.4
8/28/97	24	9.6	11.7	10.5	0.1	2.1	24	12.4	13.6	12.9	0.1	1.2	24	12.0	13.4	12.7	0.1	1.4	24	10.7	12.5	10.9	0.1	1.8
8/29/97	24	9.8	13.4	11.2	0.3	3.6	24	12.4	15.3	13.3	0.2	2.9	24	12.0	15.4	13.4	0.2	3.4	24	11.1	14.8	12.2	0.2	3.7
8/30/97	24	9.0	13.2	10.9	0.3	4.2	24	11.9	16.0	13.5	0.3	4.1	24	12.0	14.7	13.4	0.2	2.7	24	10.5	15.0	11.7	0.2	4.5
8/31/97	24	9.2	13.1	11.0	0.3	3.9	24	12.1	16.0	13.7	0.3	3.9	24	12.6	15.8	14.0	0.2	3.2	24	11.0	17.1	12.0	0.3	6.1
9/1/97	24	9.6	14.0	11.6	0.3	4.4	24	12.7	16.4	14.2	0.3	3.7	24	12.9	15.9	14.4	0.2	3.0	24	11.4	19.0	12.7	0.4	7.6
9/2/97	24	10.3	14.1	11.9	0.3	3.8	24	12.8	16.8	14.3	0.3	4.0	24	13.3	16.2	14.6	0.2	2.9	24	12.1	13.5	12.5	0.1	1.4
9/3/97	24	10.3	13.4	11.6	0.2	3.1	24	13.0	16.0	14.1	0.2	3.0	24	13.1	15.4	14.2	0.2	2.3	24	11.8	17.2	12.7	0.2	5.4
9/4/97	24	9.6	13.5	11.4	0.3	3.9	24	13.0	16.4	14.3	0.3	3.4	24	12.8	15.3	13.9	0.2	2.5	24	11.6	18.8	12.7	0.3	7.2
9/5/97	24	9.5	12.8	10.9	0.2	3.3	24	12.7	14.8	13.5	0.2	2.1	24	12.5	14.3	13.3	0.1	1.8	24	11.9	17.5	12.8	0.2	5.6
9/6/97	24	8.4	12.1	10.2	0.3	3.7	24	11.7	15.3	13.3	0.2	3.6	24	11.5	14.7	13.1	0.2	3.2	24	12.7	13.0	12.8	0.0	0.3
9/7/97	24	8.4	12.4	10.4	0.3	4.0	24	11.7	15.8	13.4	0.3	4.1	24	11.9	15.0	13.4	0.2	3.1	24	12.1	18.2	13.2	0.3	6.1
9/8/97	24	8.7	12.6	10.6	0.3	3.9	24	12.2	16.0	13.7	0.3	3.8	24	12.2	15.6	13.8	0.2	3.4	24	11.0	13.8	11.6	0.1	2.8
9/9/97	24	9.0	12.3	10.7	0.2	3.3	24	12.4	15.3	13.7	0.2	2.9	24	12.5	15.3	13.8	0.2	2.8	24	10.8	12.8	11.4	0.2	2.0
9/10/97	24	10.0	13.2	11.2	0.2	3.2	24	12.8	13.8	13.2	0.1	1.0	24	12.8	13.9	13.2	0.1	1.1	24	12.8	13.5	13.2	0.1	0.7
9/11/97	24	10.0	12.0	10.8	0.1	2.0	24	12.2	13.4	12.9	0.1	1.2	24	12.2	13.6	12.8	0.1	1.4	24	12.7	15.0	13.2	0.1	2.3
9/12/97	24	9.2	10.9	9.9	0.1	1.7	24	11.9	13.4	12.5	0.1	1.5	24	11.9	13.3	12.5	0.1	1.4	24	12.5	15.2	13.2	0.1	2.7
9/13/97	24	8.3	10.4	9.4	0.2	2.1	24	11.1	13.0	12.2	0.1	1.9	24	11.5	13.3	12.4	0.1	1.8	24	13.0	15.3	13.4	0.1	2.3
9/14/97	24	9.0	11.4	10.0	0.2	2.4	24	11.7	13.4	12.5	0.1	1.7	24	12.2	13.9	12.8	0.1	1.7	24	11.9	14.2	13.0	0.1	2.3
9/15/97	24	9.2	9.8	9.4	0.0	0.6	24	11.9	12.4	12.1	0.0	0.5	24	12.0	12.5	12.3	0.0	0.5	24	12.4	13.8	13.1	0.1	1.4
9/16/97	24	9.0	10.3	9.5	0.1	1.3	24	11.9	12.1	12.0	0.0	0.2	24	11.7	12.0	11.9	0.0	0.3	24	12.2	13.1	12.6	0.1	0.9
9/17/97	24	9.6	10.6	10.3	0.1	1.0	24	11.6	12.8	12.1	0.1	1.2	24	11.4	11.9	11.7	0.0	0.5	24	12.1	13.0	12.4	0.0	0.9
9/18/97	24	9.3	11.8	10.3	0.2	2.5	24	11.6	12.8	12.1	0.1	1.2	24	10.9	12.8	11.8	0.1	1.9	24	11.6	13.0	12.4	0.1	1.4
9/19/97	24	8.4	11.2	9.7	0.2	2.8	24	11.0	14.1	12.3	0.2	3.1	24	10.5	12.3	11.3	0.1	1.8	24	11.9	13.3	12.6	0.1	1.4
9/20/97	24	8.3	11.2	9.6	0.2	2.9	24	11.0	14.2	12.3	0.2	3.2	24	10.8	12.6	11.6	0.1	1.8	24	11.6	12.8	12.2	0.1	1.2
9/21/97	24	8.3	11.4	9.7	0.2	3.1	24	11.1	14.4	12.4	0.2	3.3	24	10.9	12.8	11.9	0.1	1.9	24	11.4	12.1	11.8	0.0	0.7
9/22/97	24	8.6	11.4	10.0	0.2	2.8	24	11.3	14.5	12.6	0.2	3.2	24	11.2	13.1	12.2	0.1	1.9	24	11.3	13.1	11.8	0.1	1.8
9/23/97	24	8.9	11.7	10.2	0.2	2.8	24	11.6	14.8	12.9	0.2	3.2	24	11.4	13.3	12.4	0.1	1.9	24	10.8	13.5	12.0	0.2	2.7
9/24/97	24	9.3	11.8	10.6	0.2	2.5	24	11.7	15.2	13.1	0.2	3.5	24	11.7	13.6	12.7	0.1	1.9	24	10.1	12.5	11.1	0.2	2.4
9/25/97	24	9.6	11.4	10.5	0.1	1.8	24	12.1	13.9	12.9	0.1	1.8	24	12.0	13.3	12.6	0.1	1.3	24	10.1	12.4	11.3	0.2	2.3
9/26/97	24	9.8	10.7	10.3	0.1	0.9	24	12.1	12.8	12.4	0.1	0.7	24	11.7	12.5	12.2	0.0	0.8	24	12.2	12.7	12.4	0.0	0.5
9/27/97	24	9.3	10.3	9.8	0.1	1.0	24	11.4	12.4	11.9	0.1	1.0	24	11.2	12.0	11.6	0.1	0.8	24	11.8	12.2	12.0	0.0	0.4
9/28/97	24	9.2	10.9	10.0	0.1	1.7	24	11.1	13.9	12.2	0.2	2.8	24	10.8	12.3	11.6	0.1	1.5	24	11.6	12.2	11.9	0.0	0.6
9/29/97	24	9.3	11.0	10.2	0.1	1.7	24	11.3	14.2	12.4	0.2	2.9	24	11.1	12.8	11.9	0.1	1.7	24	12.2	14.7	13.5	0.2	2.5
9/30/97	24	9.6	10.3	9.9	0.0	0.7	24	11.7	12.2	11.9	0.0	0.5	24	11.4	11.9	11.7	0.0	0.5	24	12.5	13.8	13.2	0.1	1.3
10/1/97	24	9.5	10.0	9.8	0.0	0.5	24	11.3	12.1	11.6	0.1	0.8	24	10.9	11.9	11.5	0.1	1.0	24	12.2	14.5	13.9	0.2	2.3
10/2/97	24	9.0	10.1	9.4	0.1	1.1	24	11.0	12.2	11.4	0.1	1.2	24	10.6	11.4	11.0	0.1	0.8	24	12.2	14.5	13.9	0.1	2.3
10/3/97	24	8.9	10.1	9.4	0.1	1.2	24	11.3	11.9	11.5	0.0	0.6	24	10.6	10.9	10.7	0.0	0.3	24	10.8	14.5	13.0	0.3	3.7
10/4/97	24	9.0	9.6	9.3	0.0	0.6	24	11.1	11.7	11.4	0.0	0.6	24	9.8	10.6	10.3	0.0	0.8	24	9.9	10.8	10.4	0.1	0.9
10/5/97	24	7.8	9.0	8.5	0.1	1.2	24	10.8	12.5	11.3	0.1	1.7	24	9.4	10.1	9.7	0.0	0.7	24	9.4	13.8	11.0	0.4	4.4

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
10/6/97	24	7.2	8.3	7.7	0.1	1.1	24	10.2	13.8	11.9	0.3	3.6	24	9.1	13.1	10.7	0.4	4.0	24	13.5	13.9	13.8	0.0	0.4
10/7/97	24	7.0	7.6	7.4	0.0	0.6	24	13.4	13.8	13.7	0.0	0.4	24	12.9	13.4	13.2	0.0	0.5	24	13.5	13.8	13.7	0.0	0.3
10/8/97	24	7.2	7.5	7.3	0.0	0.3	24	11.6	13.6	13.2	0.1	2.0	24	10.3	13.3	12.7	0.2	3.0	24	13.0	13.6	13.5	0.0	0.6
10/9/97	24	7.0	7.3	7.2	0.0	0.3	24	10.8	13.4	12.5	0.2	2.6	24	9.8	13.3	12.0	0.3	3.5	24	12.5	13.5	13.1	0.1	1.0
10/10/97	24	6.9	7.5	7.2	0.0	0.6	24	10.5	11.0	10.7	0.0	0.5	24	9.4	9.7	9.5	0.0	0.3	24	12.2	13.0	12.6	0.0	0.8
10/11/97	24	6.9	7.8	7.3	0.1	0.9	24	10.2	11.4	10.5	0.1	1.2	24	9.2	9.8	9.5	0.0	0.6	24	12.1	12.7	12.4	0.0	0.6
10/12/97	24	7.0	7.5	7.2	0.0	0.5	24	10.2	10.5	10.3	0.0	0.3	24	9.2	9.7	9.5	0.0	0.5	24	10.8	12.2	12.0	0.1	1.4
10/13/97	24	7.5	8.9	8.0	0.1	1.4	24	10.2	11.7	10.7	0.1	1.5	24	9.5	10.3	9.8	0.1	0.8	24	10.2	12.4	11.7	0.2	2.2
10/14/97	24	6.7	8.9	7.8	0.2	2.2	24	9.6	11.6	10.4	0.1	2.0	24	9.1	10.3	9.6	0.1	1.2	24	10.1	12.5	11.8	0.2	2.4
10/15/97	24	7.2	9.3	8.2	0.2	2.1	24	9.9	11.9	10.6	0.1	2.0	24	9.5	10.9	10.1	0.1	1.4	24	10.4	12.8	12.3	0.1	2.4
10/16/97	24	7.0	9.2	8.1	0.1	2.2	24	9.7	11.7	10.5	0.1	2.0	24	9.7	10.8	10.2	0.1	1.1	24	11.1	12.8	12.2	0.1	1.7
10/17/97	24	7.9	8.9	8.3	0.1	1.0	24	10.0	11.1	10.6	0.1	1.1	24	10.1	10.9	10.5	0.1	0.8	24	10.5	12.4	11.8	0.1	1.9
10/18/97	24	7.3	8.4	7.9	0.1	1.1	24	9.3	11.1	10.1	0.1	1.8	24	9.5	10.8	10.1	0.1	1.3	24	9.9	12.4	11.1	0.2	2.5
10/19/97	24	6.7	8.1	7.4	0.1	1.4	24	9.1	11.0	9.8	0.1	1.9	24	9.5	10.5	9.9	0.1	1.0	24	9.4	12.2	10.9	0.3	2.8
10/20/97	24	6.2	7.5	6.9	0.1	1.3	24	8.5	10.5	9.3	0.1	2.0	24	9.2	10.3	9.7	0.1	1.1	24	10.1	12.2	11.6	0.1	2.1
10/21/97	24	5.9	7.2	6.6	0.1	1.3	24	8.2	10.3	9.1	0.1	2.1	24	8.9	10.1	9.6	0.1	1.2	24	11.1	12.2	11.7	0.1	1.1
10/22/97	24	6.6	7.2	6.8	0.0	0.6	24	8.9	9.4	9.2	0.0	0.5	24	9.5	10.1	9.8	0.0	0.6	24	10.2	11.8	11.3	0.1	1.6
10/23/97	24	6.9	7.5	7.2	0.0	0.6	24	8.8	9.7	9.1	0.1	0.9	24	9.7	10.3	9.8	0.0	0.6	24	10.4	11.3	10.9	0.0	0.9
10/24/97	24	6.1	6.9	6.5	0.1	0.8	24	8.2	9.7	8.8	0.1	1.5	24	9.1	10.1	9.5	0.1	1.0	24	10.7	11.1	10.9	0.0	0.4
10/25/97	24	5.6	6.6	6.1	0.1	1.0	24	7.9	9.9	8.7	0.1	2.0	24	8.9	10.1	9.5	0.1	1.2	24	10.7	11.3	11.0	0.0	0.6
10/26/97	24	5.8	6.6	6.2	0.1	0.8	24	8.3	9.3	8.8	0.1	1.0	24	9.2	10.0	9.7	0.1	0.8	24	10.7	11.1	10.9	0.0	0.4
10/27/97	23	6.6	8.3	7.0	0.1	1.7	23	8.8	10.5	9.3	0.1	1.7	23	9.5	10.6	10.0	0.1	1.1	23	10.4	11.0	10.7	0.0	0.6
10/28/97	24	6.2	7.2	6.7	0.1	1.0	24	8.8	9.3	9.1	0.0	0.5	24	9.5	10.0	9.8	0.0	0.5	24	10.1	10.7	10.5	0.0	0.6
10/29/97	24	7.0	7.9	7.5	0.1	0.9	24	9.3	10.2	9.7	0.1	0.9	24	9.2	9.7	9.4	0.0	0.5	24	10.2	10.7	10.4	0.0	0.5
10/30/97	24	7.6	8.9	8.3	0.1	1.3	24	9.9	10.8	10.3	0.1	0.9	24	8.9	9.7	9.4	0.1	0.8	24	9.6	10.5	10.1	0.1	0.9
10/31/97	24	7.3	7.8	7.5	0.0	0.5	24	9.7	10.7	10.1	0.1	1.0	24	8.7	9.1	8.9	0.0	0.4	24	9.4	10.1	9.8	0.0	0.7
11/1/97	24	6.6	7.5	7.0	0.1	0.9	24	9.1	10.3	9.7	0.1	1.2	24	8.4	8.7	8.6	0.0	0.3	24	9.3	10.2	9.8	0.1	0.9
11/2/97	24	5.8	7.5	6.7	0.1	1.7	24	8.8	10.0	9.3	0.1	1.2	24	8.1	9.1	8.5	0.1	1.0	24	9.0	10.4	9.9	0.1	1.4
11/3/97	24	6.2	7.6	7.0	0.1	1.4	24	8.8	9.6	9.3	0.1	0.8	24	8.4	9.2	8.9	0.1	0.8	24	9.3	10.2	9.8	0.0	0.9
11/4/97	24	7.5	8.4	7.9	0.1	0.9	24	9.4	10.5	9.8	0.1	1.1	24	9.2	9.8	9.4	0.0	0.6	24	9.6	9.9	9.8	0.0	0.3
11/5/97	24	7.5	8.7	8.0	0.1	1.2	24	9.6	11.1	10.1	0.1	1.5	24	9.2	10.1	9.7	0.1	0.9	24	9.7	10.2	10.0	0.0	0.5
11/6/97	24	7.9	8.6	8.2	0.0	0.7	24	10.0	10.3	10.1	0.0	0.3	24	9.7	10.1	9.8	0.0	0.4	24	9.9	10.1	9.9	0.0	0.2
11/7/97	24	7.5	8.4	7.9	0.1	0.9	24	9.6	10.0	9.8	0.0	0.4	24	9.4	9.8	9.7	0.0	0.4	24	9.3	9.9	9.7	0.0	0.6
11/8/97	24	6.4	7.8	7.2	0.1	1.4	24	8.8	10.2	9.4	0.1	1.4	24	8.9	9.5	9.2	0.0	0.6	24	9.3	9.7	9.5	0.0	0.4
11/9/97	24	5.8	7.3	6.4	0.1	1.5	24	8.3	9.7	8.8	0.1	1.4	24	8.4	8.9	8.7	0.0	0.5	24	9.6	9.9	9.7	0.0	0.3
11/10/97	24	5.3	6.9	6.0	0.1	1.6	24	8.0	9.4	8.5	0.1	1.4	24	8.3	8.9	8.6	0.0	0.6	24	9.6	9.7	9.7	0.0	0.1
11/11/97	24	5.0	6.2	5.6	0.1	1.2	24	7.7	8.9	8.1	0.1	1.2	24	8.0	8.7	8.4	0.0	0.7	24	9.4	9.6	9.5	0.0	0.2
11/12/97	24	4.5	5.5	5.1	0.1	1.0	24	7.2	8.3	7.7	0.1	1.1	24	7.5	8.3	7.9	0.0	0.8	24	9.1	9.4	9.3	0.0	0.3
11/13/97	24	4.5	5.3	5.0	0.1	0.8	24	7.1	8.2	7.5	0.1	1.1	24	7.5	8.3	7.9	0.0	0.8	24	8.7	9.3	9.1	0.0	0.6
11/14/97	24	5.2	5.6	5.4	0.0	0.4	24	7.2	8.5	7.8	0.1	1.3	24	8.1	8.7	8.3	0.0	0.6	24	8.8	9.1	9.0	0.0	0.3
11/15/97	24	4.7	5.3	4.9	0.0	0.6	24	6.8	7.9	7.2	0.1	1.1	24	7.5	8.0	7.8	0.0	0.5	24	8.7	8.8	8.8	0.0	0.1
11/16/97	24	4.8	5.2	5.0	0.0	0.4	24	6.9	7.9	7.5	0.1	1.0	24	7.8	8.6	8.2	0.1	0.8	24	8.5	8.7	8.6	0.0	0.2
11/17/97	24	5.2	5.8	5.4	0.0	0.6	24	7.6	8.5	8.1	0.1	0.9	24	8.0	8.7	8.4	0.1	0.7	24	8.5	8.7	8.5	0.0	0.2
11/18/97	24	5.3	5.9	5.7	0.0	0.6	24	7.9	8.5	8.2	0.0	0.6	24	8.0	8.4	8.2	0.0	0.4	24	8.4	8.5	8.4	0.0	0.1
11/19/97	24	5.3	5.8	5.5	0.0	0.5	24	7.7	8.2	8.0	0.0	0.5	24	7.7	8.3	8.0	0.0	0.6	24	8.2	8.4	8.3	0.0	0.2
11/20/97	24	5.3	6.1	5.8	0.1	0.8	24	8.2	8.6	8.4	0.0	0.4	24	7.5	8.1	7.9	0.0	0.6	24	7.4	8.2	7.7	0.1	0.8
11/21/97	24	5.2	6.2	5.6	0.1	1.0	24	7.7	8.6	8.1	0.1	0.9	24	7.2	8.1	7.7	0.0	0.9	24	7.4	7.9	7.6	0.0	0.5
11/22/97	24	4.8	6.1	5.5	0.1	1.3	24	7.7	8.0	7.8	0.0	0.3	24	7.0	8.0	7.5	0.1	1.0	24	7.7	7.9	7.7	0.0	0.2
11/23/97	24	5.9	6.6	6.1	0.1	0.7	24	7.9	8.6	8.3	0.1	0.7	24	7.7	8.3	8.0	0.1	0.6	24	7.6	7.7	7.7	0.0	0.1
11/24/97	24	5.8	6.2	6.0	0.0	0.4	24	8.2	8.8	8.4	0.0	0.6	24	7.7	8.1	7.9	0.0	0.4	24	7.4	7.7	7.6	0.0	0.3
11/25/97	24	5.0	5.8	5.4	0.0	0.8	24	7.6	8.5	8.0	0.1	0.9	24	7.2	7.7	7.5	0.0	0.5	24	7.3	7.6	7.4	0.0	0.3
11/26/97	24	4.8	5.9	5.2	0.1	1.1	24	7.2	8.3	7.7	0.1	1.1	24	6.9	7.7	7.2	0.1	0.8	24	7.4	7.6	7.4	0.0	0.2
11/27/97	24	4.4	5.6	4.9	0.1	1.2	24	7.1	7.7	7.4	0.0	0.6	24	6.6	7.4	6.9	0.1	0.8	24	7.3	7.4	7.3	0.0	0.1
11/28/97	24	5.6	6.6	6.2	0.1	1.0	24	7.7	8.5	8.2	0.1	0.8	24	7.5	8.1	7.9	0.0	0.6	24	7.3	7.4	7.4	0.0	0.1
11/29/97	24	5.9	6.4	6.2	0.0	0.5	24	8.2	8.5	8.3	0.0	0.3	24	7.7	8.1	8.0	0.0	0.4	24	7.3	7.4	7.4	0.0	0.1
11/30/97	24	5.6	6.1	5.8	0.0	0.5	24	8.2	8.5	8.3	0.0	0.3	24	7.5	7.8	7.7	0.0	0.3	24	7.1	7.3	7.1	0.0	0.2
12/1/97	24	4.7	5.6	5.2	0.1	0.9	24	7.1	8.0	7.7	0.1	0.9	24	6.9	7.5	7.2	0.0	0.6	24	6.8	7.1	7.0	0.0	0.3
12/2/97	24	4.2	5.3	4.6	0.1	1.1	24	6.6	7.4	7.0	0.0	0.8	24	6.6	7.0	6.8	0.0	0.4	24	6.7	7.0	6.9	0.0	0.3
12/3/97	24	3.9	4.8	4.3	0.1	0.9	24	6.3	7.1	6.7	0.0	0.8	24	6.3	6.9	6.6	0.0	0.6	24	6.7	6.8	6.8	0.0	0.1
12/4/97	24	3.9	5.2	4.5	0.1	1.3	24	6.2	6.9	6.5	0.0	0.7	24	6.3	7.0	6.6	0.0	0.7	24	6.7	6.8	6.7	0.0	0.1
12/5/97	24	3.6	4.4	4.0	0.1	0.8	24	5.7	6.6	6.1	0.1	0.9	24	6.1	6.6	6.3	0.0	0.5	24	6.3	6.7	6.5	0.0	0.4
12/6/97	24	3.3	4.1	3.7	0.1	0.8	24	5.5	6.3	5.9	0.1	0.8	24	5.6	6.4	6.1	0.0	0.8	24	6.2	6.5	6.3	0.0	0.3
12/7/97	24	3.4	4.2	3.9	0.0	0.8	24	6.0	6.3	6.1	0.0	0.3	24	6.3	6.6	6.4	0.0	0.3	24	6.2	6.5	6.3	0.0	0.3
12/8/97	24	3.7	4.7	4.2	0.1	1.0	24	6.2	6.9	6.5	0.1	0.7	24	6.3	7.0	6.6	0.1	0.7	24	6.2	6.3	6.3	0.0	0.1
12/9/97	24	4.1	4.5	4.3	0.0	0.4	24	6.6	7.1	6.8	0.0	0.5	24	6.6	6.9	6.7	0.0	0.3	24	6.2	6.3	6.2	0.0	0.1
12/10/97	24	4.1	4.7	4.4	0.0	0.6	24	6.5	7.6	7.0	0.1	1.1	24	6.4	7.0	6.6	0.0	0.6	24	6.0	6.3	6.2	0.0	0.3
12/11/97	24	3.7	4.4	4.1	0.0	0.7	24	6.0	6.9	6.4	0.1	0.9	24	5.9	6.4	6.1	0.0	0.5	24	5.9	6.2	6.0	0.0	0.3
12/12/97	24	3.6	4.1	3.8	0.0	0.5	24	5.7	6.5	5.9	0.1	0.8	24	5.5	6.3	5.8	0.0	0.8	24	5.9	6.0	5.9	0.0	0.1
12/13/97	24	3.6	3.9	3.7	0.0	0.3	24	5.5	5.8	5.6	0.0	0.3	24	5.5	5.9	5.7	0.0	0.4	24	5.7	5.9	5.8	0.0	0.2

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
12/14/97	24	3.7	4.1	3.9	0.0	0.4	24	5.7	6.5	6.1	0.1	0.8	24	5.8	6.4	6.1	0.1	0.6	24	5.6	5.9	5.8	0.0	0.3
12/15/97	24	4.1	4.4	4.2	0.0	0.3	24	6.3	6.8	6.6	0.0	0.5	24	6.3	6.7	6.5	0.0	0.4	24	5.7	6.0	5.8	0.0	0.3
12/16/97	24	3.6	4.7	4.2	0.1	1.1	24	6.3	7.4	6.9	0.1	1.1	24	5.8	7.4	6.7	0.1	1.6	24	5.7	6.0	5.9	0.0	0.3
12/17/97	24	4.2	4.7	4.5	0.0	0.5	24	6.9	7.2	7.0	0.0	0.3	24	6.6	7.0	6.9	0.0	0.4	23	5.7	6.2	5.9	0.0	0.5
12/18/97	24	4.1	4.7	4.4	0.0	0.6	24	6.6	7.6	6.9	0.1	1.0	24	6.1	6.6	6.4	0.0	0.5	24	5.6	5.9	5.7	0.0	0.3
12/19/97	24	3.9	4.8	4.3	0.1	0.9	24	6.5	7.2	6.8	0.1	0.7	24	5.9	6.7	6.3	0.1	0.8	24	5.6	5.6	5.6	0.0	0.0
12/20/97	24	3.3	4.2	3.8	0.1	0.9	24	5.4	6.6	6.2	0.1	1.2	24	5.2	6.3	5.8	0.1	1.1	24	5.3	5.7	5.5	0.0	0.4
12/21/97	24	3.4	4.4	4.0	0.1	1.0	24	6.0	6.9	6.4	0.0	0.9	24	5.8	6.4	6.0	0.0	0.6	24	5.4	5.6	5.5	0.0	0.2
12/22/97	24	2.8	3.7	3.3	0.1	0.9	24	5.4	6.5	6.0	0.1	1.1	24	5.3	5.9	5.6	0.0	0.6	24	5.3	5.4	5.3	0.0	0.1
12/23/97	24	3.1	3.7	3.5	0.0	0.6	24	5.2	6.2	5.8	0.1	1.0	24	5.0	5.6	5.4	0.0	0.6	24	5.3	5.4	5.3	0.0	0.1
12/24/97	24	3.4	4.2	3.9	0.0	0.8	24	6.0	6.6	6.3	0.0	0.6	24	5.6	5.9	5.8	0.0	0.3	24	5.3	5.4	5.3	0.0	0.1
12/25/97	24	2.5	3.3	3.0	0.1	0.8	24	5.4	6.2	5.8	0.1	0.8	24	5.2	5.8	5.4	0.0	0.6	24	5.1	5.4	5.3	0.0	0.3
12/26/97	24	2.6	3.6	3.0	0.1	1.0	24	5.1	6.0	5.5	0.1	0.9	24	5.0	5.8	5.3	0.1	0.8	24	4.8	5.3	5.1	0.0	0.5
12/27/97	24	3.3	4.1	3.8	0.1	0.8	24	5.7	6.6	6.2	0.1	0.9	24	5.5	6.3	5.9	0.1	0.8	24	4.9	5.3	5.1	0.0	0.4
12/28/97	24	4.1	4.5	4.3	0.0	0.4	24	6.3	7.1	6.7	0.1	0.8	24	6.1	6.4	6.2	0.0	0.3	24	5.1	5.4	5.2	0.0	0.3
12/29/97	24	4.4	4.8	4.6	0.0	0.4	24	6.9	7.7	7.2	0.1	0.8	24	6.3	6.7	6.4	0.0	0.4	24	5.1	5.4	5.2	0.0	0.3
12/30/97	24	3.6	4.5	4.0	0.1	0.9	24	5.8	7.1	6.5	0.1	1.3	24	5.6	6.4	5.9	0.1	0.8	24	4.9	5.3	5.1	0.0	0.4
12/31/97	24	3.4	4.1	3.7	0.1	0.7	24	5.7	6.6	6.1	0.1	0.9	24	5.5	6.3	5.8	0.1	0.8	24	4.8	5.1	5.0	0.0	0.3
1/1/98	24	4.2	5.0	4.6	0.1	0.8	24	6.6	7.2	6.9	0.0	0.6	24	6.3	6.9	6.6	0.0	0.6	24	5.1	5.6	5.3	0.0	0.5
1/2/98	24	3.4	4.2	3.8	0.1	0.8	24	6.3	7.1	6.5	0.1	0.8	24	5.6	6.3	5.8	0.0	0.7	24	4.9	5.6	5.1	0.0	0.7
1/3/98	24	3.1	3.7	3.5	0.0	0.6	24	5.8	6.3	6.1	0.0	0.5	24	5.5	5.8	5.6	0.0	0.3	24	4.9	5.3	5.0	0.0	0.4
1/4/98	24	2.8	3.3	3.0	0.0	0.5	24	5.2	6.2	5.7	0.1	1.0	24	5.0	5.6	5.3	0.0	0.6	24	4.8	5.1	4.9	0.0	0.3
1/5/98	24	2.6	3.3	3.0	0.0	0.7	24	5.7	6.2	6.0	0.0	0.5	24	5.2	5.8	5.5	0.0	0.6	24	4.8	4.9	4.8	0.0	0.1
1/6/98	24	3.3	3.7	3.5	0.0	0.4	24	6.2	6.5	6.4	0.0	0.3	24	5.8	6.1	5.9	0.0	0.3	24	4.8	5.3	4.9	0.0	0.5
1/7/98	24	3.3	4.4	3.8	0.1	1.1	24	6.2	6.9	6.4	0.0	0.7	24	5.8	6.3	6.1	0.0	0.5	24	4.8	5.3	4.9	0.0	0.5
1/8/98	24	3.0	4.5	3.7	0.1	1.5	24	5.7	7.1	6.3	0.1	1.4	24	5.3	6.1	5.8	0.0	0.8	24	4.6	4.9	4.8	0.0	0.3
1/9/98	24	2.3	3.6	2.9	0.1	1.3	24	5.1	5.7	5.4	0.0	0.6	24	4.9	5.3	5.1	0.0	0.4	24	4.6	4.8	4.6	0.0	0.2
1/10/98	24	2.5	3.9	3.3	0.1	1.4	24	4.8	6.2	5.7	0.1	1.4	24	4.7	5.8	5.4	0.1	1.1	24	4.5	4.6	4.6	0.0	0.1
1/11/98	24	0.9	2.3	1.3	0.1	1.4	24	2.9	4.8	3.4	0.1	1.9	24	3.1	4.7	3.6	0.1	1.6	24	4.3	4.6	4.3	0.0	0.3
1/12/98	24	0.4	1.5	1.1	0.1	1.1	24	1.8	3.2	2.5	0.1	1.4	24	2.5	3.3	3.0	0.1	0.8	24	4.0	4.3	4.2	0.0	0.3
1/13/98	24	0.2	2.3	1.0	0.2	2.1	24	1.4	3.8	2.7	0.2	2.4	24	1.2	3.8	2.6	0.2	2.6	24	4.0	4.2	4.1	0.0	0.2
1/14/98	24	1.8	2.6	2.3	0.1	0.8	24	3.8	4.8	4.3	0.1	1.0	24	3.4	4.9	4.0	0.1	1.5	24	4.2	4.2	4.2	0.0	0.0
1/15/98	24	2.8	3.9	3.4	0.1	1.1	24	4.8	5.8	5.1	0.1	1.0	24	4.9	5.5	5.2	0.0	0.6	24	4.2	4.3	4.2	0.0	0.1
1/16/98	24	3.4	4.2	3.8	0.1	0.8	24	5.2	5.8	5.4	0.0	0.6	24	5.2	5.6	5.4	0.0	0.4	24	4.2	4.3	4.2	0.0	0.1
1/17/98	24	3.7	4.2	4.0	0.0	0.5	24	5.5	6.2	5.8	0.0	0.7	24	5.3	5.9	5.7	0.0	0.6	24	4.2	4.8	4.5	0.0	0.6
1/18/98	24	4.1	4.5	4.3	0.0	0.4	24	5.8	6.5	6.2	0.0	0.7	24	5.8	6.1	5.9	0.0	0.3	24	4.3	4.9	4.7	0.0	0.6
1/19/98	24	4.1	4.5	4.3	0.0	0.4	24	6.2	6.5	6.3	0.0	0.3	24	5.8	6.1	5.9	0.0	0.3	24	4.3	4.8	4.4	0.0	0.5
1/20/98	24	4.1	4.8	4.4	0.0	0.7	24	6.2	6.6	6.3	0.0	0.4	24	5.8	6.1	5.9	0.0	0.3	24	4.2	4.3	4.3	0.0	0.1
1/21/98	24	4.1	4.5	4.3	0.0	0.4	24	6.2	6.5	6.3	0.0	0.3	24	5.6	5.9	5.8	0.0	0.3	24	4.2	4.2	4.2	0.0	0.0
1/22/98	24	4.1	4.8	4.4	0.1	0.7	24	6.2	6.6	6.4	0.0	0.4	24	5.6	6.3	5.9	0.0	0.7	24	4.2	4.3	4.2	0.0	0.1
1/23/98	24	4.2	4.7	4.5	0.0	0.5	24	6.5	6.9	6.7	0.0	0.4	24	5.9	6.4	6.2	0.0	0.5	24	4.2	4.2	4.2	0.0	0.0
1/24/98	24	4.1	4.4	4.3	0.0	0.3	24	6.5	6.8	6.7	0.0	0.3	24	6.1	6.4	6.3	0.0	0.3	24	4.2	4.2	4.2	0.0	0.0
1/25/98	24	4.1	4.8	4.5	0.1	0.7	24	6.5	7.1	6.7	0.0	0.6	24	6.1	6.6	6.4	0.0	0.5	24	4.2	4.2	4.2	0.0	0.0
1/26/98	24	4.5	5.3	4.8	0.1	0.8	24	6.6	7.4	7.0	0.0	0.8	24	6.4	6.9	6.6	0.0	0.5	24	4.2	4.3	4.2	0.0	0.1
1/27/98	24	4.5	5.3	4.8	0.1	0.8	24	6.8	7.4	7.0	0.0	0.6	24	6.4	6.7	6.5	0.0	0.3	24	4.2	4.3	4.2	0.0	0.1
1/28/98	24	4.5	5.5	4.9	0.1	1.0	24	6.8	7.7	7.1	0.1	0.9	24	6.3	7.0	6.6	0.1	0.7	24	4.2	4.3	4.3	0.0	0.1
1/29/98	24	4.7	5.5	5.0	0.1	0.8	24	7.1	7.7	7.3	0.0	0.6	24	6.6	7.0	6.8	0.0	0.4	24	4.3	4.3	4.3	0.0	0.0
1/30/98	24	4.2	5.6	4.9	0.1	1.4	24	6.6	7.9	7.2	0.1	1.3	24	6.3	6.7	6.6	0.0	0.4	24	4.2	4.3	4.3	0.0	0.1
1/31/98	24	3.9	5.3	4.5	0.1	1.4	24	6.3	7.7	6.8	0.1	1.4	24	5.9	6.6	6.2	0.1	0.7	24	4.2	4.5	4.3	0.0	0.3
2/1/98	24	3.9	4.5	4.3	0.0	0.6	24	6.2	6.8	6.5	0.0	0.6	24	5.8	6.3	6.1	0.0	0.5	24	4.2	4.3	4.3	0.0	0.1
2/2/98	24	4.2	5.5	4.6	0.1	1.3	24	6.3	7.6	6.7	0.1	1.3	24	5.9	6.6	6.2	0.0	0.7	24	4.3	4.5	4.3	0.0	0.2
2/3/98	24	4.4	5.3	4.9	0.1	0.9	24	6.5	7.4	7.0	0.1	0.9	24	5.9	6.7	6.4	0.1	0.8	24	4.3	4.6	4.4	0.0	0.3
2/4/98	24	4.8	6.1	5.3	0.1	1.3	24	7.1	8.2	7.4	0.1	1.1	24	6.6	7.2	6.8	0.0	0.6	24	4.3	4.8	4.5	0.0	0.5
2/5/98	24	4.7	5.8	5.2	0.1	1.1	24	6.9	8.0	7.4	0.1	1.1	24	6.4	7.2	6.7	0.1	0.8	24	4.3	4.8	4.5	0.0	0.5
2/6/98	24	5.0	5.8	5.3	0.0	0.8	24	7.2	8.0	7.6	0.1	0.8	24	6.7	7.4	6.9	0.0	0.7	24	4.5	5.1	4.6	0.0	0.6
2/7/98	24	4.5	5.6	5.1	0.1	1.1	24	6.9	8.0	7.4	0.1	1.1	24	6.4	7.2	6.8	0.1	0.8	24	4.5	4.9	4.6	0.0	0.4
2/8/98	24	4.7	5.2	4.9	0.0	0.5	24	7.1	7.6	7.3	0.0	0.5	24	6.4	6.9	6.6	0.0	0.5	24	4.5	4.8	4.5	0.0	0.3
2/9/98	24	4.2	5.5	4.8	0.1	1.3	24	6.5	7.9	7.2	0.1	1.4	24	6.1	7.0	6.5	0.1	0.9	24	4.5	4.6	4.5	0.0	0.1
2/10/98	24	4.1	4.5	4.3	0.0	0.4	24	6.5	6.9	6.7	0.0	0.4	24	5.9	6.4	6.1	0.0	0.5	24	4.5	4.5	4.5	0.0	0.0
2/11/98	24	3.7	4.8	4.3	0.1	1.1	24	6.6	7.2	6.8	0.0	0.6	24	6.1	6.6	6.3	0.0	0.5	24	4.5	4.6	4.5	0.0	0.1
2/12/98	24	4.4	5.0	4.6	0.0	0.6	24	6.8	7.4	7.0	0.0	0.6	24	6.3	6.7	6.5	0.0	0.4	24	4.5	4.9	4.7	0.0	0.4
2/13/98	24	4.2	5.3	4.6	0.1	1.1	24	6.6	7.6	7.0	0.1	1.0	24	6.1	6.7	6.4	0.0	0.6	24	4.5	4.6	4.6	0.0	0.1
2/14/98	24	4.2	5.2	4.7	0.1	1.0	24	6.5	7.2	6.8	0.0	0.7	24	6.1	6.6	6.3	0.0	0.5	24	4.5	4.9	4.6	0.0	0.4
2/15/98	24	4.4	5.5	4.8	0.1	1.1	24	6.8	7.7	7.1	0.1	0.9	24	6.3	6.7	6.4	0.0	0.4	24	4.5	5.3	4.7	0.1	0.8
2/16/98	24	4.2	5.5	4.8	0.1	1.3	24	6.3	7.6	6.9	0.1	1.3	24	5.9	6.7	6.3	0.1	0.8	24	4.5	5.4	4.7	0.0	0.9
2/17/98	24	4.7	5.8	5.2	0.1	1.1	24	6.8	7.9	7.2	0.1	1.1	24	6.3	7.0	6.6	0.1	0.7	24	4.5	5.3	4.7	0.0	0.8
2/18/98	24	4.8	5.3	5.0	0.0	0.5	24	6.9	7.4	7.1	0.0	0.5	24	6.4	6.7	6.6	0.0	0.3	24	4.6	4.6	4.6	0.0	0.0
2/19/98	24	4.8	6.1	5.3	0.1	1.3	24	7.1	8.3	7.5	0.1	1.2	24	6.6	7.4	6.9	0.1	0.8	24	4.6	4.8	4.6	0.0	0.2
2/20/98	24	4.2	5.5	5.1	0.1	1.3	24	6.9	7.9	7.4	0.1	1.0	24	6.4	7.0	6.8	0.0	0.6	24	4.6	4.8	4.6	0.0	0.2

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SWRES						SW2BU						SW2BL						SW2TR					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
2/21/98	24	2.5	3.9	3.3	0.1	1.4	24	5.4	6.8	6.1	0.1	1.4	24	4.9	6.3	5.5	0.1	1.4	24	4.5	4.6	4.6	0.0	0.1
2/22/98	24	3.7	5.2	4.3	0.1	1.5	24	6.2	7.2	6.6	0.1	1.0	24	5.8	6.4	6.0	0.0	0.6	24	4.6	4.8	4.7	0.0	0.2
2/23/98	24	3.6	5.5	4.4	0.1	1.9	8	5.8	6.3	6.1	0.1	0.5	24	5.5	6.4	5.9	0.1	0.9	24	4.6	4.9	4.7	0.0	0.3
2/24/98	24	3.3	5.3	4.2	0.1	2.0	0	Stopped monitoring 2/23/98					24	5.2	6.3	5.7	0.1	1.1	10	4.6	4.6	4.6	0.0	0.0
2/25/98	24	3.4	5.5	4.3	0.1	2.1	0						24	5.3	6.1	5.8	0.0	0.8						
2/26/98	24	3.9	5.2	4.4	0.1	1.3	0						24	5.6	6.6	5.9	0.1	1.0						
2/27/98	24	3.4	5.5	4.3	0.1	2.1	0						24	5.2	6.3	5.7	0.1	1.1						
2/28/98	24	3.3	4.5	4.0	0.1	1.2	0						24	5.6	6.1	5.9	0.0	0.5						
Max	24	11.7	16.8	13.9	0.4	5.9	24	14.8	19.7	16.8	0.4	5.5	24	13.9	19.0	15.7	0.4	5.9	24	13.5	21.4	13.9	0.6	11.2
Min	0	0.2	1.5	1.0	0.0	0.3	0	1.4	3.2	2.5	0.0	0.2	0	1.2	3.3	2.6	0.0	0.2	0	3.2	3.4	3.3	0.0	0.0

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
4/2/96	0						0						0	1/s Rain Cr.: 4/03					0					
4/3/96	0						0						14	5.6	6.6	6.2	0.1	1.0	0					
4/4/96	0						0						24	5.2	7.2	6.3	0.2	2.0	0					
4/5/96	0						0						24	6.3	8.3	7.3	0.2	2.0	0					
4/6/96	0						0						24	7.2	8.4	7.8	0.1	1.2	0					
4/7/96	0						0						24	7.7	9.5	8.5	0.1	1.8	0					
4/8/96	0						0						24	8.1	9.7	8.9	0.1	1.6	0					
4/9/96	0						0						24	8.4	9.0	8.8	0.0	0.6	0					
4/10/96	0						0						24	7.8	8.6	8.2	0.0	0.8	0					
4/11/96	0						0						24	6.9	8.0	7.6	0.1	1.1	0					
4/12/96	0						0						24	5.3	6.7	5.9	0.1	1.4	0					
4/13/96	0						0						24	5.8	6.9	6.3	0.1	1.1	0					
4/14/96	0						0						24	6.1	7.8	6.9	0.1	1.7	0					
4/15/96	0						0						24	6.9	8.0	7.4	0.1	1.1	0					
4/16/96	0						0						24	6.6	7.4	7.0	0.0	0.8	0					
4/17/96	0						0						24	5.9	6.9	6.5	0.1	1.0	0					
4/18/96	0						0						24	5.9	6.4	6.2	0.0	0.5	0					
4/19/96	0						0						24	5.8	6.6	6.1	0.1	0.8	0					
4/20/96	0						0						24	5.8	6.4	6.1	0.1	0.6	0					
4/21/96	0						0						24	5.9	6.9	6.4	0.1	1.0	0					
4/22/96	0						0						24	6.6	7.0	6.8	0.0	0.4	0					
4/23/96	0						0						24	6.9	7.7	7.2	0.0	0.8	0					
4/24/96	0						0						24	6.3	6.9	6.7	0.0	0.6	0					
4/25/96	0						0						24	6.4	6.9	6.7	0.0	0.5	0					
4/26/96	0						0						24	6.4	7.2	6.7	0.1	0.8	0					
4/27/96	0						0						24	6.1	7.4	6.6	0.1	1.3	0					
4/28/96	0	Deployed: 4/29					0	Deployed: 4/29					24	5.8	7.8	6.9	0.2	2.0	0	Deployed: 4/29				
4/29/96	7	7.1	7.4	7.3	0.1	0.3	13	6.9	7.1	7.1	0.0	0.2	24	7.2	8.9	7.9	0.1	1.7	3	5.9	6.1	6.0	0.1	0.2
4/30/96	24	6.9	7.2	7.0	0.0	0.3	24	6.9	7.2	7.1	0.0	0.3	24	7.0	8.1	7.6	0.1	1.1	12	5.7	6.2	6.0	0.1	0.5
5/1/96	24	6.9	7.1	7.0	0.0	0.2	24	7.1	7.4	7.2	0.0	0.3	24	6.9	8.1	7.4	0.1	1.2	12	5.7	6.2	6.0	0.0	0.5
5/2/96	24	7.1	7.2	7.1	0.0	0.1	24	7.1	7.4	7.2	0.0	0.3	24	6.4	7.5	6.9	0.1	1.1	12	5.7	6.1	5.8	0.0	0.4
5/3/96	24	7.2	7.5	7.4	0.0	0.3	24	7.2	7.7	7.5	0.0	0.5	24	6.1	7.0	6.6	0.1	0.9	12	5.6	6.1	5.8	0.0	0.5
5/4/96	24	7.5	7.7	7.6	0.0	0.2	24	7.2	7.4	7.3	0.0	0.2	24	6.1	8.1	7.0	0.1	2.0	12	5.6	6.5	5.9	0.1	0.9
5/5/96	24	7.2	7.7	7.5	0.0	0.5	24	7.1	7.6	7.3	0.0	0.5	24	6.3	7.8	7.1	0.1	1.5	12	5.6	6.2	5.9	0.1	0.6
5/6/96	24	7.4	7.5	7.5	0.0	0.1	24	7.4	7.6	7.5	0.0	0.2	21	6.4	8.6	7.3	0.2	2.2	12	5.6	6.5	5.9	0.1	0.9
5/7/96	24	7.4	7.5	7.5	0.0	0.1	24	7.1	7.7	7.4	0.0	0.6	24	6.6	7.5	7.0	0.1	0.9	12	5.6	6.2	5.8	0.1	0.6
5/8/96	24	7.4	8.0	7.7	0.0	0.6	24	7.2	7.6	7.4	0.0	0.4	24	5.9	7.2	6.5	0.1	1.3	12	5.4	6.1	5.7	0.1	0.7
5/9/96	24	7.7	8.3	7.8	0.0	0.6	24	7.2	8.0	7.5	0.0	0.8	24	5.8	7.7	6.6	0.1	1.9	12	5.4	6.4	5.8	0.1	1.0
5/10/96	24	7.7	8.1	7.8	0.0	0.4	24	7.4	7.6	7.4	0.0	0.2	24	6.4	8.1	7.0	0.1	1.7	12	5.6	6.5	5.9	0.1	0.9
5/11/96	24	8.0	9.4	8.7	0.1	1.4	24	7.2	7.6	7.4	0.0	0.4	24	7.0	8.0	7.5	0.1	1.0	12	5.7	6.1	5.9	0.0	0.4
5/12/96	24	8.6	9.1	8.9	0.0	0.5	24	7.4	7.7	7.5	0.0	0.3	24	7.7	8.7	8.2	0.1	1.0	12	5.9	6.4	6.0	0.0	0.5
5/13/96	24	8.1	8.6	8.3	0.0	0.5	24	7.4	7.6	7.5	0.0	0.2	24	8.4	9.0	8.6	0.0	0.6	12	5.9	6.2	6.0	0.0	0.3
5/14/96	24	8.0	8.3	8.1	0.0	0.3	24	7.4	7.6	7.6	0.0	0.2	24	8.4	9.5	8.9	0.1	1.1	12	5.9	6.2	6.0	0.0	0.3
5/15/96	24	8.1	8.5	8.4	0.0	0.4	24	7.6	7.9	7.6	0.0	0.3	24	8.6	9.2	8.9	0.0	0.6	12	5.9	6.4	6.1	0.0	0.5
5/16/96	24	8.5	8.8	8.6	0.0	0.3	24	7.6	7.7	7.6	0.0	0.1	24	8.1	9.5	8.7	0.1	1.4	12	5.9	6.8	6.2	0.1	0.9
5/17/96	24	8.1	8.5	8.3	0.0	0.4	24	7.6	8.0	7.6	0.0	0.4	24	8.4	8.7	8.6	0.0	0.3	12	6.1	6.4	6.2	0.0	0.3
5/18/96	24	8.0	8.3	8.2	0.0	0.3	24	7.7	8.0	7.7	0.0	0.3	24	8.1	8.6	8.3	0.0	0.5	12	6.2	6.7	6.4	0.0	0.5
5/19/96	24	8.1	8.6	8.3	0.0	0.5	24	7.7	7.9	7.7	0.0	0.2	24	7.7	8.4	8.0	0.0	0.7	12	6.4	7.0	6.6	0.1	0.6
5/20/96	24	8.3	9.2	8.9	0.1	0.9	24	7.7	8.2	7.9	0.0	0.5	24	7.4	8.4	7.8	0.1	1.0	12	6.2	7.1	6.5	0.1	0.9
5/21/96	23	8.8	9.5	9.1	0.0	0.7	24	7.9	8.0	7.9	0.0	0.1	14	7.4	7.7	7.5	0.0	0.3	11	6.1	6.4	6.2	0.0	0.3
5/22/96	24	8.3	8.6	8.5	0.0	0.3	24	7.9	8.0	7.9	0.0	0.1	0						12	6.1	6.4	6.2	0.0	0.3
5/23/96	24	8.5	9.1	8.8	0.0	0.6	24	8.0	8.6	8.2	0.0	0.6	0						12	6.1	6.5	6.2	0.0	0.4
5/24/96	24	8.6	8.9	8.8	0.0	0.3	24	8.0	8.2	8.0	0.0	0.2	0						12	5.9	7.3	6.5	0.1	1.4
5/25/96	24	8.5	9.1	8.8	0.0	0.6	24	8.0	8.2	8.0	0.0	0.2	0						12	6.1	7.5	6.5	0.1	1.4
5/26/96	24	8.0	9.1	8.5	0.1	1.1	24	8.0	8.5	8.1	0.0	0.5	0						12	6.1	7.0	6.4	0.1	0.9
5/27/96	24	8.3	8.9	8.7	0.0	0.6	24	8.0	8.9	8.3	0.1	0.9	0						12	6.1	6.5	6.2	0.0	0.4
5/28/96	24	8.9	9.4	9.2	0.0	0.5	24	8.0	8.8	8.3	0.0	0.8	0						12	6.1	6.2	6.1	0.0	0.1
5/29/96	24	8.9	9.4	9.1	0.0	0.5	24	8.2	8.3	8.2	0.0	0.1	0						12	6.1	6.4	6.2	0.0	0.3
5/30/96	24	9.1	9.4	9.2	0.0	0.3	24	8.2	8.3	8.2	0.0	0.1	0						12	6.1	6.2	6.1	0.0	0.1
5/31/96	24	9.2	9.5	9.4	0.0	0.3	24	8.2	8.3	8.3	0.0	0.1	0						12	5.9	7.0	6.3	0.1	1.1
6/1/96	24	9.2	10.0	9.5	0.0	0.8	24	8.2	8.3	8.3	0.0	0.1	0						12	6.1	7.0	6.4	0.1	0.9
6/2/96	24	9.4	10.8	9.8	0.1	1.4	24	8.3	8.5	8.3	0.0	0.2	0						12	6.2	7.1	6.6	0.1	0.9
6/3/96	24	9.1	9.8	9.3	0.0	0.7	24	8.3	8.5	8.3	0.0	0.2	0						12	6.2	7.1	6.6	0.1	0.9
6/4/96	24	8.8	9.8	9.4	0.1	1.0	24	8.3	8.6	8.3	0.0	0.3	0						12	6.2	6.8	6.4	0.1	0.6
6/5/96	24	9.5	10.3	9.8	0.0	0.8	24	8.2	8.6	8.4	0.0	0.4	0						12	6.1	7.3	6.4	0.1	1.2
6/6/96	24	9.4	10.8	9.8	0.1	1.4	24	8.3	8.5	8.4	0.0	0.2	0						12	6.2	7.5	6.6	0.1	1.3
6/7/96	24	9.5	10.3	9.7	0.1	0.8	24	8.5	9.1	8.6	0.0	0.6	0						12	6.2	7.5	6.6	0.1	1.3
6/8/96	24	9.7	10.6	10.0	0.1	0.9	24	8.3	8.9	8.5	0.0	0.6	0						12	6.1	7.3	6.5	0.1	1.2
6/9/96	24	9.8	14.6	11.7	0.4	4.8	24	8.3	8.9	8.6	0.0	0.6	0						12	6.1	6.7	6.3	0.1	0.6

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
6/10/96	24	9.7	14.2	11.1	0.3	4.5	24	8.5	8.6	8.6	0.0	0.1	0						12	6.1	7.3	6.5	0.1	1.2
6/11/96	24	9.1	10.6	10.0	0.1	1.5	24	8.5	8.8	8.6	0.0	0.3	0						12	6.2	7.5	6.5	0.1	1.3
6/12/96	24	9.4	10.8	10.2	0.1	1.4	24	8.5	8.9	8.7	0.0	0.4	0						12	6.1	7.5	6.6	0.1	1.4
6/13/96	24	9.2	10.6	9.9	0.1	1.4	24	8.6	9.3	8.8	0.0	0.7	0						12	6.2	7.5	6.6	0.1	1.3
6/14/96	24	10.0	11.1	10.5	0.1	1.1	24	8.6	9.3	8.8	0.0	0.7	0						12	6.2	7.5	6.6	0.1	1.3
6/15/96	24	9.1	10.3	9.7	0.1	1.2	24	8.6	9.1	8.8	0.0	0.5	0						12	6.2	7.6	6.6	0.1	1.4
6/16/96	24	9.4	10.5	9.8	0.1	1.1	24	8.8	9.3	8.9	0.0	0.5	0						12	6.1	6.8	6.4	0.1	0.7
6/17/96	24	9.7	10.9	10.4	0.1	1.2	24	8.8	9.1	8.9	0.0	0.3	0						12	6.1	6.4	6.3	0.0	0.3
6/18/96	24	9.8	10.9	10.3	0.1	1.1	24	8.8	8.9	8.9	0.0	0.1	0						12	6.2	7.1	6.4	0.1	0.9
6/19/96	24	9.8	11.7	10.7	0.1	1.9	24	8.9	9.1	9.0	0.0	0.2	0						12	6.1	7.6	6.6	0.2	1.5
6/20/96	24	9.4	11.4	10.2	0.1	2.0	24	8.9	9.3	9.0	0.0	0.4	0						12	6.2	7.8	6.7	0.2	1.6
6/21/96	24	10.2	10.9	10.5	0.0	0.7	24	8.9	9.3	9.0	0.0	0.4	0						12	6.4	7.0	6.5	0.1	0.6
6/22/96	24	10.2	11.2	10.8	0.1	1.0	24	8.9	9.3	9.1	0.0	0.4	0						12	6.4	6.8	6.5	0.0	0.4
6/23/96	24	10.8	12.8	11.5	0.2	2.0	24	9.1	9.1	9.1	0.0	0.0	0						12	6.4	6.8	6.6	0.0	0.4
6/24/96	24	10.6	13.4	11.4	0.2	2.8	22	9.1	9.3	9.3	0.0	0.2	0						10	6.4	6.8	6.6	0.0	0.4
6/25/96	24	10.2	11.1	10.7	0.0	0.9	24	9.1	9.3	9.3	0.0	0.2	0						12	6.5	7.9	6.9	0.2	1.4
6/26/96	24	10.6	11.4	10.9	0.0	0.8	24	9.1	9.3	9.3	0.0	0.2	0						12	6.4	7.6	6.8	0.1	1.2
6/27/96	24	10.6	11.5	10.9	0.1	0.9	24	9.1	9.6	9.3	0.0	0.5	0						12	6.5	6.8	6.6	0.0	0.3
6/28/96	24	10.6	11.1	10.9	0.0	0.5	24	9.3	9.4	9.3	0.0	0.1	0						12	6.4	7.0	6.7	0.1	0.6
6/29/96	24	10.8	11.1	10.9	0.0	0.3	24	9.4	9.6	9.4	0.0	0.2	0						12	6.4	7.9	6.9	0.2	1.5
6/30/96	24	10.9	17.8	15.0	0.5	6.9	24	9.4	9.7	9.5	0.0	0.3	0						12	6.4	7.6	6.9	0.1	1.2
7/1/96	24	10.6	17.5	12.3	0.5	6.9	24	9.4	9.7	9.5	0.0	0.3	0						12	6.5	7.9	7.0	0.2	1.4
7/2/96	24	10.6	12.5	11.1	0.1	1.9	24	9.4	9.6	9.5	0.0	0.2	0						12	6.5	7.6	6.9	0.1	1.1
7/3/96	24	10.9	12.2	11.3	0.1	1.3	24	9.4	9.6	9.5	0.0	0.2	0						12	6.5	7.5	6.8	0.1	1.0
7/4/96	24	10.9	18.1	15.2	0.6	7.2	24	9.4	9.7	9.6	0.0	0.3	0						12	6.4	7.3	6.8	0.1	0.9
7/5/96	24	10.8	18.3	12.7	0.6	7.5	24	9.4	9.7	9.6	0.0	0.3	0						12	6.4	7.8	6.9	0.2	1.4
7/6/96	24	10.8	11.9	11.2	0.1	1.1	24	9.6	10.0	9.7	0.0	0.4	0						12	6.4	7.9	6.9	0.2	1.5
7/7/96	24	11.1	18.9	15.5	0.6	7.8	24	9.6	10.0	9.8	0.0	0.4	0						12	6.5	8.1	7.0	0.2	1.6
7/8/96	24	10.9	13.2	11.4	0.1	2.3	24	9.7	10.0	9.8	0.0	0.3	0						12	6.5	8.1	7.1	0.2	1.6
7/9/96	24	10.8	15.4	12.1	0.2	4.6	24	9.7	10.2	9.9	0.0	0.5	0						12	6.7	7.8	7.0	0.1	1.1
7/10/96	24	11.2	13.1	11.7	0.1	1.9	24	9.7	10.0	9.9	0.0	0.3	0						12	6.5	7.9	7.0	0.2	1.4
7/11/96	24	11.7	11.9	11.7	0.0	0.2	24	9.9	10.2	10.0	0.0	0.3	0						12	6.5	8.1	7.0	0.2	1.6
7/12/96	24	11.1	15.3	12.1	0.2	4.2	24	9.9	10.2	10.1	0.0	0.3	0						12	6.7	8.1	7.1	0.2	1.4
7/13/96	24	11.4	17.8	13.0	0.4	6.4	24	10.0	10.2	10.1	0.0	0.2	0						12	6.7	8.1	7.2	0.2	1.4
7/14/96	24	12.0	21.7	18.8	0.6	9.7	24	10.0	10.2	10.1	0.0	0.2	0						12	6.7	8.2	7.2	0.2	1.5
7/15/96	24	10.6	21.6	14.9	1.0	11.0	24	10.0	10.2	10.2	0.0	0.2	0						12	6.7	8.2	7.1	0.2	1.5
7/16/96	24	11.2	18.6	13.0	0.5	7.4	24	10.0	10.3	10.2	0.0	0.3	0						12	6.7	8.1	7.1	0.1	1.4
7/17/96	24	11.1	18.0	12.8	0.5	6.9	24	10.0	10.3	10.2	0.0	0.3	0						12	6.5	6.8	6.7	0.0	0.3
7/18/96	24	11.5	17.2	14.0	0.5	5.7	24	10.2	10.3	10.2	0.0	0.1	0						12	6.5	7.0	6.7	0.1	0.5
7/19/96	24	17.2	18.9	18.1	0.1	1.7	24	10.2	10.3	10.2	0.0	0.1	0						12	6.7	7.1	6.8	0.0	0.4
7/20/96	24	11.4	18.8	14.6	0.7	7.4	24	10.2	10.2	10.2	0.0	0.0	0						12	6.7	7.1	6.8	0.0	0.4
7/21/96	24	11.4	20.4	16.7	0.6	9.0	24	10.2	10.3	10.3	0.0	0.1	0						12	6.5	8.1	7.1	0.2	1.6
7/22/96	23	10.9	20.1	13.5	0.6	9.2	22	10.2	10.6	10.4	0.0	0.4	0	Thermograph missing: 7/22					11	6.7	8.1	7.1	0.1	1.4
7/23/96	24	11.1	12.9	11.7	0.1	1.8	24	10.3	10.5	10.5	0.0	0.2	0						12	6.8	8.2	7.2	0.2	1.4
7/24/96	24	11.1	15.4	12.2	0.2	4.3	24	10.5	10.6	10.5	0.0	0.1	0						12	6.8	8.1	7.2	0.1	1.3
7/25/96	24	11.2	16.2	12.2	0.2	5.0	24	10.5	10.6	10.5	0.0	0.1	0						12	6.7	8.2	7.2	0.2	1.5
7/26/96	24	11.4	18.0	13.0	0.3	6.6	24	10.5	10.6	10.6	0.0	0.1	0						12	6.7	8.2	7.2	0.2	1.5
7/27/96	24	11.5	12.9	12.2	0.1	1.4	24	10.6	10.6	10.6	0.0	0.0	0						12	6.8	7.9	7.2	0.1	1.1
7/28/96	24	10.5	11.9	11.4	0.1	1.4	24	10.6	10.8	10.6	0.0	0.2	0						12	6.8	7.1	6.9	0.0	0.3
7/29/96	24	9.7	13.2	11.7	0.2	3.5	24	10.6	10.8	10.7	0.0	0.2	0						12	6.7	8.2	7.2	0.2	1.5
7/30/96	24	12.2	14.5	12.4	0.1	2.3	24	10.6	10.9	10.7	0.0	0.3	0						12	6.7	7.9	7.1	0.1	1.2
7/31/96	24	11.1	12.8	12.0	0.1	1.7	24	10.6	10.9	10.8	0.0	0.3	0						12	6.5	8.1	7.0	0.2	1.6
8/1/96	24	11.9	13.1	12.2	0.1	1.2	24	10.8	10.9	10.8	0.0	0.1	0						12	6.5	7.9	7.0	0.1	1.4
8/2/96	24	12.0	13.6	12.6	0.1	1.6	24	10.8	11.1	10.8	0.0	0.3	0						12	6.7	7.5	6.9	0.1	0.8
8/3/96	24	10.2	12.5	11.8	0.2	2.3	24	10.8	10.9	10.9	0.0	0.1	0						12	6.7	7.1	6.8	0.1	0.4
8/4/96	24	8.9	10.6	9.4	0.1	1.7	24	10.8	11.1	11.0	0.0	0.3	0						12	6.7	7.0	6.8	0.0	0.3
8/5/96	24	8.9	13.4	11.6	0.4	4.5	24	10.9	11.1	11.0	0.0	0.2	0						12	6.5	7.1	6.8	0.1	0.6
8/6/96	24	10.8	12.9	12.4	0.1	2.1	24	10.9	11.1	11.0	0.0	0.2	0						12	6.5	7.9	7.0	0.1	1.4
8/7/96	24	9.7	13.7	11.8	0.3	4.0	24	10.9	11.1	11.0	0.0	0.2	0						12	6.7	8.1	7.1	0.1	1.4
8/8/96	24	12.8	13.9	13.1	0.1	1.1	24	10.9	11.1	11.1	0.0	0.2	0						12	6.7	8.1	7.2	0.1	1.4
8/9/96	24	12.8	13.4	13.0	0.0	0.6	24	11.1	11.2	11.1	0.0	0.1	0						12	6.7	8.1	7.2	0.1	1.4
8/10/96	24	12.8	14.3	13.0	0.1	1.5	24	11.1	11.2	11.1	0.0	0.1	0						12	6.7	8.1	7.2	0.1	1.4
8/11/96	24	11.9	13.2	12.9	0.1	1.3	24	11.1	11.2	11.1	0.0	0.1	0						12	6.7	7.6	6.9	0.1	0.9
8/12/96	24	10.8	13.2	12.3	0.2	2.4	24	11.1	11.2	11.1	0.0	0.1	0						12	6.5	7.9	7.0	0.2	1.4
8/13/96	24	10.2	12.3	11.2	0.1	2.1	24	11.1	11.2	11.1	0.0	0.1	0						12	6.7	7.9	7.1	0.1	1.2
8/14/96	24	11.4	13.4	12.6	0.1	2.0	24	11.1	11.2	11.2	0.0	0.1	0						12	6.7	8.1	7.1	0.1	1.4
8/15/96	24	11.4	13.6	12.5	0.1	2.2	24	11.2	11.4	11.3	0.0	0.2	0						12	6.5	7.9	7.0	0.1	1.4
8/16/96	24	11.7	13.2	12.4	0.1	1.5	24	11.2	11.5	11.4	0.0	0.3	0						12	6.5	7.9	7.0	0.1	1.4
8/17/96	24	10.6	12.5	11.9	0.1	1.9	24	11.2	11.5	11.4	0.0	0.3	0						12	6.5	7.6	6.9	0.1	1.1

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
8/18/96	24	9.7	10.5	10.2	0.0	0.8	24	11.4	11.5	11.4	0.0	0.1	0						12	6.5	7.5	6.8	0.1	1.0
8/19/96	24	9.4	13.1	11.7	0.3	3.7	24	11.4	11.7	11.5	0.0	0.3	0						12	6.4	7.8	6.9	0.1	1.4
8/20/96	24	11.9	13.6	12.5	0.1	1.7	24	11.4	11.7	11.5	0.0	0.3	0						12	6.5	7.5	6.9	0.1	1.0
8/21/96	24	11.2	12.2	11.8	0.1	1.0	24	11.5	11.7	11.6	0.0	0.2	0						12	6.5	7.8	6.9	0.1	1.3
8/22/96	24	11.5	14.6	12.8	0.2	3.1	24	11.5	11.7	11.6	0.0	0.2	0						12	6.5	7.9	7.0	0.1	1.4
8/23/96	24	11.7	15.0	13.3	0.2	3.3	24	11.5	11.7	11.6	0.0	0.2	0						12	6.7	7.9	7.1	0.1	1.2
8/24/96	24	11.5	14.2	12.8	0.2	2.7	24	11.5	11.7	11.6	0.0	0.2	0						12	6.7	7.8	7.1	0.1	1.1
8/25/96	24	11.2	12.5	12.0	0.1	1.3	24	11.5	11.7	11.6	0.0	0.2	0						12	6.8	7.6	7.1	0.1	0.8
8/26/96	24	12.0	14.2	13.2	0.2	2.2	23	11.5	11.7	11.7	0.0	0.2	0	Deployed near mouth: 8/27					10	6.8	7.0	6.9	0.0	0.2
8/27/96	24	11.9	14.3	13.1	0.2	2.4	24	11.7	11.7	11.7	0.0	0.0	12	13.0	14.1	13.6	0.1	1.1	12	6.7	7.0	6.8	0.0	0.3
8/28/96	24	11.4	12.6	12.0	0.1	1.2	24	11.7	11.9	11.8	0.0	0.2	24	12.2	15.0	13.5	0.2	2.8	12	6.5	7.3	6.8	0.1	0.8
8/29/96	24	11.7	15.3	13.1	0.2	3.6	24	11.7	11.9	11.9	0.0	0.2	24	12.7	16.9	14.3	0.3	4.2	12	6.7	7.9	7.0	0.1	1.2
8/30/96	24	12.2	14.2	13.3	0.2	2.0	24	11.7	11.9	11.9	0.0	0.2	24	13.2	15.2	14.0	0.1	2.0	12	6.7	7.3	6.9	0.1	0.6
8/31/96	24	11.2	14.2	13.2	0.2	3.0	24	11.7	11.9	11.8	0.0	0.2	24	12.7	14.9	13.6	0.2	2.2	12	6.7	7.3	6.9	0.1	0.6
9/1/96	24	9.8	11.1	10.3	0.1	1.3	24	11.7	11.9	11.8	0.0	0.2	24	11.6	15.7	13.3	0.3	4.1	12	6.4	7.8	6.9	0.1	1.4
9/2/96	24	9.4	9.8	9.6	0.0	0.4	24	11.7	12.0	11.9	0.0	0.3	24	11.6	14.2	12.9	0.2	2.6	12	6.5	7.1	6.7	0.1	0.6
9/3/96	24	9.4	14.0	12.0	0.4	4.6	24	11.9	12.0	11.9	0.0	0.1	24	11.8	14.2	12.8	0.2	2.4	12	6.5	7.3	6.7	0.1	0.8
9/4/96	24	12.2	14.3	13.8	0.2	2.1	24	11.9	12.2	12.0	0.0	0.3	24	11.8	13.5	12.4	0.1	1.7	12	6.5	7.1	6.7	0.1	0.6
9/5/96	24	13.2	14.2	13.9	0.0	1.0	24	11.9	12.0	12.0	0.0	0.1	24	11.6	12.4	12.0	0.1	0.8	12	6.5	6.7	6.6	0.0	0.2
9/6/96	24	10.6	13.9	12.6	0.2	3.3	24	12.0	12.0	12.0	0.0	0.0	24	11.6	13.9	12.5	0.1	2.3	12	6.4	7.3	6.8	0.1	0.9
9/7/96	24	9.7	10.6	10.0	0.1	0.9	24	12.0	12.0	12.0	0.0	0.0	24	12.2	14.1	12.8	0.1	1.9	12	6.5	7.3	6.8	0.1	0.8
9/8/96	24	9.4	9.8	9.6	0.0	0.4	24	12.0	12.2	12.0	0.0	0.2	24	12.1	14.9	13.0	0.2	2.8	12	6.5	7.5	6.8	0.1	1.0
9/9/96	24	9.4	14.3	12.9	0.4	4.9	24	12.0	12.3	12.2	0.0	0.3	24	12.2	15.0	13.1	0.2	2.8	12	6.5	7.6	6.9	0.1	1.1
9/10/96	24	11.9	14.0	13.3	0.1	2.1	24	12.2	12.3	12.2	0.0	0.1	24	11.6	15.8	13.2	0.3	4.2	12	6.5	7.6	6.8	0.1	1.1
9/11/96	24	10.3	12.8	11.7	0.2	2.5	24	12.2	12.3	12.3	0.0	0.1	24	12.5	15.7	13.6	0.2	3.2	12	6.7	7.3	6.9	0.1	0.6
9/12/96	24	10.2	12.3	11.0	0.1	2.1	24	12.2	12.3	12.3	0.0	0.1	24	12.5	13.3	12.9	0.1	0.8	12	6.5	6.8	6.7	0.0	0.3
9/13/96	24	9.7	10.6	10.2	0.1	0.9	24	12.2	12.3	12.2	0.0	0.1	24	12.4	12.8	12.5	0.0	0.4	12	6.5	6.8	6.6	0.0	0.3
9/14/96	24	9.8	14.6	12.8	0.4	4.8	24	12.2	12.3	12.3	0.0	0.1	24	12.1	12.8	12.4	0.0	0.7	12	6.7	7.0	6.8	0.0	0.3
9/15/96	24	13.7	14.5	14.2	0.1	0.8	24	12.2	12.3	12.3	0.0	0.1	24	11.8	12.7	12.2	0.1	0.9	12	7.1	7.5	7.4	0.0	0.4
9/16/96	24	14.0	14.5	14.2	0.0	0.5	24	12.3	12.6	12.4	0.0	0.3	24	11.6	12.5	11.9	0.1	0.9	12	7.0	7.5	7.1	0.1	0.5
9/17/96	24	12.8	14.3	14.0	0.1	1.5	24	12.6	12.6	12.6	0.0	0.0	24	11.5	12.7	11.9	0.1	1.2	12	6.7	7.6	7.0	0.1	0.9
9/18/96	24	14.0	14.6	14.3	0.0	0.6	24	12.6	12.8	12.7	0.0	0.2	24	11.0	12.2	11.6	0.1	1.2	12	6.5	7.0	6.8	0.1	0.5
9/19/96	24	13.7	14.3	14.1	0.0	0.6	24	12.6	13.7	12.8	0.0	1.1	24	11.1	12.2	11.7	0.1	1.1	12	6.5	7.0	6.8	0.0	0.5
9/20/96	24	13.9	14.3	14.1	0.0	0.4	24	12.8	13.3	13.0	0.0	0.5	24	10.8	12.1	11.3	0.1	1.3	12	6.4	7.0	6.6	0.1	0.6
9/21/96	24	13.9	14.3	14.2	0.0	0.4	24	12.6	13.1	12.9	0.0	0.5	24	10.5	11.8	11.1	0.1	1.3	12	6.4	6.8	6.5	0.0	0.4
9/22/96	24	14.0	14.2	14.1	0.0	0.2	24	12.6	13.3	13.0	0.0	0.7	24	10.5	12.1	11.1	0.1	1.6	12	6.4	7.0	6.6	0.1	0.6
9/23/96	24	14.3	15.6	15.1	0.1	1.3	24	12.8	14.2	13.4	0.1	1.4	24	10.2	11.9	11.0	0.1	1.7	12	6.2	7.0	6.5	0.1	0.8
9/24/96	24	13.7	15.1	14.7	0.1	1.4	23	13.1	13.4	13.3	0.0	0.3	10	10.4	10.8	10.5	0.0	0.4	11	6.4	6.8	6.5	0.0	0.4
9/25/96	24	13.4	14.3	14.0	0.1	0.9	24	13.3	13.7	13.5	0.0	0.4	0	Thermograph missing: 9/25					12	6.2	7.0	6.5	0.1	0.8
9/26/96	24	13.6	14.3	14.0	0.0	0.7	24	13.3	13.6	13.4	0.0	0.3	0						12	6.4	7.1	6.6	0.1	0.7
9/27/96	24	13.1	14.0	13.8	0.0	0.9	24	13.4	13.7	13.6	0.0	0.3	0						12	6.4	7.1	6.7	0.1	0.7
9/28/96	24	13.6	14.0	13.8	0.0	0.4	24	13.4	14.2	14.0	0.1	0.8	0						12	6.5	7.1	6.7	0.1	0.6
9/29/96	24	10.5	13.7	12.2	0.3	3.2	24	13.6	13.7	13.7	0.0	0.1	0						12	6.4	7.1	6.7	0.1	0.7
9/30/96	24	10.5	15.3	13.1	0.3	4.8	24	13.7	14.2	13.9	0.0	0.5	0						12	6.4	7.0	6.6	0.1	0.6
10/1/96	24	13.1	14.2	13.8	0.0	1.1	24	13.7	14.2	14.1	0.0	0.5	0						12	6.4	7.1	6.6	0.1	0.7
10/2/96	24	14.0	15.0	14.5	0.1	1.0	24	14.2	14.8	14.5	0.0	0.6	0						12	6.4	7.0	6.6	0.1	0.6
10/3/96	24	13.9	14.2	14.0	0.0	0.3	24	14.3	15.0	14.7	0.0	0.7	0						12	6.5	7.0	6.7	0.1	0.5
10/4/96	24	13.2	14.0	13.9	0.0	0.8	24	14.5	15.0	14.9	0.0	0.5	0						12	6.7	7.0	6.8	0.0	0.3
10/5/96	24	13.6	13.9	13.9	0.0	0.3	24	14.5	14.8	14.6	0.0	0.3	0						12	6.4	7.0	6.6	0.1	0.6
10/6/96	24	11.5	13.9	12.7	0.2	2.4	24	14.5	14.6	14.6	0.0	0.1	0						12	6.4	7.0	6.6	0.1	0.6
10/7/96	24	10.9	14.2	13.4	0.2	3.3	24	14.5	15.0	14.8	0.0	0.5	0						12	6.5	7.0	6.7	0.1	0.5
10/8/96	24	13.6	14.2	14.0	0.0	0.6	24	14.8	15.0	14.9	0.0	0.2	0						12	6.5	7.1	6.8	0.1	0.6
10/9/96	24	13.7	14.8	14.4	0.1	1.1	24	15.0	15.1	15.1	0.0	0.1	0						12	6.7	7.3	6.9	0.1	0.6
10/10/96	24	14.0	14.3	14.1	0.0	0.3	24	15.0	15.1	15.0	0.0	0.1	0						12	6.7	6.8	6.7	0.0	0.1
10/11/96	24	13.7	14.2	13.9	0.0	0.5	24	15.0	15.1	15.1	0.0	0.1	0						12	6.5	6.8	6.7	0.0	0.3
10/12/96	24	13.4	14.0	14.0	0.0	0.6	24	15.0	15.3	15.1	0.0	0.3	0						12	6.5	6.8	6.7	0.0	0.3
10/13/96	24	11.1	13.9	12.7	0.2	2.8	24	15.0	15.1	15.1	0.0	0.1	0						12	6.7	7.5	7.1	0.1	0.8
10/14/96	24	11.4	13.7	13.1	0.2	2.3	24	15.0	15.3	15.1	0.0	0.3	0						12	7.1	8.4	7.7	0.2	1.3
10/15/96	24	13.2	13.7	13.4	0.0	0.5	24	15.1	15.3	15.1	0.0	0.2	0						12	7.1	8.1	7.6	0.1	1.0
10/16/96	24	13.1	13.4	13.2	0.0	0.3	24	15.1	15.1	15.1	0.0	0.0	0						12	6.7	7.3	7.0	0.1	0.6
10/17/96	24	13.1	13.4	13.2	0.0	0.3	24	15.1	15.1	15.1	0.0	0.0	0						12	6.5	7.0	6.7	0.0	0.5
10/18/96	24	12.6	13.2	12.9	0.0	0.6	24	14.8	15.3	15.1	0.0	0.5	0						12	6.7	7.1	6.9	0.0	0.4
10/19/96	24	12.5	12.8	12.6	0.0	0.3	24	14.5	14.8	14.6	0.0	0.3	0						12	6.5	6.8	6.7	0.0	0.3
10/20/96	24	11.2	12.5	12.0	0.1	1.3	24	14.3	14.5	14.4	0.0	0.2	0						12	6.4	6.8	6.5	0.0	0.4
10/21/96	24	11.1	12.5	12.2	0.1	1.4	24	14.3	14.3	14.3	0.0	0.0	0						12	6.4	6.7	6.6	0.0	0.3
10/22/96	24	11.9	12.5	12.1	0.0	0.6	22	14.0	14.3	14.2	0.0	0.3	0	Could not access: 10/22					12	6.7	7.1	6.9	0.0	0.4
10/23/96	24	11.5	12.2	12.0	0.0	0.7	24	13.9	14.0	13.9	0.0	0.1	0						12	6.7	7.0	6.8	0.0	0.3
10/24/96	24	11.5	12.2	11.7	0.1	0.7	24	13.6	13.9	13.7	0.0	0.3	0						12	6.8	7.1	7.0	0.0	0.3
10/25/96	24	11.4	11.5	11.5	0.0	0.1	24	13.4	13.6	13.6	0.0	0.2	0						12	6.4	7.0	6.7	0.1	0.6

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
10/26/96	24	11.2	11.4	11.3	0.0	0.2	24	13.3	13.4	13.4	0.0	0.1	0						12	6.4	6.8	6.5	0.0	0.4
10/27/96	24	11.1	11.4	11.2	0.0	0.3	24	13.1	13.3	13.2	0.0	0.2	0						12	6.4	6.7	6.5	0.0	0.3
10/28/96	24	11.1	11.4	11.1	0.0	0.3	24	12.9	13.1	13.0	0.0	0.2	0						12	6.7	6.7	6.7	0.0	0.0
10/29/96	24	10.9	11.1	11.0	0.0	0.2	24	12.6	12.9	12.7	0.0	0.3	0						12	6.5	7.0	6.7	0.0	0.5
10/30/96	24	11.1	11.2	11.1	0.0	0.1	24	12.5	12.6	12.6	0.0	0.1	0						12	6.4	6.8	6.6	0.0	0.4
10/31/96	24	10.9	11.2	11.1	0.0	0.3	24	12.3	12.6	12.4	0.0	0.3	0						12	6.2	6.7	6.4	0.0	0.5
11/1/96	24	10.6	11.1	10.8	0.0	0.5	24	12.5	12.5	12.5	0.0	0.0	0						12	6.4	6.7	6.5	0.0	0.3
11/2/96	24	10.6	10.8	10.7	0.0	0.2	24	12.3	12.5	12.4	0.0	0.2	0						12	6.4	6.7	6.5	0.0	0.3
11/3/96	24	10.5	10.6	10.5	0.0	0.1	24	12.2	12.2	12.2	0.0	0.0	0						12	6.5	6.8	6.7	0.0	0.3
11/4/96	24	10.3	10.5	10.4	0.0	0.2	24	12.0	12.2	12.2	0.0	0.2	0						12	6.5	6.7	6.6	0.0	0.2
11/5/96	24	10.2	10.5	10.3	0.0	0.3	24	12.0	12.0	12.0	0.0	0.0	0						12	6.5	6.7	6.6	0.0	0.2
11/6/96	24	10.0	10.3	10.2	0.0	0.3	24	11.9	12.0	12.0	0.0	0.1	0						12	6.5	6.8	6.7	0.0	0.3
11/7/96	24	10.0	10.2	10.2	0.0	0.2	24	11.9	11.9	11.9	0.0	0.0	0						12	6.5	6.8	6.6	0.0	0.3
11/8/96	24	10.0	10.2	10.2	0.0	0.2	24	11.7	11.9	11.9	0.0	0.2	0						12	6.8	7.1	6.9	0.0	0.3
11/9/96	24	10.0	10.2	10.1	0.0	0.2	24	11.7	11.7	11.7	0.0	0.0	0						12	6.7	7.0	6.8	0.0	0.3
11/10/96	24	10.0	10.2	10.1	0.0	0.2	24	11.5	11.7	11.5	0.0	0.2	0						12	6.7	7.1	6.9	0.0	0.4
11/11/96	24	10.0	10.2	10.0	0.0	0.2	24	11.4	11.5	11.5	0.0	0.1	0						12	7.0	7.3	7.1	0.0	0.3
11/12/96	24	9.8	10.2	10.0	0.0	0.4	24	11.4	11.7	11.5	0.0	0.3	0						12	7.0	7.1	7.1	0.0	0.1
11/13/96	24	9.7	10.0	9.8	0.0	0.3	24	11.2	11.4	11.3	0.0	0.2	0						12	7.0	7.1	7.0	0.0	0.1
11/14/96	24	9.7	9.7	9.7	0.0	0.0	24	11.2	11.2	11.2	0.0	0.0	0						12	6.8	7.0	7.0	0.0	0.2
11/15/96	24	9.5	9.7	9.6	0.0	0.2	24	11.2	11.2	11.2	0.0	0.0	0						12	6.7	7.0	6.8	0.0	0.3
11/16/96	24	9.5	9.7	9.5	0.0	0.2	24	11.2	11.2	11.2	0.0	0.0	0						12	6.7	7.0	6.8	0.0	0.3
11/17/96	24	9.2	9.5	9.3	0.0	0.3	24	11.1	11.2	11.1	0.0	0.1	0						12	6.7	7.0	6.8	0.0	0.3
11/18/96	24	9.2	9.4	9.2	0.0	0.2	24	11.1	11.2	11.2	0.0	0.1	0						12	6.5	6.7	6.7	0.0	0.2
11/19/96	24	9.1	9.2	9.2	0.0	0.1	24	11.2	11.4	11.3	0.0	0.2	0						12	6.5	6.8	6.7	0.0	0.3
11/20/96	24	8.8	9.1	8.9	0.0	0.3	24	10.9	11.2	11.1	0.0	0.3	0						12	6.5	6.8	6.7	0.0	0.3
11/21/96	24	8.8	8.8	8.8	0.0	0.0	24	10.6	10.9	10.8	0.0	0.3	0						12	6.5	6.8	6.7	0.0	0.3
11/22/96	24	8.5	8.8	8.6	0.0	0.3	24	10.3	10.6	10.5	0.0	0.3	0						12	6.5	6.7	6.7	0.0	0.2
11/23/96	24	8.1	8.5	8.3	0.0	0.4	24	10.2	10.3	10.2	0.0	0.1	0						12	6.4	6.7	6.5	0.0	0.3
11/24/96	24	8.1	8.3	8.2	0.0	0.2	24	10.3	10.5	10.4	0.0	0.2	0						12	6.5	6.7	6.6	0.0	0.2
11/25/96	24	7.8	8.1	8.0	0.0	0.3	24	9.7	10.3	10.0	0.0	0.6	0						12	6.7	7.0	6.8	0.0	0.3
11/26/96	22	7.8	8.0	7.9	0.0	0.2	23	9.5	9.7	9.6	0.0	0.2	0						15	6.5	7.0	6.8	0.0	0.5
11/27/96	24	7.8	8.0	7.9	0.0	0.2	24	9.4	9.5	9.4	0.0	0.1	0						24	6.7	7.3	6.9	0.0	0.6
11/28/96	24	7.5	7.8	7.6	0.0	0.3	24	9.2	9.4	9.3	0.0	0.2	0						24	6.8	7.1	7.0	0.0	0.3
11/29/96	24	7.5	7.7	7.6	0.0	0.2	24	9.1	9.2	9.1	0.0	0.1	0						24	6.7	6.8	6.8	0.0	0.1
11/30/96	24	7.7	7.7	7.7	0.0	0.0	24	9.1	9.2	9.1	0.0	0.1	0						24	6.7	7.0	6.8	0.0	0.3
12/1/96	24	7.4	7.7	7.5	0.0	0.3	24	8.9	9.1	9.0	0.0	0.2	0						24	6.5	7.0	6.7	0.0	0.5
12/2/96	24	7.2	7.4	7.3	0.0	0.2	24	8.8	8.9	8.9	0.0	0.1	0						24	6.1	6.5	6.4	0.0	0.4
12/3/96	24	7.1	7.2	7.2	0.0	0.1	24	8.9	8.9	8.9	0.0	0.0	0						24	6.4	6.5	6.4	0.0	0.1
12/4/96	24	7.1	7.2	7.1	0.0	0.1	24	8.8	8.9	8.9	0.0	0.1	0						24	6.4	6.5	6.4	0.0	0.1
12/5/96	24	6.9	7.1	7.1	0.0	0.2	24	8.6	8.9	8.8	0.0	0.3	0						24	6.5	6.5	6.5	0.0	0.0
12/6/96	24	6.9	7.1	6.9	0.0	0.2	24	8.4	8.6	8.5	0.0	0.2	0						24	6.2	6.5	6.4	0.0	0.3
12/7/96	24	6.8	6.9	6.9	0.0	0.1	24	8.3	8.6	8.4	0.0	0.3	0						24	6.5	6.7	6.6	0.0	0.2
12/8/96	24	6.8	6.8	6.8	0.0	0.0	24	8.3	8.4	8.4	0.0	0.1	0						24	6.7	6.7	6.7	0.0	0.0
12/9/96	24	6.6	6.8	6.7	0.0	0.2	24	8.3	8.3	8.3	0.0	0.0	0						24	6.7	6.8	6.7	0.0	0.1
12/10/96	24	6.4	6.8	6.6	0.0	0.4	24	8.0	8.3	8.1	0.0	0.3	0						24	6.5	6.8	6.7	0.0	0.3
12/11/96	24	6.3	6.4	6.4	0.0	0.1	24	7.7	8.0	7.9	0.0	0.3	0						24	6.5	6.7	6.6	0.0	0.2
12/12/96	24	6.4	6.6	6.5	0.0	0.2	24	7.7	7.8	7.7	0.0	0.1	0						24	6.5	6.5	6.5	0.0	0.0
12/13/96	24	6.3	6.4	6.4	0.0	0.1	24	7.5	7.7	7.6	0.0	0.2	0						24	6.5	6.7	6.5	0.0	0.2
12/14/96	24	6.3	6.3	6.3	0.0	0.0	24	7.4	7.5	7.4	0.0	0.1	0						24	6.2	6.5	6.4	0.0	0.3
12/15/96	24	6.3	6.3	6.3	0.0	0.0	24	7.2	7.4	7.3	0.0	0.2	0						24	6.2	6.5	6.3	0.0	0.3
12/16/96	24	6.1	6.3	6.2	0.0	0.2	24	7.2	7.4	7.2	0.0	0.2	0						24	6.2	6.5	6.4	0.0	0.3
12/17/96	24	6.0	6.1	6.1	0.0	0.1	24	7.2	7.5	7.4	0.0	0.3	0						24	5.9	6.2	6.1	0.0	0.3
12/18/96	24	6.0	6.0	6.0	0.0	0.0	24	7.2	7.4	7.4	0.0	0.2	0						24	5.9	6.2	6.0	0.0	0.3
12/19/96	24	5.8	5.8	5.8	0.0	0.0	24	7.2	7.2	7.2	0.0	0.0	0						24	5.9	6.4	6.1	0.0	0.5
12/20/96	24	5.7	5.8	5.8	0.0	0.1	24	7.1	7.2	7.2	0.0	0.1	0						24	6.1	6.2	6.1	0.0	0.1
12/21/96	24	5.7	5.8	5.7	0.0	0.1	24	7.1	7.1	7.1	0.0	0.0	0						24	5.7	6.1	6.0	0.0	0.4
12/22/96	24	5.7	5.7	5.7	0.0	0.0	24	6.9	7.1	7.1	0.0	0.2	0						24	5.7	6.2	6.0	0.0	0.5
12/23/96	24	5.7	5.8	5.7	0.0	0.1	24	6.7	6.9	6.8	0.0	0.2	0						24	5.4	6.1	5.8	0.0	0.7
12/24/96	24	5.7	5.7	5.7	0.0	0.0	24	6.6	6.7	6.7	0.0	0.1	0						24	5.9	6.1	6.0	0.0	0.2
12/25/96	24	5.5	5.7	5.6	0.0	0.2	24	6.4	6.9	6.6	0.0	0.5	0						24	5.7	6.4	6.1	0.0	0.7
12/26/96	24	5.5	5.5	5.5	0.0	0.0	24	6.7	6.7	6.7	0.0	0.0	0						24	4.8	5.9	5.5	0.1	1.1
12/27/96	24	5.4	5.5	5.5	0.0	0.1	24	6.6	6.6	6.6	0.0	0.0	0						24	5.7	6.1	5.9	0.0	0.4
12/28/96	24	5.4	5.4	5.4	0.0	0.0	24	6.4	6.6	6.5	0.0	0.2	0						24	5.7	5.9	5.8	0.0	0.2
12/29/96	24	5.4	5.4	5.4	0.0	0.0	24	6.4	6.4	6.4	0.0	0.0	0						24	5.6	6.5	5.9	0.1	0.9
12/30/96	24	5.4	5.4	5.4	0.0	0.0	24	6.3	6.4	6.3	0.0	0.1	0						24	6.5	6.7	6.6	0.0	0.2
12/31/96	24	5.2	5.4	5.3	0.0	0.2	24	6.1	6.3	6.3	0.0	0.2	0						24	6.5	7.0	6.7	0.0	0.5
1/1/97	24	5.2	5.4	5.2	0.0	0.2	24	6.1	6.1	6.1	0.0	0.0	0						24	6.7	6.8	6.7	0.0	0.1
1/2/97	24	5.2	5.4	5.4	0.0	0.2	24	6.0	6.1	6.0	0.0	0.1	0						24	6.5	6.7	6.7	0.0	0.2

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
1/3/97	24	5.4	5.4	5.4	0.0	0.0	24	6.0	6.0	6.0	0.0	0.0	0						24	6.1	6.4	6.2	0.0	0.3
1/4/97	24	5.4	5.5	5.4	0.0	0.1	24	6.0	6.0	6.0	0.0	0.0	0						24	6.2	6.4	6.2	0.0	0.2
1/5/97	24	5.4	5.4	5.4	0.0	0.0	24	5.8	6.0	5.8	0.0	0.2	0						24	6.1	6.2	6.2	0.0	0.1
1/6/97	24	5.4	5.4	5.4	0.0	0.0	24	5.8	5.8	5.8	0.0	0.0	0						24	5.9	6.2	6.1	0.0	0.3
1/7/97	24	5.2	5.4	5.2	0.0	0.2	24	5.8	5.8	5.8	0.0	0.0	0						24	6.1	6.2	6.2	0.0	0.1
1/8/97	24	5.2	5.4	5.3	0.0	0.2	24	5.8	5.8	5.8	0.0	0.0	0						24	6.2	6.2	6.2	0.0	0.0
1/9/97	24	5.2	5.4	5.3	0.0	0.2	24	5.8	6.0	5.8	0.0	0.2	0						24	6.1	6.2	6.2	0.0	0.1
1/10/97	24	5.4	5.4	5.4	0.0	0.0	24	5.8	5.8	5.8	0.0	0.0	0						24	6.2	6.2	6.2	0.0	0.0
1/11/97	24	5.4	5.5	5.5	0.0	0.1	24	5.8	5.8	5.8	0.0	0.0	0						24	5.9	6.2	6.1	0.0	0.3
1/12/97	24	5.2	5.4	5.3	0.0	0.2	24	5.7	5.7	5.7	0.0	0.0	0						24	5.4	5.9	5.6	0.0	0.5
1/13/97	24	5.0	5.2	5.1	0.0	0.2	24	5.7	5.7	5.7	0.0	0.0	0						24	5.3	5.4	5.4	0.0	0.1
1/14/97	24	4.9	5.0	4.9	0.0	0.1	24	5.7	5.7	5.7	0.0	0.0	0						24	5.1	5.4	5.3	0.0	0.3
1/15/97	23	4.7	4.9	4.7	0.0	0.2	24	5.5	5.7	5.5	0.0	0.2	0						24	5.3	5.4	5.3	0.0	0.1
1/16/97	24	4.7	4.7	4.7	0.0	0.0	22	5.3	5.5	5.3	0.0	0.2	0						24	5.1	5.4	5.3	0.0	0.3
1/17/97	24	4.6	4.7	4.6	0.0	0.1	24	5.3	5.3	5.3	0.0	0.0	0						24	5.4	5.4	5.4	0.0	0.0
1/18/97	24	4.6	4.7	4.6	0.0	0.1	24	5.3	5.3	5.3	0.0	0.0	0						24	5.4	6.1	5.8	0.0	0.7
1/19/97	24	4.6	4.6	4.6	0.0	0.0	24	5.3	5.3	5.3	0.0	0.0	0						24	5.7	5.9	5.8	0.0	0.2
1/20/97	24	4.6	4.6	4.6	0.0	0.0	24	5.2	5.3	5.2	0.0	0.1	0						24	5.7	5.9	5.8	0.0	0.2
1/21/97	24	4.6	4.6	4.6	0.0	0.0	24	5.0	5.2	5.0	0.0	0.2	0						24	5.4	5.7	5.6	0.0	0.3
1/22/97	24	4.4	4.6	4.5	0.0	0.2	24	5.0	5.0	5.0	0.0	0.0	0						24	5.0	5.4	5.2	0.0	0.4
1/23/97	24	4.4	4.6	4.4	0.0	0.2	24	4.9	5.0	4.9	0.0	0.1	0						24	5.1	5.4	5.4	0.0	0.3
1/24/97	24	4.3	4.4	4.4	0.0	0.1	24	4.9	4.9	4.9	0.0	0.0	0						24	5.1	5.6	5.4	0.0	0.5
1/25/97	24	4.3	4.4	4.4	0.0	0.1	24	4.9	4.9	4.9	0.0	0.0	0						24	5.1	5.4	5.2	0.0	0.3
1/26/97	24	4.3	4.4	4.3	0.0	0.1	24	4.7	4.9	4.8	0.0	0.2	0						24	5.0	5.3	5.1	0.0	0.3
1/27/97	24	4.1	4.3	4.2	0.0	0.2	24	4.6	4.7	4.6	0.0	0.1	0						24	4.5	5.1	4.9	0.0	0.6
1/28/97	24	4.1	4.1	4.1	0.0	0.0	24	4.6	4.6	4.6	0.0	0.0	0						24	5.1	5.3	5.1	0.0	0.2
1/29/97	24	4.1	4.1	4.1	0.0	0.0	24	4.6	4.6	4.6	0.0	0.0	0						24	5.1	5.6	5.3	0.0	0.5
1/30/97	24	4.1	4.1	4.1	0.0	0.0	24	4.6	4.6	4.6	0.0	0.0	0						24	5.4	5.6	5.5	0.0	0.2
1/31/97	24	4.1	4.1	4.1	0.0	0.0	24	4.6	4.7	4.7	0.0	0.1	0						24	5.6	6.1	5.8	0.0	0.5
2/1/97	24	4.1	4.3	4.1	0.0	0.2	24	4.6	4.7	4.6	0.0	0.1	0						24	5.6	6.1	5.9	0.0	0.5
2/2/97	24	3.9	4.1	4.1	0.0	0.2	24	4.6	4.7	4.6	0.0	0.1	0						24	5.4	5.9	5.6	0.0	0.5
2/3/97	24	4.1	4.4	4.2	0.0	0.3	24	4.7	4.7	4.7	0.0	0.0	0						24	5.4	5.7	5.5	0.0	0.3
2/4/97	24	4.3	4.4	4.4	0.0	0.1	24	4.6	4.7	4.6	0.0	0.1	0						24	5.1	5.6	5.4	0.0	0.5
2/5/97	24	4.3	4.4	4.4	0.0	0.1	24	4.4	4.6	4.6	0.0	0.2	0						24	5.1	5.4	5.2	0.0	0.3
2/6/97	24	4.1	4.3	4.2	0.0	0.2	24	4.4	4.4	4.4	0.0	0.0	0						24	5.1	5.4	5.2	0.0	0.3
2/7/97	24	4.1	4.1	4.1	0.0	0.0	24	4.3	4.4	4.4	0.0	0.1	0						24	5.0	5.3	5.1	0.0	0.3
2/8/97	24	3.9	4.1	4.0	0.0	0.2	24	4.3	4.3	4.3	0.0	0.0	0						24	5.0	5.3	5.1	0.0	0.3
2/9/97	24	3.9	3.9	3.9	0.0	0.0	24	4.3	4.3	4.3	0.0	0.0	0						24	5.0	5.3	5.1	0.0	0.3
2/10/97	24	3.8	3.9	3.9	0.0	0.1	24	4.3	4.3	4.3	0.0	0.0	0						24	5.1	5.4	5.2	0.0	0.3
2/11/97	24	3.8	3.8	3.8	0.0	0.0	24	4.3	4.3	4.3	0.0	0.0	0						24	4.8	5.3	5.1	0.0	0.5
2/12/97	24	3.8	3.9	3.8	0.0	0.1	24	4.3	4.3	4.3	0.0	0.0	0						24	5.1	5.4	5.2	0.0	0.3
2/13/97	24	3.8	3.8	3.8	0.0	0.0	24	4.3	4.3	4.3	0.0	0.0	0						24	5.1	5.3	5.2	0.0	0.2
2/14/97	24	3.8	3.8	3.8	0.0	0.0	24	4.3	4.3	4.3	0.0	0.0	0						24	5.1	5.4	5.4	0.0	0.3
2/15/97	24	3.8	3.9	3.8	0.0	0.1	24	4.3	4.6	4.4	0.0	0.3	0						24	5.4	5.9	5.5	0.0	0.5
2/16/97	24	3.9	4.3	4.2	0.0	0.4	24	4.4	4.6	4.6	0.0	0.2	0						24	5.1	5.7	5.5	0.0	0.6
2/17/97	24	4.1	4.4	4.2	0.0	0.3	24	4.3	4.4	4.4	0.0	0.1	0						24	5.4	5.7	5.6	0.0	0.3
2/18/97	24	3.9	4.1	4.1	0.0	0.2	24	4.3	4.3	4.3	0.0	0.0	0						24	5.3	5.6	5.4	0.0	0.3
2/19/97	24	4.1	4.1	4.1	0.0	0.0	24	4.3	4.3	4.3	0.0	0.0	0						24	5.3	5.6	5.5	0.0	0.3
2/20/97	24	3.9	4.1	4.0	0.0	0.2	24	4.1	4.3	4.2	0.0	0.2	0						24	5.3	5.6	5.4	0.0	0.3
2/21/97	24	3.8	4.1	4.0	0.0	0.3	24	4.3	4.4	4.3	0.0	0.1	0						24	5.1	5.7	5.3	0.0	0.6
2/22/97	24	3.9	4.3	4.2	0.0	0.4	24	4.3	4.6	4.4	0.0	0.3	0						24	5.0	5.6	5.2	0.0	0.6
2/23/97	24	4.3	4.4	4.4	0.0	0.1	24	4.4	4.6	4.6	0.0	0.2	0						24	5.0	5.6	5.2	0.0	0.6
2/24/97	22	4.3	4.4	4.4	0.0	0.1	23	4.4	4.7	4.6	0.0	0.3	0						23	5.1	5.7	5.3	0.0	0.6
2/25/97	24	4.3	4.4	4.4	0.0	0.1	24	4.3	4.4	4.4	0.0	0.1	0						24	5.1	5.6	5.3	0.0	0.5
2/26/97	24	4.1	4.4	4.2	0.0	0.3	24	4.3	4.4	4.3	0.0	0.1	0						24	5.1	5.4	5.3	0.0	0.3
2/27/97	24	3.9	4.1	4.1	0.0	0.2	24	4.3	4.4	4.3	0.0	0.1	0						24	4.8	5.4	5.1	0.0	0.6
2/28/97	24	3.9	4.1	4.0	0.0	0.2	24	4.4	4.6	4.5	0.0	0.2	0						24	4.8	5.1	5.0	0.0	0.3
3/1/97	24	4.1	4.3	4.2	0.0	0.2	24	4.3	4.6	4.4	0.0	0.3	0						24	4.5	5.1	4.8	0.0	0.6
3/2/97	24	4.1	4.3	4.3	0.0	0.2	24	4.3	4.3	4.3	0.0	0.0	0						24	4.7	5.3	5.0	0.0	0.6
3/3/97	24	4.1	4.3	4.3	0.0	0.2	24	4.4	4.4	4.4	0.0	0.0	0						24	5.0	5.1	5.1	0.0	0.1
3/4/97	24	4.3	4.3	4.3	0.0	0.0	24	4.4	4.6	4.5	0.0	0.2	0						24	5.0	5.3	5.1	0.0	0.3
3/5/97	24	4.3	4.4	4.3	0.0	0.1	24	4.6	4.7	4.6	0.0	0.1	0						24	5.0	5.4	5.2	0.0	0.4
3/6/97	24	4.3	4.4	4.3	0.0	0.1	24	4.6	4.7	4.6	0.0	0.1	0						24	5.1	5.6	5.3	0.0	0.5
3/7/97	24	4.3	4.4	4.4	0.0	0.1	24	4.4	4.4	4.4	0.0	0.0	0						24	5.4	5.7	5.6	0.0	0.3
3/8/97	24	4.3	4.6	4.4	0.0	0.3	24	4.4	4.6	4.5	0.0	0.2	0						24	5.3	5.9	5.5	0.0	0.6
3/9/97	24	4.4	4.6	4.5	0.0	0.2	24	4.6	4.7	4.7	0.0	0.1	0						24	5.3	5.9	5.6	0.0	0.6
3/10/97	24	4.6	4.7	4.6	0.0	0.1	24	4.6	4.7	4.7	0.0	0.1	0						24	5.4	5.6	5.5	0.0	0.2
3/11/97	24	4.7	4.7	4.7	0.0	0.0	24	4.7	4.7	4.7	0.0	0.0	0						24	4.8	5.6	5.3	0.0	0.8
3/12/97	24	4.6	4.7	4.7	0.0	0.1	24	4.6	4.7	4.7	0.0	0.1	0						24	5.0	5.3	5.1	0.0	0.3

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
3/13/97	24	4.4	4.6	4.6	0.0	0.2	24	4.7	4.9	4.8	0.0	0.2	0						24	5.0	5.4	5.2	0.0	0.4
3/14/97	24	4.6	4.7	4.7	0.0	0.1	24	4.9	5.2	5.0	0.0	0.3	0						24	5.0	5.6	5.2	0.0	0.6
3/15/97	24	4.6	4.9	4.7	0.0	0.3	24	4.9	5.2	5.1	0.0	0.3	0						24	4.8	5.6	5.2	0.1	0.8
3/16/97	24	4.6	4.7	4.6	0.0	0.1	24	4.9	4.9	4.9	0.0	0.0	0						24	5.4	5.7	5.6	0.0	0.3
3/17/97	24	4.4	4.7	4.5	0.0	0.3	24	4.7	4.9	4.9	0.0	0.2	0						24	5.6	5.7	5.6	0.0	0.1
3/18/97	24	4.7	4.7	4.7	0.0	0.0	24	4.9	5.2	5.0	0.0	0.3	0						24	5.6	6.2	5.7	0.0	0.6
3/19/97	23	4.7	5.2	5.0	0.0	0.5	22	5.0	5.2	5.0	0.0	0.2	0						24	5.9	6.2	6.1	0.0	0.3
3/20/97	24	4.7	5.0	4.9	0.0	0.3	24	5.0	5.0	5.0	0.0	0.0	0						24	5.3	6.1	5.8	0.1	0.8
3/21/97	24	4.7	5.0	4.9	0.0	0.3	24	4.9	5.2	5.0	0.0	0.3	0						24	5.1	5.9	5.4	0.1	0.8
3/22/97	24	4.9	5.2	5.0	0.0	0.3	24	4.9	5.0	4.9	0.0	0.1	0						24	5.1	5.7	5.4	0.0	0.6
3/23/97	24	4.9	5.2	5.0	0.0	0.3	24	4.9	4.9	4.9	0.0	0.0	0						24	5.3	5.7	5.5	0.0	0.4
3/24/97	24	4.9	5.8	5.2	0.1	0.9	24	4.9	5.3	5.0	0.0	0.4	0						24	5.1	5.7	5.4	0.0	0.6
3/25/97	24	5.5	6.0	5.8	0.0	0.5	24	4.9	5.2	5.0	0.0	0.3	0						24	5.1	6.1	5.5	0.1	1.0
3/26/97	24	5.0	5.5	5.2	0.0	0.5	24	4.9	5.0	5.0	0.0	0.1	0						24	5.3	5.9	5.6	0.0	0.6
3/27/97	24	5.0	5.5	5.3	0.0	0.5	24	5.0	5.2	5.0	0.0	0.2	0						24	5.3	5.6	5.4	0.0	0.3
3/28/97	24	5.2	5.7	5.4	0.0	0.5	24	5.0	5.2	5.1	0.0	0.2	0						24	5.1	5.6	5.3	0.0	0.5
3/29/97	24	5.2	6.0	5.6	0.1	0.8	24	5.2	5.7	5.5	0.0	0.5	0						24	5.0	5.7	5.3	0.0	0.7
3/30/97	24	5.0	6.1	5.7	0.1	1.1	24	5.2	5.5	5.3	0.0	0.3	0						24	5.1	5.6	5.2	0.0	0.5
3/31/97	24	4.9	5.5	5.2	0.0	0.6	24	5.2	5.5	5.4	0.0	0.3	0						24	5.0	5.1	5.0	0.0	0.1
4/1/97	24	5.4	5.5	5.5	0.0	0.1	24	5.2	5.3	5.2	0.0	0.1	0						24	4.8	5.4	5.1	0.0	0.6
4/2/97	24	5.4	5.7	5.6	0.0	0.3	24	5.3	5.5	5.4	0.0	0.2	0						24	4.7	5.6	5.0	0.1	0.9
4/3/97	24	5.4	5.5	5.5	0.0	0.1	24	5.3	5.5	5.4	0.0	0.2	0						24	4.8	5.4	5.1	0.0	0.6
4/4/97	24	5.4	6.3	5.5	0.0	0.9	24	5.3	5.5	5.5	0.0	0.2	0						24	4.8	5.6	5.0	0.1	0.8
4/5/97	24	5.5	6.0	5.7	0.0	0.5	24	5.2	5.7	5.4	0.0	0.5	0						24	4.7	5.6	5.0	0.1	0.9
4/6/97	24	6.0	6.3	6.2	0.0	0.3	24	5.5	5.7	5.5	0.0	0.2	0						24	4.8	5.6	5.1	0.1	0.8
4/7/97	24	5.7	6.3	5.9	0.0	0.6	24	5.7	5.8	5.7	0.0	0.1	0						24	5.0	5.4	5.2	0.0	0.4
4/8/97	24	5.8	6.0	6.0	0.0	0.2	24	5.5	5.7	5.7	0.0	0.2	0						24	5.1	5.3	5.2	0.0	0.2
4/9/97	24	5.5	6.0	5.8	0.0	0.5	24	5.5	5.5	5.5	0.0	0.0	0						24	5.0	5.1	5.1	0.0	0.1
4/10/97	24	5.5	6.0	5.7	0.0	0.5	24	5.5	5.8	5.7	0.0	0.3	0						24	5.0	5.3	5.1	0.0	0.3
4/11/97	24	6.0	6.4	6.2	0.0	0.4	24	5.5	5.8	5.7	0.0	0.3	0						24	4.8	5.6	5.1	0.1	0.8
4/12/97	24	6.3	6.6	6.4	0.0	0.3	24	5.7	6.0	5.8	0.0	0.3	0						24	4.8	5.6	5.1	0.1	0.8
4/13/97	24	6.3	6.6	6.5	0.0	0.3	24	5.8	6.1	6.0	0.0	0.3	0						24	5.1	5.3	5.2	0.0	0.2
4/14/97	24	6.0	6.4	6.3	0.0	0.4	24	5.8	6.0	5.8	0.0	0.2	0						24	5.1	5.4	5.3	0.0	0.3
4/15/97	24	6.3	6.6	6.5	0.0	0.3	24	5.8	6.0	5.9	0.0	0.2	0						24	5.3	6.2	5.7	0.1	0.9
4/16/97	24	6.0	6.8	6.4	0.1	0.8	24	5.8	6.0	5.9	0.0	0.2	0						24	5.4	6.4	5.7	0.1	1.0
4/17/97	24	6.0	6.4	6.3	0.0	0.4	24	5.8	6.1	6.0	0.0	0.3	0						24	5.3	6.2	5.6	0.1	0.9
4/18/97	24	6.3	7.4	6.8	0.1	1.1	24	6.0	6.1	6.0	0.0	0.1	0						24	5.3	5.6	5.4	0.0	0.3
4/19/97	24	6.8	7.4	7.1	0.0	0.6	24	6.1	6.3	6.2	0.0	0.2	0						24	5.4	6.8	5.8	0.1	1.4
4/20/97	24	5.5	7.1	6.2	0.1	1.6	24	6.1	6.3	6.2	0.0	0.2	0						24	5.6	6.8	6.1	0.1	1.2
4/21/97	24	6.8	7.2	7.1	0.0	0.4	24	6.3	6.4	6.3	0.0	0.1	0						24	5.1	6.2	5.7	0.1	1.1
4/22/97	22	7.2	7.5	7.4	0.0	0.3	23	6.3	6.6	6.5	0.0	0.3	0						23	5.6	5.7	5.6	0.0	0.1
4/23/97	24	6.9	7.2	7.1	0.0	0.3	24	6.4	6.6	6.6	0.0	0.2	0						24	5.3	5.7	5.6	0.0	0.4
4/24/97	24	6.6	6.9	6.8	0.0	0.3	24	6.4	6.6	6.5	0.0	0.2	0						24	5.3	5.7	5.5	0.0	0.4
4/25/97	24	6.6	7.5	6.9	0.0	0.9	24	6.6	6.7	6.6	0.0	0.1	0						24	5.3	6.2	5.6	0.1	0.9
4/26/97	24	7.1	8.1	7.7	0.1	1.0	24	6.7	7.2	6.8	0.0	0.5	0						24	5.4	6.1	5.7	0.1	0.7
4/27/97	24	6.8	7.1	7.0	0.0	0.3	24	6.6	6.9	6.7	0.0	0.3	0						24	5.3	5.6	5.4	0.0	0.3
4/28/97	24	6.9	7.5	7.2	0.0	0.6	24	6.7	7.1	6.9	0.0	0.4	0						24	5.3	5.6	5.4	0.0	0.3
4/29/97	24	7.2	7.5	7.3	0.0	0.3	24	6.9	7.1	6.9	0.0	0.2	0						24	5.4	5.9	5.5	0.0	0.5
4/30/97	24	6.6	7.7	7.1	0.1	1.1	24	6.9	7.1	6.9	0.0	0.2	0						24	5.3	5.9	5.5	0.0	0.6
5/1/97	24	6.8	7.1	6.9	0.0	0.3	24	6.9	7.1	7.0	0.0	0.2	0						24	5.1	5.9	5.4	0.0	0.8
5/2/97	24	6.9	7.8	7.4	0.1	0.9	24	7.2	8.0	7.5	0.1	0.8	0						24	5.1	6.1	5.5	0.1	1.0
5/3/97	24	7.5	7.7	7.5	0.0	0.2	24	7.1	8.0	7.5	0.1	0.9	0						24	5.4	5.7	5.5	0.0	0.3
5/4/97	24	7.5	8.0	7.8	0.0	0.5	24	7.1	7.2	7.2	0.0	0.1	0						24	5.4	6.1	5.6	0.0	0.7
5/5/97	24	7.5	8.3	7.9	0.1	0.8	24	6.9	7.1	7.0	0.0	0.2	0						24	5.4	5.9	5.6	0.0	0.5
5/6/97	24	7.4	7.5	7.4	0.0	0.1	24	7.1	7.2	7.2	0.0	0.1	0						24	5.3	5.7	5.5	0.0	0.4
5/7/97	24	7.4	9.5	8.1	0.1	2.1	24	7.2	7.5	7.3	0.0	0.3	0						24	5.1	6.4	5.6	0.1	1.3
5/8/97	24	8.3	9.5	9.0	0.1	1.2	24	7.2	7.7	7.5	0.0	0.5	0						24	5.3	6.4	5.7	0.1	1.1
5/9/97	24	7.7	8.3	7.9	0.0	0.6	24	7.2	7.4	7.3	0.0	0.2	0						24	5.4	6.5	5.8	0.1	1.1
5/10/97	24	7.8	7.8	7.8	0.0	0.0	24	7.1	7.5	7.3	0.0	0.4	0						24	5.4	6.7	5.8	0.1	1.3
5/11/97	24	7.8	9.5	8.4	0.2	1.7	24	7.2	7.7	7.4	0.0	0.5	0						24	5.4	6.7	5.9	0.1	1.3
5/12/97	24	9.4	10.0	9.6	0.0	0.6	24	7.1	7.4	7.2	0.0	0.3	0						24	5.6	6.5	5.9	0.1	0.9
5/13/97	24	8.9	9.7	9.1	0.1	0.8	24	7.2	7.7	7.4	0.0	0.5	0						24	5.6	6.7	5.9	0.1	1.1
5/14/97	24	8.9	9.5	9.3	0.0	0.6	24	7.5	7.8	7.6	0.0	0.3	0						24	5.6	6.5	5.9	0.1	0.9
5/15/97	24	9.1	9.7	9.3	0.0	0.6	24	7.5	8.0	7.6	0.0	0.5	0						24	5.6	6.2	5.8	0.0	0.6
5/16/97	24	9.2	9.8	9.5	0.0	0.6	24	7.5	7.8	7.7	0.0	0.3	0						24	5.6	6.5	5.9	0.1	0.9
5/17/97	24	8.9	9.8	9.4	0.0	0.9	24	7.8	8.9	8.0	0.1	1.1	0						24	5.6	6.5	5.9	0.1	0.9
5/18/97	24	9.2	11.7	10.4	0.1	2.5	24	7.8	8.3	8.1	0.0	0.5	0						24	5.4	6.5	5.8	0.1	1.1
5/19/97	24	9.2	10.3	9.9	0.1	1.1	24	7.8	8.1	8.0	0.0	0.3	0						24	5.4	6.7	5.8	0.1	1.3
5/20/97	24	9.4	10.2	9.7	0.0	0.8	24	7.8	8.9	8.1	0.1	1.1	0						24	5.4	5.9	5.6	0.0	0.5

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
5/21/97	23	9.5	10.3	10.0	0.0	0.8	22	8.0	8.0	8.0	0.0	0.0	0						24	5.4	6.4	5.7	0.1	1.0
5/22/97	24	9.4	10.2	9.7	0.1	0.8	24	8.0	8.3	8.1	0.0	0.3	0						24	5.4	6.4	5.7	0.1	1.0
5/23/97	24	9.5	9.8	9.7	0.0	0.3	24	8.0	8.1	8.0	0.0	0.1	0						24	5.6	6.2	5.7	0.0	0.6
5/24/97	24	9.7	10.0	9.8	0.0	0.3	24	7.8	8.1	8.0	0.0	0.3	0						24	5.6	6.4	5.8	0.0	0.8
5/25/97	24	9.1	9.8	9.5	0.0	0.7	24	8.0	8.3	8.1	0.0	0.3	0						24	5.6	5.7	5.6	0.0	0.1
5/26/97	24	9.5	10.2	10.0	0.0	0.7	24	8.0	8.1	8.1	0.0	0.1	0						24	5.6	6.5	5.9	0.1	0.9
5/27/97	24	9.8	10.9	10.3	0.1	1.1	24	8.1	8.6	8.2	0.0	0.5	0						24	5.7	6.4	5.9	0.1	0.7
5/28/97	24	9.7	10.9	10.2	0.1	1.2	24	8.1	8.4	8.3	0.0	0.3	0						24	5.7	6.1	5.8	0.0	0.4
5/29/97	24	9.8	10.2	10.0	0.0	0.4	24	8.3	8.4	8.4	0.0	0.1	0						24	5.7	6.7	6.0	0.1	1.0
5/30/97	24	9.8	11.4	10.6	0.1	1.6	24	8.3	8.6	8.4	0.0	0.3	0						24	5.9	6.2	6.0	0.0	0.3
5/31/97	24	9.5	10.3	9.9	0.1	0.8	24	8.3	8.8	8.5	0.0	0.5	0						24	5.9	6.8	6.4	0.1	0.9
6/1/97	24	9.4	10.6	10.0	0.1	1.2	24	8.6	9.1	8.9	0.0	0.5	0						24	6.4	6.8	6.5	0.0	0.4
6/2/97	24	10.0	10.6	10.4	0.0	0.6	24	8.9	9.2	9.1	0.0	0.3	0						24	6.4	7.5	6.7	0.1	1.1
6/3/97	24	9.8	10.3	10.1	0.0	0.5	24	8.9	9.5	9.2	0.0	0.6	0						24	6.4	6.7	6.5	0.0	0.3
6/4/97	24	9.8	10.5	10.2	0.0	0.7	24	9.4	9.5	9.4	0.0	0.1	0						24	6.2	6.7	6.4	0.0	0.5
6/5/97	24	10.0	10.3	10.2	0.0	0.3	24	9.4	9.5	9.4	0.0	0.1	0						24	6.2	7.5	6.6	0.1	1.3
6/6/97	24	9.8	10.8	10.3	0.1	1.0	24	9.4	9.8	9.6	0.0	0.4	0						24	6.1	7.3	6.5	0.1	1.2
6/7/97	24	9.7	10.5	9.9	0.0	0.8	24	9.5	10.2	9.7	0.0	0.7	0						24	6.2	7.0	6.4	0.1	0.8
6/8/97	24	9.4	10.8	10.2	0.1	1.4	24	9.2	10.5	9.7	0.1	1.3	0						24	6.1	7.3	6.5	0.1	1.2
6/9/97	24	9.1	10.9	10.3	0.1	1.8	24	9.5	10.3	9.8	0.0	0.8	0						24	6.1	7.5	6.5	0.1	1.4
6/10/97	24	10.2	10.8	10.4	0.0	0.6	24	9.5	10.2	9.8	0.0	0.7	0						24	6.2	7.3	6.5	0.1	1.1
6/11/97	24	10.3	11.1	10.7	0.1	0.8	24	9.8	10.2	9.9	0.0	0.4	0						24	6.2	6.7	6.4	0.0	0.5
6/12/97	24	10.3	10.6	10.5	0.0	0.3	24	10.0	10.3	10.1	0.0	0.3	0						24	6.2	6.8	6.4	0.0	0.6
6/13/97	24	10.0	10.8	10.6	0.0	0.8	24	10.0	10.8	10.3	0.0	0.8	0						24	6.2	7.3	6.5	0.1	1.1
6/14/97	24	9.7	10.9	10.4	0.1	1.2	24	10.2	10.8	10.3	0.0	0.6	0						24	6.2	7.5	6.5	0.1	1.3
6/15/97	24	10.2	10.9	10.7	0.1	0.7	24	10.2	10.5	10.3	0.0	0.3	0						24	6.2	7.5	6.6	0.1	1.3
6/16/97	24	9.5	11.2	10.7	0.1	1.7	24	10.2	10.5	10.4	0.0	0.3	0						24	6.4	6.8	6.5	0.0	0.4
6/17/97	24	10.3	10.9	10.6	0.0	0.6	24	10.3	10.5	10.5	0.0	0.2	0						24	6.4	6.8	6.5	0.0	0.4
6/18/97	24	10.3	10.9	10.7	0.0	0.6	24	10.5	10.8	10.6	0.0	0.3	0						24	6.2	6.7	6.5	0.0	0.5
6/19/97	22	10.6	11.1	10.8	0.0	0.5	22	10.5	10.9	10.6	0.0	0.4	0						23	6.2	6.8	6.4	0.0	0.6
6/20/97	24	10.3	10.9	10.6	0.0	0.6	24	10.5	10.9	10.7	0.0	0.4	0						24	6.2	7.5	6.6	0.1	1.3
6/21/97	24	10.0	11.4	10.7	0.1	1.4	24	10.6	10.8	10.7	0.0	0.2	0						24	6.4	6.7	6.5	0.0	0.3
6/22/97	24	10.3	10.9	10.6	0.0	0.6	24	10.6	10.8	10.7	0.0	0.2	0						24	6.4	6.7	6.5	0.0	0.3
6/23/97	24	10.3	11.2	10.9	0.1	0.9	24	10.6	10.8	10.8	0.0	0.2	0						24	6.5	7.0	6.6	0.0	0.5
6/24/97	24	10.6	11.2	11.0	0.0	0.6	24	10.6	10.9	10.8	0.0	0.3	0						24	6.4	7.6	6.8	0.1	1.2
6/25/97	24	10.8	11.7	11.2	0.1	0.9	24	10.8	10.9	10.9	0.0	0.1	0						24	6.5	7.8	6.9	0.1	1.3
6/26/97	24	10.6	11.4	11.0	0.0	0.8	24	10.8	11.1	10.9	0.0	0.3	0						24	6.5	7.1	6.7	0.0	0.6
6/27/97	24	10.5	10.9	10.8	0.0	0.4	24	10.8	10.9	10.9	0.0	0.1	0						24	6.5	7.3	6.8	0.1	0.8
6/28/97	24	10.8	11.1	10.9	0.0	0.3	24	10.9	11.1	10.9	0.0	0.2	0						24	6.5	7.3	6.8	0.0	0.8
6/29/97	24	9.7	10.8	10.4	0.1	1.1	24	10.9	11.1	11.0	0.0	0.2	0						24	6.7	7.6	6.9	0.1	0.9
6/30/97	24	9.5	11.5	10.8	0.2	2.0	24	10.9	11.1	11.0	0.0	0.2	0						24	6.5	7.1	6.8	0.0	0.6
7/1/97	24	10.6	11.4	11.0	0.1	0.8	24	10.9	11.1	11.0	0.0	0.2	0						24	6.7	7.0	6.8	0.0	0.3
7/2/97	24	10.6	11.4	10.9	0.0	0.8	24	10.9	11.1	11.1	0.0	0.2	0						24	6.5	7.9	7.0	0.1	1.4
7/3/97	24	10.6	12.3	11.3	0.1	1.7	24	11.1	11.2	11.1	0.0	0.1	0						24	6.7	8.1	7.1	0.1	1.4
7/4/97	24	9.5	11.1	10.4	0.1	1.6	24	11.1	11.2	11.1	0.0	0.1	0						24	6.8	8.2	7.2	0.1	1.4
7/5/97	24	9.4	12.0	10.8	0.2	2.6	24	11.1	11.4	11.2	0.0	0.3	0						24	6.8	8.1	7.1	0.1	1.3
7/6/97	24	11.2	12.0	11.6	0.1	0.8	24	11.1	11.2	11.1	0.0	0.1	0						24	6.8	7.6	7.0	0.1	0.8
7/7/97	24	11.2	12.0	11.8	0.0	0.8	24	11.1	11.2	11.2	0.0	0.1	0						24	6.7	8.1	7.1	0.1	1.4
7/8/97	24	11.1	11.7	11.4	0.0	0.6	24	11.2	11.4	11.2	0.0	0.2	0						24	6.8	7.3	7.0	0.0	0.5
7/9/97	24	11.1	12.0	11.5	0.1	0.9	24	11.2	11.4	11.3	0.0	0.2	0						24	7.0	7.5	7.2	0.0	0.5
7/10/97	24	11.4	11.9	11.6	0.0	0.5	24	11.4	11.5	11.4	0.0	0.1	0						24	7.0	7.3	7.1	0.0	0.3
7/11/97	24	11.2	11.7	11.5	0.0	0.5	24	11.4	11.5	11.4	0.0	0.1	0						24	6.8	7.8	7.2	0.1	1.0
7/12/97	24	11.4	11.9	11.5	0.0	0.5	24	11.4	11.9	11.5	0.0	0.5	0						24	7.0	8.2	7.4	0.1	1.2
7/13/97	24	10.8	12.2	11.4	0.1	1.4	24	11.4	11.7	11.5	0.0	0.3	0						24	7.0	8.4	7.4	0.1	1.4
7/14/97	24	10.3	12.5	11.7	0.1	2.2	24	11.4	11.5	11.5	0.0	0.1	0						24	7.0	8.1	7.3	0.1	1.1
7/15/97	24	10.8	12.3	11.6	0.1	1.5	24	11.4	11.7	11.5	0.0	0.3	0						24	6.8	7.9	7.2	0.1	1.1
7/16/97	24	11.4	12.5	11.8	0.1	1.1	24	11.5	11.7	11.6	0.0	0.2	0						24	6.8	8.2	7.2	0.1	1.4
7/17/97	24	10.5	12.2	11.3	0.1	1.7	24	11.5	11.9	11.6	0.0	0.4	0						24	6.8	7.6	7.1	0.1	0.8
7/18/97	24	11.1	12.3	11.7	0.1	1.2	24	11.5	11.9	11.7	0.0	0.4	0						24	6.8	8.1	7.2	0.1	1.3
7/19/97	24	11.1	12.6	11.9	0.1	1.5	24	11.7	11.9	11.8	0.0	0.2	0						24	6.8	8.2	7.2	0.1	1.4
7/20/97	24	11.4	12.0	11.8	0.0	0.6	24	11.7	11.9	11.8	0.0	0.2	0						24	7.0	8.2	7.4	0.1	1.2
7/21/97	24	11.2	13.9	11.9	0.1	2.7	24	11.7	12.0	11.8	0.0	0.3	0						24	6.8	7.6	7.1	0.0	0.8
7/22/97	24	10.9	12.6	11.6	0.1	1.7	24	11.5	11.9	11.8	0.0	0.4	0						24	6.8	7.6	7.1	0.1	0.8
7/23/97	24	10.5	12.3	11.4	0.1	1.8	24	11.7	12.0	11.9	0.0	0.3	0						24	6.8	8.2	7.2	0.1	1.4
7/24/97	24	11.5	12.5	11.9	0.1	1.0	24	11.9	12.2	12.0	0.0	0.3	0						24	6.8	8.2	7.2	0.1	1.4
7/25/97	24	11.5	12.5	12.0	0.1	1.0	24	11.9	12.3	12.0	0.0	0.4	0						24	6.8	8.1	7.2	0.1	1.3
7/26/97	24	10.9	12.3	11.9	0.1	1.4	24	11.9	12.2	12.0	0.0	0.3	0						24	6.7	8.1	7.2	0.1	1.4
7/27/97	24	11.7	12.5	12.0	0.0	0.8	24	11.9	12.2	12.0	0.0	0.3	0						24	6.8	8.2	7.2	0.1	1.4
7/28/97	24	11.5	12.6	11.9	0.0	1.1	24	11.9	12.2	12.0	0.0	0.3	0						24	6.8	8.2	7.3	0.1	1.4

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
7/29/97	24	11.7	12.8	12.2	0.1	1.1	24	12.0	12.2	12.1	0.0	0.2	0						24	6.8	8.1	7.3	0.1	1.3
7/30/97	24	10.0	11.5	10.7	0.1	1.5	24	12.0	12.3	12.1	0.0	0.3	0						24	6.8	8.1	7.2	0.1	1.3
7/31/97	24	10.0	12.5	11.1	0.2	2.5	24	12.0	12.3	12.1	0.0	0.3	0						24	6.8	8.2	7.2	0.1	1.4
8/1/97	24	10.6	12.2	11.3	0.1	1.6	24	12.0	12.2	12.1	0.0	0.2	0						24	6.8	8.2	7.2	0.1	1.4
8/2/97	24	9.8	11.9	10.8	0.1	2.1	24	12.0	12.3	12.2	0.0	0.3	0						24	6.8	8.2	7.2	0.1	1.4
8/3/97	24	9.8	12.5	11.3	0.2	2.7	24	12.2	12.3	12.2	0.0	0.1	0						24	6.8	8.2	7.3	0.1	1.4
8/4/97	24	10.0	13.2	11.7	0.2	3.2	24	12.2	12.3	12.2	0.0	0.1	0						24	6.8	8.2	7.3	0.1	1.4
8/5/97	24	11.4	13.7	12.5	0.1	2.3	24	12.2	12.3	12.2	0.0	0.1	0						24	6.8	8.2	7.3	0.1	1.4
8/6/97	24	11.2	13.2	12.0	0.1	2.0	24	12.2	12.3	12.3	0.0	0.1	0						24	7.0	8.2	7.4	0.1	1.2
8/7/97	24	11.7	13.6	12.3	0.1	1.9	24	12.2	12.3	12.3	0.0	0.1	0						24	6.8	8.1	7.3	0.1	1.3
8/8/97	24	10.9	13.9	12.5	0.2	3.0	24	12.2	12.5	12.3	0.0	0.3	0						24	6.8	8.1	7.2	0.1	1.3
8/9/97	24	11.2	13.1	12.0	0.1	1.9	24	12.3	12.5	12.4	0.0	0.2	0						24	6.8	8.2	7.2	0.1	1.4
8/10/97	24	10.3	12.0	11.0	0.1	1.7	24	12.3	12.5	12.3	0.0	0.2	0						24	6.8	8.1	7.2	0.1	1.3
8/11/97	24	10.0	13.2	11.8	0.3	3.2	24	12.3	12.5	12.4	0.0	0.2	0						24	6.8	8.2	7.3	0.1	1.4
8/12/97	24	11.1	12.9	12.2	0.1	1.8	24	12.3	12.5	12.4	0.0	0.2	0						24	6.8	8.2	7.3	0.1	1.4
8/13/97	24	12.2	12.9	12.7	0.0	0.7	24	12.3	12.5	12.5	0.0	0.2	0						24	6.8	8.1	7.3	0.1	1.3
8/14/97	24	11.4	12.9	12.3	0.1	1.5	24	12.5	12.5	12.5	0.0	0.0	0						24	6.8	8.2	7.3	0.1	1.4
8/15/97	24	11.1	13.9	12.8	0.2	2.8	24	12.5	12.5	12.5	0.0	0.0	0						24	6.8	7.8	7.1	0.1	1.0
8/16/97	24	10.0	12.9	11.0	0.2	2.9	24	12.5	12.6	12.5	0.0	0.1	0						24	6.8	8.1	7.2	0.1	1.3
8/17/97	24	9.8	10.5	10.1	0.0	0.7	24	12.5	12.6	12.5	0.0	0.1	0						24	6.8	8.2	7.3	0.1	1.4
8/18/97	24	10.0	13.1	11.9	0.3	3.1	24	12.5	12.6	12.5	0.0	0.1	0						24	6.8	7.5	7.1	0.0	0.7
8/19/97	24	12.5	14.5	13.2	0.1	2.0	24	12.5	12.6	12.6	0.0	0.1	0						24	6.8	8.1	7.2	0.1	1.3
8/20/97	24	12.3	14.2	13.2	0.1	1.9	24	12.5	12.6	12.6	0.0	0.1	0						24	6.8	7.1	7.0	0.0	0.3
8/21/97	24	10.5	12.9	11.8	0.2	2.4	24	12.5	12.6	12.6	0.0	0.1	0						24	6.8	7.9	7.1	0.1	1.1
8/22/97	24	11.5	14.8	13.3	0.2	3.3	24	12.6	12.6	12.6	0.0	0.0	0						24	6.8	8.1	7.2	0.1	1.3
8/23/97	24	12.3	13.7	13.2	0.1	1.4	24	12.6	12.6	12.6	0.0	0.0	0						24	6.8	7.6	7.0	0.1	0.8
8/24/97	24	10.3	13.4	11.7	0.2	3.1	24	12.6	12.6	12.6	0.0	0.0	0						24	6.8	7.3	7.1	0.0	0.5
8/25/97	24	10.3	13.6	12.2	0.3	3.3	24	12.6	12.6	12.6	0.0	0.0	0						24	6.8	7.8	7.2	0.1	1.0
8/26/97	24	12.3	13.6	13.1	0.1	1.3	24	12.6	12.6	12.6	0.0	0.0	0						24	6.8	7.1	7.0	0.0	0.3
8/27/97	24	12.2	14.3	13.1	0.1	2.1	24	12.6	12.6	12.6	0.0	0.0	0						22	6.8	7.3	6.9	0.0	0.5
8/28/97	24	12.5	13.7	13.2	0.1	1.2	23	12.6	12.8	12.7	0.0	0.2	0						24	6.8	7.3	7.0	0.0	0.5
8/29/97	24	10.5	12.2	10.9	0.1	1.7	24	12.6	12.8	12.8	0.0	0.2	0						24	6.8	7.8	7.1	0.1	1.0
8/30/97	24	10.3	13.2	11.7	0.3	2.9	24	12.6	12.8	12.8	0.0	0.2	0						24	6.7	7.8	7.0	0.1	1.1
8/31/97	24	12.0	13.4	13.0	0.1	1.4	24	12.8	12.8	12.8	0.0	0.0	0						24	6.7	7.8	7.0	0.1	1.1
9/1/97	24	12.6	13.4	13.1	0.0	0.8	24	12.8	12.9	12.8	0.0	0.1	0						24	6.7	7.9	7.1	0.1	1.2
9/2/97	24	11.9	13.7	13.2	0.1	1.8	24	12.8	12.9	12.9	0.0	0.1	0						24	6.7	7.8	7.0	0.1	1.1
9/3/97	24	12.9	13.9	13.5	0.1	1.0	24	12.8	12.9	12.9	0.0	0.1	0						24	6.7	7.6	7.0	0.1	0.9
9/4/97	24	13.4	13.9	13.7	0.0	0.5	24	12.9	13.1	12.9	0.0	0.2	0						24	6.7	7.8	7.0	0.1	1.1
9/5/97	24	13.6	13.9	13.7	0.0	0.3	24	12.9	13.1	13.0	0.0	0.2	0						24	6.7	7.3	6.9	0.1	0.6
9/6/97	24	12.9	14.0	13.6	0.1	1.1	24	12.9	13.3	13.1	0.0	0.4	0						24	6.5	7.5	6.8	0.1	1.0
9/7/97	24	12.6	14.3	13.7	0.1	1.7	24	13.1	13.3	13.2	0.0	0.2	0						24	6.5	7.6	6.9	0.1	1.1
9/8/97	24	13.2	16.1	14.5	0.2	2.9	24	13.1	13.3	13.2	0.0	0.2	0						24	6.7	7.6	7.0	0.1	0.9
9/9/97	24	13.4	15.1	14.2	0.1	1.7	24	13.1	13.3	13.3	0.0	0.2	0						24	6.7	7.5	7.0	0.1	0.8
9/10/97	24	12.6	15.0	14.0	0.2	2.4	24	13.3	13.4	13.3	0.0	0.1	0						24	6.7	7.0	6.8	0.0	0.3
9/11/97	24	13.9	14.6	14.1	0.0	0.7	24	13.3	13.4	13.4	0.0	0.1	0						24	6.7	7.1	6.9	0.0	0.4
9/12/97	24	13.1	14.8	14.3	0.1	1.7	24	13.3	13.4	13.4	0.0	0.1	0						24	6.5	7.1	6.8	0.0	0.6
9/13/97	24	10.9	14.5	12.4	0.3	3.6	24	13.4	13.6	13.5	0.0	0.2	0						24	6.5	7.1	6.7	0.0	0.6
9/14/97	24	10.6	14.8	12.4	0.4	4.2	24	13.4	13.6	13.6	0.0	0.2	0						24	6.7	7.3	6.8	0.0	0.6
9/15/97	24	13.9	14.8	14.4	0.0	0.9	24	13.6	13.7	13.6	0.0	0.1	0						24	6.7	7.3	6.9	0.0	0.6
9/16/97	24	13.7	15.0	14.5	0.1	1.3	24	13.6	13.9	13.7	0.0	0.3	0						24	7.1	9.6	7.8	0.2	2.5
9/17/97	24	12.9	14.5	14.0	0.1	1.6	24	13.7	13.9	13.8	0.0	0.2	0						24	8.5	9.5	9.0	0.1	1.0
9/18/97	24	13.1	14.3	14.1	0.1	1.2	24	13.7	14.2	13.9	0.0	0.5	0						24	8.1	9.2	8.6	0.1	1.1
9/19/97	24	14.0	15.3	14.7	0.1	1.3	24	14.0	14.3	14.2	0.0	0.3	0						24	7.6	8.5	7.9	0.1	0.9
9/20/97	24	13.7	15.6	14.8	0.1	1.9	24	14.3	14.8	14.4	0.0	0.5	0						24	7.1	7.9	7.5	0.0	0.8
9/21/97	24	11.7	14.0	12.1	0.1	2.3	24	14.5	14.8	14.6	0.0	0.3	0						24	7.0	7.8	7.2	0.0	0.8
9/22/97	24	10.9	15.3	14.1	0.3	4.4	24	14.6	15.0	14.9	0.0	0.4	0						24	7.0	7.5	7.2	0.0	0.5
9/23/97	24	14.0	15.4	14.9	0.1	1.4	24	14.6	15.0	14.8	0.0	0.4	0						24	7.0	7.6	7.1	0.0	0.6
9/24/97	24	12.6	14.6	14.1	0.1	2.0	24	14.6	15.0	14.9	0.0	0.4	0						24	6.8	7.5	7.1	0.0	0.7
9/25/97	24	14.2	15.3	14.6	0.1	1.1	24	14.8	15.0	15.0	0.0	0.2	0						24	6.8	7.3	7.0	0.0	0.5
9/26/97	24	14.0	14.5	14.3	0.0	0.5	24	14.8	15.3	15.1	0.0	0.5	0						24	6.8	7.0	7.0	0.0	0.2
9/27/97	24	11.4	14.3	12.8	0.2	2.9	24	15.0	15.1	15.1	0.0	0.1	0						24	6.8	7.1	6.9	0.0	0.3
9/28/97	24	11.4	11.5	11.5	0.0	0.1	24	15.1	15.3	15.2	0.0	0.2	0						24	6.7	7.3	6.9	0.0	0.6
9/29/97	24	11.4	15.0	14.1	0.3	3.6	24	15.3	15.3	15.3	0.0	0.0	0						24	6.8	7.3	6.9	0.0	0.5
9/30/97	24	14.2	14.8	14.6	0.0	0.6	24	15.3	15.6	15.4	0.0	0.3	0						24	6.8	7.0	6.9	0.0	0.2
10/1/97	24	14.2	15.1	14.6	0.1	0.9	24	15.4	15.6	15.4	0.0	0.2	0						24	7.0	7.1	7.1	0.0	0.1
10/2/97	24	13.9	14.6	14.3	0.0	0.7	24	15.4	15.8	15.6	0.0	0.4	0						24	7.1	7.9	7.6	0.1	0.8
10/3/97	24	14.0	14.5	14.3	0.0	0.5	24	15.6	15.8	15.6	0.0	0.2	0						24	7.6	8.5	8.1	0.1	0.9
10/4/97	24	12.0	14.0	13.0	0.2	2.0	24	15.6	15.8	15.7	0.0	0.2	0						24	8.2	8.7	8.5	0.0	0.5
10/5/97	24	13.7	14.0	13.9	0.0	0.3	24	15.8	15.9	15.9	0.0	0.1	0						24	7.3	8.2	7.9	0.1	0.9

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
10/6/97	24	13.9	14.2	14.1	0.0	0.3	24	15.8	15.9	15.8	0.0	0.1	0						24	7.0	7.5	7.1	0.0	0.5
10/7/97	24	13.7	14.0	13.8	0.0	0.3	24	15.4	15.8	15.6	0.0	0.4	0						24	6.7	7.0	6.9	0.0	0.3
10/8/97	24	13.7	14.0	13.9	0.0	0.3	24	15.3	15.4	15.4	0.0	0.1	0						24	6.8	7.0	6.9	0.0	0.2
10/9/97	24	12.9	13.6	13.2	0.0	0.7	24	15.0	15.3	15.1	0.0	0.3	0						24	6.8	7.0	7.0	0.0	0.2
10/10/97	24	13.1	13.4	13.3	0.0	0.3	24	14.8	15.0	15.0	0.0	0.2	0						24	7.0	7.0	7.0	0.0	0.0
10/11/97	24	12.8	13.1	12.9	0.0	0.3	24	14.6	14.8	14.7	0.0	0.2	0						24	6.8	7.1	6.9	0.0	0.3
10/12/97	24	12.8	12.9	12.9	0.0	0.1	24	14.5	14.6	14.6	0.0	0.1	0						24	6.8	7.0	6.9	0.0	0.2
10/13/97	24	12.8	12.9	12.8	0.0	0.1	24	14.2	14.5	14.3	0.0	0.3	0						24	6.8	7.1	6.9	0.0	0.3
10/14/97	24	12.8	12.9	12.8	0.0	0.1	24	14.0	14.2	14.2	0.0	0.2	0						24	6.7	7.1	6.9	0.0	0.4
10/15/97	24	12.8	13.2	13.0	0.0	0.4	24	14.0	14.0	14.0	0.0	0.0	0						24	6.8	7.3	7.0	0.0	0.5
10/16/97	24	12.8	13.1	12.9	0.0	0.3	24	13.9	14.0	14.0	0.0	0.1	0						24	6.8	7.3	7.0	0.0	0.5
10/17/97	24	12.3	12.8	12.6	0.0	0.5	24	13.7	13.9	13.9	0.0	0.2	0						24	7.0	7.1	7.0	0.0	0.1
10/18/97	24	12.3	12.8	12.5	0.0	0.5	18	13.7	13.7	13.7	0.0	0.0	0						24	6.8	7.1	6.9	0.0	0.3
10/19/97	24	12.3	12.6	12.5	0.0	0.3	0	Thermograph damaged					0						24	6.8	7.1	7.0	0.0	0.3
10/20/97	24	12.3	12.8	12.6	0.0	0.5	0	Partial data recovered					0						24	6.8	7.3	6.9	0.0	0.5
10/21/97	24	12.3	12.6	12.5	0.0	0.3	0						0						24	6.8	7.3	7.0	0.0	0.5
10/22/97	24	12.0	12.3	12.2	0.0	0.3	0						0						24	7.0	7.1	7.1	0.0	0.1
10/23/97	24	11.9	12.0	12.0	0.0	0.1	0						0						24	7.0	7.3	7.2	0.0	0.3
10/24/97	24	11.9	12.0	12.0	0.0	0.1	0						0						24	7.0	7.3	7.1	0.0	0.3
10/25/97	24	11.9	12.0	11.9	0.0	0.1	0						0						24	7.0	7.5	7.1	0.0	0.5
10/26/97	24	11.7	11.9	11.8	0.0	0.2	0						0						24	7.1	7.3	7.2	0.0	0.2
10/27/97	24	11.5	11.7	11.6	0.0	0.2	0						0						23	7.1	7.6	7.3	0.0	0.5
10/28/97	23	11.4	11.5	11.4	0.0	0.1	14	13.0	13.0	13.0	0.0	0.0	0						24	7.1	7.5	7.3	0.0	0.4
10/29/97	24	11.1	11.5	11.3	0.0	0.4	24	12.9	13.0	13.0	0.0	0.1	0						24	7.5	8.1	7.9	0.0	0.6
10/30/97	24	10.5	11.4	10.9	0.1	0.9	24	12.7	12.9	12.9	0.0	0.2	0						24	8.1	8.8	8.5	0.0	0.7
10/31/97	24	10.8	11.1	11.0	0.0	0.3	24	12.7	12.9	12.9	0.0	0.2	0						24	7.8	8.4	8.1	0.0	0.6
11/1/97	24	10.9	11.2	11.0	0.0	0.3	24	12.6	12.7	12.7	0.0	0.1	0						24	7.5	7.8	7.6	0.0	0.3
11/2/97	24	11.2	11.4	11.2	0.0	0.2	24	12.4	12.6	12.6	0.0	0.2	0						24	7.3	7.6	7.5	0.0	0.3
11/3/97	24	10.9	11.2	11.0	0.0	0.3	24	12.4	12.6	12.5	0.0	0.2	0						24	7.3	7.6	7.5	0.0	0.3
11/4/97	24	10.8	10.9	10.9	0.0	0.1	24	12.2	12.4	12.2	0.0	0.2	0						24	7.5	7.8	7.6	0.0	0.3
11/5/97	24	10.9	11.1	11.1	0.0	0.2	24	11.9	12.2	12.1	0.0	0.3	0						24	7.6	7.9	7.7	0.0	0.3
11/6/97	24	10.8	11.1	10.8	0.0	0.3	24	11.8	11.9	11.9	0.0	0.1	0						24	7.6	7.8	7.7	0.0	0.2
11/7/97	24	10.3	10.8	10.5	0.0	0.5	24	11.9	11.9	11.9	0.0	0.0	0						24	7.6	7.8	7.6	0.0	0.2
11/8/97	24	10.3	10.6	10.5	0.0	0.3	24	11.9	12.1	12.0	0.0	0.2	0						24	7.5	7.8	7.6	0.0	0.3
11/9/97	24	10.6	10.8	10.6	0.0	0.2	24	12.1	12.7	12.6	0.0	0.6	0						24	7.5	7.8	7.6	0.0	0.3
11/10/97	24	10.5	10.6	10.6	0.0	0.1	24	12.4	12.7	12.5	0.0	0.3	0						24	7.5	7.8	7.6	0.0	0.3
11/11/97	24	10.3	10.3	10.3	0.0	0.0	24	12.2	12.4	12.4	0.0	0.2	0						24	7.3	7.6	7.5	0.0	0.3
11/12/97	24	10.2	10.3	10.2	0.0	0.1	24	11.6	12.2	12.0	0.0	0.6	0						24	7.3	7.6	7.4	0.0	0.3
11/13/97	24	9.8	10.2	10.0	0.0	0.4	24	11.3	11.5	11.4	0.0	0.2	0						24	7.3	7.6	7.5	0.0	0.3
11/14/97	24	9.7	10.0	9.8	0.0	0.3	24	11.2	11.5	11.3	0.0	0.3	0						24	7.3	7.6	7.5	0.0	0.3
11/15/97	24	9.5	9.7	9.7	0.0	0.2	24	11.0	11.2	11.1	0.0	0.2	0						24	7.1	7.6	7.4	0.0	0.5
11/16/97	24	9.5	9.7	9.5	0.0	0.2	24	11.0	11.3	11.2	0.0	0.3	0						24	7.3	7.6	7.5	0.0	0.3
11/17/97	24	9.1	9.5	9.4	0.0	0.4	24	10.9	11.2	11.1	0.0	0.3	0						24	7.3	7.6	7.5	0.0	0.3
11/18/97	24	9.1	9.4	9.2	0.0	0.3	24	10.9	11.0	10.9	0.0	0.1	0						24	7.3	7.6	7.5	0.0	0.3
11/19/97	24	8.6	9.4	9.1	0.0	0.8	24	10.7	11.3	11.1	0.0	0.6	0						24	7.1	7.6	7.5	0.0	0.5
11/20/97	24	8.6	8.9	8.8	0.0	0.3	24	10.5	10.7	10.6	0.0	0.2	0						24	7.5	7.8	7.7	0.0	0.3
11/21/97	24	8.8	8.9	8.9	0.0	0.1	24	10.4	10.5	10.5	0.0	0.1	0						24	7.1	7.8	7.5	0.0	0.7
11/22/97	24	8.8	8.9	8.8	0.0	0.1	24	10.4	10.9	10.5	0.0	0.5	0						24	7.1	7.5	7.3	0.0	0.4
11/23/97	24	8.5	8.8	8.7	0.0	0.3	24	10.5	10.9	10.7	0.0	0.4	0						24	7.3	7.8	7.5	0.0	0.5
11/24/97	24	8.5	8.5	8.5	0.0	0.0	23	10.2	10.5	10.4	0.0	0.3	0						24	7.3	7.6	7.5	0.0	0.3
11/25/97	24	8.5	8.6	8.5	0.0	0.1	24	9.9	10.2	10.0	0.0	0.3	0						24	7.3	7.6	7.4	0.0	0.3
11/26/97	24	8.5	8.6	8.5	0.0	0.1	24	9.9	10.2	10.1	0.0	0.3	0						24	7.1	7.6	7.3	0.0	0.5
11/27/97	24	8.3	8.5	8.4	0.0	0.2	24	9.6	10.1	9.9	0.0	0.5	0						24	7.1	7.5	7.3	0.0	0.4
11/28/97	24	8.1	8.5	8.3	0.0	0.4	24	9.5	9.6	9.5	0.0	0.1	0						24	7.5	7.6	7.6	0.0	0.1
11/29/97	24	8.1	8.3	8.1	0.0	0.2	24	9.3	9.5	9.4	0.0	0.2	0						24	7.5	7.6	7.6	0.0	0.1
11/30/97	24	8.0	8.0	8.0	0.0	0.0	24	9.1	9.5	9.3	0.0	0.4	0						24	7.3	7.5	7.5	0.0	0.2
12/1/97	24	8.0	8.0	8.0	0.0	0.0	24	9.1	9.1	9.1	0.0	0.0	0						24	7.1	7.5	7.2	0.0	0.4
12/2/97	24	7.8	8.0	7.9	0.0	0.2	24	9.1	9.8	9.6	0.1	0.7	0						24	7.1	7.3	7.2	0.0	0.2
12/3/97	24	7.8	7.8	7.8	0.0	0.0	24	9.6	9.8	9.6	0.0	0.2	0						24	7.1	7.3	7.2	0.0	0.2
12/4/97	24	7.7	7.8	7.7	0.0	0.1	24	9.3	9.6	9.4	0.0	0.3	0						24	7.1	7.3	7.2	0.0	0.2
12/5/97	24	7.5	7.7	7.5	0.0	0.2	24	9.3	9.5	9.5	0.0	0.2	0						24	7.0	7.3	7.1	0.0	0.3
12/6/97	24	7.4	7.4	7.4	0.0	0.0	24	9.1	9.3	9.3	0.0	0.2	0						24	7.0	7.1	7.1	0.0	0.1
12/7/97	24	7.2	7.4	7.3	0.0	0.2	24	9.1	9.1	9.1	0.0	0.0	0						24	7.0	7.1	7.1	0.0	0.1
12/8/97	24	7.1	7.2	7.2	0.0	0.1	24	9.0	9.1	9.1	0.0	0.1	0						24	7.1	7.3	7.1	0.0	0.2
12/9/97	24	6.9	7.1	7.0	0.0	0.2	24	8.5	9.0	8.9	0.0	0.5	0						24	7.0	7.1	7.1	0.0	0.1
12/10/97	24	6.9	7.1	7.0	0.0	0.2	24	8.1	8.5	8.2	0.0	0.4	0						24	7.0	7.3	7.1	0.0	0.3
12/11/97	24	6.9	6.9	6.9	0.0	0.0	24	7.9	8.2	8.1	0.0	0.3	0						24	7.0	7.1	7.0	0.0	0.1
12/12/97	24	6.8	6.8	6.8	0.0	0.0	24	8.2	8.5	8.4	0.0	0.3	0						24	7.0	7.1	7.0	0.0	0.1
12/13/97	24	6.8	6.8	6.8	0.0	0.0	24	8.2	8.4	8.4	0.0	0.2	0						24	6.8	7.0	7.0	0.0	0.2

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
12/14/97	24	6.6	6.8	6.6	0.0	0.2	24	8.2	8.4	8.3	0.0	0.2	0						24	7.0	7.1	7.0	0.0	0.1
12/15/97	24	6.4	6.6	6.6	0.0	0.2	24	8.1	8.2	8.1	0.0	0.1	0						24	6.8	7.1	7.0	0.0	0.3
12/16/97	24	6.4	6.6	6.5	0.0	0.2	24	7.9	8.1	8.0	0.0	0.2	0						24	6.7	7.6	7.2	0.1	0.9
12/17/97	22	6.3	6.6	6.4	0.0	0.3	24	7.8	7.9	7.9	0.0	0.1	0						24	7.0	7.3	7.1	0.0	0.3
12/18/97	24	6.3	6.4	6.3	0.0	0.1	24	7.6	7.8	7.7	0.0	0.2	0						24	6.7	7.0	6.9	0.0	0.3
12/19/97	24	6.3	6.4	6.4	0.0	0.1	24	7.3	7.6	7.4	0.0	0.3	0						24	6.7	7.0	6.8	0.0	0.3
12/20/97	24	6.3	6.4	6.3	0.0	0.1	24	7.3	7.3	7.3	0.0	0.0	0						24	6.4	6.8	6.7	0.0	0.4
12/21/97	24	6.3	6.3	6.3	0.0	0.0	24	7.3	7.3	7.3	0.0	0.0	0						24	6.7	7.0	6.8	0.0	0.3
12/22/97	24	6.1	6.3	6.1	0.0	0.2	24	7.3	7.3	7.3	0.0	0.0	0						24	6.5	6.8	6.7	0.0	0.3
12/23/97	24	6.1	6.1	6.1	0.0	0.0	24	7.1	7.3	7.1	0.0	0.2	0						24	6.5	6.8	6.7	0.0	0.3
12/24/97	24	6.0	6.1	6.0	0.0	0.1	24	7.1	7.1	7.1	0.0	0.0	0						24	6.8	7.0	6.9	0.0	0.2
12/25/97	24	6.0	6.0	6.0	0.0	0.0	24	7.0	7.0	7.0	0.0	0.0	0						24	6.7	6.8	6.7	0.0	0.1
12/26/97	24	6.0	6.0	6.0	0.0	0.0	24	6.8	7.0	7.0	0.0	0.2	0						24	6.7	7.0	6.7	0.0	0.3
12/27/97	24	5.8	6.0	6.0	0.0	0.2	24	6.8	6.8	6.8	0.0	0.0	0						24	6.8	7.0	6.9	0.0	0.2
12/28/97	24	5.8	6.0	5.9	0.0	0.2	24	6.8	6.8	6.8	0.0	0.0	0						24	6.8	7.0	6.9	0.0	0.2
12/29/97	24	5.8	6.0	5.9	0.0	0.2	24	6.8	6.8	6.8	0.0	0.0	0						24	7.0	7.1	7.0	0.0	0.1
12/30/97	24	5.8	6.0	5.9	0.0	0.2	24	6.8	6.8	6.8	0.0	0.0	0						24	6.5	6.8	6.7	0.0	0.3
12/31/97	24	5.8	6.0	5.8	0.0	0.2	24	6.7	6.8	6.7	0.0	0.1	0						24	6.5	6.8	6.7	0.0	0.3
1/1/98	24	5.7	6.0	5.8	0.0	0.3	24	6.5	6.7	6.6	0.0	0.2	0						24	6.4	7.0	6.9	0.0	0.6
1/2/98	24	5.7	5.8	5.7	0.0	0.1	24	6.5	6.7	6.6	0.0	0.2	0						24	6.2	6.5	6.4	0.0	0.3
1/3/98	24	5.7	5.8	5.7	0.0	0.1	24	6.5	6.8	6.6	0.0	0.3	0						24	6.4	6.4	6.4	0.0	0.0
1/4/98	24	5.7	5.7	5.7	0.0	0.0	24	6.7	6.7	6.7	0.0	0.0	0						24	6.1	6.4	6.3	0.0	0.3
1/5/98	24	5.5	5.7	5.7	0.0	0.2	24	6.5	6.7	6.6	0.0	0.2	0						24	6.4	6.5	6.5	0.0	0.1
1/6/98	24	5.5	5.5	5.5	0.0	0.0	24	6.5	6.5	6.5	0.0	0.0	0						24	6.4	6.7	6.6	0.0	0.3
1/7/98	24	5.5	5.5	5.5	0.0	0.0	24	6.5	6.5	6.5	0.0	0.0	0						24	6.5	6.7	6.5	0.0	0.2
1/8/98	24	5.5	5.5	5.5	0.0	0.0	24	6.5	6.5	6.5	0.0	0.0	0						24	6.2	6.7	6.5	0.0	0.5
1/9/98	24	5.5	5.5	5.5	0.0	0.0	24	6.5	6.5	6.5	0.0	0.0	0						24	6.2	6.4	6.3	0.0	0.2
1/10/98	24	5.4	5.5	5.4	0.0	0.1	24	6.4	6.5	6.4	0.0	0.1	0						24	6.1	6.5	6.4	0.0	0.4
1/11/98	24	5.2	5.4	5.3	0.0	0.2	24	6.0	6.4	6.2	0.0	0.4	0						24	5.4	6.2	5.7	0.0	0.8
1/12/98	24	4.9	5.2	5.1	0.0	0.3	24	5.9	6.0	6.0	0.0	0.1	0						24	5.3	5.9	5.6	0.0	0.6
1/13/98	24	4.9	5.0	4.9	0.0	0.1	24	5.9	5.9	5.9	0.0	0.0	0						24	5.0	6.1	5.8	0.1	1.1
1/14/98	24	4.9	4.9	4.9	0.0	0.0	24	5.9	5.9	5.9	0.0	0.0	0						24	5.6	6.1	5.8	0.0	0.5
1/15/98	24	4.9	4.9	4.9	0.0	0.0	24	5.7	5.9	5.8	0.0	0.2	0						24	6.1	6.4	6.2	0.0	0.3
1/16/98	24	4.9	4.9	4.9	0.0	0.0	24	5.7	5.9	5.7	0.0	0.2	0						24	6.2	6.4	6.3	0.0	0.2
1/17/98	24	4.9	5.0	4.9	0.0	0.1	24	5.6	5.7	5.6	0.0	0.1	0						24	6.4	6.5	6.4	0.0	0.1
1/18/98	24	4.9	4.9	4.9	0.0	0.0	24	5.6	5.7	5.7	0.0	0.1	0						24	6.4	6.7	6.5	0.0	0.3
1/19/98	24	4.9	4.9	4.9	0.0	0.0	24	5.6	5.7	5.7	0.0	0.1	0						24	6.4	6.5	6.4	0.0	0.1
1/20/98	23	4.9	4.9	4.9	0.0	0.0	23	5.6	5.6	5.6	0.0	0.0	0						24	6.4	6.5	6.4	0.0	0.1
1/21/98	24	4.9	5.0	5.0	0.0	0.1	24	5.6	5.6	5.6	0.0	0.0	0						24	6.2	6.4	6.4	0.0	0.2
1/22/98	24	5.0	5.2	5.1	0.0	0.2	24	5.6	5.6	5.6	0.0	0.0	0						24	6.2	6.5	6.4	0.0	0.3
1/23/98	24	4.9	5.2	5.0	0.0	0.3	24	5.4	5.6	5.5	0.0	0.2	0						24	6.4	6.7	6.6	0.0	0.3
1/24/98	24	4.7	5.0	4.9	0.0	0.3	24	5.3	5.4	5.4	0.0	0.1	0						24	6.4	6.7	6.5	0.0	0.3
1/25/98	24	4.7	5.0	4.9	0.0	0.3	24	5.4	5.6	5.5	0.0	0.2	0						24	6.4	6.7	6.6	0.0	0.3
1/26/98	24	4.9	5.0	4.9	0.0	0.1	24	5.4	5.6	5.5	0.0	0.2	0						24	6.5	6.7	6.6	0.0	0.2
1/27/98	24	4.9	5.2	5.0	0.0	0.3	24	5.4	5.6	5.4	0.0	0.2	0						24	6.4	6.5	6.4	0.0	0.1
1/28/98	24	5.2	5.4	5.3	0.0	0.2	24	5.6	5.6	5.6	0.0	0.0	0						24	6.4	6.7	6.4	0.0	0.3
1/29/98	24	5.2	5.4	5.4	0.0	0.2	24	5.4	5.6	5.5	0.0	0.2	0						24	6.4	6.5	6.4	0.0	0.1
1/30/98	24	5.0	5.2	5.1	0.0	0.2	24	5.4	5.6	5.5	0.0	0.2	0						24	6.2	6.5	6.4	0.0	0.3
1/31/98	24	5.0	5.2	5.2	0.0	0.2	24	5.6	5.6	5.6	0.0	0.0	0						24	6.1	6.4	6.2	0.0	0.3
2/1/98	24	5.0	5.2	5.1	0.0	0.2	24	5.4	5.6	5.5	0.0	0.2	0						24	6.1	6.2	6.1	0.0	0.1
2/2/98	24	5.2	5.2	5.2	0.0	0.0	24	5.4	5.6	5.5	0.0	0.2	0						24	5.9	6.2	6.1	0.0	0.3
2/3/98	24	5.0	5.2	5.1	0.0	0.2	24	5.4	5.6	5.5	0.0	0.2	0						24	6.1	6.2	6.1	0.0	0.1
2/4/98	24	5.0	5.2	5.1	0.0	0.2	24	5.4	5.6	5.5	0.0	0.2	0						24	6.1	6.2	6.1	0.0	0.1
2/5/98	24	5.2	5.2	5.2	0.0	0.0	24	5.4	5.7	5.6	0.0	0.3	0						24	5.9	6.2	6.1	0.0	0.3
2/6/98	24	5.2	5.4	5.3	0.0	0.2	24	5.6	5.7	5.7	0.0	0.1	0						24	5.9	6.2	6.1	0.0	0.3
2/7/98	24	5.2	5.4	5.3	0.0	0.2	24	5.6	5.7	5.6	0.0	0.1	0						24	5.7	6.1	5.9	0.0	0.4
2/8/98	24	5.2	5.4	5.3	0.0	0.2	24	5.6	5.7	5.6	0.0	0.1	0						24	5.7	5.9	5.9	0.0	0.2
2/9/98	24	5.0	5.2	5.1	0.0	0.2	24	5.6	5.6	5.6	0.0	0.0	0						24	5.6	5.9	5.7	0.0	0.3
2/10/98	24	5.2	5.2	5.2	0.0	0.0	24	5.6	5.6	5.6	0.0	0.0	0						24	5.6	5.7	5.7	0.0	0.1
2/11/98	24	5.2	5.2	5.2	0.0	0.0	24	5.6	5.6	5.6	0.0	0.0	0						24	5.6	5.9	5.7	0.0	0.3
2/12/98	24	5.2	5.4	5.4	0.0	0.2	24	5.6	5.6	5.6	0.0	0.0	0						24	5.7	6.2	6.0	0.0	0.5
2/13/98	24	5.2	5.4	5.2	0.0	0.2	24	5.6	5.6	5.6	0.0	0.0	0						24	5.7	6.1	5.9	0.0	0.4
2/14/98	24	5.4	5.4	5.4	0.0	0.0	24	5.6	5.7	5.6	0.0	0.1	0						24	5.7	5.9	5.8	0.0	0.2
2/15/98	24	5.4	5.4	5.4	0.0	0.0	24	5.6	5.7	5.6	0.0	0.1	0						24	5.7	5.9	5.8	0.0	0.2
2/16/98	24	5.4	5.5	5.5	0.0	0.1	24	5.6	5.7	5.7	0.0	0.1	0						24	5.6	5.9	5.7	0.0	0.3
2/17/98	24	5.4	5.5	5.5	0.0	0.1	24	5.7	5.7	5.7	0.0	0.0	0						24	5.7	6.1	5.8	0.0	0.4
2/18/98	24	5.4	5.5	5.5	0.0	0.1	24	5.7	5.7	5.7	0.0	0.0	0						24	5.7	5.9	5.8	0.0	0.2
2/19/98	24	5.5	5.5	5.5	0.0	0.0	24	5.7	5.7	5.7	0.0	0.0	0						24	5.9	6.1	6.0	0.0	0.2
2/20/98	24	5.4	5.7	5.4	0.0	0.3	24	5.6	5.7	5.7	0.0	0.1	0						24	5.6	5.9	5.8	0.0	0.3

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	YALTR						MERTR						OLECM						COUGM					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
2/21/98	24	5.2	5.5	5.4	0.0	0.3	24	5.6	5.7	5.6	0.0	0.1	0						24	5.4	5.7	5.6	0.0	0.3
2/22/98	24	5.4	5.4	5.4	0.0	0.0	24	5.6	5.6	5.6	0.0	0.0	0						24	5.6	6.1	5.8	0.0	0.5
2/23/98	10	5.4	5.4	5.4	0.0	0.0	13	5.6	5.7	5.6	0.0	0.1	0						9	5.4	5.6	5.5	0.0	0.2
2/24/98													0						0	Stopped monitoring 2/23/98				
2/25/98													0											
2/26/98													0											
2/27/98													0											
2/28/98													0											
Max	24	17.2	21.7	18.8	1.0	11.0	24	15.8	15.9	15.9	0.1	1.4	24	13.2	16.9	14.3	0.3	4.2	24	8.5	9.6	9.0	0.2	2.5
Min	0	3.8	3.8	3.8	0.0	0.0	0	4.1	4.3	4.2	0.0	0.0	0	5.2	6.4	5.9	0.0	0.3	0	4.5	5.1	4.8	0.0	0.0

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
4/2/96	0						0						0					
4/3/96	0						0						0					
4/4/96	0						0						0					
4/5/96	0						0						0					
4/6/96	0						0						0					
4/7/96	0						0						0					
4/8/96	0						0						0					
4/9/96	0						0						0					
4/10/96	0						0						0					
4/11/96	0						0						0					
4/12/96	0						0						0					
4/13/96	0						0						0					
4/14/96	0						0						0					
4/15/96	0						0						0					
4/16/96	0						0						0					
4/17/96	0						0						0					
4/18/96	0						0						0					
4/19/96	0						0						0					
4/20/96	0						0						0					
4/21/96	0						0						0					
4/22/96	0						0						0					
4/23/96	0						0						0					
4/24/96	0						0						0					
4/25/96	0						0						0					
4/26/96	0						0						0					
4/27/96	0						0						0					
4/28/96	0	Deployed: 4/29					0						0					
4/29/96	9	8.2	9.4	8.9	0.1	1.2	0						0					
4/30/96	24	7.1	8.5	7.8	0.1	1.4	0						0					
5/1/96	24	7.1	8.2	7.6	0.1	1.1	0						0					
5/2/96	24	6.5	7.5	7.0	0.1	1.0	0						0					
5/3/96	24	6.0	7.1	6.5	0.1	1.1	0						0					
5/4/96	24	6.0	8.9	7.1	0.2	2.9	0						0					
5/5/96	24	6.1	9.5	7.7	0.2	3.4	0						0					
5/6/96	24	6.5	9.5	7.8	0.2	3.0	0						0					
5/7/96	24	6.8	7.8	7.3	0.1	1.0	0						0					
5/8/96	24	5.5	8.0	6.7	0.2	2.5	0						0					
5/9/96	24	5.4	8.0	6.8	0.2	2.6	0						0					
5/10/96	24	6.1	9.2	7.5	0.2	3.1	0						0					
5/11/96	24	7.7	8.8	8.3	0.1	1.1	0						0					
5/12/96	24	8.2	9.9	9.0	0.1	1.7	0						0					
5/13/96	24	9.1	9.9	9.4	0.1	0.8	0						0					
5/14/96	24	9.1	10.6	9.8	0.1	1.5	0						0					
5/15/96	24	9.1	9.9	9.4	0.0	0.8	0						0					
5/16/96	24	8.3	10.6	9.3	0.2	2.3	0						0					
5/17/96	24	8.6	9.4	9.0	0.0	0.8	0						0					
5/18/96	24	8.0	8.8	8.4	0.0	0.8	0						0					
5/19/96	24	7.5	8.2	7.8	0.0	0.7	0						0					
5/20/96	24	7.2	8.5	7.7	0.1	1.3	0						0					
5/21/96	24	7.1	8.0	7.5	0.1	0.9	0						0					
5/22/96	23	6.9	7.8	7.4	0.0	0.9	0						0					
5/23/96	24	6.8	7.8	7.3	0.1	1.0	0						0					
5/24/96	24	6.9	9.9	8.3	0.2	3.0	0						0					
5/25/96	24	8.0	11.4	9.6	0.3	3.4	0						0					
5/26/96	24	8.9	10.3	9.5	0.1	1.4	0						0					
5/27/96	24	8.5	9.4	8.9	0.1	0.9	0						0					
5/28/96	24	8.0	9.2	8.4	0.1	1.2	0						0					
5/29/96	24	7.8	8.9	8.4	0.1	1.1	0						0					
5/30/96	24	8.0	9.1	8.5	0.1	1.1	0						0					
5/31/96	24	7.5	11.1	9.2	0.3	3.6	0						0					
6/1/96	24	8.9	12.0	10.5	0.2	3.1	0						0					
6/2/96	24	9.9	13.4	11.6	0.3	3.5	0						0					
6/3/96	24	11.1	13.9	12.4	0.2	2.8	0						0					
6/4/96	24	11.4	13.3	12.0	0.1	1.9	0						0					
6/5/96	24	9.9	14.0	11.8	0.3	4.1	0						0					
6/6/96	24	10.6	15.0	12.6	0.3	4.4	0						0					
6/7/96	24	11.4	14.2	12.6	0.2	2.8	0						0					
6/8/96	24	10.9	14.3	12.4	0.2	3.4	0						0					
6/9/96	24	10.8	12.0	11.4	0.1	1.2	0						0					

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
6/10/96	24	9.5	14.0	11.7	0.3	4.5	0						0					
6/11/96	24	10.8	14.7	12.5	0.3	3.9	0						0					
6/12/96	24	10.0	15.3	12.5	0.4	5.3	0						0					
6/13/96	24	10.9	14.3	12.4	0.2	3.4	0						0					
6/14/96	24	10.3	15.4	12.5	0.4	5.1	0						0					
6/15/96	24	10.3	15.6	12.8	0.4	5.3	0						0					
6/16/96	24	9.4	12.8	11.4	0.2	3.4	0						0					
6/17/96	24	9.5	11.1	10.1	0.1	1.6	0						0					
6/18/96	24	8.9	12.2	10.3	0.2	3.3	0						0					
6/19/96	24	7.8	14.7	11.2	0.5	6.9	0						0					
6/20/96	24	9.5	15.8	12.7	0.5	6.3	0						0					
6/21/96	24	11.2	12.8	11.8	0.1	1.6	0						0					
6/22/96	24	10.8	12.3	11.4	0.1	1.5	0						0					
6/23/96	24	10.9	12.5	11.5	0.1	1.6	0						0					
6/24/96	24	10.5	11.4	10.9	0.1	0.9	0						0					
6/25/96	23	10.3	13.7	11.5	0.2	3.4	0						0					
6/26/96	24	10.3	14.5	12.3	0.3	4.2	0						0					
6/27/96	24	11.2	12.3	11.7	0.1	1.1	0						0					
6/28/96	24	10.8	12.3	11.4	0.1	1.5	0						0					
6/29/96	24	9.7	14.3	12.0	0.3	4.6	0						0					
6/30/96	24	10.9	15.0	12.8	0.3	4.1	0						0					
7/1/96	24	11.6	16.2	13.8	0.3	4.6	0						0					
7/2/96	24	12.8	15.8	14.1	0.2	3.0	0						0					
7/3/96	24	12.6	14.8	13.7	0.1	2.2	0						0					
7/4/96	24	12.6	15.1	13.6	0.2	2.5	0						0					
7/5/96	24	10.8	15.4	13.0	0.3	4.6	0						0					
7/6/96	24	11.2	16.2	13.6	0.4	5.0	0						0					
7/7/96	24	12.3	17.4	14.8	0.4	5.1	0						0					
7/8/96	24	13.3	18.0	15.5	0.3	4.7	0						0					
7/9/96	24	13.9	16.7	15.0	0.2	2.8	0						0					
7/10/96	24	12.6	17.2	14.8	0.3	4.6	0						0					
7/11/96	24	13.1	18.2	15.6	0.4	5.1	0						0					
7/12/96	24	14.2	19.1	16.5	0.4	4.9	0						0					
7/13/96	24	15.0	19.8	17.3	0.4	4.8	0						0					
7/14/96	24	15.6	20.2	17.8	0.3	4.6	0						0					
7/15/96	24	16.1	19.9	17.8	0.3	3.8	0						0					
7/16/96	24	15.3	18.0	16.4	0.2	2.7	0						0					
7/17/96	24	13.4	15.6	14.5	0.1	2.2	0						0					
7/18/96	24	12.0	13.3	12.6	0.1	1.3	0						0					
7/19/96	24	11.7	13.4	12.5	0.1	1.7	0						0					
7/20/96	24	12.0	14.3	12.9	0.2	2.3	0						0					
7/21/96	24	12.2	17.0	14.4	0.4	4.8	0						0					
7/22/96	24	13.6	18.6	16.0	0.4	5.0	0						0					
7/23/96	22	14.5	19.6	16.8	0.4	5.1	0						0					
7/24/96	24	15.8	20.1	17.8	0.3	4.3	0						0					
7/25/96	24	15.8	20.4	18.0	0.3	4.6	0						0					
7/26/96	24	15.9	20.4	18.1	0.3	4.5	0						0					
7/27/96	24	16.6	20.6	18.5	0.3	4.0	0						0					
7/28/96	24	16.6	17.8	17.3	0.1	1.2	0						0					
7/29/96	24	15.3	20.1	17.6	0.4	4.8	0						0					
7/30/96	24	16.1	19.9	17.8	0.3	3.8	0						0					
7/31/96	24	15.1	19.1	17.0	0.3	4.0	0						0					
8/1/96	24	14.7	17.4	15.9	0.2	2.7	0						0					
8/2/96	24	14.0	15.1	14.7	0.1	1.1	0						0					
8/3/96	24	13.3	15.1	14.1	0.1	1.8	0						0					
8/4/96	24	13.3	14.0	13.6	0.1	0.7	0						0					
8/5/96	24	12.8	14.2	13.4	0.1	1.4	0						0					
8/6/96	24	12.0	16.4	14.1	0.3	4.4	0						0					
8/7/96	24	13.0	18.0	15.5	0.4	5.0	0						0					
8/8/96	24	14.2	19.0	16.5	0.4	4.8	0						0					
8/9/96	24	14.8	19.4	17.1	0.3	4.6	0						0					
8/10/96	24	15.6	19.9	17.7	0.3	4.3	0						0					
8/11/96	24	15.3	17.4	16.4	0.1	2.1	0						0					
8/12/96	24	13.6	18.2	15.8	0.3	4.6	0						0					
8/13/96	24	14.3	18.6	16.5	0.3	4.3	0						0					
8/14/96	24	15.1	19.1	17.1	0.3	4.0	0						0					
8/15/96	24	14.3	18.3	16.5	0.3	4.0	0						0					
8/16/96	24	14.3	17.8	16.1	0.3	3.5	0						0					
8/17/96	24	13.4	15.6	14.7	0.1	2.2	0						0					

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
8/18/96	24	13.6	15.6	14.4	0.1	2.0	0						0					
8/19/96	24	12.0	16.2	14.3	0.3	4.2	0						0					
8/20/96	24	13.6	15.8	14.5	0.2	2.2	0						0					
8/21/96	24	12.3	16.4	14.4	0.3	4.1	0						0					
8/22/96	24	12.8	16.9	14.9	0.3	4.1	0						0					
8/23/96	24	13.1	17.5	15.3	0.3	4.4	0						0					
8/24/96	24	14.0	17.8	16.1	0.3	3.8	0						0					
8/25/96	24	15.0	17.8	16.4	0.2	2.8	0						0					
8/26/96	24	15.6	16.6	16.0	0.1	1.0	0						0					
8/27/96	24	14.7	15.8	15.3	0.1	1.1	0						0					
8/28/96	24	13.3	16.2	14.8	0.2	2.9	0						0					
8/29/96	24	13.6	17.4	15.5	0.3	3.8	0						0					
8/30/96	24	14.8	16.6	15.7	0.1	1.8	0						0					
8/31/96	24	14.2	16.1	15.1	0.1	1.9	0						0					
9/1/96	24	12.8	15.9	14.5	0.2	3.1	0						0					
9/2/96	24	12.6	14.8	13.8	0.2	2.2	0						0					
9/3/96	24	12.5	14.5	13.6	0.1	2.0	0						0					
9/4/96	24	12.5	13.7	13.0	0.1	1.2	0						0					
9/5/96	24	11.9	12.5	12.1	0.0	0.6	0						0					
9/6/96	24	11.4	14.2	12.7	0.2	2.8	0						0					
9/7/96	24	12.5	14.7	13.6	0.2	2.2	0						0					
9/8/96	24	12.6	15.6	14.0	0.2	3.0	0						0					
9/9/96	24	13.3	15.6	14.5	0.2	2.3	0						0					
9/10/96	24	12.3	15.6	14.0	0.2	3.3	0						0					
9/11/96	24	13.0	15.6	14.3	0.2	2.6	0						0					
9/12/96	24	13.4	14.7	13.9	0.1	1.3	0						0					
9/13/96	24	13.1	13.6	13.3	0.0	0.5	0						0					
9/14/96	24	12.6	13.1	12.9	0.0	0.5	0						0					
9/15/96	24	11.4	12.6	12.1	0.1	1.2	0						0					
9/16/96	24	10.9	12.3	11.5	0.1	1.4	0						0					
9/17/96	24	10.9	12.5	11.6	0.1	1.6	0						0					
9/18/96	24	10.0	11.2	10.7	0.1	1.2	0						0					
9/19/96	24	10.6	11.7	11.1	0.1	1.1	0						0					
9/20/96	24	10.2	11.6	10.7	0.1	1.4	0						0					
9/21/96	24	9.4	10.8	10.1	0.1	1.4	0						0					
9/22/96	24	9.4	11.2	10.1	0.1	1.8	0						0					
9/23/96	24	8.5	10.6	9.5	0.2	2.1	0						0					
9/24/96	24	8.8	11.1	9.8	0.2	2.3	0						0					
9/25/96	23	8.5	10.9	9.6	0.2	2.4	0						0					
9/26/96	24	8.6	11.2	9.8	0.2	2.6	0						0					
9/27/96	24	9.2	11.9	10.5	0.2	2.7	0						0					
9/28/96	24	10.0	12.5	11.1	0.2	2.5	0						0					
9/29/96	24	10.0	12.3	11.1	0.2	2.3	0						0					
9/30/96	23	10.3	11.6	10.9	0.1	1.3	0						0					
10/1/96	24	10.0	11.9	10.8	0.1	1.9	0						0					
10/2/96	24	9.7	11.6	10.6	0.1	1.9	0						0					
10/3/96	24	10.8	12.5	11.6	0.1	1.7	0						0					
10/4/96	24	11.6	12.3	11.9	0.1	0.7	0						0					
10/5/96	24	11.1	12.2	11.7	0.1	1.1	0						0					
10/6/96	24	10.3	12.0	11.1	0.1	1.7	0						0					
10/7/96	24	10.3	12.2	11.2	0.1	1.9	0						0					
10/8/96	24	10.5	12.5	11.4	0.1	2.0	0						0					
10/9/96	24	11.1	13.0	11.9	0.1	1.9	0						0					
10/10/96	24	11.9	12.3	12.1	0.0	0.4	0						0					
10/11/96	24	11.6	12.5	12.1	0.0	0.9	0						0					
10/12/96	24	10.9	11.7	11.4	0.1	0.8	0						0					
10/13/96	24	10.5	11.2	10.9	0.0	0.7	0						0					
10/14/96	24	9.5	10.3	9.9	0.0	0.8	0						0					
10/15/96	24	8.0	9.4	8.8	0.1	1.4	0						0					
10/16/96	24	7.1	8.0	7.8	0.1	0.9	0						0					
10/17/96	24	6.6	7.7	7.1	0.1	1.1	0						0					
10/18/96	24	6.9	8.0	7.5	0.1	1.1	0						0					
10/19/96	24	6.5	7.1	6.9	0.0	0.6	0						0					
10/20/96	24	6.3	7.2	6.8	0.1	0.9	0						0					
10/21/96	24	6.1	7.4	6.7	0.1	1.3	0						0					
10/22/96	24	7.4	8.3	7.8	0.1	0.9	0						0					
10/23/96	24	7.2	7.8	7.5	0.0	0.6	0						0					
10/24/96	24	7.4	8.2	7.9	0.1	0.8	0						0					
10/25/96	24	7.1	7.7	7.3	0.0	0.6	0						0					

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
10/26/96	24	6.3	7.1	6.7	0.1	0.8	0						0					
10/27/96	24	6.5	7.4	6.9	0.1	0.9	0						0					
10/28/96	24	7.1	7.8	7.5	0.1	0.7	0						0					
10/29/96	24	7.4	8.0	7.7	0.0	0.6	0						0					
10/30/96	24	6.9	7.5	7.2	0.0	0.6	0						0					
10/31/96	24	6.1	6.8	6.5	0.1	0.7	0						0					
11/1/96	24	5.8	6.8	6.3	0.1	1.0	0						0					
11/2/96	24	6.3	7.1	6.7	0.1	0.8	0						0					
11/3/96	24	6.9	7.5	7.2	0.1	0.6	0						0					
11/4/96	24	6.8	7.4	7.1	0.0	0.6	0						0					
11/5/96	24	6.5	6.6	6.6	0.0	0.1	0						0					
11/6/96	24	6.6	6.9	6.7	0.0	0.3	0						0					
11/7/96	24	6.3	7.1	6.6	0.1	0.8	0						0					
11/8/96	24	7.1	7.7	7.4	0.0	0.6	0						0					
11/9/96	24	6.8	7.2	7.1	0.0	0.4	0						0					
11/10/96	24	6.9	7.8	7.4	0.1	0.9	0						0					
11/11/96	24	7.8	8.6	8.3	0.1	0.8	0						0					
11/12/96	24	8.5	8.8	8.6	0.0	0.3	0						0					
11/13/96	24	8.0	8.8	8.5	0.0	0.8	0						0					
11/14/96	24	7.4	8.0	7.6	0.0	0.6	0						0					
11/15/96	24	6.8	7.4	7.2	0.0	0.6	0						0					
11/16/96	24	6.5	6.8	6.7	0.0	0.3	0						0					
11/17/96	24	6.0	6.6	6.3	0.1	0.6	0						0					
11/18/96	24	5.2	6.1	5.9	0.1	0.9	0						0					
11/19/96	24	5.4	6.3	5.9	0.1	0.9	0						0					
11/20/96	24	6.0	6.5	6.2	0.0	0.5	0						0					
11/21/96	24	5.8	6.3	6.1	0.0	0.5	0						0					
11/22/96	24	5.8	6.3	6.1	0.0	0.5	0						0					
11/23/96	24	5.2	5.8	5.5	0.0	0.6	0						0					
11/24/96	24	5.7	6.5	6.1	0.1	0.8	0						0					
11/25/96	24	6.3	6.8	6.6	0.0	0.5	0						0					
11/26/96	24	5.8	6.6	6.3	0.1	0.8	0						0					
11/27/96	24	6.5	7.5	6.8	0.1	1.0	0						0					
11/28/96	24	6.5	7.1	6.7	0.0	0.6	0						0					
11/29/96	24	6.5	6.8	6.6	0.0	0.3	0						0					
11/30/96	24	6.5	7.2	6.8	0.1	0.7	0						0					
12/1/96	24	5.5	6.8	6.0	0.1	1.3	0						0					
12/2/96	24	4.7	5.7	5.1	0.1	1.0	0						0					
12/3/96	24	4.9	5.4	5.2	0.0	0.5	0						0					
12/4/96	24	5.0	5.8	5.2	0.1	0.8	0						0					
12/5/96	24	5.8	6.0	5.9	0.0	0.2	0						0					
12/6/96	24	5.2	5.8	5.6	0.0	0.6	0						0					
12/7/96	24	5.7	6.0	5.9	0.0	0.3	0						0					
12/8/96	24	6.0	6.3	6.1	0.0	0.3	0						0					
12/9/96	24	6.1	6.5	6.3	0.0	0.4	0						0					
12/10/96	24	5.8	6.5	6.2	0.0	0.7	0						0					
12/11/96	24	5.8	6.1	6.0	0.0	0.3	0						0					
12/12/96	24	5.8	6.1	6.0	0.0	0.3	0						0					
12/13/96	24	5.8	6.0	5.9	0.0	0.2	0						0					
12/14/96	24	5.2	5.8	5.5	0.0	0.6	0						0					
12/15/96	24	4.9	5.7	5.3	0.1	0.8	0						0					
12/16/96	24	4.9	5.8	5.6	0.1	0.9	0						0					
12/17/96	24	4.0	4.9	4.3	0.0	0.9	0	Deployed: 12/18					0	Deployed: 12/8				
12/18/96	24	3.8	4.6	4.2	0.1	0.8	8	4.1	4.4	4.3	0.0	0.3	9	7.3	8.4	7.8	0.1	1.1
12/19/96	24	3.8	4.7	4.3	0.1	0.9	24	3.8	5.1	4.4	0.1	1.3	24	6.9	8.0	7.4	0.1	1.1
12/20/96	24	4.3	5.0	4.6	0.0	0.7	24	4.6	5.1	4.8	0.0	0.5	24	7.8	8.3	8.0	0.0	0.5
12/21/96	24	4.3	4.6	4.4	0.0	0.3	24	4.0	4.6	4.2	0.0	0.6	24	7.7	8.0	7.9	0.0	0.3
12/22/96	24	4.3	4.9	4.5	0.0	0.6	24	3.7	4.8	4.3	0.1	1.1	24	7.5	8.3	7.9	0.0	0.8
12/23/96	24	4.1	4.6	4.4	0.0	0.5	24	3.7	4.4	4.0	0.0	0.7	24	7.3	7.8	7.6	0.0	0.5
12/24/96	24	4.6	5.2	4.9	0.0	0.6	24	4.4	4.9	4.7	0.0	0.5	24	7.7	7.8	7.8	0.0	0.1
12/25/96	24	4.7	5.7	5.3	0.1	1.0	24	4.6	5.5	5.2	0.1	0.9	24	7.3	8.3	7.9	0.1	1.0
12/26/96	24	4.0	5.2	4.5	0.1	1.2	24	4.1	4.9	4.6	0.1	0.8	24	6.9	7.3	7.1	0.0	0.4
12/27/96	24	4.9	5.7	5.3	0.1	0.8	24	4.8	5.2	5.0	0.0	0.4	24	7.3	7.8	7.6	0.0	0.5
12/28/96	24	4.6	5.0	4.8	0.0	0.4	24	4.1	4.9	4.7	0.0	0.8	24	7.2	7.7	7.4	0.0	0.5
12/29/96	24	4.1	6.0	5.0	0.1	1.9	24	4.0	5.5	4.7	0.1	1.5	24	6.7	8.1	7.3	0.1	1.4
12/30/96	24	6.0	6.1	6.1	0.0	0.1	24	5.5	6.2	5.8	0.0	0.7	24	8.1	8.3	8.1	0.0	0.2
12/31/96	24	6.0	6.6	6.2	0.0	0.6	24	6.0	6.8	6.2	0.0	0.8	24	8.3	8.6	8.4	0.0	0.3
1/1/97	24	6.0	6.5	6.3	0.0	0.5	24	6.0	6.5	6.3	0.0	0.5	24	8.6	8.9	8.6	0.0	0.3
1/2/97	24	6.0	6.5	6.4	0.0	0.5	24	6.2	6.5	6.3	0.0	0.3	24	8.3	8.9	8.6	0.0	0.6

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
1/3/97	24	5.0	6.0	5.3	0.1	1.0	24	5.2	6.0	5.4	0.0	0.8	24	7.8	8.3	8.0	0.0	0.5
1/4/97	24	5.2	5.5	5.3	0.0	0.3	24	5.2	5.7	5.4	0.0	0.5	24	7.8	8.4	8.0	0.0	0.6
1/5/97	24	5.2	5.4	5.3	0.0	0.2	24	5.2	5.4	5.3	0.0	0.2	24	7.8	8.3	8.0	0.0	0.5
1/6/97	24	4.6	5.2	4.9	0.0	0.6	24	5.1	5.4	5.2	0.0	0.3	24	7.5	8.0	7.8	0.0	0.5
1/7/97	24	4.9	5.4	5.2	0.0	0.5	24	5.1	5.5	5.3	0.0	0.4	24	7.8	8.3	8.1	0.0	0.5
1/8/97	24	5.2	5.8	5.5	0.0	0.6	24	5.4	5.7	5.5	0.0	0.3	24	8.1	8.6	8.3	0.0	0.5
1/9/97	24	5.5	5.8	5.7	0.0	0.3	24	5.5	5.8	5.7	0.0	0.3	24	8.1	8.6	8.3	0.0	0.5
1/10/97	24	5.7	6.0	5.9	0.0	0.3	24	5.7	6.0	5.8	0.0	0.3	24	8.3	8.7	8.5	0.0	0.4
1/11/97	24	5.0	6.0	5.5	0.0	1.0	24	5.4	5.8	5.5	0.0	0.4	24	7.5	8.3	8.0	0.0	0.8
1/12/97	24	2.9	4.9	3.7	0.1	2.0	24	3.7	5.2	4.3	0.1	1.5	24	6.6	7.5	7.0	0.1	0.9
1/13/97	24	2.2	2.9	2.5	0.0	0.7	24	2.9	3.5	3.0	0.0	0.6	24	6.0	6.7	6.4	0.1	0.7
1/14/97	24	2.1	2.7	2.4	0.0	0.6	24	2.6	2.9	2.8	0.0	0.3	24	6.4	7.0	6.6	0.0	0.6
1/15/97	24	2.5	3.0	2.7	0.0	0.5	24	2.7	2.9	2.9	0.0	0.2	24	6.6	7.3	6.8	0.0	0.7
1/16/97	24	2.7	3.5	3.0	0.1	0.8	24	2.6	3.3	2.9	0.1	0.7	24	6.6	7.3	7.0	0.1	0.7
1/17/97	24	3.6	4.4	4.0	0.1	0.8	24	3.3	4.3	3.9	0.1	1.0	24	7.3	7.8	7.6	0.0	0.5
1/18/97	24	4.4	5.5	5.1	0.1	1.1	24	4.4	5.4	5.0	0.1	1.0	24	7.8	8.4	8.1	0.0	0.6
1/19/97	24	5.4	5.8	5.6	0.0	0.4	24	5.2	5.7	5.5	0.0	0.5	24	8.0	8.4	8.2	0.0	0.4
1/20/97	24	5.5	5.7	5.7	0.0	0.2	24	5.5	5.7	5.6	0.0	0.2	24	8.1	8.4	8.3	0.0	0.3
1/21/97	24	5.2	5.5	5.4	0.0	0.3	24	4.8	5.5	5.2	0.0	0.7	24	7.8	8.3	8.1	0.0	0.5
1/22/97	24	3.8	4.9	4.2	0.1	1.1	24	3.5	4.6	4.0	0.1	1.1	24	6.6	7.8	7.1	0.1	1.2
1/23/97	24	4.0	4.4	4.3	0.0	0.4	24	3.8	4.4	4.2	0.0	0.6	24	7.2	7.8	7.5	0.0	0.6
1/24/97	24	4.1	4.6	4.3	0.0	0.5	24	4.1	4.8	4.4	0.0	0.7	24	7.2	8.1	7.6	0.1	0.9
1/25/97	24	3.6	4.3	4.0	0.0	0.7	24	3.8	4.3	4.1	0.0	0.5	24	6.9	7.7	7.2	0.1	0.8
1/26/97	24	2.9	3.5	3.2	0.0	0.6	24	3.0	3.8	3.4	0.0	0.8	24	6.4	7.0	6.7	0.0	0.6
1/27/97	24	2.5	3.0	2.8	0.0	0.5	24	2.6	3.0	2.8	0.0	0.4	24	6.3	7.0	6.6	0.1	0.7
1/28/97	24	3.0	4.0	3.6	0.1	1.0	24	2.7	3.8	3.4	0.1	1.1	24	6.9	7.8	7.4	0.1	0.9
1/29/97	24	3.6	4.7	4.2	0.1	1.1	24	3.8	4.8	4.3	0.1	1.0	24	7.3	8.6	7.9	0.1	1.3
1/30/97	24	4.6	5.0	4.8	0.0	0.4	24	4.6	4.9	4.7	0.0	0.3	24	8.0	8.3	8.2	0.0	0.3
1/31/97	24	5.0	5.7	5.3	0.0	0.7	24	4.9	5.5	5.2	0.0	0.6	24	8.1	8.6	8.3	0.0	0.5
2/1/97	24	5.2	5.7	5.5	0.0	0.5	24	5.1	5.5	5.3	0.0	0.4	24	7.8	8.6	8.3	0.0	0.8
2/2/97	24	5.0	5.5	5.2	0.0	0.5	24	4.8	5.5	5.1	0.0	0.7	24	7.5	8.1	7.9	0.0	0.6
2/3/97	24	4.7	5.2	5.0	0.0	0.5	24	4.8	5.5	5.1	0.0	0.7	24	7.5	8.1	7.7	0.0	0.6
2/4/97	24	4.4	5.0	4.7	0.0	0.6	24	4.4	5.1	4.8	0.0	0.7	24	7.2	7.8	7.5	0.0	0.6
2/5/97	24	3.8	4.4	4.2	0.0	0.6	24	4.0	4.6	4.3	0.0	0.6	24	6.9	7.8	7.2	0.1	0.9
2/6/97	24	3.6	4.3	4.0	0.1	0.7	24	3.7	4.3	4.0	0.0	0.6	24	6.9	7.8	7.2	0.1	0.9
2/7/97	24	3.3	4.0	3.7	0.0	0.7	24	3.2	3.8	3.5	0.0	0.6	24	6.7	7.5	7.1	0.0	0.8
2/8/97	24	3.0	3.6	3.3	0.0	0.6	24	2.7	3.7	3.2	0.1	1.0	24	6.6	7.8	7.2	0.1	1.2
2/9/97	24	3.2	4.0	3.5	0.1	0.8	24	3.0	3.8	3.4	0.1	0.8	24	6.9	7.8	7.3	0.1	0.9
2/10/97	24	3.5	4.4	3.9	0.1	0.9	24	3.3	4.4	3.8	0.1	1.1	24	7.2	8.1	7.6	0.1	0.9
2/11/97	24	3.5	4.4	4.0	0.1	0.9	24	3.7	4.3	3.9	0.0	0.6	24	7.0	8.0	7.5	0.1	1.0
2/12/97	24	4.3	4.6	4.4	0.0	0.3	24	3.7	4.4	4.0	0.1	0.7	24	7.5	8.3	7.9	0.1	0.8
2/13/97	24	4.3	4.7	4.5	0.0	0.4	24	4.1	4.4	4.2	0.0	0.3	24	7.7	8.0	7.9	0.0	0.3
2/14/97	24	4.6	5.4	5.0	0.1	0.8	24	4.3	5.1	4.7	0.1	0.8	24	7.8	8.4	8.1	0.1	0.6
2/15/97	24	5.0	5.5	5.3	0.0	0.5	24	5.1	5.8	5.3	0.1	0.7	24	8.1	8.9	8.5	0.0	0.8
2/16/97	24	4.7	6.0	5.4	0.1	1.3	24	4.9	6.3	5.6	0.1	1.4	24	7.7	9.2	8.4	0.1	1.5
2/17/97	24	5.5	5.8	5.7	0.0	0.3	24	5.5	6.2	5.8	0.0	0.7	24	8.3	9.0	8.6	0.0	0.7
2/18/97	24	5.2	5.5	5.4	0.0	0.3	24	5.2	5.5	5.3	0.0	0.3	24	8.0	8.6	8.2	0.0	0.6
2/19/97	24	4.9	5.4	5.2	0.0	0.5	24	4.9	5.2	5.1	0.0	0.3	24	8.0	8.4	8.1	0.0	0.4
2/20/97	24	4.7	5.4	5.0	0.0	0.7	24	4.8	5.5	5.0	0.0	0.7	24	7.7	8.6	8.1	0.1	0.9
2/21/97	24	4.4	5.5	4.9	0.1	1.1	24	4.6	5.5	5.0	0.1	0.9	24	7.2	8.7	7.8	0.1	1.5
2/22/97	24	4.1	5.0	4.6	0.1	0.9	24	4.3	5.4	4.8	0.1	1.1	24	6.7	8.4	7.5	0.1	1.7
2/23/97	24	4.0	5.0	4.6	0.1	1.0	24	4.4	5.5	4.9	0.1	1.1	24	6.9	8.6	7.6	0.1	1.7
2/24/97	24	4.3	5.5	4.9	0.1	1.2	24	4.8	6.0	5.3	0.1	1.2	24	6.9	9.0	7.8	0.1	2.1
2/25/97	24	4.6	5.8	5.2	0.1	1.2	24	4.9	6.2	5.5	0.1	1.3	24	7.2	8.9	8.1	0.1	1.7
2/26/97	24	5.0	5.8	5.7	0.0	0.8	24	5.2	6.0	5.7	0.0	0.8	24	7.8	8.7	8.3	0.0	0.9
2/27/97	24	3.8	4.9	4.3	0.1	1.1	24	4.0	5.1	4.5	0.1	1.1	24	7.0	8.4	7.7	0.1	1.4
2/28/97	24	3.5	4.3	4.0	0.1	0.8	24	3.5	4.6	4.1	0.1	1.1	24	6.7	8.3	7.5	0.1	1.6
3/1/97	24	3.2	4.1	3.7	0.1	0.9	24	2.4	4.4	3.2	0.1	2.0	24	6.4	7.8	7.0	0.1	1.4
3/2/97	24	3.8	4.6	4.2	0.1	0.8	24	3.2	4.1	3.7	0.1	0.9	24	6.9	8.1	7.5	0.1	1.2
3/3/97	24	3.8	4.3	4.1	0.0	0.5	24	3.5	4.3	3.9	0.0	0.8	24	7.0	7.7	7.3	0.1	0.7
3/4/97	24	3.8	4.6	4.3	0.1	0.8	24	3.8	4.6	4.3	0.1	0.8	24	7.2	8.0	7.6	0.1	0.8
3/5/97	24	4.3	5.0	4.6	0.1	0.7	24	4.3	5.1	4.5	0.1	0.8	24	7.3	8.1	7.7	0.1	0.8
3/6/97	24	4.6	4.9	4.8	0.0	0.3	24	4.3	4.6	4.5	0.0	0.3	24	7.5	8.1	7.9	0.1	0.6
3/7/97	24	4.7	5.0	4.9	0.0	0.3	24	4.3	5.1	4.7	0.0	0.8	24	7.7	8.6	8.2	0.1	0.9
3/8/97	24	4.4	5.4	4.9	0.1	1.0	24	4.3	5.5	4.9	0.1	1.2	24	7.3	8.9	8.0	0.1	1.6
3/9/97	24	5.0	5.5	5.3	0.0	0.5	24	4.8	5.2	5.0	0.0	0.4	24	7.3	8.3	7.9	0.1	1.0
3/10/97	24	4.9	5.2	5.1	0.0	0.3	24	4.9	5.2	5.1	0.0	0.3	24	7.8	8.3	8.0	0.0	0.5
3/11/97	24	4.6	5.2	5.0	0.0	0.6	24	4.4	5.2	4.9	0.0	0.8	24	7.3	8.4	7.9	0.1	1.1
3/12/97	24	4.1	4.7	4.5	0.0	0.6	24	3.8	4.6	4.2	0.0	0.8	24	7.2	7.8	7.5	0.0	0.6

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
3/13/97	24	4.0	5.0	4.5	0.1	1.0	24	3.8	4.9	4.3	0.1	1.1	24	6.9	8.3	7.5	0.1	1.4
3/14/97	24	4.1	5.4	4.7	0.1	1.3	24	4.0	5.5	4.7	0.1	1.5	24	7.0	8.9	7.9	0.1	1.9
3/15/97	24	4.0	5.4	4.6	0.1	1.4	24	3.7	5.1	4.3	0.1	1.4	24	7.2	8.1	7.6	0.1	0.9
3/16/97	24	5.2	5.5	5.4	0.0	0.3	24	4.9	5.5	5.2	0.0	0.6	24	8.1	8.9	8.4	0.1	0.8
3/17/97	24	5.4	5.7	5.5	0.0	0.3	24	4.9	5.2	5.1	0.0	0.3	24	8.1	8.6	8.4	0.0	0.5
3/18/97	24	5.2	5.8	5.5	0.0	0.6	24	5.1	5.7	5.4	0.0	0.6	24	8.1	8.7	8.4	0.1	0.6
3/19/97	24	5.4	5.8	5.6	0.0	0.4	24	5.1	5.7	5.4	0.0	0.6	13	8.4	9.0	8.6	0.0	0.6
3/20/97	24	4.9	6.0	5.6	0.1	1.1	24	4.9	6.0	5.4	0.1	1.1	0					
3/21/97	24	4.3	5.8	5.0	0.1	1.5	24	4.3	6.3	5.2	0.1	2.0	0					
3/22/97	24	4.7	6.6	5.7	0.1	1.9	24	4.9	6.8	5.8	0.2	1.9	0					
3/23/97	24	5.8	7.1	6.3	0.1	1.3	24	5.7	7.2	6.2	0.1	1.5	0					
3/24/97	24	4.9	6.6	5.8	0.1	1.7	24	4.9	7.1	5.9	0.2	2.2	0					
3/25/97	24	5.2	7.2	6.3	0.2	2.0	24	5.2	7.7	6.4	0.2	2.5	0					
3/26/97	24	5.8	7.1	6.5	0.1	1.3	24	5.5	7.4	6.5	0.1	1.9	0					
3/27/97	24	4.9	5.7	5.4	0.1	0.8	24	4.9	5.8	5.4	0.1	0.9	0					
3/28/97	24	4.7	5.4	4.9	0.0	0.7	24	4.6	5.5	5.0	0.1	0.9	0					
3/29/97	24	4.3	6.0	5.2	0.1	1.7	24	4.1	6.5	5.3	0.2	2.4	0					
3/30/97	24	5.0	6.0	5.6	0.1	1.0	24	5.2	6.3	5.7	0.1	1.1	0					
3/31/97	24	4.3	5.4	4.6	0.1	1.1	24	4.3	5.4	4.7	0.1	1.1	0					
4/1/97	24	4.1	5.5	4.7	0.1	1.4	24	4.1	5.8	4.8	0.1	1.7	0					
4/2/97	24	3.6	5.8	4.7	0.2	2.2	24	3.7	6.3	4.9	0.2	2.6	0					
4/3/97	24	4.7	5.8	5.2	0.1	1.1	24	4.9	6.3	5.3	0.1	1.4	0					
4/4/97	24	4.3	6.1	5.1	0.1	1.8	24	4.0	6.5	5.1	0.2	2.5	0					
4/5/97	24	3.8	6.3	5.0	0.2	2.5	24	4.0	6.8	5.2	0.2	2.8	0					
4/6/97	24	4.3	6.9	5.5	0.2	2.6	24	4.4	7.4	5.7	0.2	3.0	0					
4/7/97	24	5.5	6.6	6.0	0.1	1.1	24	5.7	7.2	6.3	0.1	1.5	0					
4/8/97	24	6.0	6.6	6.3	0.0	0.6	24	6.0	6.8	6.3	0.0	0.8	0					
4/9/97	24	5.7	6.1	5.9	0.0	0.4	24	5.7	6.3	5.9	0.0	0.6	0					
4/10/97	24	5.5	6.3	5.8	0.1	0.8	24	5.5	6.5	5.9	0.1	1.0	0					
4/11/97	24	4.6	6.8	5.6	0.1	2.2	24	4.6	7.2	5.7	0.2	2.6	0					
4/12/97	24	4.4	6.8	5.7	0.2	2.4	24	4.4	7.4	5.8	0.2	3.0	0					
4/13/97	24	5.7	6.3	6.0	0.0	0.6	24	5.7	6.3	6.1	0.0	0.6	0					
4/14/97	24	5.4	5.8	5.6	0.0	0.4	24	5.4	5.8	5.7	0.0	0.4	0					
4/15/97	24	5.5	7.2	6.3	0.1	1.7	24	5.5	7.9	6.6	0.2	2.4	0					
4/16/97	24	6.0	7.2	6.5	0.1	1.2	24	6.2	8.0	6.8	0.1	1.8	0					
4/17/97	24	5.4	7.2	6.3	0.1	1.8	24	5.5	7.7	6.4	0.2	2.2	0					
4/18/97	24	5.5	6.5	6.1	0.1	1.0	24	5.7	6.6	6.2	0.1	0.9	0					
4/19/97	24	6.3	6.8	6.6	0.0	0.5	24	6.3	6.9	6.7	0.0	0.6	0					
4/20/97	24	5.5	6.8	5.9	0.1	1.3	24	5.5	6.9	6.1	0.1	1.4	0					
4/21/97	24	4.7	6.8	5.8	0.2	2.1	24	4.8	7.1	6.0	0.2	2.3	0					
4/22/97	24	6.1	6.9	6.5	0.1	0.8	24	6.2	6.9	6.5	0.1	0.7	0					
4/23/97	24	6.0	6.8	6.4	0.0	0.8	24	5.8	6.9	6.4	0.1	1.1	0					
4/24/97	24	5.7	6.6	6.1	0.1	0.9	24	5.5	6.6	6.1	0.1	1.1	0					
4/25/97	24	5.5	8.0	6.8	0.2	2.5	24	5.7	8.6	7.0	0.2	2.9	0					
4/26/97	24	6.9	8.8	7.8	0.1	1.9	24	7.1	9.1	8.0	0.1	2.0	0					
4/27/97	24	6.5	7.8	7.0	0.1	1.3	24	6.8	8.0	7.2	0.1	1.2	0					
4/28/97	24	6.1	6.8	6.5	0.0	0.7	24	6.5	6.9	6.6	0.0	0.4	0					
4/29/97	24	6.1	6.9	6.5	0.0	0.8	24	6.0	7.4	6.6	0.1	1.4	0					
4/30/97	24	5.5	6.9	6.2	0.1	1.4	24	5.4	6.9	6.2	0.1	1.5	0					
5/1/97	24	5.2	6.6	5.9	0.1	1.4	24	5.2	6.8	5.9	0.1	1.6	0					
5/2/97	24	4.9	7.2	6.1	0.2	2.3	24	5.1	7.6	6.3	0.2	2.5	0					
5/3/97	24	6.5	7.4	6.9	0.1	0.9	24	6.8	7.6	7.0	0.1	0.8	0					
5/4/97	24	6.5	7.8	7.1	0.1	1.3	24	6.6	8.2	7.3	0.1	1.6	0					
5/5/97	24	6.9	8.2	7.5	0.1	1.3	24	7.1	8.5	7.7	0.1	1.4	0					
5/6/97	24	7.1	8.0	7.5	0.1	0.9	24	7.1	8.6	7.7	0.1	1.5	0					
5/7/97	24	6.0	8.6	7.4	0.2	2.6	24	6.0	9.4	7.6	0.2	3.4	0					
5/8/97	24	6.9	9.9	8.3	0.2	3.0	24	7.2	10.5	8.7	0.2	3.3	0					
5/9/97	24	7.4	10.2	8.8	0.2	2.8	24	7.9	11.1	9.3	0.2	3.2	0					
5/10/97	24	7.7	10.6	9.2	0.2	2.9	24	8.3	11.7	9.8	0.2	3.4	0					
5/11/97	24	8.5	11.4	9.9	0.2	2.9	24	9.3	12.5	10.7	0.2	3.2	0					
5/12/97	24	8.6	10.9	9.9	0.2	2.3	24	9.9	12.7	11.1	0.2	2.8	0					
5/13/97	24	8.8	11.2	10.0	0.2	2.4	24	9.9	12.8	11.3	0.2	2.9	0					
5/14/97	24	9.2	11.4	10.3	0.2	2.2	24	10.3	13.0	11.5	0.2	2.7	0					
5/15/97	24	9.5	10.5	10.0	0.1	1.0	24	10.7	12.2	11.3	0.1	1.5	0					
5/16/97	24	9.1	12.0	10.5	0.2	2.9	24	10.2	13.3	11.5	0.2	3.1	0					
5/17/97	24	9.2	12.2	10.5	0.2	3.0	24	10.2	13.3	11.5	0.2	3.1	0					
5/18/97	24	8.3	11.9	10.1	0.2	3.6	24	9.4	13.0	11.0	0.3	3.6	0					
5/19/97	24	8.6	12.3	10.3	0.2	3.7	24	9.6	13.1	11.0	0.2	3.5	0					
5/20/97	24	8.8	10.2	9.4	0.1	1.4	24	9.4	10.5	9.8	0.1	1.1	0	Thermograph stolen				

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
5/21/97	24	7.8	11.1	9.3	0.2	3.3	23	8.5	12.0	9.8	0.2	3.5	8	10.4	11.8	11.2	0.2	1.4
5/22/97	23	8.0	11.1	9.5	0.2	3.1	24	8.6	11.6	10.0	0.2	3.0	24	9.1	11.9	10.6	0.2	2.8
5/23/97	24	8.9	10.0	9.4	0.1	1.1	24	9.4	10.7	9.8	0.1	1.3	24	10.1	10.9	10.4	0.1	0.8
5/24/97	24	8.8	11.2	9.7	0.2	2.4	24	8.9	10.7	9.7	0.1	1.8	24	9.8	11.5	10.5	0.1	1.7
5/25/97	24	8.8	9.5	9.1	0.0	0.7	24	8.9	9.6	9.3	0.0	0.7	24	9.9	10.4	10.2	0.0	0.5
5/26/97	24	8.5	12.3	10.2	0.3	3.8	24	8.6	12.5	10.3	0.3	3.9	24	9.6	12.6	11.0	0.2	3.0
5/27/97	24	10.0	11.4	10.6	0.1	1.4	24	10.0	12.0	10.8	0.1	2.0	24	10.4	11.9	11.0	0.1	1.5
5/28/97	24	10.0	11.1	10.6	0.1	1.1	24	10.3	11.6	11.0	0.1	1.3	24	10.4	11.3	10.9	0.1	0.9
5/29/97	24	10.3	12.3	11.2	0.1	2.0	24	10.8	13.0	11.6	0.2	2.2	24	10.7	12.2	11.3	0.1	1.5
5/30/97	24	10.8	11.9	11.3	0.1	1.1	24	11.3	12.2	11.6	0.1	0.9	24	10.7	11.5	11.0	0.1	0.8
5/31/97	24	10.9	11.7	11.3	0.0	0.8	24	10.5	11.7	11.3	0.1	1.2	24	10.9	11.5	11.2	0.1	0.6
6/1/97	24	9.7	10.8	10.4	0.1	1.1	24	9.6	10.5	10.0	0.0	0.9	24	10.5	11.3	10.9	0.1	0.8
6/2/97	24	9.1	12.0	10.5	0.2	2.9	24	9.1	11.7	10.3	0.2	2.6	24	10.2	12.9	11.4	0.2	2.7
6/3/97	24	10.0	10.6	10.3	0.0	0.6	24	9.9	10.3	10.2	0.0	0.4	24	10.9	11.3	11.1	0.0	0.4
6/4/97	24	9.7	10.6	10.1	0.1	0.9	24	9.4	10.2	9.7	0.0	0.8	24	10.5	11.3	10.9	0.1	0.8
6/5/97	24	9.4	11.7	10.3	0.2	2.3	24	8.9	10.5	9.5	0.1	1.6	24	10.4	12.2	11.1	0.1	1.8
6/6/97	24	8.6	12.0	10.3	0.2	3.4	24	8.3	11.4	9.7	0.2	3.1	24	9.8	12.7	11.2	0.2	2.9
6/7/97	24	9.5	11.6	10.5	0.1	2.1	24	9.3	11.4	10.1	0.1	2.1	24	10.5	12.9	11.4	0.2	2.4
6/8/97	24	8.8	12.6	10.6	0.3	3.8	24	8.6	12.0	10.2	0.2	3.4	24	9.8	13.2	11.4	0.2	3.4
6/9/97	24	9.4	13.6	11.4	0.3	4.2	24	9.3	13.0	10.9	0.3	3.7	24	9.9	13.5	11.6	0.3	3.6
6/10/97	24	10.6	13.9	12.1	0.2	3.3	24	10.3	13.3	11.5	0.2	3.0	24	10.5	13.0	11.6	0.2	2.5
6/11/97	24	11.1	12.3	11.7	0.1	1.2	24	10.5	11.9	11.1	0.1	1.4	24	10.5	11.5	11.1	0.1	1.0
6/12/97	24	10.6	12.6	11.4	0.1	2.0	24	10.0	11.4	10.7	0.1	1.4	24	10.5	12.1	11.1	0.1	1.6
6/13/97	24	10.0	13.0	11.3	0.2	3.0	24	9.9	12.5	11.0	0.2	2.6	24	10.2	12.4	11.2	0.2	2.2
6/14/97	24	10.8	13.7	11.9	0.2	2.9	24	10.3	12.8	11.2	0.2	2.5	24	10.4	12.6	11.4	0.2	2.2
6/15/97	24	11.6	15.0	13.0	0.2	3.4	24	10.8	13.9	11.9	0.2	3.1	24	10.7	13.2	11.7	0.2	2.5
6/16/97	24	12.3	14.0	13.2	0.1	1.7	24	11.4	13.1	12.3	0.1	1.7	24	11.0	12.2	11.6	0.1	1.2
6/17/97	24	12.3	13.3	12.8	0.1	1.0	24	11.7	12.5	12.1	0.1	0.8	24	10.9	12.1	11.4	0.1	1.2
6/18/97	24	11.7	13.6	12.6	0.1	1.9	24	11.1	12.7	11.8	0.1	1.6	24	10.9	12.1	11.4	0.1	1.2
6/19/97	24	10.3	12.6	11.5	0.2	2.3	24	10.0	11.9	10.8	0.1	1.9	24	9.8	11.6	10.8	0.1	1.8
6/20/97	24	9.7	14.3	11.9	0.3	4.6	24	9.7	13.7	11.5	0.3	4.0	24	9.6	12.9	11.2	0.2	3.3
6/21/97	24	10.6	12.2	11.4	0.1	1.6	24	10.0	11.3	10.7	0.1	1.3	24	10.5	11.3	10.8	0.0	0.8
6/22/97	24	10.2	10.8	10.4	0.0	0.6	24	9.6	10.5	10.0	0.1	0.9	24	10.4	11.0	10.6	0.0	0.6
6/23/97	24	9.9	11.4	10.6	0.1	1.5	24	9.4	10.8	10.0	0.1	1.4	24	10.2	11.6	10.9	0.1	1.4
6/24/97	24	9.5	13.4	11.3	0.3	3.9	24	8.9	12.4	10.6	0.2	3.5	24	9.9	12.9	11.2	0.2	3.0
6/25/97	24	10.3	13.0	11.5	0.2	2.7	24	9.9	12.5	11.0	0.2	2.6	24	10.2	12.4	11.2	0.1	2.2
6/26/97	24	10.6	12.8	11.6	0.1	2.2	24	10.0	11.7	10.8	0.1	1.7	24	10.5	11.9	11.1	0.1	1.4
6/27/97	24	10.0	13.6	11.6	0.2	3.6	24	9.6	12.4	10.8	0.2	2.8	24	9.9	12.7	11.2	0.2	2.8
6/28/97	24	10.5	12.5	11.5	0.1	2.0	24	9.7	11.9	10.7	0.1	2.2	24	10.1	11.6	10.9	0.1	1.5
6/29/97	24	10.9	14.2	12.2	0.2	3.3	24	10.3	12.7	11.2	0.2	2.4	24	10.7	13.0	11.6	0.2	2.3
6/30/97	24	10.8	12.0	11.4	0.1	1.2	24	10.2	11.3	10.7	0.1	1.1	24	10.2	11.5	11.0	0.1	1.3
7/1/97	24	10.9	12.3	11.5	0.1	1.4	24	10.3	11.6	10.9	0.1	1.3	24	10.7	11.6	11.1	0.1	0.9
7/2/97	24	10.2	14.3	12.2	0.3	4.1	24	9.7	13.7	11.5	0.3	4.0	24	9.9	13.2	11.4	0.2	3.3
7/3/97	24	11.1	15.8	13.3	0.3	4.7	24	10.5	14.7	12.5	0.3	4.2	24	10.4	13.6	11.9	0.2	3.2
7/4/97	24	12.3	17.2	14.6	0.4	4.9	24	11.9	16.1	13.8	0.3	4.2	24	11.0	14.3	12.5	0.2	3.3
7/5/97	24	13.9	16.4	14.8	0.2	2.5	24	13.0	15.8	14.0	0.2	2.8	24	11.5	13.6	12.3	0.1	2.1
7/6/97	24	13.6	15.8	14.4	0.2	2.2	24	12.5	14.5	13.4	0.1	2.0	24	11.5	13.2	12.1	0.1	1.7
7/7/97	24	12.3	16.2	14.1	0.3	3.9	24	11.7	15.3	13.2	0.2	3.6	24	10.7	13.2	11.8	0.2	2.5
7/8/97	24	13.0	13.9	13.3	0.0	0.9	24	12.2	13.0	12.6	0.0	0.8	24	11.0	11.6	11.4	0.0	0.6
7/9/97	24	11.7	12.8	12.5	0.1	1.1	24	11.3	12.7	12.0	0.1	1.4	24	11.2	11.9	11.5	0.1	0.7
7/10/97	24	10.9	11.7	11.3	0.1	0.8	24	10.8	11.6	11.2	0.0	0.8	24	10.7	11.5	11.1	0.1	0.8
7/11/97	24	10.5	12.8	11.4	0.2	2.3	24	10.5	12.2	11.2	0.1	1.7	24	10.5	12.2	11.3	0.1	1.7
7/12/97	24	10.5	13.3	11.7	0.2	2.8	24	10.5	13.4	11.8	0.2	2.9	24	10.4	13.0	11.6	0.2	2.6
7/13/97	24	10.9	14.3	12.5	0.2	3.4	24	11.1	14.4	12.6	0.2	3.3	24	10.9	13.5	12.0	0.2	2.6
7/14/97	24	11.9	14.7	13.1	0.2	2.8	24	11.9	14.7	13.1	0.2	2.8	24	11.0	13.3	12.1	0.2	2.3
7/15/97	24	12.5	14.2	13.1	0.1	1.7	24	12.2	14.1	12.9	0.1	1.9	24	11.3	12.6	11.9	0.1	1.3
7/16/97	24	11.7	15.6	13.5	0.3	3.9	24	11.6	15.3	13.2	0.3	3.7	24	10.7	13.8	12.0	0.2	3.1
7/17/97	24	12.5	14.7	13.3	0.1	2.2	24	12.2	14.8	13.1	0.2	2.6	24	11.0	13.2	11.9	0.1	2.2
7/18/97	24	12.3	15.8	13.8	0.2	3.5	24	12.2	15.5	13.4	0.2	3.3	24	11.0	13.6	12.1	0.2	2.6
7/19/97	24	12.5	16.7	14.4	0.3	4.2	24	12.2	16.1	14.0	0.3	3.9	24	10.9	13.9	12.3	0.2	3.0
7/20/97	24	13.4	17.7	15.3	0.3	4.3	24	13.1	17.1	14.8	0.3	4.0	24	11.3	14.6	12.7	0.2	3.3
7/21/97	24	13.7	15.1	14.4	0.1	1.4	24	13.1	14.7	13.9	0.1	1.6	24	11.5	12.6	12.0	0.1	1.1
7/22/97	24	12.8	15.1	13.9	0.2	2.3	24	12.7	14.5	13.5	0.1	1.8	24	10.9	12.9	11.8	0.1	2.0
7/23/97	24	12.3	16.6	14.3	0.3	4.3	24	12.2	16.3	13.9	0.3	4.1	24	10.5	13.8	12.1	0.2	3.3
7/24/97	24	13.0	16.7	14.6	0.3	3.7	24	12.7	16.4	14.2	0.3	3.7	24	11.0	13.8	12.2	0.2	2.8
7/25/97	24	13.0	16.7	14.6	0.3	3.7	24	12.5	16.3	14.0	0.3	3.8	24	10.7	13.5	12.0	0.2	2.8
7/26/97	24	12.8	16.9	14.7	0.3	4.1	24	12.2	16.3	14.0	0.3	4.1	24	10.5	13.6	12.0	0.2	3.1
7/27/97	24	13.1	17.5	15.2	0.3	4.4	24	12.7	17.1	14.6	0.3	4.4	24	10.9	13.9	12.3	0.2	3.0
7/28/97	24	13.9	18.0	15.8	0.3	4.1	24	13.4	17.4	15.1	0.3	4.0	24	11.3	14.1	12.5	0.2	2.8

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
7/29/97	24	14.3	18.0	16.0	0.3	3.7	24	13.7	17.2	15.2	0.3	3.5	24	11.3	13.8	12.4	0.2	2.5
7/30/97	24	14.3	17.8	15.9	0.3	3.5	24	13.6	17.2	15.0	0.2	3.6	24	11.3	13.6	12.3	0.2	2.3
7/31/97	24	13.6	17.5	15.5	0.3	3.9	24	13.1	17.1	14.8	0.3	4.0	24	10.9	13.6	12.1	0.2	2.7
8/1/97	24	13.6	17.8	15.5	0.3	4.2	24	13.3	17.2	15.0	0.3	3.9	24	10.9	13.8	12.3	0.2	2.9
8/2/97	24	13.9	18.0	15.8	0.3	4.1	24	13.6	17.4	15.2	0.3	3.8	24	11.2	13.8	12.4	0.2	2.6
8/3/97	24	14.2	18.5	16.2	0.3	4.3	24	13.9	18.0	15.7	0.3	4.1	24	11.3	14.3	12.6	0.2	3.0
8/4/97	24	14.8	19.0	16.7	0.3	4.2	24	14.5	18.3	16.1	0.3	3.8	24	11.5	14.3	12.7	0.2	2.8
8/5/97	24	15.0	19.3	17.1	0.3	4.3	24	14.7	18.7	16.4	0.3	4.0	24	11.5	14.3	12.7	0.2	2.8
8/6/97	24	16.1	19.6	17.7	0.3	3.5	24	15.5	19.0	16.9	0.3	3.5	24	11.8	14.4	13.0	0.2	2.6
8/7/97	24	15.3	18.8	17.0	0.2	3.5	24	14.8	18.3	16.3	0.2	3.5	24	11.5	13.9	12.6	0.2	2.4
8/8/97	24	14.8	17.7	16.1	0.2	2.9	24	14.4	17.4	15.5	0.2	3.0	24	11.2	13.5	12.2	0.2	2.3
8/9/97	24	13.9	18.0	15.9	0.3	4.1	24	13.9	17.9	15.6	0.3	4.0	24	11.0	13.8	12.3	0.2	2.8
8/10/97	24	13.9	18.3	16.0	0.3	4.4	24	13.9	18.0	15.8	0.3	4.1	24	11.0	13.9	12.4	0.2	2.9
8/11/97	24	14.2	18.5	16.4	0.3	4.3	24	14.2	18.2	16.1	0.3	4.0	24	11.3	13.9	12.5	0.2	2.6
8/12/97	24	14.7	19.0	16.7	0.3	4.3	24	14.5	18.5	16.4	0.3	4.0	24	11.3	14.1	12.6	0.2	2.8
8/13/97	24	15.3	18.6	17.0	0.2	3.3	24	15.2	18.7	16.6	0.2	3.5	24	11.6	13.8	12.6	0.2	2.2
8/14/97	24	15.1	19.1	17.1	0.3	4.0	24	15.0	19.0	16.8	0.3	4.0	24	11.5	14.1	12.7	0.2	2.6
8/15/97	24	15.6	17.2	16.4	0.1	1.6	24	15.0	16.9	15.9	0.1	1.9	24	11.9	12.9	12.3	0.1	1.0
8/16/97	24	14.0	18.3	16.2	0.3	4.3	24	14.2	18.2	16.1	0.3	4.0	24	11.0	13.8	12.3	0.2	2.8
8/17/97	24	14.7	18.6	16.7	0.3	3.9	24	14.8	18.5	16.5	0.3	3.7	24	11.5	13.9	12.6	0.2	2.4
8/18/97	24	15.3	16.7	16.2	0.1	1.4	24	14.8	16.4	15.9	0.1	1.6	24	11.8	12.7	12.3	0.1	0.9
8/19/97	24	13.9	17.8	15.8	0.3	3.9	24	14.1	17.9	15.7	0.3	3.8	24	11.0	13.5	12.1	0.2	2.5
8/20/97	24	14.3	15.4	14.7	0.1	1.1	24	14.4	14.8	14.6	0.0	0.4	24	11.3	12.1	11.6	0.0	0.8
8/21/97	24	13.9	17.2	15.4	0.3	3.3	24	14.1	17.2	15.4	0.2	3.1	24	11.3	13.3	12.1	0.2	2.0
8/22/97	24	13.7	17.7	15.7	0.3	4.0	24	14.1	17.7	15.6	0.3	3.6	24	11.2	13.5	12.2	0.2	2.3
8/23/97	24	14.3	17.0	15.6	0.2	2.7	24	14.2	16.4	15.2	0.2	2.2	24	11.2	13.0	12.1	0.1	1.8
8/24/97	24	14.2	15.0	14.6	0.0	0.8	24	14.1	15.0	14.5	0.1	0.9	24	11.6	12.4	11.9	0.0	0.8
8/25/97	24	13.7	15.9	14.7	0.2	2.2	24	13.9	16.3	14.9	0.2	2.4	24	11.5	12.9	12.1	0.1	1.4
8/26/97	24	14.2	14.8	14.5	0.0	0.6	24	13.9	14.8	14.5	0.1	0.9	24	11.6	12.1	11.8	0.0	0.5
8/27/97	24	13.4	15.3	14.3	0.1	1.9	22	13.6	15.5	14.3	0.1	1.9	23	11.2	12.1	11.5	0.1	0.9
8/28/97	24	13.7	15.0	14.4	0.1	1.3	24	13.9	15.0	14.3	0.1	1.1	24	11.0	12.2	11.6	0.1	1.2
8/29/97	24	13.9	16.4	15.0	0.2	2.5	24	13.9	16.3	14.8	0.2	2.4	24	11.5	12.9	12.0	0.1	1.4
8/30/97	24	13.0	16.4	14.7	0.2	3.4	24	13.1	16.4	14.5	0.2	3.3	24	10.9	12.9	11.9	0.1	2.0
8/31/97	24	13.0	16.2	14.6	0.2	3.2	24	13.3	16.4	14.7	0.2	3.1	24	10.9	13.0	11.9	0.1	2.1
9/1/97	24	13.6	16.6	14.9	0.2	3.0	24	13.9	16.7	15.2	0.2	2.8	24	11.3	13.3	12.2	0.1	2.0
9/2/97	24	13.6	17.0	15.3	0.2	3.4	24	13.9	17.1	15.3	0.2	3.2	24	11.0	13.0	11.9	0.1	2.0
9/3/97	24	14.2	16.7	15.4	0.2	2.5	24	14.4	16.7	15.3	0.2	2.3	24	11.0	12.7	11.8	0.1	1.7
9/4/97	24	14.2	17.0	15.5	0.2	2.8	24	14.4	17.2	15.4	0.2	2.8	24	11.5	13.2	12.1	0.1	1.7
9/5/97	24	13.9	15.6	14.7	0.1	1.7	24	13.9	15.9	14.8	0.1	2.0	24	10.7	11.8	11.2	0.1	1.1
9/6/97	24	12.5	15.4	13.9	0.2	2.9	24	13.0	15.9	14.3	0.2	2.9	24	10.4	12.4	11.3	0.1	2.0
9/7/97	24	12.3	15.6	13.9	0.2	3.3	24	13.0	16.1	14.4	0.2	3.1	24	10.4	12.7	11.5	0.2	2.3
9/8/97	24	12.6	15.9	14.2	0.2	3.3	24	13.6	16.4	14.9	0.2	2.8	24	10.5	13.2	11.8	0.2	2.7
9/9/97	24	13.3	16.1	14.6	0.2	2.8	24	13.9	16.6	15.3	0.2	2.7	24	10.9	12.6	11.7	0.1	1.7
9/10/97	24	14.3	15.1	14.8	0.1	0.8	24	14.5	15.6	15.0	0.1	1.1	24	11.3	12.2	11.8	0.0	0.9
9/11/97	24	14.0	15.1	14.6	0.1	1.1	24	14.1	15.5	14.8	0.1	1.4	24	11.5	12.2	11.9	0.1	0.7
9/12/97	24	13.0	13.9	13.5	0.1	0.9	24	13.3	14.7	14.0	0.1	1.4	24	10.7	11.6	11.2	0.1	0.9
9/13/97	24	11.7	13.6	12.7	0.1	1.9	24	12.7	14.7	13.6	0.1	2.0	24	10.2	11.8	11.1	0.1	1.6
9/14/97	24	12.8	14.2	13.5	0.1	1.4	24	13.3	14.5	13.7	0.1	1.2	24	11.3	12.2	11.6	0.1	0.9
9/15/97	24	12.3	13.3	12.8	0.1	1.0	24	11.9	13.3	12.6	0.1	1.4	24	11.2	11.6	11.4	0.0	0.4
9/16/97	24	11.9	12.2	12.0	0.0	0.3	24	11.4	11.9	11.6	0.0	0.5	24	11.2	11.5	11.3	0.0	0.3
9/17/97	24	10.9	11.9	11.5	0.1	1.0	24	10.5	11.3	10.8	0.1	0.8	24	11.3	11.9	11.6	0.0	0.6
9/18/97	24	10.3	11.2	10.8	0.0	0.9	24	9.9	10.8	10.4	0.1	0.9	24	11.2	12.6	11.7	0.1	1.4
9/19/97	24	9.5	11.1	10.3	0.1	1.6	24	9.6	11.0	10.2	0.1	1.4	24	10.1	12.2	11.1	0.1	2.1
9/20/97	24	9.9	11.7	10.7	0.1	1.8	24	9.9	11.4	10.6	0.1	1.5	24	10.7	12.6	11.5	0.1	1.9
9/21/97	24	10.0	12.2	11.0	0.2	2.2	24	10.3	12.0	11.1	0.1	1.7	24	10.5	12.7	11.5	0.2	2.2
9/22/97	24	10.5	12.6	11.5	0.1	2.1	24	10.8	12.5	11.6	0.1	1.7	24	10.7	12.6	11.6	0.1	1.9
9/23/97	24	10.8	13.3	12.0	0.2	2.5	24	11.3	13.3	12.2	0.1	2.0	24	10.5	13.0	11.7	0.2	2.5
9/24/97	24	11.7	14.0	12.7	0.2	2.3	24	12.0	13.7	12.8	0.1	1.7	24	11.5	13.3	12.3	0.1	1.8
9/25/97	24	12.0	13.6	12.9	0.1	1.6	24	12.2	13.6	12.9	0.1	1.4	24	11.3	12.7	12.0	0.1	1.4
9/26/97	24	11.9	13.1	12.6	0.1	1.2	24	11.4	12.8	12.2	0.1	1.4	24	11.5	12.1	11.8	0.0	0.6
9/27/97	24	11.1	11.9	11.4	0.0	0.8	24	11.1	11.7	11.4	0.0	0.6	24	11.2	12.2	11.6	0.1	1.0
9/28/97	24	10.3	11.7	11.0	0.1	1.4	24	10.7	12.2	11.4	0.1	1.5	24	10.7	12.4	11.5	0.1	1.7
9/29/97	24	10.3	12.0	11.2	0.1	1.7	24	11.0	12.7	11.7	0.1	1.7	24	10.5	12.4	11.5	0.1	1.9
9/30/97	24	11.1	11.6	11.4	0.0	0.5	24	11.6	11.9	11.7	0.0	0.3	24	11.2	11.6	11.4	0.0	0.4
10/1/97	24	10.8	11.9	11.4	0.1	1.1	24	10.5	11.9	11.5	0.1	1.4	24	11.0	11.8	11.5	0.0	0.8
10/2/97	24	10.2	10.8	10.5	0.0	0.6	24	10.0	10.7	10.3	0.0	0.7	24	10.9	11.6	11.2	0.1	0.7
10/3/97	24	10.0	10.3	10.2	0.0	0.3	24	9.9	10.2	10.1	0.0	0.3	24	11.0	11.6	11.3	0.1	0.6
10/4/97	24	9.5	10.3	9.9	0.0	0.8	24	9.4	10.0	9.7	0.0	0.6	24	11.2	11.5	11.4	0.0	0.3
10/5/97	24	8.5	9.4	9.1	0.0	0.9	24	8.5	9.6	9.1	0.1	1.1	24	10.7	11.8	11.2	0.1	1.1

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
10/6/97	24	7.8	8.6	8.3	0.1	0.8	24	8.0	9.1	8.5	0.1	1.1	24	9.8	11.2	10.5	0.1	1.4
10/7/97	24	7.8	8.5	8.1	0.0	0.7	24	7.9	8.5	8.3	0.0	0.6	24	9.6	11.0	10.3	0.1	1.4
10/8/97	24	8.2	8.5	8.3	0.0	0.3	24	8.2	8.5	8.3	0.0	0.3	24	10.2	10.5	10.3	0.0	0.3
10/9/97	24	8.0	8.3	8.2	0.0	0.3	24	8.0	8.3	8.2	0.0	0.3	24	10.2	10.4	10.2	0.0	0.2
10/10/97	24	7.8	8.2	8.0	0.0	0.4	24	7.9	8.0	8.0	0.0	0.1	24	10.1	10.4	10.3	0.0	0.3
10/11/97	24	7.8	8.3	8.0	0.0	0.5	24	7.7	8.5	8.1	0.1	0.8	24	9.9	10.9	10.4	0.1	1.0
10/12/97	24	8.0	8.3	8.2	0.0	0.3	24	8.0	8.5	8.3	0.0	0.5	24	10.2	10.5	10.4	0.0	0.3
10/13/97	24	8.3	8.8	8.5	0.0	0.5	24	8.2	9.1	8.6	0.1	0.9	24	10.1	11.2	10.6	0.1	1.1
10/14/97	24	7.7	8.6	8.2	0.1	0.9	24	7.9	9.1	8.6	0.1	1.2	24	9.3	11.0	10.1	0.1	1.7
10/15/97	24	8.3	9.4	8.8	0.1	1.1	24	8.8	10.2	9.4	0.1	1.4	24	9.8	11.6	10.6	0.1	1.8
10/16/97	24	8.5	9.4	8.9	0.1	0.9	24	8.9	9.9	9.5	0.1	1.0	24	9.6	11.0	10.4	0.1	1.4
10/17/97	24	9.1	9.5	9.3	0.0	0.4	24	9.1	10.2	9.7	0.1	1.1	24	10.4	11.6	10.9	0.1	1.2
10/18/97	24	8.6	9.2	8.9	0.0	0.6	24	8.2	9.3	8.8	0.1	1.1	24	9.5	10.9	10.2	0.1	1.4
10/19/97	24	7.8	8.6	8.3	0.1	0.8	24	8.0	8.9	8.5	0.1	0.9	24	9.1	10.4	9.8	0.1	1.3
10/20/97	24	7.1	8.2	7.6	0.1	1.1	24	7.7	8.8	8.2	0.1	1.1	24	8.4	10.1	9.2	0.1	1.7
10/21/97	24	6.8	7.7	7.3	0.1	0.9	24	7.6	8.6	8.1	0.1	1.0	24	8.4	9.9	9.1	0.1	1.5
10/22/97	24	7.4	8.0	7.6	0.0	0.6	24	7.9	8.5	8.2	0.0	0.6	24	9.1	10.1	9.6	0.1	1.0
10/23/97	24	7.7	8.3	8.0	0.0	0.6	24	7.6	8.6	8.1	0.1	1.0	24	9.0	10.1	9.5	0.1	1.1
10/24/97	24	6.8	7.5	7.2	0.0	0.7	24	7.1	8.2	7.5	0.1	1.1	24	8.1	9.8	8.9	0.1	1.7
10/25/97	24	6.1	7.2	6.7	0.1	1.1	24	6.9	8.2	7.5	0.1	1.3	24	8.1	9.8	8.9	0.1	1.7
10/26/97	24	6.6	7.5	7.1	0.1	0.9	24	7.6	8.3	7.9	0.1	0.7	24	8.8	9.9	9.4	0.1	1.1
10/27/97	24	7.5	8.2	7.7	0.1	0.7	24	7.6	8.9	8.1	0.1	1.3	24	9.3	10.2	9.8	0.0	0.9
10/28/97	24	7.2	7.8	7.6	0.0	0.6	24	7.7	8.2	8.0	0.0	0.5	24	8.8	9.8	9.4	0.1	1.0
10/29/97	24	7.8	8.5	8.4	0.0	0.7	24	8.2	8.6	8.5	0.0	0.4	24	9.8	10.5	10.3	0.0	0.7
10/30/97	24	8.5	9.4	8.9	0.1	0.9	24	8.8	9.6	9.1	0.1	0.8	24	10.4	11.0	10.7	0.0	0.6
10/31/97	24	8.3	8.6	8.5	0.0	0.3	24	8.2	8.9	8.6	0.0	0.7	24	10.4	10.9	10.5	0.0	0.5
11/1/97	24	7.5	8.3	7.9	0.0	0.8	24	7.7	8.5	8.1	0.0	0.8	24	9.3	10.2	9.8	0.1	0.9
11/2/97	24	7.5	8.3	7.9	0.1	0.8	24	7.9	8.8	8.3	0.1	0.9	24	9.3	10.5	9.9	0.1	1.2
11/3/97	24	7.7	8.6	8.1	0.1	0.9	24	8.0	8.8	8.4	0.1	0.8	24	9.3	10.2	9.8	0.1	0.9
11/4/97	24	8.5	8.9	8.7	0.0	0.4	24	8.6	9.6	9.1	0.1	1.0	24	10.2	11.0	10.5	0.1	0.8
11/5/97	24	8.6	9.4	9.0	0.1	0.8	24	9.1	9.9	9.5	0.0	0.8	24	10.2	10.9	10.6	0.0	0.7
11/6/97	24	9.1	9.4	9.2	0.0	0.3	24	9.3	9.6	9.4	0.0	0.3	24	10.4	10.7	10.5	0.0	0.3
11/7/97	24	8.5	9.2	8.9	0.0	0.7	24	8.5	9.4	9.0	0.1	0.9	24	10.1	10.5	10.3	0.0	0.4
11/8/97	24	7.7	8.5	8.0	0.0	0.8	24	7.7	8.5	8.1	0.0	0.8	24	9.3	9.9	9.7	0.0	0.6
11/9/97	24	7.7	8.0	7.8	0.0	0.3	24	7.7	8.3	8.0	0.0	0.6	24	9.3	9.8	9.5	0.0	0.5
11/10/97	24	7.4	7.8	7.5	0.0	0.4	24	7.6	8.2	7.8	0.0	0.6	24	9.1	9.8	9.4	0.0	0.7
11/11/97	24	6.6	7.5	7.1	0.1	0.9	24	6.9	7.9	7.4	0.1	1.0	24	8.7	9.6	9.1	0.1	0.9
11/12/97	24	5.8	6.5	6.2	0.0	0.7	24	6.5	7.1	6.8	0.0	0.6	24	8.2	9.0	8.6	0.1	0.8
11/13/97	24	6.1	6.5	6.3	0.0	0.4	24	6.5	7.1	6.9	0.1	0.6	24	8.5	9.3	8.9	0.1	0.8
11/14/97	24	6.1	7.1	6.6	0.1	1.0	24	6.5	7.6	7.0	0.1	1.1	24	8.8	9.6	9.2	0.0	0.8
11/15/97	24	5.5	6.1	5.9	0.1	0.6	24	6.0	6.8	6.5	0.1	0.8	24	8.4	9.1	8.7	0.1	0.7
11/16/97	24	5.8	6.8	6.3	0.1	1.0	24	6.3	7.1	6.8	0.1	0.8	24	8.7	9.6	9.2	0.1	0.9
11/17/97	24	6.5	7.1	6.8	0.0	0.6	24	6.8	7.2	7.0	0.0	0.4	24	9.1	9.8	9.5	0.1	0.7
11/18/97	24	6.5	6.9	6.8	0.0	0.4	24	6.9	7.4	7.2	0.0	0.5	24	9.1	9.6	9.4	0.0	0.5
11/19/97	24	6.5	6.8	6.6	0.0	0.3	24	6.8	7.2	7.0	0.0	0.4	24	9.0	9.5	9.3	0.0	0.5
11/20/97	24	6.9	7.4	7.2	0.0	0.5	24	7.4	7.7	7.6	0.0	0.3	24	9.3	9.8	9.6	0.0	0.5
11/21/97	24	6.8	7.4	7.2	0.0	0.6	24	6.9	7.7	7.4	0.0	0.8	24	9.0	9.6	9.4	0.0	0.6
11/22/97	24	6.6	7.2	7.0	0.0	0.6	24	6.9	7.4	7.2	0.0	0.5	24	8.8	9.6	9.3	0.1	0.8
11/23/97	24	7.1	7.7	7.4	0.1	0.6	24	7.2	8.0	7.7	0.1	0.8	24	9.5	9.9	9.7	0.0	0.4
11/24/97	24	6.9	7.5	7.2	0.0	0.6	24	7.2	7.9	7.6	0.0	0.7	24	9.1	9.8	9.6	0.0	0.7
11/25/97	24	6.5	6.9	6.8	0.0	0.4	24	6.8	7.4	7.1	0.0	0.6	24	8.8	9.5	9.2	0.0	0.7
11/26/97	24	6.0	6.9	6.5	0.0	0.9	24	6.2	7.2	6.8	0.1	1.0	24	8.2	9.5	9.0	0.1	1.3
11/27/97	24	5.5	6.8	6.0	0.1	1.3	24	6.0	7.2	6.6	0.1	1.2	24	7.9	9.1	8.5	0.1	1.2
11/28/97	24	6.9	7.5	7.3	0.0	0.6	24	7.2	7.7	7.6	0.0	0.5	24	9.1	9.8	9.5	0.0	0.7
11/29/97	24	7.1	7.5	7.4	0.0	0.4	24	7.2	7.7	7.6	0.0	0.5	24	9.5	9.6	9.6	0.0	0.1
11/30/97	24	6.8	7.1	6.9	0.0	0.3	24	6.6	7.2	7.0	0.0	0.6	24	9.3	9.5	9.4	0.0	0.2
12/1/97	24	5.8	6.8	6.0	0.1	1.0	24	6.0	6.6	6.3	0.0	0.6	24	8.2	9.1	8.6	0.1	0.9
12/2/97	24	5.5	5.8	5.7	0.0	0.3	24	5.8	6.3	6.1	0.0	0.5	24	8.4	8.7	8.5	0.0	0.3
12/3/97	24	5.2	5.7	5.5	0.0	0.5	24	5.5	6.2	5.8	0.0	0.7	24	8.2	9.0	8.5	0.0	0.8
12/4/97	24	5.2	5.8	5.5	0.0	0.6	24	5.7	6.3	5.9	0.0	0.6	24	8.2	9.0	8.6	0.0	0.8
12/5/97	24	4.9	5.4	5.1	0.0	0.5	24	4.9	5.7	5.4	0.0	0.8	24	8.1	8.5	8.2	0.0	0.4
12/6/97	24	4.4	5.0	4.8	0.0	0.6	24	4.8	5.2	5.0	0.0	0.4	24	7.8	8.4	8.1	0.0	0.6
12/7/97	24	4.6	5.0	4.9	0.0	0.4	24	4.8	5.2	5.0	0.0	0.4	24	8.1	8.4	8.2	0.0	0.3
12/8/97	24	4.6	5.2	4.9	0.0	0.6	24	4.8	5.5	5.1	0.0	0.7	24	8.2	8.8	8.5	0.0	0.6
12/9/97	24	4.4	5.0	4.6	0.0	0.6	24	4.6	5.1	4.9	0.0	0.5	24	8.1	8.5	8.3	0.0	0.4
12/10/97	24	4.6	5.4	4.9	0.1	0.8	24	4.9	5.7	5.2	0.1	0.8	24	8.2	8.8	8.5	0.0	0.6
12/11/97	24	4.4	5.2	4.8	0.1	0.8	24	4.9	5.4	5.1	0.0	0.5	24	8.1	8.5	8.2	0.0	0.4
12/12/97	24	4.4	5.0	4.7	0.0	0.6	24	4.6	5.2	4.9	0.0	0.6	24	7.8	8.4	8.0	0.0	0.6
12/13/97	24	4.6	4.7	4.6	0.0	0.1	24	4.6	4.9	4.8	0.0	0.3	24	7.8	8.1	8.0	0.0	0.3

Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
12/14/97	24	4.6	5.5	5.0	0.1	0.9	24	4.8	5.7	5.3	0.1	0.9	24	8.1	8.7	8.4	0.0	0.6
12/15/97	24	5.2	5.5	5.4	0.0	0.3	24	5.4	5.8	5.6	0.0	0.4	24	8.2	8.5	8.4	0.0	0.3
12/16/97	24	5.4	6.8	6.2	0.1	1.4	24	5.4	6.9	6.4	0.1	1.5	24	8.2	9.3	8.8	0.1	1.1
12/17/97	24	6.0	6.5	6.3	0.0	0.5	24	6.2	6.8	6.5	0.0	0.6	24	8.5	9.0	8.8	0.0	0.5
12/18/97	24	5.2	5.8	5.7	0.0	0.6	24	5.7	6.2	5.9	0.0	0.5	24	8.2	8.7	8.5	0.0	0.5
12/19/97	24	5.2	5.8	5.5	0.1	0.6	24	5.5	6.2	5.8	0.0	0.7	24	7.9	8.8	8.3	0.1	0.9
12/20/97	24	4.9	5.4	5.0	0.0	0.5	24	4.9	5.7	5.3	0.0	0.8	24	7.8	8.2	8.0	0.0	0.4
12/21/97	24	4.7	5.4	5.1	0.0	0.7	24	4.8	5.5	5.2	0.0	0.7	24	7.6	8.5	8.1	0.1	0.9
12/22/97	24	4.1	4.6	4.4	0.0	0.5	24	4.0	5.1	4.6	0.1	1.1	24	7.1	8.1	7.6	0.1	1.0
12/23/97	24	3.6	4.1	3.9	0.0	0.5	24	4.0	4.4	4.2	0.0	0.4	24	7.0	7.8	7.4	0.1	0.8
12/24/97	24	4.1	4.6	4.4	0.0	0.5	24	4.4	4.9	4.7	0.0	0.5	24	7.6	8.2	8.0	0.0	0.6
12/25/97	24	3.6	4.4	3.9	0.0	0.8	24	4.0	4.6	4.2	0.0	0.6	24	7.1	7.9	7.5	0.1	0.8
12/26/97	24	3.3	4.0	3.7	0.1	0.7	24	4.0	4.6	4.2	0.0	0.6	24	7.0	7.9	7.5	0.1	0.9
12/27/97	24	3.6	4.4	4.1	0.1	0.8	24	4.1	4.9	4.6	0.1	0.8	24	7.6	8.4	8.0	0.1	0.8
12/28/97	24	4.4	5.0	4.7	0.0	0.6	24	4.8	5.4	5.1	0.0	0.6	24	8.2	8.7	8.4	0.0	0.5
12/29/97	24	5.0	5.8	5.5	0.1	0.8	24	5.4	6.0	5.6	0.0	0.6	24	8.5	9.0	8.8	0.0	0.5
12/30/97	24	4.6	5.5	4.8	0.1	0.9	24	4.6	5.4	5.0	0.0	0.8	24	7.3	8.4	7.6	0.1	1.1
12/31/97	24	4.6	5.7	5.0	0.1	1.1	24	4.8	5.8	5.2	0.1	1.0	24	7.1	8.2	7.7	0.1	1.1
1/1/98	24	5.7	6.5	6.1	0.1	0.8	24	5.1	6.5	6.0	0.1	1.4	24	8.2	8.8	8.5	0.0	0.6
1/2/98	24	4.6	5.5	4.8	0.0	0.9	24	4.6	5.1	4.8	0.0	0.5	24	7.8	8.2	7.9	0.0	0.4
1/3/98	24	4.3	4.6	4.5	0.0	0.3	24	4.3	4.8	4.5	0.0	0.5	24	7.6	8.1	7.8	0.0	0.5
1/4/98	24	4.3	4.6	4.3	0.0	0.3	24	3.7	4.4	4.1	0.0	0.7	24	7.6	8.1	7.8	0.0	0.5
1/5/98	24	4.4	5.0	4.7	0.0	0.6	24	4.3	5.2	4.6	0.1	0.9	24	7.8	8.2	8.0	0.0	0.4
1/6/98	24	5.0	5.4	5.3	0.0	0.4	24	5.2	5.4	5.3	0.0	0.2	24	8.1	8.4	8.3	0.0	0.3
1/7/98	24	5.2	5.7	5.5	0.0	0.5	24	5.4	5.7	5.5	0.0	0.3	24	7.9	8.4	8.1	0.0	0.5
1/8/98	24	4.6	5.4	5.2	0.1	0.8	24	4.8	5.5	5.2	0.0	0.7	24	7.3	8.2	7.8	0.1	0.9
1/9/98	24	4.1	4.6	4.4	0.0	0.5	24	4.1	4.8	4.5	0.0	0.7	24	7.0	7.5	7.3	0.0	0.5
1/10/98	24	3.6	4.9	4.6	0.1	1.3	24	3.8	5.1	4.7	0.1	1.3	24	6.7	7.9	7.5	0.1	1.2
1/11/98	24	1.4	3.6	2.1	0.2	2.2	24	1.3	3.8	2.0	0.2	2.5	24	4.8	6.7	5.7	0.1	1.9
1/12/98	24	0.6	1.7	1.4	0.1	1.1	24	0.2	1.6	1.2	0.1	1.4	24	4.7	5.7	5.5	0.1	1.0
1/13/98	24	-0.2	2.9	1.7	0.2	3.1	24	0.0	3.0	1.8	0.2	3.0	24	3.9	7.0	6.0	0.2	3.1
1/14/98	24	2.9	4.6	3.5	0.1	1.7	24	2.9	4.8	3.7	0.1	1.9	24	6.8	7.3	7.0	0.0	0.5
1/15/98	24	4.6	5.0	4.9	0.0	0.4	24	4.8	5.2	4.9	0.0	0.4	24	7.3	7.9	7.5	0.0	0.6
1/16/98	24	4.9	5.4	5.1	0.0	0.5	24	4.9	5.4	5.2	0.0	0.5	24	7.3	7.8	7.6	0.0	0.5
1/17/98	24	5.2	5.7	5.5	0.0	0.5	24	5.2	5.5	5.4	0.0	0.3	24	7.5	8.2	7.9	0.0	0.7
1/18/98	24	5.5	6.0	5.7	0.0	0.5	24	5.5	5.8	5.7	0.0	0.3	24	7.9	8.2	8.0	0.0	0.3
1/19/98	24	5.5	5.7	5.7	0.0	0.2	24	5.5	5.5	5.5	0.0	0.0	24	7.8	8.1	7.9	0.0	0.3
1/20/98	24	5.5	5.8	5.6	0.0	0.3	24	5.5	5.7	5.5	0.0	0.2	24	7.9	8.2	8.0	0.0	0.3
1/21/98	24	5.4	5.7	5.5	0.0	0.3	24	5.2	5.5	5.4	0.0	0.3	24	7.8	7.9	7.8	0.0	0.1
1/22/98	24	5.4	5.8	5.6	0.0	0.4	24	5.4	5.8	5.6	0.0	0.4	24	7.8	8.4	8.0	0.0	0.6
1/23/98	24	5.7	6.1	5.9	0.0	0.4	24	5.5	6.2	5.9	0.1	0.7	24	8.1	8.5	8.3	0.0	0.4
1/24/98	24	5.8	6.1	5.9	0.0	0.3	24	5.7	6.0	5.8	0.0	0.3	24	8.1	8.4	8.3	0.0	0.3
1/25/98	24	5.8	6.1	6.0	0.0	0.3	24	5.8	6.3	6.0	0.0	0.5	24	8.1	8.7	8.3	0.0	0.6
1/26/98	24	6.1	6.3	6.2	0.0	0.2	24	6.0	6.5	6.2	0.0	0.5	24	8.1	8.8	8.5	0.0	0.7
1/27/98	24	6.0	6.3	6.1	0.0	0.3	24	6.0	6.3	6.1	0.0	0.3	24	8.2	8.8	8.5	0.0	0.6
1/28/98	24	6.0	6.6	6.3	0.1	0.6	24	6.0	6.8	6.4	0.1	0.8	24	8.4	9.1	8.7	0.1	0.7
1/29/98	24	6.3	6.6	6.5	0.0	0.3	24	6.3	6.6	6.4	0.0	0.3	24	8.5	9.1	8.8	0.0	0.6
1/30/98	24	5.8	6.3	6.0	0.0	0.5	24	5.7	6.3	6.1	0.0	0.6	24	8.2	8.7	8.5	0.0	0.5
1/31/98	24	5.5	5.8	5.7	0.0	0.3	24	5.5	6.2	5.8	0.0	0.7	24	8.1	8.7	8.3	0.0	0.6
2/1/98	24	5.4	5.7	5.5	0.0	0.3	24	5.4	5.7	5.5	0.0	0.3	24	7.9	8.5	8.2	0.0	0.6
2/2/98	24	5.2	5.8	5.5	0.0	0.6	24	5.4	6.0	5.5	0.0	0.6	24	7.9	8.5	8.2	0.0	0.6
2/3/98	24	5.5	6.1	5.8	0.1	0.6	24	5.4	6.3	5.9	0.1	0.9	24	8.2	9.0	8.7	0.1	0.8
2/4/98	24	6.1	6.5	6.3	0.0	0.4	24	6.2	6.8	6.4	0.0	0.6	24	8.7	9.3	8.9	0.0	0.6
2/5/98	24	5.8	6.5	6.1	0.1	0.7	24	6.0	6.6	6.3	0.1	0.6	24	8.4	9.3	8.8	0.1	0.9
2/6/98	24	6.1	6.8	6.4	0.0	0.7	24	6.2	6.8	6.5	0.0	0.6	24	8.7	9.3	9.0	0.0	0.6
2/7/98	24	5.8	6.3	6.1	0.0	0.5	24	5.8	6.6	6.2	0.0	0.8	24	7.9	9.1	8.6	0.1	1.2
2/8/98	24	5.8	6.1	6.0	0.0	0.3	24	5.5	6.2	6.0	0.0	0.7	24	8.4	8.8	8.6	0.0	0.4
2/9/98	24	5.0	5.8	5.5	0.0	0.8	24	4.9	5.7	5.3	0.0	0.8	24	7.9	9.0	8.5	0.1	1.1
2/10/98	24	4.9	5.5	5.2	0.0	0.6	24	4.9	5.5	5.2	0.0	0.6	24	7.9	8.7	8.3	0.1	0.8
2/11/98	24	5.2	5.8	5.5	0.0	0.6	24	5.2	5.5	5.4	0.0	0.3	24	8.2	8.8	8.5	0.0	0.6
2/12/98	24	5.5	6.1	5.9	0.0	0.6	24	5.5	6.2	5.7	0.0	0.7	24	8.5	9.1	8.7	0.0	0.6
2/13/98	24	5.5	5.8	5.6	0.0	0.3	24	5.2	5.8	5.5	0.0	0.6	24	8.2	9.0	8.6	0.0	0.8
2/14/98	24	5.4	5.8	5.6	0.0	0.4	24	5.4	5.8	5.6	0.0	0.4	24	8.2	8.7	8.5	0.0	0.5
2/15/98	24	5.5	5.8	5.7	0.0	0.3	24	5.5	5.8	5.6	0.0	0.3	24	8.4	9.0	8.6	0.0	0.6
2/16/98	24	5.2	5.7	5.5	0.0	0.5	24	5.2	6.2	5.7	0.1	1.0	24	7.9	9.0	8.5	0.1	1.1
2/17/98	24	5.5	6.1	5.8	0.1	0.6	24	5.7	6.3	6.0	0.1	0.6	24	8.4	9.3	8.8	0.1	0.9
2/18/98	24	5.8	6.1	5.9	0.0	0.3	24	5.8	6.2	6.0	0.0	0.4	24	8.5	8.8	8.6	0.0	0.3
2/19/98	24	5.8	6.5	6.2	0.0	0.7	24	5.8	6.5	6.2	0.1	0.7	24	8.5	9.5	9.0	0.1	1.0
2/20/98	24	5.7	6.5	6.1	0.0	0.8	24	5.4	6.3	5.9	0.1	0.9	24	8.4	9.0	8.7	0.0	0.6

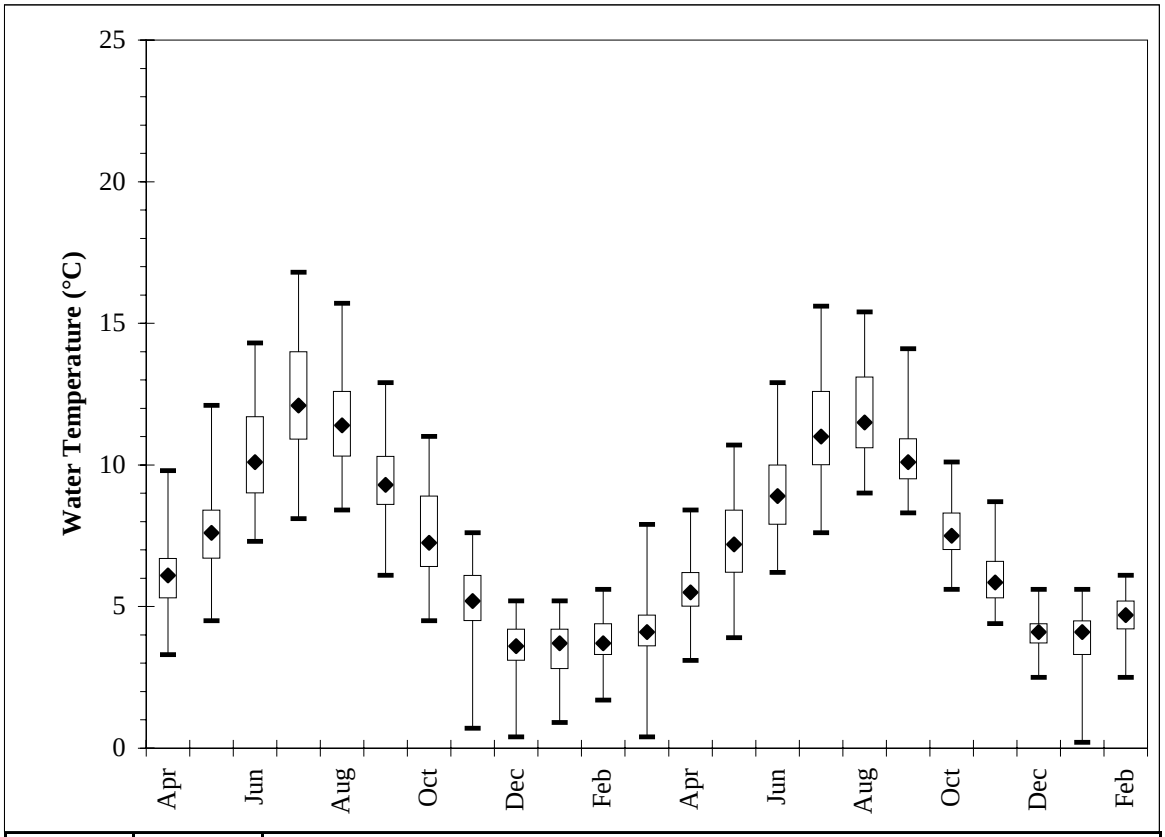
Appendix 2.1-1. Daily summary of water temperature at PacifiCorp monitoring stations, April 1996 through February 1998.

	SIOUX						SPELU						SPELL					
		Water Temperature (ºC)						Water Temperature (ºC)						Water Temperature (ºC)				
Date	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta	N	Min	Max	Mean	SE	Delta
2/21/98	24	5.0	5.7	5.3	0.0	0.7	24	4.4	5.5	5.0	0.1	1.1	24	7.9	8.4	8.2	0.0	0.5
2/22/98	24	5.0	5.5	5.3	0.0	0.5	24	5.1	5.8	5.4	0.1	0.7	24	7.9	9.0	8.4	0.1	1.1
2/23/98	24	4.6	5.5	5.0	0.1	0.9	24	4.9	6.0	5.3	0.1	1.1	11	7.3	7.8	7.5	0.1	0.5
2/24/98	24	4.3	5.0	4.7	0.1	0.7	24	4.4	5.5	5.0	0.1	1.1						
2/25/98	24	4.4	4.9	4.7	0.0	0.5	24	4.3	5.2	4.8	0.1	0.9						
2/26/98	24	4.4	5.2	4.7	0.1	0.8	24	4.4	5.5	4.9	0.1	1.1						
2/27/98	24	3.8	4.9	4.4	0.1	1.1	24	4.1	5.4	4.7	0.1	1.3						
2/28/98	24	4.6	5.4	5.0	0.1	0.8	24	4.8	5.2	5.0	0.0	0.4						
Max	24	16.6	20.6	18.5	0.5	6.9	24	15.5	19.0	16.9	0.3	4.4	24	11.9	14.6	13.0	0.3	3.6
Min	0	-0.2	1.7	1.4	0.0	0.1	0	0.0	1.6	1.2	0.0	0.0	0	3.9	5.7	5.5	0.0	0.1

Appendix 2.1-2

Percent Exceedences of Recorded Water Temperatures

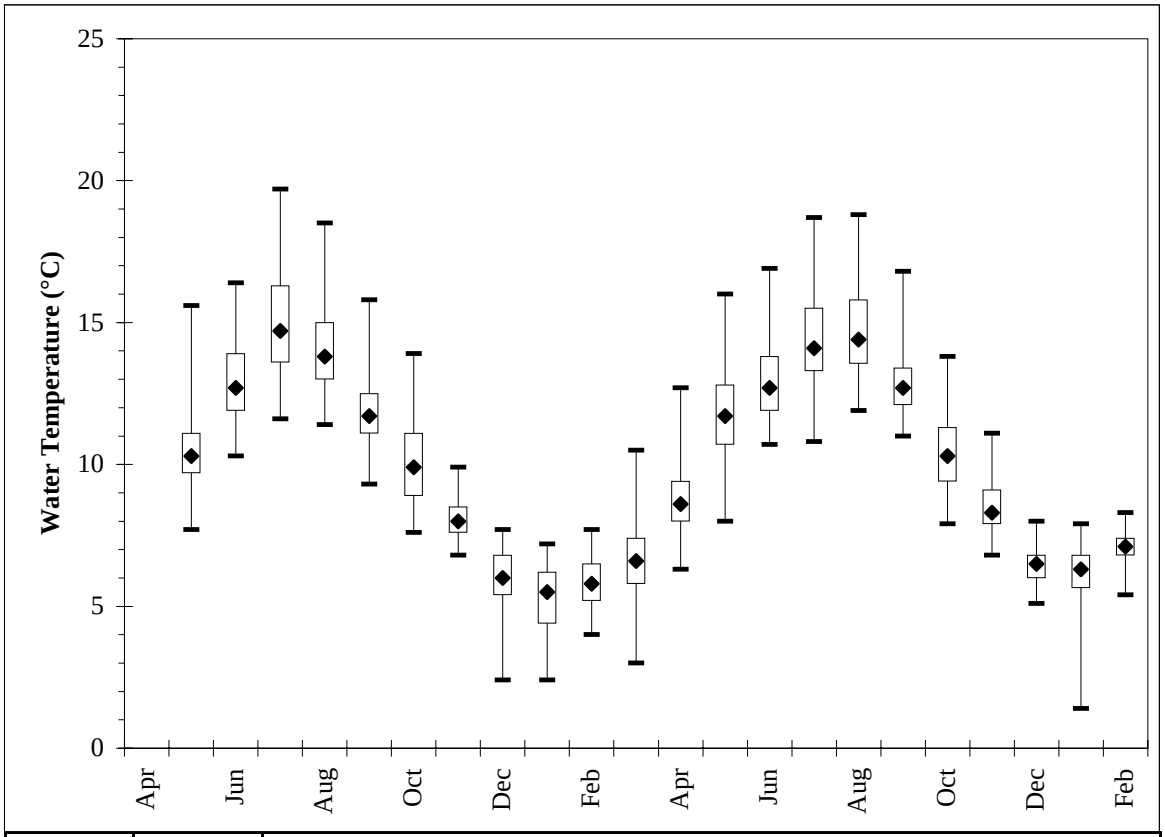
Appendix 2.1-2. Percent exceedences of recorded water temperatures.



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	534	3.3	4.8	5.3	6.1	6.7	7.8	9.8
May-96	744	4.5	5.9	6.7	7.6	8.4	9.5	12.1
Jun-96	528	7.3	8.4	9.0	10.1	11.7	12.9	14.3
Jul-96	743	8.1	9.8	10.9	12.1	14.0	15.4	16.8
Aug-96	744	8.4	9.6	10.3	11.4	12.6	14.0	15.7
Sep-96	720	6.1	7.8	8.6	9.3	10.3	11.2	12.9
Oct-96	744	4.5	5.6	6.4	7.3	8.9	9.6	11.0
Nov-96	720	0.7	4.1	4.5	5.2	6.1	6.7	7.6
Dec-96	744	0.4	2.6	3.1	3.6	4.2	4.5	5.2
Jan-97	744	0.9	1.8	2.8	3.7	4.2	4.5	5.2
Feb-97	672	1.7	2.8	3.3	3.7	4.4	4.8	5.6
Mar-97	744	0.4	3.1	3.6	4.1	4.7	5.5	7.9
Apr-97	720	3.1	4.2	5.0	5.5	6.2	7.0	8.4
May-97	744	3.9	5.6	6.2	7.2	8.4	9.5	10.7
Jun-97	719	6.2	7.3	7.9	8.9	10.0	11.0	12.9
Jul-97	744	7.6	9.2	10.0	11.0	12.6	13.8	15.6
Aug-97	744	9.0	10.1	10.6	11.5	13.1	14.0	15.4
Sep-97	720	8.3	9.0	9.5	10.1	10.9	12.0	14.1
Oct-97	743	5.6	6.6	7.0	7.5	8.3	9.2	10.1
Nov-97	720	4.4	5.0	5.3	5.9	6.6	7.8	8.7
Dec-97	744	2.5	3.4	3.7	4.1	4.4	4.7	5.6
Jan-98	744	0.2	2.2	3.3	4.1	4.5	4.8	5.6
Feb-98	672	2.5	3.9	4.2	4.7	5.2	5.5	6.1

SWRES - North Fork Lewis River Inflow to Swift Reservoir

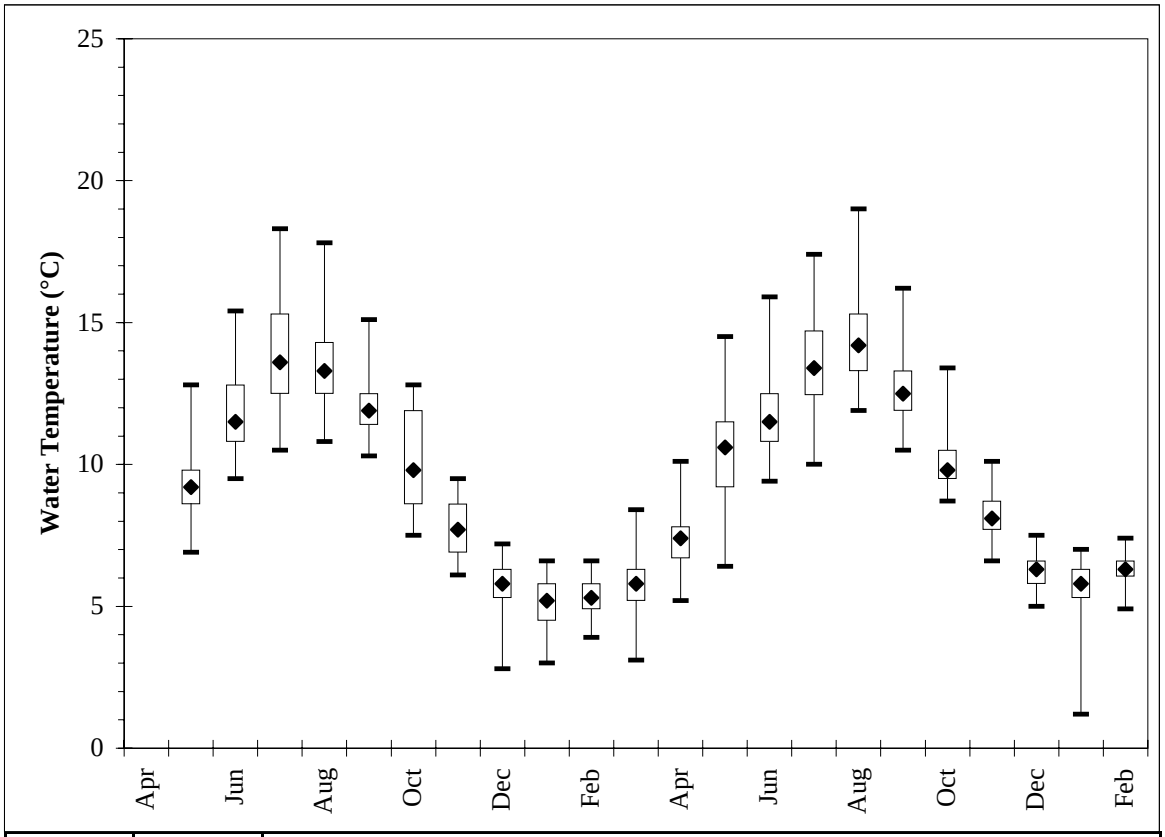
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	0							
May-96	609	7.7	9.3	9.7	10.3	11.1	12.1	15.6
Jun-96	718	10.3	11.4	11.9	12.7	13.9	15.3	16.4
Jul-96	742	11.6	12.8	13.6	14.7	16.3	17.7	19.7
Aug-96	742	11.4	12.5	13.0	13.8	15.0	16.4	18.5
Sep-96	719	9.3	10.3	11.1	11.7	12.5	13.6	15.8
Oct-96	744	7.6	8.5	8.9	9.9	11.1	11.7	13.9
Nov-96	720	6.8	7.2	7.6	8.0	8.5	9.1	9.9
Dec-96	742	2.4	4.9	5.4	6.0	6.8	7.1	7.7
Jan-97	744	2.4	3.8	4.4	5.5	6.2	6.6	7.2
Feb-97	672	4.0	4.6	5.2	5.8	6.5	6.9	7.7
Mar-97	744	3.0	5.4	5.8	6.6	7.4	8.3	10.5
Apr-97	720	6.3	7.4	8.0	8.6	9.4	10.3	12.7
May-97	742	8.0	9.6	10.7	11.7	12.8	14.4	16.0
Jun-97	720	10.7	11.4	11.9	12.7	13.8	14.8	16.9
Jul-97	744	10.8	12.7	13.3	14.1	15.5	16.9	18.7
Aug-97	744	11.9	12.8	13.6	14.4	15.8	17.4	18.8
Sep-97	720	11.0	11.7	12.1	12.7	13.4	14.5	16.8
Oct-97	743	7.9	8.9	9.4	10.3	11.3	12.2	13.8
Nov-97	720	6.8	7.6	7.9	8.3	9.1	9.9	11.1
Dec-97	744	5.1	5.7	6.0	6.5	6.8	7.1	8.0
Jan-98	744	1.4	4.1	5.7	6.3	6.8	7.1	7.9
Feb-98	536	5.4	6.5	6.8	7.1	7.4	7.7	8.3

SW2BU - Upstream End of Swift No. 2 Bypass

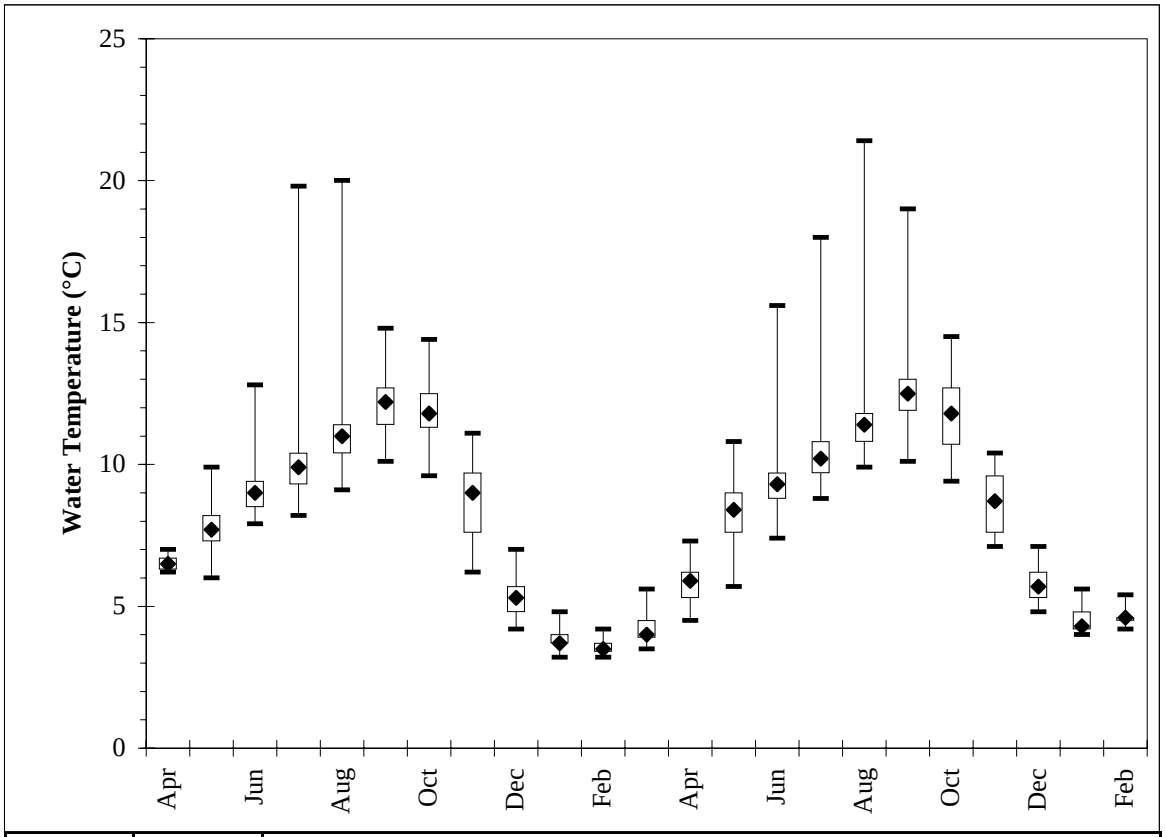
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	0							
May-96	608	6.9	8.1	8.6	9.2	9.8	10.6	12.8
Jun-96	720	9.5	10.5	10.8	11.5	12.8	14.2	15.4
Jul-96	743	10.5	11.7	12.5	13.6	15.3	16.7	18.3
Aug-96	743	10.8	11.9	12.5	13.3	14.3	15.8	17.8
Sep-96	720	10.3	10.9	11.4	11.9	12.5	13.1	15.1
Oct-96	743	7.5	8.3	8.6	9.8	11.9	12.2	12.8
Nov-96	720	6.1	6.6	6.9	7.7	8.6	8.9	9.5
Dec-96	744	2.8	5.0	5.3	5.8	6.3	6.6	7.2
Jan-97	744	3.0	3.8	4.5	5.2	5.8	6.1	6.6
Feb-97	672	3.9	4.5	4.9	5.3	5.8	6.1	6.6
Mar-97	744	3.1	4.9	5.2	5.8	6.3	6.9	8.4
Apr-97	720	5.2	6.3	6.7	7.4	7.8	8.3	10.1
May-97	744	6.4	8.0	9.2	10.6	11.5	12.9	14.5
Jun-97	720	9.4	10.3	10.8	11.5	12.5	13.6	15.9
Jul-97	744	10.0	11.9	12.5	13.4	14.7	15.6	17.4
Aug-97	744	11.9	12.6	13.3	14.2	15.3	16.4	19.0
Sep-97	720	10.5	11.4	11.9	12.5	13.3	14.3	16.2
Oct-97	743	8.7	9.2	9.5	9.8	10.5	11.7	13.4
Nov-97	720	6.6	7.5	7.7	8.1	8.7	9.5	10.1
Dec-97	744	5.0	5.5	5.8	6.3	6.6	6.9	7.5
Jan-98	744	1.2	3.8	5.3	5.8	6.3	6.6	7.0
Feb-98	672	4.9	5.6	6.1	6.3	6.6	6.9	7.4

SW2BP - Downstream End of Swift No. 2 Bypass

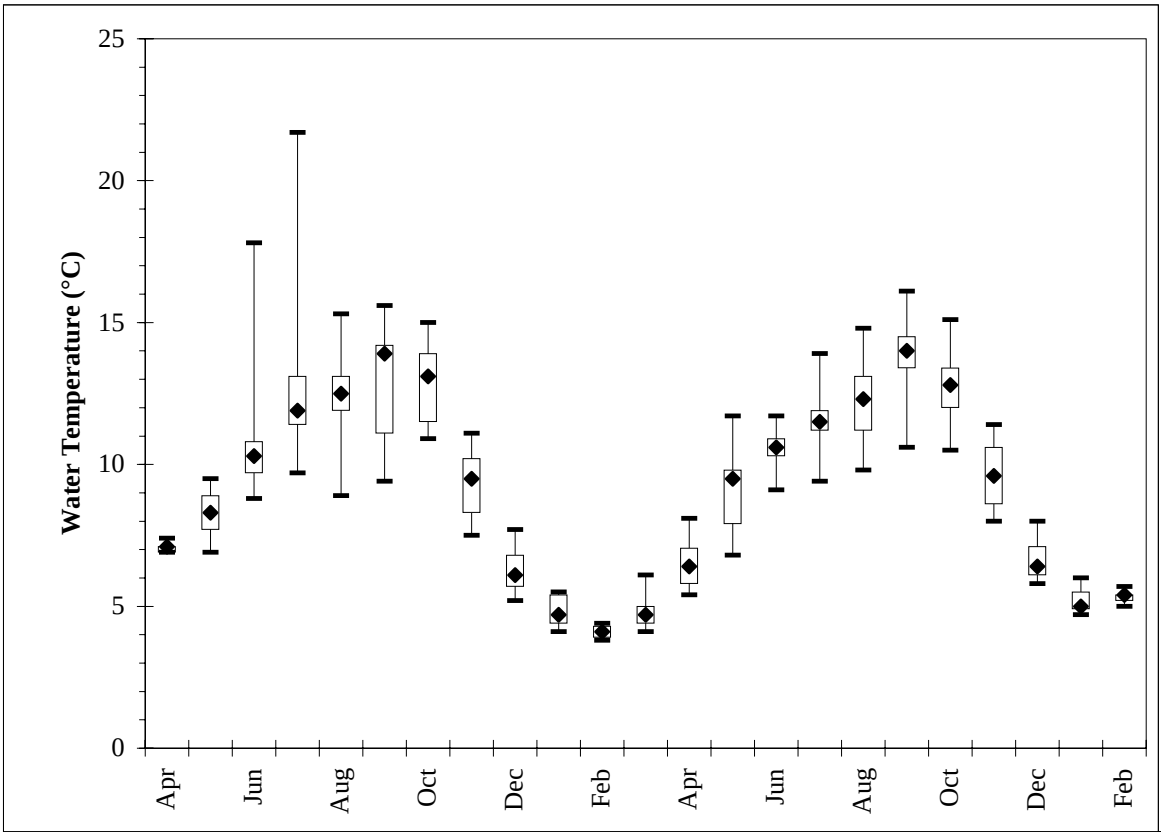
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	32	6.2	6.3	6.3	6.5	6.7	6.8	7.0
May-96	744	6.0	6.5	7.3	7.7	8.2	8.5	9.9
Jun-96	719	7.9	8.4	8.5	9.0	9.4	10.1	12.8
Jul-96	743	8.2	8.8	9.3	9.9	10.4	11.0	19.8
Aug-96	744	9.1	9.9	10.4	11.0	11.4	11.9	20.0
Sep-96	720	10.1	10.8	11.4	12.2	12.7	13.3	14.8
Oct-96	744	9.6	10.8	11.3	11.8	12.5	13.1	14.4
Nov-96	719	6.2	7.1	7.6	9.0	9.7	10.1	11.1
Dec-96	744	4.2	4.5	4.8	5.3	5.7	5.9	7.0
Jan-97	744	3.2	3.4	3.7	3.7	4.0	4.2	4.8
Feb-97	671	3.2	3.4	3.4	3.5	3.7	3.9	4.2
Mar-97	744	3.5	3.9	3.9	4.0	4.5	4.6	5.6
Apr-97	720	4.5	4.8	5.3	5.9	6.2	6.7	7.3
May-97	744	5.7	6.7	7.6	8.4	9.0	9.4	10.8
Jun-97	719	7.4	8.4	8.8	9.3	9.7	10.4	15.6
Jul-97	744	8.8	9.3	9.7	10.2	10.8	11.1	18.0
Aug-97	744	9.9	10.5	10.8	11.4	11.8	12.7	21.4
Sep-97	720	10.1	11.4	11.9	12.5	13.0	13.5	19.0
Oct-97	743	9.4	10.1	10.7	11.8	12.7	13.8	14.5
Nov-97	720	7.1	7.4	7.6	8.7	9.6	9.9	10.4
Dec-97	743	4.8	5.1	5.3	5.7	6.2	6.8	7.1
Jan-98	744	4.0	4.2	4.2	4.3	4.8	4.9	5.6
Feb-98	562	4.2	4.3	4.5	4.6	4.6	4.8	5.4

SW2TR - Swift No. 2 Powerhouse Tailrace

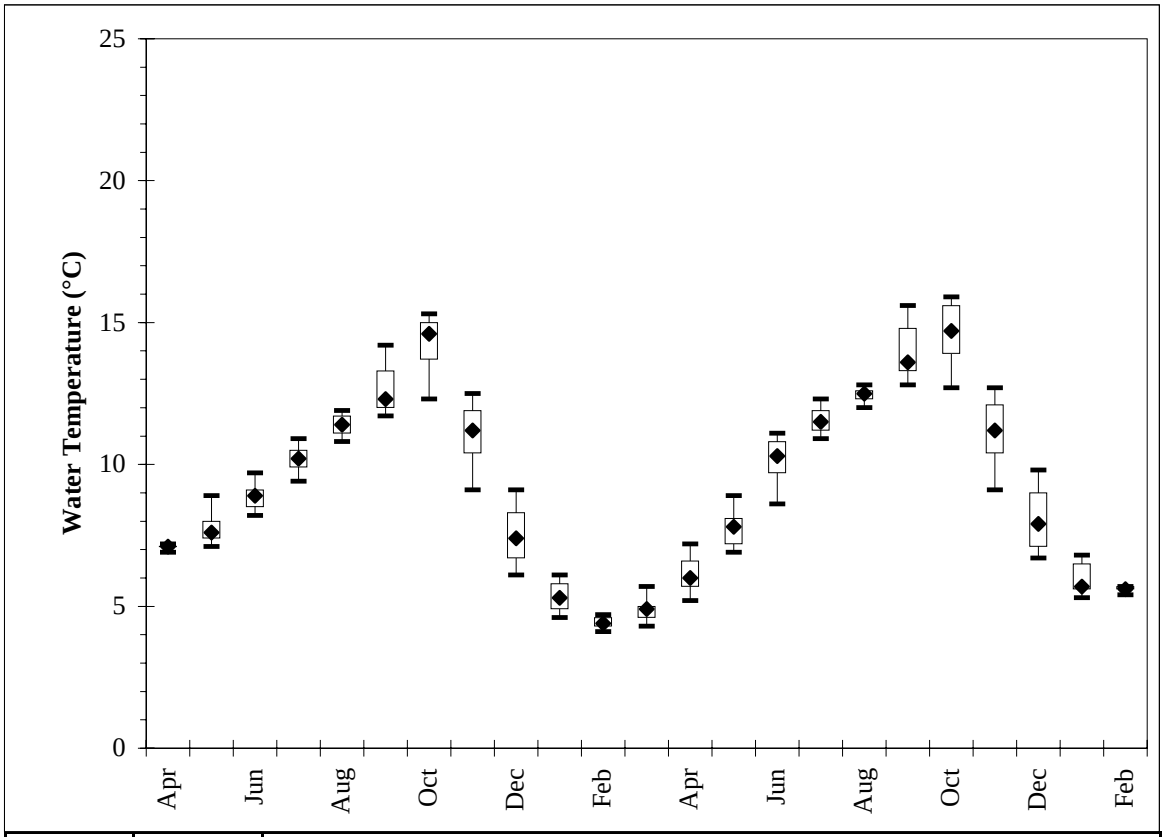
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	31	6.9	6.9	6.9	7.1	7.1	7.4	7.4
May-96	743	6.9	7.4	7.7	8.3	8.9	9.2	9.5
Jun-96	720	8.8	9.4	9.7	10.3	10.8	11.2	17.8
Jul-96	743	9.7	10.9	11.4	11.9	13.1	18.0	21.7
Aug-96	744	8.9	10.5	11.9	12.5	13.1	13.7	15.3
Sep-96	720	9.4	9.8	11.1	13.9	14.2	14.3	15.6
Oct-96	744	10.9	11.1	11.5	13.1	13.9	14.0	15.0
Nov-96	718	7.5	7.8	8.3	9.5	10.2	10.5	11.1
Dec-96	744	5.2	5.4	5.7	6.1	6.8	7.2	7.7
Jan-97	743	4.1	4.1	4.4	4.7	5.4	5.4	5.5
Feb-97	670	3.8	3.8	3.9	4.1	4.3	4.4	4.4
Mar-97	743	4.1	4.3	4.4	4.7	5.0	5.5	6.1
Apr-97	718	5.4	5.5	5.8	6.4	7.1	7.2	8.1
May-97	743	6.8	7.5	7.9	9.5	9.8	10.2	11.7
Jun-97	718	9.1	10.0	10.3	10.6	10.9	11.1	11.7
Jul-97	744	9.4	10.8	11.2	11.5	11.9	12.2	13.9
Aug-97	744	9.8	10.3	11.2	12.3	13.1	13.4	14.8
Sep-97	720	10.6	11.9	13.4	14.0	14.5	15.0	16.1
Oct-97	743	10.5	11.4	12.0	12.8	13.4	14.0	15.1
Nov-97	720	8.0	8.3	8.6	9.6	10.6	10.9	11.4
Dec-97	742	5.8	6.0	6.1	6.4	7.1	7.8	8.0
Jan-98	743	4.7	4.9	4.9	5.0	5.5	5.7	6.0
Feb-98	538	5.0	5.2	5.2	5.4	5.4	5.5	5.7

YALTR - Yale Powerhouse Tailrace

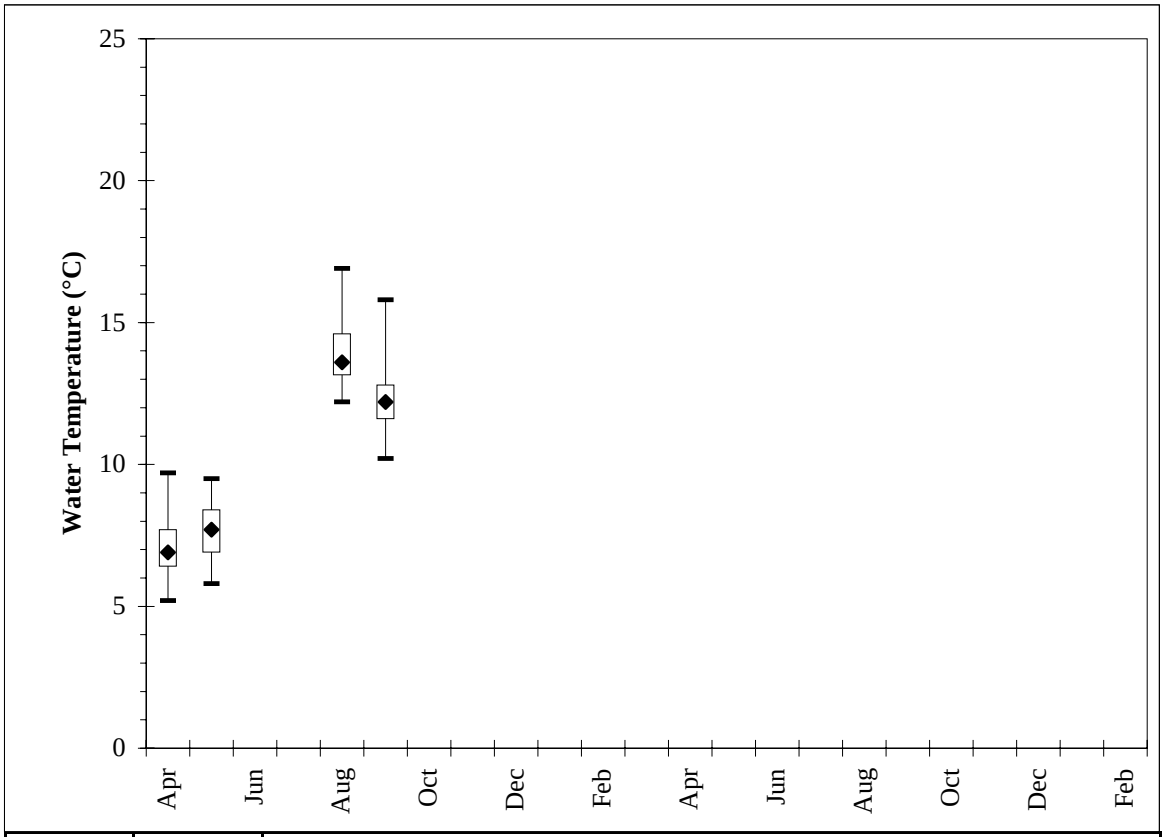
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	37	6.9	7.1	7.1	7.1	7.1	7.1	7.2
May-96	744	7.1	7.2	7.4	7.6	8.0	8.2	8.9
Jun-96	718	8.2	8.3	8.5	8.9	9.1	9.3	9.7
Jul-96	742	9.4	9.6	9.9	10.2	10.5	10.6	10.9
Aug-96	743	10.8	10.9	11.1	11.4	11.7	11.7	11.9
Sep-96	719	11.7	11.9	12.0	12.3	13.3	13.7	14.2
Oct-96	742	12.3	12.9	13.7	14.6	15.0	15.1	15.3
Nov-96	719	9.1	9.4	10.4	11.2	11.9	12.2	12.5
Dec-96	744	6.1	6.4	6.7	7.4	8.3	8.9	9.1
Jan-97	742	4.6	4.6	4.9	5.3	5.8	6.0	6.1
Feb-97	671	4.1	4.3	4.3	4.4	4.6	4.6	4.7
Mar-97	742	4.3	4.4	4.6	4.9	5.0	5.2	5.7
Apr-97	719	5.2	5.5	5.7	6.0	6.6	6.9	7.2
May-97	742	6.9	7.2	7.2	7.8	8.1	8.4	8.9
Jun-97	718	8.6	9.4	9.7	10.3	10.8	10.9	11.1
Jul-97	744	10.9	11.1	11.2	11.5	11.9	12.0	12.3
Aug-97	743	12.0	12.2	12.3	12.5	12.6	12.6	12.8
Sep-97	720	12.8	12.9	13.3	13.6	14.8	15.1	15.6
Oct-97	512	12.7	12.9	13.9	14.7	15.6	15.8	15.9
Nov-97	719	9.1	9.6	10.4	11.2	12.1	12.6	12.7
Dec-97	744	6.7	6.8	7.1	7.9	9.0	9.3	9.8
Jan-98	743	5.3	5.4	5.6	5.7	6.5	6.5	6.8
Feb-98	541	5.4	5.4	5.6	5.6	5.7	5.7	5.7

MERTR - Merwin Powerhouse Tailrace

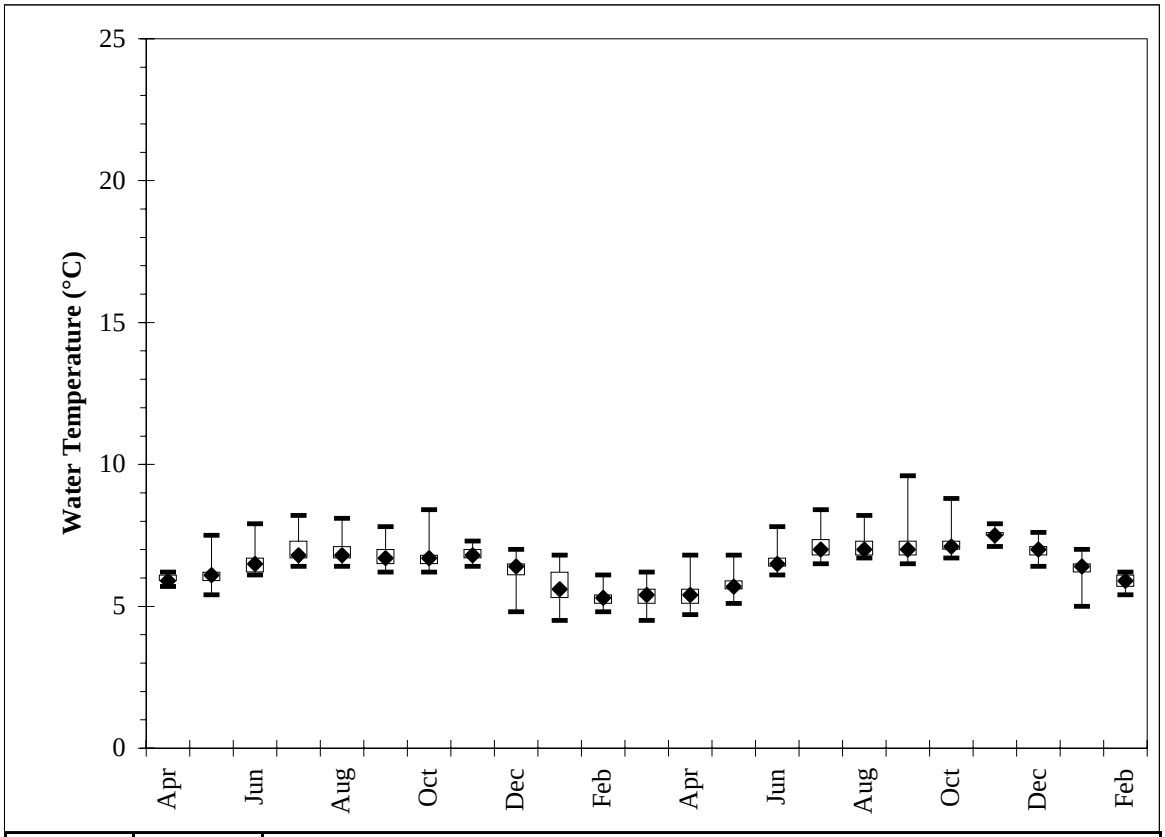
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	662	5.2	5.9	6.4	6.9	7.7	8.4	9.7
May-96	491	5.8	6.4	6.9	7.7	8.4	8.7	9.5
Jun-96	0							
Jul-96	0							
Aug-96	108	12.2	12.7	13.2	13.6	14.6	15.1	16.9
Sep-96	562	10.2	11.0	11.6	12.2	12.8	13.8	15.8
Oct-96	0							
Nov-96	0							
Dec-96	0							
Jan-97	0							
Feb-97	0							
Mar-97	0							
Apr-97	0							
May-97	0							
Jun-97	0							
Jul-97	0							
Aug-97	0							
Sep-97	0							
Oct-97	0							
Nov-97	0							
Dec-97	0							
Jan-98	0							
Feb-98	0							

OLECM - Ole Creek Near Mouth

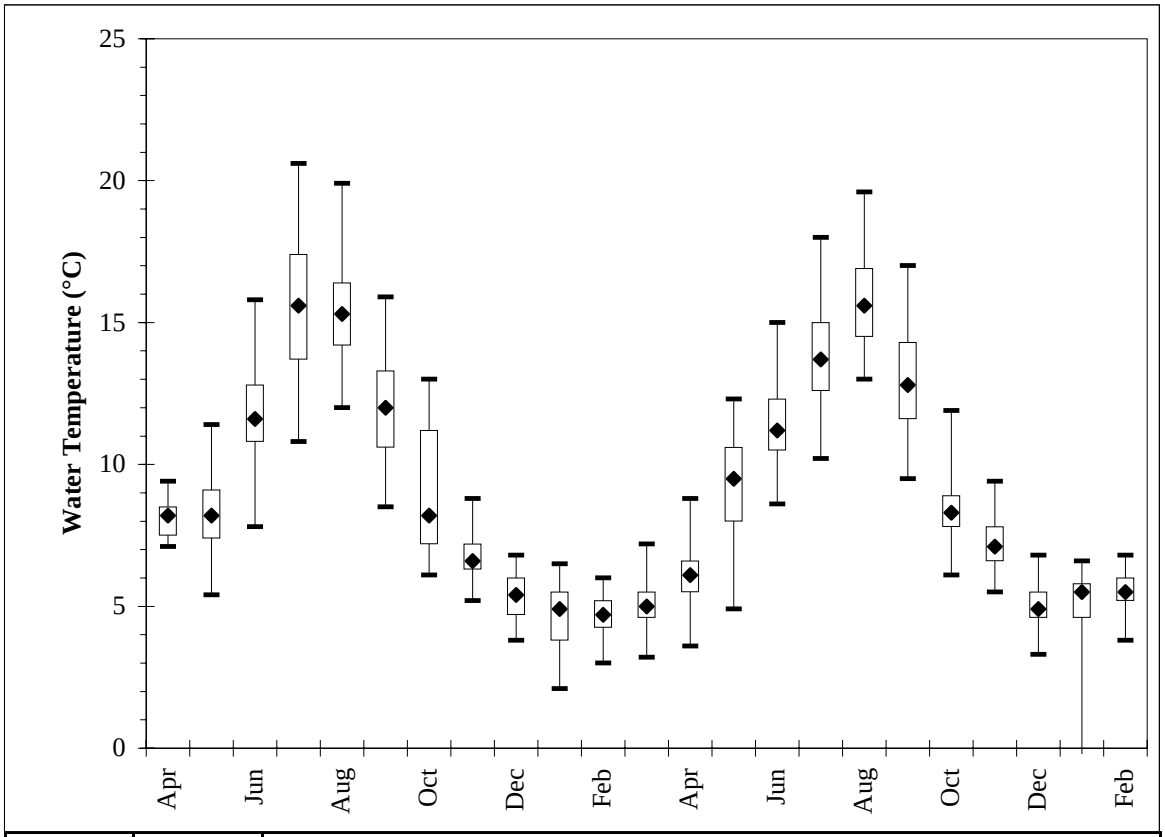
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	15	5.7	5.8	5.9	5.9	6.1	6.2	6.2
May-96	371	5.4	5.7	5.9	6.1	6.2	6.5	7.5
Jun-96	358	6.1	6.2	6.2	6.5	6.7	7.1	7.9
Jul-96	371	6.4	6.5	6.7	6.8	7.3	7.9	8.2
Aug-96	370	6.4	6.7	6.7	6.8	7.1	7.6	8.1
Sep-96	359	6.2	6.4	6.5	6.7	7.0	7.1	7.8
Oct-96	372	6.2	6.4	6.5	6.7	6.8	7.1	8.4
Nov-96	411	6.4	6.5	6.7	6.8	7.0	7.0	7.3
Dec-96	744	4.8	5.7	6.1	6.4	6.5	6.7	7.0
Jan-97	744	4.5	5.1	5.3	5.6	6.2	6.2	6.8
Feb-97	671	4.8	5.0	5.1	5.3	5.4	5.6	6.1
Mar-97	744	4.5	5.0	5.1	5.4	5.6	5.7	6.2
Apr-97	719	4.7	5.0	5.1	5.4	5.6	5.9	6.8
May-97	744	5.1	5.4	5.6	5.7	5.9	6.4	6.8
Jun-97	719	6.1	6.2	6.4	6.5	6.7	7.0	7.8
Jul-97	744	6.5	6.8	6.8	7.0	7.4	7.9	8.4
Aug-97	742	6.7	6.8	6.8	7.0	7.3	7.8	8.2
Sep-97	720	6.5	6.7	6.8	7.0	7.3	7.9	9.6
Oct-97	743	6.7	6.8	7.0	7.1	7.3	8.1	8.8
Nov-97	720	7.1	7.3	7.5	7.5	7.6	7.6	7.9
Dec-97	744	6.4	6.7	6.8	7.0	7.1	7.1	7.6
Jan-98	744	5.0	6.1	6.2	6.4	6.5	6.7	7.0
Feb-98	537	5.4	5.7	5.7	5.9	6.1	6.1	6.2

COUGM - Cougar Creek Near Mouth

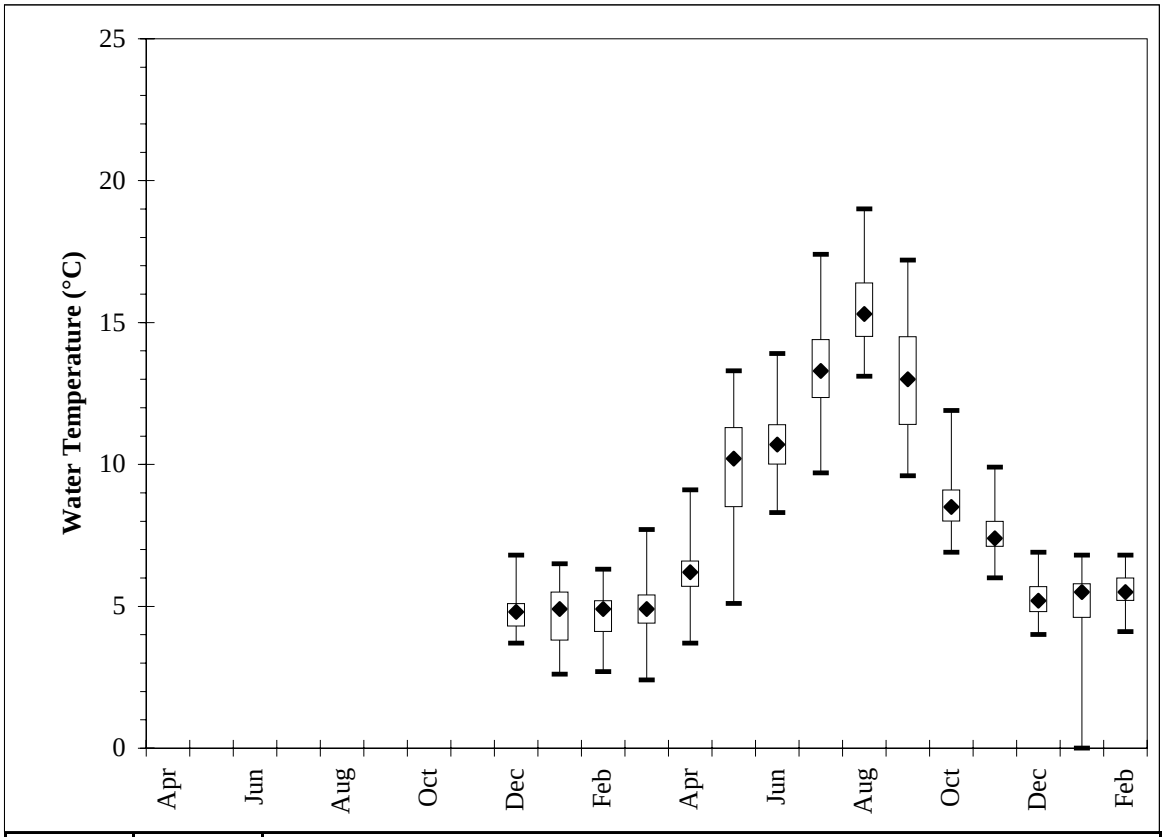
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	33	7.1	7.1	7.5	8.2	8.5	9.1	9.4
May-96	743	5.4	6.6	7.4	8.2	9.1	9.7	11.4
Jun-96	719	7.8	10.0	10.8	11.6	12.8	14.0	15.8
Jul-96	742	10.8	12.6	13.7	15.6	17.4	19.0	20.6
Aug-96	744	12.0	13.4	14.2	15.3	16.4	17.7	19.9
Sep-96	718	8.5	9.7	10.6	12.0	13.3	14.5	15.9
Oct-96	744	6.1	6.8	7.2	8.2	11.2	12.0	13.0
Nov-96	720	5.2	6.0	6.3	6.6	7.2	7.8	8.8
Dec-96	744	3.8	4.3	4.7	5.4	6.0	6.1	6.8
Jan-97	744	2.1	2.7	3.8	4.9	5.5	5.8	6.5
Feb-97	672	3.0	3.6	4.3	4.7	5.2	5.5	6.0
Mar-97	744	3.2	4.1	4.6	5.0	5.5	6.0	7.2
Apr-97	720	3.6	4.7	5.5	6.1	6.6	6.9	8.8
May-97	743	4.9	6.9	8.0	9.5	10.6	11.2	12.3
Jun-97	720	8.6	9.9	10.5	11.2	12.3	13.1	15.0
Jul-97	744	10.2	11.4	12.6	13.7	15.0	16.4	18.0
Aug-97	744	13.0	14.0	14.5	15.6	16.9	18.0	19.6
Sep-97	720	9.5	10.8	11.6	12.8	14.3	15.3	17.0
Oct-97	744	6.1	7.4	7.8	8.3	8.9	10.0	11.9
Nov-97	720	5.5	6.1	6.6	7.1	7.8	8.8	9.4
Dec-97	744	3.3	4.1	4.6	4.9	5.5	5.8	6.8
Jan-98	744	-0.2	3.2	4.6	5.5	5.8	6.1	6.6
Feb-98	672	3.8	4.7	5.2	5.5	6.0	6.3	6.8

SIOUX - Siouxon Creek Near Mouth

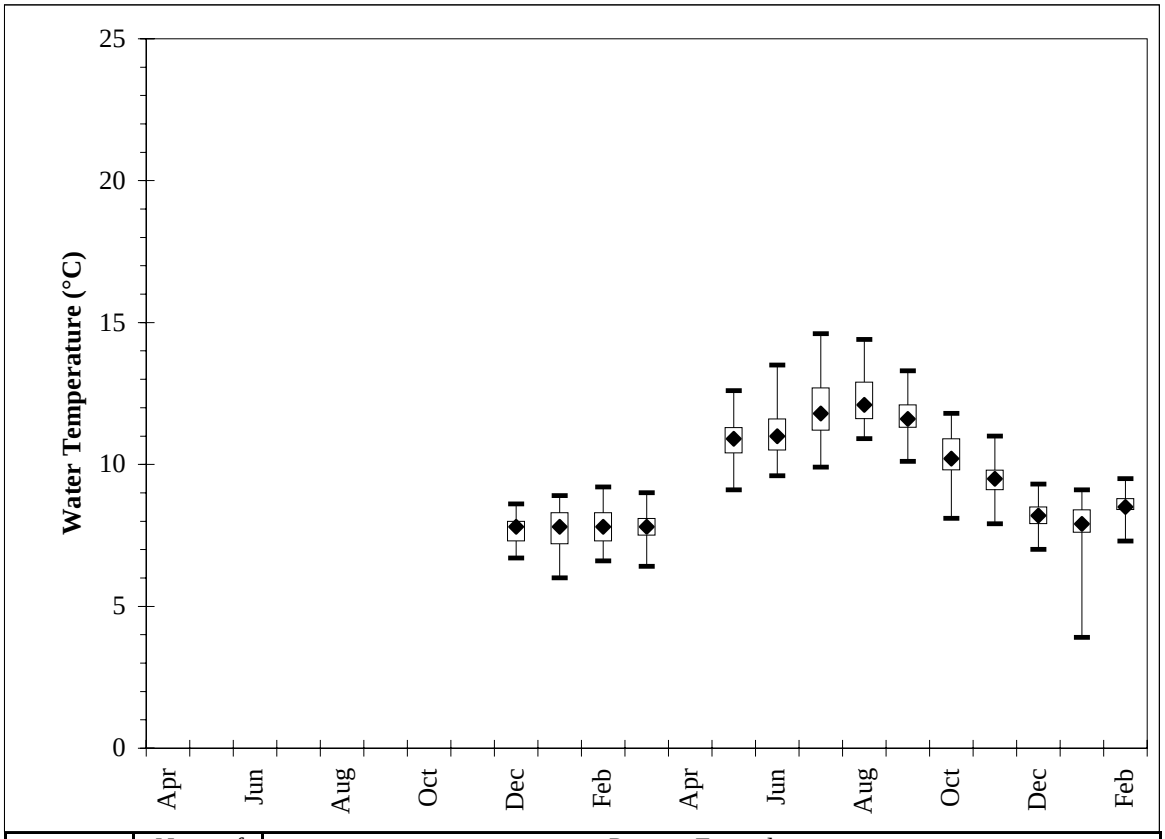
Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	0							
May-96	0							
Jun-96	0							
Jul-96	0							
Aug-96	0							
Sep-96	0							
Oct-96	0							
Nov-96	0							
Dec-96	320	3.7	4	4.3	4.8	5.1	5.8	6.8
Jan-97	744	2.6	2.9	3.8	4.9	5.5	5.8	6.5
Feb-97	672	2.7	3.7	4.1	4.9	5.2	5.7	6.3
Mar-97	744	2.4	4	4.4	4.9	5.4	6.2	7.7
Apr-97	720	3.7	4.9	5.7	6.2	6.6	7.2	9.1
May-97	743	5.1	6.9	8.5	10.2	11.3	12	13.3
Jun-97	720	8.3	9.4	10	10.7	11.4	12.4	13.9
Jul-97	744	9.7	11.1	12.35	13.3	14.4	15.6	17.4
Aug-97	742	13.1	14.1	14.5	15.3	16.4	17.5	19
Sep-97	720	9.6	10.8	11.4	13	14.5	15.5	17.2
Oct-97	744	6.9	7.76	8	8.5	9.1	9.9	11.9
Nov-97	720	6	6.8	7.1	7.4	8	8.9	9.9
Dec-97	744	4	4.4	4.8	5.2	5.7	6.2	6.9
Jan-98	744	0	3	4.6	5.5	5.8	6.2	6.8
Feb-98	672	4.1	4.9	5.2	5.5	6	6.3	6.8

SPLYU - Speelyai Creek Upper

Appendix 2.1-2. Percent exceedences of recorded water temperatures (continued).



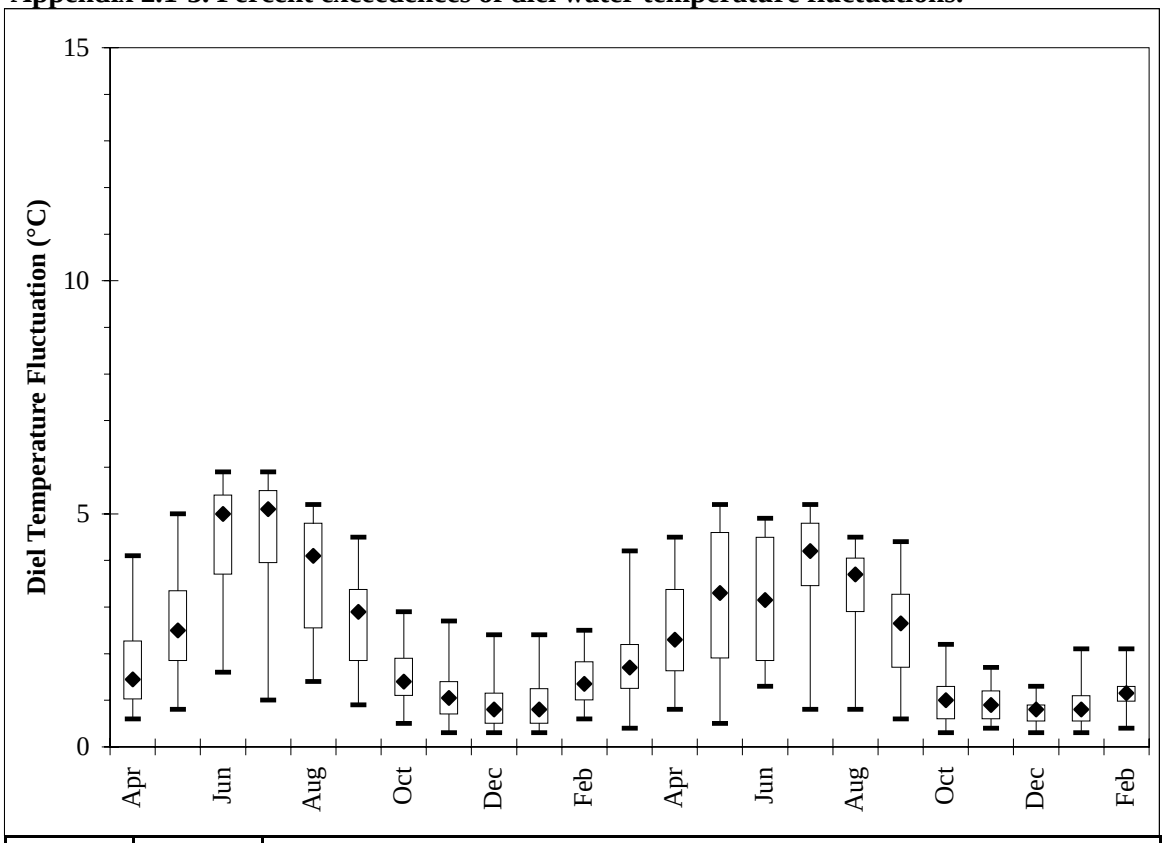
Month	Num. of Meas.	Percent Exceedence 100	90	75	50	25	10	0
Apr-96	0							
May-96	0							
Jun-96	0							
Jul-96	0							
Aug-96	0							
Sep-96	0							
Oct-96	0							
Nov-96	0							
Dec-96	321	6.7	7.0	7.3	7.8	8.0	8.3	8.6
Jan-97	744	6.0	6.7	7.2	7.8	8.3	8.4	8.9
Feb-97	672	6.6	7.0	7.3	7.8	8.3	8.4	9.2
Mar-97	445	6.4	7.2	7.5	7.8	8.1	8.6	9.0
Apr-97	0							
May-97	248	9.1	9.9	10.4	10.9	11.3	11.7	12.6
Jun-97	720	9.6	10.4	10.5	11.0	11.6	12.4	13.5
Jul-97	744	9.9	10.9	11.2	11.8	12.7	13.3	14.6
Aug-97	743	10.9	11.3	11.6	12.1	12.9	13.6	14.4
Sep-97	720	10.1	10.9	11.3	11.6	12.1	12.4	13.3
Oct-97	744	8.1	9.1	9.8	10.2	10.9	11.3	11.8
Nov-97	720	7.9	8.8	9.1	9.5	9.8	10.4	11.0
Dec-97	744	7.0	7.5	7.9	8.2	8.5	8.7	9.3
Jan-98	744	3.9	7.0	7.6	7.9	8.4	8.5	9.1
Feb-98	539	7.3	8.1	8.4	8.5	8.8	9.0	9.5

SPLYL - Speelyai Creek Lower

Appendix 2.1-3

Percent Exceedences of Diel Water Temperature Fluctuations

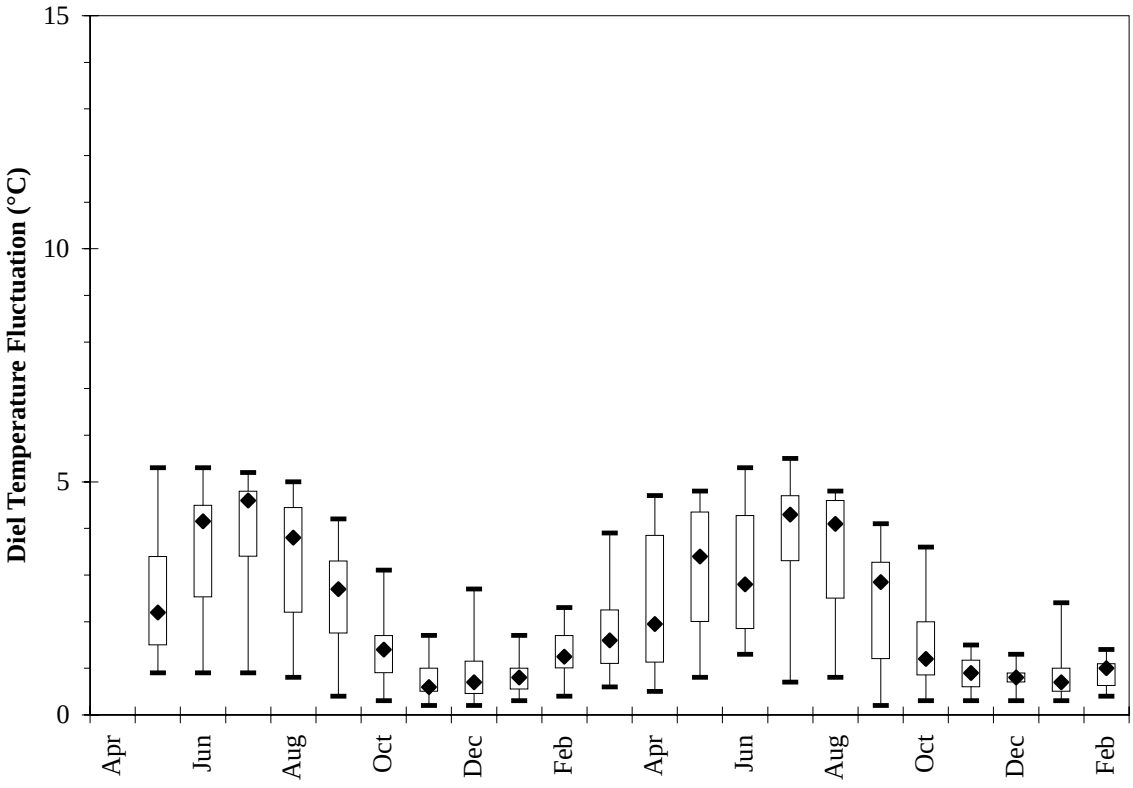
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations.



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	22	0.6	0.6	1.0	1.5	2.3	3.6	4.1
May-96	31	0.8	1.4	1.9	2.5	3.4	4.4	5.0
Jun-96	21	1.6	2.6	3.7	5.0	5.4	5.7	5.9
Jul-96	31	1.0	2.4	4.0	5.1	5.5	5.6	5.9
Aug-96	31	1.4	2.2	2.5	4.1	4.8	5.0	5.2
Sep-96	30	0.9	1.2	1.9	2.9	3.4	3.6	4.5
Oct-96	31	0.5	0.8	1.1	1.4	1.9	2.7	2.9
Nov-96	30	0.3	0.5	0.7	1.1	1.4	1.9	2.7
Dec-96	31	0.3	0.4	0.5	0.8	1.2	1.3	2.4
Jan-97	31	0.3	0.4	0.5	0.8	1.3	1.6	2.4
Feb-97	28	0.6	0.7	1.0	1.4	1.8	2.2	2.5
Mar-97	31	0.4	0.8	1.3	1.7	2.2	2.7	4.2
Apr-97	30	0.8	1.1	1.6	2.3	3.4	3.9	4.5
May-97	31	0.5	1.6	1.9	3.3	4.6	5.1	5.2
Jun-97	30	1.3	1.6	1.9	3.2	4.5	4.8	4.9
Jul-97	31	0.8	2.1	3.5	4.2	4.8	5.0	5.2
Aug-97	31	0.8	2.0	2.9	3.7	4.1	4.3	4.5
Sep-97	30	0.6	1.0	1.7	2.7	3.3	3.9	4.4
Oct-97	31	0.3	0.5	0.6	1.0	1.3	1.7	2.2
Nov-97	30	0.4	0.5	0.6	0.9	1.2	1.4	1.7
Dec-97	31	0.3	0.4	0.6	0.8	0.9	1.0	1.3
Jan-98	31	0.3	0.4	0.6	0.8	1.1	1.4	2.1
Feb-98	28	0.4	0.6	1.0	1.2	1.3	1.9	2.1

SWRES - North Fork Lewis River Inflow to Swift Reservoir

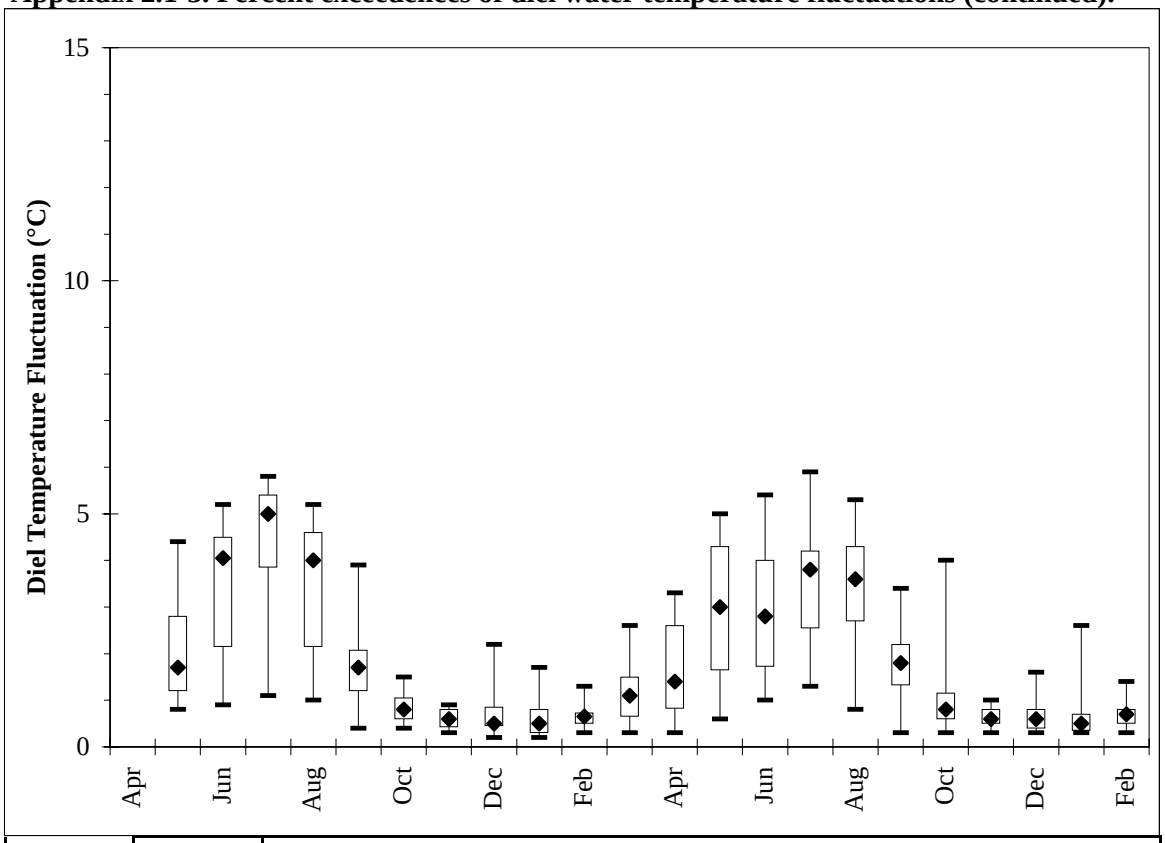
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	0							
May-96	25	0.9	1.1	1.5	2.2	3.4	4.4	5.3
Jun-96	30	0.9	1.8	2.5	4.2	4.5	5.0	5.3
Jul-96	31	0.9	2.0	3.4	4.6	4.8	5.0	5.2
Aug-96	31	0.8	1.4	2.2	3.8	4.5	4.7	5.0
Sep-96	30	0.4	0.9	1.8	2.7	3.3	3.6	4.2
Oct-96	31	0.3	0.7	0.9	1.4	1.7	2.9	3.1
Nov-96	30	0.2	0.4	0.5	0.6	1.0	1.4	1.7
Dec-96	31	0.2	0.3	0.5	0.7	1.2	1.3	2.7
Jan-97	31	0.3	0.3	0.6	0.8	1.0	1.4	1.7
Feb-97	28	0.4	0.6	1.0	1.3	1.7	1.9	2.3
Mar-97	31	0.6	0.8	1.1	1.6	2.3	2.8	3.9
Apr-97	30	0.5	0.9	1.1	2.0	3.9	4.2	4.7
May-97	31	0.8	1.5	2.0	3.4	4.4	4.7	4.8
Jun-97	30	1.3	1.5	1.8	2.8	4.3	4.9	5.3
Jul-97	31	0.7	1.7	3.3	4.3	4.7	5.0	5.5
Aug-97	31	0.8	1.3	2.5	4.1	4.6	4.6	4.8
Sep-97	30	0.2	0.7	1.2	2.8	3.3	3.7	4.1
Oct-97	31	0.3	0.5	0.8	1.2	2.0	2.0	3.6
Nov-97	30	0.3	0.3	0.6	0.9	1.2	1.4	1.5
Dec-97	31	0.3	0.5	0.7	0.8	0.9	1.1	1.3
Jan-98	31	0.3	0.3	0.5	0.7	1.0	1.4	2.4
Feb-98	22	0.4	0.5	0.6	1.0	1.1	1.3	1.4

SW2BU - Upstream End of Swift No. 2 Bypass

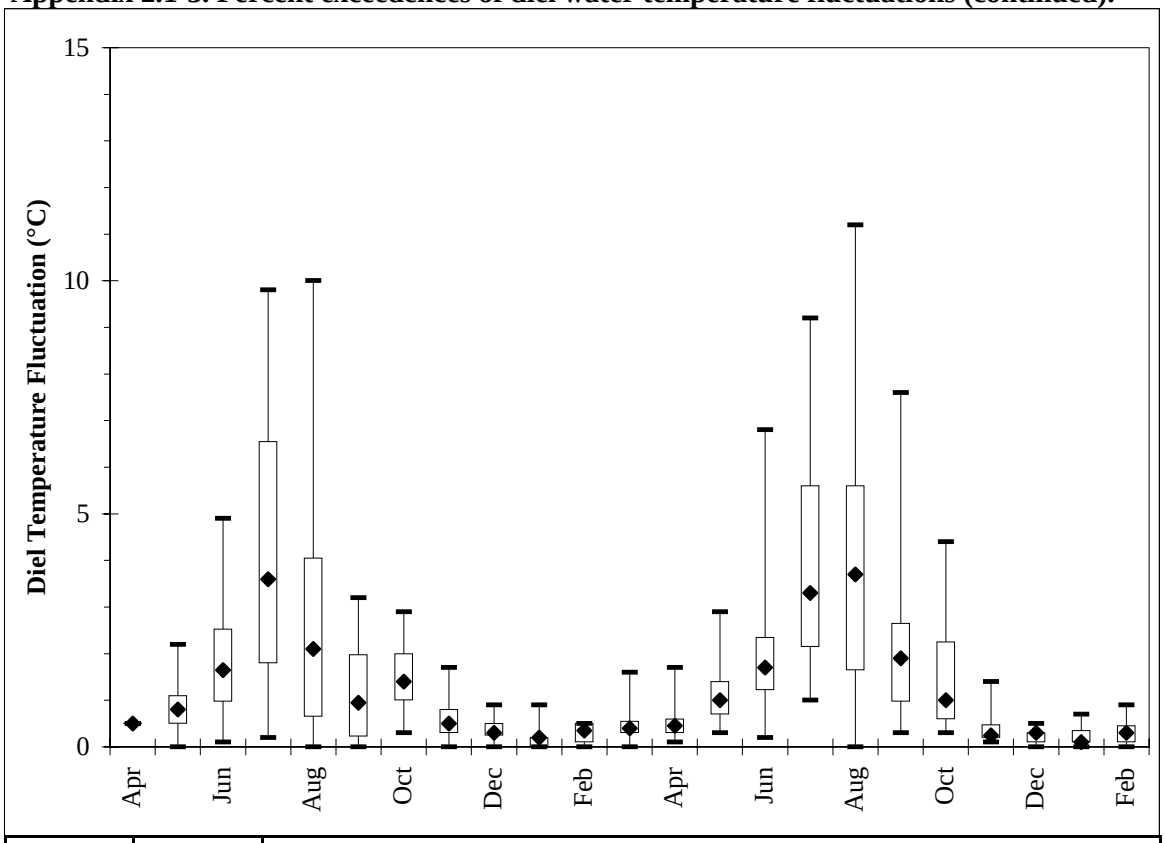
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	0							
May-96	25	0.8	0.9	1.2	1.7	2.8	3.8	4.4
Jun-96	30	0.9	1.3	2.2	4.1	4.5	4.8	5.2
Jul-96	31	1.1	2.2	3.8	5.0	5.4	5.7	5.8
Aug-96	31	1.0	1.7	2.2	4.0	4.6	5.2	5.2
Sep-96	30	0.4	0.9	1.2	1.7	2.1	2.5	3.9
Oct-96	31	0.4	0.5	0.6	0.8	1.1	1.4	1.5
Nov-96	30	0.3	0.3	0.4	0.6	0.8	0.8	0.9
Dec-96	31	0.2	0.3	0.5	0.5	0.8	1.1	2.2
Jan-97	31	0.2	0.3	0.3	0.5	0.8	1.0	1.7
Feb-97	28	0.3	0.4	0.5	0.6	0.7	1.0	1.3
Mar-97	31	0.3	0.5	0.7	1.1	1.5	1.9	2.6
Apr-97	30	0.3	0.8	0.8	1.4	2.6	2.9	3.3
May-97	31	0.6	1.2	1.7	3.0	4.3	4.7	5.0
Jun-97	30	1.0	1.5	1.7	2.8	4.0	4.7	5.4
Jul-97	31	1.3	1.7	2.6	3.8	4.2	4.7	5.9
Aug-97	31	0.8	1.6	2.7	3.6	4.3	4.8	5.3
Sep-97	30	0.3	0.5	1.3	1.8	2.2	3.0	3.4
Oct-97	31	0.3	0.5	0.6	0.8	1.2	1.4	4.0
Nov-97	30	0.3	0.4	0.5	0.6	0.8	0.9	1.0
Dec-97	31	0.3	0.3	0.4	0.6	0.8	0.8	1.6
Jan-98	31	0.3	0.3	0.3	0.5	0.7	1.1	2.6
Feb-98	28	0.3	0.5	0.5	0.7	0.8	1.0	1.4

SW2BP - Downstream End of Swift No. 2 Bypass

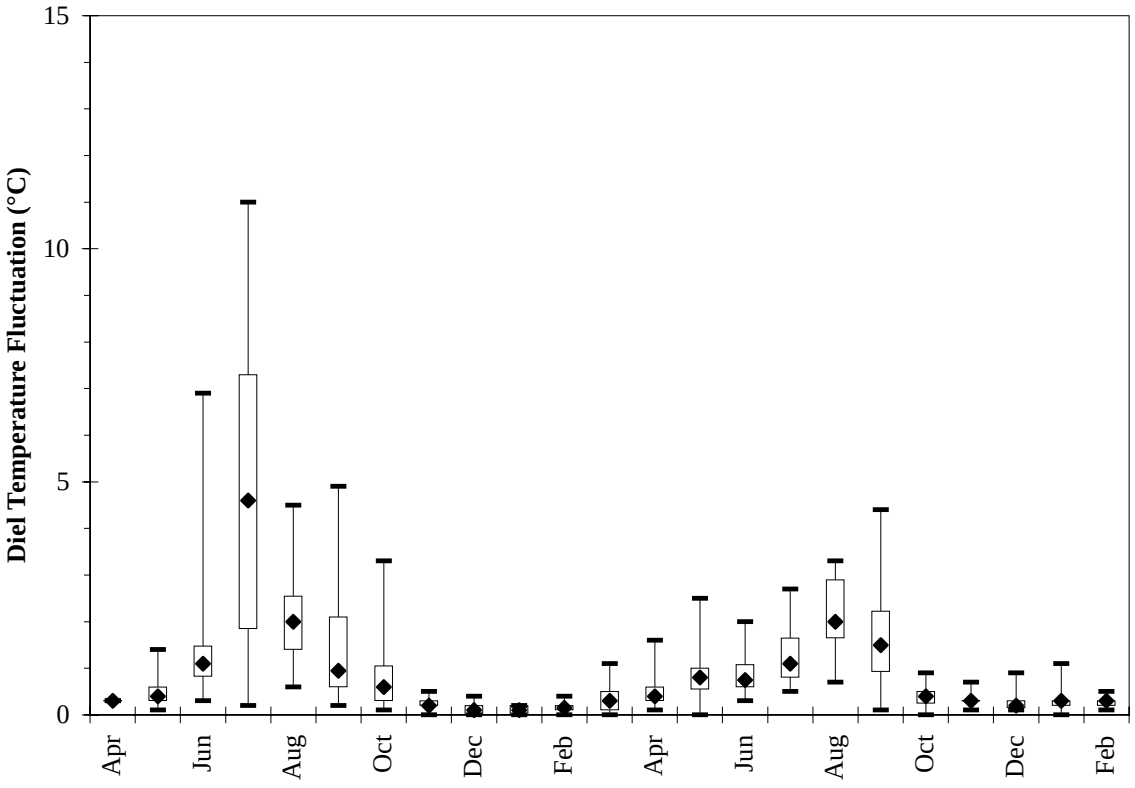
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
May-96	31	0.0	0.3	0.5	0.8	1.1	1.4	2.2
Jun-96	30	0.1	0.3	1.0	1.7	2.5	3.5	4.9
Jul-96	31	0.2	0.6	1.8	3.6	6.6	8.9	9.8
Aug-96	31	0.0	0.1	0.6	2.1	4.1	6.3	10.0
Sep-96	30	0.0	0.0	0.2	1.0	2.0	2.8	3.2
Oct-96	31	0.3	0.5	1.0	1.4	2.0	2.3	2.9
Nov-96	30	0.0	0.2	0.3	0.5	0.8	1.1	1.7
Dec-96	31	0.0	0.1	0.3	0.3	0.5	0.7	0.9
Jan-97	31	0.0	0.0	0.0	0.2	0.2	0.6	0.9
Feb-97	28	0.0	0.1	0.1	0.4	0.5	0.5	0.5
Mar-97	31	0.0	0.1	0.3	0.4	0.6	0.9	1.6
Apr-97	30	0.1	0.3	0.3	0.5	0.6	0.8	1.7
May-97	31	0.3	0.3	0.7	1.0	1.4	1.9	2.9
Jun-97	30	0.2	0.8	1.2	1.7	2.4	3.4	6.8
Jul-97	31	1.0	1.4	2.2	3.3	5.6	6.7	9.2
Aug-97	31	0.0	0.3	1.7	3.7	5.6	8.6	11.2
Sep-97	30	0.3	0.6	1.0	1.9	2.7	5.7	7.6
Oct-97	31	0.3	0.4	0.6	1.0	2.3	2.5	4.4
Nov-97	30	0.1	0.1	0.2	0.3	0.5	0.8	1.4
Dec-97	31	0.0	0.1	0.1	0.3	0.3	0.4	0.5
Jan-98	31	0.0	0.0	0.1	0.1	0.4	0.5	0.7
Feb-98	23	0.0	0.1	0.1	0.3	0.5	0.8	0.9

SW2TR - Swift No. 2 Powerhouse Tailrace

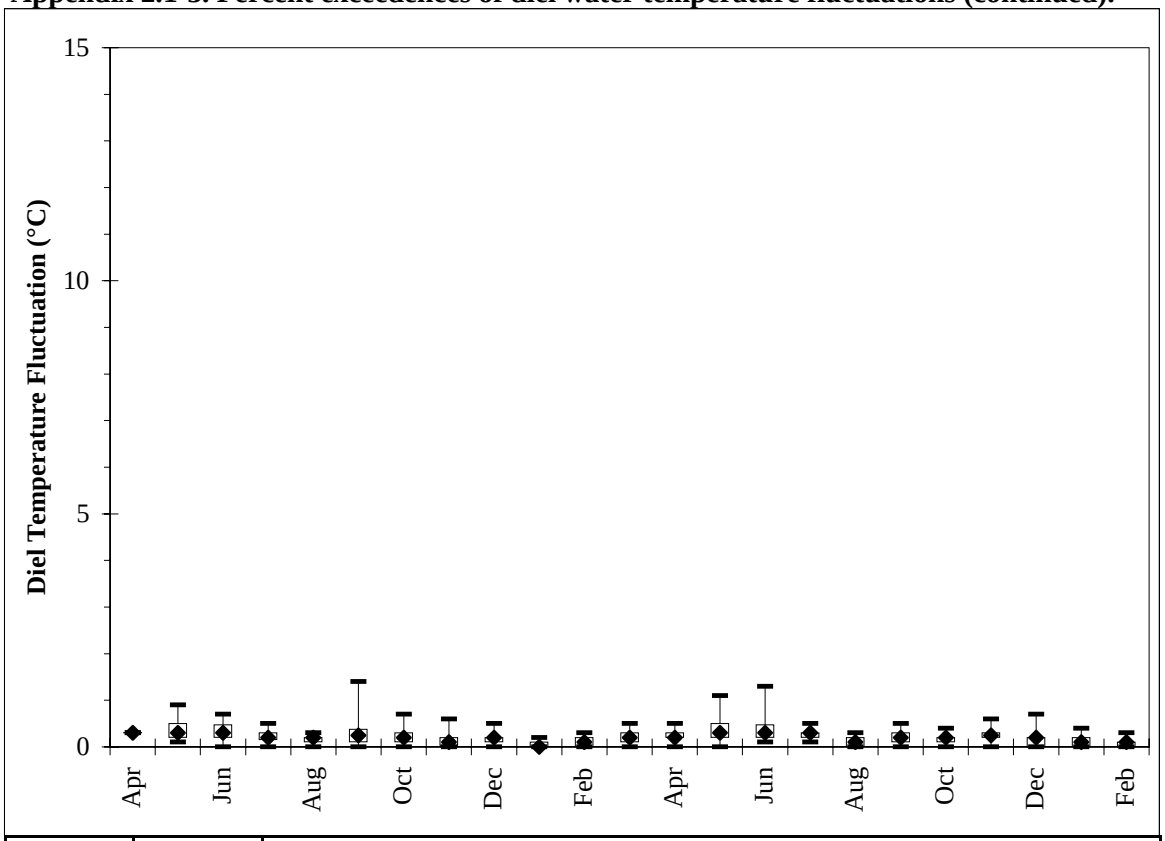
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3
May-96	31	0.1	0.2	0.3	0.4	0.6	0.7	1.4
Jun-96	30	0.3	0.7	0.8	1.1	1.5	3.0	6.9
Jul-96	31	0.2	1.4	1.8	4.6	7.3	9.0	11.0
Aug-96	31	0.6	1.1	1.4	2.0	2.6	3.6	4.5
Sep-96	30	0.2	0.4	0.6	1.0	2.1	4.6	4.9
Oct-96	31	0.1	0.2	0.3	0.6	1.0	2.3	3.3
Nov-96	30	0.0	0.1	0.2	0.2	0.3	0.3	0.5
Dec-96	31	0.0	0.0	0.0	0.1	0.2	0.2	0.4
Jan-97	31	0.0	0.0	0.0	0.1	0.2	0.2	0.2
Feb-97	28	0.0	0.0	0.1	0.1	0.2	0.3	0.4
Mar-97	31	0.0	0.1	0.1	0.3	0.5	0.6	1.1
Apr-97	30	0.1	0.3	0.3	0.4	0.6	1.0	1.6
May-97	31	0.0	0.3	0.5	0.8	1.0	1.6	2.5
Jun-97	30	0.3	0.4	0.6	0.7	1.1	1.4	2.0
Jul-97	31	0.5	0.6	0.8	1.1	1.7	2.2	2.7
Aug-97	31	0.7	1.3	1.6	2.0	2.9	3.2	3.3
Sep-97	30	0.1	0.5	0.9	1.5	2.2	3.6	4.4
Oct-97	31	0.0	0.1	0.3	0.4	0.5	0.7	0.9
Nov-97	30	0.1	0.2	0.3	0.3	0.3	0.5	0.7
Dec-97	31	0.1	0.1	0.2	0.2	0.3	0.3	0.9
Jan-98	31	0.0	0.1	0.2	0.3	0.3	0.6	1.1
Feb-98	22	0.1	0.1	0.2	0.3	0.3	0.4	0.5

YALTR - Yale Powerhouse Tailrace

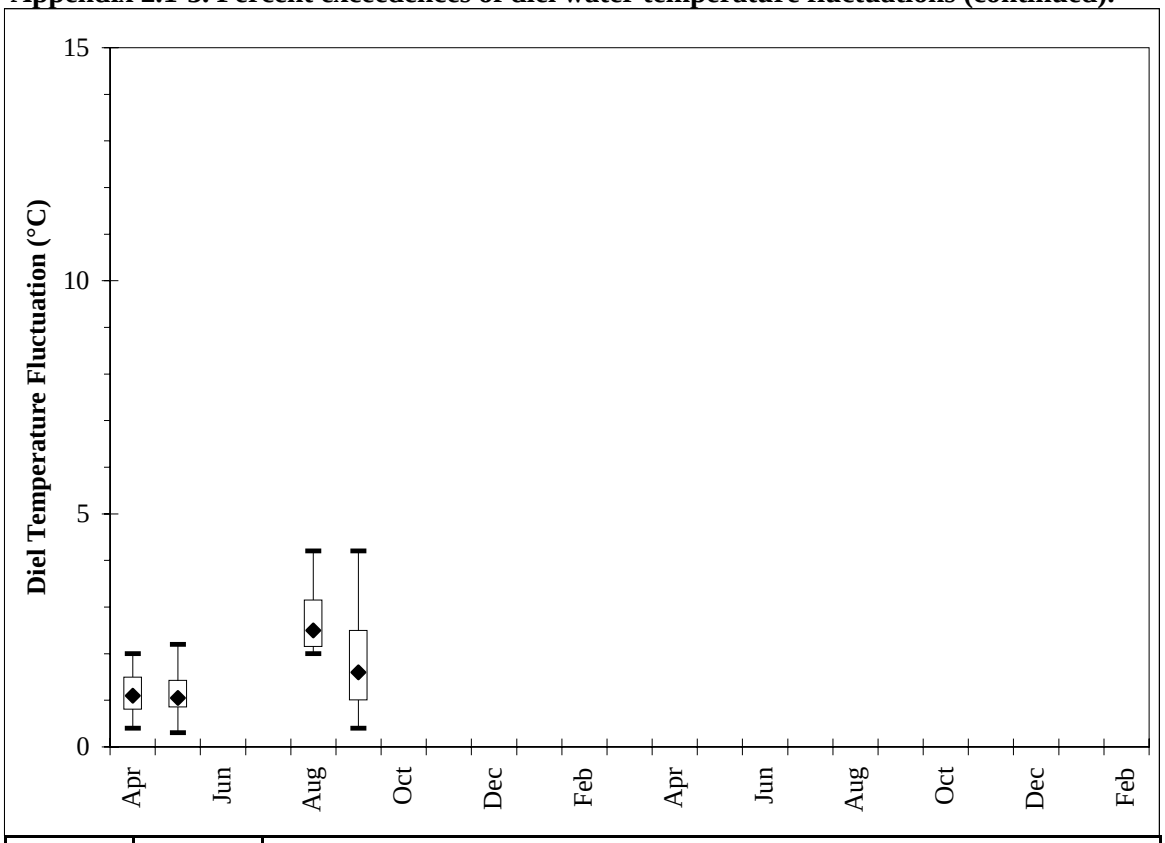
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3
May-96	31	0.1	0.1	0.2	0.3	0.5	0.6	0.9
Jun-96	30	0.0	0.1	0.2	0.3	0.5	0.6	0.7
Jul-96	31	0.0	0.1	0.2	0.2	0.3	0.4	0.5
Aug-96	31	0.0	0.1	0.1	0.2	0.2	0.3	0.3
Sep-96	30	0.0	0.1	0.1	0.2	0.4	0.7	1.4
Oct-96	31	0.0	0.1	0.1	0.2	0.3	0.5	0.7
Nov-96	30	0.0	0.0	0.0	0.1	0.2	0.3	0.6
Dec-96	31	0.0	0.0	0.1	0.2	0.2	0.3	0.5
Jan-97	31	0.0	0.0	0.0	0.0	0.1	0.2	0.2
Feb-97	28	0.0	0.0	0.0	0.1	0.2	0.2	0.3
Mar-97	31	0.0	0.0	0.1	0.2	0.3	0.3	0.5
Apr-97	30	0.0	0.1	0.2	0.2	0.3	0.3	0.5
May-97	31	0.0	0.1	0.2	0.3	0.5	0.8	1.1
Jun-97	30	0.1	0.1	0.2	0.3	0.5	0.7	1.3
Jul-97	31	0.1	0.1	0.2	0.3	0.3	0.4	0.5
Aug-97	31	0.0	0.0	0.0	0.1	0.2	0.2	0.3
Sep-97	30	0.0	0.1	0.1	0.2	0.3	0.4	0.5
Oct-97	20	0.0	0.1	0.1	0.2	0.2	0.3	0.4
Nov-97	30	0.0	0.1	0.2	0.3	0.3	0.5	0.6
Dec-97	31	0.0	0.0	0.0	0.2	0.2	0.3	0.7
Jan-98	31	0.0	0.0	0.0	0.1	0.2	0.2	0.4
Feb-98	22	0.0	0.0	0.0	0.1	0.1	0.2	0.3

MERTR - Merwin Powerhouse Tailrace

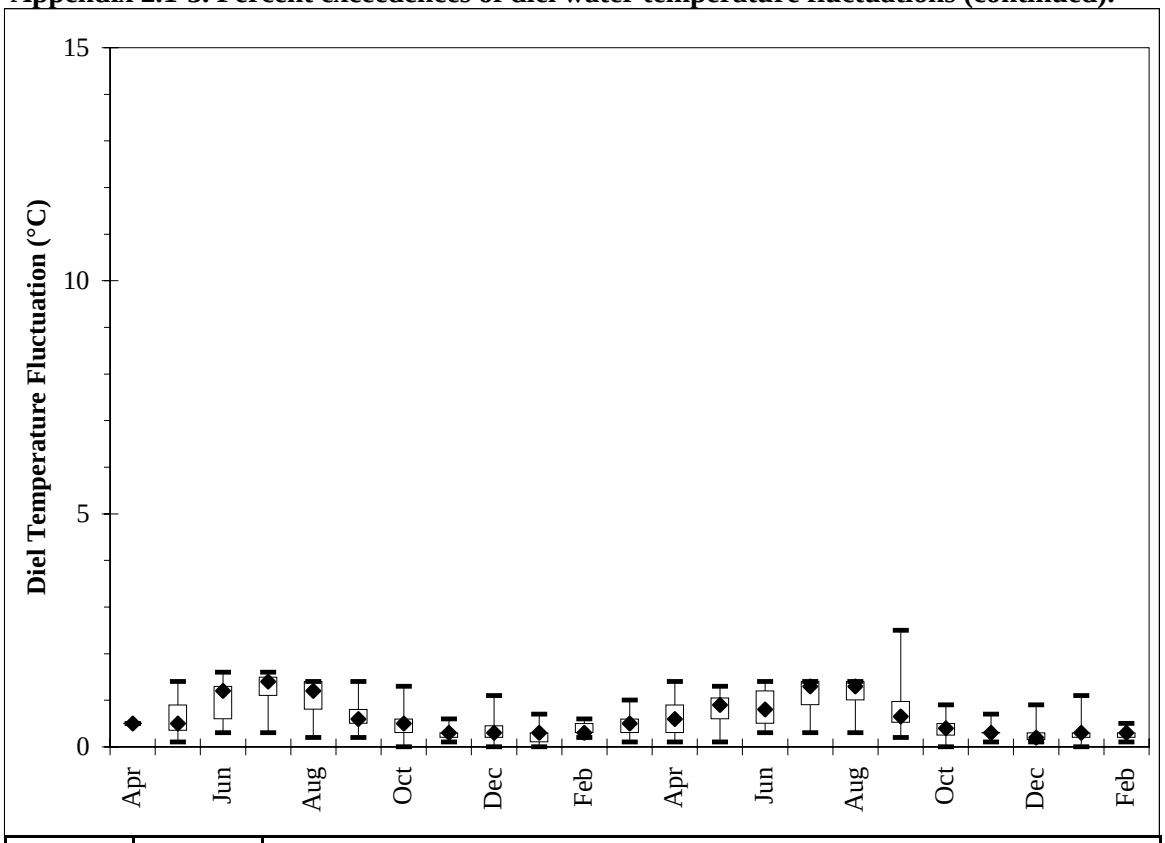
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	27	0.4	0.6	0.8	1.1	1.5	1.9	2.0
May-96	20	0.3	0.6	0.9	1.1	1.4	1.9	2.2
Jun-96	0							
Jul-96	0							
Aug-96	4	2.0	2.1	2.2	2.5	3.2	3.8	4.2
Sep-96	23	0.4	0.8	1.0	1.6	2.5	3.1	4.2
Oct-96	0							
Nov-96	0							
Dec-96	0							
Jan-97	0							
Feb-97	0							
Mar-97	0							
Apr-97	0							
May-97	0							
Jun-97	0							
Jul-97	0							
Aug-97	0							
Sep-97	0							
Oct-97	0							
Nov-97	0							
Dec-97	0							
Jan-98	0							
Feb-98	0							

OLECM - Ole Creek Near Mouth

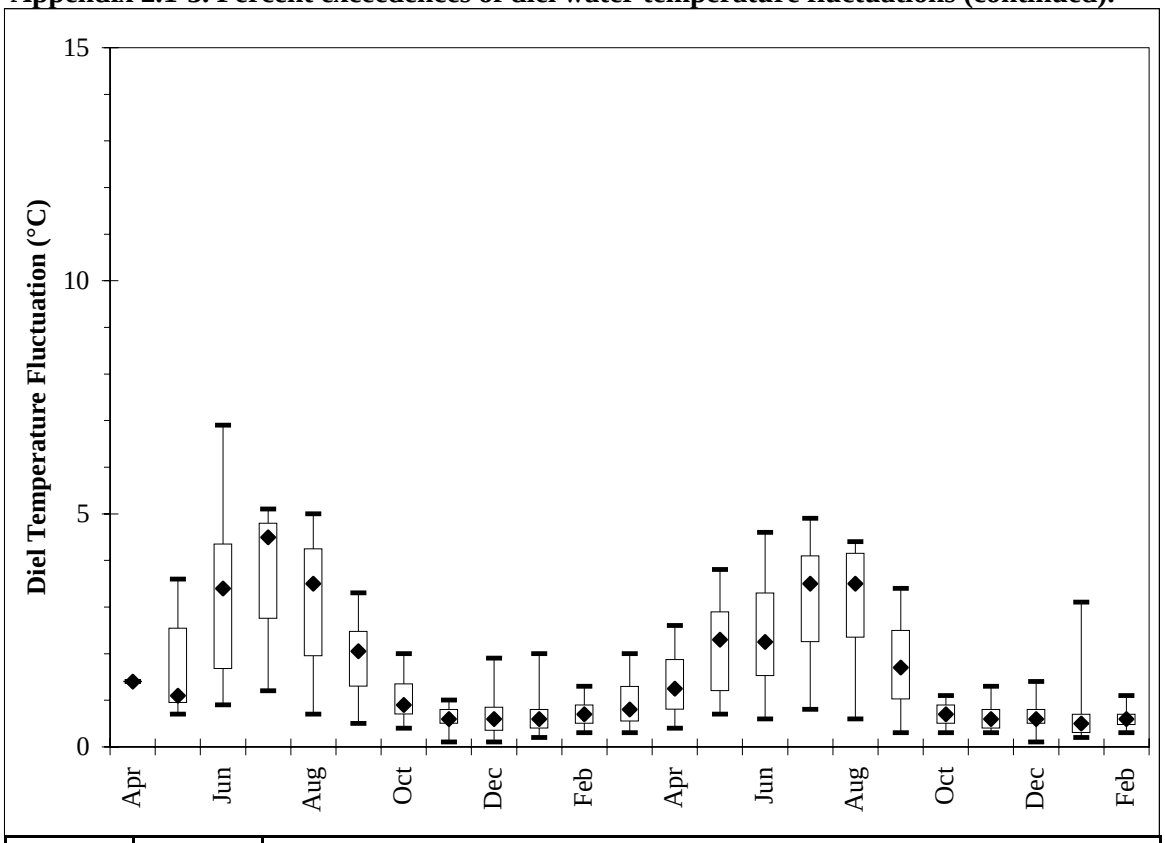
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
May-96	31	0.1	0.3	0.4	0.5	0.9	1.0	1.4
Jun-96	30	0.3	0.4	0.6	1.2	1.3	1.4	1.6
Jul-96	31	0.3	0.4	1.1	1.4	1.5	1.6	1.6
Aug-96	31	0.2	0.4	0.8	1.2	1.4	1.4	1.4
Sep-96	30	0.2	0.3	0.5	0.6	0.8	1.0	1.4
Oct-96	31	0.0	0.3	0.3	0.5	0.6	0.7	1.3
Nov-96	30	0.1	0.2	0.2	0.3	0.3	0.3	0.6
Dec-96	31	0.0	0.1	0.2	0.3	0.5	0.7	1.1
Jan-97	31	0.0	0.1	0.1	0.3	0.3	0.5	0.7
Feb-97	28	0.2	0.3	0.3	0.3	0.5	0.6	0.6
Mar-97	31	0.1	0.2	0.3	0.5	0.6	0.8	1.0
Apr-97	30	0.1	0.2	0.3	0.6	0.9	1.0	1.4
May-97	31	0.1	0.4	0.6	0.9	1.1	1.3	1.3
Jun-97	30	0.3	0.4	0.5	0.8	1.2	1.3	1.4
Jul-97	31	0.3	0.5	0.9	1.3	1.4	1.4	1.4
Aug-97	31	0.3	0.5	1.0	1.3	1.4	1.4	1.4
Sep-97	30	0.2	0.3	0.5	0.7	1.0	1.1	2.5
Oct-97	31	0.0	0.1	0.3	0.4	0.5	0.7	0.9
Nov-97	30	0.1	0.2	0.3	0.3	0.3	0.5	0.7
Dec-97	31	0.1	0.1	0.2	0.2	0.3	0.3	0.9
Jan-98	31	0.0	0.1	0.2	0.3	0.3	0.6	1.1
Feb-98	22	0.1	0.1	0.2	0.3	0.3	0.4	0.5

COUGM - Cougar Creek Near Mouth

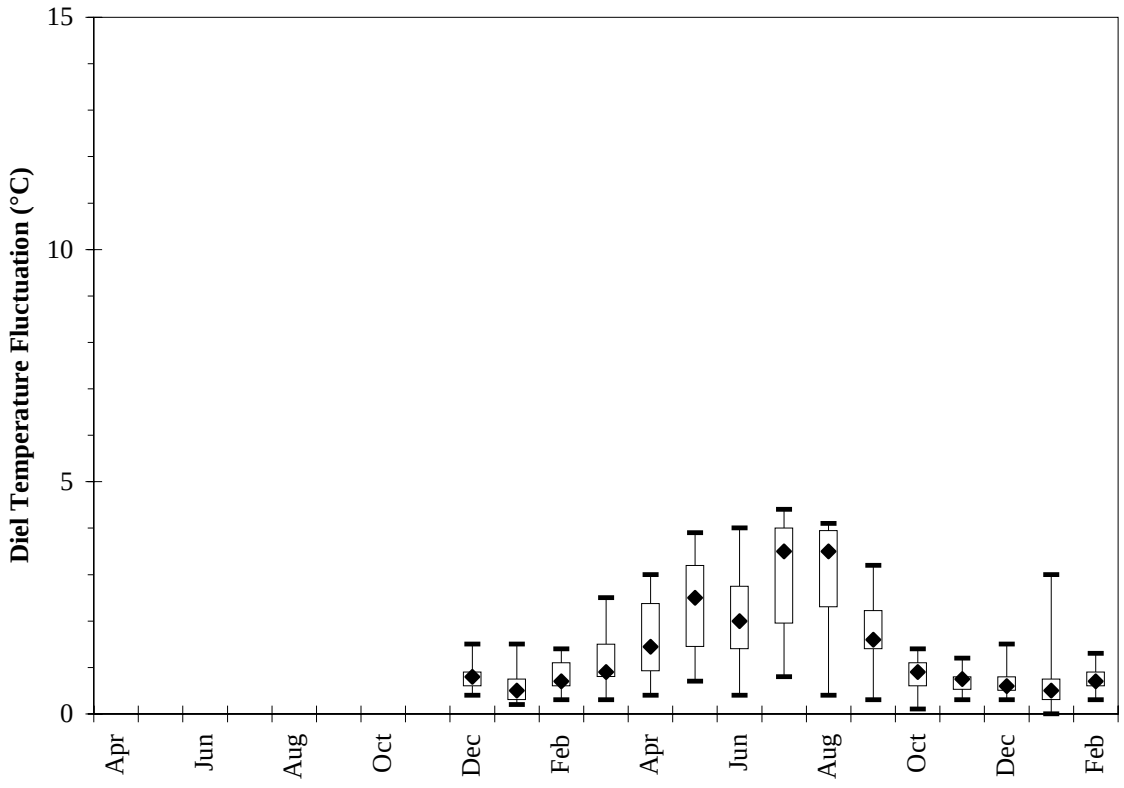
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	1	1.4	1.4	1.4	1.4	1.4	1.4	1.4
May-96	31	0.7	0.8	1.0	1.1	2.6	3.1	3.6
Jun-96	30	0.9	1.5	1.7	3.4	4.4	5.3	6.9
Jul-96	31	1.2	2.2	2.8	4.5	4.8	5.0	5.1
Aug-96	31	0.7	1.1	2.0	3.5	4.3	4.6	5.0
Sep-96	30	0.5	1.0	1.3	2.1	2.5	2.8	3.3
Oct-96	31	0.4	0.6	0.7	0.9	1.4	1.9	2.0
Nov-96	30	0.1	0.3	0.5	0.6	0.8	0.9	1.0
Dec-96	31	0.1	0.3	0.4	0.6	0.9	1.0	1.9
Jan-97	31	0.2	0.3	0.4	0.6	0.8	1.1	2.0
Feb-97	28	0.3	0.4	0.5	0.7	0.9	1.1	1.3
Mar-97	31	0.3	0.3	0.6	0.8	1.3	1.7	2.0
Apr-97	30	0.4	0.6	0.8	1.3	1.9	2.4	2.6
May-97	31	0.7	0.9	1.2	2.3	2.9	3.3	3.8
Jun-97	30	0.6	1.0	1.5	2.3	3.3	3.8	4.6
Jul-97	31	0.8	1.4	2.3	3.5	4.1	4.3	4.9
Aug-97	31	0.6	1.3	2.4	3.5	4.2	4.3	4.4
Sep-97	30	0.3	0.8	1.0	1.7	2.5	3.0	3.4
Oct-97	31	0.3	0.3	0.5	0.7	0.9	1.1	1.1
Nov-97	30	0.3	0.3	0.4	0.6	0.8	0.9	1.3
Dec-97	31	0.1	0.4	0.5	0.6	0.8	0.9	1.4
Jan-98	31	0.2	0.3	0.3	0.5	0.7	1.3	3.1
Feb-98	28	0.3	0.3	0.5	0.6	0.7	0.8	1.1

SIOUX - Siouxon Creek Near Mouth

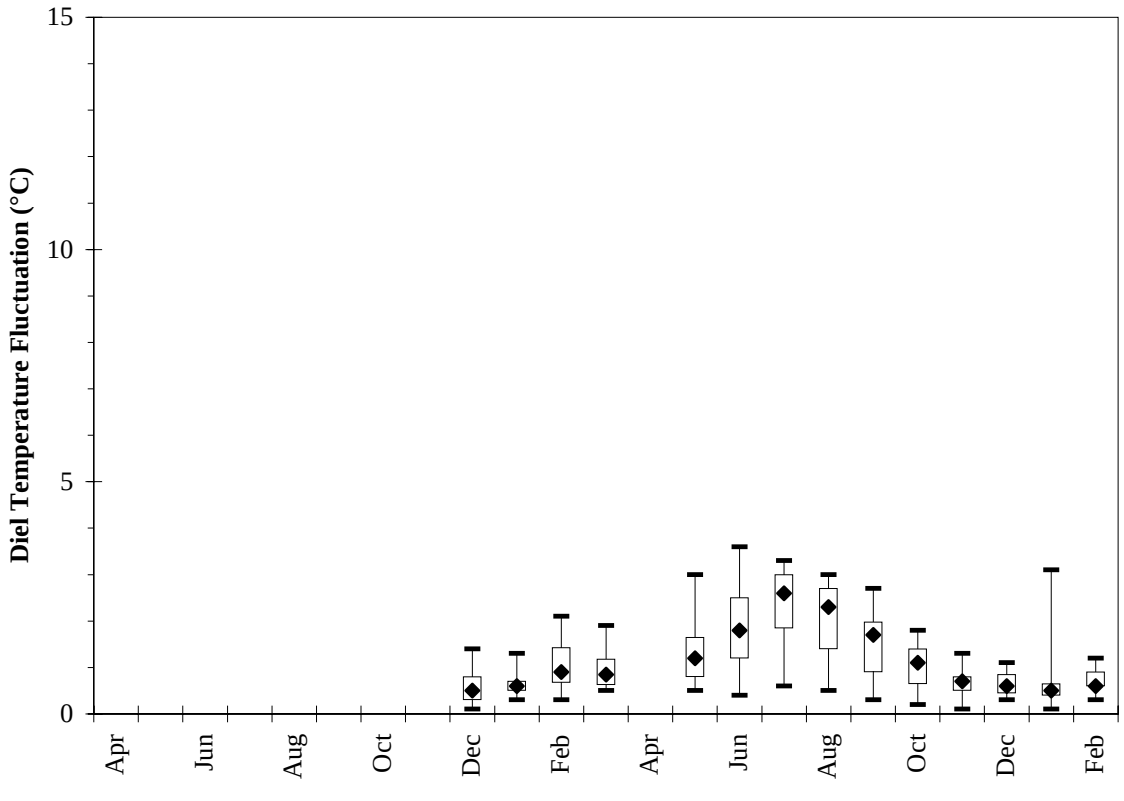
Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence 100	90	75	50	25	10	0
Apr-96	0							
May-96	0							
Jun-96	0							
Jul-96	0							
Aug-96	0							
Sep-96	0							
Oct-96	0							
Nov-96	0							
Dec-96	13	0.4	0.5	0.6	0.8	0.9	1.3	1.5
Jan-97	31	0.2	0.3	0.3	0.5	0.8	1.0	1.5
Feb-97	28	0.3	0.4	0.6	0.7	1.1	1.1	1.4
Mar-97	31	0.3	0.4	0.8	0.9	1.5	2.0	2.5
Apr-97	30	0.4	0.6	0.9	1.5	2.4	2.8	3.0
May-97	31	0.7	1.1	1.5	2.5	3.2	3.5	3.9
Jun-97	30	0.4	0.9	1.4	2.0	2.7	3.4	4.0
Jul-97	31	0.8	1.4	2.0	3.5	4.0	4.1	4.4
Aug-97	31	0.4	1.1	2.3	3.5	4.0	4.0	4.1
Sep-97	30	0.3	0.8	1.4	1.6	2.2	2.8	3.2
Oct-97	31	0.1	0.3	0.6	0.9	1.1	1.3	1.4
Nov-97	30	0.3	0.4	0.5	0.7	0.8	1.0	1.2
Dec-97	31	0.3	0.4	0.5	0.6	0.8	0.9	1.5
Jan-98	31	0.0	0.3	0.3	0.5	0.8	1.4	3.0
Feb-98	28	0.3	0.4	0.6	0.7	0.9	1.1	1.3

SPLYU - Speelyai Creek Upper

Appendix 2.1-3. Percent exceedences of diel water temperature fluctuations (continued).



Month	Num. of Meas.	Percent Exceedence						
		100	90	75	50	25	10	0
Apr-96	0							
May-96	0							
Jun-96	0							
Jul-96	0							
Aug-96	0							
Sep-96	0							
Oct-96	0							
Nov-96	0							
Dec-96	13	0.1	0.2	0.3	0.5	0.8	1.1	1.4
Jan-97	31	0.3	0.4	0.5	0.6	0.7	0.9	1.3
Feb-97	28	0.3	0.6	0.7	0.9	1.4	1.7	2.1
Mar-97	18	0.5	0.6	0.6	0.9	1.2	1.5	1.9
Apr-97	0							
May-97	10	0.5	0.6	0.8	1.2	1.7	2.8	3.0
Jun-97	30	0.4	0.8	1.2	1.8	2.5	3.0	3.6
Jul-97	31	0.6	0.9	1.9	2.6	3.0	3.3	3.3
Aug-97	31	0.5	0.9	1.4	2.3	2.7	2.8	3.0
Sep-97	30	0.3	0.6	0.9	1.7	2.0	2.2	2.7
Oct-97	31	0.2	0.3	0.7	1.1	1.4	1.7	1.8
Nov-97	30	0.1	0.4	0.5	0.7	0.8	0.9	1.3
Dec-97	31	0.3	0.3	0.4	0.6	0.9	1.0	1.1
Jan-98	31	0.1	0.3	0.4	0.5	0.7	1.0	3.1
Feb-98	22	0.3	0.5	0.6	0.6	0.9	1.1	1.2

SPLYL - Speelyai Creek Lower

Appendix 2.1-4

7-Day Maximum Temperatures at PacifiCorp Monitoring Stations
April 1996 through February 1998

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998.

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
4/2/96 - 4/8/96											
4/3/96 - 4/9/96											
4/4/96 - 4/10/96							8.7				
4/5/96 - 4/11/96							8.8				
4/6/96 - 4/12/96							8.6				
4/7/96 - 4/13/96							8.3				
4/8/96 - 4/14/96							8.1				
4/9/96 - 4/15/96	7.5						7.9				
4/10/96 - 4/16/96	7.3						7.6				
4/11/96 - 4/17/96	7.1						7.4				
4/12/96 - 4/18/96	7.0						7.2				
4/13/96 - 4/19/96	7.1						7.1				
4/14/96 - 4/20/96	7.0						7.1				
4/15/96 - 4/21/96	6.7						6.9				
4/16/96 - 4/22/96	6.5						6.8				
4/17/96 - 4/23/96	6.5						6.8				
4/18/96 - 4/24/96	6.4						6.8				
4/19/96 - 4/25/96	6.4						6.9				
4/20/96 - 4/26/96	6.4						7.0				
4/21/96 - 4/27/96	6.6						7.1				
4/22/96 - 4/28/96	6.8						7.3				
4/23/96 - 4/29/96	7.3						7.5				
4/24/96 - 4/30/96	7.5						7.6				
4/25/96 - 5/1/96	7.8						7.8				
4/26/96 - 5/2/96	8.0						7.9				
4/27/96 - 5/3/96	8.1						7.8				
4/28/96 - 5/4/96	8.2						7.9				
4/29/96 - 5/5/96	8.3						7.9				
4/30/96 - 5/6/96	8.2			6.9	7.4	7.5	7.9	6.3	8.5		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
5/1/96 - 5/7/96	8.2			7.0	7.5	7.5	7.8	6.3	8.4		
5/2/96 - 5/8/96	8.2			7.0	7.6	7.6	7.7	6.2	8.3		
5/3/96 - 5/9/96	8.4			7.2	7.7	7.7	7.7	6.3	8.4		
5/4/96 - 5/10/96	8.7			7.4	7.8	7.6	7.9	6.3	8.7		
5/5/96 - 5/11/96	8.6			7.5	8.1	7.7	7.8	6.3	8.7		
5/6/96 - 5/12/96	8.8			7.6	8.3	7.7	8.0	6.3	8.7		
5/7/96 - 5/13/96	8.8	11.1	10.1	7.7	8.4	7.7	8.0	6.3	8.8		
5/8/96 - 5/14/96	9.1	11.2	10.2	7.8	8.5	7.7	8.3	6.3	9.2		
5/9/96 - 5/15/96	9.2	11.4	10.3	8.0	8.6	7.7	8.6	6.3	9.5		
5/10/96 - 5/16/96	9.3	11.6	10.4	8.2	8.7	7.7	8.9	6.4	9.8		
5/11/96 - 5/17/96	9.1	11.5	10.2	8.3	8.7	7.7	8.9	6.4	9.9		
5/12/96 - 5/18/96	9.0	11.5	10.2	8.6	8.6	7.8	9.0	6.4	9.9		
5/13/96 - 5/19/96	8.9	11.6	10.1	8.8	8.5	7.8	9.0	6.5	9.6		
5/14/96 - 5/20/96	8.8	11.7	10.1	8.9	8.6	7.9	8.9	6.7	9.4		
5/15/96 - 5/21/96	8.4	11.5	9.9	9.0	8.8	8.0		6.7	9.1		
5/16/96 - 5/22/96	8.3	11.3	9.7	9.1	8.8	8.0		6.7	8.8		
5/17/96 - 5/23/96	8.2	11.1	9.5	9.0	8.8	8.1		6.6	8.4		
5/18/96 - 5/24/96	8.6	11.6	9.8	8.9	8.9	8.1		6.8	8.4		
5/19/96 - 5/25/96	9.2	12.3	10.2	8.8	9.0	8.2		6.9	8.8		
5/20/96 - 5/26/96	9.8	12.7	10.6	8.8	9.1	8.2		6.9	9.1		
5/21/96 - 5/27/96	9.9	12.9	10.8	8.7	9.0	8.3		6.8	9.2		
5/22/96 - 5/28/96	10.2	13.1	11.0	8.6	9.0	8.5		6.8	9.4		
5/23/96 - 5/29/96	10.5	13.3	11.2	8.8	9.1	8.5		6.8	9.6		
5/24/96 - 5/30/96	10.6	13.4	11.2	8.9	9.2	8.5		6.7	9.7		
5/25/96 - 5/31/96	10.6	13.3	11.4	9.0	9.3	8.5		6.7	9.9		
5/26/96 - 6/1/96	10.6	13.2	11.4	9.1	9.4	8.5		6.6	10.0		
5/27/96 - 6/2/96	10.7	13.3	11.6	9.4	9.6	8.5		6.6	10.4		
5/28/96 - 6/3/96	11.1	13.6	12.1	9.5	9.8	8.4		6.7	11.1		
5/29/96 - 6/4/96	11.5	14.0	12.5	10.2	9.8	8.4		6.8	11.7		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
5/30/96 - 6/5/96	11.9	14.6	13.0	10.2	9.9	8.4		6.9	12.4		
5/31/96 - 6/6/96	12.6	15.3	13.7	10.6	10.1	8.5		7.1	13.2		
6/1/96 - 6/7/96	13.0	15.6	14.1	10.8	10.3	8.6		7.2	13.7		
6/2/96 - 6/8/96	13.2	15.7	14.3	10.7	10.3	8.7		7.2	14.0		
6/3/96 - 6/9/96	13.1	15.5	14.2	10.5	10.9	8.7		7.2	13.8		
6/4/96 - 6/10/96	13.0	15.5	14.2	10.6	11.5	8.7		7.2	13.8		
6/5/96 - 6/11/96	13.2	15.8	14.5	10.3	11.6	8.8		7.3	14.0		
6/6/96 - 6/12/96	13.4	15.8	14.7	10.3	11.7	8.8		7.3	14.2		
6/7/96 - 6/13/96	13.4	15.8	14.7	10.4	11.7	8.9		7.3	14.1		
6/8/96 - 6/14/96	13.3	15.8	14.7	10.4	11.8	9.0		7.3	14.3		
6/9/96 - 6/15/96	13.5	15.8	14.7	10.2	11.7	9.0		7.4	14.5		
6/10/96 - 6/16/96	13.4	15.7	14.7	10.2	11.2	9.0		7.4	14.6		
6/11/96 - 6/17/96	12.9	15.3	14.1	10.1	10.7	9.1		7.3	14.2		
6/12/96 - 6/18/96		14.9	13.9	10.4	10.7	9.1		7.2	13.8		
6/13/96 - 6/19/96		14.8	13.8	10.6	10.9	9.2		7.2	13.7		
6/14/96 - 6/20/96		14.8	13.8	10.5	11.0	9.2		7.3	13.9		
6/15/96 - 6/21/96		14.5	13.4	10.5	10.9	9.2		7.2	13.6		
6/16/96 - 6/22/96		14.2	13.0	10.5	11.1	9.2		7.1	13.1		
6/17/96 - 6/23/96		14.1	12.9	10.5	11.4	9.2		7.1	13.1		
6/18/96 - 6/24/96		14.2	13.0	10.5	11.8	9.2		7.1	13.1		
6/19/96 - 6/25/96		14.5	13.2	10.1	11.8	9.2		7.2	13.3		
6/20/96 - 6/26/96		14.6	13.3	10.0	11.7	9.3		7.2	13.3		
6/21/96 - 6/27/96		14.2	12.9	9.7	11.8	9.3		7.1	12.8		
6/22/96 - 6/28/96		14.1	12.9	9.5	11.8	9.3		7.1	12.7		
6/23/96 - 6/29/96		14.4	13.3	9.5	11.8	9.4		7.3	13.0		
6/24/96 - 6/30/96		14.8	13.8	9.4	12.5	9.5		7.4	13.4		
6/25/96 - 7/1/96		15.3	14.5	9.7	13.1	9.5		7.5	14.0		
6/26/96 - 7/2/96		15.5	14.6	9.9	13.3	9.6		7.5	14.3		
6/27/96 - 7/3/96	13.3	15.4	14.5	11.1	13.4	9.6		7.5	14.4		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
6/28/96 - 7/4/96	13.6	15.8	14.8	11.0	14.3	9.6		7.5	14.8		
6/29/96 - 7/5/96	13.9	16.2	15.2	11.5	15.4	9.7		7.7	15.2		
6/30/96 - 7/6/96	14.1	16.4	15.4	11.6	15.5	9.7		7.7	15.5		
7/1/96 - 7/7/96	14.2	16.6	15.7	11.8	15.6	9.8		7.7	15.8		
7/2/96 - 7/8/96	14.3	16.8	15.8	12.5	15.0	9.8		7.8	16.1		
7/3/96 - 7/9/96	14.4	16.9	15.9	13.1	15.4	9.9		7.8	16.2		
7/4/96 - 7/10/96	14.6	17.1	16.2	12.4	15.6	9.9		7.8	16.6		
7/5/96 - 7/11/96	15.0	17.5	16.8	13.2	14.7	10.0		8.0	17.0		
7/6/96 - 7/12/96	15.3	17.8	17.1	13.6	14.2	10.1		8.0	17.5		
7/7/96 - 7/13/96	15.6	18.1	17.4	14.0	15.1	10.1		8.0	18.1		
7/8/96 - 7/14/96	15.8	18.4	17.5	14.7	15.5	10.1		8.0	18.5		
7/9/96 - 7/15/96	15.9	18.5	17.7	15.0	16.7	10.2		8.1	18.7		
7/10/96 - 7/16/96	15.9	18.5	17.7	15.5	17.1	10.2		8.1	18.9		
7/11/96 - 7/17/96	15.4	18.0	17.1	15.8	17.8	10.2		7.9	18.7		
7/12/96 - 7/18/96	14.6	17.3	16.3	15.3	18.6	10.2		7.8	18.0		
7/13/96 - 7/19/96	14.0	16.6	15.6	14.8	19.1	10.3		7.6	17.2		
7/14/96 - 7/20/96	13.3	15.9	14.9	14.4	19.3	10.3		7.5	16.4		
7/15/96 - 7/21/96	13.1	15.6	14.6	13.7	19.1	10.3		7.5	15.9		
7/16/96 - 7/22/96	13.0	15.5	14.5	12.7	18.9	10.3		7.5	15.7		
7/17/96 - 7/23/96	13.1	15.5	14.7	11.6	18.0	10.4		7.5	16.0		
7/18/96 - 7/24/96	13.8	16.2	15.4	12.1	17.7	10.4		7.7	16.6		
7/19/96 - 7/25/96	14.8	17.0	16.3	12.5	17.5	10.4		7.8	17.6		
7/20/96 - 7/26/96	15.5	17.8	17.0	12.3	17.4	10.5		8.0	18.6		
7/21/96 - 7/27/96	16.2	18.4	17.6	12.9	16.6	10.5		8.1	19.5		
7/22/96 - 7/28/96	15.9	18.3	17.4	13.1	15.3	10.6		8.0	19.6		
7/23/96 - 7/29/96	16.0	18.3	17.4	13.8	14.4	10.6		8.0	19.9		
7/24/96 - 7/30/96	16.0	18.3	17.2	14.0	14.6	10.7		7.9	19.9		
7/25/96 - 7/31/96	15.8	18.2	17.1	13.2	14.2	10.7		7.9	19.8		
7/26/96 - 8/1/96	15.6	17.9	16.9	13.7	13.8	10.8		7.9	19.3		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
7/27/96 - 8/2/96	15.0	17.2	16.3	13.8	13.1	10.9		7.8	18.6		
7/28/96 - 8/3/96	14.3	16.6	15.7	13.3	13.1	10.9		7.7	17.8		
7/29/96 - 8/4/96	14.0	16.2	15.4	13.5	12.9	10.9		7.7	17.2		
7/30/96 - 8/5/96	13.4	15.4	14.8	13.0	12.9	11.0		7.5	16.4		
7/31/96 - 8/6/96	13.0	15.2	14.5	13.3	12.7	11.0		7.5	15.9		
8/1/96 - 8/7/96	13.0	15.1	14.5	12.7	12.8	11.0		7.5	15.7		
8/2/96 - 8/8/96	13.0	15.3	14.6	12.0	12.9	11.1		7.5	16.0		
8/3/96 - 8/9/96	13.5	15.8	15.2	13.2	12.9	11.1		7.6	16.6		
8/4/96 - 8/10/96	14.0	16.4	15.8	13.6	13.2	11.1		7.8	17.3		
8/5/96 - 8/11/96	14.5	16.9	16.2	13.8	13.5	11.1		7.9	17.8		
8/6/96 - 8/12/96	14.9	17.5	16.8	13.9	13.5	11.2		8.0	18.3		
8/7/96 - 8/13/96	15.0	17.7	17.0	13.4	13.4	11.2		8.0	18.6		
8/8/96 - 8/14/96	15.1	17.7	17.1	14.0	13.4	11.2		8.0	18.8		
8/9/96 - 8/15/96	15.0	17.6	17.0	14.3	13.3	11.2		7.9	18.7		
8/10/96 - 8/16/96	14.8	17.4	16.8	14.3	13.3	11.3		7.9	18.5		
8/11/96 - 8/17/96	14.4	17.1	16.4	14.0	13.1	11.3		7.8	17.9		
8/12/96 - 8/18/96	14.0	16.8	16.2	13.8	12.7	11.4		7.8	17.6		
8/13/96 - 8/19/96	13.9	16.6	16.0	13.3	12.7	11.4		7.8	17.3		
8/14/96 - 8/20/96	13.6	16.4	15.7	13.3	12.8	11.5		7.8	16.9		
8/15/96 - 8/21/96	13.3	16.3	15.4	13.7	12.7	11.6		7.7	16.5		
8/16/96 - 8/22/96	13.1	16.2	15.3	13.5	12.8	11.6		7.7	16.3		
8/17/96 - 8/23/96	13.1	16.2	15.3	12.5	13.1	11.6		7.7	16.3		
8/18/96 - 8/24/96	13.2	16.3	15.6	12.5	13.3	11.7		7.7	16.6		
8/19/96 - 8/25/96	13.5	16.5	15.7	12.6	13.6	11.7		7.8	16.9		
8/20/96 - 8/26/96	13.3	16.3	15.5	13.0	13.8	11.7		7.6	17.0		
8/21/96 - 8/27/96	13.2	16.0	15.3	13.3	13.9	11.7		7.6	17.0		
8/22/96 - 8/28/96	13.1	15.8	15.2	12.6	13.9	11.7		7.5	16.9		
8/23/96 - 8/29/96	13.1	15.7	15.1	12.8	14.0	11.8		7.5	17.0		
8/24/96 - 8/30/96	13.0	15.4	14.8	13.2	13.9	11.8		7.4	16.9		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
8/25/96 - 8/31/96	12.6	15.1	14.4	13.0	13.9	11.8		7.3	16.6		
8/26/96 - 9/1/96	12.5	14.9	14.4	12.9	13.7	11.8		7.4	16.4		
8/27/96 - 9/2/96	12.4	14.9	14.3	12.4	13.1	11.9		7.4	16.1		
8/28/96 - 9/3/96	12.3	14.8	14.3	12.3	13.0	11.9	15.2	7.4	15.9		
8/29/96 - 9/4/96	12.1	14.6	14.1	12.5	13.3	12.0	14.9	7.4	15.6		
8/30/96 - 9/5/96	11.5	13.9	13.5	12.2	13.1	12.0	14.3	7.2	14.9		
8/31/96 - 9/6/96	11.3	13.8	13.3	11.8	13.1	12.0	14.1	7.2	14.5		
9/1/96 - 9/7/96	11.4	13.8	13.3	12.1	12.6	12.0	14.0	7.2	14.3		
9/2/96 - 9/8/96	11.4	13.7	13.2	12.4	12.4	12.1	13.9	7.2	14.3		
9/3/96 - 9/9/96	11.6	14.0	13.4	13.0	13.0	12.1	14.0	7.3	14.4		
9/4/96 - 9/10/96	11.7	14.3	13.7	13.1	13.0	12.1	14.2	7.3	14.6		
9/5/96 - 9/11/96	12.0	14.5	13.9	13.0	12.8	12.2	14.5	7.3	14.8		
9/6/96 - 9/12/96	12.2	14.7	14.1	13.3	12.5	12.2	14.7	7.3	15.1		
9/7/96 - 9/13/96	12.0	14.4	13.9	13.2	12.1	12.2	14.5	7.3	15.1		
9/8/96 - 9/14/96	11.7	14.2	13.7	13.0	12.6	12.3	14.3	7.2	14.8		
9/9/96 - 9/15/96	11.4	13.8	13.4	12.8	13.3	12.3	14.0	7.2	14.4		
9/10/96 - 9/16/96	11.0	13.5	13.1	12.7	13.3	12.3	13.7	7.2	13.9		
9/11/96 - 9/17/96	10.8	13.2	12.8	12.6	13.4	12.4	13.2	7.2	13.5		
9/12/96 - 9/18/96	10.4	12.8	12.5	12.4	13.6	12.5	12.7	7.2	12.9		
9/13/96 - 9/19/96	10.3	12.7	12.4	12.2	13.9	12.7	12.6	7.2	12.4		
9/14/96 - 9/20/96	10.3	12.7	12.3	12.5	14.4	12.8	12.5	7.2	12.1		
9/15/96 - 9/21/96	10.2	12.6	12.2	12.8	14.4	12.9	12.3	7.2	11.8		
9/16/96 - 9/22/96	10.1	12.6	12.2	12.9	14.4	13.1	12.2	7.1	11.6		
9/17/96 - 9/23/96	9.9	12.5	12.1	13.0	14.5	13.3	12.1	7.1	11.4		
9/18/96 - 9/24/96	9.7	12.2	12.0	13.0	14.6	13.4		6.9	11.2		
9/19/96 - 9/25/96	9.7	12.3	12.0	13.3	14.6	13.5		6.9	11.1		
9/20/96 - 9/26/96	9.7	12.4	12.1	13.2	14.6	13.5		7.0	11.1		
9/21/96 - 9/27/96	9.9	12.7	12.2	12.9	14.5	13.6		7.0	11.1		
9/22/96 - 9/28/96	10.1	13.0	12.4	12.8	14.5	13.7		7.0	11.3		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
9/23/96 - 9/29/96	10.3	13.2	12.4	12.7	14.4	13.8		7.0	11.5		
9/24/96 - 9/30/96	10.5	13.3	12.6	12.6	14.4	13.8		7.0	11.6		
9/25/96 - 10/1/96	10.7	13.4	12.6	12.6	14.3	13.9		7.1	11.8		
9/26/96 - 10/2/96	10.7	13.4	12.6	12.7	14.4	14.1		7.1	11.9		
9/27/96 - 10/3/96	10.8	13.3	12.6	12.8	14.3	14.3		7.1	12.0		
9/28/96 - 10/4/96	10.6	13.0	12.6	12.9	14.3	14.4		7.0	12.1		
9/29/96 - 10/5/96	10.4	12.8	12.5	12.9	14.3	14.5		7.0	12.1		
9/30/96 - 10/6/96	10.3	12.6	12.5	12.9	14.4	14.7		7.0	12.0		
10/1/96 - 10/7/96	10.2	12.6	12.4	12.9	14.2	14.8		7.0	12.1		
10/2/96 - 10/8/96	10.3	12.7	12.4	13.0	14.2	14.9		7.0	12.2		
10/3/96 - 10/9/96	10.5	12.9	12.5	13.0	14.2	14.9		7.1	12.4		
10/4/96 - 10/10/96	10.4	12.9	12.5	12.9	14.2	14.9		7.0	12.4		
10/5/96 - 10/11/96	10.4	12.9	12.5	12.9	14.2	15.0		7.0	12.4		
10/6/96 - 10/12/96	10.4	12.8	12.5	13.0	14.2	15.0		7.0	12.3		
10/7/96 - 10/13/96	10.2	12.6	12.4	13.0	14.2	15.1		7.0	12.2		
10/8/96 - 10/14/96	9.9	12.2	12.2	13.0	14.2	15.1		7.2	11.9		
10/9/96 - 10/15/96	9.5	11.8	11.9	12.9	14.1	15.2		7.4	11.5		
10/10/96 - 10/16/96	9.0	11.3	11.5	12.8	13.9	15.2		7.4	10.8		
10/11/96 - 10/17/96	8.5	10.8	11.2	12.9	13.8	15.2		7.4	10.1		
10/12/96 - 10/18/96	8.1	10.5	10.7	13.0	13.6	15.2		7.5	9.5		
10/13/96 - 10/19/96	7.7	10.2	10.2	12.9	13.4	15.1		7.5	8.8		
10/14/96 - 10/20/96	7.4	10.0	9.8	13.0	13.2	15.1		7.4	8.2		
10/15/96 - 10/21/96	7.1	9.8	9.5	12.8	13.1	14.9		7.1	7.8		
10/16/96 - 10/22/96	7.0	9.7	9.4	12.7	12.9	14.8		7.0	7.7		
10/17/96 - 10/23/96	6.8	9.6	9.2	12.5	12.7	14.6		6.9	7.6		
10/18/96 - 10/24/96	6.9	9.7	9.1	12.3	12.6	14.4		6.9	7.7		
10/19/96 - 10/25/96	6.9	9.7	9.0	12.2	12.3	14.2		6.9	7.7		
10/20/96 - 10/26/96	6.9	9.7	8.9	12.0	12.1	14.0		6.9	7.7		
10/21/96 - 10/27/96	6.9	9.7	8.9	11.9	12.0	13.8		6.9	7.7		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
10/22/96 - 10/28/96	7.0	9.7	8.9	11.7	11.8	13.7		6.9	7.8		
10/23/96 - 10/29/96	7.0	9.7	8.8	11.6	11.6	13.5		6.9	7.7		
10/24/96 - 10/30/96	7.1	9.7	8.8	11.5	11.5	13.3		6.9	7.7		
10/25/96 - 10/31/96	6.9	9.6	8.7	11.4	11.3	13.1		6.8	7.5		
10/26/96 - 11/1/96	6.8	9.5	8.7	11.4	11.3	12.9		6.8	7.3		
10/27/96 - 11/2/96	6.8	9.5	8.8	11.3	11.2	12.8		6.8	7.3		
10/28/96 - 11/3/96	6.8	9.4	8.9	11.2	11.1	12.6		6.8	7.4		
10/29/96 - 11/4/96	6.7	9.4	8.9	11.0	10.9	12.5		6.8	7.3		
10/30/96 - 11/5/96	6.5	9.1	8.8	10.8	10.8	12.4		6.7	7.1		
10/31/96 - 11/6/96	6.3	9.0	8.8	10.7	10.7	12.3		6.7	7.0		
11/1/96 - 11/7/96	6.2	8.9	8.7	10.5	10.6	12.2		6.7	7.1		
11/2/96 - 11/8/96	6.3	9.0	8.7	10.3	10.4	12.1		6.8	7.2		
11/3/96 - 11/9/96	6.2	9.0	8.6	10.1	10.4	12.0		6.8	7.2		
11/4/96 - 11/10/96	6.2	8.9	8.6	10.0	10.3	11.9		6.9	7.2		
11/5/96 - 11/11/96	6.4	9.0	8.6	9.9	10.3	11.8		7.0	7.4		
11/6/96 - 11/12/96	6.6	9.2	8.8	9.9	10.2	11.8		7.0	7.7		
11/7/96 - 11/13/96	6.9	9.4	8.9	9.8	10.2	11.7		7.1	8.0		
11/8/96 - 11/14/96	7.1	9.5	9.0	9.7	10.1	11.6		7.1	8.1		
11/9/96 - 11/15/96	7.0	9.4	9.0	9.5	10.0	11.5		7.1	8.1		
11/10/96 - 11/16/96	6.8	9.3	9.0	9.4	10.0	11.4		7.1	8.0		
11/11/96 - 11/17/96	6.6	9.2	8.8	9.3	9.9	11.3		7.1	7.9		
11/12/96 - 11/18/96	6.2	9.0	8.5	9.1	9.7	11.3		7.0	7.5		
11/13/96 - 11/19/96	5.6	8.6	8.0	9.0	9.6	11.3		6.9	7.1		
11/14/96 - 11/20/96	5.2	8.4	7.7	8.8	9.5	11.2		6.9	6.8		
11/15/96 - 11/21/96	4.8	8.1	7.4	8.7	9.3	11.2		6.9	6.6		
11/16/96 - 11/22/96	4.7	8.0	7.1	8.6	9.2	11.1		6.8	6.4		
11/17/96 - 11/23/96	4.5	7.8	7.0	8.4	9.0	11.0		6.8	6.3		
11/18/96 - 11/24/96	4.4	7.7	6.8	8.2	8.9	10.9		6.7	6.3		
11/19/96 - 11/25/96	4.5	7.6	6.9	8.0	8.7	10.7		6.8	6.4		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
11/20/96 - 11/26/96	4.8	7.7	7.0	7.8	8.5	10.5		6.8	6.4		
11/21/96 - 11/27/96	4.8	7.7	7.1	7.7	8.4	10.3		6.9	6.5		
11/22/96 - 11/28/96	4.9	7.8	7.2	7.5	8.2	10.0		6.9	6.7		
11/23/96 - 11/29/96	4.9	7.8	7.2	7.4	8.1	9.8		6.9	6.7		
11/24/96 - 11/30/96	5.0	7.9	7.3	7.3	7.9	9.7		7.0	6.9		
11/25/96 - 12/1/96	5.2	8.0	7.4	7.2	7.9	9.5		7.0	7.0		
11/26/96 - 12/2/96	5.0	7.9	7.3	7.0	7.8	9.3			6.8		
11/27/96 - 12/3/96	4.9	7.7	7.1	6.8	7.6	9.2		6.9	6.6		
11/28/96 - 12/4/96	4.7	7.4	6.9	6.6	7.5	9.1		6.8	6.4		
11/29/96 - 12/5/96	4.5	7.2	6.7	6.4	7.4	9.0		6.7	6.2		
11/30/96 - 12/6/96	4.3	7.0	6.5	6.2	7.3	8.9		6.6	6.1		
12/1/96 - 12/7/96	4.1	6.8	6.4	6.1	7.2	8.8		6.6	5.9		
12/2/96 - 12/8/96	4.0	6.7	6.3	5.9	7.1	8.7		6.6	5.9		
12/3/96 - 12/9/96	4.1	6.7	6.3	5.9	7.0	8.7		6.6	6.0		
12/4/96 - 12/10/96	4.2	6.8	6.4	5.8	7.0	8.6		6.6	6.1		
12/5/96 - 12/11/96	4.3	6.9	6.5	5.8	6.8	8.4		6.7	6.2		
12/6/96 - 12/12/96	4.4	7.0	6.6	5.8	6.8	8.3		6.7	6.2		
12/7/96 - 12/13/96	4.6	7.1	6.6	5.8	6.7	8.2		6.7	6.2		
12/8/96 - 12/14/96	4.6	7.2	6.6	5.8	6.6	8.0		6.7	6.2		
12/9/96 - 12/15/96	4.6	7.2	6.6	5.8	6.5	7.9		6.6	6.1		
12/10/96 - 12/16/96	4.6	7.2	6.6	5.7	6.4	7.7		6.6	6.0		
12/11/96 - 12/17/96	4.5	7.0	6.4	5.6	6.3	7.6		6.5	5.8		
12/12/96 - 12/18/96	4.3	6.7	6.2	5.5	6.3	7.5		6.4	5.6		
12/13/96 - 12/19/96	4.2	6.6	6.1	5.4	6.2	7.4		6.4	5.4		
12/14/96 - 12/20/96	4.1	6.5	6.1	5.3	6.1	7.4		6.4	5.2		
12/15/96 - 12/21/96	4.0	6.3	5.9	5.3	6.0	7.3		6.3	5.0		
12/16/96 - 12/22/96	4.0	6.3	5.9	5.2	5.9	7.3		6.3	4.9		
12/17/96 - 12/23/96	3.7	6.0	5.7	5.2	5.9	7.2		6.2	4.8		
12/18/96 - 12/24/96	3.7	6.0	5.7	5.2	5.8	7.1		6.2	4.8		

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
12/19/96 - 12/25/96	3.7	6.0	5.7	5.2	5.8	7.0		6.2	5.0	4.9	8.1
12/20/96 - 12/26/96	3.6	5.9	5.6	5.1	5.7	6.9		6.1	5.0	4.9	8.0
12/21/96 - 12/27/96	3.5	5.7	5.5	5.0	5.7	6.9		6.1	5.1	4.9	7.9
12/22/96 - 12/28/96	3.5	5.7	5.5	5.0	5.6	6.8		6.1	5.2	4.9	7.9
12/23/96 - 12/29/96	3.1	5.6	5.5	4.9	5.6	6.7		6.1	5.3	5.0	7.8
12/24/96 - 12/30/96	3.1	5.7	5.6	4.9	5.5	6.6		6.2	5.6	5.3	7.9
12/25/96 - 12/31/96	3.2	5.6	5.7	4.8	5.5	6.6		6.4	5.8	5.6	8.0
12/26/96 - 1/1/97	3.3	5.4	5.7	4.8	5.4	6.4		6.4	5.9	5.7	8.1
12/27/96 - 1/2/97	3.6	5.3	5.7	4.7	5.4	6.4		6.5	6.1	5.9	8.3
12/28/96 - 1/3/97	3.7	5.3	5.7	4.6	5.4	6.3		6.6	6.1	6.1	8.4
12/29/96 - 1/4/97	3.9	5.3	5.8	4.5	5.4	6.2		6.6	6.2	6.2	8.5
12/30/96 - 1/5/97	4.2	5.4	5.8	4.5	5.4	6.1		6.6	6.1	6.2	8.5
12/31/96 - 1/6/97	4.3	5.5	5.8	4.4	5.4	6.0		6.5	6.0	6.0	8.5
1/1/97 - 1/7/97	4.4	5.7	5.8	4.4	5.4	6.0		6.4	5.8	5.9	8.4
1/2/97 - 1/8/97	4.5	6.0	5.8	4.3	5.4	5.9		6.3	5.7	5.7	8.4
1/3/97 - 1/9/97	4.5	6.4	6.0	4.3	5.4	5.9		6.3	5.6	5.6	8.4
1/4/97 - 1/10/97	4.6	6.7	6.2	4.4	5.4	5.9		6.2	5.6	5.6	8.4
1/5/97 - 1/11/97	4.7	6.8	6.2	4.4	5.4	5.9		6.2	5.7	5.7	8.4
1/6/97 - 1/12/97	4.6	6.7	6.2	4.4	5.4	5.8		6.2	5.6	5.6	8.3
1/7/97 - 1/13/97	4.4	6.5	5.9	4.4	5.4	5.8		6.0	5.3	5.4	8.1
1/8/97 - 1/14/97	4.0	6.2	5.6	4.3	5.3	5.8		5.9	4.9	5.0	7.9
1/9/97 - 1/15/97	3.7	5.8	5.3	4.3	5.3	5.8		5.8	4.5	4.6	7.7
1/10/97 - 1/16/97	3.4	5.4	5.0	4.2	5.2	5.7		5.7	4.1	4.2	7.5
1/11/97 - 1/17/97	3.1	5.1	4.7	4.1	5.1	5.6		5.6	3.9	4.0	7.4
1/12/97 - 1/18/97	3.0	5.0	4.6	4.0	4.9	5.6		5.6	3.8	3.9	7.4
1/13/97 - 1/19/97	3.1	5.0	4.7	3.9	4.8	5.5		5.6	4.0	4.0	7.6
1/14/97 - 1/20/97	3.4	5.3	4.9	3.8	4.7	5.4		5.6	4.4	4.3	7.8
1/15/97 - 1/21/97	3.7	5.6	5.2	3.7	4.7	5.4		5.7	4.8	4.7	8.0
1/16/97 - 1/22/97	4.0	5.8	5.5	3.7	4.6	5.3		5.7	5.0	4.9	8.1

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
1/17/97 - 1/23/97	4.1	6.0	5.6	3.7	4.6	5.2		5.7	5.2	5.1	8.1
1/18/97 - 1/24/97	4.2	6.2	5.7	3.7	4.6	5.1		5.7	5.2	5.2	8.2
1/19/97 - 1/25/97	4.1	6.1	5.7	3.7	4.5	5.1		5.6	5.0	5.0	8.1
1/20/97 - 1/26/97	3.9	5.9	5.5	3.7	4.5	5.0		5.5	4.7	4.7	7.9
1/21/97 - 1/27/97	3.6	5.6	5.1	3.7	4.5	4.9		5.4	4.3	4.3	7.7
1/22/97 - 1/28/97	3.5	5.4	5.0	3.6	4.4	4.9		5.4	4.1	4.1	7.6
1/23/97 - 1/29/97	3.5	5.4	5.0	3.6	4.3	4.8		5.4	4.1	4.1	7.7
1/24/97 - 1/30/97	3.6	5.4	5.0	3.5	4.3	4.7		5.4	4.2	4.2	7.8
1/25/97 - 1/31/97	3.6	5.4	5.0	3.5	4.2	4.7		5.5	4.3	4.3	7.9
1/26/97 - 2/1/97	3.8	5.5	5.2	3.4	4.2	4.7		5.6	4.5	4.5	8.0
1/27/97 - 2/2/97	4.0	5.8	5.3	3.4	4.2	4.7		5.7	4.8	4.7	8.1
1/28/97 - 2/3/97	4.3	6.1	5.6	3.5	4.2	4.7		5.8	5.1	5.1	8.3
1/29/97 - 2/4/97	4.4	6.3	5.7	3.5	4.2	4.7		5.8	5.3	5.3	8.3
1/30/97 - 2/5/97	4.3	6.3	5.6	3.5	4.3	4.7		5.8	5.2	5.2	8.2
1/31/97 - 2/6/97	4.2	6.2	5.6	3.5	4.3	4.6		5.7	5.1	5.1	8.1
2/1/97 - 2/7/97	4.0	6.0	5.4	3.5	4.3	4.6		5.6	4.9	4.9	8.0
2/2/97 - 2/8/97	3.8	5.9	5.3	3.6	4.3	4.5		5.5	4.6	4.6	7.8
2/3/97 - 2/9/97	3.7	5.7	5.1	3.6	4.2	4.5		5.4	4.4	4.4	7.8
2/4/97 - 2/10/97	3.7	5.7	5.1	3.6	4.2	4.4		5.4	4.2	4.2	7.8
2/5/97 - 2/11/97	3.6	5.6	5.0	3.6	4.1	4.4		5.3	4.2	4.1	7.8
2/6/97 - 2/12/97	3.6	5.6	5.1	3.6	4.0	4.3		5.3	4.2	4.1	7.9
2/7/97 - 2/13/97	3.7	5.7	5.1	3.6	3.9	4.3		5.3	4.2	4.1	7.9
2/8/97 - 2/14/97	3.9	5.9	5.2	3.6	3.9	4.3		5.3	4.4	4.3	8.1
2/9/97 - 2/15/97	4.2	6.2	5.4	3.7	3.9	4.3		5.4	4.7	4.6	8.2
2/10/97 - 2/16/97	4.5	6.5	5.6	3.7	3.9	4.4		5.5	5.0	5.0	8.4
2/11/97 - 2/17/97	4.7	6.7	5.7	3.8	4.0	4.4		5.5	5.2	5.2	8.5
2/12/97 - 2/18/97	4.8	6.9	5.9	3.9	4.0	4.4		5.6	5.4	5.4	8.6
2/13/97 - 2/19/97	4.9	7.0	5.9	3.8	4.1	4.4		5.6	5.5	5.5	8.6
2/14/97 - 2/20/97	5.1	7.1	6.0	3.8	4.1	4.4		5.6	5.6	5.7	8.7

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
2/15/97 - 2/21/97	5.2	7.3	6.1	3.8	4.1	4.4		5.7	5.6	5.7	8.8
2/16/97 - 2/22/97	5.1	7.2	6.0	3.8	4.2	4.4		5.6	5.5	5.7	8.7
2/17/97 - 2/23/97	5.1	7.2	5.9	3.8	4.2	4.4		5.6	5.4	5.5	8.6
2/18/97 - 2/24/97	5.1	7.2	5.9	3.8	4.2	4.5		5.6	5.3	5.5	8.6
2/19/97 - 2/25/97	5.2	7.3	6.0	3.8	4.3	4.5		5.6	5.4	5.6	8.7
2/20/97 - 2/26/97	5.4	7.3	6.1	3.8	4.3	4.5		5.6	5.4	5.7	8.7
2/21/97 - 2/27/97	5.4	7.3	6.0	3.9	4.3	4.5		5.6	5.4	5.7	8.7
2/22/97 - 2/28/97	5.3	7.3	6.0	3.9	4.3	4.5		5.5	5.2	5.5	8.6
2/23/97 - 3/1/97	5.0	7.1	6.0	3.9	4.3	4.5		5.4	5.1	5.4	8.5
2/24/97 - 3/2/97	4.8	6.9	5.9	4.0	4.3	4.5		5.4	5.0	5.2	8.5
2/25/97 - 3/3/97	4.7	6.6	5.8	4.0	4.3	4.4		5.3	4.8	5.0	8.3
2/26/97 - 3/4/97	4.5	6.4	5.7	4.0	4.3	4.5		5.2	4.7	4.7	8.1
2/27/97 - 3/5/97	4.4	6.3	5.6	4.1	4.3	4.5		5.2	4.5	4.6	8.1
2/28/97 - 3/6/97	4.2	6.2	5.5	4.1	4.3	4.6		5.3	4.5	4.5	8.0
3/1/97 - 3/7/97	4.3	6.2	5.5	4.2	4.3	4.5		5.4	4.6	4.6	8.1
3/2/97 - 3/8/97	4.5	6.4	5.6	4.3	4.4	4.5		5.5	4.8	4.8	8.2
3/3/97 - 3/9/97	4.6	6.4	5.6	4.3	4.4	4.6		5.6	5.0	4.9	8.2
3/4/97 - 3/10/97	4.6	6.6	5.7	4.4	4.5	4.6		5.6	5.1	5.0	8.3
3/5/97 - 3/11/97	4.6	6.7	5.7	4.4	4.5	4.6		5.7	5.2	5.1	8.4
3/6/97 - 3/12/97	4.5	6.8	5.7	4.4	4.6	4.6		5.7	5.1	5.1	8.3
3/7/97 - 3/13/97	4.7	6.9	5.8	4.4	4.6	4.7		5.6	5.1	5.1	8.4
3/8/97 - 3/14/97	4.8	7.0	5.9	4.3	4.7	4.8		5.6	5.2	5.2	8.4
3/9/97 - 3/15/97	4.6	6.9	5.8	4.3	4.7	4.9		5.6	5.2	5.1	8.3
3/10/97 - 3/16/97	4.6	7.0	5.9	4.3	4.7	4.9		5.5	5.2	5.1	8.4
3/11/97 - 3/17/97	4.6	7.1	5.9	4.4	4.7	4.9		5.6	5.3	5.1	8.4
3/12/97 - 3/18/97	4.6	7.1	6.0	4.4	4.7	5.0		5.6	5.4	5.2	8.5
3/13/97 - 3/19/97	4.7	7.2	6.1	4.6	4.8	5.1		5.8	5.5	5.4	
3/14/97 - 3/20/97	4.7	7.3	6.2	4.6	4.8	5.1		5.9	5.7	5.5	
3/15/97 - 3/21/97	4.8	7.5	6.3	4.7	4.9	5.1		5.9	5.7	5.6	

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
3/16/97 - 3/22/97	5.1	7.8	6.6	4.7	4.9	5.1		5.9	5.9	5.9	
3/17/97 - 3/23/97	5.4	8.1	6.8	4.6	5.0	5.1		5.9	6.1	6.1	
3/18/97 - 3/24/97	5.7	8.5	7.0	4.5	5.2	5.1		5.9	6.2	6.4	
3/19/97 - 3/25/97	6.2	9.0	7.3	4.7	5.3	5.1		5.9	6.4	6.7	
3/20/97 - 3/26/97	6.5	9.4	7.6	4.5	5.4	5.1		5.9	6.6	6.9	
3/21/97 - 3/27/97	6.5	9.4	7.6	4.6	5.5	5.1		5.8	6.6	6.9	
3/22/97 - 3/28/97	6.5	9.3	7.6	4.6	5.6	5.1		5.8	6.5	6.8	
3/23/97 - 3/29/97	6.6	9.5	7.6	4.6	5.7	5.2		5.8	6.4	6.7	
3/24/97 - 3/30/97	6.5	9.3	7.5	4.7	5.8	5.3		5.7	6.3	6.6	
3/25/97 - 3/31/97	6.3	9.1	7.4	4.7	5.8	5.3		5.7	6.1	6.4	
3/26/97 - 4/1/97	6.1	9.0	7.3	4.7	5.7	5.3		5.6	5.9	6.1	
3/27/97 - 4/2/97	6.1	9.1	7.2	4.7	5.7	5.4		5.5	5.7	5.9	
3/28/97 - 4/3/97	6.2	9.1	7.3	4.8	5.7	5.5		5.5	5.7	6.0	
3/29/97 - 4/4/97	6.4	9.4	7.5	4.8	5.8	5.5		5.5	5.8	6.2	
3/30/97 - 4/5/97	6.5	9.6	7.6	4.9	5.8	5.5		5.5	5.8	6.2	
3/31/97 - 4/6/97	6.8	9.9	7.9	5.0	5.8	5.5		5.5	6.0	6.4	
4/1/97 - 4/7/97	7.1	10.1	8.1	5.1	5.9	5.6		5.5	6.1	6.6	
4/2/97 - 4/8/97	7.1	9.9	8.1	5.2	6.0	5.6		5.5	6.3	6.8	
4/3/97 - 4/9/97	7.1	9.7	8.0	5.3	6.1	5.6		5.4	6.3	6.8	
4/4/97 - 4/10/97	7.0	9.7	8.0	5.3	6.1	5.7		5.4	6.4	6.8	
4/5/97 - 4/11/97	7.1	9.8	8.1	5.4	6.1	5.7		5.4	6.5	6.9	
4/6/97 - 4/12/97	7.1	9.7	8.2	5.5	6.2	5.8		5.4	6.6	7.0	
4/7/97 - 4/13/97	6.8	9.4	8.0	5.6	6.3	5.8		5.4	6.5	6.8	
4/8/97 - 4/14/97	6.5	9.3	7.8	5.7	6.3	5.8		5.4	6.4	6.6	
4/9/97 - 4/15/97	6.8	9.7	7.9	5.8	6.4	5.9		5.5	6.5	6.8	
4/10/97 - 4/16/97	7.1	10.0	8.1	6.0	6.5	6.0		5.7	6.6	7.0	
4/11/97 - 4/17/97	7.3	10.5	8.3	6.2	6.5	6.0		5.8	6.8	7.2	
4/12/97 - 4/18/97	7.1	10.3	8.1	6.4	6.7	6.0		5.8	6.7	7.1	
4/13/97 - 4/19/97	6.9	10.1	8.0	6.6	6.8	6.1		6.0	6.7	7.0	

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
4/14/97 - 4/20/97	7.0	10.4	8.0	6.7	6.9	6.1		6.2	6.8	7.1	
4/15/97 - 4/21/97	7.1	10.7	8.2	6.7	7.0	6.2		6.3	6.9	7.3	
4/16/97 - 4/22/97	6.8	10.4	8.1	6.7	7.1	6.3		6.2	6.9	7.2	
4/17/97 - 4/23/97	6.6	10.3	8.0	6.6	7.2	6.3		6.1	6.8	7.0	
4/18/97 - 4/24/97	6.4	9.9	7.9	6.5	7.2	6.4		6.1	6.7	6.8	
4/19/97 - 4/25/97	6.7	10.2	8.1	6.4	7.3	6.5		6.2	7.0	7.1	
4/20/97 - 4/26/97	7.1	10.6	8.5	6.4	7.4	6.6		6.1	7.2	7.4	
4/21/97 - 4/27/97	7.2	10.6	8.6	6.3	7.4	6.7		5.9	7.4	7.6	
4/22/97 - 4/28/97	7.1	10.5	8.6	6.4	7.4	6.8		5.8	7.4	7.6	
4/23/97 - 4/29/97	7.3	10.6	8.8	6.4	7.4	6.9		5.8	7.4	7.6	
4/24/97 - 4/30/97	7.3	10.8	8.8	6.5	7.5	7.0		5.9	7.4	7.6	
4/25/97 - 5/1/97	7.3	11.0	8.9	6.5	7.5	7.0		5.9	7.4	7.7	
4/26/97 - 5/2/97	7.1	10.9	8.8	6.6	7.5	7.2		5.9	7.3	7.5	
4/27/97 - 5/3/97	7.0	10.7	8.6	6.5	7.5	7.3		5.8	7.1	7.3	
4/28/97 - 5/4/97	7.1	10.7	8.7	6.6	7.6	7.4		5.9	7.1	7.3	
4/29/97 - 5/5/97	7.3	10.9	8.9	6.8	7.7	7.4		5.9	7.3	7.6	
4/30/97 - 5/6/97	7.3	11.0	9.0	6.9	7.7	7.4		5.9	7.4	7.7	
5/1/97 - 5/7/97	7.7	11.4	9.4	7.0	8.0	7.4		6.0	7.7	8.1	
5/2/97 - 5/8/97	8.1	11.8	9.8	7.4	8.3	7.5		6.0	8.2	8.6	
5/3/97 - 5/9/97	8.6	12.3	10.4	7.6	8.4	7.4		6.1	8.6	9.1	
5/4/97 - 5/10/97	9.1	13.0	11.0	7.8	8.4	7.4		6.2	9.0	9.7	
5/5/97 - 5/11/97	9.5	13.6	11.7	8.2	8.6	7.4		6.3	9.6	10.3	
5/6/97 - 5/12/97	9.9	14.2	12.4	8.5	8.9	7.5		6.4	9.9	10.9	
5/7/97 - 5/13/97	10.3	14.9	13.0	8.7	9.2	7.6		6.6	10.4	11.5	
5/8/97 - 5/14/97	10.4	15.3	13.4	8.9	9.2	7.6		6.6	10.8	12.0	
5/9/97 - 5/15/97	10.4	15.3	13.5	8.9	9.2	7.6		6.5	10.9	12.3	
5/10/97 - 5/16/97	10.4	15.5	13.8	9.0	9.4	7.7		6.5	11.1	12.6	
5/11/97 - 5/17/97	10.3	15.6	13.9	9.0	9.7	7.9		6.5	11.4	12.8	
5/12/97 - 5/18/97	10.2	15.6	14.0	9.0	10.0	8.0		6.5	11.4	12.9	

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
5/13/97 - 5/19/97	10.2	15.6	14.1	9.0	10.1	8.1		6.5	11.6	13.0	
5/14/97 - 5/20/97	9.7	15.1	13.7	9.0	10.1	8.3		6.4	11.5	12.6	
5/15/97 - 5/21/97	9.6	14.9	13.6	9.1	10.3	8.3		6.4	11.5	12.5	
5/16/97 - 5/22/97	9.6	14.8	13.6	9.2	10.3	8.3		6.4	11.5	12.4	
5/17/97 - 5/23/97	9.3	14.3	13.1	9.1	10.3	8.4		6.4	11.3	12.0	
5/18/97 - 5/24/97	9.1	13.9	12.8	9.1	10.4	8.3		6.4	11.1	11.7	
5/19/97 - 5/25/97	8.7	13.3	12.2	9.3	10.1	8.3		6.2	10.8	11.2	
5/20/97 - 5/26/97	8.7	13.2	12.2	9.2	10.1	8.3		6.2	10.8	11.1	
5/21/97 - 5/27/97	9.0	13.4	12.4	9.5	10.2	8.2		6.3	10.9	11.3	
5/22/97 - 5/28/97	8.9	13.1	12.2	9.5	10.3	8.3		6.2	10.9	11.2	11.5
5/23/97 - 5/29/97	8.9	13.2	12.3	9.6	10.3	8.3		6.3	11.1	11.4	11.5
5/24/97 - 5/30/97	9.0	13.3	12.4	9.8	10.5	8.4		6.3	11.4	11.7	11.6
5/25/97 - 5/31/97	9.0	13.3	12.3	10.0	10.5	8.5		6.3	11.5	11.8	11.6
5/26/97 - 6/1/97	9.1	13.5	12.4	9.7	10.6	8.6		6.5	11.6	11.9	11.8
5/27/97 - 6/2/97	9.1	13.6	12.3	9.8	10.7	8.7		6.6	11.6	11.8	11.8
5/28/97 - 6/3/97	9.0	13.5	12.1	9.7	10.6	8.9		6.7	11.5	11.6	11.7
5/29/97 - 6/4/97	9.0	13.6	12.1	9.7	10.6	9.0		6.8	11.4	11.4	11.7
5/30/97 - 6/5/97	9.1	13.5	12.0	9.6	10.6	9.2		6.9	11.3	11.0	11.7
5/31/97 - 6/6/97	9.4	13.8	12.2	9.5	10.5	9.3		7.0	11.3	10.9	11.9
6/1/97 - 6/7/97	9.6	14.0	12.4	9.5	10.5	9.5		7.1	11.3	10.9	12.1
6/2/97 - 6/8/97	10.2	14.5	12.8	9.7	10.5	9.7		7.1	11.6	11.1	12.4
6/3/97 - 6/9/97	10.4	14.7	13.1	9.8	10.6	9.9		7.1	11.8	11.3	12.4
6/4/97 - 6/10/97	10.8	15.1	13.6	9.9	10.7	10.0		7.2	12.3	11.7	12.7
6/5/97 - 6/11/97	11.0	15.3	13.7	10.0	10.7	10.1		7.2	12.5	11.9	12.7
6/6/97 - 6/12/97	10.9	15.4	13.8	10.1	10.8	10.2		7.1	12.7	12.1	12.7
6/7/97 - 6/13/97	11.0	15.5	13.9	10.1	10.8	10.4		7.1	12.8	12.2	12.7
6/8/97 - 6/14/97	11.4	15.9	14.3	10.3	10.8	10.4		7.2	13.1	12.4	12.6
6/9/97 - 6/15/97	11.6	16.0	14.5	10.1	10.9	10.4		7.2	13.4	12.7	12.6
6/10/97 - 6/16/97	11.4	15.7	14.3	10.2	10.9	10.5		7.1	13.5	12.7	12.4

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
6/11/97 - 6/17/97	11.2	15.4	14.1	10.0	10.9	10.5		7.1	13.4	12.6	12.3
6/12/97 - 6/18/97	11.4	15.3	14.1	10.8	10.9	10.6		7.1	13.6	12.7	12.4
6/13/97 - 6/19/97	11.4	15.2	14.0	10.9	11.0	10.7		7.1	13.6	12.8	12.3
6/14/97 - 6/20/97	11.5	15.2	14.2	11.1	11.0	10.7		7.1	13.8	12.9	12.4
6/15/97 - 6/21/97	10.9	14.7	13.8	11.3	11.0	10.7		7.0	13.6	12.7	12.2
6/16/97 - 6/22/97	10.4	14.1	13.1	11.5	11.0	10.7		6.9	13.0	12.2	11.9
6/17/97 - 6/23/97	10.2	13.7	12.8	11.5	11.0	10.8		6.9	12.6	11.9	11.8
6/18/97 - 6/24/97	10.4	13.9	13.0	11.8	11.1	10.8		7.0	12.6	11.9	11.9
6/19/97 - 6/25/97	10.6	14.1	13.2	11.0	11.2	10.9		7.2	12.5	11.9	12.0
6/20/97 - 6/26/97	10.7	14.1	13.3	11.1	11.2	10.9		7.2	12.6	11.8	12.0
6/21/97 - 6/27/97	10.7	14.0	13.1	11.1	11.2	10.9		7.2	12.5	11.7	12.0
6/22/97 - 6/28/97	10.9	14.1	13.2	10.7	11.2	10.9		7.3	12.5	11.7	12.0
6/23/97 - 6/29/97	11.3	14.6	13.6	10.6	11.2	11.0		7.4	13.0	12.1	12.3
6/24/97 - 6/30/97	11.3	14.8	13.7	10.7	11.2	11.0		7.4	13.1	12.1	12.3
6/25/97 - 7/1/97	11.1	14.5	13.5	11.0	11.3	11.0		7.3	12.9	12.0	12.1
6/26/97 - 7/2/97	11.2	14.6	13.7	11.7	11.2	11.1		7.3	13.1	12.2	12.2
6/27/97 - 7/3/97	11.5	15.1	14.2	11.7	11.3	11.1		7.5	13.5	12.6	12.5
6/28/97 - 7/4/97	11.8	15.4	14.2	11.9	11.4	11.1		7.6	14.0	13.1	12.7
6/29/97 - 7/5/97	12.0	15.9	14.4	12.0	11.5	11.2		7.7	14.6	13.7	13.0
6/30/97 - 7/6/97	12.2	15.9	14.5	12.5	11.7	11.2		7.7	14.8	14.0	13.0
7/1/97 - 7/7/97	12.7	16.3	15.0	13.1	11.7	11.2		7.9	15.4	14.5	13.2
7/2/97 - 7/8/97	12.7	16.4	15.2	12.8	11.8	11.2		7.9	15.7	14.7	13.2
7/3/97 - 7/9/97	12.6	16.0	14.8	12.1	11.9	11.3		7.8	15.4	14.6	13.1
7/4/97 - 7/10/97	12.2	15.5	14.2	12.1	11.8	11.3		7.7	14.9	14.1	12.8
7/5/97 - 7/11/97	11.8	15.1	14.1	12.6	11.9	11.4		7.7	14.2	13.6	12.5
7/6/97 - 7/12/97	11.8	15.0	14.0	12.6	11.9	11.4		7.7	13.8	13.2	12.4
7/7/97 - 7/13/97	11.9	15.1	14.1	13.3	11.9	11.5		7.8	13.6	13.2	12.4
7/8/97 - 7/14/97	12.0	15.2	14.1	13.6	12.0	11.6		7.8	13.4	13.1	12.4
7/9/97 - 7/15/97	12.6	15.6	14.4	13.8	12.1	11.6		7.9	13.4	13.3	12.6

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
7/10/97 - 7/16/97	12.9	16.2	14.9	14.3	12.1	11.6		8.0	13.8	13.7	12.8
7/11/97 - 7/17/97	13.4	16.6	15.2	14.1	12.2	11.7		8.0	14.2	14.1	13.1
7/12/97 - 7/18/97	13.8	16.9	15.5	13.5	12.3	11.8		8.1	14.7	14.6	13.3
7/13/97 - 7/19/97	14.1	17.1	15.8	13.4	12.4	11.8		8.1	15.1	15.0	13.4
7/14/97 - 7/20/97	14.3	17.3	16.1	12.7	12.3	11.8		8.0	15.6	15.4	13.6
7/15/97 - 7/21/97	14.2	17.2	15.9	11.7	12.5	11.9		8.0	15.7	15.4	13.5
7/16/97 - 7/22/97	14.1	17.2	16.0	12.2	12.6	11.9		7.9	15.8	15.4	13.5
7/17/97 - 7/23/97	14.1	17.1	15.9	12.1	12.6	11.9		7.9	16.0	15.6	13.5
7/18/97 - 7/24/97	14.3	17.4	16.1	12.9	12.6	12.0		8.0	16.2	15.8	13.6
7/19/97 - 7/25/97	14.2	17.4	16.0	12.9	12.6	12.0		8.0	16.4	15.9	13.6
7/20/97 - 7/26/97	14.2	17.3	15.9	13.5	12.6	12.1		8.0	16.4	15.9	13.5
7/21/97 - 7/27/97	14.0	17.2	15.8	13.7	12.7	12.1		8.0	16.4	15.9	13.4
7/22/97 - 7/28/97	14.3	17.6	16.1	14.2	12.5	12.1		8.1	16.8	16.3	13.7
7/23/97 - 7/29/97	14.5	17.7	16.1	13.6	12.5	12.2		8.2	17.2	16.7	13.8
7/24/97 - 7/30/97	14.5	17.8	16.2	14.2	12.4	12.2		8.1	17.4	16.8	13.8
7/25/97 - 7/31/97	14.4	17.8	16.4	13.9	12.4	12.2		8.1	17.5	16.9	13.7
7/26/97 - 8/1/97	14.5	17.9	16.6	14.0	12.3	12.2		8.2	17.6	17.1	13.8
7/27/97 - 8/2/97	14.4	17.9	16.7	13.5	12.3	12.2		8.2	17.8	17.2	13.8
7/28/97 - 8/3/97	14.4	18.0	16.7	13.5	12.3	12.3		8.2	17.9	17.4	13.9
7/29/97 - 8/4/97	14.5	18.0	16.9	14.3	12.4	12.3		8.2	18.1	17.5	13.9
7/30/97 - 8/5/97	14.5	18.2	17.2	15.4	12.5	12.3		8.2	18.3	17.7	14.0
7/31/97 - 8/6/97	14.7	18.3	17.5	15.0	12.7	12.3		8.2	18.5	18.0	14.1
8/1/97 - 8/7/97	14.7	18.4	17.6	14.7	12.9	12.3		8.2	18.7	18.1	14.1
8/2/97 - 8/8/97	14.7	18.3	17.5	15.0	13.1	12.3		8.2	18.7	18.2	14.1
8/3/97 - 8/9/97	14.7	18.3	17.4	15.7	13.3	12.4		8.2	18.7	18.2	14.1
8/4/97 - 8/10/97	14.6	18.3	17.3	15.4	13.2	12.4		8.2	18.7	18.2	14.0
8/5/97 - 8/11/97	14.5	18.2	17.2	14.9	13.2	12.4		8.2	18.6	18.2	14.0
8/6/97 - 8/12/97	14.4	18.2	17.2	15.2	13.1	12.4		8.2	18.6	18.2	13.9
8/7/97 - 8/13/97	14.3	18.0	16.9	14.8	13.1	12.5		8.1	18.4	18.1	13.8

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
8/8/97 - 8/14/97	14.4	18.1	16.8	15.8	13.0	12.5		8.2	18.5	18.2	13.9
8/9/97 - 8/15/97	14.2	17.9	16.7	16.2	13.0	12.5		8.1	18.4	18.2	13.8
8/10/97 - 8/16/97	14.2	17.9	16.9	16.2	13.0	12.5		8.1	18.4	18.2	13.8
8/11/97 - 8/17/97	14.3	17.9	17.2	16.0	12.7	12.5		8.1	18.5	18.3	13.8
8/12/97 - 8/18/97	14.2	17.6	16.9	16.4	12.7	12.5		8.0	18.2	18.0	13.6
8/13/97 - 8/19/97	14.1	17.4	16.7	15.2	13.0	12.6		8.0	18.0	17.9	13.5
8/14/97 - 8/20/97	13.7	16.9	16.3	15.7	13.1	12.6		7.9	17.6	17.4	13.3
8/15/97 - 8/21/97	13.4	16.6	16.1	15.2	13.1	12.6		7.8	17.3	17.1	13.2
8/16/97 - 8/22/97	13.5	16.7	16.3	14.6	13.3	12.6		7.9	17.4	17.2	13.3
8/17/97 - 8/23/97	13.5	16.4	16.0	13.9	13.4	12.6		7.8	17.2	17.0	13.1
8/18/97 - 8/24/97	13.0	15.8	15.4	14.5	13.8	12.6		7.7	16.7	16.5	12.9
8/19/97 - 8/25/97	12.8	15.7	15.4	13.7	13.9	12.6		7.7	16.6	16.5	13.0
8/20/97 - 8/26/97	12.3	15.2	14.9	13.6	13.7	12.6		7.6	16.1	16.0	12.8
8/21/97 - 8/27/97	12.4	15.2	14.9	13.5	13.8	12.6		7.6	16.1	16.1	12.8
8/22/97 - 8/28/97	12.2	14.8	14.6	13.0	13.9	12.6		7.5	15.8	15.8	12.6
8/23/97 - 8/29/97	12.1	14.6	14.3	13.4	13.5	12.7		7.5	15.6	15.6	12.5
8/24/97 - 8/30/97	12.1	14.6	14.2	13.9	13.4	12.7		7.5	15.5	15.6	12.5
8/25/97 - 8/31/97	12.3	14.9	14.5	14.2	13.4	12.7		7.6	15.7	15.8	12.6
8/26/97 - 9/1/97	12.6	15.0	14.6	15.0	13.4	12.8		7.6	15.8	15.9	12.6
8/27/97 - 9/2/97	13.0	15.5	15.0	15.1	13.4	12.8		7.7	16.1	16.2	12.8
8/28/97 - 9/3/97	13.3	15.7	15.3	15.6	13.4	12.8		7.7	16.3	16.4	12.9
8/29/97 - 9/4/97	13.5	16.1	15.5	16.5	13.4	12.9		7.8	16.6	16.7	13.0
8/30/97 - 9/5/97	13.4	16.1	15.4	16.9	13.6	12.9		7.7	16.5	16.6	12.8
8/31/97 - 9/6/97	13.3	16.0	15.4	16.6	13.7	13.0		7.7	16.4	16.6	12.8
9/1/97 - 9/7/97	13.2	15.9	15.3	16.7	13.9	13.1		7.6	16.3	16.5	12.7
9/2/97 - 9/8/97	13.0	15.9	15.2	16.0	14.3	13.1		7.6	16.2	16.5	12.7
9/3/97 - 9/9/97	12.7	15.7	15.1	15.9	14.5	13.2		7.6	16.0	16.4	12.7
9/4/97 - 9/10/97	12.7	15.3	14.9	15.4	14.6	13.3		7.5	15.8	16.2	12.6
9/5/97 - 9/11/97	12.5	14.9	14.6	14.8	14.7	13.3		7.4	15.5	16.0	12.4

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
9/6/97 - 9/12/97	12.2	14.7	14.5	14.5	14.8	13.3		7.3	15.3	15.8	12.4
9/7/97 - 9/13/97	12.0	14.4	14.3	14.8	14.9	13.4		7.3	15.0	15.7	12.3
9/8/97 - 9/14/97	11.8	14.0	14.1	14.3	15.0	13.4		7.2	14.8	15.4	12.3
9/9/97 - 9/15/97	11.4	13.5	13.7	14.3	14.8	13.5		7.2	14.5	15.0	12.0
9/10/97 - 9/16/97	11.1	13.1	13.2	14.3	14.8	13.6		7.5	13.9	14.3	11.9
9/11/97 - 9/17/97	10.8	12.9	12.9	14.2	14.7	13.6		7.9	13.5	13.7	11.8
9/12/97 - 9/18/97	10.7	12.8	12.8	13.9	14.7	13.8		8.2	12.9	13.0	11.9
9/13/97 - 9/19/97	10.8	12.9	12.7	13.7	14.7	13.9		8.4	12.5	12.5	12.0
9/14/97 - 9/20/97	10.9	13.1	12.6	13.3	14.9	14.1		8.5	12.2	12.0	12.1
9/15/97 - 9/21/97	10.9	13.3	12.4	13.0	14.8	14.2		8.5	11.9	11.7	12.2
9/16/97 - 9/22/97	11.1	13.6	12.5	12.9	14.9	14.4		8.6	11.8	11.6	12.3
9/17/97 - 9/23/97	11.3	13.9	12.7	13.0	14.9	14.6		8.3	12.0	11.8	12.5
9/18/97 - 9/24/97	11.5	14.3	12.9	12.9	14.9	14.7		8.0	12.3	12.1	12.7
9/19/97 - 9/25/97	11.4	14.4	13.0	12.8	15.1	14.8		7.7	12.6	12.5	12.7
9/20/97 - 9/26/97	11.4	14.3	13.0	12.7	15.0	15.0		7.5	12.9	12.8	12.7
9/21/97 - 9/27/97	11.2	14.0	12.9	12.6	14.8	15.0		7.4	13.0	12.8	12.7
9/22/97 - 9/28/97	11.2	13.9	12.9	12.7	14.4	15.1		7.3	12.9	12.8	12.6
9/23/97 - 9/29/97	11.1	13.9	12.8	12.9	14.4	15.1		7.3	12.8	12.9	12.6
9/24/97 - 9/30/97	10.9	13.5	12.6	12.9	14.3	15.2		7.2	12.6	12.7	12.4
9/25/97 - 10/1/97	10.7	13.1	12.4	13.2	14.4	15.3		7.2	12.3	12.4	12.2
9/26/97 - 10/2/97	10.5	12.8	12.1	13.5	14.3	15.4		7.2	11.9	12.0	12.0
9/27/97 - 10/3/97	10.4	12.7	11.9	13.8	14.3	15.5		7.5	11.5	11.6	11.9
9/28/97 - 10/4/97	10.3	12.6	11.7	13.6	14.2	15.6		7.7	11.2	11.4	11.8
9/29/97 - 10/5/97	10.0	12.4	11.4	13.8	14.6	15.7		7.8	10.9	11.0	11.8
9/30/97 - 10/6/97	9.6	12.3	11.4	13.7	14.5	15.8		7.8	10.4	10.5	11.6
10/1/97 - 10/7/97	9.2	12.6	11.6	13.7	14.3	15.8		7.8	10.0	10.0	11.5
10/2/97 - 10/8/97	8.9	12.8	11.8	13.6	14.2	15.8		7.8	9.5	9.5	11.3
10/3/97 - 10/9/97	8.5	13.0	12.1	13.4	14.0	15.7		7.7	9.1	9.2	11.1
10/4/97 - 10/10/97	8.1	12.8	11.9	13.2	13.9	15.6		7.5	8.8	8.9	11.0

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
10/5/97 - 10/11/97	7.9	12.8	11.8	13.5	13.8	15.4		7.3	8.5	8.6	10.9
10/6/97 - 10/12/97	7.6	12.5	11.8	13.2	13.6	15.3		7.1	8.4	8.5	10.7
10/7/97 - 10/13/97	7.7	12.2	11.4	13.0	13.4	15.1		7.0	8.4	8.5	10.7
10/8/97 - 10/14/97	7.9	11.9	10.9	12.8	13.3	14.8		7.0	8.4	8.6	10.7
10/9/97 - 10/15/97	8.2	11.6	10.6	12.7	13.1	14.6		7.1	8.6	8.8	10.9
10/10/97 - 10/16/97	8.4	11.4	10.2	12.6	13.1	14.4		7.1	8.7	9.0	10.9
10/11/97 - 10/17/97	8.6	11.4	10.4	12.5	13.0	14.3		7.1	8.9	9.4	11.1
10/12/97 - 10/18/97	8.7	11.4	10.5	12.5	12.9			7.1	9.0	9.5	11.1
10/13/97 - 10/19/97	8.8	11.4	10.6	12.5	12.9			7.2	9.1	9.5	11.1
10/14/97 - 10/20/97	8.6	11.3	10.6	12.5	12.9			7.2	9.0	9.5	10.9
10/15/97 - 10/21/97	8.4	11.1	10.6	12.4	12.8			7.2	8.9	9.4	10.8
10/16/97 - 10/22/97	8.1	10.7	10.5	12.3	12.7			7.2	8.7	9.2	10.6
10/17/97 - 10/23/97	7.8	10.4	10.4	12.1	12.6			7.2	8.5	9.0	10.4
10/18/97 - 10/24/97	7.5	10.2	10.3	11.9	12.4			7.2	8.2	8.7	10.2
10/19/97 - 10/25/97	7.3	10.1	10.2	11.7	12.3			7.3	7.9	8.5	10.0
10/20/97 - 10/26/97	7.1	9.8	10.1	11.6	12.2			7.3	7.8	8.5	10.0
10/21/97 - 10/27/97	7.2	9.8	10.2	11.4	12.1			7.3	7.8	8.5	10.0
10/22/97 - 10/28/97	7.2	9.7	10.2	11.2	11.9			7.4	7.8	8.4	10.0
10/23/97 - 10/29/97	7.3	9.8	10.1	11.0	11.8			7.5	7.9	8.4	10.0
10/24/97 - 10/30/97	7.5	10.0	10.0	10.9	11.7			7.7	8.0	8.6	10.1
10/25/97 - 10/31/97	7.6	10.1	9.9	10.8	11.6			7.9	8.2	8.7	10.3
10/26/97 - 11/1/97	7.7	10.2	9.7	10.6	11.5			7.9	8.3	8.7	10.4
10/27/97 - 11/2/97	7.9	10.3	9.6	10.5	11.4			8.0	8.4	8.8	10.4
10/28/97 - 11/3/97	7.8	10.1	9.4	10.4	11.3			8.0	8.5	8.8	10.4
10/29/97 - 11/4/97	7.9	10.3	9.3	10.3	11.2	12.7		8.0	8.7	9.0	10.6
10/30/97 - 11/5/97	8.1	10.4	9.4	10.2	11.2	12.6		8.0	8.8	9.2	10.7
10/31/97 - 11/6/97	8.0	10.4	9.4	10.2	11.1	12.5		7.8	8.8	9.2	10.6
11/1/97 - 11/7/97	8.1	10.3	9.5	10.1	11.1	12.3		7.8	8.9	9.2	10.6
11/2/97 - 11/8/97	8.1	10.2	9.7	10.1	11.0	12.2		7.8	8.9	9.2	10.5

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
11/3/97 - 11/9/97	8.1	10.2	9.6	10.0	10.9	12.3		7.8	8.9	9.2	10.4
11/4/97 - 11/10/97	8.0	10.2	9.6	9.9	10.8	12.3		7.8	8.7	9.1	10.4
11/5/97 - 11/11/97	7.7	9.9	9.4	9.9	10.8	12.3		7.8	8.5	8.8	10.2
11/6/97 - 11/12/97	7.2	9.5	9.2	9.8	10.6	12.3		7.7	8.1	8.4	9.9
11/7/97 - 11/13/97	6.8	9.2	8.9	9.6	10.5	12.2		7.7	7.7	8.1	9.7
11/8/97 - 11/14/97	6.4	9.0	8.8	9.5	10.4	12.2		7.7	7.4	7.8	9.6
11/9/97 - 11/15/97	6.0	8.7	8.5	9.4	10.3	12.0		7.7	7.1	7.6	9.5
11/10/97 - 11/16/97	5.7	8.4	8.5	9.2	10.1	11.8		7.6	6.9	7.4	9.4
11/11/97 - 11/17/97	5.6	8.3	8.5	9.1	10.0	11.6		7.6	6.8	7.3	9.4
11/12/97 - 11/18/97	5.5	8.3	8.4	8.9	9.8	11.4		7.6	6.7	7.2	9.4
11/13/97 - 11/19/97	5.6	8.2	8.4	8.8	9.7	11.3		7.6	6.8	7.2	9.5
11/14/97 - 11/20/97	5.7	8.3	8.4	8.6	9.5	11.2		7.6	6.9	7.3	9.6
11/15/97 - 11/21/97	5.8	8.3	8.3	8.5	9.4	11.0		7.7	6.9	7.3	9.6
11/16/97 - 11/22/97	5.9	8.3	8.3	8.3	9.2	11.0		7.6	7.1	7.4	9.6
11/17/97 - 11/23/97	6.1	8.4	8.3	8.2	9.1	10.9		7.7	7.2	7.5	9.7
11/18/97 - 11/24/97	6.1	8.5	8.2	8.0	9.0	10.8		7.7	7.3	7.6	9.7
11/19/97 - 11/25/97	6.1	8.5	8.1	7.9	8.9	10.7		7.7	7.3	7.6	9.7
11/20/97 - 11/26/97	6.1	8.5	8.0	7.8	8.7	10.6		7.7	7.3	7.6	9.7
11/21/97 - 11/27/97	6.1	8.4	7.9	7.7	8.7	10.5		7.6	7.2	7.5	9.6
11/22/97 - 11/28/97	6.1	8.3	7.9	7.6	8.6	10.3		7.6	7.2	7.5	9.6
11/23/97 - 11/29/97	6.2	8.4	7.9	7.5	8.5	10.1		7.6	7.3	7.6	9.6
11/24/97 - 11/30/97	6.1	8.4	7.8	7.5	8.4	9.9		7.6	7.2	7.5	9.5
11/25/97 - 12/1/97	6.0	8.3	7.8	7.4	8.4	9.7		7.6	7.1	7.3	9.4
11/26/97 - 12/2/97	5.9	8.1	7.7	7.3	8.3	9.7		7.5	6.9	7.1	9.3
11/27/97 - 12/3/97	5.8	8.0	7.5	7.2	8.2	9.6		7.5	6.7	7.0	9.3
11/28/97 - 12/4/97	5.7	7.8	7.5	7.1	8.1	9.6		7.4	6.6	6.9	9.2
11/29/97 - 12/5/97	5.4	7.6	7.3	7.0	7.9	9.5		7.4	6.3	6.6	9.1
11/30/97 - 12/6/97	5.1	7.3	7.0	6.9	7.8	9.5		7.3	5.9	6.2	8.9
12/1/97 - 12/7/97	4.8	6.9	6.9	6.8	7.7	9.5		7.3	5.6	5.9	8.7

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
12/2/97 - 12/8/97	4.7	6.8	6.8	6.7	7.6	9.5		7.2	5.4	5.8	8.7
12/3/97 - 12/9/97	4.6	6.7	6.8	6.6	7.5	9.3		7.2	5.3	5.6	8.7
12/4/97 - 12/10/97	4.5	6.8	6.8	6.5	7.4	9.2		7.2	5.3	5.5	8.6
12/5/97 - 12/11/97	4.4	6.8	6.7	6.4	7.3	9.0		7.2	5.2	5.4	8.6
12/6/97 - 12/12/97	4.4	6.8	6.7	6.3	7.1	8.8		7.2	5.1	5.3	8.5
12/7/97 - 12/13/97	4.4	6.7	6.6	6.2	7.0	8.7		7.1	5.1	5.3	8.5
12/8/97 - 12/14/97	4.3	6.8	6.6	6.1	7.0	8.6		7.1	5.1	5.4	8.5
12/9/97 - 12/15/97	4.3	6.7	6.5	6.1	6.9	8.5		7.1	5.2	5.4	8.5
12/10/97 - 12/16/97	4.3	6.8	6.6	6.0	6.8	8.3		7.2	5.4	5.7	8.6
12/11/97 - 12/17/97	4.3	6.7	6.6	6.0	6.7	8.2		7.2	5.6	5.8	8.6
12/12/97 - 12/18/97	4.4	6.8	6.6	6.0	6.7	8.2		7.2	5.7	5.9	8.7
12/13/97 - 12/19/97	4.5	6.9	6.7	5.9	6.6	8.1		7.2	5.8	6.1	8.7
12/14/97 - 12/20/97	4.5	7.0	6.7	5.9	6.5	7.9		7.1	5.9	6.2	8.7
12/15/97 - 12/21/97	4.6	7.1	6.7	5.9	6.5	7.7		7.1	5.9	6.2	8.7
12/16/97 - 12/22/97	4.5	7.1	6.6	5.8	6.4	7.6		7.1	5.8	6.1	8.7
12/17/97 - 12/23/97	4.3	6.9	6.4	5.7	6.4	7.5		7.0	5.4	5.7	8.4
12/18/97 - 12/24/97	4.2	6.8	6.2	5.6	6.3	7.4		6.9	5.1	5.4	8.3
12/19/97 - 12/25/97	4.0	6.6	6.1	5.5	6.2	7.3		6.9	4.9	5.2	8.2
12/20/97 - 12/26/97	3.9	6.4	6.0	5.5	6.2	7.2		6.9	4.6	5.0	8.1
12/21/97 - 12/27/97	3.9	6.4	6.0	5.4	6.1	7.1		6.9	4.5	4.9	8.1
12/22/97 - 12/28/97	3.9	6.5	6.0	5.4	6.1	7.0		6.9	4.4	4.8	8.1
12/23/97 - 12/29/97	4.0	6.6	6.1	5.4	6.0	7.0		7.0	4.6	5.0	8.3
12/24/97 - 12/30/97	4.1	6.8	6.2	5.4	6.0	6.9		7.0	4.8	5.1	8.4
12/25/97 - 12/31/97	4.1	6.8	6.2	5.3	6.0	6.9		6.9	5.0	5.2	8.4
12/26/97 - 1/1/98	4.4	6.9	6.4	5.3	6.0	6.8		7.0	5.3	5.5	8.5
12/27/97 - 1/2/98	4.5	7.1	6.5	5.4	6.0	6.8		6.9	5.5	5.6	8.5
12/28/97 - 1/3/98	4.4	7.0	6.4	5.4	5.9	6.8		6.8	5.5	5.6	8.5
12/29/97 - 1/4/98	4.2	6.9	6.3	5.3	5.9	6.8		6.7	5.5	5.4	8.4
12/30/97 - 1/5/98	4.0	6.7	6.2	5.3	5.9	6.7		6.6	5.3	5.3	8.3

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
12/31/97 - 1/6/98	3.9	6.6	6.1	5.3	5.8	6.7		6.6	5.3	5.3	8.3
1/1/98 - 1/7/98	3.9	6.6	6.1	5.3	5.7	6.7		6.6	5.3	5.3	8.3
1/2/98 - 1/8/98	3.9	6.6	6.0	5.2	5.6	6.6		6.6	5.2	5.2	8.2
1/3/98 - 1/9/98	3.8	6.4	5.9	5.1	5.6	6.6		6.5	5.0	5.1	8.1
1/4/98 - 1/10/98	3.8	6.4	5.9	5.0	5.6	6.6		6.6	5.1	5.2	8.1
1/5/98 - 1/11/98	3.7	6.2	5.7	4.9	5.5	6.5		6.5	4.9	5.1	7.9
1/6/98 - 1/12/98	3.4	5.8	5.4	4.8	5.4	6.4		6.4	4.5	4.6	7.5
1/7/98 - 1/13/98	3.2	5.4	5.0	4.7	5.4	6.3		6.4	4.1	4.2	7.3
1/8/98 - 1/14/98	3.0	5.1	4.8	4.5	5.3	6.2		6.3	4.0	4.1	7.2
1/9/98 - 1/15/98	2.9	4.9	4.8	4.4	5.2	6.2		6.2	3.9	4.0	7.1
1/10/98 - 1/16/98	3.0	4.9	4.8	4.4	5.1	6.1		6.2	4.0	4.1	7.2
1/11/98 - 1/17/98	3.0	4.9	4.8	4.4	5.0	6.0		6.2	4.1	4.2	7.2
1/12/98 - 1/18/98	3.3	5.2	5.0	4.4	5.0	5.9		6.3	4.5	4.5	7.4
1/13/98 - 1/19/98	3.7	5.6	5.4	4.5	4.9	5.8		6.4	5.0	5.0	7.8
1/14/98 - 1/20/98	4.1	6.0	5.7	4.5	4.9	5.8		6.4	5.5	5.4	8.0
1/15/98 - 1/21/98	4.4	6.3	5.9	4.5	4.9	5.7		6.5	5.6	5.5	8.0
1/16/98 - 1/22/98	4.5	6.4	6.0	4.5	5.0	5.7		6.5	5.7	5.6	8.1
1/17/98 - 1/23/98	4.6	6.5	6.1	4.5	5.0	5.6		6.5	5.8	5.7	8.2
1/18/98 - 1/24/98	4.6	6.6	6.2	4.4	5.0	5.6		6.6	5.9	5.8	8.2
1/19/98 - 1/25/98	4.6	6.7	6.3	4.3	5.0	5.6		6.6	5.9	5.9	8.3
1/20/98 - 1/26/98	4.8	6.8	6.4	4.2	5.0	5.6		6.6	6.0	6.0	8.4
1/21/98 - 1/27/98	4.8	7.0	6.5	4.2	5.1	5.6		6.6	6.1	6.1	8.5
1/22/98 - 1/28/98	5.0	7.1	6.6	4.3	5.1	5.6		6.6	6.2	6.3	8.7
1/23/98 - 1/29/98	5.1	7.3	6.7	4.3	5.2	5.6		6.6	6.3	6.4	8.8
1/24/98 - 1/30/98	5.2	7.4	6.8	4.3	5.2	5.6		6.6	6.3	6.4	8.8
1/25/98 - 1/31/98	5.3	7.6	6.8	4.3	5.2	5.6		6.6	6.3	6.4	8.8
1/26/98 - 2/1/98	5.3	7.5	6.7	4.3	5.2	5.6		6.5	6.2	6.3	8.8
1/27/98 - 2/2/98	5.3	7.5	6.7	4.4	5.3	5.6		6.4	6.2	6.3	8.8
1/28/98 - 2/3/98	5.3	7.5	6.7	4.4	5.3	5.6		6.4	6.1	6.3	8.8

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
1/29/98 - 2/4/98	5.4	7.6	6.7	4.5	5.2	5.6		6.3	6.1	6.3	8.8
1/30/98 - 2/5/98	5.4	7.7	6.8	4.5	5.2	5.6		6.3	6.1	6.3	8.9
1/31/98 - 2/6/98	5.5	7.7	6.9	4.7	5.2	5.6		6.2	6.2	6.3	8.9
2/1/98 - 2/7/98	5.5	7.7	6.9	4.7	5.3	5.6		6.2	6.2	6.4	9.0
2/2/98 - 2/8/98	5.6	7.8	7.0	4.8	5.3	5.7		6.1	6.3	6.5	9.0
2/3/98 - 2/9/98	5.6	7.9	7.1	4.8	5.3	5.7		6.1	6.3	6.4	9.1
2/4/98 - 2/10/98	5.5	7.8	7.0	4.8	5.3	5.7		6.0	6.2	6.3	9.1
2/5/98 - 2/11/98	5.3	7.7	7.0	4.8	5.3	5.7		6.0	6.1	6.1	9.0
2/6/98 - 2/12/98	5.2	7.6	6.9	4.8	5.3	5.6		6.0	6.1	6.1	9.0
2/7/98 - 2/13/98	5.1	7.5	6.8	4.7	5.3	5.6		6.0	5.9	5.9	8.9
2/8/98 - 2/14/98	5.1	7.4	6.7	4.7	5.3	5.6		5.9	5.8	5.8	8.9
2/9/98 - 2/15/98	5.1	7.4	6.7	4.8	5.3	5.6		5.9	5.8	5.8	8.9
2/10/98 - 2/16/98	5.1	7.4	6.6	4.9	5.4	5.6		5.9	5.8	5.8	8.9
2/11/98 - 2/17/98	5.3	7.5	6.7	5.0	5.4	5.7		6.0	5.9	5.9	9.0
2/12/98 - 2/18/98	5.4	7.5	6.7	5.0	5.4	5.7		6.0	5.9	6.0	9.0
2/13/98 - 2/19/98	5.5	7.7	6.8	5.0	5.5	5.7		6.0	6.0	6.1	9.0
2/14/98 - 2/20/98	5.6	7.7	6.9	5.0	5.5	5.7		6.0	6.1	6.2	9.0
2/15/98 - 2/21/98	5.4	7.7	6.8	5.0	5.5	5.7		5.9	6.1	6.1	9.0
2/16/98 - 2/22/98	5.3	7.6	6.8	4.9	5.5	5.7		6.0	6.0	6.1	9.0
2/17/98 - 2/23/98	5.3		6.7	4.8					6.0	6.1	
2/18/98 - 2/24/98	5.3		6.6						5.8	6.0	
2/19/98 - 2/25/98	5.3		6.6						5.7	5.8	
2/20/98 - 2/26/98	5.2		6.4						5.5	5.7	
2/21/98 - 2/27/98	5.2		6.3						5.2	5.6	
2/22/98 - 2/28/98	5.2		6.3						5.2	5.5	
2/23/98 - 3/1/98	5.3		6.3						5.2	5.5	
2/24/98 - 3/2/98	5.3		6.3						5.3	5.4	
2/25/98 - 3/3/98	5.3		6.2						5.3	5.4	
2/26/98 - 3/4/98	5.3		6.3						5.4	5.4	

Appendix 2.1-4. 7-Day maximum temperatures at PacifiCorp monitoring stations, April 1996 through February 1998 (continued).

Time Period	SWRES	SW2BU	SW2BL	SW2TR	YALTR	MERTR	OLECM	COUGM	SIOUX	SPELU	SPELL
2/27/98 - 3/5/98	5.3		6.3						5.4	5.4	
2/28/98 - 3/6/98	5.2		6.3						5.4	5.4	
3/1/98 - 3/7/98	5.4		6.4						5.4	5.5	
3/2/98 - 3/8/98	5.2		6.4						5.4	5.5	
3/3/98 - 3/9/98	5.2		6.3						5.3	5.4	
3/4/98 - 3/10/98	5.2		6.4						5.4	5.5	
3/5/98 - 3/11/98	5.5		6.6						5.6	5.8	
3/6/98 - 3/12/98	5.8		6.8						5.9	6.1	
1996 Maximum	16.2	18.5	17.7	15.8	19.3	15.2	15.2	8.1	19.9	6.2	8.5
1997 Maximum	14.7	18.4	17.6	16.9	15.1	15.8	n/a	8.6	18.7	18.3	14.1

Appendix 2.2-1

Yale Laboratory Data

Appendix 2.2-1. Yale Laboratory Data. ND = No data collected.

Date	Site	Time	NH3 (mg/l as N)	NO3/NO2 (mg/l as N)	Turbidity (NTUs)	Alkalinity (mg/l CaCO3)	Total P (mg/l as P)	Ortho P (mg/l as P)	E. Coli (mpn/100 ml)	Fecal Col. (mpn/100 ml)	TPN (mg/l as N)
28-Mar-96	COUGM	14:30	0.06	0.04	0.4	11	<0.01	0.01	<2	ND	ND
29-Apr-96	COUGM	16:40	<0.01	0.16	0.5	8	<0.01	0.01	ND	<2	<0.20
21-May-96	COUGM	13:30	<0.01	0.06	<0.20	13	0.02	<0.01	ND	8	<0.20
24-Jun-96	COUGM	13:00	<0.01	0.04	0.2	12	0.01	0.01	ND	7	<0.20
22-Jul-96	COUGM	13:25	0.03	0.03	2.6	25	0.04	<0.01	ND	7	<0.20
26-Aug-96	COUGM	14:30	<0.01	0.02	0.2	14	0.02	0.01	ND	4	<0.20
24-Sep-96	COUGM	13:56	<0.01	0.07	0.35	15	0.02	<0.01	ND	<2	<0.20
22-Oct-96	COUGM	13:00	0.03	0.27	0.5	13	0.02	0.04	ND	17	<0.20
26-Nov-96	COUGM	9:10	<0.01	0.14	0.25	11	0.03	0.01	2	ND	<0.2
18-Dec-96	COUGM	13:50	<0.01	0.08	1.7	9	0.02	<0.01	ND	2	<0.2
16-Jan-97	COUGM	10:40	0.04	0.05	0.3	9	<0.01	0.01	ND	<2	<0.2
24-Feb-97	COUGM	14:15	<0.01	0.03	0.3	9	0.03	0.01	ND	<2	<0.2
19-Mar-97	COUGM	12:30	<0.01	0.07	3.8	8	0.02	0.02	ND	<2	<0.2
22-Apr-97	COUGM	12:25	<0.01	0.07	0.43	9	0.01	<0.01	ND	<2	<0.2
21-May-97	COUGM	13:15	<0.01	0.03	<0.2	9	0.01	0.01	ND	<2	<0.2
19-Jun-97	COUGM	13:15	0.06	0.05	0.2	11	0.02	<0.01	ND	<2	<0.2
29-Jul-97	COUGM	13:40	<0.04	0.03	<0.2	13	0.01	<0.01	ND	ND	<0.2
27-Aug-97	COUGM	13:20	<0.01	0.04	8.1	19	0.03	<0.01	ND	2	<0.2
30-Sep-97	COUGM	12:15	0.03	0.1	<0.2	13	0.01	<0.01	ND	11	<0.2
27-Oct-97	COUGM	12:00	<0.01	0.21	0.5	11	0.02	<0.01	ND	ND	0.2
24-Nov-97	COUGM	13:00	0.02	0.13	0.85	10	<0.01	<0.01	ND	<2	<0.2
17-Dec-97	COUGM	13:30	0.05	0.15	0.85	10	0.02	<0.01	ND	<2	<0.2
20-Jan-98	COUGM	12:50	0.01	0.08	0.45	8	0.04	0.01	ND	<2	<0.2
23-Feb-98	COUGM	10:30	<0.01	0.09	<0.2	8	<0.01	0.01	ND	2	<0.2
28-Mar-96	MERTR	9:30	0.06	0.1	23	13	0.05	0.01	<2	ND	ND
29-Apr-96	MERTR	9:30	<0.01	0.17	18	13	0.02	0.01	ND	<2	0.24
21-May-96	MERTR	10:30	<0.01	0.06	12	15	0.02	0.03	ND	2	<0.20
24-Jun-96	MERTR	10:00	0.04	0.09	6.6	13	0.02	0.02	ND	<2	<0.20
22-Jul-96	MERTR	10:20	0.02	0.03	0.55	13	0.03	<0.01	ND	<2	<0.20
26-Aug-96	MERTR	16:48	0.02	<0.01	2	16	0.01	0.01	ND	<2	<0.20
24-Sep-96	MERTR	15:30	<0.01	0.02	1.7	15	<0.01	<0.01	ND	2	<0.20
22-Oct-96	MERTR	14:50	0.03	0.08	11	16	0.01	0.04	ND	<2	<0.20
26-Nov-96	MERTR	14:40	<0.01	0.08	5.2	17	0.02	0.02	<2	ND	<0.2
19-Dec-96	MERTR	16:30	<0.01	0.13	2.2	15	0.02	0.02	ND	2	<0.2
16-Jan-97	MERTR	11:50	0.07	0.12	7.5	13	0.03	0.04	ND	2	<0.2
24-Feb-97	MERTR	15:30	0.01	0.08	8.3	13	0.01	0.04	ND	<2	<0.2

Appendix 2.2-1. Yale Laboratory Data. ND = No data collected.

Date	Site	Time	NH3 (mg/l as N)	NO3/NO2 (mg/l as N)	Turbidity (NTUs)	Alkalinity (mg/l CaCO3)	Total P (mg/l as P)	Ortho P (mg/l as P)	E. Coli (mpn/100 ml)	Fecal Col. (mpn/100 ml)	TPN (mg/l as N)
19-Mar-97	MERTR	15:10	<0.01	0.11	6.8	12	0.02	0.04	ND	2	<0.2
22-Apr-97	MERTR	14:50	<0.01	0.07	8.9	13	0.02	0.03	ND	<2	<0.2
22-May-97	MERTR	9:40	<0.01	0.06	3.5	13	0.02	0.03	ND	2	<0.2
19-Jun-97	MERTR	16:00	0.04	0.03	3	14	0.01	<0.01	ND	2	<0.2
29-Jul-97	MERTR	15:45	<0.04	0.02	2.3	14	0.02	<0.01	ND	ND	<0.2
28-Aug-97	MERTR	11:00	<0.01	0.03	0.7	14	0.01	<0.01	ND	11	<0.2
30-Sep-97	MERTR	14:10	0.04	<0.01	0.8	15	<0.01	<0.01	ND	<2	0.2
27-Oct-97	MERTR	10:20	<0.01	0.21	1.8	15	<0.01	<0.01	ND	<2	0.2
24-Nov-97	MERTR	15:15	<0.01	0.07	1.3	15	<0.01	<0.01	ND	13	<0.2
17-Dec-97	MERTR	10:30	0.02	0.04	1.2	15	<0.01	0.01	ND	2	<0.2
20-Jan-98	MERTR	10:15	<0.01	0.1	2.5	14	0.04	0.02	ND	<2	<0.2
23-Feb-98	MERTR	13:15	<0.01	0.11	2	13	<0.01	0.01	ND	<2	<0.2
28-Mar-96	SIOUX	12:00	0.04	0.02	0.45	14	<0.01	<0.01	ND	ND	ND
29-Apr-96	SIOUX	14:00	<0.01	0.16	1.6	11	<0.01	0.02	ND	5	0.25
22-May-96	SIOUX	13:30	<0.01	0.02	1.6	12	0.02	<0.01	ND	8	0.21
25-Jun-96	SIOUX	15:10	<0.01	0.03	0.5	2	<0.01	0.03	ND	8	<0.20
23-Jul-96	SIOUX	14:00	0.02	0.04	0.5	20	0.03	<0.01	ND	13	<0.20
27-Aug-96	SIOUX	16:10	0.02	<0.01	<0.20	22	<0.01	<0.01	ND	<2	<0.20
25-Sep-96	SIOUX	13:45	<0.01	0.02	0.25	17	<0.01	0.01	ND	2	<0.20
21-Oct-96	SIOUX	14:00	0.02	0.14	0.6	16	0.02	0.04	ND	8	NM
25-Nov-96	SIOUX	12:30	0.02	0.05	2.4	9	0.02	0.01	ND	<2	<0.2
19-Dec-96	SIOUX	15:30	<0.01	0.05	0.6	13	0.02	<0.01	ND	2	<0.2
20-Mar-97	SIOUX	13:00	<0.01	0.02	3.9	7	<0.01	0.01	ND	<2	<0.2
23-Apr-97	SIOUX	11:45	<0.01	0.02	0.48	9	0.02	<0.01	ND	4	<0.2
22-May-97	SIOUX	13:00	<0.01	0.01	<0.2	13	0.02	<0.01	ND	2	<0.2
20-Jun-97	SIOUX	11:40	0.03	0.01	<0.2	15	0.01	<0.01	ND	8	<0.2
28-Jul-97	SIOUX	13:30	<0.04	0.01	<0.2	17	0.06	<0.01	ND	11	<0.2
28-Aug-97	SIOUX	14:15	<0.01	0.03	<0.2	24	<0.01	<0.01	ND	30	<0.2
29-Sep-97	SIOUX	12:20	<0.01	0.04	0.4	13	<0.01	<0.01	ND	<2	<0.2
28-Oct-97	SIOUX	13:10	<0.01	0.06	0.25	14	0.02	<0.01	ND	13	<0.2
25-Nov-97	SIOUX	14:30	<0.01	0.05	0.65	9	<0.01	<0.01	ND	6	<0.2
18-Dec-97	SIOUX	12:20	0.1	<0.01	0.35	9	0.06	<0.01	ND	8	<0.2
21-Jan-98	SIOUX	11:45	<0.01	0.07	0.8	9	0.05	0.02	ND	4	<0.2
24-Feb-98	SIOUX	10:50	<0.05	0.05	0.35	10	<0.01	<0.01	ND	<2	<0.2
28-Mar-96	SW2BP	13:45	0.04	0.05	1.7	22	0.01	0.01	<2	ND	ND
29-Apr-96	SW2BP	15:30	<0.01	0.17	1.6	15	<0.01	0.02	ND	<2	0.4

Appendix 2.2-1. Yale Laboratory Data. ND = No data collected.

Date	Site	Time	NH3 (mg/l as N)	NO3/NO2 (mg/l as N)	Turbidity (NTUs)	Alkalinity (mg/l CaCO3)	Total P (mg/l as P)	Ortho P (mg/l as P)	E. Coli (mpn/100 ml)	Fecal Col. (mpn/100 ml)	TPN (mg/l as N)
21-May-96	SW2BP	12:00	<0.01	0.07	0.7	18	0.02	<0.01	ND	8	0.2
24-Jun-96	SW2BP	11:40	<0.01	0.05	1.5	19	0.02	0.02	ND	11	<0.20
22-Jul-96	SW2BP	12:30	0.02	0.03	10	20	0.07	0.04	ND	5	<0.20
26-Aug-96	SW2BP	13:17	0.02	0.01	0.9	24	0.03	0.01	ND	11	<0.20
24-Sep-96	SW2BP	10:19	<0.01	0.06	0.7	25	0.01	<0.01	ND	7	<0.20
22-Oct-96	SW2BP	12:00	0.01	0.2	0.6	15	<0.01	0.03	ND	13	<0.20
26-Nov-96	SW2BP	11:45	<0.01	0.12	2	14	0.03	0.01	<2	ND	<0.2
18-Dec-96	SW2BP	12:50	<0.01	0.12	1.5	18	0.02	<0.01	ND	2	<0.2
15-Jan-97	SW2BP	14:15	0.05	0.14	17	17	0.02	0.01	ND	<2	<0.2
24-Feb-97	SW2BP	13:50	<0.01	0.07	10	15	0.04	0.02	ND	<2	<0.2
19-Mar-97	SW2BP	9:02	<0.01	0.08	4.8	9	0.04	0.02	ND	2	<0.2
22-Apr-97	SW2BP	11:25	<0.01	0.05	1	13	0.01	0.01	ND	<2	<0.2
21-May-97	SW2BP	12:00	<0.01	0.04	0.75	21	0.01	0.01	ND	<2	<0.2
19-Jun-97	SW2BP	12:00	0.05	0.04	0.45	22	0.02	<0.01	ND	<2	<0.2
29-Jul-97	SW2BP	12:50	<0.04	0.04	0.33	22	0.02	0.01	ND	ND	<0.2
27-Aug-97	SW2BP	12:30	<0.01	0.06	6.9	14	0.04	0.01	ND	23	<0.2
30-Sep-97	SW2BP	11:40	0.03	0.1	0.35	22	<0.01	ND	ND	11	<0.2
27-Oct-97	SW2BP	13:00	<0.01	0.2	0.7	23	0.01	ND	ND	7	<0.2
24-Nov-97	SW2BP	12:30	0.02	0.16	1.1	13	<0.01	<0.01	ND	4	<0.2
17-Dec-97	SW2BP	13:15	0.02	0.13	1.4	11	0.02	<0.01	ND	2	<0.2
20-Jan-98	SW2BP	12:15	0.01	0.12	1.1	11	0.02	0.01	ND	<2	<0.2
23-Feb-98	SW2BP	10:10	<0.01	0.12	0.5	13	<0.01	0.01	ND	2	<0.2
28-Mar-96	SW2TR	14:15	0.03	0.04	30	15	0.1	0.02	<2	ND	ND
29-Apr-96	SW2TR	16:15	<0.01	0.1	20	14	0.02	0.01	ND	<2	0.28
21-May-96	SW2TR	13:00	<0.01	0.02	10	17	0.03	0.03	ND	5	<0.20
24-Jun-96	SW2TR	12:30	<0.01	0.08	11	15	0.03	0.05	ND	4	<0.20
22-Jul-96	SW2TR	13:00	0.03	0.01	10	20	0.08	0.04	ND	13	<0.20
26-Aug-96	SW2TR	14:05	0.02	<0.01	6.8	16	0.03	0.04	ND	<2	<0.20
24-Sep-96	SW2TR	12:25	<0.01	0.01	5	21	0.02	0.02	ND	<2	<0.20
22-Oct-96	SW2TR	12:30	0.03	0.07	16	22	0.02	0.04	ND	<2	<0.20
26-Nov-96	SW2TR	12:15	0.01	0.03	9.1	22	0.03	0.03	2	ND	<0.2
18-Dec-96	SW2TR	13:30	<0.01	0.05	14	16	0.03	0.05	ND	2	<0.2
15-Jan-97	SW2TR	14:40	0.08	0.04	20	14	0.07	0.07	ND	2	<0.2
24-Feb-97	SW2TR	14:00	0.02	0.03	10	14	0.02	0.07	ND	2	<0.2
19-Mar-97	SW2TR	9:15	<0.01	0.05	12	15	0.06	0.06	ND	<2	<0.2
22-Apr-97	SW2TR	11:50	<0.01	0.03	11	15	0.04	0.04	ND	<2	<0.2

Appendix 2.2-1. Yale Laboratory Data. ND = No data collected.

Date	Site	Time	NH3 (mg/l as N)	NO3/NO2 (mg/l as N)	Turbidity (NTUs)	Alkalinity (mg/l CaCO3)	Total P (mg/l as P)	Ortho P (mg/l as P)	E. Coli (mpn/100 ml)	Fecal Col. (mpn/100 ml)	TPN (mg/l as N)
21-May-97	SW2TR	12:45	<0.01	0.03	5	13	0.02	0.03	ND	<2	<0.2
19-Jun-97	SW2TR	12:30	0.05	<0.01	2.8	14	0.02	0.01	ND	2	<0.2
29-Jul-97	SW2TR	13:10	<0.04	<0.01	0.89	15	0.01	0.01	ND	ND	<0.2
27-Aug-97	SW2TR	12:50	<0.01	<0.01	ND	29	0.02	<0.01	ND	<2	<0.2
30-Sep-97	SW2TR	12:00	ND	ND	ND	ND	ND	ND	ND	ND	ND
27-Oct-97	SW2TR	13:25	<0.01	0.21	3.5	17	0.02	0.01	ND	<2	0.2
24-Nov-97	SW2TR	12:45	<0.01	0.04	5.6	17	0.02	0.02	ND	13	0.2
17-Dec-97	SW2TR	11:30	0.02	0.05	4.3	16	0.03	0.02	ND	<2	<0.2
20-Jan-98	SW2TR	12:30	0.01	0.03	4.5	15	0.05	0.02	ND	<2	<0.2
24-Feb-98	SW2TR	9:45	<0.05	0.04	2.5	15	0.01	0.02	ND	ND	<0.2
27-Apr-96	SWRES	12:00	<0.01	0.19	31	17	0.09	0.02	ND	<2	0.49
21-May-96	SWRES	7:00	<0.01	0.04	11	20	0.04	0.03	ND	13	<0.20
26-Jun-96	SWRES	11:35	0.01	0.02	<0.20	25	0.03	0.03	ND	5	<0.20
19-Jul-96	SWRES	14:35	0.04	0.02	1	32	0.06	0.03	ND	130	ND
18-Oct-96	SWRES	11:50	0.03	0.05	9.9	24	0.06	0.03	ND	170	NM
26-Nov-96	SWRES	10:45	<0.01	0.05	5.2	23	<0.01	0.03	5	ND	<0.2
18-Dec-96	SWRES	11:20	0.01	0.05	6.3	24	0.03	0.02	ND	11	<0.2
15-Jan-97	SWRES	13:40	0.04	0.04	21	21	0.06	0.05	ND	5	<0.2
24-Feb-97	SWRES	11:40	0.01	0.02	2.6	20	0.03	0.03	ND	<2	<0.2
19-Mar-97	SWRES	10:10	<0.01	0.06	76	11	2.6	0.01	ND	33	1
22-Apr-97	SWRES	10:40	<0.01	0.03	37	15	0.15	0.06	ND	4	<0.2
21-May-97	SWRES	10:30	<0.01	0.03	3	20	0.04	0.02	ND	8	<0.2
19-Jun-97	SWRES	10:55	0.02	<0.01	0.75	21	0.03	0.02	ND	2	<0.2
29-Jul-97	SWRES	12:00	<0.04	<0.01	0.7	24	0.04	0.02	ND	13	<0.2
27-Aug-97	SWRES	11:30	<0.01	0.01	ND	28	0.05	0.05	ND	50	<0.2
30-Sep-97	SWRES	10:55	0.04	0.01	0.95	28	0.03	0.03	ND	4	<0.2
27-Oct-97	SWRES	14:30	<0.01	0.19	2.3	25	0.04	0.03	ND	4	0.2
24-Nov-97	SWRES	10:45	0.03	0.04	44	16	0.26	0.06	ND	17	<0.2
17-Dec-97	SWRES	12:30	0.02	0.07	18	16	0.15	0.03	ND	70	<0.2
20-Jan-98	SWRES	11:30	0.01	0.04	5.5	16	0.12	0.03	ND	ND	<0.2
23-Feb-98	SWRES	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28-Mar-96	YALTR	15:15	0.04	0.05	30	13	0.06	0.01	<2	ND	ND
29-Apr-96	YALTR	17:30	<0.01	0.15	17	13	<0.01	0.02	ND	2	<0.20
21-May-96	YALTR	14:00	<0.01	0.04	9.4	15	0.02	0.02	ND	<2	<0.20
24-Jun-96	YALTR	14:00	<0.01	<0.01	5	14	0.02	0.02	ND	<2	<0.20
22-Jul-96	YALTR	14:15	<0.01	0.01	5.2	14	0.03	0.01	ND	<2	<0.20

Appendix 2.2-1. Yale Laboratory Data. ND = No data collected.

Date	Site	Time	NH3 (mg/l as N)	NO3/NO2 (mg/l as N)	Turbidity (NTUs)	Alkalinity (mg/l CaCO3)	Total P (mg/l as P)	Ortho P (mg/l as P)	E. Coli (mpn/100 ml)	Fecal Col. (mpn/100 ml)	TPN (mg/l as N)
26-Aug-96	YALTR	15:30	0.03	0.02	2	16	0.01	0.02	ND	<2	<0.20
24-Sep-96	YALTR	14:42	<0.01	<0.01	1.5	16	<0.01	<0.01	ND	2	<0.20
22-Oct-96	YALTR	13:35	0.02	0.08	12	17	0.01	0.04	ND	<2	<0.20
26-Nov-96	YALTR	13:20	<0.01	0.05	5.2	20	0.03	0.02	2	ND	<0.2
19-Dec-96	YALTR	12:40	<0.01	0.08	2.1	15	0.02	0.03	ND	2	<0.2
15-Jan-97	YALTR	15:40	0.05	0.06	9.8	13	0.04	0.05	ND	broken	0.3
24-Feb-97	YALTR	10:30	0.02	0.03	9.9	13	<0.01	0.06	ND	<2	<0.2
19-Mar-97	YALTR	13:45	<0.01	0.06	7.8	12	0.03	0.04	ND	<2	<0.2
22-Apr-97	YALTR	13:20	<0.01	0.03	8.6	13	0.02	0.03	ND	4	<0.2
21-May-97	YALTR	14:30	<0.01	0.02	4.5	14	0.03	0.03	ND	<2	<0.2
19-Jun-97	YALTR	14:30	0.05	<0.01	2.8	14	0.02	<0.01	ND	<	<0.2
29-Jul-97	YALTR	14:30	<0.04	<0.01	2.7	14	0.01	<0.01	ND	<2	<0.2
27-Aug-97	YALTR	14:00	<0.01	0.01	ND	15	0.02	<0.01	ND	<2	<0.2
30-Sep-97	YALTR	13:00	0.03	<0.01	0.65	15	<0.01	<0.01	ND	<2	<0.2
28-Oct-97	YALTR	11:00	<0.01	<0.01	1.8	16	<0.01	<0.01	ND	2	<0.2
24-Nov-97	YALTR	14:20	0.03	0.06	3	14	<0.01	<0.01	ND	8	<0.2
17-Dec-97	YALTR	14:15	0.05	0.06	1.8	15	0.01	0.01	ND	<2	<0.2
20-Jan-98	YALTR	13:40	0.01	0.05	3.5	13	0.04	0.02	ND	2	<0.2
23-Feb-98	YALTR	11:30	<0.01	0.06	2.5	14	0.01	0.02	ND	ND	<0.2
28-Mar-96	YRESL-B	11:15	0.04	0.05	27	13	0.05	0.01	ND	ND	ND
29-Apr-96	YRESL-B	13:30	<0.01	0.15	20	14	0.02	0.02	ND	2	0.36
22-May-96	YRESL-B	12:30	<0.01	0.04	13	15	0.03	<0.01	ND	<2	0.21
25-Jun-96	YRESL-B	14:15	<0.01	<0.01	4.5	14	<0.01	0.02	ND	<2	<0.02
23-Jul-96	YRESL-B	13:15	0.02	0.02	4.9	14	0.03	0.01	ND	<2	<0.20
27-Aug-96	YRESL-B	15:05	0.01	0.01	1.8	15	<0.01	0.01	ND	<2	<0.20
25-Sep-96	YRESL-B	12:50	0.01	<0.01	1.4	16	<0.01	0.01	ND	<2	<0.20
21-Oct-96	YRESL-B	13:15	0.03	0.11	4	15	0.02	0.04	ND	<2	NM
25-Nov-96	YRESL-B	11:45	0.02	0.07	5.8	15	0.03	0.03	ND	<2	<0.2
19-Dec-96	YRESL-B	15:00	<0.01	0.08	1.8	15	0.02	0.03	ND	<2	<0.2
20-Mar-97	YRESL-B	12:00	<0.01	0.05	8.6	13	0.09	0.04	ND	<2	<0.2
23-Apr-97	YRESL-B	11:15	<0.01	0.04	8.3	14	0.03	0.05	ND	ND	<0.2
22-May-97	YRESL-B	12:00	0.01	0.04	3.8	14	0.03	0.03	ND	<2	<0.2
20-Jun-97	YRESL-B	10:30	0.04	0.02	0.95	13	0.03	<0.01	ND	<2	<0.2
28-Jul-97	YRESL-B	12:40	<0.04	<0.01	1.3	14	0.01	<0.01	ND	ND	<0.2
28-Aug-97	YRESL-B	13:15	<0.01	0.01	1.2	14	0.01	<0.01	ND	<2	<0.2
29-Sep-97	YRESL-B	13:15	<0.01	0.01	0.95	16	<0.01	<0.01	ND	<2	<0.2

Appendix 2.2-1. Yale Laboratory Data. ND = No data collected.

Date	Site	Time	NH3 (mg/l as N)	NO3/NO2 (mg/l as N)	Turbidity (NTUs)	Alkalinity (mg/l CaCO3)	Total P (mg/l as P)	Ortho P (mg/l as P)	E. Coli (mpn/100 ml)	Fecal Col. (mpn/100 ml)	TPN (mg/l as N)
28-Oct-97	YRESL-B	13:35	<0.01	0.05	2.8	16	<0.01	0.02	ND	<2	<0.2
25-Nov-97	YRESL-B	13:46	<0.01	0.05	3.5	15	<0.01	<0.01	ND	2	<0.2
18-Dec-97	YRESL-B	11:30	0.1	0.01	1.9	15	<0.01	<0.01	ND	<2	<0.2
21-Jan-98	YRESL-B	10:45	<0.01	0.07	3.5	13	0.05	0.02	ND	<2	ND
24-Feb-98	YRESL-B	11:15	<0.01	0.07	3.5	14	0.01	0.02	ND	<2	<0.2
28-Mar-96	YRESL-S	11:15	0.04	0.06	26	13	0.06	0.02	<2	ND	ND
29-Apr-96	YRESL-S	13:00	<0.01	0.19	<0.20	13	<0.01	0.02	ND	2	0.26
22-May-96	YRESL-S	12:15	<0.01	<0.01	5	15	0.01	<0.01	ND	<2	<0.20
25-Jun-96	YRESL-S	14:00	<0.01	0.01	3.1	14	<0.01	<0.01	ND	<2	<0.20
23-Jul-96	YRESL-S	13:00	0.03	0.01	0.9	15	0.01	<0.01	ND	<2	<0.20
27-Aug-96	YRESL-S	15:05	0.02	<0.01	0.45	16	<0.01	<0.01	ND	<2	<0.20
25-Sep-96	YRESL-S	12:35	0.01	<0.01	0.7	17	<0.01	0.01	ND	<2	<0.20
21-Oct-96	YRESL-S	13:15	0.02	0.08	1.5	21	0.02	0.05	ND	2	NM
25-Nov-96	YRESL-S	11:00	0.07	0.05	3.1	20	0.03	0.02	ND	2	<0.2
19-Dec-96	YRESL-S	14:30	<0.01	0.07	2	17	0.02	0.03	ND	<2	<0.2
20-Mar-97	YRESL-S	12:00	<0.01	0.04	6.4	12	0.03	0.03	ND	<2	<0.2
23-Apr-97	YRESL-S	10:35	<0.01	0.02	6.3	15	0.04	0.04	ND	<2	<0.2
22-May-97	YRESL-S	12:10	<0.01	<0.01	1.8	14	0.01	0.01	ND	<2	<0.2
20-Jun-97	YRESL-S	10:30	0.02	<0.01	0.9	13	0.01	<0.01	ND	<2	<0.2
28-Jul-97	YRESL-S	12:30	<0.04	<0.01	0.55	14	0.02	<0.01	ND	<2	<0.2
27-Aug-97	YRESL-S	15:01	0.02	<0.01	7.8	10	<0.01	<0.01	ND	<2	<0.2
29-Sep-97	YRESL-S	13:00	<0.01	<0.01	0.55	15	<0.01	<0.01	ND	<2	<0.2
28-Oct-97	YRESL-S	13:35	<0.01	0.05	2.8	16	0.02	<0.01	ND	<2	<0.2
25-Nov-97	YRESL-S	13:45	0.05	0.08	3.2	15	<0.01	0.01	ND	2	<0.2
18-Dec-97	YRESL-S	11:31	0.11	<0.01	1.5	15	<0.01	0.01	ND	<2	<0.2
21-Jan-98	YRESL-S	10:46	<0.01	0.05	3	13	0.02	0.02	ND	2	<0.2
24-Feb-98	YRESL-S	11:15	<0.01	0.06	2.5	14	<0.01	0.02	ND	<2	<0.2
28-Mar-96	YRESU	13:00	0.05	0.05	30	59.5	0.08	0.01	ND	ND	ND
29-Apr-96	YRESU	11:45	<0.01	0.14	18	14	0.02	0.02	ND	<2	<0.20
22-May-96	YRESU	10:30	<0.01	0.02	6.3	16	0.02	<0.01	ND	<2	<0.20
25-Jun-96	YRESU	12:15	<0.01	<0.01	4.4	14	<0.01	<0.01	ND	<2	0.26
23-Jul-96	YRESU	11:40	0.02	<0.01	0.9	15	<0.01	<0.01	ND	<2	<0.20
27-Aug-96	YRESU	12:45	0.02	<0.01	0.5	16	<0.01	<0.01	ND	<2	<0.20
25-Sep-96	YRESU	11:40	0.01	<0.01	0.55	17	<0.01	0.01	ND	2	<0.20
21-Oct-96	YRESU	14:45	0.03	0.08	1.7	22	0.02	0.05	ND	<2	NM
25-Nov-96	YRESU	13:10	0.06	0.04	5.2	22	0.03	0.02	ND	2	<0.2

Appendix 2.2-1. Yale Laboratory Data. ND = No data collected.

Date	Site	Time	NH3 (mg/l as N)	NO3/NO2 (mg/l as N)	Turbidity (NTUs)	Alkalinity (mg/l CaCO3)	Total P (mg/l as P)	Ortho P (mg/l as P)	E. Coli (mpn/100 ml)	Fecal Col. (mpn/100 ml)	TPN (mg/l as N)
20-Mar-97	YRESU	13:30	<0.01	0.04	8.2	13	0.04	0.04	ND	<2	<0.2
23-Apr-97	YRESU	12:15	<0.01	0.03	7.8	14	0.03	0.04	ND	2	<0.2
22-May-97	YRESU	14:15	<0.01	<0.01	2	14	0.05	0.02	ND	8	<0.2
20-Jun-97	YRESU	12:20	0.04	<0.01	3.8	14	0.01	0.02	ND	2	0.3
28-Jul-97	YRESU	14:15	<0.04	<0.01	0.55	14	<0.01	<0.01	ND	4	<0.2
27-Aug-97	YRESU	15:00	<0.01	<0.01	0.5	15	0.01	<0.01	ND	<2	<0.2
29-Sep-97	YRESU	11:30	0.01	<0.01	0.65	15	<0.01	<0.01	ND	<2	<0.2
28-Oct-97	YRESU	12:30	<0.01	0.05	1.8	16	0.02	<0.01	ND	<2	<0.2
25-Nov-97	YRESU	15:10	0.01	0.05	4.2	16	<0.01	0.02	ND	<2	<0.2
18-Dec-97	YRESU	12:40	0.1	0.01	2.7	15	0.03	0.01	ND	<2	<0.2
21-Jan-98	YRESU	12:45	<0.01	0.07	4	14	0.05	0.02	ND	<2	<0.2
24-Feb-98	YRESU	12:15	<0.01	0.05	4	15	0.01	0.02	ND	<2	
Maximum			0.11	0.27	76	59.5	2.6	0.07	5	170	1
Minimum			0.01	0.01	0.2	2	0.01	0.01	2	2	0.2

AL subbed to Columbia Laboratory, detection limits were higher than normal

Appendix 2.2-2

Yale Field Data

Appendix 2.2-2. Yale Field Data. ND = No data collected.

Date	Site	Time	Water Temp. (°C)	DO (mg/l)	pH (pH Units)	Sp. Cond. (mS/cm)	TDG (%)
28-Mar-96	COUGM	14:30	5.71	11.91	7.09	31	100.2
27-Apr-96	COUGM	16:45	6.3	12.53	6.66	25	99.8
21-May-96	COUGM	13:30	6.22	12.13	7.01	32	99.8
24-Jun-96	COUGM	13:00	6.9	11.92	6.96	39	99.5
22-Jul-96	COUGM	13:30	7.98	11.31	6.37	25	99.5
26-Aug-96	COUGM	14:30	6.9	11.62	6.97	32	99.1
24-Sep-96	COUGM	13:00	7.42	12.02	7.13	40	1
24-Oct-96	COUGM	13:50	7.03	11.4	6.97	35	100.0
26-Nov-96	COUGM	9:10	6.78	13.01	6.97	33	104.4
18-Dec-96	COUGM	13:50	6.03	12.35	7.57	29	100.1
15-Jan-97	COUGM	10:47	5.17	10.44	6.98	30	102.4
24-Feb-97	COUGM	14:15	5.50	12.96	7.03	27	99.7
19-Mar-97	COUGM	12:29	5.93	12.25	7.28	25	108.0
22-Apr-97	COUGM	12:25	5.65	11.82	7.18	30	101.0
21-May-97	COUGM	13:15	6.27	11.51	7.02	29	100.5
19-Jun-97	COUGM	13:15	6.65	12.60	6.90	25	101.1
29-Jul-97	COUGM	13:40	7.7	12.10	7.20	32	100
27-Aug-97	COUGM	13:20	7.25	11.57	7.06	42	ND
30-Sep-97	COUGM	12:20	6.84	11.28	7.53	43	ND
27-Oct-97	COUGM	12:00	7.35	11.91	7.53	36	ND
24-Nov-97	COUGM	13:00	7.45	11.54	7.01	32	ND
17-Dec-97	COUGM	13:30	6.92	11.57	7.07	32	ND
20-Jan-98	COUGM	12:50	6.22	12.07	7.21	29	ND
23-Feb-98	COUGM	10:30	5.5	12.27	6.92	29	ND
28-Mar-96	MERTR	9:15	5.69	13.05	6.8	29	101.6
27-Apr-96	MERTR	9:45	7.03	12.27	6.73	34	101.8
21-May-96	MERTR	10:30	7.8	11.73	6.76	35	103
24-Jun-96	MERTR	10:00	9.1	10.92	6.64	37	100
22-Jul-96	MERTR	10:25	10.37	9.95	6.71	25	104.1
26-Aug-96	MERTR	17:05	11.72	10.08	6.74	35	100.1
24-Sep-96	MERTR	15:30	13.62	8.02	6.63		100.4
24-Oct-96	MERTR	16:00	13.5	9.14	6.92	42	100.8
26-Nov-96	MERTR	14:40	9.64	10.65	6.9	46	102.4
15-Jan-97	MERTR	11:45	5.23	10.78	6.84	40	103.3
24-Feb-97	MERTR	15:30	4.47	13.17	6.78	36	ND
19-Mar-97	MERTR	15:10	5.14	12.51	7.17	35	101.2
22-Apr-97	MERTR	14:50	6.37	12.38	6.36	39	103.7
21-May-97	MERTR	16:15	7.85	11.54	6.45	39	105.0
19-Jun-97	MERTR	16:10	10.75	11.51	6.54	30	105.2

Appendix 2.2-2. Yale Field Data. ND = No data collected.

Date	Site	Time	Water Temp. (°C)	DO (mg/l)	pH (pH Units)	Sp. Cond. (mS/cm)	TDG (%)
29-Jul-97	MERTR	15:45	12.36	10.48	7.03	34	101.7
27-Aug-97	MERTR	11:00	12.6	9.72	6.42	37	ND
30-Sep-97	MERTR	14:10	15.31	8.49	7.13	44	104.1
27-Oct-97	MERTR	10:20	13.11	9.81	7.16	43	109.8
24-Nov-97	MERTR	15:15	10.22	10.61	7.10	45	100.2
17-Dec-97	MERTR	10:30	7.76	11.71	7.10	44	101
20-Jan-97	MERTR	10:15	5.35	12.15	7.01	42	ND
23-Feb-98	MERTR	13:15	5.63	12.22	7.28	39	106
28-Mar-96	SIOUX	12:00	ND	ND	7.6	33.1	100
27-Apr-96	SIOUX	14:00	6.93	11.6	6.98	29	100.8
21-May-96	SIOUX	13:30	7.79	12.32	7.04	24	ND
24-Jun-96	SIOUX	15:10	13.63	10.61	7.65	33	100
23-Jul-96	SIOUX	14:00	18.86	9.18	7.37	45	ND
26-Aug-96	SIOUX	16:00	15.44	9.81	7.33	53	100.4
24-Sep-96	SIOUX	13:20	10.09	11.09	7.00	43	100
21-Oct-96	SIOUX	14:00	7.13	12.56	7.00	27	100.7
26-Nov-96	SIOUX	12:30	6.87	12.37	6.9	24	106.8
18-Dec-96	SIOUX	15:30	4.59	12.40	7.28	31	103.0
19-Mar-97	SIOUX	13:00	5.85	12.41	7.48	22	101.4
22-Apr-97	SIOUX	11:45	6.47	12.24	7.01	30	102.2
22-May-97	SIOUX	13:00	10.02	10.53	7.27	36	102.4
20-Jun-97	SIOUX	11:40	11.5	11.86	7.3	34	103.0
28-Jul-97	SIOUX	13:45	16.8	10.25	7.47	37.5	99.7
27-Aug-97	SIOUX	14:15	ND	ND	ND	ND	ND
29-Sep-97	SIOUX	12:20	11.04	10.94	7.29	39	ND
10/28/97	SIOUX	13:10	7.68	11.9	7.29	42	ND
25-Nov-97	SIOUX	14:30	6.86	12.15	7.18	32	ND
18-Dec-97	SIOUX	12:20	5.62	12.75	7.11	31	ND
21-Jan-98	SIOUX	11:45	5.46	12.63	7.3	32	ND
24-Feb-98	SIOUX	10:50	4.43	12.82	7.18	35	ND
26-Nov-96	SPLYL	14:00	9.08	11.40	6.91	57	103.2
18-Dec-96	SPLYL	14:50	7.63	10.78	7.83	54	100.6
15-Jan-97	SPLYL	16:15	7.03	10.60	6.86	50	102.8
24-Feb-97	SPLYL	14:53	8.80	11.86	7.24	48	99.9
19-Mar-97	SPLYL	14:30	8.92	10.72	7.48	44	100.7
22-Apr-97	SPLYL	13:50	9.63	10.88	6.88	54	101.0
21-May-97	SPLYL	15:17	11.46	9.90	7.12	57	101.1
19-Jun-97	SPLYL	15:13	11.43	11.43	7.09	50	102.6
29-Jul-97	SPLYL	15:15	13.5	10.68	7.10	53	100.1

Appendix 2.2-2. Yale Field Data. ND = No data collected.

Date	Site	Time	Water Temp. (°C)	DO (mg/l)	pH (pH Units)	Sp. Cond. (mS/cm)	TDG (%)
27-Aug-97	SPLYL	16:05	12.1	9.19	7.27	59	ND
30-Sep-97	SPLYL	13:40	11.35	10.37	7.50	63	ND
27-Oct-97	SPLYL	11:05	9.55	10.88	7.14	58	108.3
24-Nov-97	SPLYL	14:50	9.61	10.72	7.04	54	ND
17-Dec-97	SPLYL	14:50	8.73	10.93	7.03	52	ND
20-Jan-98	SPLYL	14:10	8.03	11.62	7.01	51	ND
23-Feb-98	SPLYL	12:05	7.75	11.64	7.19	54	ND
26-Nov-96	SPLYU	12:50	6.74	12.74	6.97	29	103.2
18-Dec-96	SPLYU	14:15	4.25	12.36	7.61	33	100.5
15-Jan-97	SPLYU	10:10	2.37	11.03	6.57	33	102.4
24-Feb-97	SPLYU	14:30	5.89	ND	7.25	29	99.2
19-Mar-97	SPLYU	13:20	5.38	12.39	7.54	23	100.2
22-Apr-97	SPLYU	12:45	6.57	11.71	7.01	28	100.9
21-May-97	SPLYU	14:05	12.25	9.40	6.85	34	101.1
19-Jun-97	SPLYU	13:45	11.75	11.60	7.20	26	101.6
29-Jul-97	SPLYU	14:07	16.9	9.60	7.20	32	100.1
27-Aug-97	SPLYU	13:30	15.58	9.52	7.25	39	ND
30-Sep-97	SPLYU	12:40	11.84	10.15	7.63	40	ND
27-Oct-97	SPLYU	11:30	8.5	11.52	7.57	36	ND
24-Nov-97	SPLYU	13:30	7.55	11.46	7.14	28	ND
17-Dec-97	SPLYU	13:45	6.33	12.25	7.11	28	ND
20-Jan-98	SPLYU	13:05	5.59	12.45	7.21	28	ND
23-Feb-98	SPLYU	10:45	5.14	12.15	7.10	31	ND
28-Mar-96	SW2BP	13:45	7.47	12.62	7.2	46	103.1
27-Apr-96	SW2BP	15:30	10.03	11.4	6.9	36	101.4
21-May-96	SW2BP	12:00	7.89	11.34	6.99	39	100.1
24-Jun-96	SW2BP	11:40	10.39	11.26	7.03	50	100.6
22-Jul-96	SW2BP	12:30	15.08	10.29	7.11	41	105.2
26-Aug-96	SW2BP	13:30	12.95	10.77	7.24	50	102.8
24-Sep-96	SW2BP	12:00	11.67	11.25	7.14	57	102.8
24-Oct-96	SW2BP	13:00	8.83	10.88	6.53	39	100.6
26-Nov-96	SW2BP	11:45	6.76	12.88	7.05	38	103.9
18-Dec-96	SW2BP	13:50	4.82	12.46	7.62	46	96.0
15-Jan-97	SW2BP	14:15	3.42	12.07	6.54	42	103.8
24-Feb-97	SW2BP	13:30	5.41	12.77	7.10	38	100.0
19-Mar-97	SW2BP	9:02	5.66	12.06	7.12	27	101.2
22-Apr-97	SW2BP	11:25	7.01	12.00	6.93	38	100.5
21-May-97	SW2BP	12:03	10.72	10.27	7.21	50	103.9
19-Jun-97	SW2BP	12:00	11.92	10.90	7.03	44	104.6

Appendix 2.2-2. Yale Field Data. ND = No data collected.

Date	Site	Time	Water Temp. (°C)	DO (mg/l)	pH (pH Units)	Sp. Cond. (mS/cm)	TDG (%)
29-Jul-97	SW2BP	13:00	13.05	10.43	7.19	48	101
27-Aug-97	SW2BP	12:30	12.68	10.46	6.99	53	ND
30-Sep-97	SW2BP	11:45	11.45	10.65	7.37	54	ND
27-Oct-97	SW2BP	12:55	9.99	11.66	7.49	53	ND
24-Nov-97	SW2BP	12:30	7.69	11.84	6.86	36	ND
17-Dec-97	SW2BP	13:15	6.56	12.80	7.32	34	ND
20-Jan-98	SW2BP	12:15	5.67	12.32	7.38	34	ND
23-Feb-98	SW2BP	10:10	5.12	12.30	6.84	35	ND
28-Mar-96	SW2TR	14:15	5.56	13.81	6.86	38	ND
27-Apr-96	SW2TR	16:15	6.81	12.44	7.16	39	100.1
21-May-96	SW2TR	13:00	8.13	12.64	7.26	40	101.2
24-Jun-96	SW2TR	12:30	8.61	11.29	6.81	42	109.3
22-Jul-96	SW2TR	13:02	10.68	10.55	6.6	30	108.2
26-Aug-96	SW2TR	14:11	12.41	9.41	6.9	40	102.7
24-Sep-96	SW2TR	12:28	12.42	9.88	6.96	50	101.7
24-Oct-96	SW2TR	13:23	11.64	9.39	6.88	53	102.6
26-Nov-96	SW2TR	12:15	7.38	10.68	6.87	52	100.3
19-Dec-96	SW2TR	13:30	4.77	12.10	6.94	39	ND
15-Jan-97	SW2TR	14:40	3.75	12.12	6.64	40	105.1
24-Feb-97	SW2TR	14:00	3.72	14.59	6.78	37	ND
19-Mar-97	SW2TR	9:21	4.05	12.20	7.1	40	103.2
22-Apr-97	SW2TR	11:50	6.01	12.28	6.77	42	104.7
21-May-97	SW2TR	12:45	9.21	11.00	7.05	39	105.4
19-Jun-97	SW2TR	12:30	9.74	11.94	6.88	31	110.3
29-Jul-97	SW2TR	13:10	10.59	11.88	7.14	36	112.6
27-Aug-97	SW2TR	13:00	19.76	7.32	7.42	40	99.2
30-Sep-97	SW2TR	12:00	ND	ND	ND	ND	ND
27-Oct-97	SW2TR	13:25	10.73	10.50	7.50	48	109.8
24-Nov-97	SW2TR	12:45	7.42	10.98	6.99	45	100.1
17-Dec-97	SW2TR	11:30	5.7	12.28	7.19	45	118
20-Jan-98	SW2TR	12:30	4.11	12.15	7.28	45	ND
24-Feb-98	SW2TR	9:45	4.53	14.90	7.03	47	ND
27-Apr-96	SWRES	12:00	6.09	12.46	7.04	44	ND
21-May-96	SWRES	7:35	6.07	12.54	6.83	47	ND
24-Jun-96	SWRES	11:35	11.26	10.72	7.46	50	101.1
19-Jul-96	SWRES	14:35	10.7	10.8	7.4	60	100.9
18-Oct-96	SWRES	11:50	7.3	12.31	7.05	63	99.6
26-Nov-96	SWRES	10:45	4.77	12.85	7.21	56	104.6
18-Dec-96	SWRES	11:20	2.61	13.30	7.75	60	99.3

Appendix 2.2-2. Yale Field Data. ND = No data collected.

Date	Site	Time	Water Temp. (°C)	DO (mg/l)	pH (pH Units)	Sp. Cond. (mS/cm)	TDG (%)
15-Jan-97	SWRES	13:00	1.93	12.45	6.39	55	104.8
24-Feb-97	SWRES	11:40	4.30	13.26	7.16	51	101.2
19-Mar-97	SWRES	10:15	3.92	12.98	7.13	32	102.1
22-Apr-97	SWRES	10:40	5.51	12.05	5.92	45	101.7
21-May-97	SWRES	10:35	6.41	11.24	7.38	51	102.2
19-Jun-97	SWRES	11:05	8.49	11.25	7.27	49	103.2
27-Aug-97	SWRES	11:30	10.1	10.01	6.85	73	ND
30-Sep-97	SWRES	11:00	9.79	10.59	7.73	67	ND
27-Oct-97	SWRES	14:30	8.2	11.14	7.56	69	ND
24-Nov-97	SWRES	10:45	5.95	12.10	6.73	48	ND
17-Dec-97	SWRES	12:30	4.64	12.58	7.38	48	ND
20-Jan-98	SWRES	11:30	4.19	12.74	7.34	50	ND
23-Feb-98	SWRES	ND	ND	ND	ND	ND	ND
28-Mar-96	YALTR	15:15	5.13	12.73	6.9	35	ND
27-Apr-96	YALTR	17:30	7.16	12.22	6.88	36	101
21-May-96	YALTR	14:00	8.92	11.58	7.07	37	103.3
24-Jun-96	YALTR	14:00	10.45	10.63	6.95	39	103.2
22-Jul-96	YALTR	14:20	12.6	9.65	6.79	30	107.2
26-Aug-96	YALTR	15:15	13.53	9.34	6.65	37	107
24-Sep-96	YALTR	14:40	14.92	9.56	6.98	44	104.1
22-Oct-96	YALTR	15:20	11.33	9.76	7.00	45	100
26-Nov-96	YALTR	13:20	7.86	10.96	6.89	48	100.5
19-Dec-96	YALTR	12:37	5.52	10.91	7.34	37	101.2
15-Jan-97	YALTR	15:40	4.42	11.82	6.93	39	102.9
24-Feb-97	YALTR	10:30	3.99	12.91	7.01	36	ND
19-Mar-97	YALTR	13:45	4.82	12.46	7.29	35	101.1
22-Apr-97	YALTR	13:20	7.26	12.02	6.68	38	103.8
21-May-97	YALTR	14:30	9.51	11.55	6.85	40	109.5
19-Jun-97	YALTR	14:30	9.99	12.02	6.80	31	112.8
29-Jul-97	YALTR	14:40	12	11.27	7.06	34	108.2
27-Aug-97	YALTR	14:15	13.24	10.01	6.97	40	109
30-Sep-97	YALTR	13:05	14.25	9.93	7.54	45	104.8
28-Oct-97	YALTR	11:00	11.14	10.56	7.04	47	110.5
24-Nov-97	YALTR	14:20	8.12	11.29	7.02	42	100.5
17-Dec-97	YALTR	14:15	6	11.47	7.04	44	102.6
20-Jan-98	YALTR	13:30	4.54	12.70	7.08	42	ND
23-Feb-98	YALTR	11:30	5.04	12.40	7.13	44	ND
Maximum			19.76	14.90	7.83	73	118
Minimum			1.93	7.32	5.92	22	1

Appendix 2.2-3

Comparison of Routine and Field Duplicate Analyses

Appendix 2.2-3(a). Comparison of routine (R) and field duplicate analyses at Yale monitoring sites, April 1996 - February 1998.

		Alkalinity			Ammonia			TPN			Nitrate+Nitrite		
Date	Site	R	D	% RSD	R	D	% RSD	R	D	% RSD	R	D	% RSD
4/29/96	COUGM	8	9	8.3	<0.01	<0.01	NC	<0.20	<0.20	NC	0.16	0.15	4.6
4/29/96	COUGM	<0.01	<0.01	NC	0.01	0.01	0	0.5	0.6	12.9	<2	<2	NC
12/18/96	COUGM	9	9	0	<0.01	<0.01	NC	<0.2	<0.2	NC	0.08	0.07	9.4
12/18/96	COUGM	0.02	0.02	0	<0.01	<0.01	NC	1.7	1.2	24.4	2	<2	NC
1/16/97	COUGM	9	9	0	0.04	0.03	20.2	<0.2	<0.2	NC	0.05	0.06	12.9
1/16/97	COUGM	<0.01	<0.01	NC	0.01	0.01	0	0.3	0.5	35.4	<2	<2	NC
10/27/97	COUGM	11	11	0	<0.01	<0.01	NC	0.2	0.2	0	0.25	0.25	0
10/27/97	COUGM	0.02	<0.01	NC	<0.01	<0.01	NC	0.5	0.2	60.6	2	2	0
12/17/97	COUGM	10	10	0	0.05	<0.01	NC	<0.2	<0.2	NC	0.15	0.15	0
12/17/97	COUGM	0.02	0.03	28.3	<0.01	<0.01	NC	0.85	0.7	13.7	<2	<2	NC
7/29/97	MERTR	14	14	0	<0.04	<0.04	NC	<0.2	<0.2	NC	0.02	0.02	0
7/29/97	MERTR	0.02	0.01	47.1	<0.01	<0.01	NC	2.3	2.3	0	ND	ND	NC
3/20/97	SIOUX	7	7	0	<0.01	<0.01	NC	<0.2	<0.2	NC	0.02	0.02	0
3/20/97	SIOUX	0.01	<0.01	NC	0.01	0.01	0	3.5	3.9	7.6	2	<2	NC
8/28/97	SIOUX	24	19	16.4	<0.01	0.02	NC	<0.2	<0.2	NC	0.03	0.03	0
8/28/97	SIOUX	24	19	16.4	<0.01	0.02	NC	<0.2	<0.2	NC	0.03	0.03	0
8/28/97	SIOUX	<0.01	0.01	NC	<0.01	<0.01	NC	<0.20	0.3	NC	30	13	55.9
11/25/97	SIOUX	9	15	35.4	<0.01	<0.01	NC	<0.2	<0.2	NC	0.05	0.05	0
11/25/97	SIOUX	<0.01	<0.01	NC	<0.01	<0.01	NC	0.65	0.8	14.6	6	4	28.3
10/22/96	SW2BP	15	16	4.6	0.01	0.03	70.7	<0.20	NM	NC	0.2	0.3	28.3
10/22/96	SW2BP	<0.01	0.01	NC	0.03	0.04	20.2	0.6	0.8	20.2	13	49	82.1
2/24/97	SW2BP	15	15	0	<0.01	<0.01	NC	<0.2	<0.2	NC	0.07	0.07	0
2/24/97	SW2BP	0.04	0.02	47.1	0.02	0.01	47.1	10	1	115.7	<2	<2	NC
7/22/96	SW2TR	20	20	0	0.03	0.02	28.3	<0.20	<0.20	NC	0.03	0.03	0
7/22/96	SW2TR	0.08	0.07	9.4	0.04	0.04	0	1	1	0	13	5	62.9
11/26/96	SW2TR	22	22	0	0.01	<0.01	NC	<0.2	<0.2	NC	0.03	0.03	0
11/26/96	SW2TR	0.03	0.03	0	0.03	0.03	0	9.1	10	6.7	2	<2	NC
5/21/97	SWRESI	20	17	11.5	<0.01	<0.01	NC	<0.2	<0.2	NC	0.03	0.04	20.2
5/21/97	SWRESI	0.04	0.03	20.2	0.02	0.03	28.3	3	2.5	12.9	8	2	84.9
8/26/96	YALTR	16	16	0	0.03	0.02	28.3	<0.20	<0.20	NC	0.02	<0.01	NC
8/26/96	YALTR	0.02	0.01	47.1	0.02	0.01	47.1	2	2	0	<2	<2	NC

Appendix 2.2-3(a). Comparison of routine (R) and field duplicate analyses at Yale monitoring sites, April 1996 - February 1998.

		Alkalinity			Ammonia			TPN			Nitrate+Nitrite		
Date	Site	R	D	% RSD	R	D	% RSD	R	D	% RSD	R	D	% RSD
6/19/97	YALTR	14	14	0	0.05	0.05	0	<0.2	<0.2	NC	<0.01	<0.01	NC
6/19/97	YALTR	0.02	0.01	47.1	<0.01	<0.01	NC	2.8	2.5	8	<2	2	NC
2/24/98	YALTR	14	14	0	<0.01	<0.01	NC	<0.2	<0.2	NC	0.06	0.07	10.9
2/24/98	YALTR	0.01	0.01	0	0.02	0.02	0	2.5	3	12.9	<2	<2	NC
9/29/97	YRESL-B	16	15	4.6	<0.01	<0.01	NC	<0.2	<0.2	NC	<0.01	<0.01	NC
9/29/97	YRESL-B	<0.01	<0.01	NC	<0.01	<0.01	NC	0.95	0.85	7.9	<2	<2	NC
5/22/96	YRESL-S	15	15	0	<0.01	<0.01	NC	<0.20	<0.20	NC	<0.01	0.04	NC
5/22/96	YRESL-S	0.01	0.02	47.1	<0.01	<0.01	NC	5	12	58.2	<2	<2	NC
9/25/96	YRESU	17	14	13.7	0.01	0.01	0	<0.20	<0.20	NC	<0.01	<0.01	0
9/25/96	YRESU	<0.01	<0.01	NC	0.01	0.01	0	0.55	0.55	0	2	2	0
1/21/98	YRESU	14	14	0	<0.01	0.01	NC	<0.2		NC	0.07	0.06	10.9
1/21/98	YRESU	0.05	0.03	35.4	0.02	0.02	0	4	4	0	<2	<2	NC
6/25/96	YRESU-S	14	14	0	<0.01	<0.01	NC	0.26	<0.20	NC	<0.01	<0.01	NC
6/25/96	YRESU-S	<0.01	<0.01	NC	<0.01	0.01	NC	4.4	4.5	1.6	<2	<2	NC

Appendix 2.2-3(b). Results of field blank sample analyses.

Analyte	4/29/96	5/21/96	6/24/96	7/23/96	8/26/96	9/25/96	10/22/96	11/26/96
Alkalinity	<1	1	<1	1	1	<1	<1	1
Ammonia	<0.01	<0.01	<0.01	0.02	0.02	0.03	0.02	0.01
TPN	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2
Ortho-P	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Total P	<0.01	<0.01	<0.01	0.03	0.03	<0.01	<0.01	0.03
NO3+NO	0.06	0.01	<0.01	0.01	<0.01	<0.01	<0.2	0.01
Turbidity	0.65	<0.20	0.43	<0.20	<0.20	0.25	0.2	<0.2
Fecal Col.	<2	<2	<2	ND	<2	ND	<2	ND

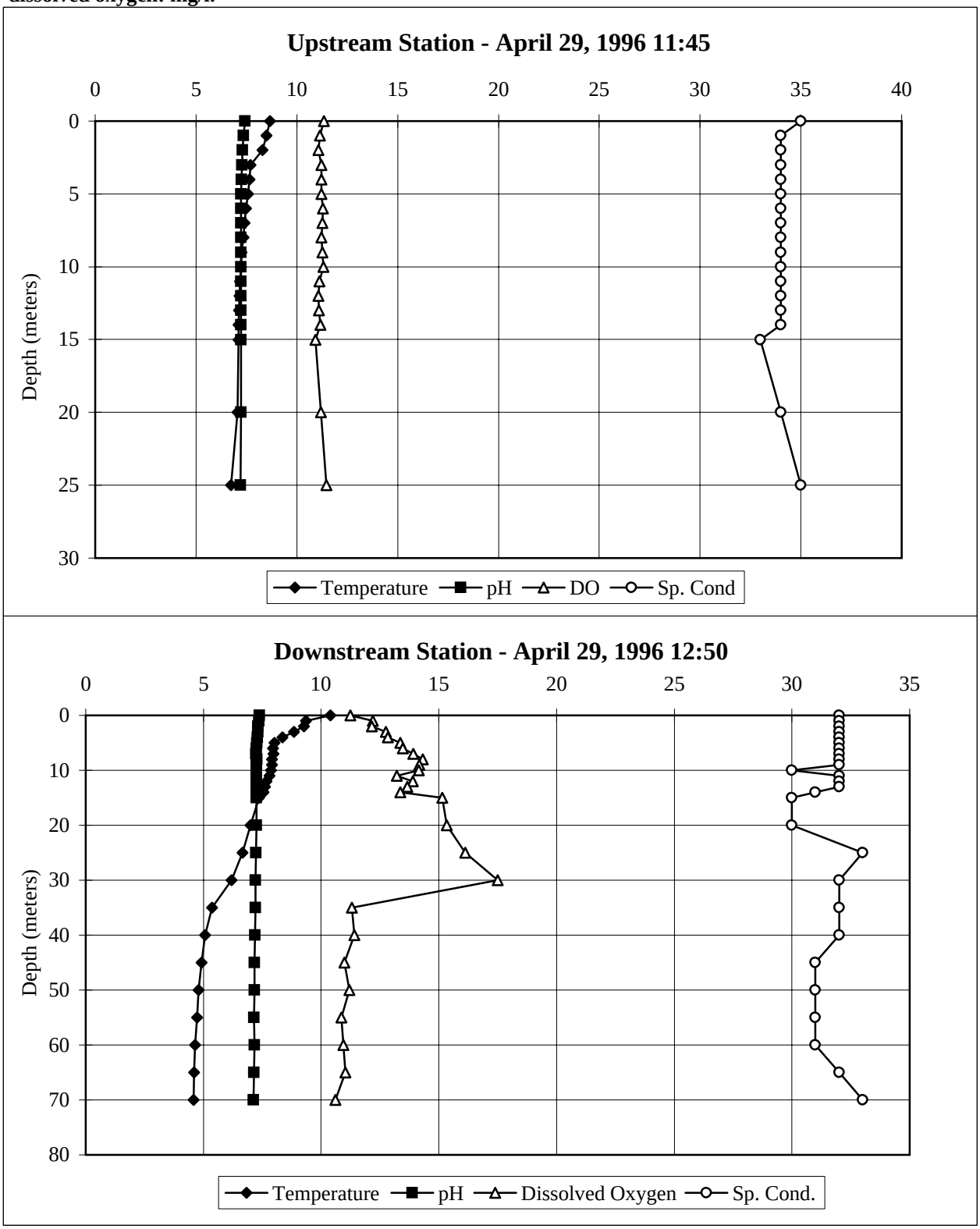
Analyte	12/19/96	1/15/97	2/24/97	4/22/97	5/22/97	6/19/97	7/28/97	8/28/97
Alkalinity	<1	<1	<1	<1	<1	<1	<1	<1
Ammonia	<0.01	0.05	<0.01	<0.01	<0.01	0.04	<0.04	<0.01
TPN	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20
Ortho-P	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total P	0.02	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
NO3+NO	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Turbidity	0.2	<0.2	<0.2	0.5	<0.2	<0.2	<0.2	<0.2
Fecal Col.	ND	<2	<2	<2	<2	<2	ND	<2

Analyte	9/30/97	10/27/97	11/24/97	12/17/97	1/21/98	2/23/98
Alkalinity	<1	<1	<1	<1	<1	<1
Ammonia	0.05	<0.01	<0.01	0.01	0.01	<0.01
TPN	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ortho-P	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Total P	<0.01	<0.01	<0.01	0.03	<0.01	<0.01
NO3+NO	<0.01	0.18	0.01	0.02	<0.01	<0.01
Turbidity	<0.2	<0.2	<0.2	<0.2	0.75	<0.2
Fecal Col.	<2	<2	<2	<2	<2	<2

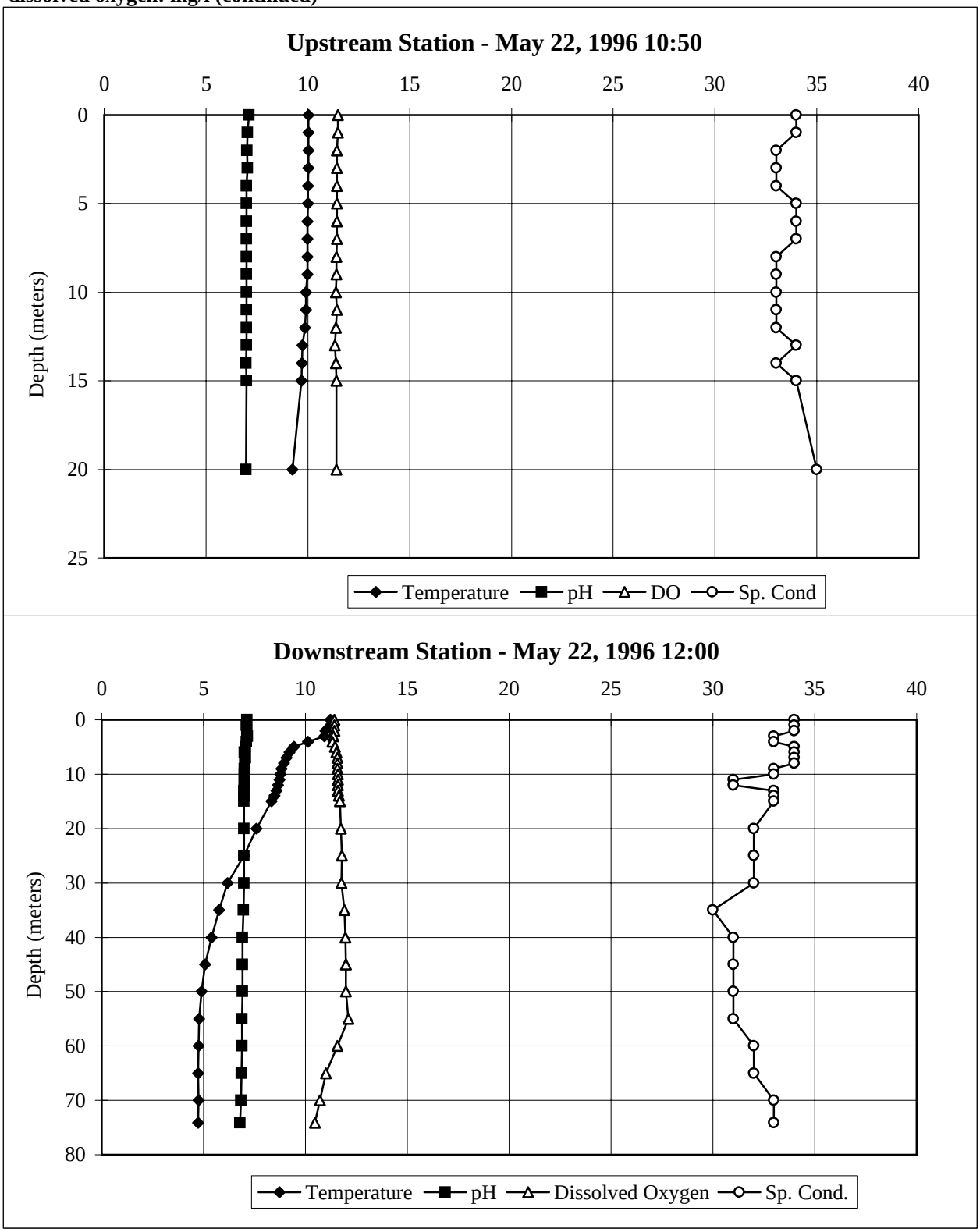
Appendix 2.3-1

Yale Lake Profile Data

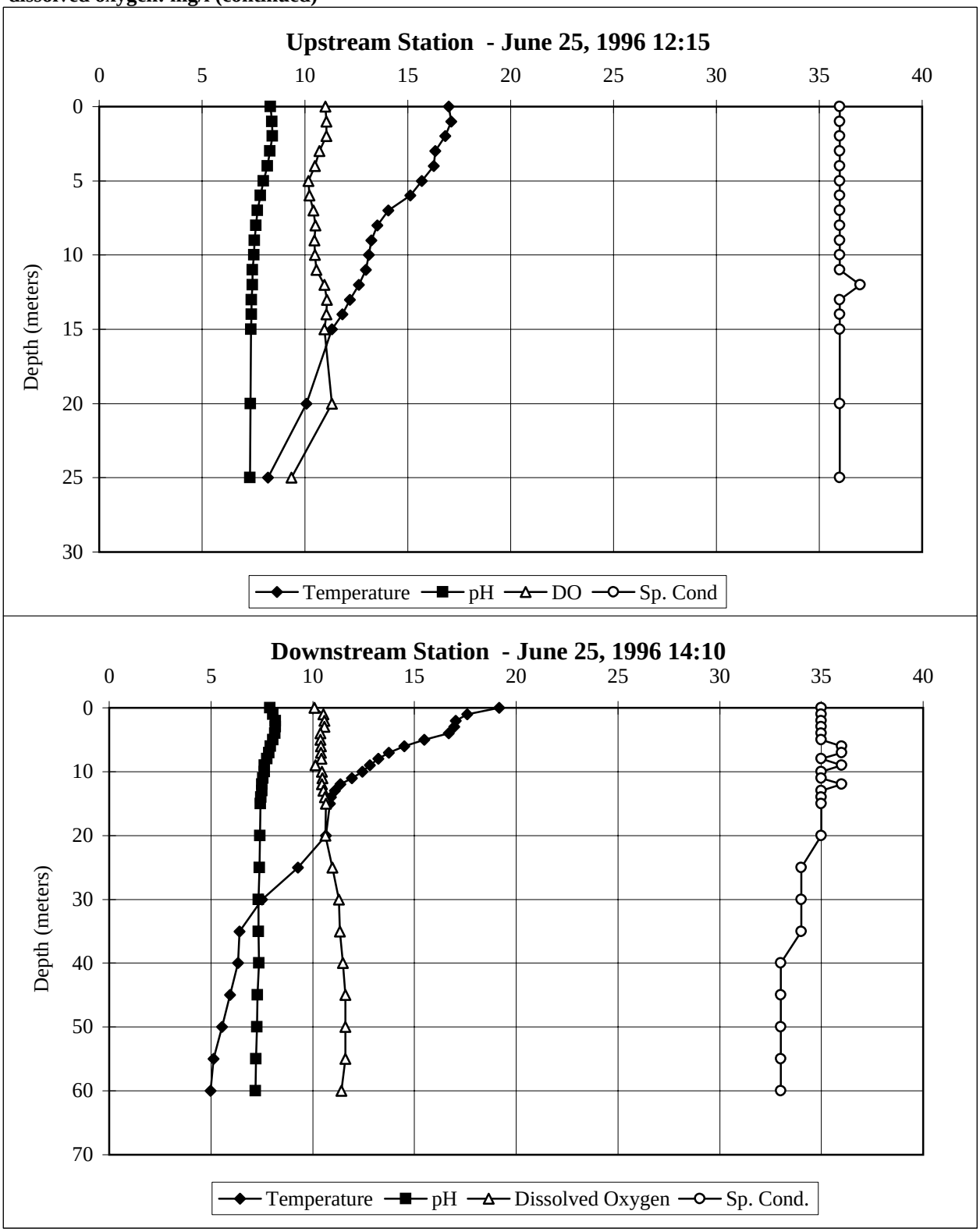
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l.



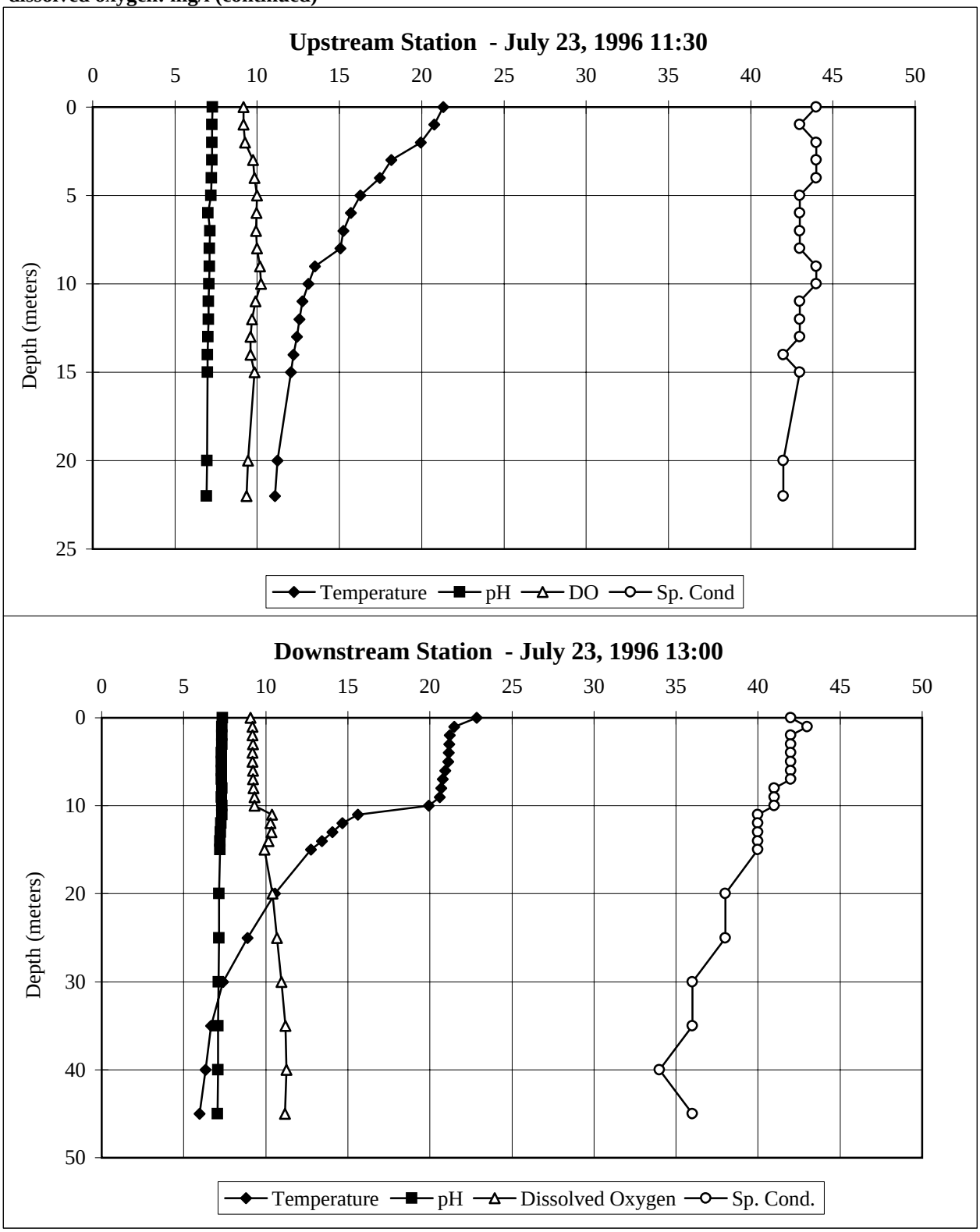
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



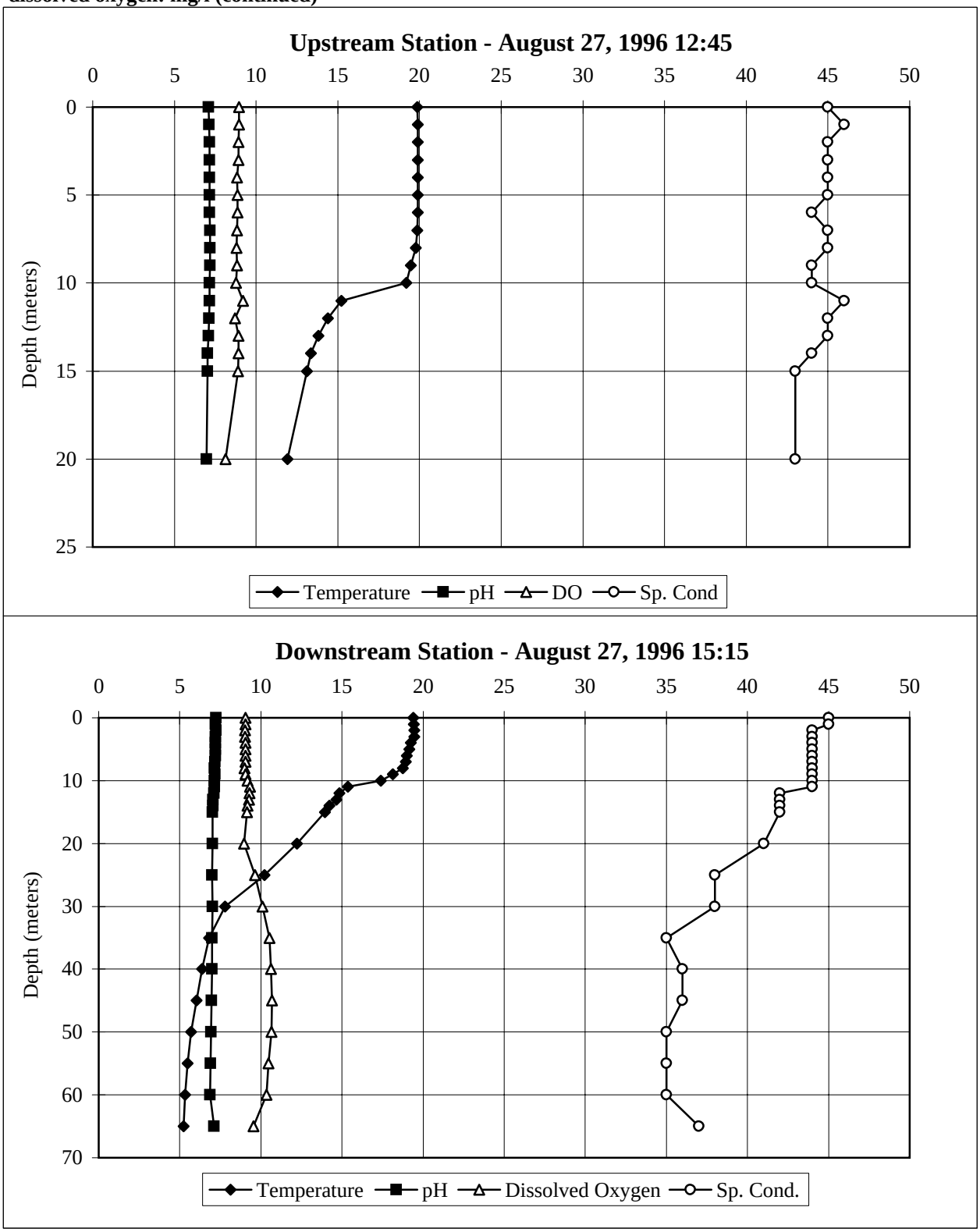
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



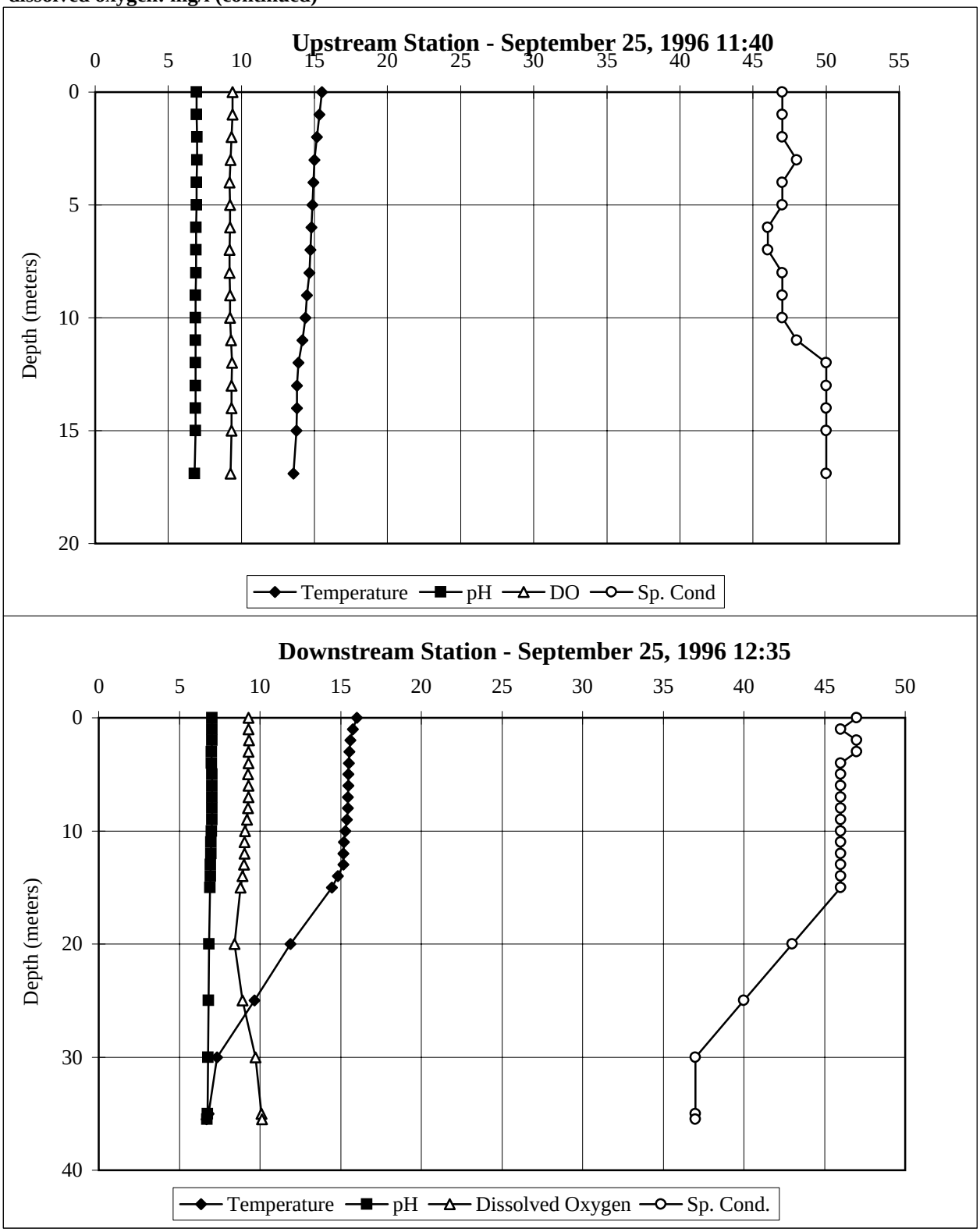
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



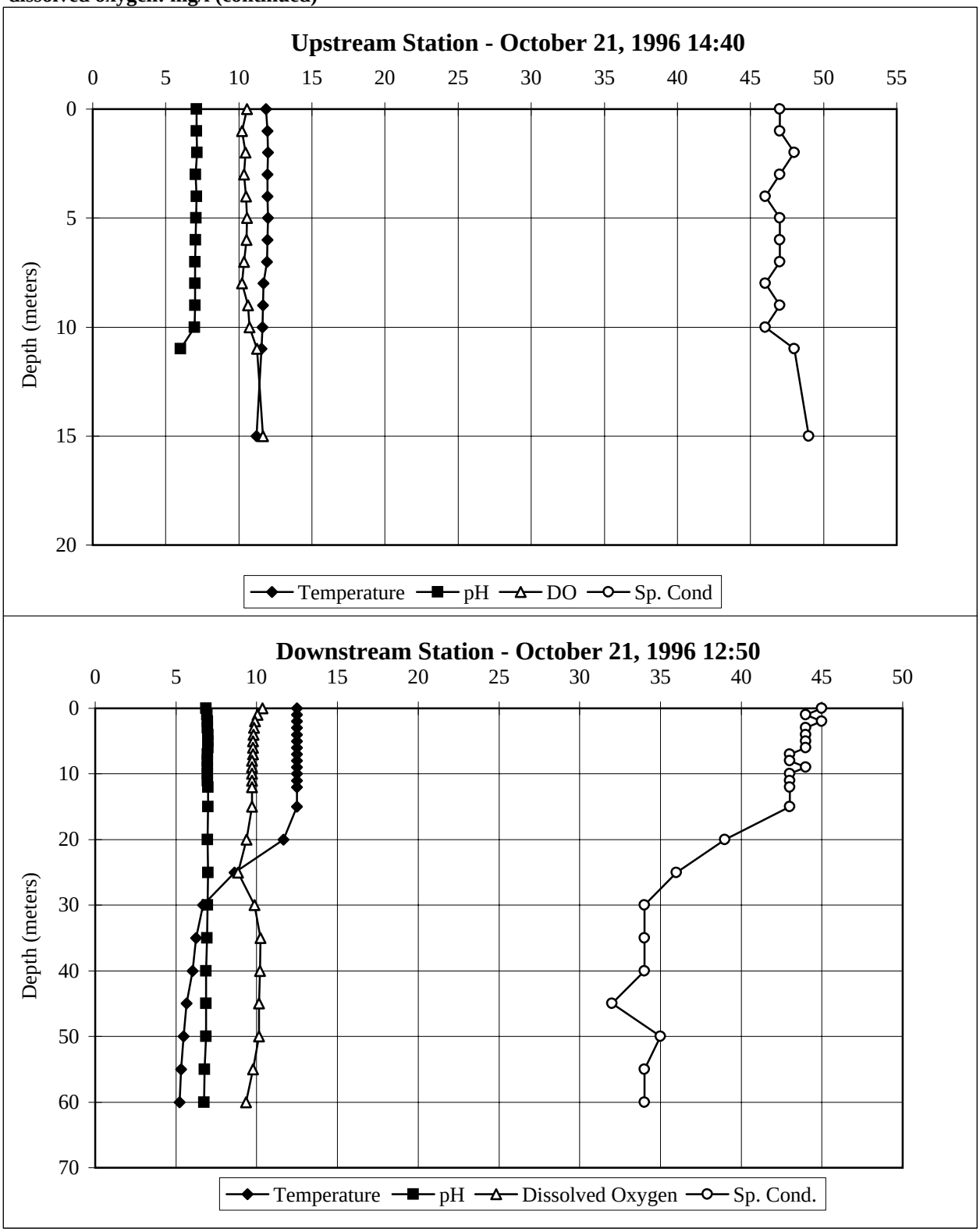
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



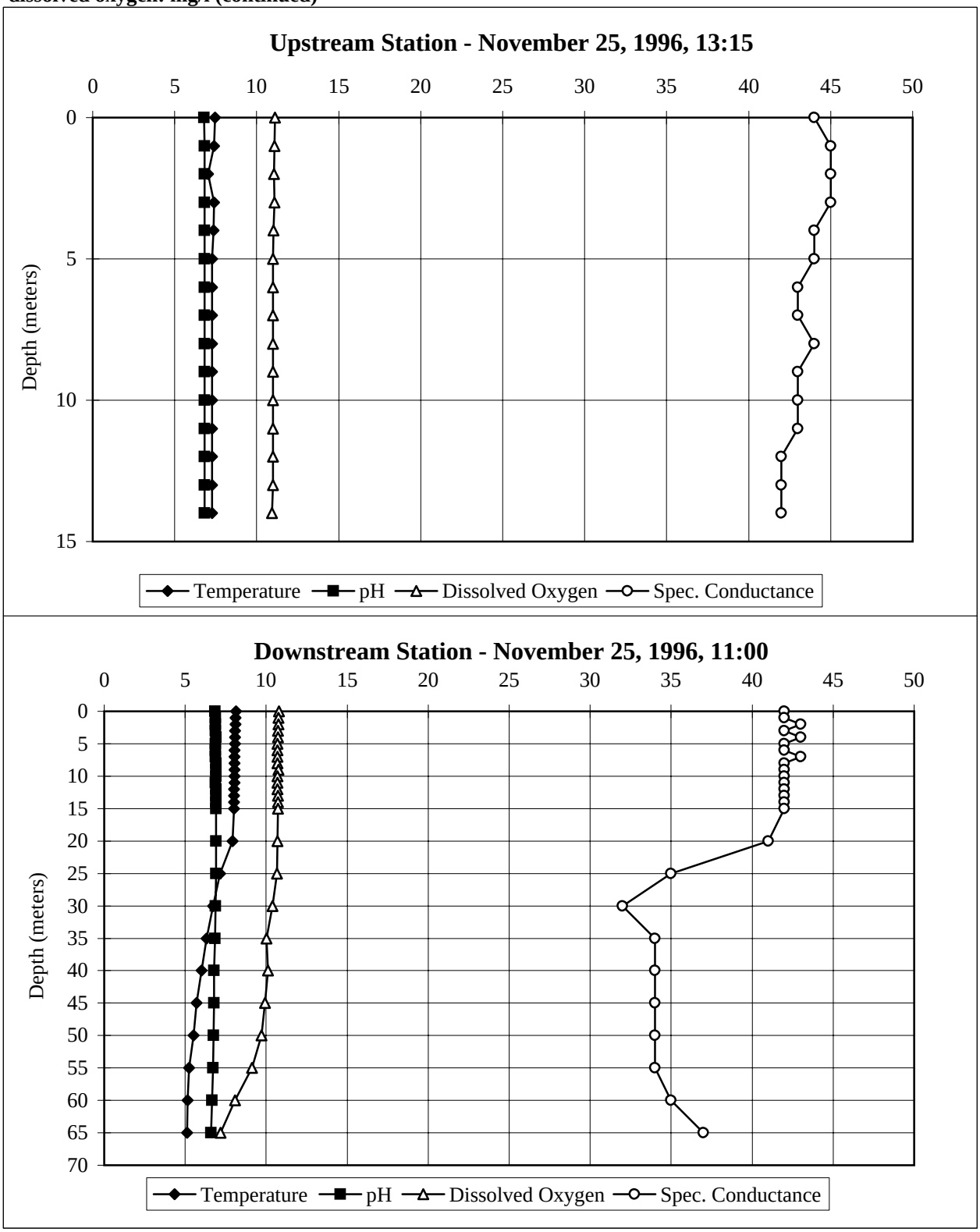
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



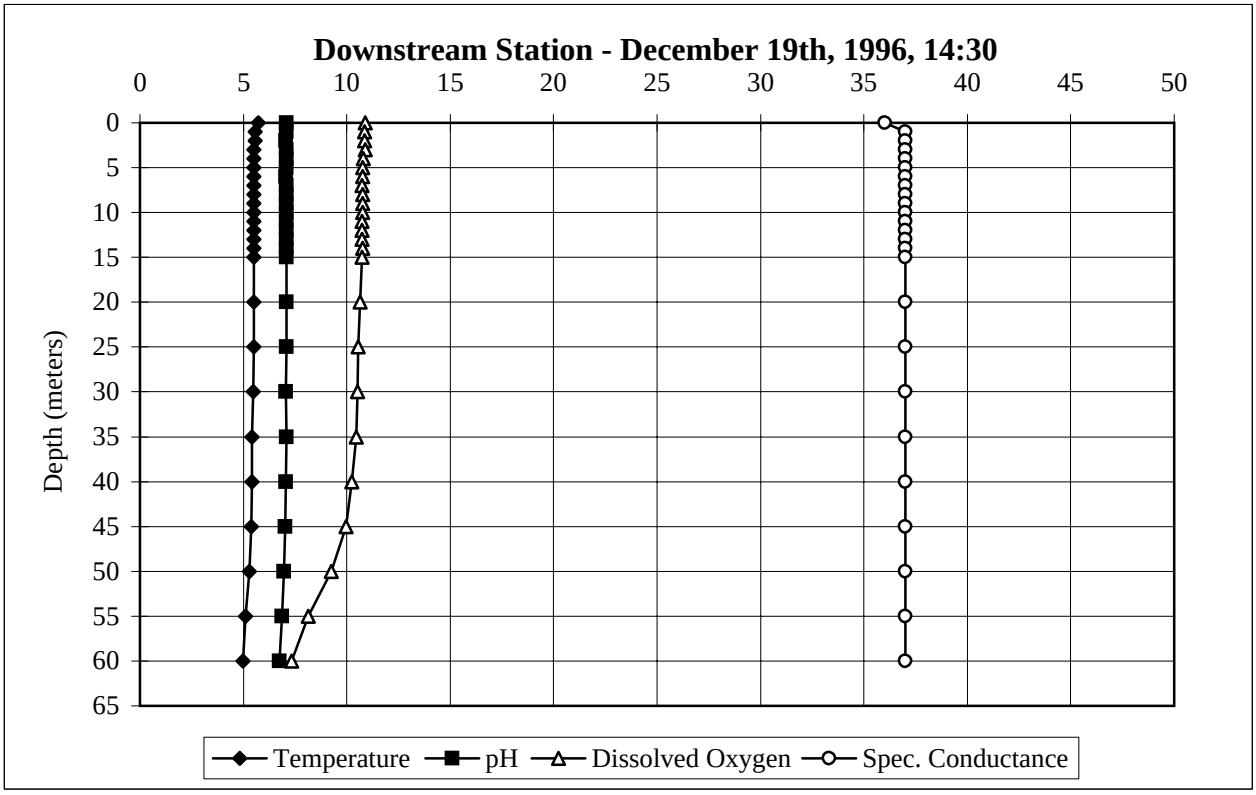
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



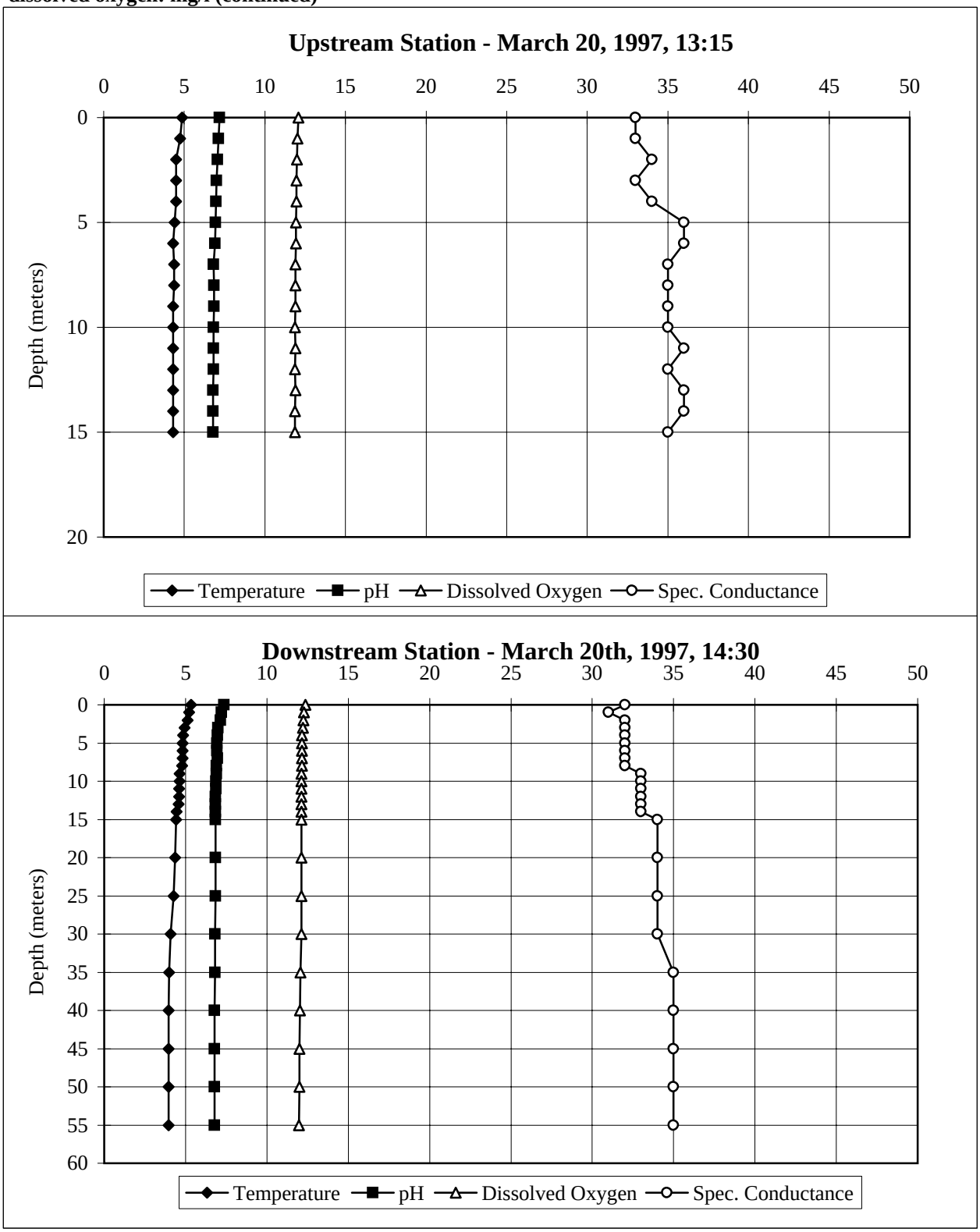
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



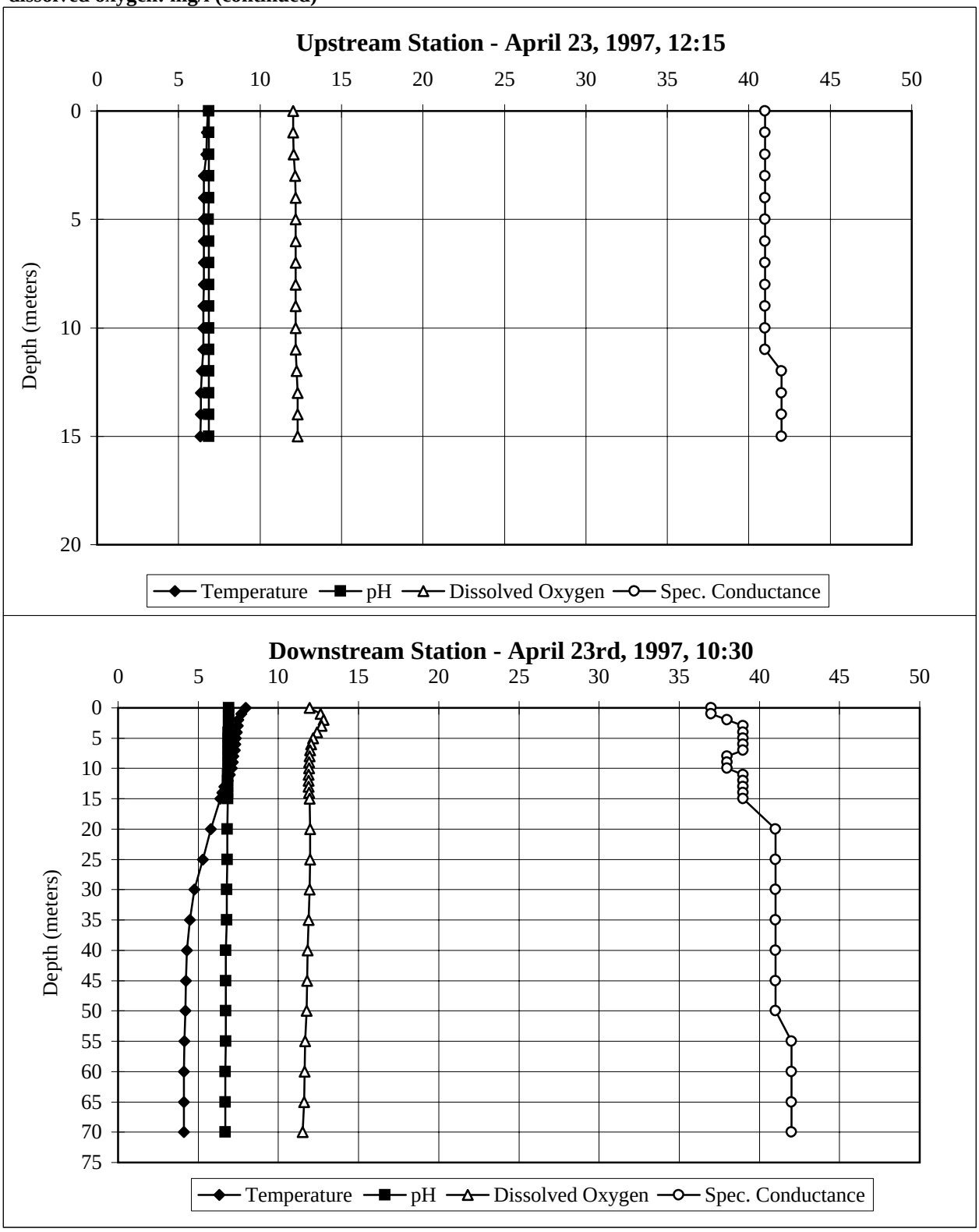
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



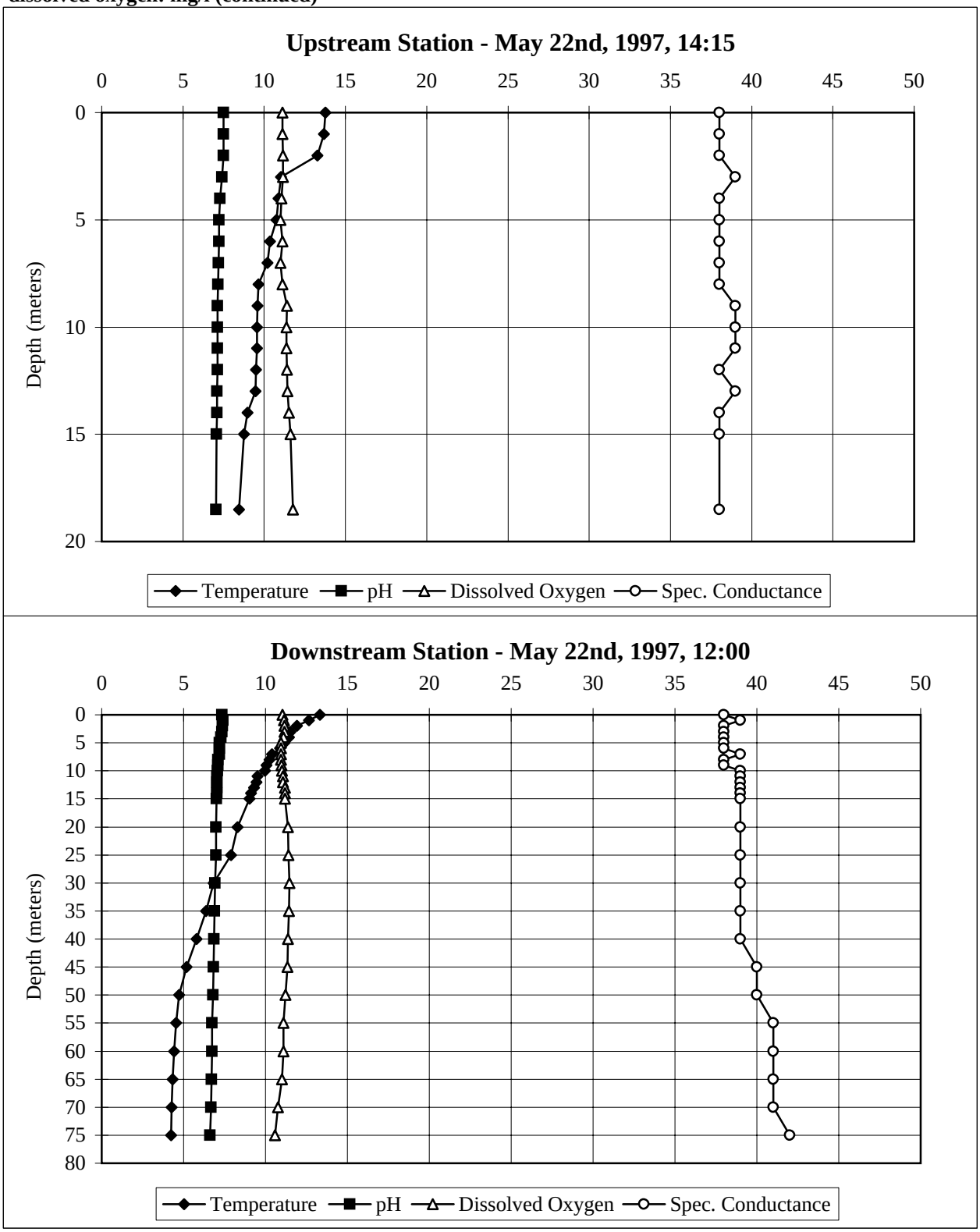
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



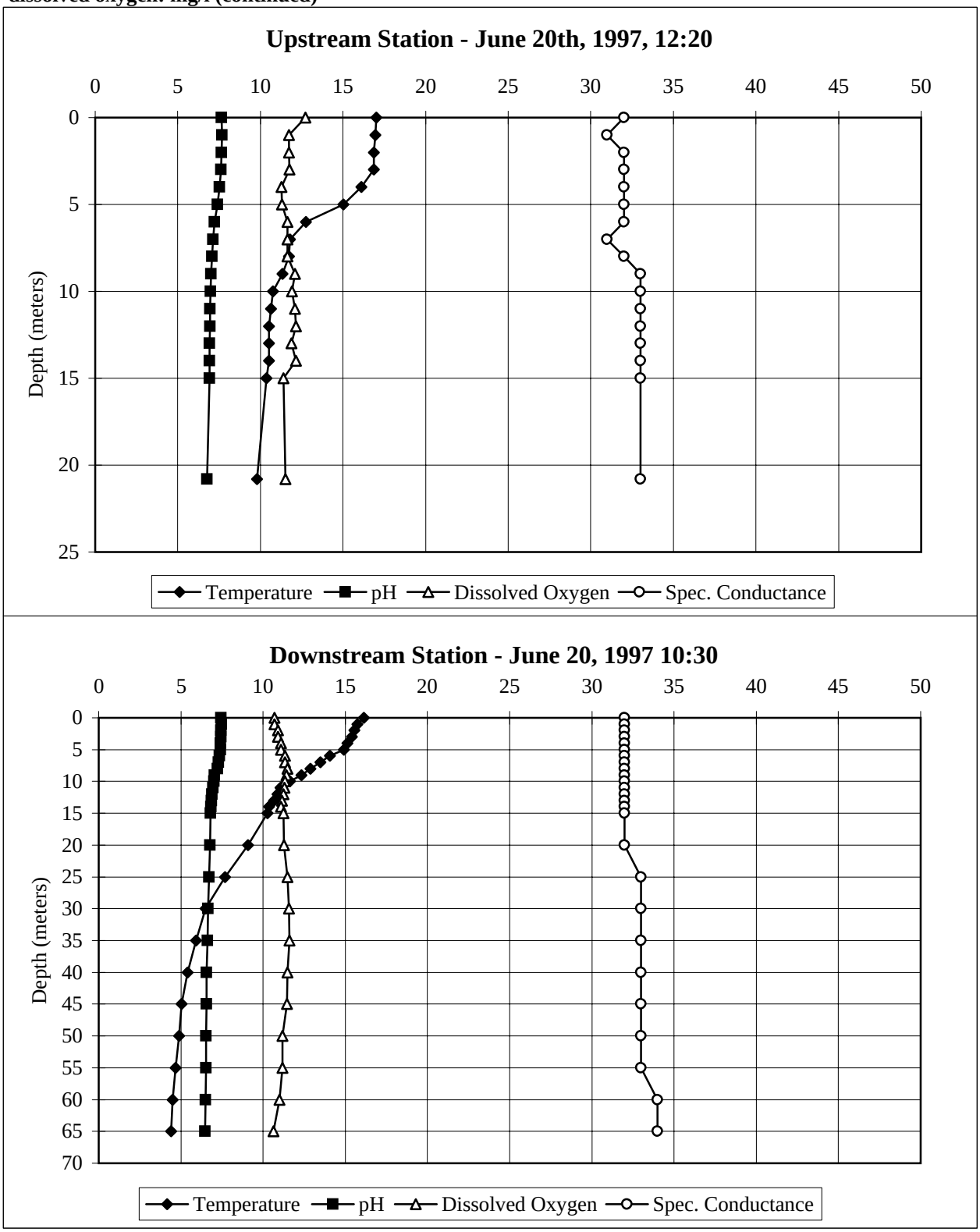
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



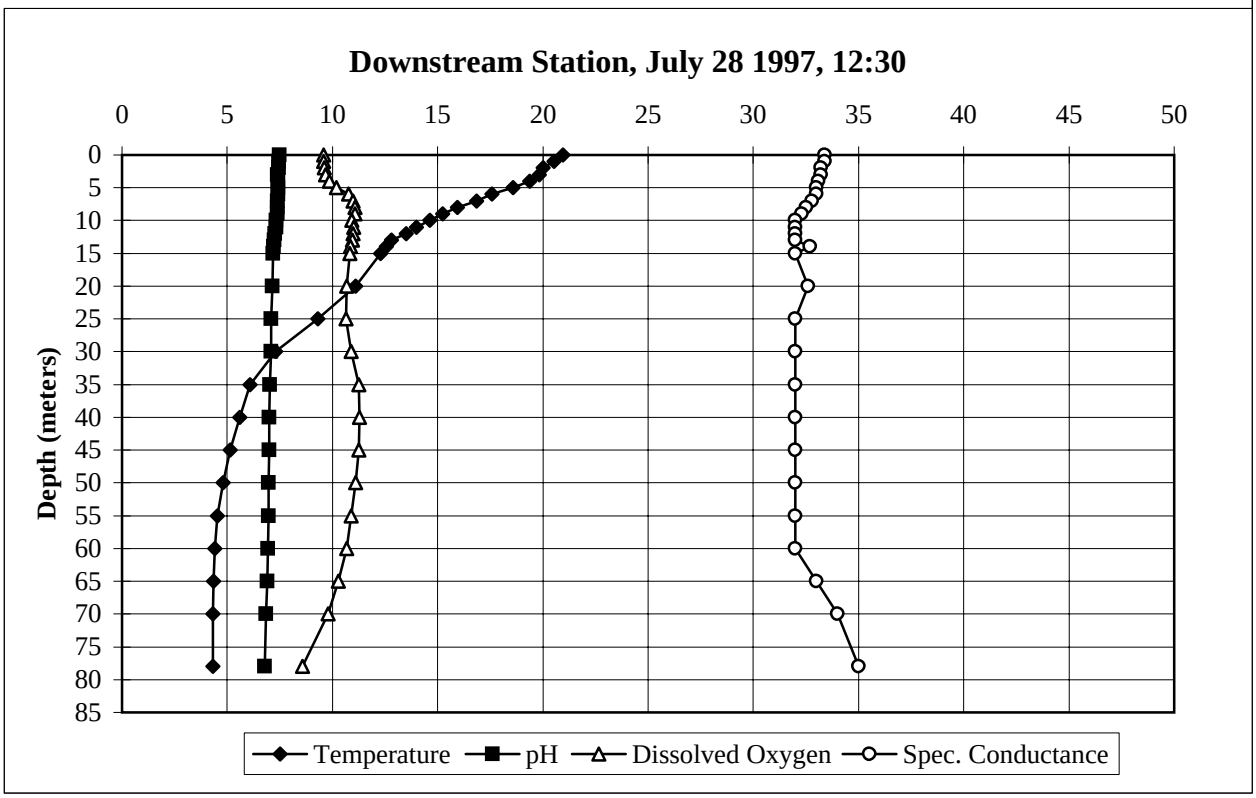
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



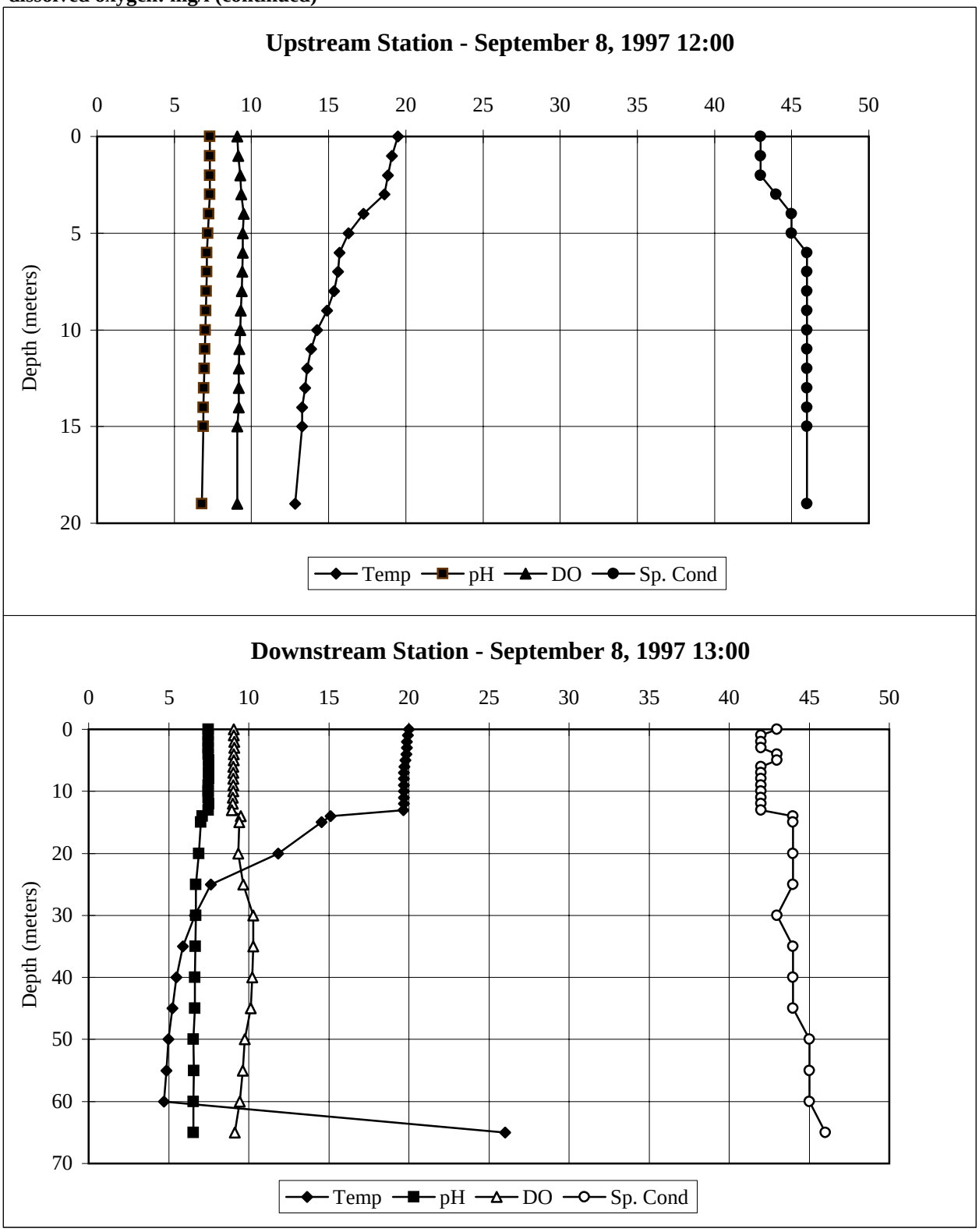
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



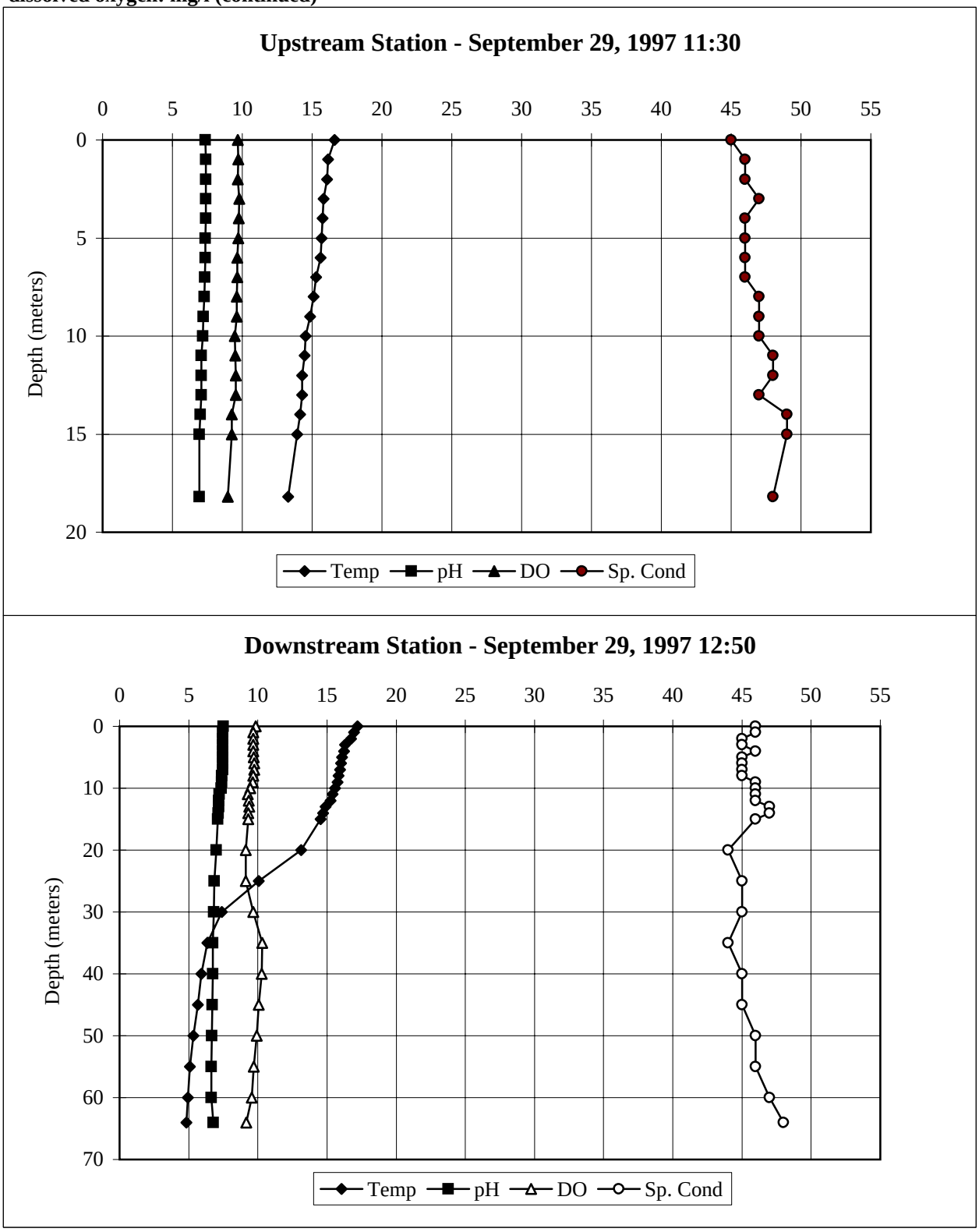
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



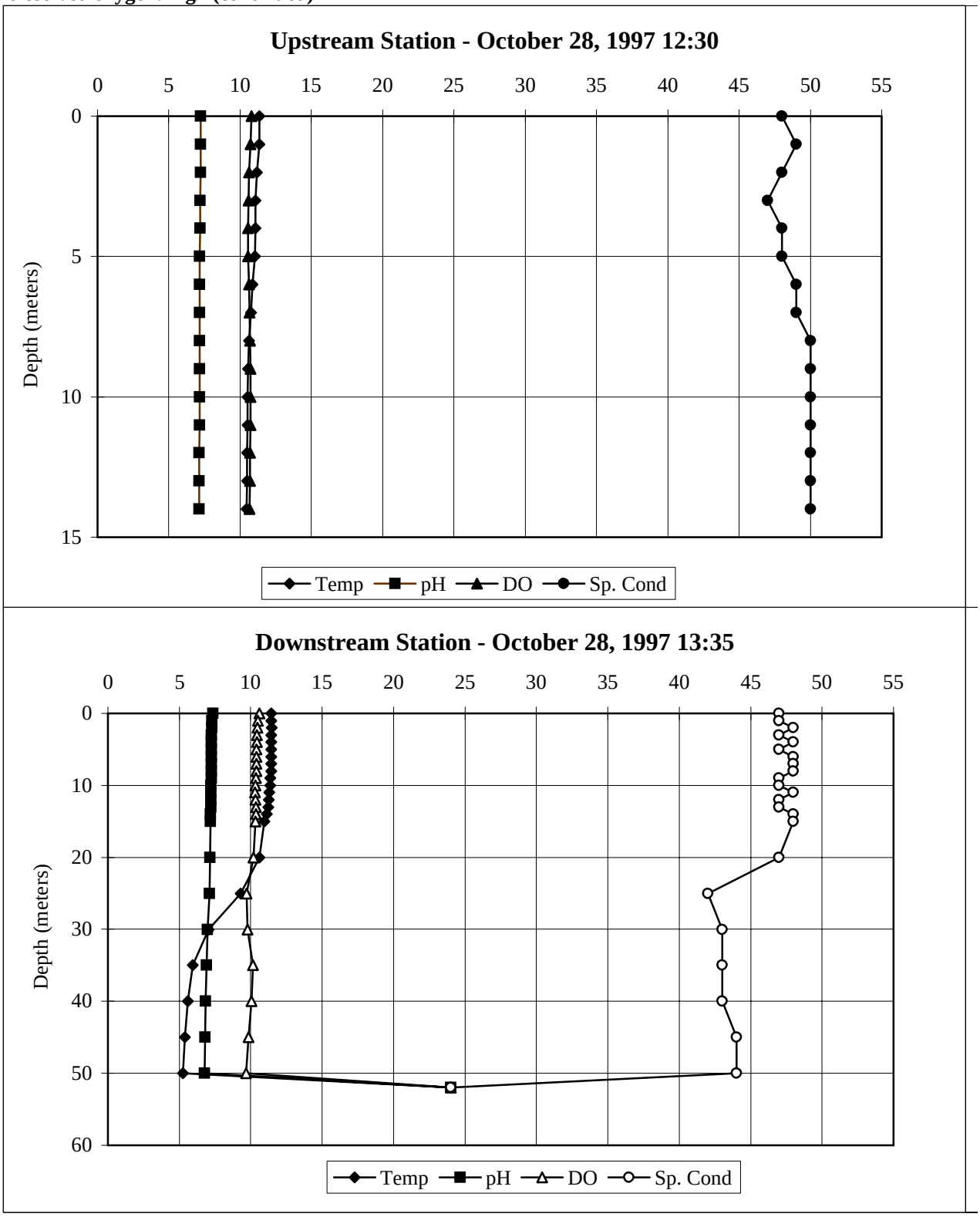
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



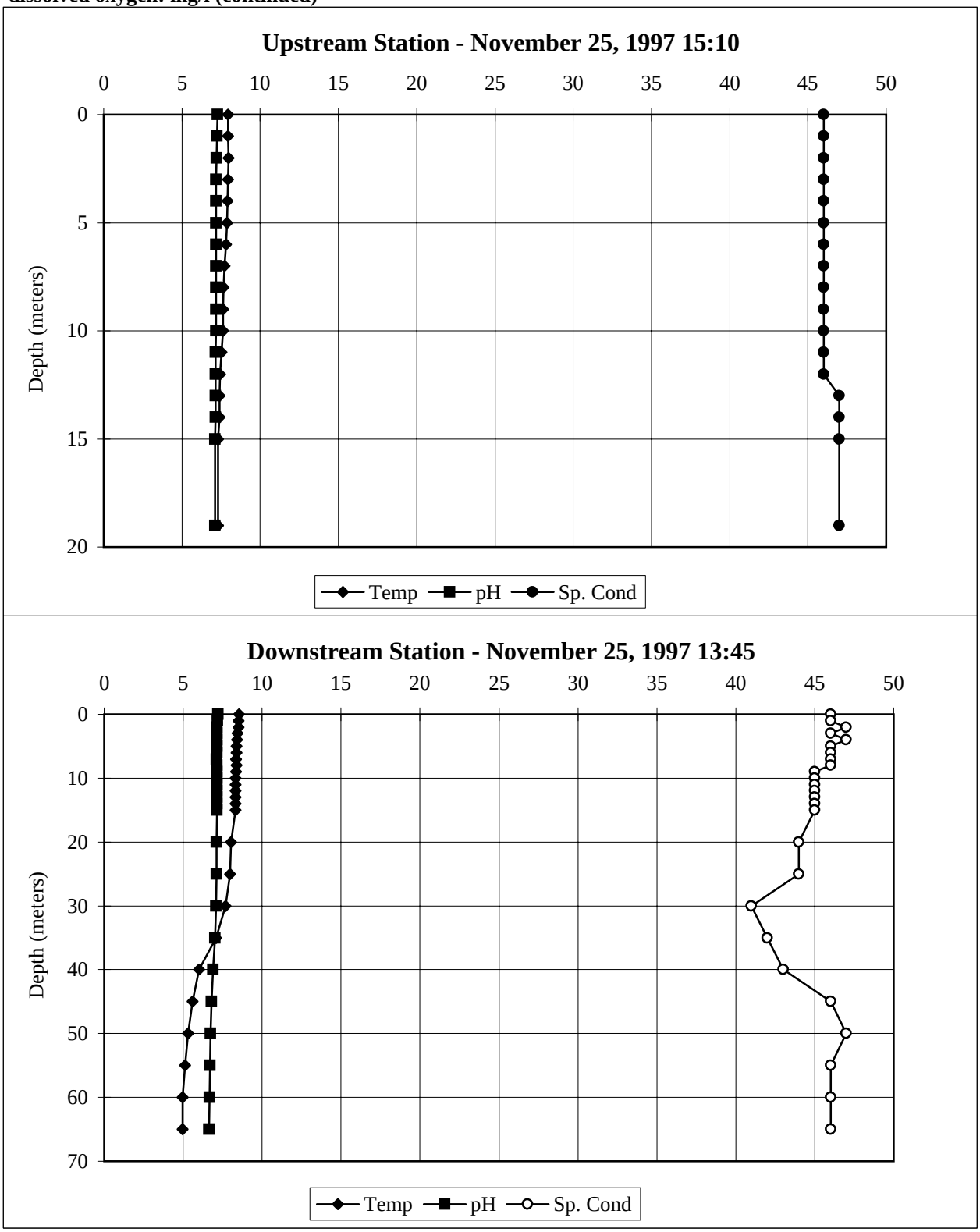
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



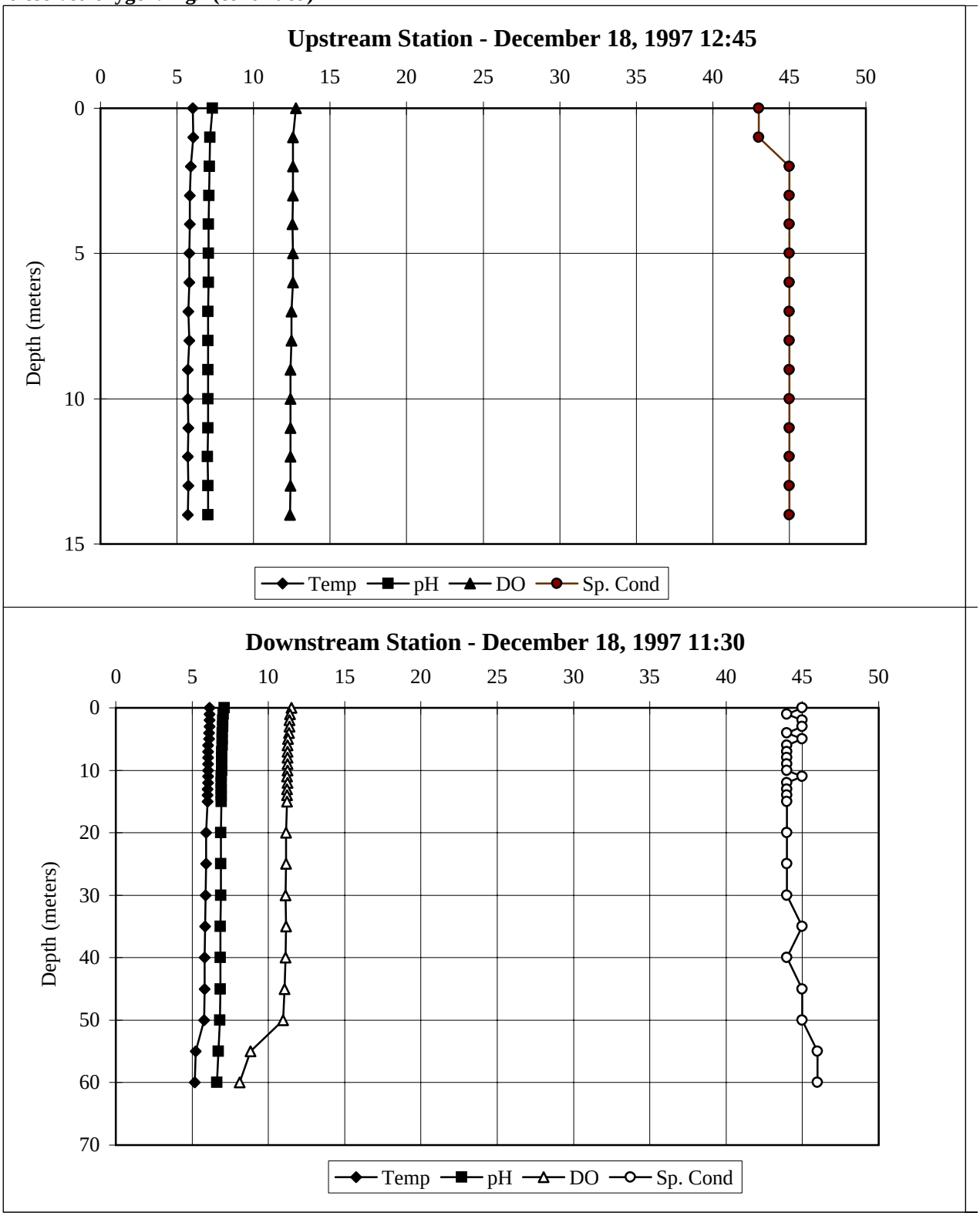
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



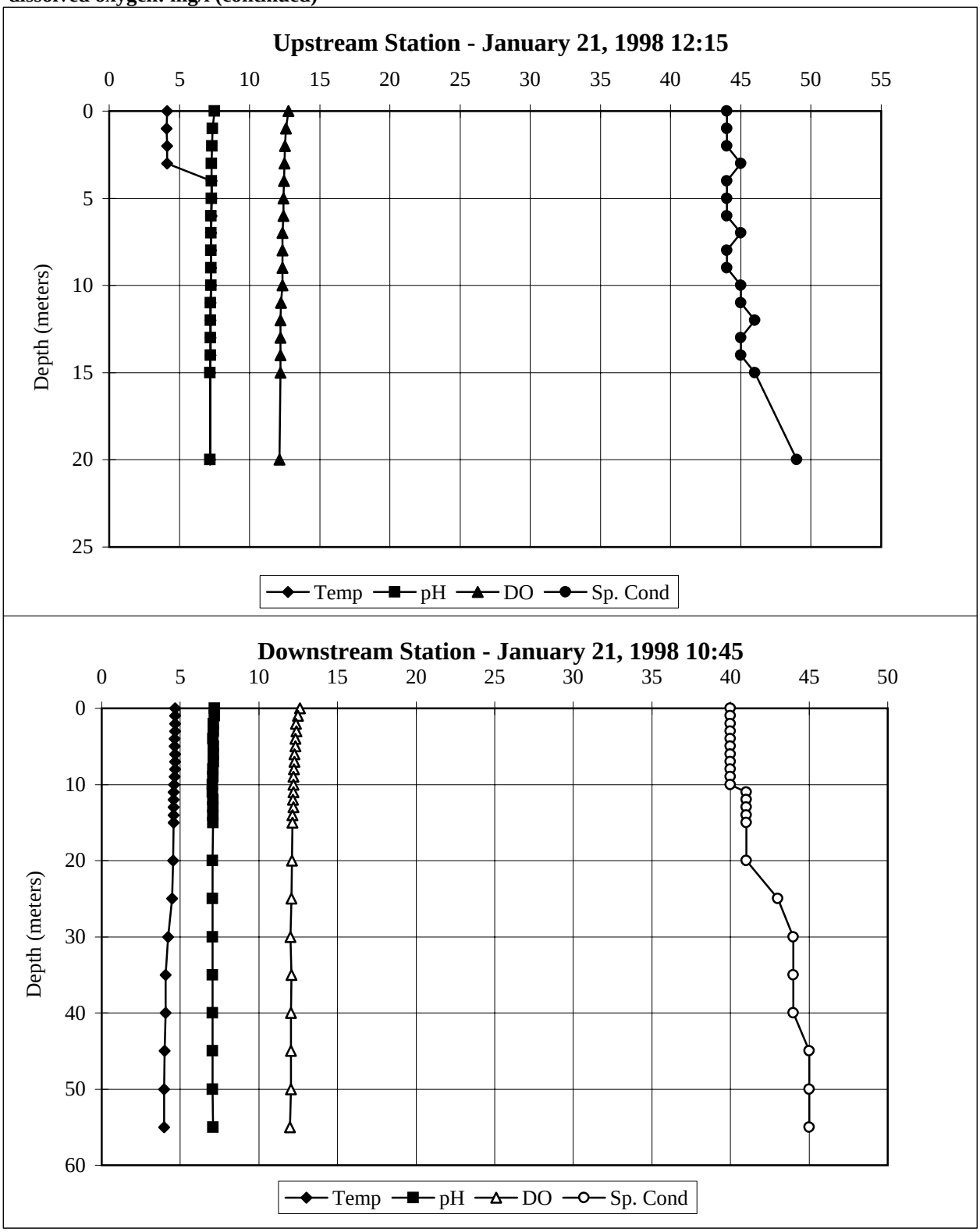
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



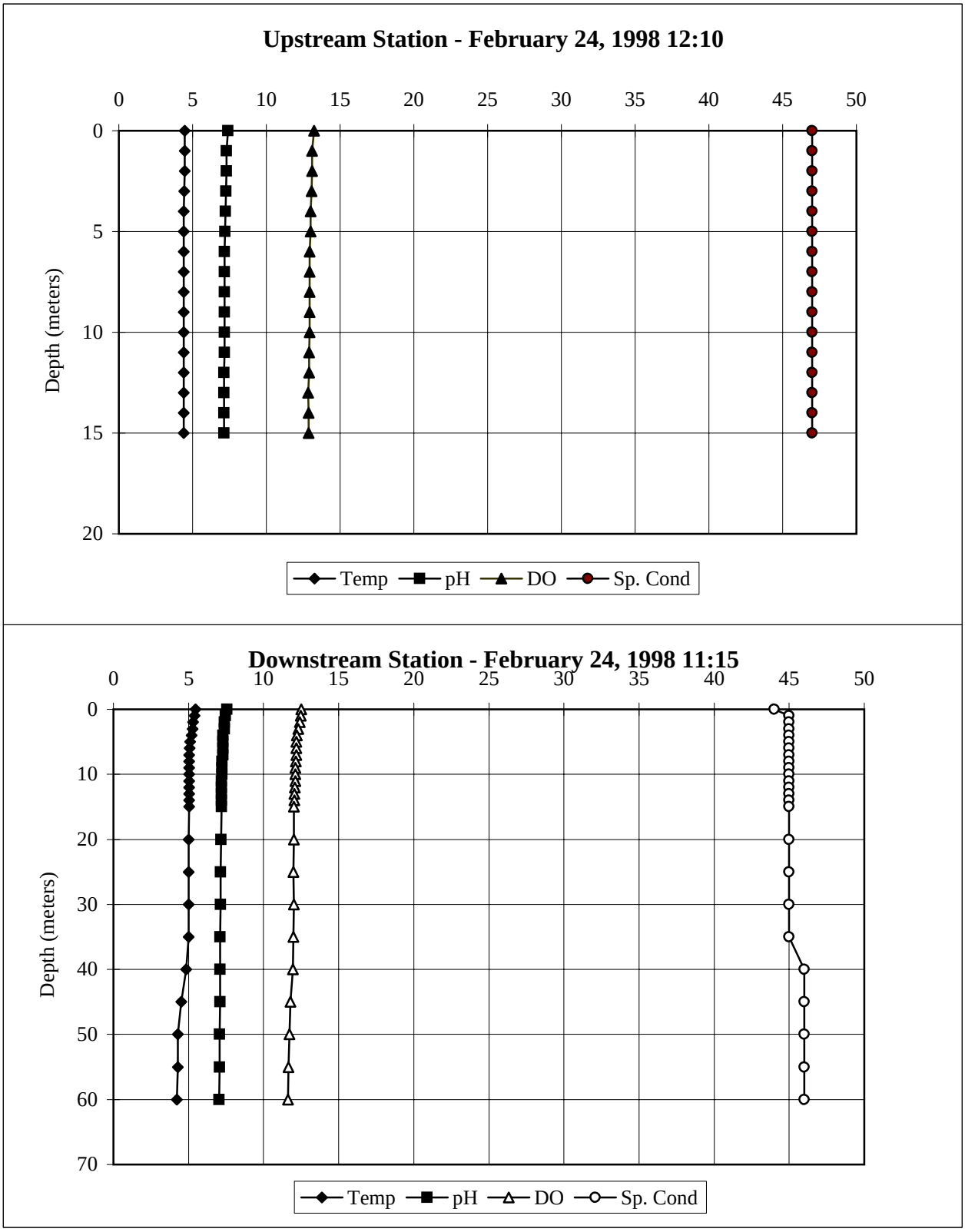
Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm, dissolved oxygen: mg/l (continued)



Appendix 2.3-1. Yale Lake profile data. Temperature:°C, pH: pH units, specific conductance: mS/cm,



Appendix 2.3-2

Phytoplankton Sample Analysis

Appendix 2.3-2. Phytoplankton Sample Analysis.

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	96-03-28
DIVERSITY INDEX:	3.1
TROPHIC STATE INDEX:	11.3
TOTAL DENSITY (#/ml):	12.9
TOTAL BIOVOLUME (cu.uM/ml):	3821.2
NUMBER OF SPECIES:	9.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Achnanthes minutissima	2	18.2	117	3.1
Diatoma hiemale mesodon	2	18.2	1874	49.0
Asterionella formosa	1	9.1	258	6.7
Fragilaria brevistriata	1	9.1	193	5.1
Navicula cryptocephala veneta	1	9.1	111	2.9
Achnanthes peragalli	1	9.1	164	4.3
Fragilaria construens	1	9.1	131	3.4
Cymbella minuta	1	9.1	433	11.3
Cocconeis placentula	1	9.1	539	14.1

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	96-03-28
DIVERSITY INDEX:	2.5
TROPHIC STATE INDEX:	16.1
TOTAL DENSITY (#/ml):	9.1
TOTAL BIOVOLUME (cu.uM/ml):	8321.8
NUMBER OF SPECIES:	6.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Melosira italica	3	28.6	7335	88.1
Achnanthes lanceolata	1	14.3	234	2.8
Asterionella formosa	1	14.3	286	3.4
Achnanthes minutissima	1	14.3	65	0.8
Gomphonema olivaceum	1	14.3	292	3.5
Chrysococcus rufescens	1	14.3	110	1.3

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR Upper
SAMPLE DATE: 96-04-29
DIVERSITY INDEX: 3.6
TROPHIC STATE INDEX: 17.1
TOTAL DENSITY (#/ml): 24.7
TOTAL BIOVOLUME (cu.uM/ml): 9704.0
NUMBER OF SPECIES: 15.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Cryptomonas erosa	5	21.7	2792	28.8
Achnanthes lanceolata	4	17.4	773	8.0
Stephanodiscus hantzschii	2	8.7	258	2.7
Achnanthes minutissima	1	4.3	54	0.6
Gomphonema olivaceum	1	4.3	242	2.5
Chlamydomonas sp.	1	4.3	349	3.6
Navicula decussis	1	4.3	206	2.1
Nitzschia amphibia	1	4.3	103	1.1
Nitzschia communis	1	4.3	48	0.5
Stephanodiscus astraea minutula	1	4.3	376	3.9
Navicula minima	1	4.3	47	0.5
Pinnularia microstauron	1	4.3	3672	37.8
Synedra rumpens	1	4.3	150	1.5
Cymbella minuta	1	4.3	397	4.1
Asterionella formosa	1	4.3	236	2.4

SAMPLE: YALE RESERVOIR Lower
SAMPLE DATE: 96-04-29
DIVERSITY INDEX: 2.7
TROPHIC STATE INDEX: 23.2
TOTAL DENSITY (#/ml): 56.2
TOTAL BIOVOLUME (cu.uM/ml): 23814.0
NUMBER OF SPECIES: 14.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Cryptomonas erosa	27	47.9	14010	58.8
Stephanodiscus hantzschii	7	12.5	843	3.5
Achnanthes lanceolata	6	10.4	1054	4.4
Stephanodiscus astraea minutula	2	4.2	820	3.4
Melosira italica	2	4.2	2207	9.3
Chlamydomonas sp.	2	4.2	761	3.2
Tabellaria fenestrata	1	2.1	2811	11.8
Cyclotella meneghiniana	1	2.1	445	1.9
Fragilaria construens venter	1	2.1	56	0.2
Synedra rumpens	1	2.1	164	0.7
Navicula decussis	1	2.1	225	0.9
Asterionella formosa	1	2.1	258	1.1
Chrysococcus rufescens	1	2.1	100	0.4
Achnanthes minutissima	1	2.1	59	0.2

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	96-05-22
DIVERSITY INDEX:	3.4
TROPHIC STATE INDEX:	29.9
TOTAL DENSITY (#/ml):	169.8
TOTAL BIOVOLUME (cu.uM/ml):	61918.9
NUMBER OF SPECIES:	20.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Cryptomonas erosa	41	24.1	21272	34.4
Rhodomonas minuta	37	21.7	736	1.2
Stephanodiscus astraea minutula	29	16.9	10022	16.2
Synedra rumpens	10	6.0	1432	2.3
Chlamydomonas sp.	6	3.6	1994	3.2
Asterionella formosa	6	3.6	1795	2.9
Achnanthes lanceolata	6	3.6	1469	2.4
Nitzschia acicularis	4	2.4	1145	1.8
Melosira italica	4	2.4	15414	24.9
Unidentified flagellate	4	2.4	82	0.1
Stephanodiscus hantzschii	4	2.4	491	0.8
Melosira granulata angustissima	2	1.2	1023	1.7
Fragilaria vaucheria	2	1.2	1178	1.9
Chrysococcus rufescens	2	1.2	174	0.3
Achnanthes linearis	2	1.2	270	0.4
Diatoma hiemale mesodon	2	1.2	1636	2.6
Gomphonema angustatum	2	1.2	736	1.2
Fragilaria construens venter	2	1.2	98	0.2
Cymbella minuta	2	1.2	757	1.2
Navicula cryptocephala veneta	2	1.2	194	0.3

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	96-05-22
DIVERSITY INDEX:	2.7
TROPHIC STATE INDEX:	34.1
TOTAL DENSITY (#/ml):	273.5
TOTAL BIOVOLUME (cu.uM/ml):	111135.7
NUMBER OF SPECIES:	13.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	128	46.8	2561	2.3
Cryptomonas erosa	38	13.8	19669	17.7
Melosira italica	20	7.4	63315	57.0
Synedra rumpens	20	7.4	2851	2.6
Stephanodiscus astraea minutula	20	7.4	7129	6.4
Chlamydomonas sp.	12	4.3	3783	3.4
Asterionella formosa	9	3.2	6337	5.7
Chrysococcus rufescens	9	3.2	742	0.7
Fragilaria vaucheria	6	2.1	1676	1.5
Kephyrion sp.	3	1.1	183	0.2
Anacystis marina	3	1.1	873	0.8
Oocystis lacustris	3	1.1	896	0.8
Meridion circulare	3	1.1	1120	1.0

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	96-06-25
DIVERSITY INDEX:	1.0
TROPHIC STATE INDEX:	48.6
TOTAL DENSITY (#/ml):	482.0
TOTAL BIOVOLUME (cu.uM/ml):	841457.8
NUMBER OF SPECIES:	8.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Anabaena flos-aquae	398	82.6	716294	85.1
Melosira italica	44	9.2	104128	12.4
Melosira granulata angustissima	13	2.8	11043	1.3
Asterionella formosa	9	1.8	4864	0.6
Chlamydomonas sp.	4	0.9	1437	0.2
Tabellaria flocculosa	4	0.9	2609	0.3
Gomphonema olivaceum	4	0.9	995	0.1
Rhodomonas minuta	4	0.9	88	0.0

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	96-06-25
DIVERSITY INDEX:	1.056725
TROPHIC STATE INDEX:	42.7
TOTAL DENSITY (#/ml):	258.1
TOTAL BIOVOLUME (cu.uM/ml):	372812.5
NUMBER OF SPECIES:	9.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Anabaena flos-aquae	218	84.6	349454	93.7
Rhodomonas minuta	9	3.3	170	0.0
Cryptomonas erosa	9	3.3	4425	1.2
Melosira italica	6	2.2	16032	4.3
Synedra rumpens	6	2.2	794	0.2
Achnanthes minutissima	3	1.1	142	0.0
Chlamydomonas sp.	3	1.1	922	0.2
Unidentified flagellate	3	1.1	57	0.0
Fragilaria vaucheria	3	1.1	817	0.2

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	96-07-23
DIVERSITY INDEX:	1.8
TROPHIC STATE INDEX:	24.2
TOTAL DENSITY (#/ml):	141.5
TOTAL BIOVOLUME (cu.uM/ml):	27453.0
NUMBER OF SPECIES:	9.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	88	62.5	1769	6.4
Cryptomonas erosa	28	19.4	14306	52.1
Anabaena flos-aquae	8	5.6	7861	28.6
Ankistrodesmus falcatus	4	2.8	98	0.4
Synedra rumpens	4	2.8	825	3.0
Nitzschia frustulum	4	2.8	472	1.7
Glenodinium sp.	2	1.4	1376	5.0
Chromulina sp.	2	1.4	39	0.1
Synedra radians	2	1.4	707	2.6

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	96-07-23
DIVERSITY INDEX:	3.4
TROPHIC STATE INDEX:	15.7
TOTAL DENSITY (#/ml):	19.5
TOTAL BIOVOLUME (cu.uM/ml):	7843.3
NUMBER OF SPECIES:	13.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Cryptomonas erosa	5	26.1	2645	33.7
Rhodomonas minuta	3	13.0	51	0.6
Glenodinium sp.	2	8.7	1187	15.1
Ankistrodesmus falcatus	2	8.7	64	0.8
Synedra radians	2	8.7	610	7.8
Fragilaria construens venter	1	4.3	81	1.0
Melosira italica	1	4.3	2396	30.5
Unidentified flagellate	1	4.3	17	0.2
Achnanthes linearis	1	4.3	112	1.4
Nitzschia palea	1	4.3	153	1.9
Cocconeis placentula	1	4.3	390	5.0
Kephyrion sp.	1	4.3	53	0.7
Achnanthes minutissima	1	4.3	85	1.1

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR Upper
SAMPLE DATE: 96-08-27

DIVERSITY INDEX:	1.937557
TROPHIC STATE INDEX:	27.2
TOTAL DENSITY (#/ml):	201.1
NUMBER OF SPECIES:	11.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	126	62.6	2519	5.9
Cryptomonas erosa	22	11.1	11620	27.4
Kephyrion littorale	18	9.1	1737	4.1
Aphanizomenon flos-aquae	16	8.1	15602	36.8
Anabaena flos-aquae	6	3.0	6095	14.4
Dinobryon bavaricum	2	1.0	244	0.6
Hemidinium sp.	2	1.0	609	1.4
Synedra radians	2	1.0	731	1.7
Asterionella formosa	2	1.0	1788	4.2
Glenodinium sp.	2	1.0	1422	3.4
Unidentified flagellate	2	1.0	41	0.1

SAMPLE: YALE RESERVOIR Lower
SAMPLE DATE: 96-08-27

DIVERSITY INDEX:	0.9
TROPHIC STATE INDEX:	19.6
TOTAL DENSITY (#/ml):	190.1
TOTAL BIOVOLUME (cu.uM/ml):	14075.1
NUMBER OF SPECIES:	8.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	165	86.7	3298	23.4
Cryptomonas erosa	12	6.1	6052	43.0
Fragilaria construens venter	4	2.0	186	1.3
Chlamydomonas sp.	2	1.0	630	4.5
Aphanizomenon flos-aquae	2	1.0	1164	8.3
Navicula rhynchocephala	2	1.0	572	4.1
Dinobryon bavaricum	2	1.0	233	1.7
Anabaena flos-aquae	2	1.0	1940	13.8

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	96-09-25
DIVERSITY INDEX:	1.0
TROPHIC STATE INDEX:	31
TOTAL DENSITY (#/ml):	520.6
TOTAL BIOVOLUME (cu.uM/ml):	72299.1
NUMBER OF SPECIES:	7.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	426	81.9	8526	11.8
Cryptomonas erosa	63	12.1	32669	45.2
Mallomonas sp.	13	2.6	5116	7.1
Chlamydomonas sp.	4	0.9	1458	2.0
Tabellaria fenestrata	4	0.9	10770	14.9
Dinobryon bavaricum	4	0.9	1077	1.5
Melosira italica	4	0.9	12682	17.5

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	96-09-25
DIVERSITY INDEX:	0.8
TROPHIC STATE INDEX:	30.8
TOTAL DENSITY (#/ml):	260.2
TOTAL BIOVOLUME (cu.uM/ml):	70795.3
NUMBER OF SPECIES:	7.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	224	86.1	4478	6.3
Cryptomonas erosa	21	8.2	11088	15.7
Dinobryon bavaricum	6	2.5	1305	1.8
Oscillatoria sp.	2	0.8	2132	3.0
Fragilaria construens venter	2	0.8	102	0.1
Fragilaria crotonensis	2	0.8	10747	15.2
Tabellaria fenestrata	2	0.8	40942	57.8

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	96-10-21
DIVERSITY INDEX:	2.9
TROPHIC STATE INDEX:	30.6
TOTAL DENSITY (#/ml):	200.2
TOTAL BIOVOLUME (cu.uM/ml):	68714.1
NUMBER OF SPECIES:	17.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	85	42.6	1706	2.5
Cyclotella atomus	28	13.8	554	0.8
Cryptomonas erosa	21	10.7	11088	16.1
Aphanizomenon flos-aquae	19	9.6	20727	30.2
Stephanodiscus astraea minutula	9	4.3	2985	4.3
Achnanthes lanceolata	9	4.3	1535	2.2
	4	2.0	0	0.0
Tabellaria fenestrata	4	2.1	20471	29.8
Ankistrodesmus falcatus	4	2.1	107	0.2
Meridion circulare	2	1.1	821	1.2
Melosira ambigua	2	1.1	2512	3.7
Nitzschia frustulum	2	1.1	256	0.4
Gomphonema angustatum	2	1.1	384	0.6
Fragilaria construens venter	2	1.1	409	0.6
Navicula pseudoscutiformis	2	1.1	373	0.5
Synedra radians	2	1.1	768	1.1
Melosira italica	2	1.1	4017	5.8

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	96-10-21
DIVERSITY INDEX:	2.2
TROPHIC STATE INDEX:	29.9
TOTAL DENSITY (#/ml):	172.1057
TOTAL BIOVOLUME (cu.uM/ml):	62285.91
NUMBER OF SPECIES:	15

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	108	62.7	2156.506	3.462269
Cryptomonas erosa	19	10.8	9704.276	15.58021
Dinobryon sertularia	6	3.6	962.3407	1.545038
Cyclotella atomus	6	3.6	124.4138	0.199746
Tabellaria fenestrata	6	3.6	29859.31	47.93911
Synedra rumpens	4	2.4	580.5977	0.932149
Ankistrodesmus falcatus	4	2.4	103.6782	0.166455
Melosira italica	4	2.4	15626.37	25.08814
Synedra radians	2	1.2	746.4828	1.198478
Nitzschia paleacea	2	1.2	203.2092	0.326252
Kephyrion littorale	2	1.2	196.9885	0.316265
Achnanthes minutissima	2	1.2	103.6782	0.166455
Navicula rhynchocephala	2	1.2	611.7012	0.982086
Dinobryon bavaricum	2	1.2	248.8276	0.399493
Fragilaria capucina	2	1.2	1057.517	1.697844

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	96-11-25
DIVERSITY INDEX:	3.6
TROPHIC STATE INDEX:	23.4
TOTAL DENSITY (#/ml):	97.9
TOTAL BIOVOLUME (cu.uM/ml):	24786.8
NUMBER OF SPECIES:	20.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Cryptomonas erosa	25	25.6	13029	52.6
Rhodomonas minuta	21	20.9	410	1.7
Achnanthes lanceolata	9	9.3	1640	6.6
Achnanthes minutissima	7	7.0	342	1.4
Diploneis elliptica	2	2.3	592	2.4
Cocconeis placentula	2	2.3	1048	4.2
Navicula radiosa	2	2.3	740	3.0
Cyclotella atomus	2	2.3	46	0.2
Navicula cryptocephala veneta	2	2.3	216	0.9
Ankistrodesmus falcatus	2	2.3	57	0.2
Navicula cryptocephala	2	2.3	421	1.7
Synedra rumpens	2	2.3	319	1.3
Kephyrion sp.	2	2.3	144	0.6
Gomphonema angustatum	2	2.3	410	1.7
Nitzschia dissipata	2	2.3	613	2.5
Aphanizomenon flos-aquae	2	2.3	1367	5.5
Cymbella minuta	2	2.3	1686	6.8
Fragilaria pinnata	2	2.3	273	1.1
Surirella linearis	2	2.3	638	2.6
Stephanodiscus astraea minutula	2	2.3	797	3.2

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	96-11-25
DIVERSITY INDEX:	2.8
TROPHIC STATE INDEX:	25.5
TOTAL DENSITY (#/ml):	77.2
TOTAL BIOVOLUME (cu.uM/ml):	33408.5
NUMBER OF SPECIES:	12.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Cryptomonas erosa	30	39.5	15846	47.4
Rhodomonas minuta	12	15.8	244	0.7
Asterionella formosa	10	13.2	9386	28.1
Achnanthes minutissima	6	7.9	396	1.2
Stephanodiscus astraea minutula	4	5.3	1422	4.3
Achnanthes linearis	2	2.6	268	0.8
Melosira italica	2	2.6	3827	11.5
Achnanthes pinnata	2	2.6	132	0.4
Nitzschia dissipata	2	2.6	546	1.6
Navicula decussis	2	2.6	390	1.2
Cymbella minuta	2	2.6	752	2.2
Nitzschia paleacea	2	2.6	199	0.6

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	96-12-19
DIVERSITY INDEX:	2.7
TROPHIC STATE INDEX:	18.2
TOTAL DENSITY (#/ml):	62.2
TOTAL BIOVOLUME (cu.uM/ml):	11505.4
NUMBER OF SPECIES:	14.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	30	48.6	605	5.3
Cryptomonas erosa	10	16.2	5247	45.6
Nitzschia paleacea	3	5.4	330	2.9
Rhoicosphenia curvata	2	2.7	393	3.4
Nitzschia dissipata	2	2.7	452	3.9
Cryptomonas sp.	2	2.7	673	5.8
Achnanthes minutissima	2	2.7	84	0.7
Cyclotella meneghiniana	2	2.7	639	5.6
Fragilaria vaucheria	2	2.7	484	4.2
Navicula sp.	2	2.7	252	2.2
Kephyrion sp.	2	2.7	106	0.9
Achnanthes linearis	2	2.7	222	1.9
Fragilaria capucina	2	2.7	1715	14.9
Achnanthes lanceolata	2	2.7	303	2.6

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	97-03-20
DIVERSITY INDEX:	3.7
TROPHIC STATE INDEX:	25.1
TOTAL DENSITY (#/ml):	47
TOTAL BIOVOLUME (cu.uM/ml):	31294
NUMBER OF SPECIES:	17

SPECIES	DENSITY	PCT	BIOVOL	PCT
Achnanthes lanceolata	12	25.0	2133	6.8
Diatoma hiemale mesodon	5	10.7	4063	13.0
Achnanthes minutissima	5	10.7	432	1.4
Melosira ambigua	3	7.1	9971	31.9
Stephanodiscus astraea minutula	2	3.6	593	1.9
Nitzschia frustulum	2	3.6	203	0.6
Fragilaria construens venter	2	3.6	244	0.8
Synedra rumpens	2	3.6	237	0.8
Diatoma vulgare	2	3.6	6636	21.2
Fragilaria vaucheria	2	3.6	488	1.6
Navicula decussis	2	3.6	325	1.0
Navicula gregaria	2	3.6	296	0.9
Cymbella minuta	2	3.6	626	2.0
Nitzschia dissipata	2	3.6	455	1.5
Trachelomonas hispida	2	3.6	3555	11.4
Navicula capitata	2	3.6	813	2.6
Achnanthes linearis	2	3.6	223	0.7

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR Upper
SAMPLE DATE: 97-04-23
DIVERSITY INDEX: 2.3
TROPHIC STATE INDEX: 18.4
TOTAL DENSITY (#/ml): 72.3
TOTAL BIOVOLUME (cu.uM/ml): 11820.2
NUMBER OF SPECIES: 11.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	42	58.5	847	7.2
Diatoma hiemale mesodon	5	7.3	4235	35.8
Achnanthes lanceolata	5	7.3	953	8.1
Cryptomonas erosa	4	4.9	1835	15.5
Cymbella minuta	4	4.9	1306	11.0
Stephanodiscus astraea minutula	4	4.9	1235	10.4
Achnanthes minutissima	2	2.4	88	0.7
Achnanthes linearis	2	2.4	233	2.0
Asterionella formosa	2	2.4	388	3.3
Nitzschia acicularis	2	2.4	494	4.2
Rhoicosphenia curvata	2	2.4	206	1.7

SAMPLE: YALE RESERVOIR Lower
SAMPLE DATE: 97-04-23
DIVERSITY INDEX: 1.4
TROPHIC STATE INDEX: 24.5
TOTAL DENSITY (#/ml): 325.7
TOTAL BIOVOLUME (cu.uM/ml): 28882.8
NUMBER OF SPECIES: 11.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	257	78.8	5136	17.8
Chlamydomonas sp.	19	5.8	6107	21.1
Cryptomonas erosa	16	4.8	8143	28.2
Stephanodiscus astraea minutula	9	2.9	3289	11.4
Achnanthes minutissima	6	1.9	313	1.1
Diatoma hiemale mesodon	3	1.0	2506	8.7
Fragilaria construens	3	1.0	351	1.2
Achnanthes lanceolata	3	1.0	564	2.0
Achnanthes linearis	3	1.0	413	1.4
Fragilaria vaucheria	3	1.0	902	3.1
Cymbella minuta	3	1.0	1159	4.0

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	97-05-22
DIVERSITY INDEX:	1.1
TROPHIC STATE INDEX:	37.5
TOTAL DENSITY (#/ml):	1195.2
TOTAL BIOVOLUME (cu.uM/ml):	179080.8
NUMBER OF SPECIES:	7.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	902	75.5	18040	10.1
Cryptomonas erosa	237	19.8	123123	68.8
Stephanodiscus astraea minutula	11	0.9	3946	2.2
Chlamydomonas sp.	11	0.9	3664	2.0
Oocystis lacustris	11	0.9	3473	1.9
Mallomonas sp.	11	0.9	4285	2.4
Trachelomonas sp.	11	0.9	22550	12.6

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	97-05-22
DIVERSITY INDEX:	1.3
TROPHIC STATE INDEX:	34.2
TOTAL DENSITY (#/ml):	780.3
TOTAL BIOVOLUME (cu.uM/ml):	113501.7
NUMBER OF SPECIES:	8.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	573	73.4	11454	10.1
Cryptomonas erosa	136	17.4	70728	62.3
Oocystis lacustris	36	4.6	11024	9.7
Cyclotella atomus	7	0.9	143	0.1
Asterionella formosa	7	0.9	12599	11.1
Chlamydomonas sp.	7	0.9	2327	2.0
Mallomonas sp.	7	0.9	2720	2.4
Stephanodiscus astraea minutula	7	0.9	2506	2.2

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	97-06-20
DIVERSITY INDEX:	2.6
TROPHIC STATE INDEX:	33.1
TOTAL DENSITY (#/ml):	205.6
TOTAL BIOVOLUME (cu.uM/ml):	97363.6
NUMBER OF SPECIES:	11.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	74	35.8	1474	1.5
Dinobryon bavaricum	45	21.7	8566	8.8
Asterionella formosa	31	15.1	24581	25.2
Anabaena flos-aquae	21	10.4	44809	46.0
Cryptomonas erosa	17	8.5	9078	9.3
Synedra rumpens	4	1.9	543	0.6
Anabaena circinalis	4	1.9	4655	4.8
Stephanodiscus astraea minutula	4	1.9	1358	1.4
Ankistrodesmus falcatus	2	0.9	48	0.0
Diatoma hiemale mesodon	2	0.9	1552	1.6
Synedra radians	2	0.9	698	0.7

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	97-06-20
DIVERSITY INDEX:	2.7
TROPHIC STATE INDEX:	30.7
TOTAL DENSITY (#/ml):	97.9
TOTAL BIOVOLUME (cu.uM/ml):	69476.2
NUMBER OF SPECIES:	11.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Asterionella formosa	31	32.0	30965	44.6
Rhodomonas minuta	25	25.8	504	0.7
Anabaena flos-aquae	11	11.3	23307	33.5
Cryptomonas erosa	8	8.2	4197	6.0
Dinobryon bavaricum	7	7.2	848	1.2
Synedra rumpens	4	4.1	565	0.8
Anabaena circinalis	4	4.1	7264	10.5
Stephanodiscus astraea minutula	3	3.1	1059	1.5
Nitzschia acicularis	2	2.1	565	0.8
Cyclotella atomus	1	1.0	20	0.0
Achnanthes lanceolata	1	1.0	182	0.3

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	97-07-28
DIVERSITY INDEX:	2.9
TROPHIC STATE INDEX:	25.1
TOTAL DENSITY (#/ml):	48.5
TOTAL BIOVOLUME (cu.uM/ml):	31467.1
NUMBER OF SPECIES:	19.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Asterionella formosa	22	45.2	11083	35.2
Aphanizomenon flos-aquae	9	17.8	6730	21.4
Rhodomonas minuta	4	8.2	80	0.3
Glenodinium sp.	3	5.5	1858	5.9
Dinobryon sertularia	1	2.7	869	2.8
Fragilaria construens	1	2.7	743	2.4
Ankistrodesmus falcatus	1	1.4	17	0.1
Tabellaria fenestrata	1	1.4	4779	15.2
Anabaena planctonica	1	1.4	3336	10.6
Navicula contenta biceps	1	1.4	53	0.2
Fragilaria pinnata	1	1.4	80	0.3
Cryptomonas erosa	1	1.4	345	1.1
Achnanthes linearis	1	1.4	88	0.3
Tabellaria flocculosa	1	1.4	783	2.5
Navicula cryptocephala	1	1.4	123	0.4
Kephyrion littorale	1	1.4	63	0.2
Nitzschia palea	1	1.4	119	0.4
Synedra radians	1	1.4	239	0.8
Dinobryon bavaricum	1	1.4	80	0.3

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	97-07-28
DIVERSITY INDEX:	1.4
TROPHIC STATE INDEX:	22.6
TOTAL DENSITY (#/ml):	37.8
TOTAL BIOVOLUME (cu.uM/ml):	21916.8
NUMBER OF SPECIES:	7.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Asterionella formosa	27	70.2	13434	61.3
Aphanizomenon flos-aquae	7	19.3	7447	34.0
Melosira distans	1	3.5	526	2.4
Synedra radians	1	1.8	239	1.1
Dinobryon bavaricum	1	1.8	80	0.4
Unidentified flagellate	1	1.8	13	0.1
Nitzschia dissipata	1	1.8	179	0.8

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

SAMPLE: YALE RESERVOIR	Upper
SAMPLE DATE:	97-08-28
DIVERSITY INDEX:	1.0
TROPHIC STATE INDEX:	33.7
TOTAL DENSITY (#/ml):	444
TOTAL BIOVOLUME (cu.uM/ml):	105366
NUMBER OF SPECIES:	6

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	367	82.7	7342	7.0
Cryptomonas erosa	28	6.3	14544	13.8
Aphanizomenon flos-aquae	24	5.5	23494	22.3
Mallomonas sp.	14	3.1	5314	5.0
Anabaena planctonica	7	1.6	52715	50.0
Sphaerocystis schroeteri	3	0.8	1958	1.9

SAMPLE: YALE RESERVOIR	Lower
SAMPLE DATE:	97-08-28
DIVERSITY INDEX:	1.1
TROPHIC STATE INDEX:	29.3
TOTAL DENSITY (#/ml):	378.8
TOTAL BIOVOLUME (cu.uM/ml):	56795.9
NUMBER OF SPECIES:	8.0

SPECIES	DENSITY	PCT	BIOVOL	PCT
Rhodomonas minuta	301	79.4	6013	10.6
Aphanizomenon flos-aquae	45	11.9	37884	66.7
Cryptomonas erosa	12	3.2	6254	11.0
Unidentified flagellate	6	1.6	120	0.2
Ankistrodesmus falcatus	6	1.6	150	0.3
Achnanthes minutissima	3	0.8	301	0.5
Anabaena flos-aquae	3	0.8	6013	10.6
Chromulina sp.	3	0.8	60	0.1

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Upper

SAMPLE DATE: 97-09-29

TOTAL DENSITY (#/ml): 645

TOTAL BIOVOLUME (cu.uM/ml): 331588

TROPHIC STATE INDEX: 41.9

DIVERSITY INDEX: 2.56

--	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Synedra radians	201	31.1	72203	21.8
2	Rhodomonas minuta	184	28.6	3686	1.1
3	Asterionella formosa	108	16.8	171727	51.8
4	Aphanizomenon flos-aquae	54	8.4	52038	15.7
5	Cryptomonas erosa	43	6.7	22550	6.8
6	Dinobryon sertularia	16	2.5	1935	0.6
7	Ankistrodesmus falcatus	11	1.7	271	0.1
8	Chromulina sp.	5	0.8	108	0.0
9	Chlamydomonas sp.	5	0.8	1762	0.5
10	Kephyrion littorale	5	0.8	515	0.2
11	Oocystis pusilla	5	0.8	4683	1.4
12	Cyclotella atomus	5	0.8	108	0.0

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Lower

SAMPLE DATE: 97-09-29

TOTAL DENSITY (#/ml): 343

TOTAL BIOVOLUME (cu.uM/ml): 247072

TROPHIC STATE INDEX: 39.8

DIVERSITY INDEX: 2.19

--	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Synedra radians	179	52.2	64514	26.1
2	Asterionella formosa	75	21.7	111705	45.2
3	Rhodomonas minuta	30	8.7	597	0.2
4	Ankistrodesmus falcatus	19	5.4	467	0.2
5	Chlamydomonas sp.	11	3.3	3640	1.5
6	Kephyrion littorale	7	2.2	709	0.3
7	Cyclotella atomus	7	2.2	149	0.1
8	Dinobryon bavaricum	4	1.1	448	0.2
9	Fragilaria construens venter	4	1.1	179	0.1
10	Cryptomonas erosa	4	1.1	1941	0.8
11	Fragilaria crotonensis	4	1.1	62722	25.4

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Upper
SAMPLE DATE: 97-10-28
TOTAL DENSITY (#/ml): 1374
TOTAL BIOVOLUME (cu.uM/ml): 196211
TROPHIC STATE INDEX: 38.1
DIVERSITY INDEX: 1.54

--	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Rhodomonas minuta	842	61.3	16848	8.6
2	Cyclotella atomus	272	19.8	5443	2.8
3	Asterionella formosa	194	14.2	145409	74.1
4	Cryptomonas erosa	52	3.8	26956	13.7
5	Nitzschia sp.	13	0.9	1555	0.8

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Lower
SAMPLE DATE: 97-10-28
TOTAL DENSITY (#/ml): 672
TOTAL BIOVOLUME (cu.uM/ml): 202389
TROPHIC STATE INDEX: 38.3
DIVERSITY INDEX: 1.92

--	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Asterionella formosa	234	34.9	175126	86.5
2	Rhodomonas minuta	234	34.9	4683	2.3
3	Cyclotella atomus	154	22.9	3081	1.5
4	Cryptomonas erosa	31	4.6	16019	7.9
5	Dinobryon bavaricum	12	1.8	1479	0.7
6	Chlamydomonas sp.	6	0.9	2002	1.0

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Upper

SAMPLE DATE: 97-11-25

TOTAL DENSITY (#/ml): 197

TOTAL BIOVOLUME (cu.uM/ml): 54794

TROPHIC STATE INDEX: 29

DIVERSITY INDEX: 1.97

	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Asterionella formosa	123	62.4	37935	69.2
2	Cyclotella atomus	22	11.0	435	0.8
3	Rhodomonas minuta	20	10.1	398	0.7
4	Cryptomonas erosa	13	6.4	6593	12.0
5	Achnanthes minutissima	5	2.8	272	0.5
6	Stephanodiscus astraea minutula	4	1.8	1268	2.3
7	Melosira italica	4	1.8	6825	12.5
8	Achnanthes lanceolata	2	0.9	326	0.6
9	Nitzschia paleacea	2	0.9	178	0.3
10	Nitzschia palea	2	0.9	326	0.6
11	Achnanthes linearis	2	0.9	239	0.4

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Lower

SAMPLE DATE: 97-11-25

TOTAL DENSITY (#/ml): 172

TOTAL BIOVOLUME (cu.uM/ml): 35846

TROPHIC STATE INDEX: 26

DIVERSITY INDEX: 2.29

	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Rhodomonas minuta	62	36.2	1242	3.5
2	Asterionella formosa	55	31.9	19282	53.8
3	Cyclotella atomus	24	13.8	475	1.3
4	Cryptomonas erosa	16	9.6	8545	23.8
5	Achnanthes minutissima	4	2.1	183	0.5
6	Chlamydomonas sp.	4	2.1	1187	3.3
7	Nitzschia paleacea	2	1.1	179	0.5
8	Melosira italica	2	1.1	3440	9.6
9	Cymbella minuta	2	1.1	676	1.9
10	Stephanodiscus astraea minutula	2	1.1	639	1.8

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Upper

SAMPLE DATE: 97-12-18

TOTAL DENSITY (#/ml): 69

TOTAL BIOVOLUME (cu.uM/ml): 15022

TROPHIC STATE INDEX: 20

DIVERSITY INDEX: 3.48

--	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Asterionella formosa	22.6	32.9	4972	33.1
2	Rhodomonas minuta	6.9	10.0	138	0.9
3	Achnanthes lanceolata	5.9	8.6	1061	7.1
4	Cryptomonas erosa	5.9	8.6	3066	20.4
5	Cymbella minuta	3.9	5.7	1454	9.7
6	Fragilaria construens venter	2.9	4.3	184	1.2
7	Nitzschia frustulum	2.9	4.3	354	2.4
8	Achnanthes minutissima	2.9	4.3	147	1.0
9	Gomphonema angustatum	2.9	4.3	531	3.5
10	Synedra sp.	2.0	2.9	550	3.7
11	Nitzschia dissipata	2.0	2.9	529	3.5
12	Navicula cryptocephala	1.0	1.4	182	1.2
13	Fragilaria sp.	1.0	1.4	197	1.3
14	Chlamydomonas sp.	1.0	1.4	319	2.1
15	Nitzschia paleacea	1.0	1.4	96	0.6
16	Gomphonema olivaceum	1.0	1.4	221	1.5
17	Navicula gregaria	1.0	1.4	172	1.1
18	Diatoma hiemale mesodon	1.0	1.4	786	5.2
19	Achnanthes pinnata	1.0	1.4	64	0.4

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Lower

SAMPLE DATE: 97-12-18

TOTAL DENSITY (#/ml): 152

TOTAL BIOVOLUME (cu.uM/ml): 28947

TROPHIC STATE INDEX: 24.5

DIVERSITY INDEX: 2.45

--	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Rhodomonas minuta	64	42.0	1273	4.4
2	Asterionella formosa	37	24.1	8849	30.6
3	Cryptomonas erosa	19	12.5	9860	34.1
4	Cyclotella atomus	15	9.8	298	1.0
5	Achnanthes linearis	4	2.7	536	1.9
6	Fragilaria construens venter	3	1.8	195	0.7
7	Nitzschia frustulum	1	0.9	163	0.6
8	Gomphonema subclavatum	1	0.9	813	2.8
9	Navicula cryptocephala	1	0.9	251	0.9
10	Cymbella affinis	1	0.9	2438	8.4
11	Nitzschia palea	1	0.9	244	0.8
12	Achnanthes minutissima	1	0.9	68	0.2
13	Nitzschia paleacea	1	0.9	133	0.5
14	Melosira italica	1	0.9	3827	13.2

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Upper

SAMPLE DATE: 98-01-21

TOTAL DENSITY (#/ml): 44

TOTAL BIOVOLUME (cu.uM/ml): 17132

TROPHIC STATE INDEX: 20.9

DIVERSITY INDEX: 3.40

	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Asterionella formosa	15.5	35.2	4101	23.9
2	Rhodomonas minuta	7.0	15.9	140	0.8
3	Cryptomonas erosa	4.5	10.2	2345	13.7
4	Melosira italica	2.0	4.5	6986	40.8
5	Achnanthes lanceolata	2.0	4.5	361	2.1
6	Achnanthes minutissima	1.5	3.4	75	0.4
7	Fragilaria vaucheria	1.5	3.4	433	2.5
8	Stephanodiscus hantzschii	1.0	2.3	120	0.7
9	Diatoma hiemale mesodon	1.0	2.3	802	4.7
10	Stephanodiscus astraea minutula	1.0	2.3	351	2.0
11	Nitzschia frustulum	1.0	2.3	120	0.7
12	Nitzschia communis	0.5	1.1	23	0.1
13	Nitzschia dissipata	0.5	1.1	135	0.8
14	Cymbella sinuata	0.5	1.1	70	0.4
15	Navicula gregaria	0.5	1.1	88	0.5
16	Rhoicosphenia curvata	0.5	1.1	59	0.3
17	Navicula minima	0.5	1.1	22	0.1
18	Pinnularia sp.	0.5	1.1	200	1.2
19	Navicula sp.	0.5	1.1	150	0.9
20	Diploneis smithii	0.5	1.1	210	1.2
21	Fragilaria construens venter	0.5	1.1	24	0.1
22	Synedra radians	0.5	1.1	180	1.1
23	Navicula pupula	0.5	1.1	135	0.8

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Lower

SAMPLE DATE: 98-01-21

TOTAL DENSITY (#/ml): 58

TOTAL BIOVOLUME (cu.uM/ml): 12016

TROPHIC STATE INDEX: 18.5

DIVERSITY INDEX: 3.18

--	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Rhodomonas minuta	21.2	36.8	425	3.5
2	Asterionella formosa	8.0	13.8	2804	23.3
3	Cryptomonas erosa	7.3	12.6	3796	31.6
4	Achnanthes minutissima	4.0	6.9	199	1.7
5	Achnanthes linearis	3.3	5.7	701	5.8
6	Stephanodiscus astraea minutula	2.0	3.4	697	5.8
7	Stephanodiscus hantzschii	2.0	3.4	239	2.0
8	Achnanthes lanceolata	1.3	2.3	239	2.0
9	Navicula cryptocephala veneta	1.3	2.3	126	1.0
10	Rhoicosphenia curvata	1.3	2.3	155	1.3
11	Gomphonema subclavatum	0.7	1.1	398	3.3
12	Cymbella minuta	0.7	1.1	246	2.0
13	Chlamydomonas sp.	0.7	1.1	216	1.8
14	Nitzschia frustulum	0.7	1.1	80	0.7
15	Cocconeis placentula	0.7	1.1	305	2.5
16	Gomphonema angustatum	0.7	1.1	239	2.0
17	Nitzschia dissipata	0.7	1.1	179	1.5
18	Fragilaria vaucheria	0.7	1.1	191	1.6
19	Melosira ambigua	0.7	1.1	782	6.5

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Upper

SAMPLE DATE: 98-02-24

TOTAL DENSITY (#/ml): 43

TOTAL BIOVOLUME (cu.uM/ml): 19784

TROPHIC STATE INDEX: 21.9

DIVERSITY INDEX: 4.12

	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Rhodomonas minuta	10.5	24.2	210	1.1
2	Asterionella formosa	4.9	11.3	1403	7.1
3	Achnanthes minutissima	2.8	6.5	140	0.7
4	Stephanodiscus astraea minutula	2.1	4.8	736	3.7
5	Melosira ambigua	2.1	4.8	2848	14.4
6	Cryptomonas erosa	2.1	4.8	1093	5.5
7	Diatoma hiemale mesodon	2.1	4.8	1682	8.5
8	Melosira italica	2.1	4.8	7328	37.0
9	Nitzschia dissipata	1.4	3.2	377	1.9
10	Fragilaria construens venter	1.4	3.2	404	2.0
11	Achnanthes lanceolata	0.7	1.6	126	0.6
12	Gomphonema subclavatum	0.7	1.6	421	2.1
13	Navicula decussis	0.7	1.6	135	0.7
14	Achnanthes lewisiana	0.7	1.6	88	0.4
15	Gomphonema angustatum	0.7	1.6	126	0.6
16	Fragilaria vaucheria	0.7	1.6	202	1.0
17	Achnanthes exigua	0.7	1.6	78	0.4
18	Gomphonema ventricosum	0.7	1.6	596	3.0
19	Eunotia pectinalis	0.7	1.6	505	2.6
20	Navicula pupula	0.7	1.6	189	1.0
21	Achnanthes linearis	0.7	1.6	93	0.5
22	Nitzschia frustulum	0.7	1.6	84	0.4
23	Fragilaria construens	0.7	1.6	314	1.6
24	Synedra sp.	0.7	1.6	196	1.0
25	Navicula cryptocephala veneta	0.7	1.6	67	0.3
26	Cymbella minuta	0.7	1.6	259	1.3
27	Stephanodiscus hantzschii	0.7	1.6	84	0.4

Appendix 2.3-2. Phytoplankton Sample Analysis (continued).

PHYTOPLANKTON SAMPLE ANALYSIS

SAMPLE: Yale Reservoir, Lower

SAMPLE DATE: 98-02-24

TOTAL DENSITY (#/ml): 51

TOTAL BIOVOLUME (cu.uM/ml): 30721

TROPHIC STATE INDEX: 24.9

DIVERSITY INDEX: 4.14

--	SPECIES	DENSITY	PCT	BIOVOL	PCT
1	Asterionella formosa	7.6	14.9	3489	11.4
2	Stephanodiscus astraea minutula	6.2	12.2	2162	7.0
3	Rhodomonas minuta	6.2	12.2	124	0.4
4	Stephanodiscus hantzschii	4.1	8.1	494	1.6
5	Achnanthes lanceolata	3.4	6.8	618	2.0
6	Melosira varians	2.7	5.4	9281	30.2
7	Achnanthes linearis	2.7	5.4	616	2.0
8	Achnanthes minutissima	2.7	5.4	137	0.4
9	Cryptomonas erosa	2.1	4.1	1071	3.5
10	Chlamydomonas sp.	1.4	2.7	446	1.5
11	Meridion circulare	0.7	1.4	264	0.9
12	Navicula pupula	0.7	1.4	185	0.6
13	Fragilaria construens venter	0.7	1.4	33	0.1
14	Amphora perpusilla	0.7	1.4	114	0.4
15	Fragilaria construens	0.7	1.4	231	0.8
16	Melosira ambigua	0.7	1.4	404	1.3
17	Melosira italica	0.7	1.4	4526	14.7
18	Hannaea arcus	0.7	1.4	1201	3.9
19	Navicula decussis	0.7	1.4	132	0.4
20	Nitzschia paleacea	0.7	1.4	67	0.2
21	Cymbella affinis	0.7	1.4	1236	4.0
22	Synedra sp.	0.7	1.4	192	0.6
23	Cymbella minuta	0.7	1.4	254	0.8
24	Navicula radiosa	0.7	1.4	223	0.7
25	Gomphonema angustatum	0.7	1.4	124	0.4
26	Epithemia turgida	0.7	1.4	2917	9.5
27	Diploneis elliptica	0.7	1.4	178	0.6

Appendix 2.3-3

Zooplankton Results

Appendix 2.3-3. Zooplankton Results

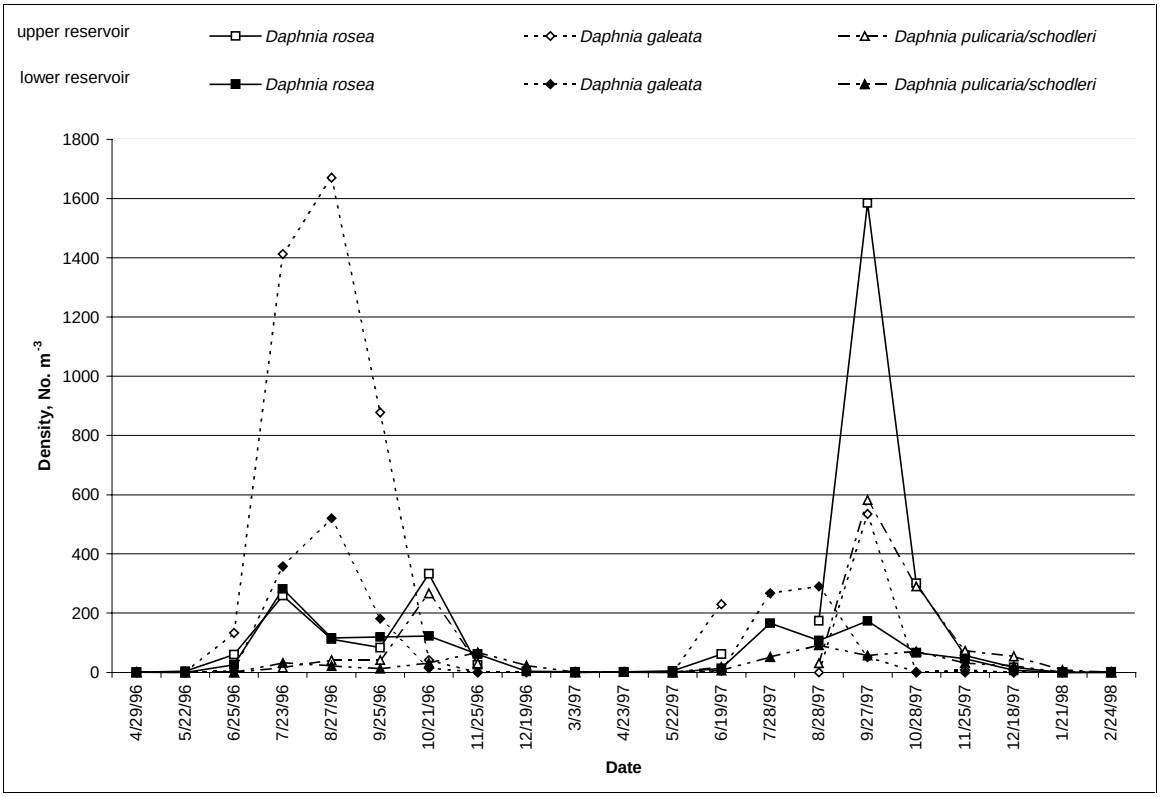


Figure 1. Density of *Daphnia* species from monthly samples at 2 stations in Yale Lake, April 26, 1996 – February 24, 1998.

Appendix 2.3-3. Zooplankton Results (continued)

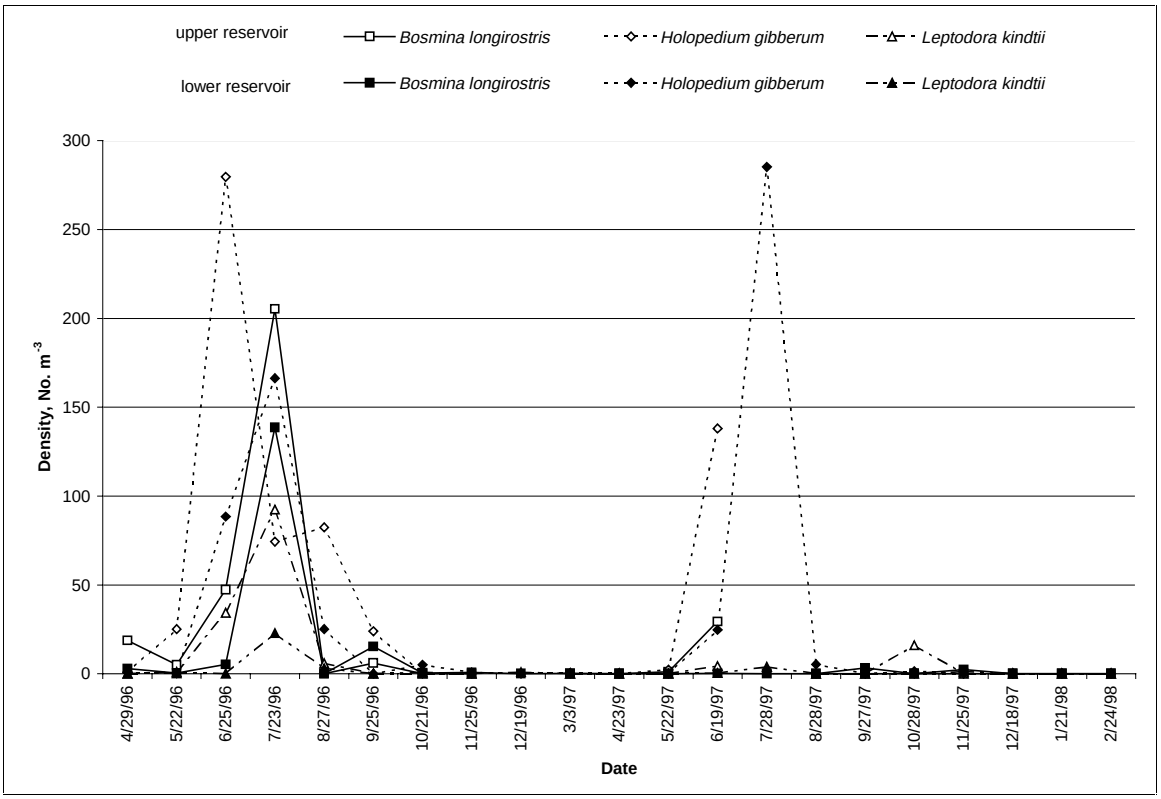


Figure 2. Density of other cladoceran species from monthly samples at 2 stations in Yale Lake, April 29, 1996 – February 24, 1998.

Appendix 2.3-3. Zooplankton Results (continued)

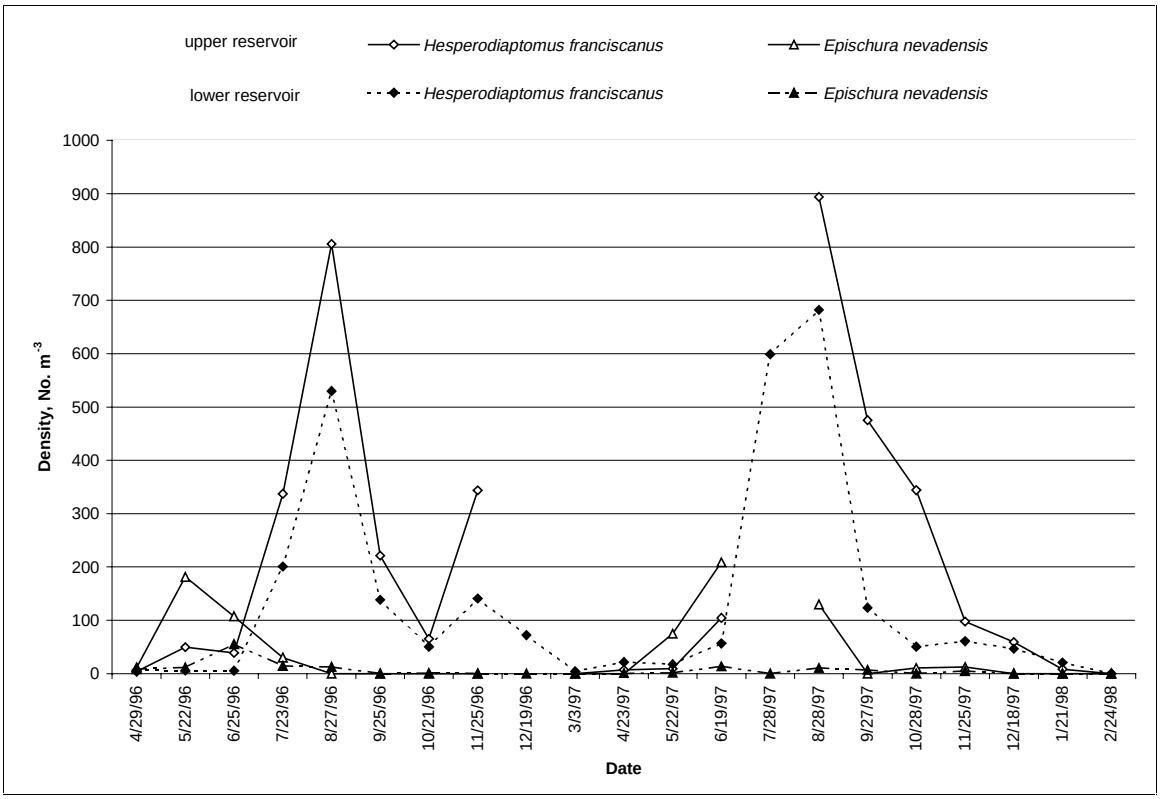


Figure 3. Density of prominent calanoid copepod species from monthly samples at 2 stations in Yale Lake, April 29, 1996 – February 24, 1998.

Appendix 2.3-3. Zooplankton Results (continued)

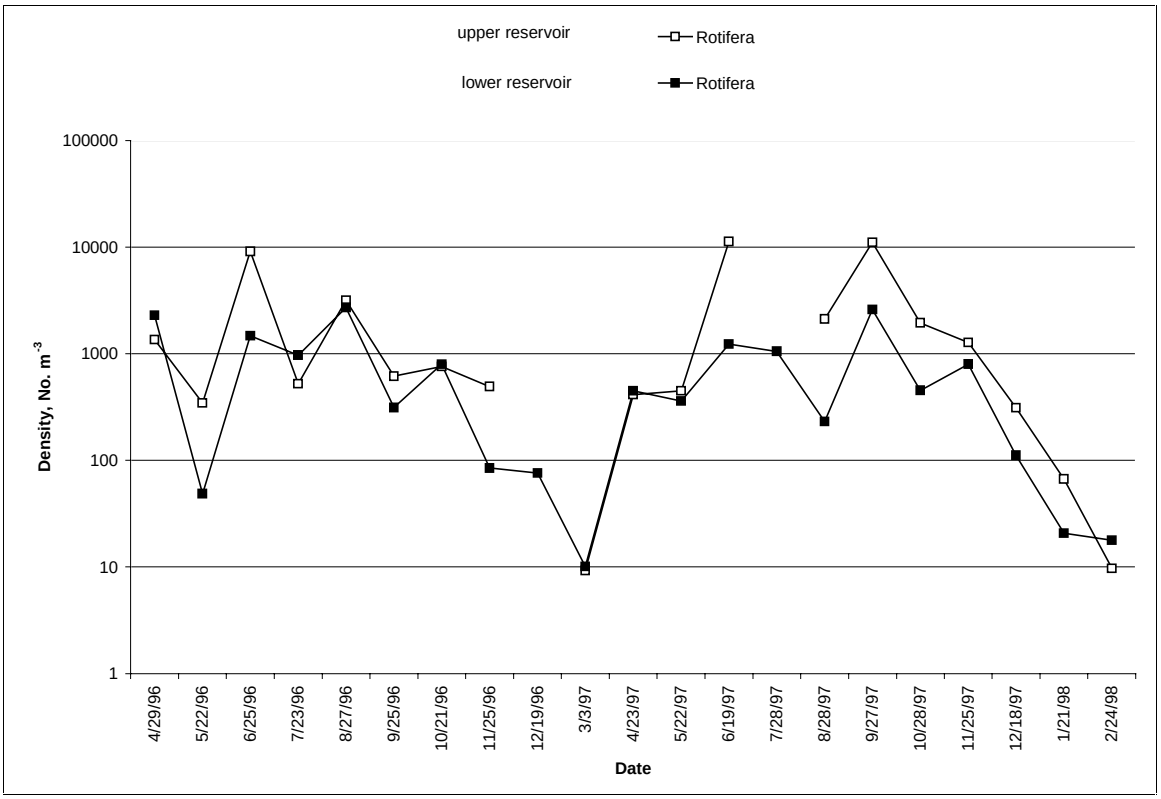


Figure 4. Density of calanoid copepod nauplii from monthly samples at 2 stations in Yale Lake, April 29, 1996 – February 24, 1998.

Appendix 2.3-3. Zooplankton Results (continued)

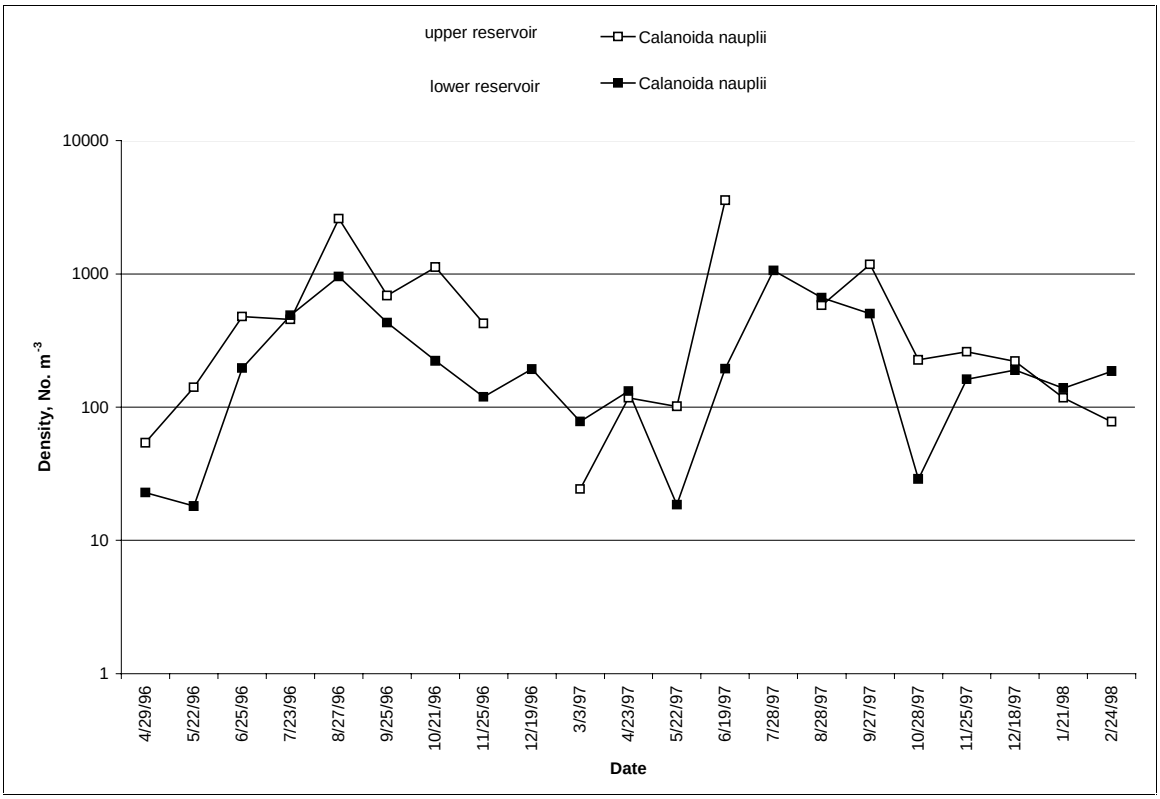


Figure 5. Density of Rotifera from monthly samples at 2 stations in Yale Lake, April 29, 1996 – February 24, 1998.

Appendix 2.7-1

Benthic Invertebrate Biomonitoring

BENTHIC INVERTEBRATE BIOMONITORING
Lewis River and Tributary Streams, October 20, 1996
Washington, Cowlitz and Lewis Counties

Submitted to: Harza Northwest, Inc., Plaza West, 9600 S.W. Oak Street, Suite 350, Portland, Oregon 97223

By: Aquatic Biology Associates, Inc., 3490 NW Deer Run Road, Corvallis, Oregon

An initial baseline survey of benthic invertebrate communities present in a regulated reach of the Lewis River between Yale Lake and Swift Reservoir was conducted on October 20, 1996. Benthic invertebrate biomonitoring baseline samples were also acquired from two tributary streams to Yale Lake; Cougar and Siouxon Creeks (Figure 1).

Benthic invertebrate samples were acquired with a 500 micron mesh kick-net, using a traveling kick-net method over a distance of about five meters. At each station, three separate kick-net samples were taken in different erosional habitats present. Samples were analyzed by Aquatic Biology Associates, Inc. (ABA), Corvallis, Oregon, using their standard laboratory and taxonomic protocols for montane stream and riverine samples.

Taxonomic composition and community profile data for all samples is attached. ABA's benthic invertebrate bioassessment for western montane streams was applied to the sample data. Complete bioassessments are attached. Table 1 summarizes bioassessment scores and selected metrics.

COUGAR CREEK

The sampling site is near the mouth, about 100-200 meters above Highway 503, and just above a fish weir. The watershed is relatively undisturbed. This site may serve as a reference control for other tributary streams in the area. Cougar Creek is a mid-size, cold water creek, that is primarily spring fed, and has a strong perennial flow. Stream bottom substrates are dominated by cobble and rubble.

Sample 1 was taken in fast water, moderate depth, near shore riffle, where cobble was dominant.

Sample 2 was taken in a deeper, mid-channel, fast, riffle/glide, where rubble substrates were dominant.

Sample 3 was taken in a shallow, slower riffle area, where both cobble and rubble were dominant.

Total bioassessment scores for the 3 samples did not vary appreciably, and averaged about 80% (Table 1). This places the Cougar Creek site just within the High habitat/biotic integrity category.

Total and EPT taxa richness is high. Dominance of the benthic community by a single taxa is low. Though the sampling method was qualitative, overall densities of invertebrates was found to be low in October 1996. Predator, scraper and shredder richness is high (+indicator). A high percentage of the community consists of taxa requiring cold water temperatures year-round. The cold water biota has a high taxa richness. A moderate to high number of long-lived taxa are present. There are no notable negative indicators.

LEWIS RIVER

The site was located in a by-pass reach between Yale Lake and Swift Reservoir (Figure 1). The riffles sampled are located 200-300 meters above the bridge crossing, in the first set of accessible riffles above a large meander pool in the bridge area.

Substrates were dominated by cobble and rubble/boulder. The channel is relatively open, though near-shore habitats receive some shading from riparian trees.

> Sample 1 was in a shallow, near-shore, steeper gradient riffle, where both cobble and rubble were dominant.
>
> Sample 2 was in a deeper, cascade/riffle in mid-channel, where rubble dominated.
>
> Sample 3 was in a deeper glide/riffle where cobble dominated.

Total bioassessment scores from the 3 erosional habitats sampled ranged from 43.5 to 50.0%. This places the site in a low habitat/biotic integrity class for this bioassessment model. The ABA benthic invertebrate bioassessment applied here is based on a mid-order stream model. Integrity categories used are meant to rate mid-order streams, and not rivers. Pacific Northwest rivers will naturally score lower using this bioassessment. A bioassessment with a biotic integrity classification suitable for application to Pacific Northwest rivers has not been developed yet. However, the current bioassessment for mid-order streams can be used to track trends in hard-bottomed river reaches.

Invertebrate densities in October 1996 were moderate (Table 1). Total and EPT taxa richness was comparatively low. Dominance of the benthic community by a single taxa was high (average 48.9%). Community tolerance was high, but within the range seen for most PNW rivers. The percent contribution and richness of the cold water biota was low. Few long-lived taxa were present. More would be expected. Dominance by collectors was very high (average 82.7%). Except for a high percent contribution of blackflies, tolerant taxa were generally rare-occasional.

SIOUXON CREEK

The sampling site was at the furthest upstream point that could be accessed by boat from Yale Lake. This station is still in the reservoir influence zone. The channel is open. Cobble/gravel/sand substrates are dominant, and generally unstable (i.e. loosely consolidated and not armored). Substrates appear to be highly susceptible to disturbance from moderate-high intensity flood events. Stream bottom substrates at the station will also be alternately flooded by lake waters and then dewatered during the year.

Biomonitoring objectives need to be more clearly defined for Siouxon Creek. The current station will document benthic community development in a zone of the lower creek that is influenced by fluctuating reservoir levels. Additional station(s) located further upstream would be needed for baseline and trend monitoring for the creek segments not influenced by the reservoir.

At the current station, October 1996 samples were:

Sample 1 was taken in a near-shore, gravel/cobble riffle/glide of moderate depth.

Sample 2 was taken in a deeper, mid-channel, gravel/cobble, riffle glide.

Sample 3 was taken in a shallow, near shore riffle with cobble/gravel substrates.

Total bioassessment scores from the three erosional habitats were all in the low to severely low habitat/biotic integrity range (average 38.7). Invertebrate densities were very low in the kick samples (average 121/sample). Both total and EPT taxa richness was very low. Dominance of the benthic communities by a single taxa was moderate. Community tolerance was high for a mid-order stream site.

The benthic community in the reservoir influenced reach of Siouxon Creek had low predator/scraper/shredder richness and high dominance by collectors. Cold water biota were absent. Taxa indicative of high habitat complexity were virtually absent.

The information obtained from the October 1996 sampling is sufficient to document that the stream reach influenced by the reservoir draw-downs, is highly impacted and that biotic integrity is low. This is typical for reservoirs, and trend monitoring is not warranted. We recommend that this station be dropped.

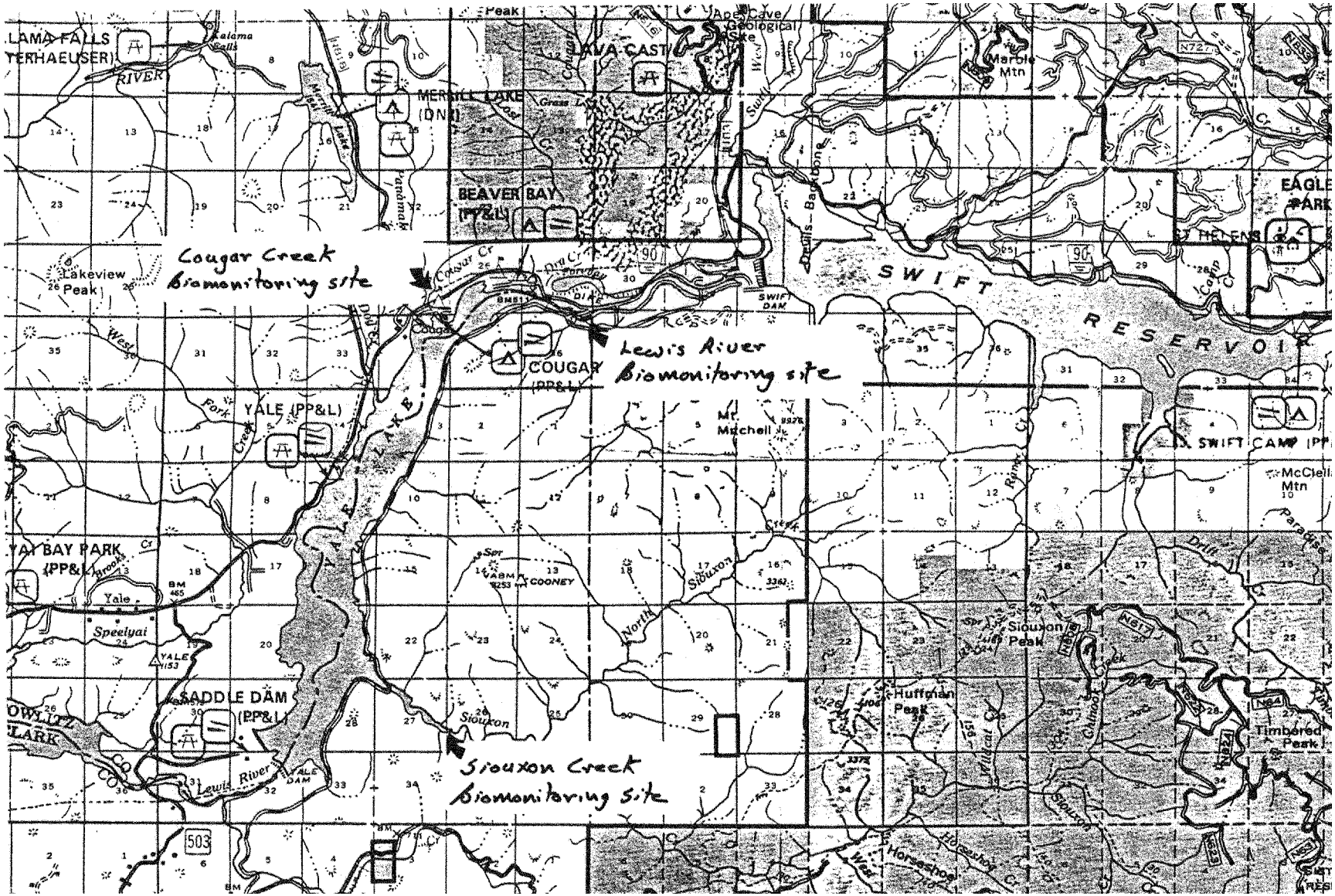

Cougar Creek
Biomonitoring site
Lewis River
Biomonitoring site
Siouxon Creek
Biomonitoring site
SWIFT RESERVOIR
COUGAR (PP&L)
YALE (PP&L)
SADDLE DAM (PP&L)
BEAVER BAY (PP&L)
MERRILL LAKE (DNR)
LAVA CAST
Ape Cave Geological Site
Marble Mtn
Lakeview Peak
Mt Mitchell
McClellan Mtn
Timbered Peak
Huffman Peak
Siouxon Lick Peak
Horsethief
Speelyai
Yale
Lewis River
SWIFT DAM
YALE DAM
503

TABLE 1

Lewis River and tributary streams, October 20, 1996, Erosional habitats.

Benthic Invertebrate Community Composition Summary

Qualitative traveling kick-net samples (500 micron mesh); 5 meter distance in riffle and glide habitats.

Three samples taken in different erosional habitat types at each station.

WA: Cowlitz and Lewis Counties, Lewis River, vicinity Yale Lake and Swift Reservoir.

CLIENT: Harza Northwest, Inc. FILE: 96LRSUM

		COUGAR CREEK				LEWIS RIVER				SIOUXON CREEK			
	BIOASSESSMENT	1	2	3	AVG	1	2	3	AVG	1	2	3	AVG
	TOTAL SCORE (%)	79.0	78.2	82.3	79.8	47.6	50.0	43.5	47.0	41.1	38.7	36.3	38.7
	Primary metrics (%)	83.3	77.8	83.3	81.5	33.3	16.7	27.8	25.9	27.8	16.7	16.7	20.4
	Positive indicators (%)	70.2	68.4	75.4	71.3	24.6	33.3	15.8	24.6	5.3	12.3	8.8	8.8
	Negative indicators (%)	87.8	89.8	89.8	89.1	79.6	81.6	81.6	80.9	87.8	77.6	75.5	80.3
	PRIMARY METRICS												
1	Total abundance	808	605	839	750.7	3355	7800	8320	6492	85	85	193	121.0
2	Total taxa richness	67	54	65	62.0	42	35	40	39.0	17	24	25	22.0
3	EPT Taxa richness	39	37	42	39.3	20	18	18	18.7	10	16	13	13.0
4	%Dominant taxa	12.6	16.2	12.8	13.9	49	40.6	57.2	48.9	18.8	23.5	28.5	23.6
5	Community Tolerance	3.27	2.52	3.4	3.1	4.81	5.06	4.84	4.9	3.87	4.01	4.23	4.0
	POSITIVE INDICATORS												
1	Predator richness	19	14	17	16.7	9	8	8	8.3	1	4	3	2.7
2	Scraper richness	19	20	23	20.7	11	5	7	7.7	6	11	8	8.3
3	Shredder richness	10	8	13	10.3	8	6	4	6.0	2	1	3	2.0
4	Xylophage (wood eaters)	1	0	1	0.7	0	0	0	0.0	0	0	0	0.0
5-8	% Cold water biota	25.6	35.4	21.83	27.6	0.97	1.93	1.56	1.5	0	0	0	0.0
9-10	Cold water biota richness	13	15	18	15.3	4	4	2	3.3	0	0	0	0.0
11-19	+ habitat indicator richness	M	M	M		L	L	VL		VL	VL	VL	
20	Long-lived taxa richness	5	5	8	6.0	2	3	1	2.0	0	0	1	0.3
21	Class 0 taxa richness	1	2	3	2.0	0	2	0	0.7	0	0	0	0.0
	NEGATIVE INDICATORS												
1	%Collector	51.9	49.3	46.6	49.3	74.3	88.7	85	82.7	71.8	63.5	75.2	70.2
2	%Parasite	0.6	1.16	1.55	1.1	0.4	0.4	0.36	0.4	5.9	4.7	0	3.5
3	%Oligochaeta	0.25	1.32	0.48	0.7	2.2	0.8	0.48	1.2	0	0	1.04	0.3
5	%Tolerant molluscs	0.12	0	0.36	0.2	0	0	0	0.0	0	0	0	0.0
8	% Tolerant mayflies	0	0	0	0.0	0	0	0	0.0	0	0	0	0.0
9	% Tolerant caddisflies	0	0	0	0.0	0	0.4	1.08	0.5	0	0	0	0.0
10	% Tolerant beetles	0	0.17	0	0.1	0.14	0	0	0.0	0	2.36	0.52	1.0
11	%Tolerant dipterans	0	0	0	0.0	0.14	0.13	0.36	0.2	0	0	1.04	0.3
16	%Simuliidae (blackfly)	0.37	0.17	0.48	0.3	14.2	29	6.13	16.4	12.9	23.5	28.5	21.6
17	%Chironomidae (midge)	22.8	8.6	27.2	19.5	8.3	7.7	8.29	8.1	7.06	12.9	10.9	10.3

A= absent, VL=Very low, L=low, M=moderate, H=high, VH=very high

Numbers in first column refer to metrics on the ABA Benthic Invertebrate Bioassessment template.

Aquatic Biology Associates, Inc., Corvallis, Oregon

Cougar Creek, Sample 1, October 20, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance	808	1
2	Total taxa richness	67	4
3	EPT Taxa richness	39	4
4	%Dominant taxa	12.6	4
5	Community Tolerance	3.27	2
	POSITIVE INDICATORS		
1	Predator richness	19	2
2	Scraper richness	19	2
3	Shredder richness	10	2
4	Xylophage richness	1	1
5	%Intolerant mayflies	16.3	4
6	%Intolerant stoneflies	5.4	3
7	%Intolerant caddisflies	3.6	2
8	%Intolerant dipterans	0.24	1
9	Intol. mayfly richness	2	2
10	Intol. stonefly richness	4	4
11	Heptageniidae richness	2	2
12	Ephemerellidae richness	6	4
13	Nemouridae richness	2	1
14	*Pteronarcys*	0	0
15	%Glossosomatidae	0.12	1
16	%Philopotamidae	0.12	2
17	%Arctopsychidae	0	0
18	*Rhyacophila richness*	4	3
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	5	3
21	Class 0 taxa richness	1	1
	NEGATIVE INDICATORS		
1	%Collector	51.85	1
2	%Parasite	0.6	1
3	%Oligochaeta	0.25	2
4	%Leech	0	1
5	%Tolerant snails	0.12	3
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	0	4
10	%Tolerant beetles	0	4
11	%Tolerant dipterans	0	4
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	0	2
14	Tol. beetle richness	0	4
15	Tol. dipteran richness	0	4
16	%Simuliidae	0.37	1
17	%Chironomid (-C.Nostoc.)	22.8	2

FILE: 96LR01X

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	98	79.0
Primary subtotal	15	83.3
Positive Indicators	40	70.2
Negative Indicators	43	87.8

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

None

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

Rhyacophila Vagrita Group

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	25.6
Total taxa richness	13

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Cougar Creek Sample 1, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR01

IDENTIFICATION CODE	96LR01
CORRECTION FACTOR	1

Taxon	Abundance	%
Turbellaria	17	2.10
Oligochaeta	2	0.25
Sphaeriidae	2	0.25
Planorbidae	1	0.12
Ostracoda	3	0.37
Acari	5	0.62
TOTAL: NON INSECTS	30	3.71
Baetis bicaudatus	65	8.04
Baetis tricaudatus	102	12.62
Attenella delantala	1	0.12
Drunella coloradensis/flavilinea	11	1.36
Drunella doddsi	67	8.29
Drunella grandis/spinifera	3	0.37
Ephemerella inermis/infrequens	12	1.49
Serratella tibialis	8	0.99
Cinygmula	28	3.47
Rhithrogena	28	3.47
Paraleptophlebia	4	0.50
Ameletus	25	3.09
TOTAL: EPHEMEROPTERA	354	43.81
Capniidae	2	0.25
Chloroperlidae	15	1.86
Sweltsa	81	10.02
Zapada cinctipes	16	1.98
Zapada Oregonensis Gr.	4	0.50
Calineuria californica	2	0.25
Doroneuria	21	2.60
Perlodidae-early instar	2	0.25
Isoperla	1	0.12
Kogotus	5	0.62
Yoraperla brevis	1	0.12
Yoraperla mariana	17	2.10
TOTAL: PLECOPTERA	167	20.67
Micrasema	1	0.12
Glossosoma	1	0.12
Agraylea	1	0.12
Lepidostoma-sand case larvae	1	0.12
Apatania	14	1.73
Ecclisomyia	5	0.62
Psychoglypha	1	0.12
Wormaldia	1	0.12
Polycentropus	1	0.12
Rhyacophila-early instar	1	0.12
Rhyacophila Betteni Gr.	4	0.50
Rhyacophila Brunnea Gr.	3	0.37
Rhyacophila Vagrita Gr.	1	0.12
Neophylax occidentis	1	0.12
Oligophlebodes	8	0.99
TOTAL: TRICHOPTERA	44	5.45

Cougar Creek Sample 1, Oct. 20, 1996 (con't.)

Taxon	Abundance	%
Heterlimnius	6	0.74
TOTAL: COLEOPTERA	6	0.74
Ceratopogoninae	1	0.12
Empididae	1	0.12
Chelifera	4	0.50
Clinocera	1	0.12
Glutops	1	0.12
Simulium	3	0.37
Dicranota	9	1.11
Hexatoma	2	0.25
Hesperoconopa	1	0.12
TOTAL: DIPTERA	23	2.85
Chironomidae-pupae	21	2.60
Brillia	55	6.81
Chironomini	2	0.25
Corynoneura	2	0.25
Eukiefferiella	19	2.35
Micropsectra	58	7.18
Orthocladiinae	3	0.37
Orthocladius Complex	3	0.37
Parametriocnemus	2	0.25
Symposiocladius	2	0.25
Synorthocladius	10	1.24
Tvetenia	7	0.87
TOTAL: CHIRONOMIDAE	184	22.77
GRAND TOTAL	808	100.00

Cougar Creek Sample 1, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR01

Total invertebrate abundance	= 808.0	EPT abundance	= 565.0
Total number of taxa	= 67	Number EPT taxa	= 39
Hilsenhoff Biotic Index	= 3.27	Brillouin H	= 3.17

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	6	30.0	3.71
Odonata	0	0.0	0.00
Ephemeroptera	12	354.0	43.81
Plecoptera	12	167.0	20.67
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	15	44.0	5.41
Lepidoptera	0	0.0	0.00
Coleoptera	1	6.0	0.74
Misc. Diptera	9	23.0	2.83
Chironomidae	12	184.0	22.79

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	19	156.0	19.29
Parasite	1	5.0	0.62
Collector-gatherer	23	415.0	51.36
Collector-filterer	2	4.0	0.49
Macrophyte-herbivore	1	1.0	0.12
Piercer-herbivore	1	1.0	0.12
Scraper	7	81.0	10.02
Shredder	8	98.0	12.13
Xylophage	0	0.0	0.00
Omnivore	3	25.0	3.09
Unknown	2	22.0	2.72

DOMINANT TAXON	ABUNDANCE	PERCENT
Baetis tricaudatus	102.0	12.62
Sweltsa	81.0	10.02
Drunella doddsi	67.0	8.29
Baetis bicaudatus	65.0	8.04
Micropsectra	58.0	7.18
SUBTOTAL 5 DOMINANTS	373.0	46.15
Brillia	55.0	6.81
Cinygmula	28.0	3.47
Rhithrogena	28.0	3.47
Ameletus	25.0	3.09
Doroneuria	21.0	2.60
TOTAL 10 DOMINANTS	530.0	65.59

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	1	1.0	0.12
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	2	132.0	16.33
D Intolerant stoneflies	4	44.0	5.44
E Tolerant caddisflies	0	0.0	0.00
F Intolerant caddisflies	5	29.0	3.58
G Tolerant beetles	0	0.0	0.00
H Intolerant flies	2	2.0	0.24
I Tolerant flies	0	0.0	0.00
J Intolerant midges	0	0.0	0.00
K Tolerant midges	0	0.0	0.00
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Cougar Creek Sample 1, Oct. 20, 1996
WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR01

RATIOS OF TAX. GROUP ABUNDANCES

EPT/Chironomidae	= 3.07
Hydropsychidae/Total Trichoptera	= 0.00
Baetidae/Total Ephemeroptera	= 0.47

RATIOS OF FFG ABUNDANCES

Scraper/Collector-filter	= 20.25
Scraper/(Scraper + C.-filterer)	= 0.95
Shredder/Total organisms	= 0.12

Biotic Condition Index
Community Tolerance Quotient (a) = 59.29
Community Tolerance Quotient (d) = 57.74

DIVERSITY MEASURES

Shannon H (loge)	= 3.30
Shannon H (log2)	= 4.76
Evenness	= 0.78
Simpson D	= 0.06

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	289.5	35.83
Univoltine	483.0	59.78
Semivoltine	35.5	4.39

Cougar Creek, Sample 2, October 20, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance (m2)	605	1
2	Total taxa richness	54	3
3	EPT Taxa richness	37	4
4	%Dominant taxa	16.2	3
5	Community Tolerance	2.52	3
	POSITIVE INDICATORS		
1	Predator richness	14	1
2	Scraper richness	20	2
3	Shredder richness	8	1
4	Xylophage richness	0	0
5	%Intolerant mayflies	25.63	4
6	%Intolerant stoneflies	7.61	3
7	%Intolerant caddisflies	1.83	2
8	%Intolerant dipterans	0.17	1
9	Intol. mayfly richness	4	3
10	Intol. stonefly richness	5	4
11	Heptageniidae richness	3	3
12	Ephemerellidae richness	6	4
13	Nemouridae richness	2	1
14	*Pteronarcys*	0	0
15	%Glossosomatidae	0	0
16	%Philopotamidae	0	0
17	%Arctopsychidae	0.17	1
18	*Rhyacophila richness*	5	4
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	5	3
21	Class 0 taxa richness	2	2
	NEGATIVE INDICATORS		
1	%Collector	49.3	2
2	%Parasite	1.16	1
3	%Oligochaeta	1.32	1
4	%Leech	0	1
5	%Tolerant snails	0	4
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	0	4
10	%Tolerant beetles	0.17	3
11	%Tolerant dipterans	0	4
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	0	2
14	Tol. beetle richness	1	3
15	Tol. dipteran richness	0	4
16	%Simuliidae	0.17	1
17	%Chironomid (-C.Nostoc.)	8.6	4

FILE: 96LR02X

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	97	78.2
Primary subtotal	14	77.8
Positive Indicators	39	68.4
Negative Indicators	44	89.8

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

Hydrobiidae snails are potential T&E.

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

Hydrobiidae snails, Rickera sorpta

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	35.41
Total taxa richness	15

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Traveling kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Cougar Creek Sample 2, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR02

IDENTIFICATION CODE	96LR02
CORRECTION FACTOR	1

Taxon	Abundance	%
Turbellaria	11	1.82
Oligochaeta	8	1.32
Hydrobiidae	1	0.17
Acari	7	1.16
TOTAL: NON INSECTS	27	4.46
Baetis bicaudatus	52	8.60
Baetis tricaudatus	83	13.72
Caudatella hystrix	3	0.50
Drunella coloradensis/flavilinea	4	0.66
Drunella doddsi	98	16.20
Drunella grandis/spinifera	1	0.17
Ephemerella inermis/infrequens	6	0.99
Serratella tibialis	1	0.17
Cinygmula	29	4.79
Epeorus grandis	2	0.33
Rhithrogena	66	10.91
Paraleptophlebia	5	0.83
Ameletus	4	0.66
TOTAL: EPHEMEROPTERA	354	58.51
Capniidae	2	0.33
Chloroperlidae	8	1.32
Sweltsa	60	9.92
Zapada cinctipes	7	1.16
Zapada Oregonensis Gr.	3	0.50
Doroneuria	28	4.63
Perlodidae-early instar	3	0.50
Isoperla	1	0.17
Megarcys	3	0.50
Rickera sorpta	2	0.33
Yoraperla brevis	1	0.17
Yoraperla mariana	12	1.98
Taeniopterygidae	1	0.17
TOTAL: PLECOPTERA	131	21.65
Parapsyche elsis	1	0.17
Micrasema	2	0.33
Lepidostoma-sand case larvae	1	0.17
Apatania	4	0.66
Rhyacophila-early instar	1	0.17
Rhyacophila Betteni Gr.	7	1.16
Rhyacophila Brunnea Gr.	2	0.33
Rhyacophila Hyalinata Gr.	3	0.50
Rhyacophila narvae	1	0.17
Neophylax occidentis	1	0.17
Oligophlebodes	5	0.83
TOTAL: TRICHOPTERA	28	4.63

Cougar Creek Sample 2, Oct. 20, 1996 (con't.)

Taxon	Abundance	%
Ampumixis dispar	1	0.17
Heterlimnius	3	0.50
Optioservus	1	0.17
TOTAL: COLEOPTERA	5	0.83
Simulium	1	0.17
Dicranota	7	1.16
TOTAL: DIPTERA	8	1.32
Chironomidae-pupae	12	1.98
Brillia	10	1.65
Eukiefferiella	13	2.15
Micropsectra	10	1.65
Orthocladiinae	1	0.17
Pagastia	1	0.17
Synorthocladius	1	0.17
Tvetenia	4	0.66
TOTAL: CHIRONOMIDAE	52	8.60
GRAND TOTAL	605	100.00

Cougar Creek Sample 2, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR02

Total invertebrate abundance	= 605.0	EPT abundance	= 513.0
Total number of taxa	= 54	Number EPT taxa	= 37
Hilsenhoff Biotic Index	= 2.52	Brillouin H	= 2.85

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	4	27.0	4.47
Odonata	0	0.0	0.00
Ephemeroptera	13	354.0	58.53
Plecoptera	13	131.0	21.68
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	11	28.0	4.66
Lepidoptera	0	0.0	0.00
Coleoptera	3	5.0	0.84
Misc. Diptera	2	8.0	1.33
Chironomidae	8	52.0	8.60

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	14	127.0	21.03
Parasite	1	7.0	1.16
Collector-gatherer	19	297.0	49.13
Collector-filterer	1	1.0	0.17
Macrophyte-herbivore	1	2.0	0.33
Piercer-herbivore	0	0.0	0.00
Scraper	8	109.0	18.03
Shredder	7	36.0	5.96
Xylophage	0	0.0	0.00
Omnivore	2	14.0	2.32
Unknown	1	12.0	1.98

DOMINANT TAXON	ABUNDANCE	PERCENT
Drunella doddsi	98.0	16.20
Baetis tricaudatus	83.0	13.72
Rhithrogena	66.0	10.91
Sweltsa	60.0	9.92
Baetis bicaudatus	52.0	8.60
SUBTOTAL 5 DOMINANTS	359.0	59.35
Cinygmula	29.0	4.79
Doroneuria	28.0	4.63
Eukiefferiella	13.0	2.15
Yoraperla mariana	12.0	1.98
Chironomidae-pupae	12.0	1.98
TOTAL 10 DOMINANTS	453.0	74.88

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	0	0.0	0.00
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	4	155.0	25.63
D Intolerant stoneflies	5	46.0	7.61
E Tolerant caddisflies	0	0.0	0.00
F Intolerant caddisflies	4	11.0	1.83
G Tolerant beetles	1	1.0	0.17
H Intolerant flies	0	0.0	0.00
I Tolerant flies	0	0.0	0.00
J Intolerant midges	1	1.0	0.17
K Tolerant midges	0	0.0	0.00
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Cougar Creek Sample 2, Oct. 20, 1996
WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR02

RATIOS OF TAX. GROUP ABUNDANCES
EPT/Chironomidae = 9.87
Hydropsychidae/Total Trichoptera = 0.00
Baetidae/Total Ephemeroptera = 0.38

RATIOS OF FFG ABUNDANCES
Scraper/Collector-filter = 109.00
Scraper/(Scraper + C.-filterer) = 0.99
Shredder/Total organisms = 0.06

Biotic Condition Index
Community Tolerance Quotient (a) = 50.65
Community Tolerance Quotient (d) = 49.03

DIVERSITY MEASURES
Shannon H (loge) = 3.00
Shannon H (log2) = 4.33
Evenness = 0.75
Simpson D = 0.08

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	158.2	26.16
Univoltine	401.8	66.40
Semivoltine	45.0	7.44

Cougar Creek, Sample 3, October 20, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance (m2)	839	1
2	Total taxa richness	65	4
3	EPT Taxa richness	42	4
4	%Dominant taxa	12.8	4
5	Community Tolerance	3.4	2
	POSITIVE INDICATORS		
1	Predator richness	17	2
2	Scraper richness	23	2
3	Shredder richness	13	2
4	Xylophage richness	1	1
5	%Intolerant mayflies	16.09	4
6	%Intolerant stoneflies	3.59	2
7	%Intolerant caddisflies	2.03	2
8	%Intolerant dipterans	0	0
9	Intol. mayfly richness	5	3
10	Intol. stonefly richness	8	4
11	Heptageniidae richness	5	4
12	Ephemerellidae richness	7	4
13	Nemouridae richness	3	2
14	*Pteronarcys*	0.12	2
15	%Glossosomatidae	0	0
16	%Philopotamidae	0	0
17	%Arctopsychidae	0	0
18	*Rhyacophila richness*	4	3
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	8	4
21	Class 0 taxa richness	3	2
	NEGATIVE INDICATORS		
1	%Collector	46.6	2
2	%Parasite	1.55	1
3	%Oligochaeta	0.48	2
4	%Leech	0	1
5	%Tolerant snails	0.36	3
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	0	4
10	%Tolerant beetles	0	4
11	%Tolerant dipterans	0	4
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	0	2
14	Tol. beetle richness	0	4
15	Tol. dipteran richness	0	4
16	%Simuliidae	0.48	1
17	%Chironomid (-C.Nostoc.)	27.2	2

FILE: 96LR03X

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	102	82.3
Primary subtotal	15	83.3
Positive Indicators	43	75.4
Negative Indicators	44	89.8

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

Hydrobiidae snails are potential T&E taxa.

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

Hydrobiidae snails, Rickera sorpta, Pteronarcys princeps.

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	21.83
Total taxa richness	18

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Traveling kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Cougar Creek Sample 3, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR03

IDENTIFICATION CODE	96LR03
CORRECTION FACTOR	1

Taxon	Abundance	%
Turbellaria	13	1.55
Oligochaeta	4	0.48
Hydrobiidae	1	0.12
Planorbidae	3	0.36
Ostracoda	4	0.48
Acari	13	1.55
TOTAL: NON INSECTS	38	4.53
Baetis bicaudatus	60	7.15
Baetis tricaudatus	91	10.85
Attenella delantala	1	0.12
Caudatella hystrix	3	0.36
Drunella coloradensis/flavilinea	4	0.48
Drunella doddsi	69	8.22
Drunella grandis/spinifera	6	0.72
Ephemerella inermis/infrequens	21	2.50
Serratella tibialis	4	0.48
Cinygma	1	0.12
Cinygmula	23	2.74
Epeorus grandis	2	0.24
Ironodes	1	0.12
Rhithrogena	30	3.58
Paraleptophlebia	15	1.79
Ameletus	11	1.31
TOTAL: EPHEMEROPTERA	342	40.76
Capniidae	9	1.07
Chloroperlidae	7	0.83
Sweltsa	81	9.65
Moselia infuscata	1	0.12
Zapada cinctipes	26	3.10
Zapada frigida	1	0.12
Zapada Oregonensis Gr.	16	1.91
Calineuria californica	2	0.24
Doroneuria	15	1.79
Perlodidae-early instar	4	0.48
Isoperla	4	0.48
Kogotus	4	0.48
Rickera sorpta	1	0.12
Yoraperla brevis	5	0.60
Yoraperla mariana	2	0.24
Pteronarcys princeps	1	0.12
Taeniopterygidae	1	0.12
TOTAL: PLECOPTERA	180	21.45

Cougar Creek Sample 3, Oct. 20, 1996 (con't.)

Taxon	Abundance	%
Lepidostoma-sand case larvae	1	0.12
Apatania	7	0.83
Ecclisomyia	3	0.36
Rhyacophila-early instar	1	0.12
Rhyacophila Angelita Gr.	1	0.12
Rhyacophila Betteni Gr.	3	0.36
Rhyacophila Brunnea Gr.	2	0.24
Neophylax occidentis	1	0.12
Oligophlebodes	6	0.72
TOTAL: TRICHOPTERA	25	2.98
Heterlimnius	5	0.60
Hydrophilidae	1	0.12
TOTAL: COLEOPTERA	6	0.72
Empididae	2	0.24
Chelifera	7	0.83
Clinocera	2	0.24
Pericoma	2	0.24
Simulium	4	0.48
Dicranota	3	0.36
TOTAL: DIPTERA	20	2.38
Chironomidae-pupae	26	3.10
Brillia	107	12.75
Diamesa	2	0.24
Eukiefferiella	19	2.26
Micropsectra	37	4.41
Orthocladiinae	2	0.24
Rheocricotopus	2	0.24
Synorthocladius	2	0.24
Tvetenia	31	3.69
TOTAL: CHIRONOMIDAE	228	27.18
GRAND TOTAL	839	100.00

Cougar Creek Sample 3, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR03

Total invertebrate abundance	= 839.0	EPT abundance	= 547.0
Total number of taxa	= 65	Number EPT taxa	= 42
Hilsenhoff Biotic Index	= 3.40	Brillouin H	= 3.15

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	6	38.0	4.54
Odonata	0	0.0	0.00
Ephemeroptera	16	342.0	40.78
Plecoptera	17	180.0	21.47
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	9	25.0	2.99
Lepidoptera	0	0.0	0.00
Coleoptera	2	6.0	0.72
Misc. Diptera	6	20.0	2.39
Chironomidae	9	228.0	27.17

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	17	140.0	16.70
Parasite	1	13.0	1.55
Collector-gatherer	21	387.0	46.15
Collector-filterer	1	4.0	0.48
Macrophyte-herbivore	0	0.0	0.00
Piercer-herbivore	0	0.0	0.00
Scraper	10	75.0	8.95
Shredder	9	168.0	20.03
Xylophage	0	0.0	0.00
Omnivore	5	26.0	3.10
Unknown	1	26.0	3.10

DOMINANT TAXON	ABUNDANCE	PERCENT
Brillia	107.0	12.75
Baetis tricaudatus	91.0	10.85
Sweltsa	81.0	9.65
Drunella doddsi	69.0	8.22
Baetis bicaudatus	60.0	7.15
SUBTOTAL 5 DOMINANTS	408.0	48.62
Micropsectra	37.0	4.41
Tvetenia	31.0	3.69
Rhithrogena	30.0	3.58
Zapada cinctipes	26.0	3.10
Chironomidae-pupae	26.0	3.10
TOTAL 10 DOMINANTS	558.0	66.50

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	1	3.0	0.36
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	5	135.0	16.09
D Intolerant stoneflies	8	30.0	3.59
E Tolerant caddisflies	0	0.0	0.00
F Intolerant caddisflies	4	17.0	2.03
G Tolerant beetles	0	0.0	0.00
H Intolerant flies	0	0.0	0.00
I Tolerant flies	0	0.0	0.00
J Intolerant midges	0	0.0	0.00
K Tolerant midges	0	0.0	0.00
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Cougar Creek Sample 3, Oct. 20, 1996
WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR03

RATIOS OF TAX. GROUP ABUNDANCES
EPT/Chironomidae = 2.40
Hydropsychidae/Total Trichoptera = 0.00
Baetidae/Total Ephemeroptera = 0.44

RATIOS OF FFG ABUNDANCES
Scraper/Collector-filter = 18.75
Scraper/(Scraper + C.-filterer) = 0.95
Shredder/Total organisms = 0.20

Biotic Condition Index
Community Tolerance Quotient (a) = 54.22
Community Tolerance Quotient (d) = 57.67

DIVERSITY MEASURES
Shannon H (loge) = 3.28
Shannon H (log2) = 4.73
Evenness = 0.79
Simpson D = 0.06

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	314.2	37.46
Univoltine	495.2	59.03
Semivoltine	29.5	3.52

Lewis River, Sample 1, October 20, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance	3355	2
2	Total taxa richness	42	2
3	EPT Taxa richness	20	1
4	%Dominant taxa	49	0
5	Community Tolerance	4.81	1
	POSITIVE INDICATORS		
1	Predator richness	9	0
2	Scraper richness	11	1
3	Shredder richness	8	1
4	Xylophage richness	0	0
5	%Intolerant mayflies	0	0
6	%Intolerant stoneflies	0.56	1
7	%Intolerant caddisflies	0	0
8	%Intolerant dipterans	0.41	1
9	Intol. mayfly richness	0	0
10	Intol. stonefly richness	3	3
11	Heptageniidae richness	2	2
12	Ephemerellidae richness	2	2
13	Nemouridae richness	4	2
14	*Pteronarcys*	0	0
15	%Glossosomatidae	0	0
16	%Philopotamidae	0	0
17	%Arctopsychidae	0	0
18	*Rhyacophila richness*	1	0
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	2	1
21	Class 0 taxa richness	0	0
	NEGATIVE INDICATORS		
1	%Collector	74.3	0
2	%Parasite	0.4	1
3	%Oligochaeta	2.2	1
4	%Leech	0	1
5	%Tolerant snails	0	4
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	0	4
10	%Tolerant beetles	0.14	3
11	%Tolerant dipterans	0.14	3
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	0	2
14	Tol. beetle richness	1	3
15	Tol. dipteran richness	1	3
16	%Simuliidae	14.2	0
17	%Chironomid (-C.Nostoc.)	8.3	4

FILE: 96LR04X

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	59	47.6
Primary subtotal	6	33.3
Positive Indicators	14	24.6
Negative Indicators	39	79.6

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

None

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

None

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	0.97
Total taxa richness	4

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Traveling kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Lewis River Sample 1, Oct. 21, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR04

IDENTIFICATION CODE	96LR04
CORRECTION FACTOR	4.62

Taxon	Abundance	%
Turbellaria	18	0.55
Oligochaeta	74	2.20
Acari	14	0.41
TOTAL: NON INSECTS	106	3.17
Baetis tricaudatus	1645	49.04
Drunella coloradensis/flavilinea	5	0.14
Ephemerella inermis/infrequens	37	1.10
Cinygmula	18	0.55
Ironodes	5	0.14
Paraleptophlebia	55	1.65
TOTAL: EPHEMEROPTERA	1765	52.62
Capniidae	453	13.50
Kathroperla perdita	9	0.28
Sweltsa	5	0.14
Soyedina	9	0.28
Zapada cinctipes	74	2.20
Zapada frigida	5	0.14
Zapada Oregonensis Gr.	5	0.14
Calineuria californica	9	0.28
Skwala	5	0.14
Yoraperla brevis	5	0.14
TOTAL: PLECOPTERA	578	17.22
Micrasema	92	2.75
Hydropsyche	5	0.14
Lepidostoma-sand case larvae	5	0.14
Rhyacophila Betteni Gr.	5	0.14
TOTAL: TRICHOPTERA	106	3.17
Dytiscidae	5	0.14
Ampumixis dispar	9	0.28
Heterlimnius	5	0.14
Acneus	5	0.14
TOTAL: COLEOPTERA	23	0.69
Empididae	5	0.14
Pericoma	5	0.14
Simulium	476	14.19
Tabanidae	5	0.14
Dicranota	5	0.14
Holorusia	5	0.14
TOTAL: DIPTERA	499	14.88
Chironomidae-pupae	23	0.69
Boreochlus	5	0.14
Brillia	51	1.52
Eukiefferiella	46	1.38
Micropsectra	5	0.14
Orthocladius Complex	18	0.55
Parametriocnemus	5	0.14
Potthastia Longimana Gr.	14	0.41
Tvetenia	111	3.31
TOTAL: CHIRONOMIDAE	277	8.26
GRAND TOTAL	3354	100.00

Lewis River Sample 1, Oct. 21, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR04

Total invertebrate abundance	= 3354.5	EPT abundance	= 2448.9
Total number of taxa	= 42	Number EPT taxa	= 20
Hilsenhoff Biotic Index	= 4.81	Brillouin H	= 1.91

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	3	106.3	3.16
Odonata	0	0.0	0.00
Ephemeroptera	6	1765.1	52.62
Plecoptera	10	577.5	17.24
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	4	106.3	3.17
Lepidoptera	0	0.0	0.00
Coleoptera	4	23.1	0.70
Misc. Diptera	6	499.0	14.89
Chironomidae	9	277.2	8.28

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	9	50.8	1.54
Parasite	1	13.9	0.41
Collector-gatherer	15	2010.0	59.93
Collector-filterer	2	480.5	14.33
Macrophyte-herbivore	1	92.4	2.75
Piercer-herbivore	0	0.0	0.00
Scraper	3	27.7	0.83
Shredder	9	609.9	18.20
Xylophage	0	0.0	0.00
Omnivore	1	46.2	1.38
Unknown	1	23.1	0.69

DOMINANT TAXON	ABUNDANCE	PERCENT
Baetis tricaudatus	1645.0	49.04
Simulium	475.9	14.19
Capniidae	452.8	13.50
Tvetenia	110.9	3.31
Micrasema	92.4	2.75
SUBTOTAL 5 DOMINANTS	2777.0	82.79
Oligochaeta	73.9	2.20
Zapada cinctipes	73.9	2.20
Paraleptophlebia	55.4	1.65
Brillia	50.8	1.52
Eukiefferiella	46.2	1.38
TOTAL 10 DOMINANTS	3077.3	91.74

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	0	0.0	0.00
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	0	0.0	0.00
D Intolerant stoneflies	3	18.5	0.56
E Tolerant caddisflies	0	0.0	0.00
F Intolerant caddisflies	0	0.0	0.00
G Tolerant beetles	1	4.6	0.14
H Intolerant flies	0	0.0	0.00
I Tolerant flies	1	4.6	0.14
J Intolerant midges	1	13.9	0.41
K Tolerant midges	0	0.0	0.00
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Lewis River Sample 1, Oct. 21, 1996
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Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR04

RATIOS OF TAX. GROUP ABUNDANCES
EPT/Chironomidae = 8.83
Hydropsychidae/Total Trichoptera = 0.04
Baetidae/Total Ephemeroptera = 0.93

RATIOS OF FFG ABUNDANCES
Scraper/Collector-filter = 0.06
Scraper/(Scraper + C.-filterer) = 0.05
Shredder/Total organisms = 0.18

Biotic Condition Index
Community Tolerance Quotient (a) = 64.29
Community Tolerance Quotient (d) = 67.54

DIVERSITY MEASURES
Shannon H (loge) = 1.94
Shannon H (log2) = 2.80
Evenness = 0.52
Simpson D = 0.28

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	1475.2	43.98
Univoltine	1807.7	53.89
Semivoltine	71.6	2.13

Lewis River, Sample 2, Ocober 20, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance	7800	2
2	Total taxa richness	35	1
3	EPT Taxa richness	18	0
4	%Dominant taxa	40.6	0
5	Community Tolerance	5.06	0
	POSITIVE INDICATORS		
1	Predator richness	8	0
2	Scraper richness	5	0
3	Shredder richness	6	1
4	Xylophage richness	0	0
5	%Intolerant mayflies	0	0
6	%Intolerant stoneflies	0.26	1
7	%Intolerant caddisflies	0.13	1
8	%Intolerant dipterans	1.54	2
9	Intol. mayfly richness	0	0
10	Intol. stonefly richness	2	2
11	Heptageniidae richness	1	1
12	Ephemerellidae richness	1	1
13	Nemouridae richness	3	2
14	*Pteronarcys*	0.13	2
15	%Glossosomatidae	0	0
16	%Philopotamidae	0	0
17	%Arctopsychidae	0	0
18	*Rhyacophila richness*	3	2
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	3	2
21	Class 0 taxa richness	2	2
	NEGATIVE INDICATORS		
1	%Collector	88.7	0
2	%Parasite	0.4	1
3	%Oligochaeta	0.8	2
4	%Leech	0	1
5	%Tolerant snails	0	4
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	0.4	3
10	%Tolerant beetles	0	4
11	%Tolerant dipterans	0.13	3
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	1	1
14	Tol. beetle richness	0	4
15	Tol. dipteran richness	1	3
16	%Simuliidae	29	0
17	%Chironomid (-C.Nostoc.)	7.7	4

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	62	50.0
Primary subtotal	3	16.7
Positive Indicators	19	33.3
Negative Indicators	40	81.6

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

None

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

Pteronarcys princeps, Rhyacophila Rotunda Group

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	1.93
Total taxa richness	4

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Traveling kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

FILE: 96LR05X

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Lewis River Sample 2, Oct. 21, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR05

IDENTIFICATION CODE	96LR05
CORRECTION FACTOR	10

Taxon	Abundance	%
Turbellaria	10	0.13
Nematoda	20	0.26
Oligochaeta	60	0.77
Pacifasticus	10	0.13
Acari	10	0.13
TOTAL: NON INSECTS	110	1.41
Baetis tricaudatus	3170	40.64
Ephemerella inermis/infrequens	670	8.59
Cinygmula	50	0.64
Paraleptophlebia	160	2.05
TOTAL: EPHEMEROPTERA	4050	51.92
Capniidae	70	0.90
Sweltsa	70	0.90
Zapada cinctipes	50	0.64
Zapada frigida	10	0.13
Zapada Oregonensis Gr.	20	0.26
Calineuria californica	100	1.28
Skwala	30	0.38
Pteronarcys princeps	10	0.13
TOTAL: PLECOPTERA	360	4.62
Micrasema	60	0.77
Hydropsyche	170	2.18
Hydroptila	30	0.38
Rhyacophila Betteni Gr.	80	1.03
Rhyacophila narvae	20	0.26
Rhyacophila Rotunda Gr.	10	0.13
TOTAL: TRICHOPTERA	370	4.74
Ampumixis dispar	10	0.13
TOTAL: COLEOPTERA	10	0.13
Empididae	30	0.38
Simulium	2260	28.97
Stratiomyiidae	10	0.13
TOTAL: DIPTERA	2300	29.49
Chironomidae-pupae	30	0.38
Brillia	90	1.15
Eukiefferiella	20	0.26
Micropsectra	70	0.90
Orthocladius Complex	10	0.13
Potthastia Longimana Gr.	120	1.54
Thienemannimyia	60	0.77
Tvetenia	200	2.56
TOTAL: CHIRONOMIDAE	600	7.69
GRAND TOTAL	7800	100.00

Lewis River Sample 2, Oct. 21, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR05

Total invertebrate abundance	= 7800.0	EPT abundance	= 4780.0
Total number of taxa	= 35	Number EPT taxa	= 18
Hilsenhoff Biotic Index	= 5.06	Brillouin H	= 1.93

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	5	110.0	1.42
Odonata	0	0.0	0.00
Ephemeroptera	4	4050.0	51.92
Plecoptera	8	360.0	4.62
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	6	370.0	4.75
Lepidoptera	0	0.0	0.00
Coleoptera	1	10.0	0.13
Misc. Diptera	3	2300.0	29.48
Chironomidae	8	600.0	7.69

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	8	400.0	5.13
Parasite	2	30.0	0.39
Collector-gatherer	11	4490.0	57.57
Collector-filterer	2	2430.0	31.15
Macrophyte-herbivore	1	60.0	0.77
Piercer-herbivore	1	30.0	0.38
Scraper	1	50.0	0.64
Shredder	5	240.0	3.08
Xylophage	0	0.0	0.00
Omnivore	3	40.0	0.52
Unknown	1	30.0	0.38

DOMINANT TAXON	ABUNDANCE	PERCENT
Baetis tricaudatus	3170.0	40.64
Simulium	2260.0	28.97
Ephemerella inermis/infreq	670.0	8.59
Tvetenia	200.0	2.56
Hydropsyche	170.0	2.18
SUBTOTAL 5 DOMINANTS	6470.0	82.94
Paraleptophlebia	160.0	2.05
Potthastia Longimana Gr.	120.0	1.54
Calineuria californica	100.0	1.28
Brillia	90.0	1.15
Rhyacophila Betteni Gr.	80.0	1.03
TOTAL 10 DOMINANTS	7020.0	89.99

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	0	0.0	0.00
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	0	0.0	0.00
D Intolerant stoneflies	2	20.0	0.26
E Tolerant caddisflies	1	30.0	0.38
F Intolerant caddisflies	1	10.0	0.13
G Tolerant beetles	0	0.0	0.00
H Intolerant flies	0	0.0	0.00
I Tolerant flies	1	10.0	0.13
J Intolerant midges	1	120.0	1.54
K Tolerant midges	0	0.0	0.00
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Lewis River Sample 2, Oct. 21, 1996
WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR05

RATIOS OF TAX. GROUP ABUNDANCES
EPT/Chironomidae = 7.97
Hydropsychidae/Total Trichoptera = 0.46
Baetidae/Total Ephemeroptera = 0.78

RATIOS OF FFG ABUNDANCES
Scraper/Collector-filter = 0.02
Scraper/(Scraper + C.-filterer) = 0.02
Shredder/Total organisms = 0.03

Biotic Condition Index
Community Tolerance Quotient (a) = 69.94
Community Tolerance Quotient (d) = 70.07

DIVERSITY MEASURES
Shannon H (loge) = 1.94
Shannon H (log2) = 2.80
Evenness = 0.55
Simpson D = 0.26

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	2932.5	37.60
Univoltine	4652.5	59.65
Semivoltine	215.0	2.76

Lewis River, Sample 3, October 21, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance	8320	2
2	Total taxa richness	40	2
3	EPT Taxa richness	18	0
4	%Dominant taxa	57.2	0
5	Community Tolerance	4.84	1
	POSITIVE INDICATORS		
1	Predator richness	8	0
2	Scraper richness	7	0
3	Shredder richness	4	0
4	Xylophage richness	0	0
5	%Intolerant mayflies	0.12	1
6	%Intolerant stoneflies	0	0
7	%Intolerant caddisflies	0	0
8	%Intolerant dipterans	1.44	2
9	Intol. mayfly richness	1	1
10	Intol. stonefly richness	0	0
11	Heptageniidae richness	2	2
12	Ephemerellidae richness	1	1
13	Nemouridae richness	2	1
14	*Pteronarcys*	0	0
15	%Glossosomatidae	0	0
16	%Philopotamidae	0	0
17	%Arctopsychidae	0	0
18	*Rhyacophila richness*	1	0
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	1	1
21	Class 0 taxa richness	0	0
	NEGATIVE INDICATORS		
1	%Collector	85	0
2	%Parasite	0.36	1
3	%Oligochaeta	0.48	2
4	%Leech	0	1
5	%Tolerant snails	0	4
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	1.08	2
10	%Tolerant beetles	0	4
11	%Tolerant dipterans	0.36	3
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	1	1
14	Tol. beetle richness	0	4
15	Tol. dipteran richness	1	3
16	%Simuliidae	6.13	1
17	%Chironomid (-C.Nostoc.)	8.29	4

FILE: 96LR06X

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	54	43.5
Primary subtotal	5	27.8
Positive Indicators	9	15.8
Negative Indicators	40	81.6

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

None

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

None

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	1.56
Total taxa richness	2

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Traveling kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Lewis River Sample 3, Oct. 21, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR06

IDENTIFICATION CODE	96LR06
CORRECTION FACTOR	10

Taxon	Abundance	%
Oligochaeta	40	0.48
Copepoda	10	0.12
Acari	30	0.36
TOTAL: NON INSECTS	80	0.96
Acentrella turbida	20	0.24
Baetis tricaudatus	4760	57.21
Diphetor hageni	30	0.36
Ephemerella inermis/infrequens	970	11.66
Cinygmula	60	0.72
Epeorus grandis	10	0.12
Paraleptophlebia	240	2.88
Ameletus	20	0.24
TOTAL: EPHEMEROPTERA	6110	73.44
Capniidae	370	4.45
Zapada cinctipes	110	1.32
Zapada Oregonensis Gr.	20	0.24
Calineuria californica	50	0.60
Skwala	70	0.84
TOTAL: PLECOPTERA	620	7.45
Micrasema	10	0.12
Hydropsyche	70	0.84
Hydroptila	90	1.08
Polycentropus	10	0.12
Rhyacophila Betteni Gr.	30	0.36
TOTAL: TRICHOPTERA	210	2.52
Dixa	10	0.12
Empididae	20	0.24
Clinocera	10	0.12
Limnophora	30	0.36
Simulium	510	6.13
Antocha	20	0.24
Tipula	10	0.12
TOTAL: DIPTERA	610	7.33
Chironomidae-pupae	30	0.36
Brillia	100	1.20
Corynoneura	10	0.12
Eukiefferiella	60	0.72
Micropsectra	50	0.60
Orthocladius Complex	30	0.36
Parametriocnemus	20	0.24
Polypedilum	10	0.12
Potthastia Longimana Gr.	120	1.44
Rheocricotopus	20	0.24
Thienemannimyia	100	1.20
Tvetenia	140	1.68
TOTAL: CHIRONOMIDAE	690	8.29
GRAND TOTAL	8320	100.00

Lewis River Sample 3, Oct. 21, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR06

Total invertebrate abundance	= 8320.0	EPT abundance	= 6940.0
Total number of taxa	= 40	Number EPT taxa	= 18
Hilsenhoff Biotic Index	= 4.84	Brillouin H	= 1.85

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	3	80.0	0.96
Odonata	0	0.0	0.00
Ephemeroptera	8	6110.0	73.43
Plecoptera	5	620.0	7.45
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	5	210.0	2.52
Lepidoptera	0	0.0	0.00
Coleoptera	0	0.0	0.00
Misc. Diptera	7	610.0	7.33
Chironomidae	12	690.0	8.28

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	8	320.0	3.84
Parasite	1	30.0	0.36
Collector-gatherer	16	6490.0	77.99
Collector-filterer	2	580.0	6.97
Macrophyte-herbivore	1	10.0	0.12
Piercer-herbivore	1	90.0	1.08
Scraper	2	70.0	0.84
Shredder	4	600.0	7.21
Xylophage	0	0.0	0.00
Omnivore	4	100.0	1.20
Unknown	1	30.0	0.36

DOMINANT TAXON	ABUNDANCE	PERCENT
Baetis tricaudatus	4760.0	57.21
Ephemerella inermis/infreq	970.0	11.66
Simulium	510.0	6.13
Capniidae	370.0	4.45
Paraleptophlebia	240.0	2.88
SUBTOTAL 5 DOMINANTS	6850.0	82.33
Tvetenia	140.0	1.68
Potthastia Longimana Gr.	120.0	1.44
Zapada cinctipes	110.0	1.32
Brillia	100.0	1.20
Thienemannimyia	100.0	1.20
TOTAL 10 DOMINANTS	7420.0	89.17

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	0	0.0	0.00
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	1	10.0	0.12
D Intolerant stoneflies	0	0.0	0.00
E Tolerant caddisflies	1	90.0	1.08
F Intolerant caddisflies	0	0.0	0.00
G Tolerant beetles	0	0.0	0.00
H Intolerant flies	0	0.0	0.00
I Tolerant flies	1	30.0	0.36
J Intolerant midges	1	120.0	1.44
K Tolerant midges	0	0.0	0.00
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Lewis River Sample 3, Oct. 21, 1996
WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR06

RATIOS OF TAX. GROUP ABUNDANCES
EPT/Chironomidae = 10.06
Hydropsychidae/Total Trichoptera = 0.33
Baetidae/Total Ephemeroptera = 0.79

RATIOS OF FFG ABUNDANCES
Scraper/Collector-filter = 0.12
Scraper/(Scraper + C.-filterer) = 0.11
Shredder/Total organisms = 0.07

Biotic Condition Index
Community Tolerance Quotient (a) = 75.20
Community Tolerance Quotient (d) = 74.44

DIVERSITY MEASURES
Shannon H (loge) = 1.86
Shannon H (log2) = 2.68
Evenness = 0.50
Simpson D = 0.35

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	4255.0	51.14
Univoltine	3980.0	47.84
Semivoltine	85.0	1.02

Siouxin Creek, Sample 1, October 20, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance	85	0
2	Total taxa richness	17	0
3	EPT Taxa richness	10	0
4	%Dominant taxa	18.8	3
5	Community Tolerance	3.87	2
	POSITIVE INDICATORS		
1	Predator richness	1	0
2	Scraper richness	6	0
3	Shredder richness	2	0
4	Xylophage richness	0	0
5	%Intolerant mayflies	0	0
6	%Intolerant stoneflies	0	0
7	%Intolerant caddisflies	0	0
8	%Intolerant dipterans	0	0
9	Intol. mayfly richness	0	0
10	Intol. stonefly richness	0	0
11	Heptageniidae richness	2	2
12	Ephemerellidae richness	1	1
13	Nemouridae richness	1	0
14	*Pteronarcys*	0	0
15	%Glossosomatidae	0	0
16	%Philopotamidae	0	0
17	%Arctopsychidae	0	0
18	*Rhyacophila richness*	0	0
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	0	0
21	Class 0 taxa richness	0	0
	NEGATIVE INDICATORS		
1	%Collector	71.77	0
2	%Parasite	5.9	0
3	%Oligochaeta	0	2
4	%Leech	0	1
5	%Tolerant snails	0	4
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	0	4
10	%Tolerant beetles	0	4
11	%Tolerant dipterans	0	4
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	0	2
14	Tol. beetle richness	0	4
15	Tol. dipteran richness	0	4
16	%Simuliidae	12.9	0
17	%Chironomid (-C.Nostoc.)	7.06	4

FILE: 96LR07X

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	51	41.1
Primary subtotal	5	27.8
Positive Indicators	3	5.3
Negative Indicators	43	87.8

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

None

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

None

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	0
Total taxa richness	0

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Traveling kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Siouxin Creek Sample 1, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR07

IDENTIFICATION CODE	96LR07
CORRECTION FACTOR	1

Taxon	Abundance	%
Acari	5	5.88
TOTAL: NON INSECTS	5	5.88
Acentrella turbida	3	3.53
Baetis tricaudatus	14	16.47
Ephemerella inermis/infrequens	12	14.12
Cinygmula	1	1.18
Rhithrogena	2	2.35
Paraleptophlebia	1	1.18
TOTAL: EPHEMEROPTERA	33	38.82
Capniidae	8	9.41
Sweltsa	1	1.18
Zapada cinctipes	2	2.35
TOTAL: PLECOPTERA	11	12.94
Hydropsyche	16	18.82
TOTAL: TRICHOPTERA	16	18.82
Ampumixis dispar	1	1.18
TOTAL: COLEOPTERA	1	1.18
Simulium	11	12.94
Antocha	2	2.35
TOTAL: DIPTERA	13	15.29
Chironomidae-pupae	4	4.71
Tanytarsini	1	1.18
Tvetenia	1	1.18
TOTAL: CHIRONOMIDAE	6	7.06
GRAND TOTAL	85	100.00

Siouxin Creek Sample 1, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR07

Total invertebrate abundance	= 85.0	EPT abundance	= 60.0
Total number of taxa	= 17	Number EPT taxa	= 10
Hilsenhoff Biotic Index	= 3.87	Brillouin H	= 2.12

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	1	5.0	5.88
Odonata	0	0.0	0.00
Ephemeroptera	6	33.0	38.83
Plecoptera	3	11.0	12.94
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	1	16.0	18.82
Lepidoptera	0	0.0	0.00
Coleoptera	1	1.0	1.18
Misc. Diptera	2	13.0	15.29
Chironomidae	3	6.0	7.07

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	1	1.0	1.18
Parasite	1	5.0	5.88
Collector-gatherer	7	34.0	40.01
Collector-filterer	2	27.0	31.76
Macrophyte-herbivore	0	0.0	0.00
Piercer-herbivore	0	0.0	0.00
Scraper	2	3.0	3.53
Shredder	2	10.0	11.76
Xylophage	0	0.0	0.00
Omnivore	0	0.0	0.00
Unknown	2	5.0	5.89

DOMINANT TAXON	ABUNDANCE	PERCENT
Hydropsyche	16.0	18.82
Baetis tricaudatus	14.0	16.47
Ephemerella inermis/infreq	12.0	14.12
Simulium	11.0	12.94
Capniidae	8.0	9.41
SUBTOTAL 5 DOMINANTS	61.0	71.76
Acari	5.0	5.88
Chironomidae-pupae	4.0	4.71
Acentrella turbida	3.0	3.53
Rhithrogena	2.0	2.35
Zapada cinctipes	2.0	2.35
TOTAL 10 DOMINANTS	77.0	90.58

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	0	0.0	0.00
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	0	0.0	0.00
D Intolerant stoneflies	0	0.0	0.00
E Tolerant caddisflies	0	0.0	0.00
F Intolerant caddisflies	0	0.0	0.00
G Tolerant beetles	0	0.0	0.00
H Intolerant flies	0	0.0	0.00
I Tolerant flies	0	0.0	0.00
J Intolerant midges	0	0.0	0.00
K Tolerant midges	0	0.0	0.00
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Siouxin Creek Sample 1, Oct. 20, 1996
WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR07

RATIOS OF TAX. GROUP ABUNDANCES

EPT/Chironomidae	= 10.00
Hydropsychidae/Total Trichoptera	= 1.00
Baetidae/Total Ephemeroptera	= 0.52

RATIOS OF FFG ABUNDANCES

Scraper/Collector-filter	= 0.11
Scraper/(Scraper + C.-filterer)	= 0.10
Shredder/Total organisms	= 0.12

Biotic Condition Index

Community Tolerance Quotient (a)	= 65.06
Community Tolerance Quotient (d)	= 74.36

DIVERSITY MEASURES

Shannon H (loge)	= 2.38
Shannon H (log2)	= 3.44
Evenness	= 0.84
Simpson D	= 0.11

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	26.2	30.88
Univoltine	57.8	67.94
Semivoltine	1.0	1.18

Siouxin Creek, Sample 2, October 20, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance	85	0
2	Total taxa richness	24	0
3	EPT Taxa richness	16	0
4	%Dominant taxa	23.5	2
5	Community Tolerance	4.01	1
	POSITIVE INDICATORS		
1	Predator richness	4	0
2	Scraper richness	11	1
3	Shredder richness	1	0
4	Xylophage richness	0	0
5	%Intolerant mayflies	0	0
6	%Intolerant stoneflies	0	0
7	%Intolerant caddisflies	0	0
8	%Intolerant dipterans	0	0
9	Intol. mayfly richness	0	0
10	Intol. stonefly richness	0	0
11	Heptageniidae richness	3	3
12	Ephemerellidae richness	1	1
13	Nemouridae richness	0	0
14	*Pteronarcys*	0	0
15	%Glossosomatidae	1.18	2
16	%Philopotamidae	0	0
17	%Arctopsychidae	0	0
18	*Rhyacophila richness*	1	0
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	0	0
21	Class 0 taxa richness	0	0
	NEGATIVE INDICATORS		
1	%Collector	63.54	0
2	%Parasite	4.7	0
3	%Oligochaeta	0	2
4	%Leech	0	1
5	%Tolerant snails	0	4
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	0	4
10	%Tolerant beetles	2.36	2
11	%Tolerant dipterans	0	4
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	0	2
14	Tol. beetle richness	2	2
15	Tol. dipteran richness	0	4
16	%Simuliidae	23.5	0
17	%Chironomid (-C.Nostoc.)	12.9	3

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	48	38.7
Primary subtotal	3	16.7
Positive Indicators	7	12.3
Negative Indicators	38	77.6

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

None

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

None

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	0
Total taxa richness	0

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Traveling kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

FILE: 96LR08X

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Siouxin Creek Sample 2, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR08

IDENTIFICATION CODE	96LR08
CORRECTION FACTOR	1

Taxon	Abundance	%
Acari	4	4.71
TOTAL: NON INSECTS	4	4.71
Acentrella turbida	2	2.35
Baetis tricaudatus	8	9.41
Ephemerella inermis/infrequens	8	9.41
Cinygmula	1	1.18
Epeorus-early instar	1	1.18
Rhithrogena	2	2.35
Paraleptophlebia	1	1.18
Ameletus	1	1.18
TOTAL: EPHEMEROPTERA	24	28.24
Capniidae	5	5.88
Sweltsa	2	2.35
Perlodidae-early instar	2	2.35
Perlinodes	1	1.18
TOTAL: PLECOPTERA	10	11.76
Micrasema	1	1.18
Glossosoma	1	1.18
Hydropsyche	7	8.24
Rhyacophila Brunnea Gr.	1	1.18
TOTAL: TRICHOPTERA	10	11.76
Heterlimnius	1	1.18
Optioservus	1	1.18
Zaitzevia	1	1.18
TOTAL: COLEOPTERA	3	3.53
Simulium	20	23.53
Antocha	3	3.53
TOTAL: DIPTERA	23	27.06
Chironomidae-pupae	9	10.59
Tvetenia	2	2.35
TOTAL: CHIRONOMIDAE	11	12.94
GRAND TOTAL	85	100.00

Siouxin Creek Sample 2, Oct. 20, 1996

**WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR08**

Total invertebrate abundance	= 85.0	EPT abundance	= 44.0
Total number of taxa	= 24	Number EPT taxa	= 16
Hilsenhoff Biotic Index	= 4.01	Brillouin H	= 2.33

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	1	4.0	4.71
Odonata	0	0.0	0.00
Ephemeroptera	8	24.0	28.24
Plecoptera	4	10.0	11.76
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	4	10.0	11.78
Lepidoptera	0	0.0	0.00
Coleoptera	3	3.0	3.54
Misc. Diptera	2	23.0	27.06
Chironomidae	2	11.0	12.94

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	4	6.0	7.06
Parasite	1	4.0	4.71
Collector-gatherer	9	27.0	31.77
Collector-filterer	2	27.0	31.77
Macrophyte-herbivore	1	1.0	1.18
Piercer-herbivore	0	0.0	0.00
Scraper	5	6.0	7.07
Shredder	1	5.0	5.88
Xylophage	0	0.0	0.00
Omnivore	0	0.0	0.00
Unknown	1	9.0	10.59

DOMINANT TAXON	ABUNDANCE	PERCENT
Simulium	20.0	23.53
Chironomidae-pupae	9.0	10.59
Baetis tricaudatus	8.0	9.41
Ephemerella inermis/infreq	8.0	9.41
Hydropsyche	7.0	8.24
SUBTOTAL 5 DOMINANTS	52.0	61.18
Capniidae	5.0	5.88
Acari	4.0	4.71
Antocha	3.0	3.53
Acentrella turbida	2.0	2.35
Rhithrogena	2.0	2.35
TOTAL 10 DOMINANTS	68.0	80.00

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	0	0.0	0.00
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	0	0.0	0.00
D Intolerant stoneflies	0	0.0	0.00
E Tolerant caddisflies	0	0.0	0.00
F Intolerant caddisflies	0	0.0	0.00
G Tolerant beetles	2	2.0	2.36
H Intolerant flies	0	0.0	0.00
I Tolerant flies	0	0.0	0.00
J Intolerant midges	0	0.0	0.00
K Tolerant midges	0	0.0	0.00
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Siouxin Creek Sample 2, Oct. 20, 1996
WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR08

RATIOS OF TAX. GROUP ABUNDANCES

EPT/Chironomidae	= 4.00
Hydropsychidae/Total Trichoptera	= 0.70
Baetidae/Total Ephemeroptera	= 0.42

RATIOS OF FFG ABUNDANCES

Scraper/Collector-filter	= 0.22
Scraper/(Scraper + C.-filterer)	= 0.18
Shredder/Total organisms	= 0.06

Biotic Condition Index

Community Tolerance Quotient (a)	= 59.21
Community Tolerance Quotient (d)	= 76.22

DIVERSITY MEASURES

Shannon H (loge)	= 2.67
Shannon H (log2)	= 3.86
Evenness	= 0.84
Simpson D	= 0.09

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	21.5	25.29
Univoltine	60.0	70.59
Semivoltine	3.5	4.12

Siouxin Creek, Sample 3, October 20, 1996, Erosional habitat.

WA: Cowlitz and Lewis Counties. Lewis River & tributaries. For Harza Northwest, Inc.

BENTHIC INVERTEBRATE BIOASSESSMENT-ABA, January 1995 Version

EROSIONAL/RIFFLE HABITAT

	METRIC	Value	Score
	PRIMARY METRICS		
1	Total abundance	193	0
2	Total taxa richness	25	0
3	EPT Taxa richness	13	0
4	%Dominant taxa	28.5	2
5	Community Tolerance	4.23	1
	POSITIVE INDICATORS		
1	Predator richness	3	0
2	Scraper richness	8	0
3	Shredder richness	3	0
4	Xylophage richness	0	0
5	%Intolerant mayflies	0	0
6	%Intolerant stoneflies	0	0
7	%Intolerant caddisflies	0	0
8	%Intolerant dipterans	0	0
9	Intol. mayfly richness	0	0
10	Intol. stonefly richness	0	0
11	Heptageniidae richness	2	2
12	Ephemerellidae richness	2	2
13	Nemouridae richness	1	0
14	*Pteronarcys*	0	0
15	%Glossosomatidae	0	0
16	%Philopotamidae	0	0
17	%Arctopsychidae	0	0
18	*Rhyacophila richness*	0	0
19	*%C. Nostococladius*	0	0
20	Long-lived taxa richness	1	1
21	Class 0 taxa richness	0	0
	NEGATIVE INDICATORS		
1	%Collector	75.15	0
2	%Parasite	0	1
3	%Oligochaeta	1.04	1
4	%Leech	0	1
5	%Tolerant snails	0	4
6	%Tolerant amphipods	0	2
7	%Tolerant odonates	0	2
8	%Tolerant mayflies	0	4
9	%Tolerant caddisflies	0	4
10	%Tolerant beetles	0.52	3
11	%Tolerant dipterans	1.04	2
12	Tol. mayfly richness	0	2
13	Tol caddisfly richness	0	2
14	Tol. beetle richness	1	3
15	Tol. dipteran richness	1	3
16	%Simuliidae	28.5	0
17	%Chironomid (-C.Nostoc.)	10.9	3

SUMMARY SCORES

	Score	%
EROSIONAL TOTAL	45	36.3
Primary subtotal	3	16.7
Positive Indicators	5	8.8
Negative Indicators	37	75.5

GENERAL BIOTIC INTEGRITY AND IMPACT CATEGORIES

Based on Total Bioassessment Score

Very high biotic/habitat integrity	90-100%
High biotic/habitat integrity	80-89%
Moderate biotic/habitat integrity	60-79%
Low biotic/habitat integrity	40-59%
Severe habitat and/or water quality limitations	<40%

The bioassessment model is based on Pacific Northwest montane watersheds that have experienced minimal human disturbance, and applies to stream sites that are: mid-order, forested, low-mid elevation, and moderate-high gradient. Maximum scores are based on experience with sites that have very high habitat complexity and integrity, and that have a strong, perennial flow of cool/cold water. Potential maximum scores in natural or minimally disturbed systems will vary, depending on watershed parameters and the resultant in-stream habitat characteristics they produce. This bioassessment is not intended to be used on: rivers; large, open streams; basin or valley streams; low gradient sites; alpine/subalpine streams; or small streams.

T&E OR SENSITIVE TAXA IDENTIFIED

None

CLASS 0 TAXA

These are either rare, unusual, or uncommon taxa; or taxa more typically associated with small streams and springs.

None

COLD WATER BIOTA

Taxa requiring year-round cool/cold water temperatures.

Total percent contribution	0
Total taxa richness	0

SAMPLE & ANALYSIS SPECIFICATIONS

Sampler Type/Mesh Size: Traveling kick-net, 500 micron.
Number of points composited: 5 meter traveling kick
Subsample size: 500-600 organisms
Taxonomy by: ABA standard taxonomic effort.
Data analysis by: ABA BENTHOS program Version 1.0

FILE: 96LR09X

Aquatic Biology Associates, Inc., 3490 NW Deer Run Rd., Corvallis, OR 97330, 541-752-1568 FAX 541-754-9605

Siouxin Creek Sample 3, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR09

IDENTIFICATION CODE	96LR09
CORRECTION FACTOR	1

Taxon	Abundance	%
Oligochaeta	2	1.04
TOTAL: NON INSECTS	2	1.04
Acentrella turbida	6	3.11
Baetis tricaudatus	23	11.92
Drunella grandis/spinifera	1	0.52
Ephemerella inermis/infrequens	15	7.77
Cinygmula	1	0.52
Rhithrogena	1	0.52
Paraleptophlebia	1	0.52
Ameletus	2	1.04
TOTAL: EPHEMEROPTERA	50	25.91
Capniidae	25	12.95
Sweltsa	1	0.52
Zapada cinctipes	3	1.55
Calineuria californica	2	1.04
TOTAL: PLECOPTERA	31	16.06
Hydropsyche	26	13.47
TOTAL: TRICHOPTERA	26	13.47
Dytiscidae	1	0.52
Ampumixis dispar	1	0.52
TOTAL: COLEOPTERA	2	1.04
Maruina	1	0.52
Simulium	55	28.50
Antocha	5	2.59
TOTAL: DIPTERA	61	31.61
Chironomidae-pupae	5	2.59
Brillia	6	3.11
Eukiefferiella	2	1.04
Orthocladius Complex	1	0.52
Stictochironomus	2	1.04
Tvetenia	5	2.59
TOTAL: CHIRONOMIDAE	21	10.88
GRAND TOTAL	193	100.00

Siouxin Creek Sample 3, Oct. 20, 1996

WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW. Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance. Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR09

Total invertebrate abundance	= 193.0	EPT abundance	= 107.0
Total number of taxa	= 25	Number EPT taxa	= 13
Hilsenhoff Biotic Index	= 4.23	Brillouin H	= 2.21

TAXONOMIC GROUP	#TAXA	ABUNDANCE	PERCENT
Non-insects	1	2.0	1.04
Odonata	0	0.0	0.00
Ephemeroptera	8	50.0	25.92
Plecoptera	4	31.0	16.06
Hemiptera	0	0.0	0.00
Megaloptera	0	0.0	0.00
Trichoptera	1	26.0	13.47
Lepidoptera	0	0.0	0.00
Coleoptera	2	2.0	1.04
Misc. Diptera	3	61.0	31.61
Chironomidae	6	21.0	10.89

FEEDING GROUP	#TAXA	ABUNDANCE	PERCENT
Predator	3	4.0	2.08
Parasite	0	0.0	0.00
Collector-gatherer	12	64.0	33.18
Collector-filterer	2	81.0	41.97
Macrophyte-herbivore	0	0.0	0.00
Piercer-herbivore	0	0.0	0.00
Scraper	3	3.0	1.56
Shredder	3	34.0	17.61
Xylophage	0	0.0	0.00
Omnivore	1	2.0	1.04
Unknown	1	5.0	2.59

DOMINANT TAXON	ABUNDANCE	PERCENT
Simulium	55.0	28.50
Hydropsyche	26.0	13.47
Capniidae	25.0	12.95
Baetis tricaudatus	23.0	11.92
Ephemerella inermis/infreq	15.0	7.77
SUBTOTAL 5 DOMINANTS	144.0	74.61
Acentrella turbida	6.0	3.11
Brillia	6.0	3.11
Antocha	5.0	2.59
Chironomidae-pupae	5.0	2.59
Tvetenia	5.0	2.59
TOTAL 10 DOMINANTS	171.0	88.60

INDICATOR ASSEMBLAGE	#TAXA	ABUNDANCE	PERCENT
A Tolerant snails	0	0.0	0.00
B Tolerant mayflies	0	0.0	0.00
C Intolerant mayflies	0	0.0	0.00
D Intolerant stoneflies	0	0.0	0.00
E Tolerant caddisflies	0	0.0	0.00
F Intolerant caddisflies	0	0.0	0.00
G Tolerant beetles	1	1.0	0.52
H Intolerant flies	0	0.0	0.00
I Tolerant flies	0	0.0	0.00
J Intolerant midges	0	0.0	0.00
K Tolerant midges	1	2.0	1.04
L	0	0.0	0.00
M	0	0.0	0.00
N	0	0.0	0.00

Siouxin Creek Sample 3, Oct. 20, 1996
WA: Cowlitz & Lewis Counties. Lewis River & tributaries. For Harza NW.
Benthic invertebrate biomonitoring. Erosional habitats. Relative abundance.
Qualitative, kick-net (500 micron). ABA, Inc. FILE: 96LR09

RATIOS OF TAX. GROUP ABUNDANCES

EPT/Chironomidae	= 5.10
Hydropsychidae/Total Trichoptera	= 1.00
Baetidae/Total Ephemeroptera	= 0.58

RATIOS OF FFG ABUNDANCES

Scraper/Collector-filter	= 0.04
Scraper/(Scraper + C.-filterer)	= 0.04
Shredder/Total organisms	= 0.18

Biotic Condition Index

Community Tolerance Quotient (a)	= 65.36
Community Tolerance Quotient (d)	= 76.59

DIVERSITY MEASURES

Shannon H (loge)	= 2.39
Shannon H (log2)	= 3.45
Evenness	= 0.74
Simpson D	= 0.14

COMMUNITY VOLTINISM ANALYSIS

TYPE	ABUNDANCE	PERCENT
Multivoltine	44.0	22.80
Univoltine	144.0	74.61
Semivoltine	5.0	2.59

Appendix 3.1-1

WDFW Creel Survey Form

AFD ANGLER SURVEY FORM

"TARGET SPECIES" CODE (Note: These are not "SPECIES" codes)

SH = STEELHEAD, GEN.	WW = WARMWATER, GEN.	YP = PERCH	ANY = ANY SPECIES (NO SPECIFIC TARGET)
SAL = SALMON, GEN.	B = BASS, GEN.	CF = CATFISH, GEN.	CYP = CYPRINID, GEN. (CARP, SUCKER, ETC.)
TR = TROUT, GEN.	C = CRAPPIE, GEN.	WAL = WALLEYE	BUR = BURBOT (LING)
WF = WHITEFISH, GEN.	S = SUNFISH, GEN.	STU = STURGEON, GEN.	AMS = SHAD

WATER (MGMT UNIT) NAME	WATER TYPE	SECTION (12 col. max)

COUNTY	DATE (mm dd yy)	INITIALS	WATER CODE	SH PCNO

EFFORT COUNTS

TIME	BOAT COUNT	ANGLER COUNTS: BOAT	ANGLER COUNTS: SHORE-PLUNK	ANGLER COUNTS: DRIFT	COMP: Y	COMP: N

PARTY & ANGLER FISHING CHARACTERISTICS / **CATCH COHORT DETAILS** / **TOTAL LENGTH** (☐ Inches ☐ Centimeters)

MARK END OF PARTY	NUMBER: ADULTS	NUMBER: JUVENILES	TIME FISHED (MILITARY): START	TIME FISHED (MILITARY): QUIT	COMPLETED Y/N	SATISFIED Y/N	ANGLER TYPE	GEAR CODE	TARGET SPECIES	CATCH BY: GROUP	CATCH BY: INDIVIDUAL	SPECIES	ORIGIN	MARKS: 1	MARKS: 2	NO. FISH: KEPT	NO. FISH: RELEASED	RELEASED CODE	#1	#2	#3	#4	#5	#6	#7	#8

ANGLER TYPE: B = Boat S = Shore T = Tube D = Drift P = Plunk C = Ice

GEAR CODE: B = Bait L = Lure F = Fly COMB = BL, BF, LF

RELEASED CODE: S = Sublegal L = Legal O = Overlegal C = Closed Season U = Undesirable

USE THESE COLUMNS TO ENTER ADDITIONAL MARKS, TAG CODES, OR OVER 24 HRS FISHED.

FMF-011891 WDW 713

Appendix 3.2-1

Physical Aquatic Habitat Survey Results

Yale Hydroelectric Project Fish Habitat Survey Form

Harza Northwest, Inc. (206) 882-2455

Stream Name: N.F. Lewis Bypass Reach

Survey Date: 09/11/96 - 09/12/96

Surveyors: GWG/LS

updated substrate

1 Nat. Seq. Ord. #	2 Hab. Type & Num. P, R, G, C SC, S/F, T, CU	3 Hab. Length ft.	4 Hab. Width ft.	6 Max. Depth 0.1 ft.	7 Substrate Dom. SA, GR, CO, SB, LB, BR	8 Substrate S-Dom. SA, GR, CO, SB, LB, BR	9 # Piece of LWD SB Small Brush	10 # Piece of LWD B Brush	11 # Piece of LWD S Small	12 # Piece of LWD L Large	13 Total Cover % Cov. 1-4	14 Total Cover Dom. U, S, D, H, W, T	15 Total Cover S-Dom U, S, D, H, W, T	**16** Embeddedness > 35% Y/N	**17** Bankful Width ft.	18 Water Temp. (°F) Temp	18 Water Temp. (°F) Time	19 Comments / Photo Numbers Additional Comments in Notebook
1	R1	302	52	1.9	SB	CO	2	0	0	0	3	S	S	N	175			Low grad. Rp influenced by Yale Lake pool elev.
1.1	SC1	420	35	1.5	SB	CO	0	0	0	0	3	S	S	N				
2	P1	510	80	8	SA	GR	0	0	0	0	3	D	S	N				LBSC at 370’ at bridge P (2 small LB tribs)
3	R2	65	10	2.4	BR	LB	0	0	0	0	2	S	S	N				
4	G1	136	22	2.8	SA	GR	0	0	0	0	1	S	S	N				
5	C1	73	65	1.8	SB	CO	0	0	0	0	3	S	T	N				
6	R3	458	68	1.9	SB	CO	1	0	0	0	3	S	T	N				photo 1
7	G2	130	45	3.8	SB	SA	0	0	0	0	2	S	S	N				photo 2 LB Flag
8	R4	196	55	1.8	GR	SB	0	0	0	0	2	S	S	N				photo 3 at Ole Cr. U.S. end of R4
9	G3	140	70	3.4	GR	CO	0	0	0	0	2	S	D	N				
10	R5	218	60	1.9	CO	SB	0	0	0	0	2	S	S	N				
11	G4	332	58	2.4	GR	GR	0	0	0	0	2	S	S	N				LB flag photo 4
12	R6	229	48	1.2	CO	CO	0	0	0	0	2	S	S	N				
13	G5	131	42	1.7	SB	CO	0	0	0	0	2	S	S	N				LB spring/seep
14	R7	220	60	2.2	CO	SB	1	0	0	0	3	S	S	N				
15	G6	68	57	2	SB	LB	0	0	0	0	2	S	S	N				
16	R8	182	65	2	SA	SB	0	0	0	0	2	S	S	N				
17	G7	112	58	2.6	CO	CO	0	0	0	0	1	S	S	N				
17.1	SC2	3048	26															photo 5,6 SC at 240’ braided w/ flood damage
18	R9	440	49	1.9	CO	SB	3	1	0	0	2	S	S	N				SEE BACK FOR DRAWING
19	G8	75	45	2.1	CO	SB	1	0	0	0	2	S	S	N				
20	R10	495	50	2	CO	SB	0	0	0	0	2	S	S	N				photo 7
21	G9	403	33	2.5		SB	0	0	0	0	2	S	S	N		56	11:45	
22	C2	116	23	1.2	SB	LB	0	0	0	0	2	S	T	N				several larger pools/beaver dams (braided area)
23	G10	65	45	3.1	CO	SB	0	0	0	0	4	S	S	N				bad fish pop unit

Yale Hydroelectric Project Fish Habitat Survey Form

Harza Northwest, Inc. (206) 882-2455

Stream Name: N.F. Lewis Bypass Reach

Survey Date: 09/11/96 - 09/12/96

Surveyors: GWG/LS

updated substrate

1 Nat. Seq. Ord. #	2 Hab. Type & Num. P, R, G, C SC, S/F, T, CU	3 Hab. Length ft.	4 Hab. Width ft.	6 Max. Depth 0.1 ft.	7 Substrate Dom. SA, GR, CO, SB, LB, BR	8 Substrate S-Dom. SA, GR, CO, SB, LB, BR	9 # Piece of LWD SB Small Brush	10 # Piece of LWD B Brush	11 # Piece of LWD S Small	12 # Piece of LWD L Large	13 Total Cover % Cov. 1-4	14 Total Cover Dom. U, S, D, H, W, T	15 Total Cover S-Dom U, S, D, H, W, T	**16** Embeddedness > 35% Y/N	**17** Bankful Width ft.	18 Water Temp. (°F) Temp	18 Water Temp. (°F) Time	19 Comments / Photo Numbers Additional Comments in Notebook
24	C3	200	23	1.4	SB	CO	1	0	0	0	3	S	T	N				photo 8
25	G11	110	40	2.8	CO	SB	3	0	0	0	2	S	S	N				RBSC complex re-enters mainstream at 75’
26	R11	226	55	1.7	CO	SB	0	0	0	0	2	S	S	N				
27	P2	98	50	4	CO	SA	1	0	0	0	2	S	D	N				
28	G12	1270	45	3.7	CO	SB	0	0	0	0	2	S	S	N				photo 9 LB SC rejoins at canal bridge at mid glide
29	P3	104	52	4.5	CO	SB	0	0	0	0	2	S	S	N				
30	R12	131	18	1.7	SB	LB	1	0	0	0	2	S	S	N				
31	G13	220	38	2.4	SB	LB	0	0	0	0	2	S	S	N				
32	R13	110	19	1.7	SB	LB	0	0	0	0	3	S	S	N				
33	G14	207	23	2.7	SB	LB	0	0	0	0	3	S	S	N				photo 10 non-typical , may want to sample
34	R14	115	20	2	SB	LB	0	0	0	0	3	S	S	N				next G (non-representative)
35	G15	225	32	3.5	SB	LB	0	0	0	0	3	S	D	N				
36	C4	96	15	1.5	SB	LB	0	0	0	0	2	S	T	N				split channel C (followed LB channel)
36.1	SC3	2450	15															RBSC approx. 30% OF q.
37	R15	545	110	1.3	SB	LB	0	0	0	0	2	S	S	N				LB trib at d.s. end of R15
38	G16	132	26	1.3	CO	SA	0	0	0	0	1	S	S	N				
39	R16	240	33	1.7	SB	CO	0	0	0	0	2	S	S	N				
40	G17	378	73	4	SB	CO	0	0	0	0	2	S	S	N				
41	P4	120	65	4.2	CO	SA	0	0	0	0	2	S	D	N				
42	G18	264	28	2.5	GR	SB	0	0	0	0	2	S	S	N				at canal emergency spillway Rd.
43	R17	290	25	1.4	CO	SB	0	0	0	0	2	S	S	N				
44	P5	260	63	4.7	SA	SB	3	0	0	0	2	S	D	N				still following LB channel from split at nso 36
45	C5	78	33	1.9	SB	CO	0	0	0	0	3	S	T	N				~ 2/3 of Q. photo 12
46	R18	62	65	1.5	SB	CO	0	0	0	0	2	S	S	N				
47	G19	186	43	2.2	SB	CO	0	0	0	0	2	S	S	N				

Yale Hydroelectric Project Fish Habitat Survey Form

Harza Northwest, Inc. (206) 882-2455

Stream Name: N.F. Lewis Bypass Reach

Survey Date: 09/11/96 - 09/12/96

Surveyors: GWG/LS

updated substrate

1 Nat. Seq. Ord. #	2 Hab. Type & Num. P, R, G, C SC, S/F, T, CU	3 Hab. Length ft.	4 Hab. Width ft.	6 Max. Depth 0.1 ft.	7 Substrate Dom. SA, GR, CO, SB, LB, BR	8 Substrate S-Dom. SA, GR, CO, SB, LB, BR	9 # Piece of LWD SB Small Brush	10 # Piece of LWD B Brush	11 # Piece of LWD S Small	12 # Piece of LWD L Large	13 Total Cover % Cov. 1-4	14 Total Cover Dom. U, S, D, H, W, T	15 Total Cover S-Dom U, S, D, H, W, T	**16** Embeddedness > 35% Y/N	**17** Bankful Width ft.	18 Water Temp. (°F) Temp	18 Water Temp. (°F) Time	19 Comments / Photo Numbers Additional Comments in Notebook
48	DC1	(Dry Channel) water goes sub surface 519’ long till pool isolated P at 242 ft. into dry channel																
		Dry channel rejoins RB SC at 519’. RBSC contains 100% of the Q at the P.																
		RBSC comprised of R and G habitat.																
49	P6	720	75	15	SA	GR	4	0	0	0	4	D	S	N				photo 13
50	R19	135	63	1.5	SB	CO	0	0	0	0	3	S	S	N				DAM IN SIGHT
51	G20	188	50	2	SB	CO	0	0	0	0	2	S	S	N				
52	R20	400	48	1.8	SB	CO	0	0	0	0	2	S	S	N				
53	G21	378	56	2.9	SB	CO	0	0	0	0	2	S	S	N				
54	C6	124	38	3.2	SB	CO	0	0	0	0	3	S	T	N				photo 14
55	R21	170	40	1.9	SB	CO	0	0	0	0	2	S	S	N				
56	G22	303	32	2.9	SB	CO	0	0	0	0	2	S	S	N				PacifiCorp Rd at 250’ into G (no culvert)
57	DC 2	198																
58	P7	150	150	15	SB	CO	0	0	0	0	4	D	D	N				photo 15

1. Natural Sequence Order (NSO)

Enter a different natural sequence order number for each habitat unit. NSO's should be entered in the same order as habitat units are encountered in the field survey, beginning with the first habitat unit, (e.g., 1,2,3,...). Side channels should be given sub-NSO's

2. Habitat Type and Number

Enter the habitat unit type and number for each unit. Habitat unit codes include:

P = Pool
R = Riffle
G = Glide
C= Cascade
SC = Side Channel
DC = Dry Channel
S/F = Step/Falls

Habitat type numbers will be ordered consecutively upstream from the starting point through the ending point of the survey. (e.g., if Reach 1 ends at P25, the next pool encountered in Reach 2 would be P26.)

In order to consider a habitat type as a unit, the habitat length must be greater than the wetted width. If a unit does not meet this criteria, do not consider it as a separate unit. For extremely long habitat units, (e.g., riffles 900 feet long) consider stratifying them into smaller more manageable lengths (i.e. separate a long riffle into NSO 20 - R4, NSO 21 - R5, and 22 - R6).

All side channels SC should be treated as individual habitat units and assigned individual sub-NSO numbers (i.e. NSO 5.1).

All side channels are considered a single habitat unit. There is no need to break them into individual habitat units. Address side channel complexity in the comments section.

S/F will receive a NSO, a habitat type and number, and a habitat length. All other information will be entered onto separate data form.

3. Habitat Length

Enter the measured wetted length for each habitat unit to the nearest foot. Lengths of all habitat units will be measured using a string chain.

4. Habitat Width

Enter the estimated mean wetted width for each habitat unit to the nearest foot.

6. Max. Depth

Enter the maximum depth for each unit. Maximum depth can be easily measured at each habitat unit with a stadia rod if the depths are typically less than 4 feet.

7. Stream Bed Substrate (Dominant)

Enter the visually estimated dominant and subdominant substrates within each unit by area. Use the following size classes and qualifiers:

SA = Sand, Silt and Clay	(0.08in)
GR = Gravel (pea to hardball size)	(0.08-2.5in)
CO = Cobble (hardball size to basketball size)	(2.5-10in)
SB = Small Boulder	(10-40in)
LB = Large Boulder	(>40in)
BR = Bedrock	

8. Stream Bed Substrate (Subdominant)

Enter the estimated sub-dominant substrate within each unit by area. Use the above size classes and qualifiers.

9, 10, 11, 12. Pieces LWD

Enter the number of pieces of large woody material within the bankfull channel for each habitat unit. This includes live, leaning trees that have the potential to fall into the stream.

To be included, leaning trees must lean over the area defined by the bankfull channel width; if it leans, but is not within this area, do not count it as woody material. If leaning trees (potential LWD) are included in the LWD count, note the approximate numbers or the percentage of total LWD pieces which leaning trees make up under Comments.

Enter the number of pieces of large woody material in each of the three size classes: (SB) Small Brush, (B) Brush, (S) Small, (L) Large. Use the following minimum diameter and length criteria:

SB = Diameter > 6in, length > 20ft
B = Diameter > 12in, length > 25ft
S = Diameter > 24in, length > 50ft
L = Diameter > 36in, length > 50ft

If the woody material does not meet the length criteria, but is longer than 2 times the bankfull channel width, count the piece In the appropriate size class based on the minimum diameter criteria.

Make note of log complexes, logjams, and rootwads under Comments.

13,14, 15. Total Cover

Percent - Enter the code for the estimated cover category for each P, R, or G unit. Assume cover to be that which is suitable for salmonids > 3" in length. If a large percentage of the habitat unit contains cover for young of the year salmonids please note it in the comments section. Visualize the wetted surface area of the unit from overhead and record the percentage class of this area that is occupied by cover:

1 = 0 to 5% total cover
2 = 6 to 20% total cover
3 = 21 to 40% total cover
4 = > 40% total cover

Cover Type - Enter the dominant and subdominant cover types for each P, R, C, or G unit. Use the following cover codes:

U = Undercut banks
S = Substrate
D = Depth > 3 feet
H = Overhanging Vegetation within 10" of WSE
W = Wood Material
T = Turbulence
A = Aquatic/Emergent Veg

16. Embeddedness

Enter Y for Yes, N for No **for every tenth P, R, G etc.** If cobble embededness is greater 35% by volume enter Y. If there is no cobble, use gravel embededness. If substrates for the habitat unit do not contain either gravel or cobble enter A.

17. Bankful Width

Enter the average bankful width for every tenth P, Ri, G, etc. Bankful width is define as the width of the channel at the normal high water line. Usually lacks vegetation growth.

18. Water Temperature

Enter the water temperature of the main channel at least 3 times a day (morning, noon, and late afternoon).

Stream temperatures should also be recorded for each tributary habitat unit.

19. Comments / Photo Numbers

Enter comments regarding any of the above evaluations. Photo number and film roll number should also be entered here. Stream gradient measurements should be recorded on a frequent basis and entered here. Other suggested comments can include habitat improvement opportunities, slides, erosion areas, streambank damage, and estimated tributary discharge.

Appendix 3.2-2

Photographs of Aquatic Habitat

Photo 1. Typical riffle habitat located within the Swift bypass reach, Sept. 11, 1996.

Photo 2. Typical glide habitat located within the Swift bypass reach, Sept. 11, 1996.

Photo 3. Typical pool habitat located within the Swift bypass reach, Sept. 11, 1996.

Photo 4. Typical pool habitat located within the Swift bypass reach, Sept. 11, 1996.

Photo 5. Typical side channel located within the Swift bypass reach, Sept. 11, 1996.

Photo 6. Isolated pools located in the lower reach of Dog Creek, Sept. 10, 1996.

Photo 7. Culvert located within the dry channel segment of Dog Creek, Sept. 10, 1996.

Photo 8. Typical aquatic habitat located within the wetted portion of Dog Creek, Sept. 10, 1996.

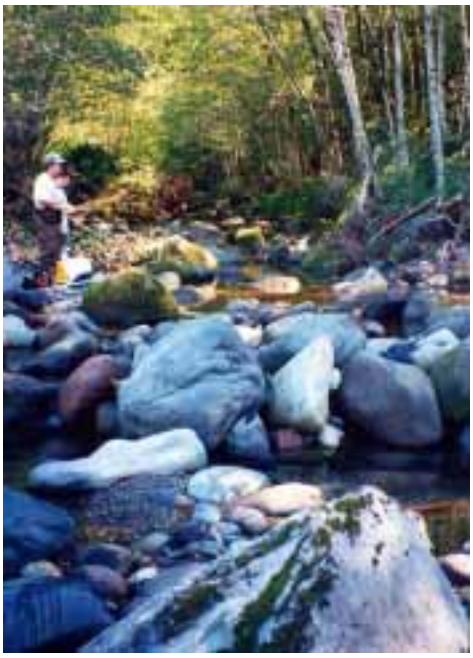

Photo 9. Typical aquatic habitat located within the lower 200 feet of Ole Creek, Sept. 9, 1996.

Photo 10. Typical aquatic habitat located within the intermittent segment of Ole Creek, Sept. 9, 1996.

Photo 11. Typical aquatic habitat located within the wetted portion of Ole Creek, Sept. 9, 1996.

Photo 12. A 30-foot-high debris jam located at RM 0.8 in Ole Creek, Sept. 9, 1996.

Photo 13. Waterfall located in the upper segment of Ole Creek, Sept. 9, 1996.

Photo 14. Rain Creek dry channel, Sept. 10, 1996.

Photo 15. Bedrock and boulder-dominated dry channel in upper Cougar Creek, Sept. 11, 1996.

Photo 16. Dry channel in upper Cougar Creek, Sept. 11, 1996.

Photo 17. Unconfirmed dry channel in upper Cougar Creek, Sept. 11, 1996.

Photo 18. Intermittent segment in Panamaker Creek, Sept. 10, 1996.

Photo 19. Typical aquatic habitat located within the wetted portion of Panamaker Creek, Sept. 10, 1996.

Photo 20. Deeply incised segment of Panamaker Creek, Sept. 10, 1996.

Photo 21. A 30-foot-high waterfall located at RM 0.3 in Panamaker Creek, Sept. 10, 1996.

Photo 22. Actively eroding streambanks in the upper segment of Panamaker Creek, Sept. 10, 1996.

Photo 23.
Typical aquatic habitat in Speelyai Creek downstream from PacifiCorp's diversion.

Photo 24.
Typical aquatic habitat in Speelyai Creek upstream from PacifiCorp's diversion.

Photo 25. Aquatic habitat in Speelyai Creek canal.

Appendix 3.4-1

Protocol for Cougar Creek Fish Weir Sampling

Appendix 3.4-1. Protocol for Cougar Creek Fish Weir Sampling

BULL TROUT TAGGING PROCEDURE:

1. Bull trout that do not have a tag will be tagged with a green floy anchor tag on the right side of the dorsal fin (fish will be tagged on the left side in 1997).

2. The insertion point of the needle should be just under the anterior half of the dorsal fin. Be sure there is enough tissue at the insertion point that the needle does not protrude through the other side during the tagging process. Special care must be taken with small fish (under 18 inches). You may need to only insert the needle in half-way. Ideally, the anchor on the tag should be located directly under the dorsal fin (i.e., midway through the back). Insert the needle at a 45 degree angle so the tag will be more streamlined and not stick out perpendicular to the fish. Once the needle is in the fish, click the trigger on the gun - a tag will be injected into the fish. Make sure that the tag injected into the fish is free and not wrapped around other tags loaded into the gun. Keep the trigger depressed and pull the needle straight out. Tug slightly on the tag to ensure that it is anchored.

3. Record the number of each tag on data sheets.

4. Note any marks on the fish, especially if there is an insertion scar from a previously tagged fish. The scar may be on either side of the dorsal fin.

BULL TROUT WITH YELLOW TAGS

The yellow tag indicates a bull trout that was captured in Merwin Reservoir and released into Cougar Creek. Yellow tags on the right side of the dorsal fin identify fish that were plated in 1995. A tag on the left side identifies fish that were planted this year. Bull trout with left sided tags do not need to be measured; note the tag number and release fish upstream of the weir. Bull trout with a right yellow tag should be measured (fork length to nearest mm) and their tag number recorded.

GENETIC SAMPLING

All bull trout that do not have tags or tag scars will be sampled for genetic testing.

1. Clip a small section of the anal fin with small scissors or finger nail clippers. The size of the clip does not have to be large. Roughly half the size of your smallest finger nail is sufficient.

2. Place the clip into a vial filled to the top with ethanol.

3. In each vial place a small paper strip (preferably "rite in rain" paper) with the sample number and followed by the letter "Y" (e.g., 1Y 2Y and so on) penciled on each strip.

4. A total of 30 samples are needed. Considering past run sizes it is unlikely that we will achieve that this year.

5. Check all tagless fish for tag scars (a small round scar under the dorsal fin indicating the insertion of the needle on the tag gun). If you note a tag scar do not take a genetic sample.

6. Fish with yellow tags will be sampled and included in the Merwin Group.

MISCELLANEOUS

1. If possible, do not anesthetize bull trout. In Merwin we have found that putting fish in a cooler for a few minutes make them passive and they become more receptive to handling. If this is too difficult be careful not to add too much MS-222.

2. Use wet gloves when handling fish (cotton, wool or similar fabric). Gloves allow much better control.

Appendix 3.7-1

Bull Trout Genetic Analysis Data

Appendix 3.7-1. Bull Trout Genetic Analysis Data

Table 1. Microsatellite loci, alleles, and references for loci used in the analysis of Lewis River bull trout.

Locus	Alleles	Reference
ONEμ7	**218 *244*	Scribner et al. 1996
μSAT73	**144 *148*	Estoup et al. 1993
SFO18	**156*	Angers et al. 1995
FGT3	**165*	Sakamoto et al. 1994
OCL12	**105 *109*	Condrey and Bentzen 1998
SCO19	**186 *190*	E. Taylor pers. comm.

Table 2. Sample location, sample size (N), allele frequencies and expected heterozygosity (*Hs*) for bull trout from the Lewis River, Washington.

Sample Location	N	Allele Frequencies				*Hs*
		*ONEμ7*218*	*μSAT73*144*	*OCL12*105*	*SCO19*186*	
Swift Reservoir	30	0.570	0.426	0.200	0.917	0.247
Yale Reservoir	10	0.250	0.650	0.600	0.800	0.286
Merwin Reservoir	24	0.220	0.587	0.500	0.854	0.268

The allele of largest molecular size at each locus (*ONEμ7*244*, *μSAT73*148*, *OCL12*109*, and *SCO19*190*) was omitted to simplify presentation.

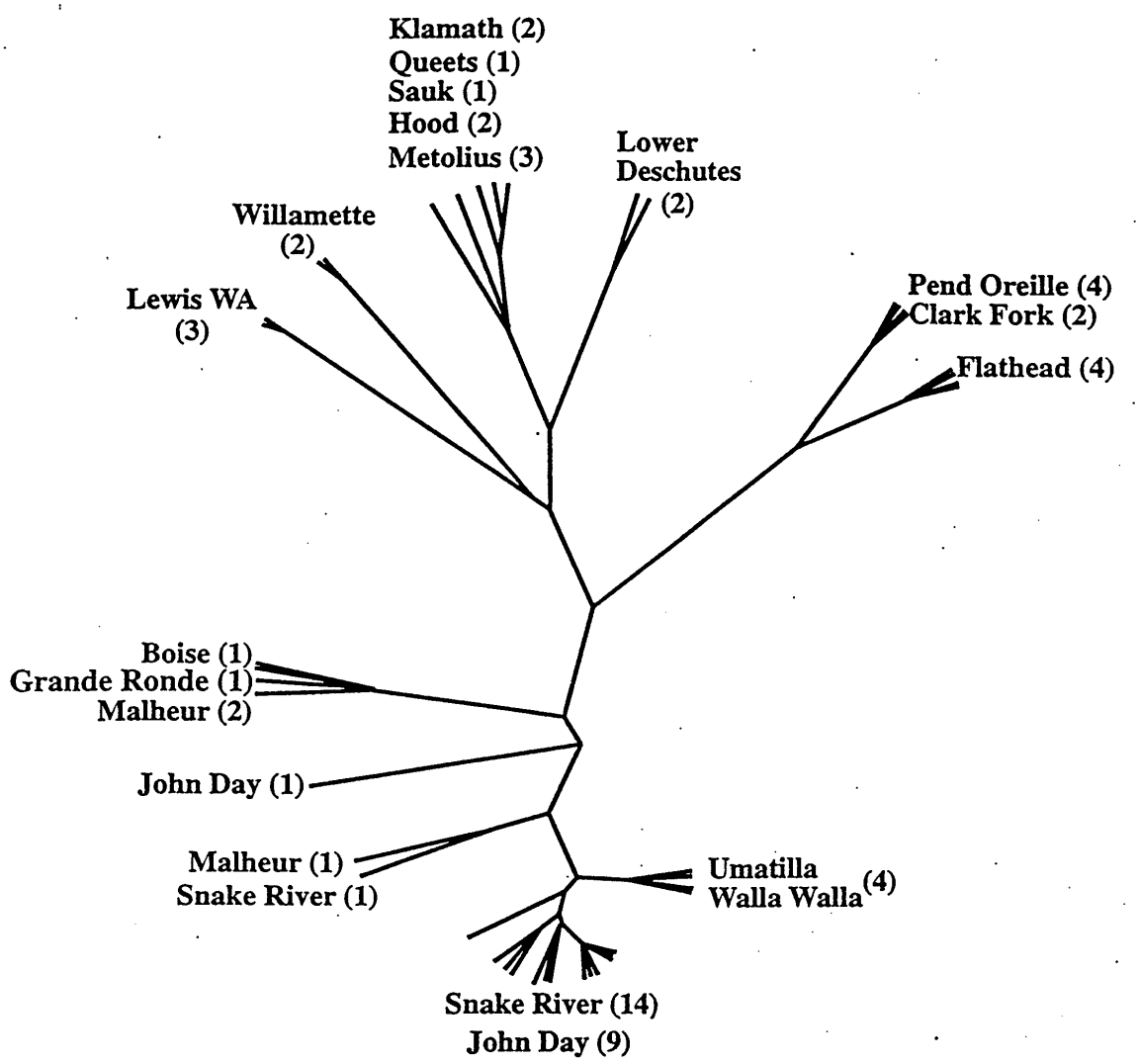

Figure 1. Radial display of Cavalli-Sforza and Edwards Chord distance estimator of genetic similarity among bull trout populations. Numbers in parentheses are the number of sampling locations represented by each region or drainage name.

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