Water Quality Screening Report: July 2007 – June 2009

Washington Department of Ecology Grants:
Centennial Clean Water Fund Grants G0800056 and G0700093
Water Quality Monitoring/Improvement Grant G0700206

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Water Quality Implementation Grants 06-02-IM and 08-02-IM
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July 31, 2009

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For

Washington State Conservation Commission
Olympia, Washington

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ACKNOWLEDGEMENTS

Washington Conservation Corps (WCC) interns Elaine Richman and Betsy Kain assisted in collecting and analyzing water samples and entering data into the JCCD database. WCC intern Heather Noel analyzed water samples, entered data, prepared the quality control data for this report, and proof read a draft of this report.

Kit Pennell, science teacher for the Chimacum School PIE Program, and her Hydrology Class students collected water quality monitoring data during the school years.

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SUMMARY

The purpose of this report is to assess the effectiveness of Best Management Practices (BMPs) implemented on agricultural lands and to track water quality trends at established stations on eastern Jefferson County streams.

Much has been accomplished in the past two years. Fencing has excluded livestock from streams--preventing manure from degrading water quality and livestock from grazing on riparian vegetation. Solar-powered watering troughs have kept livestock from drinking directly from the stream. Trees planted will one day result in cooler water and more fish cover. Large woody debris has been placed where there was none—providing salmon with pool habitat and immediate cover.

Under the Conservation Reserve Enhancement Program, 19 landowners have enrolled 160 acres of land along 10.3 miles of streambank in 4 watersheds. Stream buffers were planted with 93,000 trees and shrubs, which will one day provide shade and cover for salmon and benefit other wildlife as well. The installation of 7.3 miles of fencing, 5 livestock watering troughs, and 4 livestock stream crossings will protect the stream and its banks from livestock. To assess the value of this program, temperature data loggers were installed to monitor stream temperature on an hourly basis. It is anticipated that as the planted trees grow, stream temperature will gradually decline.

Dairy and beef farmers in the Chimacum and Discovery Bay watersheds were kept appraised of water quality conditions in Chimacum Creek, Salmon Creek, and Snow Creek on a monthly basis. Every month a chart showing the current month's fecal coliform concentrations at the stations monitored as well as the average concentrations for all the months monitored was sent to the landowners.

The District's goal of improving water quality in Jefferson County streams through the implementation of agricultural best management practices (BMPs) is not limited to the larger dairy and beef farmers. The District also assists owners of small agricultural operations. For the past several years the District organized "Horses, Livestock, and Land" workshops modeled after the Horses for Clean Water Program. In these workshops, District and other experts explained how to manage horse and smaller livestock operations in a way that would maintain good water quality.

Although much has been accomplished in the last two years, much remains to be done. Improvements still need to be made to further reduce fecal coliform levels and stream temperature and to increase dissolved oxygen levels. Water quality improvement and salmon restoration is not something that happens overnight. This kind of work requires commitment and perseverance--a long-term approach.

The District cannot take sole credit for the accomplishments described in this report. Many agencies, private landowners, and volunteers contributed to our success. These include Jefferson County, Washington Department of Fish and Wildlife, US Fish and Wildlife Service, North Olympic Salmon Coalition, Hood Canal Salmon Enhancement Group, Hood Canal Coordinating Council, Chimacum School PIE Program, Jefferson Land Trust, Washington State University Water Watchers, and Washington Conservation Corps.

INTRODUCTION

The Jefferson County Conservation District (JCCD) began its water quality monitoring program in 1993, when streams within the Discovery Bay Watershed were monitored. Since then, monitoring has expanded to include streams in the Quilcene Bay Watershed and the Chimacum Creek Watershed. Because the goals of the Conservation District are closely tied to agriculture, streams flowing through agricultural lands have been given priority in the District's monitoring program. Our monitoring has four objectives:

1) to assess the effectiveness of best management practices (BMPs) such as fencing livestock from the stream;
2) to track long-term trends in water quality at established monitoring stations;
3) to keep landowners appraised of conditions in the streams so that JCCD can work cooperatively with them in implementing BMPs where needed;
4) to identify problem reaches in need of BMPs.

This report contains the results of monitoring data collected from July 2007 to June 2009 under several different grants. Two of these grants (G0800056 and G0700093), which fund monitoring in the Chimacum and Discovery Bay watersheds, have not reached their completion dates. This report summarizes data collected so far. Final reports for these two grants will be prepared at the time of their completion.

Currently, JCCD and Jefferson County Public Health (JCPH) are monitoring 7 water quality parameters at 37 stations either once per month or twice per month. Through the use of temperature data loggers, water temperature is monitored on an hourly basis from May to October every year at 41 stations. An additional 10 stations are monitored all year. To help assess the suitability of spawning gravel for the ESA-listed summer chum salmon, intragravel dissolved oxygen (IGDO) is monitored monthly in Chimacum Creek and Salmon Creek during the egg-incubation period from September through March. The District measures stream flow when needed, but measurements are made infrequently now since Jefferson County and Washington Department of Ecology have installed telemetric gages on major streams and have made the data available on the internet.

In 1997, the District began assisting students in the Chimacum School PIE Program. Each year since then, the District has trained a new class of students in collecting and analyzing water samples. The school's 10 monitoring stations supplement those of the District. At the end of the school year, the students present their data to the District for inclusion in the District's water quality database

In addition to monitoring water, the District also monitors fish abundance to help assess projects designed to improve salmon habitat. Fish trapping is conducted mainly by citizen volunteers trained by District personnel.

Water quality and fish-trapping data are maintained at the District office on an Access database and are available to anyone with a need, including government agencies, tribes, students, and citizens. Every month, during the monitoring year, the District reports the latest fecal coliform results to the agricultural landowners. Landowners receive a chart showing the current month's fecal coliform concentration and an up-to-date average concentration at each of the stations monitored. Every two years the District prepares a water quality report that summarizes data collected during the previous two years and makes it available to anyone interested.

METHODS

Water Quality

Ambient monitoring was conducted monthly in the Discovery Bay watershed at 13 stations on Salmon Creek, Snow Creek, and their tributaries from February 2007 to June 2007 (Figure 1). Beginning in February 2008 under another grant, the number of stations in the Discovery Bay watershed was increased to 19 and monitoring frequency was increased to every two weeks. Although monitoring continues under this grant, only data collected from February 2008 to January 2009 has been analyzed in this report. Analysis of data collected in one full year with each month receiving equal weight makes the data more comparable to that of previous years.

In the Chimacum watershed 28 stations on Chimacum Creek and its tributaries were monitored monthly from October 2007 to September 2008 except from June to September when they were monitored twice per month (Figure 2). For purposes of comparison to previously collected data in which equal weight was given to each month, arithmetic averages were obtained for fecal coliform concentrations for months monitored twice. Fecal coliform geometric mean values (GMVs) were then calculated on 12 monthly values.

In addition to fecal coliform, monitoring was also conducted for dissolved oxygen (DO), temperature, conductivity, pH, turbidity, and nitrate-nitrogen (NO_3-N).

Water quality stations were selected using two criteria: 1) sites that were used in previous studies so that comparisons could be made, and 2) sites bracketing (i. e. upstream and downstream) BMPs.

District staff measured temperature, conductivity, pH, and DO on-site with a Yellow Springs Instrument (YSI) model 556 with built-in barometer. Instrument calibration was conducted immediately prior to sampling. District staff analyzed turbidity samples using a turbidity meter (Hach Model 2100N) at the JCCD laboratory in Port Hadlock within the prescribed 2-day holding time. JCCD staff used turbidity procedure 214 A in Standard Methods (APHA 1981). NO_3-N was analyzed at the JCCD lab by the use of a selective ion electrode meter (Orion Model 720A). An interference suppresser solution (ISS) was added to standards and samples (4 mL ISS to 40 mL of standard/sample) to suppress interferences from chloride and bicarbonate ions and other less significant ions (Technical Bulletin 601, Orion Research, Inc.). Fecal coliform samples were collected in sterilized bottles and analyzed within 30 hours at the Twiss Analytical Laboratory (accredited by the Department of Ecology) in Poulsbo, Washington. Two replicate samples/measurements were taken for each parameter on each sampling date. Additionally, for the Discovery Bay samples, one of the two field replicates was collected in a 250 mL bottle and split in the laboratory so as to have two lab replicates. The University of Washington analyzed one nitrate-nitrogen sample on each sampling data as a quality control check on the samples analyzed at the JCCD lab. All sample bottles were placed in a cooler with ice at the time of sampling. Fecal coliform samples were placed on crushed ice; turbidity and nitrate-nitrogen samples were placed on “blue” ice.

Figure 1. Water quality stations in the Discovery Bay watershed monitored from 2007 to 2009.

Figure 2. Water quality stations in the Chimacum watershed monitored from 2007 to 2009. Stations denoted by diamonds were monitored only by the Chimacum School Hydrology Class.

Twiss laboratory measured the temperature of the first and last fecal coliform sample collected as part of the quality control procedure.

Intragravel dissolved oxygen (IGDO) monitoring was conducted monthly from September through March on two reaches (CH/0.0-0.4 and CH/9.3) of Chimacum Creek in 2007-08 and 2008-09 (Figure 3). Chimacum Creek was not monitored for IGDO in 2006-07. In Salmon Creek, IGDO was monitored in the new channel (SA/0.15-0.5) and in the control reach (SA/0.5-0.7) in 2006-07, 2007-08, and 2008-09 (Figure 3). In 2007-08 Salmon Creek was also monitored in reaches immediately upstream (SA/1.00-1.04) and downstream (SA/0.98-1.00) of its confluence with Houck Creek.

IGDO monitoring was conducted as follows: In late July/early August, simulated "redds" were dug to a depth of about 7 inches in riffle areas of Chimacum Creek and Salmon Creek. A 4-inch aquarium air stone was placed in the "redd" with 6 feet of tubing trailing downstream in the current. Two or three 1-2 inch stones were placed over the air stone and then the "redd" was filled in with bottom material from immediately upstream. An aluminum tag, engraved with a station identification number, was secured to the tubing with aluminum wire. Water samples were collected by means of a battery-powered drill and peristaltic pump. Samples were collected in 60-mL DO bottles after discarding the first 60 mL to clear the tubing. Samples were "fixed" on-site with 8 drops of manganous sulfate solution and 8 drops of alkaline-iodide azide solution. The samples were transported to the JCCD lab where 0.5 mL 50%-sulfuric acid was added to the sample bottles to dissolve the precipitate. When the precipitate was dissolved (10-20 minutes), the samples were titrated with a Hach digital titrator using 0.0250 N sodium thiosulfate solution. Two 20-ml titrations were made on each sample and the results averaged. A third titration was made if the results of the first two were not within 0.5 mg/L. If three measurements were made, the two closest measurements were averaged.

Additionally, ambient monitoring for turbidity, temperature, and DO was conducted monthly at ten Chimacum Creek stations during the 2006-07 and 2007-08 school years by high school students in the Chimacum High School PIE Program (Figure 2). Students measured temperature on-site with a glass thermometer. Water samples were brought back to the Chimacum School laboratory and analyzed the same day. DO samples were "fixed" on-site with Hach "powder pillows" (manganous sulfate and alkaline-iodide azide) in 300-mL BOD bottles. On the same day in the school laboratory, a sulfamic acid "powder pillow" was added to each sample to dissolve the precipitate. Two 100-mL samples were then titrated using a Hach digital titrator with 0.2000 N sodium thiosulfate solution. If within 0.5 mg/L, the two readings were averaged. Otherwise, a third titration was performed and the two closest measurements were averaged. To measure turbidity, the students used a Hach Model 2100N turbidimeter. They made two runs and calculated the average of three readings taken for each run. If agreement was within 10%, the two figures were averaged. Otherwise, a third run was made and the two closest figures were averaged.

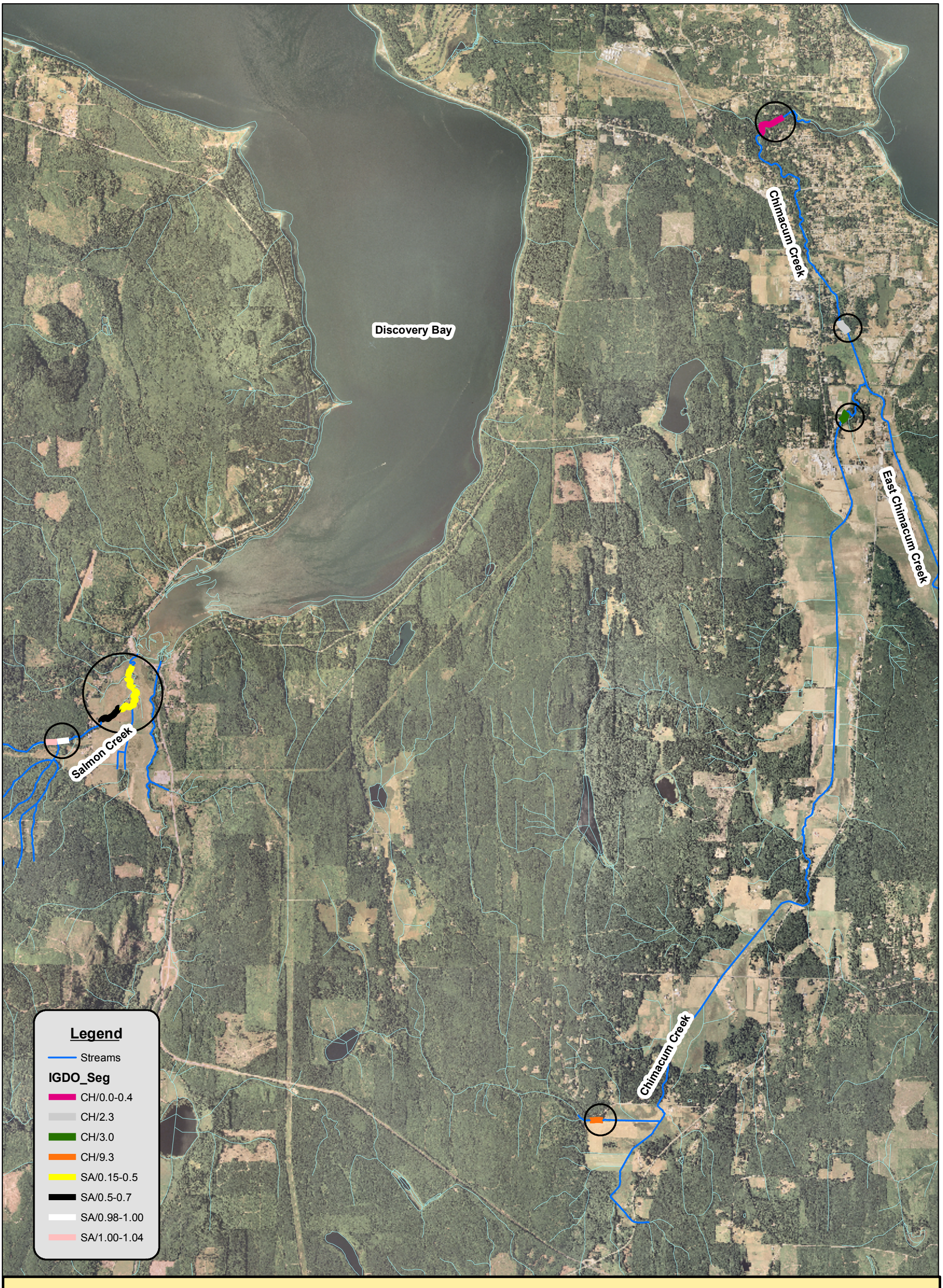

Figure 3. Intragravel dissolved oxygen (IGDO) stations monitored monthly from September to March on Chimacum Creek (1999-2008) and Salmon Creek (2002-2008)

Temperature Data Loggers

Temperature data loggers (Hobo U22 Water Temp Pro v2, manufactured by Onset Computer Corporation) were programmed to record temperature every hour and were maintained at 51 stations in the Chimacum Creek, Discovery Bay, and Quilcene Watersheds during the summers of 2007, 2008, and 2009 (Figure 4). (Data for 2009 will be reported in the 2011 Screening Report). Data loggers were placed on the stream bottom in low areas of the stream and were attached to 0.5 inch rebar with #14 black, single-strand electrical wire. Data loggers were checked for accuracy with a laboratory grade thermometer (with tenth of a degree Celsius divisions) before and after use.

Flow

Telemetric gaging stations on Chimacum Creek, Salmon Creek, and Snow Creek are maintained by Ecology and Jefferson County. Flows used to calculate loadings for these streams were obtained from historical data tables on Ecology's web site (www.ecy.wa.gov/programs/eap/flow/shu_main.html). Flows used to calculate loadings on tributary streams and ditches were obtained by establishing relationships between flows on these streams/ditches to flows on nearby gaged streams. In developing these relationships, flows were measured on both the gaged and ungaged streams on the same day. Regression analysis of this data yielded the following equations:

Waterbody	Station	Regression Equation	No. of cases	Slope probability
Chimacum Creek	CH/0.1	CH/0.1=1.1213*CH/2.3	7	0.0000
Chimacum Creek	CH/1.1	CH/1.1=1.0713*CH/2.3	3	0.0007
Chimacum Creek	CH/2.3	CH/2.3=0.8862*CH/0.1	7	0.0000
Chimacum Creek	CH/3.4	CH/3.4=0.687*CH/2.3	10	0.0000
East Chimacum Creek	ECH/0.2	ECH/0.2=0.213*CH/2.3	11	0.0000
Putaansuu Creek	PU/0.4	PU/0.4=0.029*CH/2.3	9	0.0000
Naylors Creek	NA/0.2	NA/0.2=0.080*CH/2.3	9	0.0000
Barnhouse Creek	BH/0.0	BH/0.0=0.0261*CH/0.1	4	0.0639
Swansonville Creek	SW/0.0	SW/0.0=0.00577*CH/0.1	4	0.0030
West Valley Ditch	WV/0.1	WV/0.1=0.00901*CH/0.1	5	0.0032
Ditch@CH/8.4	EG/0.0	EG/0.0=0.0111*CH/0.1	5	0.0197
Andrews Creek	AND/0.0	AND/0.0=0.429*SN/0.8	18	0.0000
Uncas Valley Ditch	UVD/0.0	UVD/0.0=0.00483*SA/0.7	3	0.0010
Tucker Ditch	TUD/0.1	TUD/0.1=0.00785*SA/0.7	3	0.0261
Houck Creek	HO/0.02	HO/0.02=0.073*SA/0.7	13	0.0000

Figure 4. Temperature stations monitored from 2007 to 2009 in eastern Jefferson County.

Flows used for the regression analysis were obtained by taking numerous velocity measurements across the stream with a Marsh-McBirney current meter (Model 201D), calculating flows for the individual subsections, and summing them.
The formula used was:

$$Q = \Sigma (A \times V)$$

where Q is the total flow (cubic feet per second or cfs);
A is the area ($ft.^2$) of an individual subsection;
and V is the corresponding mean velocity (feet per second)
of that subsection.

Loading

Fecal coliform loading, the number of fecal coliform bacteria flowing past a point in a given period of time, was calculated by the formula:

$$\text{FC loading (billions per day)} = FC \times Q \times 0.0246$$

where FC is the fecal coliform count per 100 mL of water; and Q is the stream flow (cfs).

Nitrate-nitrogen (NO_3-N) loadings were calculated by the formula:

$$NO_3\text{-N loading (pounds per day)} = C \times Q \times 5.39$$

where C is the concentration of NO_3-N expressed as mg/L; and Q is the stream flow (cfs).

Relative Fish Abundance

Fish trapping was conducted to obtain an index of relative fish abundance (RFA) for a particular stream section in order to assess BMPs in terms of salmonid habitat improvement. Landowners, students, and other volunteers were trained in fish trapping and fish identification. The traps used were standard minnow traps (Cuba Specialty Mfg. Co.) made of 1/4 inch wire mesh with a 7/8 inch hole in each of the funnel ends. Traps were baited with bread and set overnight for a one-day trapping period. Volunteers identified, enumerated, and then released the fish. Data were recorded on standardized forms. Usually at least two traps were set in a stream section on each trapping day and a minimum of 9 sets were made each quarter. Traps were often moved around within the stream section. RFAs were calculated for each species for each of the four quarters (Q) of the year, roughly corresponding to winter (Q1), spring (Q2), summer (Q3), and fall (Q4). The formula used was:

$$RFA = \sum F / \sum T$$

where F is the number of fish caught (by species) within the quarter (Q); and T is the number of traps set in that quarter.

Station Locations

Water quality and fish-monitoring station numbers contain the river mile (RM), which is the distance measured upstream from the river's mouth. For instance, water quality station CH/1.1 on Chimacum Creek is located 1.1 miles upstream from the mouth. Fish monitoring reach PU/0.0-0.38 begins at the mouth of Putaansuu Creek and extends upstream to RM 0.38. Water Resource Inventory Area 17 maps (Williams et al. 1975), topographic maps, and aerial photos were used in establishing station numbers.

In July 2003, monitoring at the downstream station on Salmon Creek was changed from SA/0.1 to SA/0.15 after water flow was diverted from the existing channel to the newly constructed channel. The fecal coliform GMV and average fecal coliform loading for the 2003-04 water-year was based on combined monthly data from both stations (Gately 2005).

Rainfall

Rainfall data for Center, Washington, located in the Chimacum Watershed, was obtained from the Western Regional Climate Center in Reno, Nevada and also from the operator of the weather station. Officially, it is station CHIMACUM 4S, WASHINGTON (451414). Annual rainfall data are shown in Figure 5 and average monthly rainfall in Figure 6.

Statistical Analyses

Box and whisker plots were used to graphically show parameter concentrations at the various monitoring stations. Interpretation of the box and whisker plot is shown in Figure 7.

Regression analysis was used to obtain flow relationships between gaged streams and ungaged streams. It was also used to determine the degree of any relationship between fecal coliform concentration and other parameters such as rainfall and temperature.

The software program *Statistix 9* was used to make the box and whisker plots and run the regression analyses (Anonymous 2008).

Reporting of Results

Results within this report are arranged in two parts. The first part contains the water quality results and project summaries. The second part contains the appendices: quality control data (Appendix A), raw water quality data (Appendix B), temperature profiles (Appendix C), relative fish abundance data (Appendix D), and station descriptions and coordinates (Appendix E).

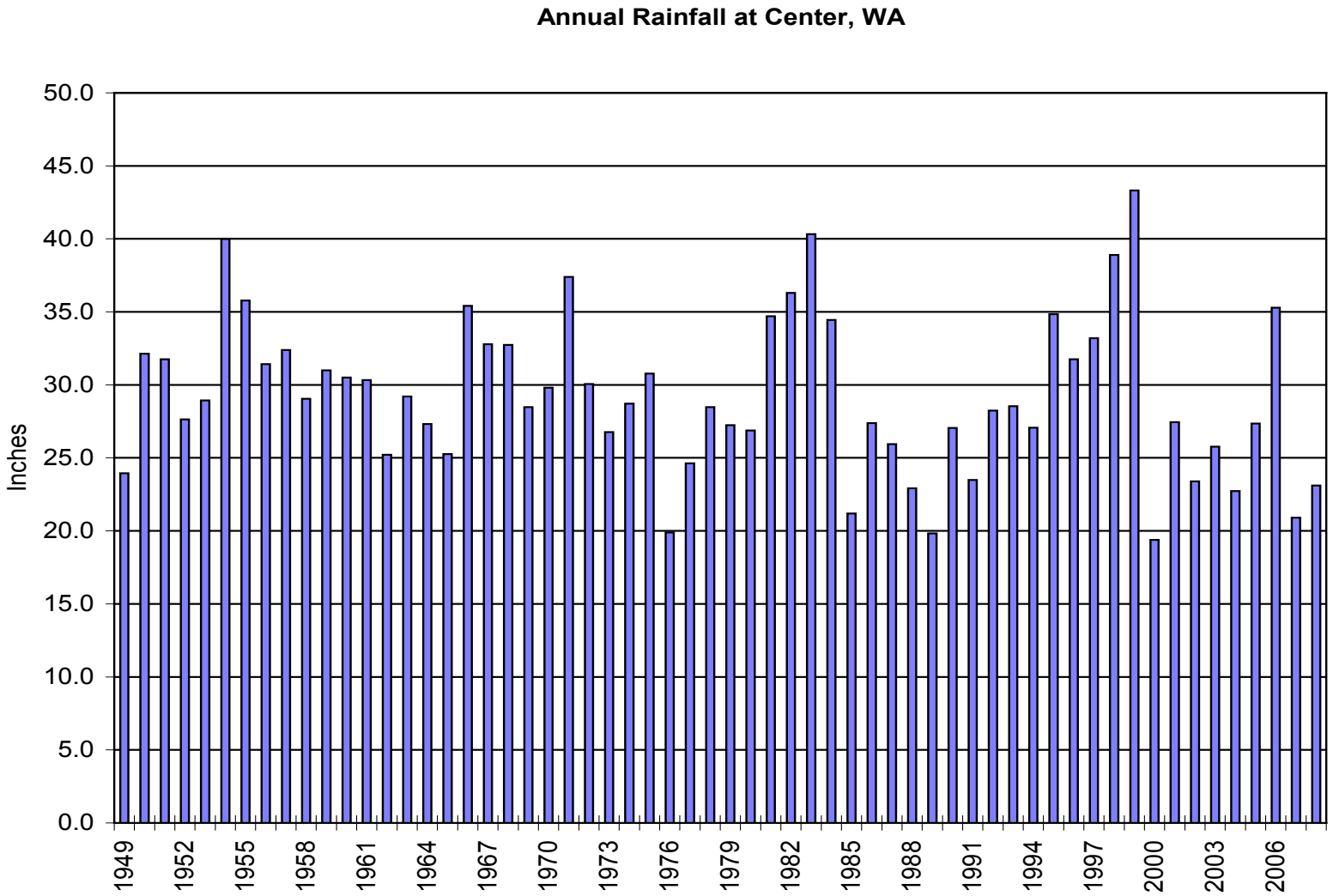

Figure 5. Annual rainfall at Center, Washington (Station CHIMACUM 4S, WASHINGTON (451414). Data provided by George Huntingford and the Western Regional Climate Center, Reno, Nevada.

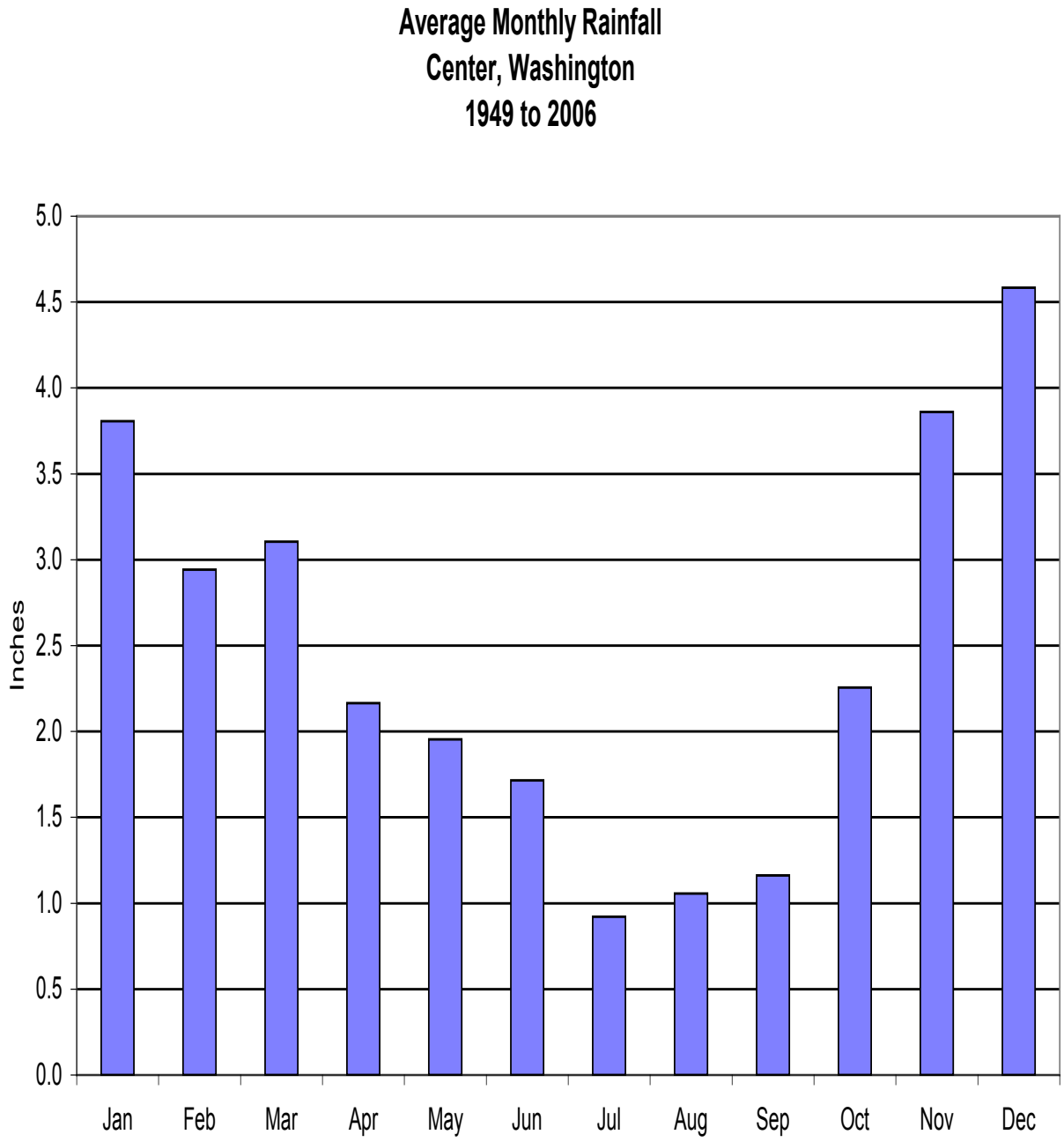

Figure 6. Average monthly rainfall from 1949 to 2006 at Center, Washington (Station CHIMACUM 4S, WASHINGTON (451414). Data provided by George Huntingford and the Western Regional Climate Center, Reno, Nevada.

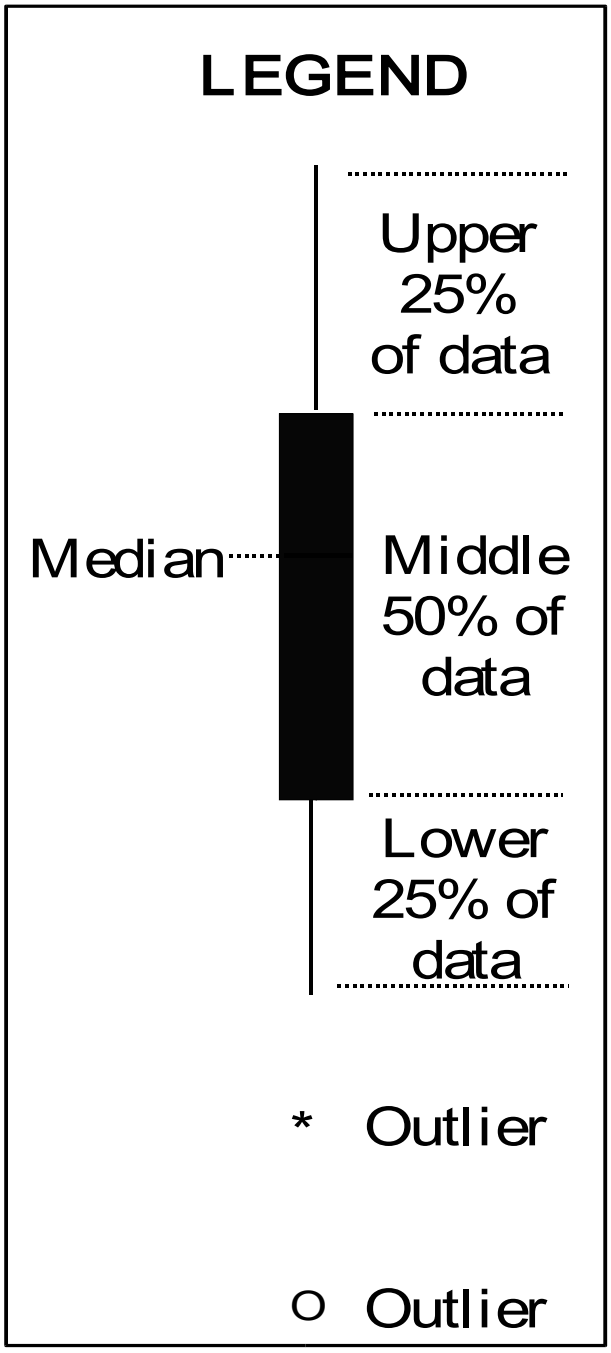

Figure 7. In the box and whisker plot shown above the shaded area within the box represents the middle 50 percent of the data and the horizontal line within the box is the median. Fifty percent of the data points are above the median and 50 percent are below it. The upper vertical line or "whisker" represents the upper 25 percent of the data, and the lower "whisker" represents the lower 25 percent. A "whisker" always ends at a data point and cannot be more than 1.5 times the length of the box. Data points which fall beyond 1.5 times the length of the box are called "outliers." An outlier 1.5-3.0 times the length of the box is represented by an asterisk (*) and a data point greater than 3 times the length of the box is represented by a circle (o).

RESULTS AND DISCUSSION

Chimacum Creek Watershed

Fecal Coliform

Fecal coliform bacteria originate in the digestive tract of warm-blooded animals and are released into the environment by excretion. They serve as an indicator of disease-causing organisms released with them. The rationale is that an increase in the bacteria's concentration indicates an increased chance that pathogens are also present. The higher that the concentration of fecal coliform is, the greater is the chance for disease.

The state standard for fecal coliform has two parts. For streams in Jefferson County, Part 1 requires that the geometric mean value (GMV) not exceed 50 FC/100mL. Part 2 requires that not more than 10% of the samples exceed 100 FC/100 mL. Both parts need to be met for the standard to be passed. In this interim report only Part 1 will be addressed for the purpose of evaluating trends. Both Parts of the standard will be addressed in the separate final reports for the Chimacum and Discovery Bay watersheds.

Of the 13 stations monitored on Chimacum Creek's main stem, all except the two most upstream stations (CH/9.0 and CH/9.3) had GMVs that exceeded the 50 FC/100 mL state standard (Figure 8). The highest GMV (150 FC/100 mL) occurred at station CH/7.8 on Egg and I Road. Other stations on the main stem which exceeded the standard had GMVs ranging from 61 FC/100 mL to 99 FC/100 mL. Three of 5 stations monitored on the East Fork exceeded the standard with failing GMVs ranging from 57 FC/100 mL to 108 FC/100 mL. Two of three stations on Naylors Creek exceeded the standard. Downstream station NA/0.1 had a GMV of 306 FC/100 mL and station NA/0.7 on West Valley Road had a GMV of 185 FC/100 mL. These two stations had the highest GMVs in the Chimacum watershed during the 2007-08 water-year. It is notable that upstream station NA/1.3 had a GMV of only 18 FC/100 mL. There are no livestock between NA/1.3 and NA/0.7, but there sometimes are between NA/0.7 and NA/0.1. Also, a portion of lower Naylors Creek is accessible to livestock. Downstream stations on Barnhouse Creek, Putaansuu Creek, Swansonville Creek, and the two ditches crossing West Valley Road all exceeded the standard.

Fecal coliform GMVs in the 2007-08 water-year were notably higher than they were in water-years since 1998 (Figures 9A-9D). It is notable that the upstream controls were also considerably higher in the 2007-08 water-year than in years since 1998. At upstream station CH/9.3 the GMV was 2.4-5.5 times higher in 2007-08 than in the other years and upstream station ECH/5.3 had a GMV 1.1-5.3 times higher.

Why were fecal coliform concentrations, even for the upstream controls, so much higher in 2007-08? Were environmental conditions in 2007-08 more conducive to fecal coliform survival and replication than in other years?

To help answer these questions, regressions were run on a number of possible environmental factors (Table 1). Temperature at the time of sampling had the strongest

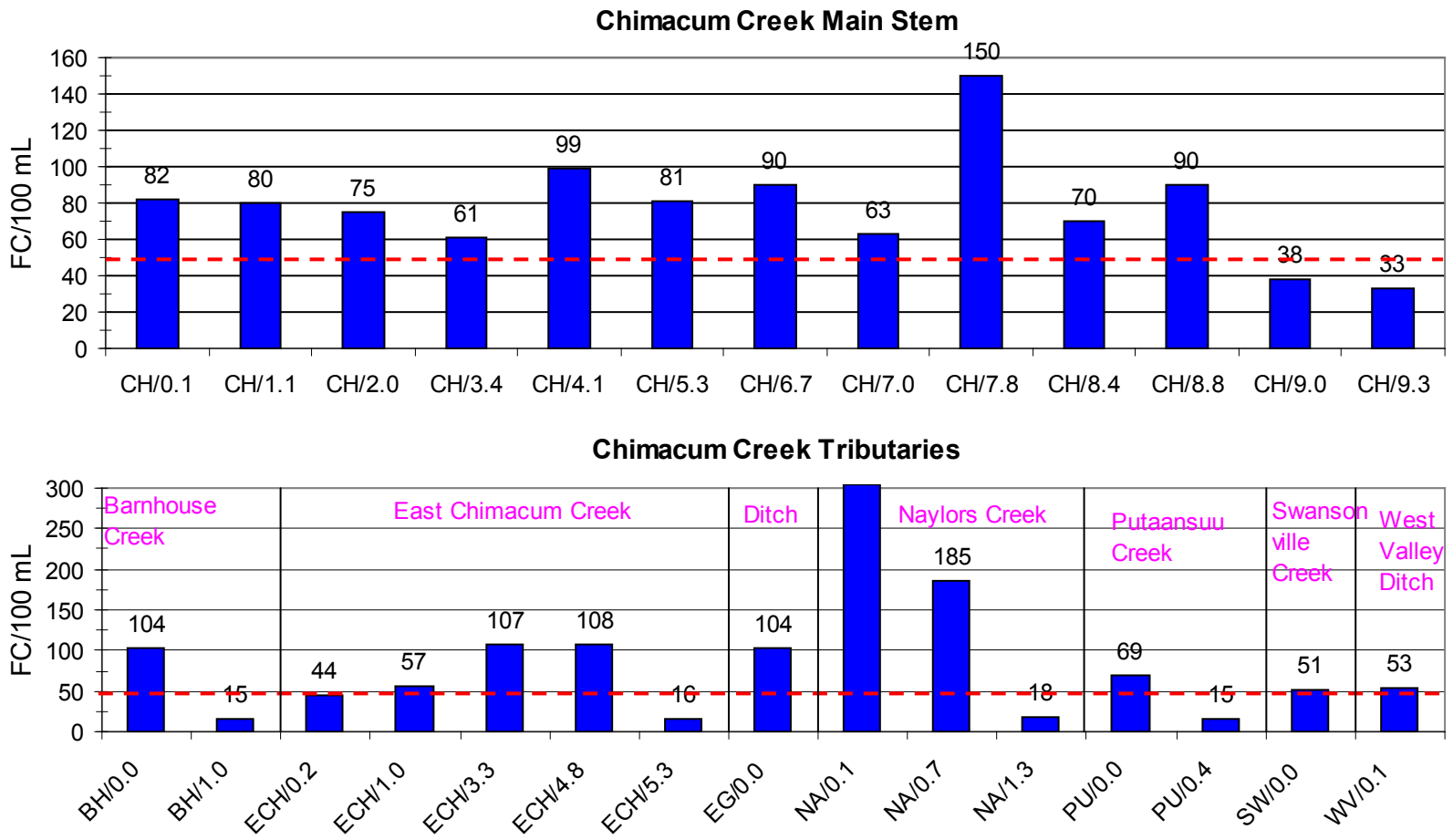

Figure 8. Fecal coliform geometric mean values (GMVs) for samples collected from Chimacum Creek mainstem (top) and tributaries (bottom) from October 2007 to September 2008. The dotted line represents the state standard.

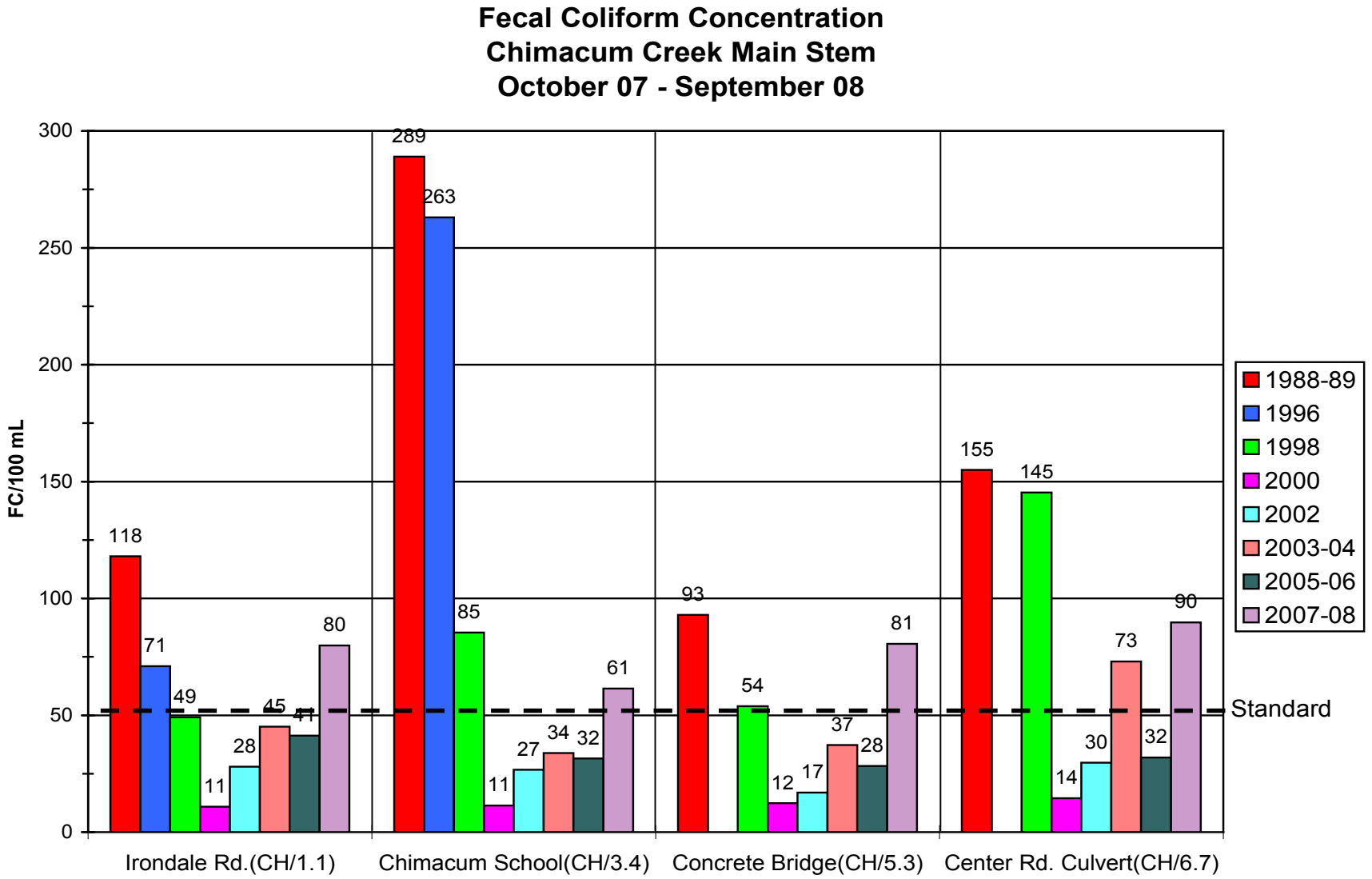

Figure 9A. Fecal coliform geometric mean values (GMVs) at stations monitored monthly during 1988-89, 1996, 1998, 2000, 2002, 2003-04, 2005-06, and 2007-08 in the Chimacum Creek watershed.

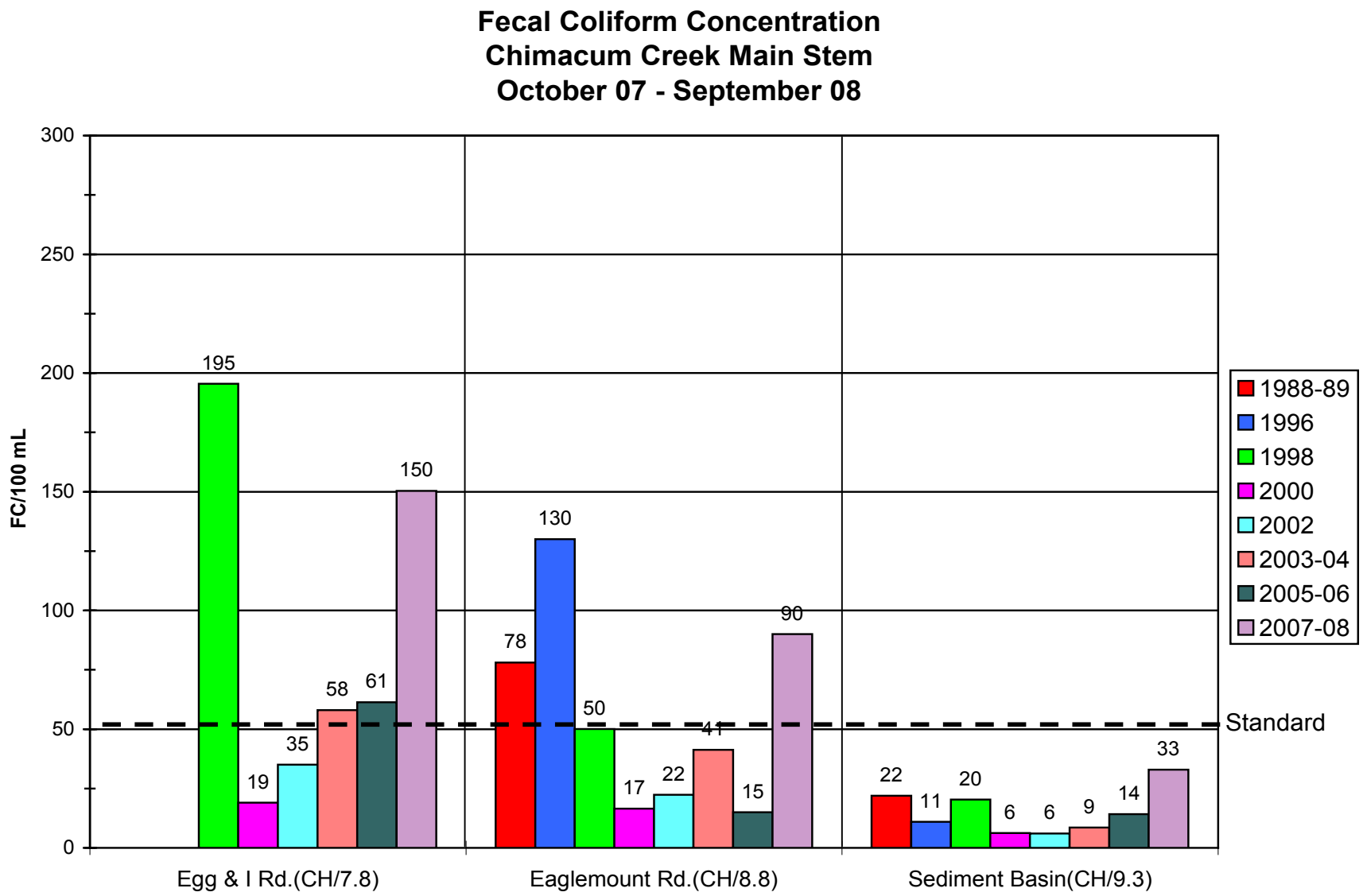

Figure 9B. Fecal coliform geometric mean values (GMVs) at stations monitored monthly during 1988-89, 1996, 1998, 2000, 2002, 2003-04, 2005-06, and 2007-08 in the Chimacum Creek watershed.

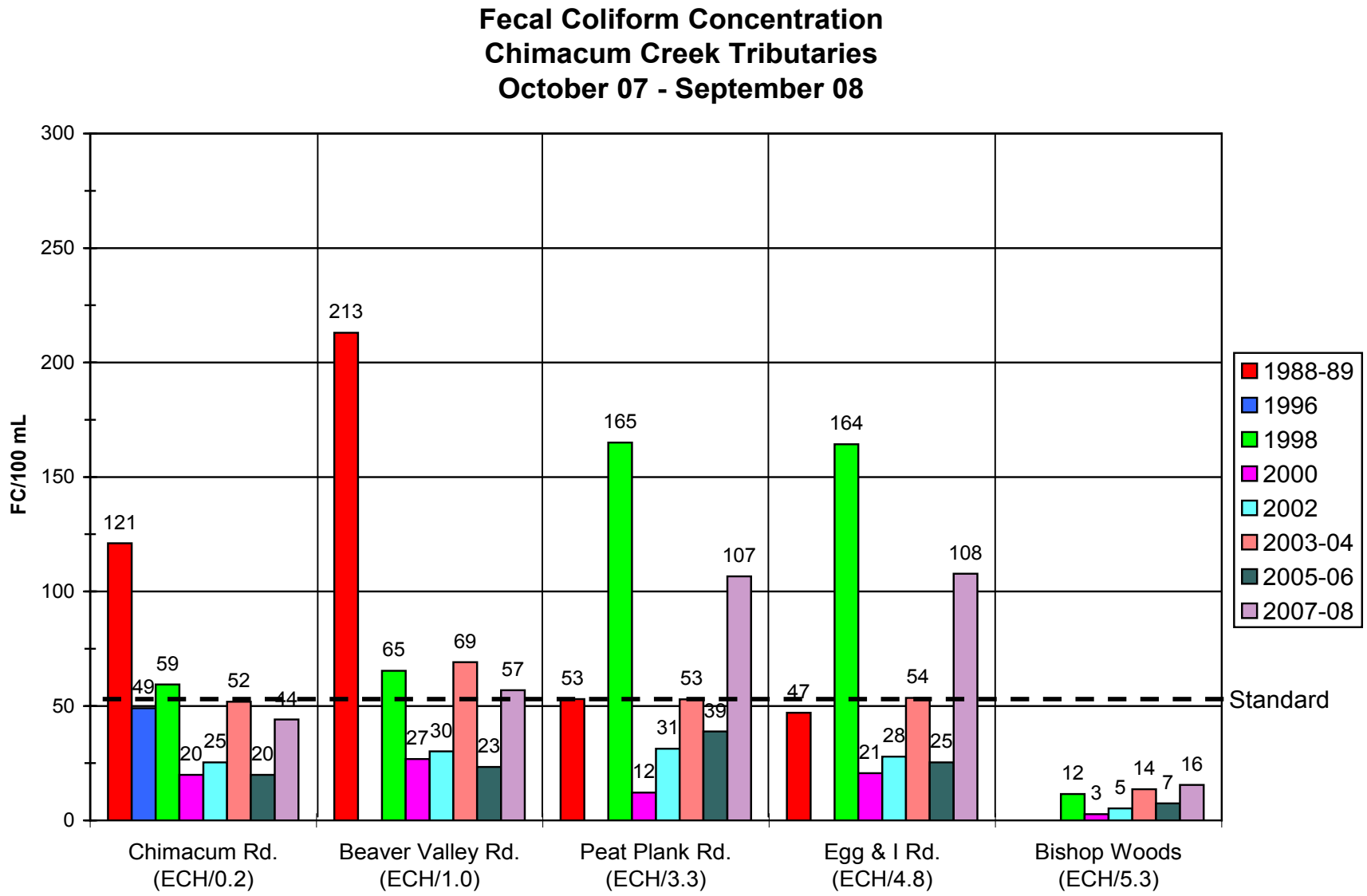

Figure 9C. Fecal coliform geometric mean values (GMVs) at stations monitored monthly during 1988-89, 1996, 1998, 2000, 2002, 2003-04, 2005-06, and 2007-08 in the Chimacum Creek watershed.

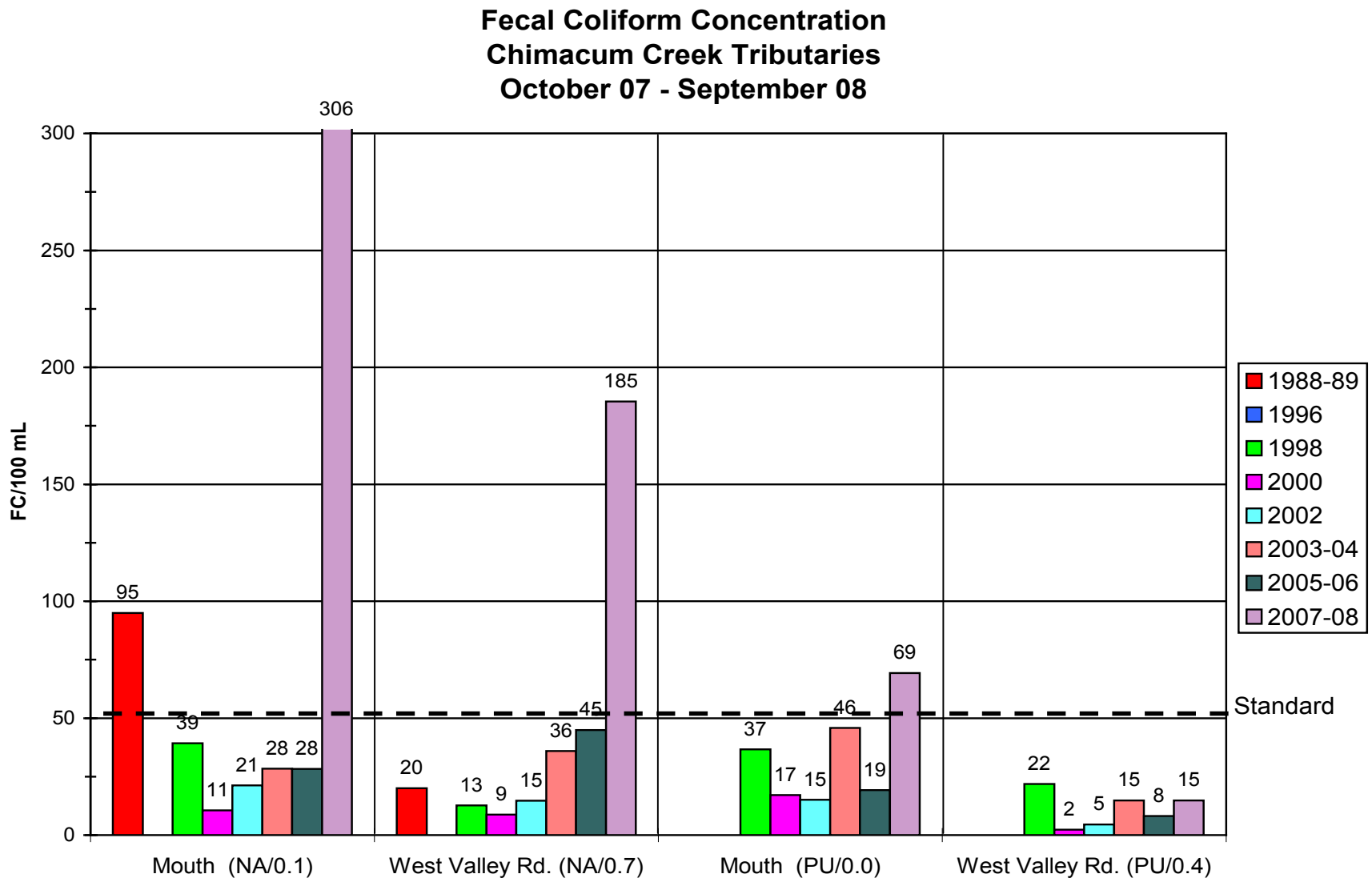

Figure 9D. Fecal coliform geometric mean values (GMVs) at stations monitored monthly during 1988-89, 1996, 1998, 2000, 2002, 2003-04, 2005-06, and 2007-08 in the Chimacum Creek watershed.

Table 1. Results of regressions of fecal coliform concentration on different independent variables. Regressions were based on data collected from 1998 to 2008 for Chimacum Creek's upstream control station CH/9.3. Day 0 is the day of sampling; Day 1 is the day before sampling; Day 2 is two days before sampling, etc.

Independent Variable	Sample Size	Probability	Type
Temperature at time of sampling	77	0.008	Positive
Maximum temperature on the day before sampling (Day 1)	46	0.060	Positive
Time of day	78	0.069	Positive
Average maximum daily temperature (Days 0 and 1)	46	0.080	Positive
Average maximum daily temperature (Days 0-2)	46	0.083	Positive
Max temp (C) two days before sampling (Day 2)	46	0.101	Positive
Average maximum daily temperature (Days 0-3)	46	0.101	Positive
Maximum temperature on the day of sampling (Day 0)	46	0.119	Positive
Average maximum daily temperature (Days 0-4)	46	0.120	Positive
Average maximum daily temperature (Days 0-5)	46	0.147	Positive
Average maximum daily temperature (Days 0-6)	46	0.171	Positive
Maximum temperature three days before sampling (Day 3)	46	0.208	Positive
Maximum temperature four days before sampling (Day 4)	46	0.236	Positive
Flow (cfs)	30	0.293	Negative
Total rainfall (Day 0 + Day 1 + Day 2))	78	0.320	Positive
Maximum temperature five days before sampling (Day 5)	46	0.351	Positive
Maximum temperature six days before sampling (Day 6)	46	0.372	Positive
Total rainfall (Day 0 + Day 1)	78	0.377	Positive
Rainfall on the day before sampling (Day 1 only)	46	0.643	Negative
Rainfall on the second day before sampling (Day 2 only)	46	0.816	Negative
Rainfall on the day of sampling (Day 0)	46	0.937	Positive

positive correlation (p=0.008) to fecal coliform concentration. Next highest was the maximum temperature occurring on the day before sampling (p=0.060). After that came time of day (p=0.069), which also could be temperature related since air and water usually warms up as the day progresses. Stream flow and rainfall had much weaker negative correlations.

Examination of fecal coliform concentration to months of the year at stations on Chimacum Creek and East Chimacum Creek showed that fecal coliform concentrations were highest from May through October (Figures 10 and 11).

Temperature was implicated as a factor in high fecal coliform levels at station 48 in Discovery Bay that resulted in the closure of about 50 acres to shellfish harvesting (Gately et al. 2007). The highest levels occurred during the summer months (Sargeant 2006). When 15 factors were analyzed for correlation to fecal coliform concentration at station 48, marine water temperature had the highest correlation (Gately et al. 2007).

However, temperature did not appear to account for the higher fecal coliform concentrations at station CH/9.4 in 2007-08 because four of the previous six water-years had higher average temperatures at the time of monitoring than in 2007-08.

Average monthly fecal coliform loadings at stations CH/1.1, NA/0.1, and PU/0.0 were higher in the 2007-08 water-year than in all previous years monitored (Figure 12). At stations CH/3.4 and ECH/0.2 loadings were higher in 2007-08 than in all years monitored since 1998. Figure 13 shows loadings for the 2007-08 water-year including loadings on some tributaries and ditches which have never been monitored before. Most notable is the high loading for Naylors Creek (19 billion FC per day), which is more than twice that of East Chimacum Creek (6.9 billion FC per day)

Nitrate-Nitrogen

Nitrate-nitrogen concentrations ranged from 0.00 mg/L to 6.5 mg/L in samples collected monthly in 2007-08 in the Chimacum watershed **(**Figure 14). Concentrations were highest in December with the highest level occurring at Peat Plank Road station ECH/3.3. This station also had the highest level in 2003-05 and 2005-06 (Gately 2003; Gately 2005). Other East Chimacum Creek stations were also high in December. Monthly nitrate-nitrogen loadings for station CH/0.1 are shown in Figure 15. The highest loadings at this station occurred in December (1,564 pounds N per day) and January (1,051 pounds N per day).

Sources of nitrate-nitrogen include soils, organic fertilizer (manure), inorganic fertilizer (chemicals), septic drainfields, automobile exhaust, and atmospheric nitrogen (through denitrification). In soils, decaying organic matter (plants and animals) is the source of nitrogen. Thus soils rich in organic matter contain more nitrogen than sandier soils. Chimacum Watershed soils have a high organic content and are therefore potentially high in nitrogen.

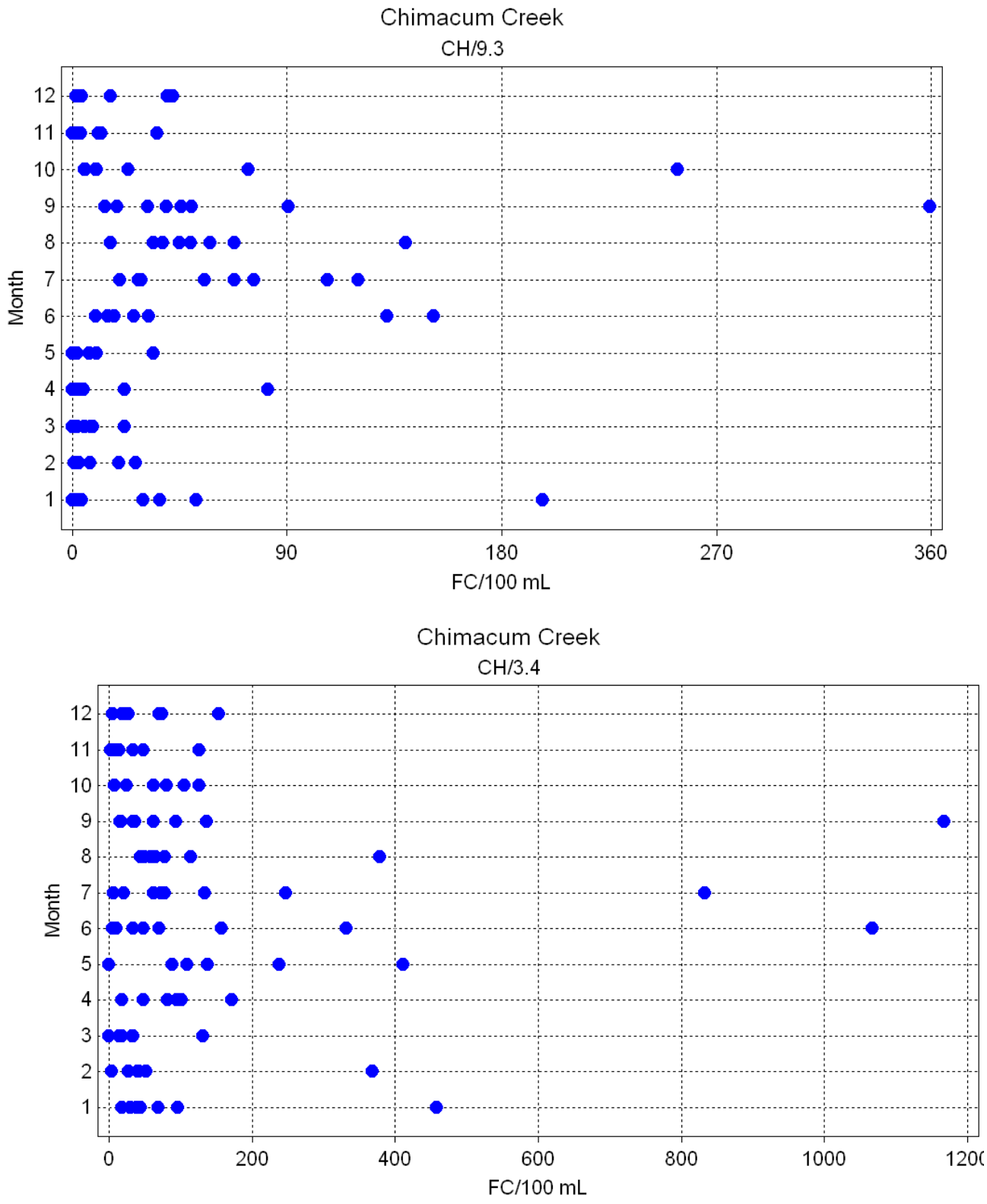

Figure 10. Dot plots showing fecal coliform concentrations by month in samples collected from 1996 to 2008 in Chimacum Creek at upstream control station CH/9.3 (top) and station CH/3.4 (bottom) .

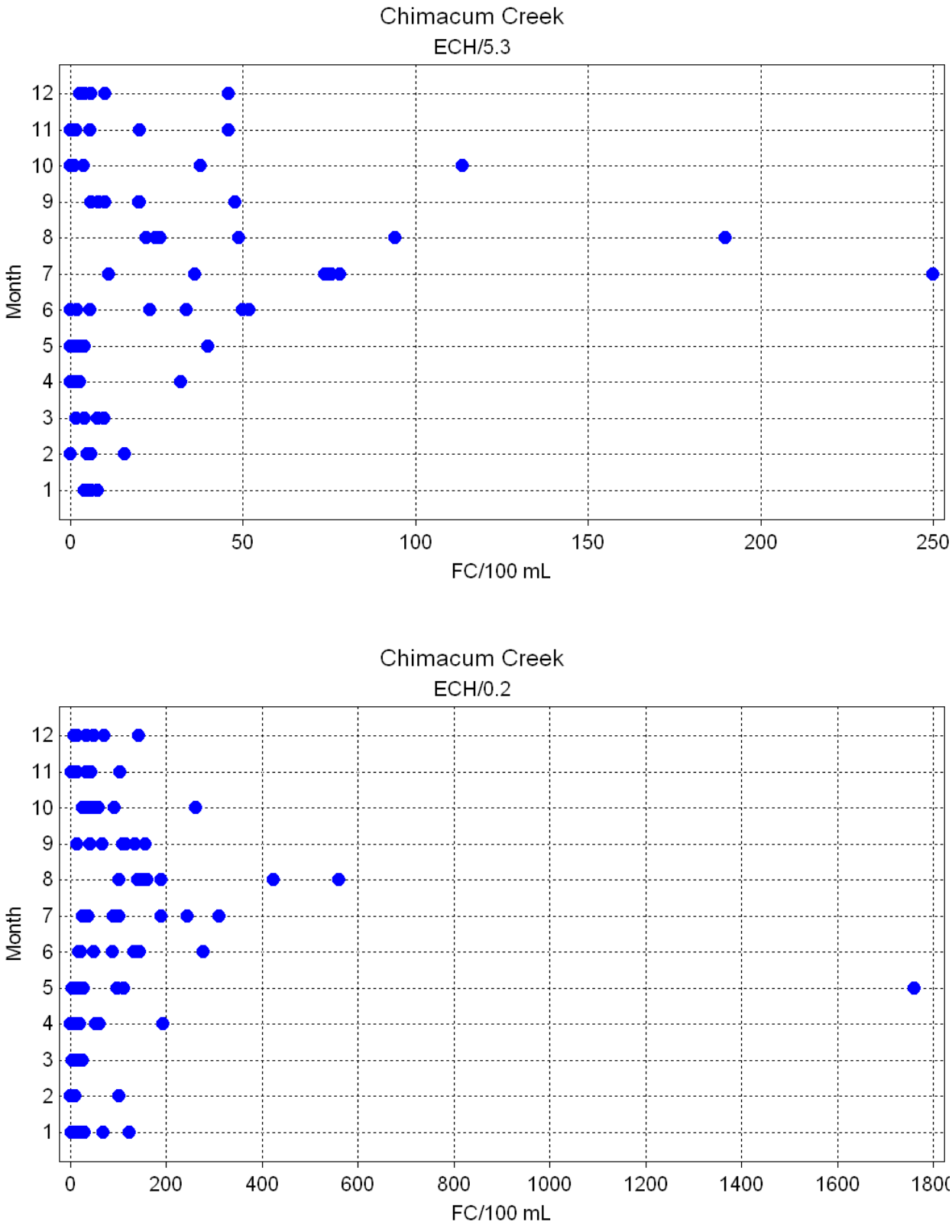

Figure 11. Dot plots showing fecal coliform concentrations by month in samples collected from 1996 to 2008 in East Chimacum Creek at upstream control station ECH/5.3 (top) and station ECH/0.2 (bottom) .

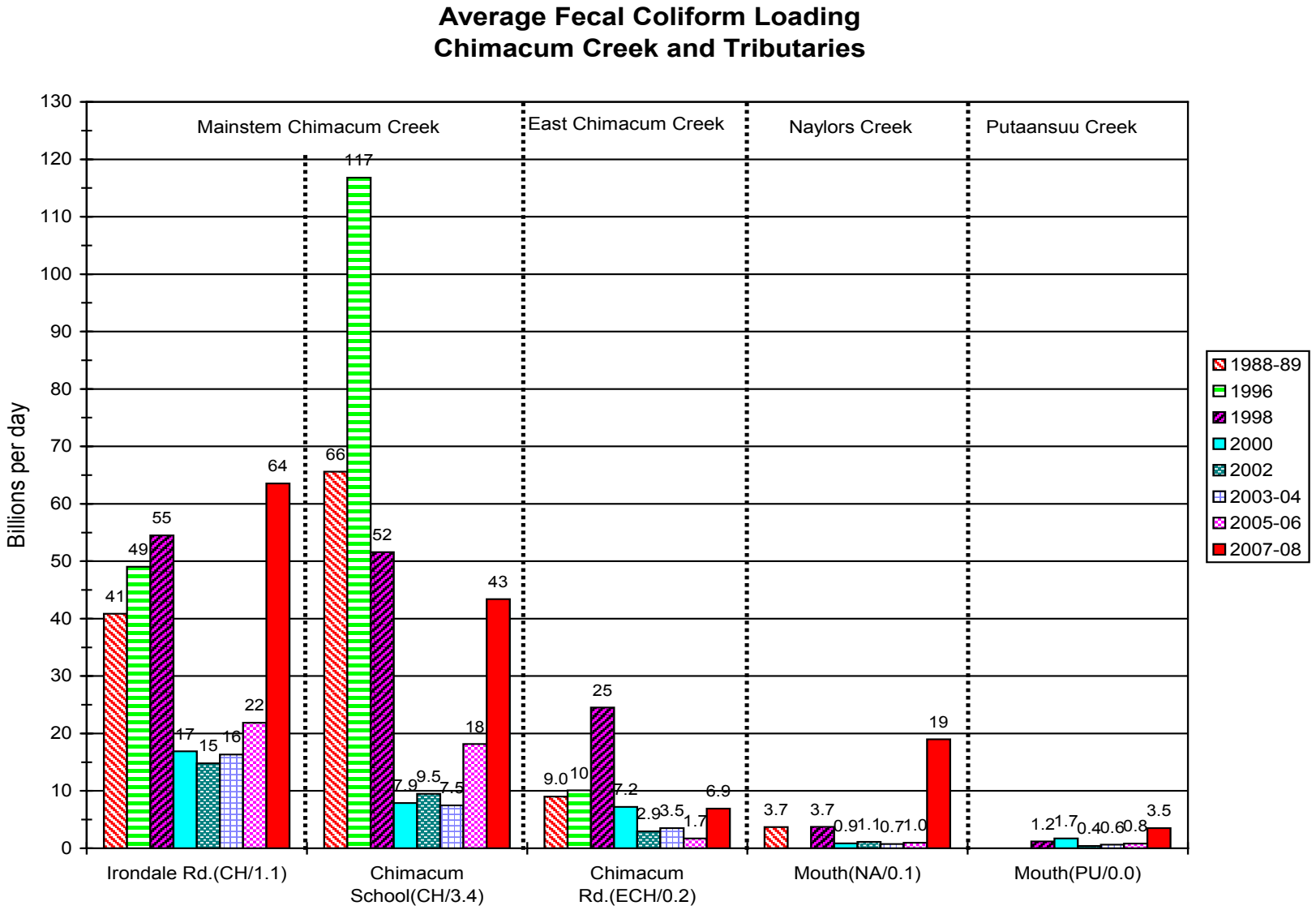

Figure 12. Average fecal coliform loading at stations monitored monthly during 1988-89, 1996, 1998, 2000, 2002, 2003-04, 2005-06, and 2007-08 in the Chimacum Creek watershed.

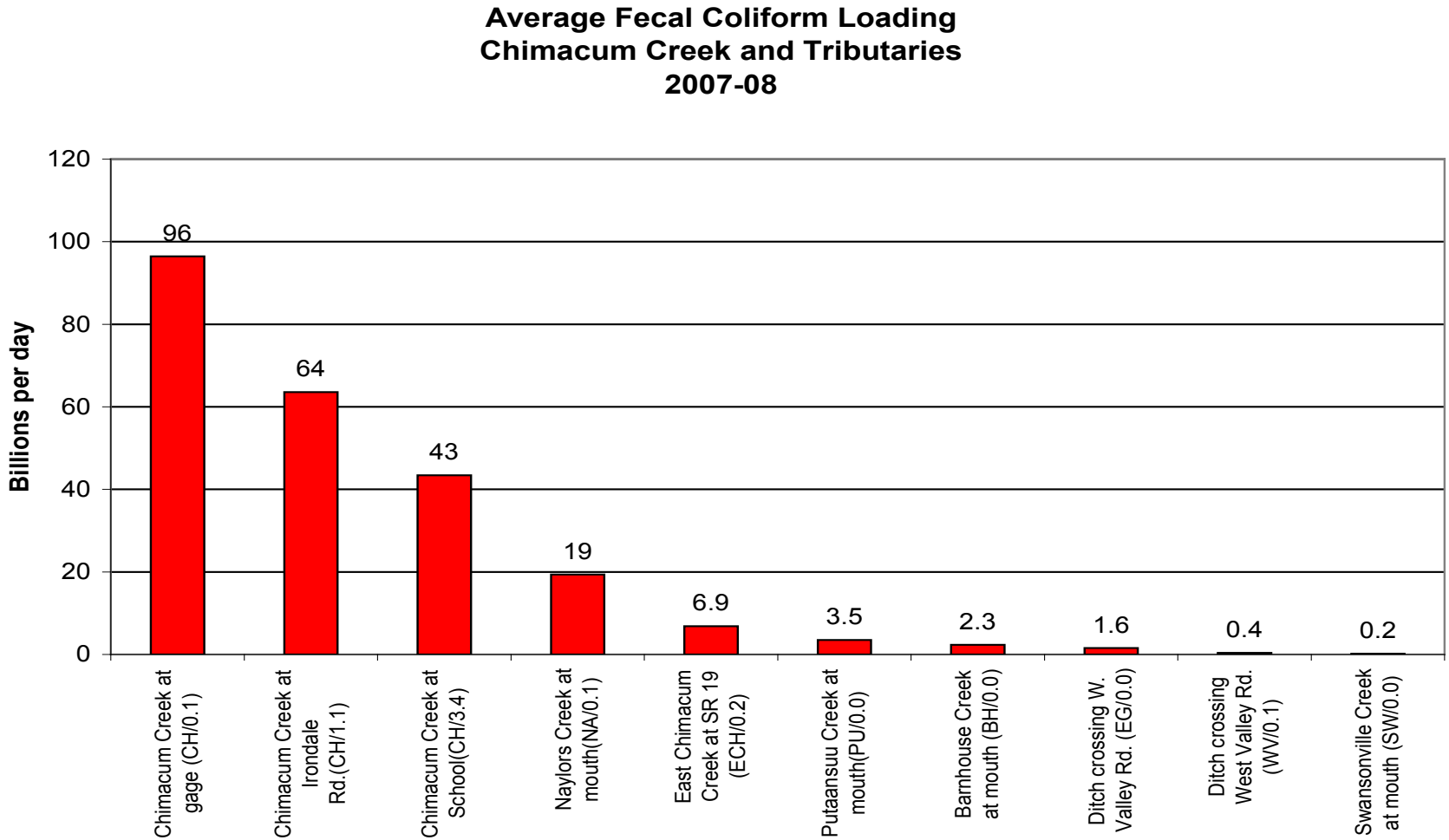

Figure 13. Average fecal coliform loading at stations monitored monthly in the Chimacum Creek watershed in 2007-08.

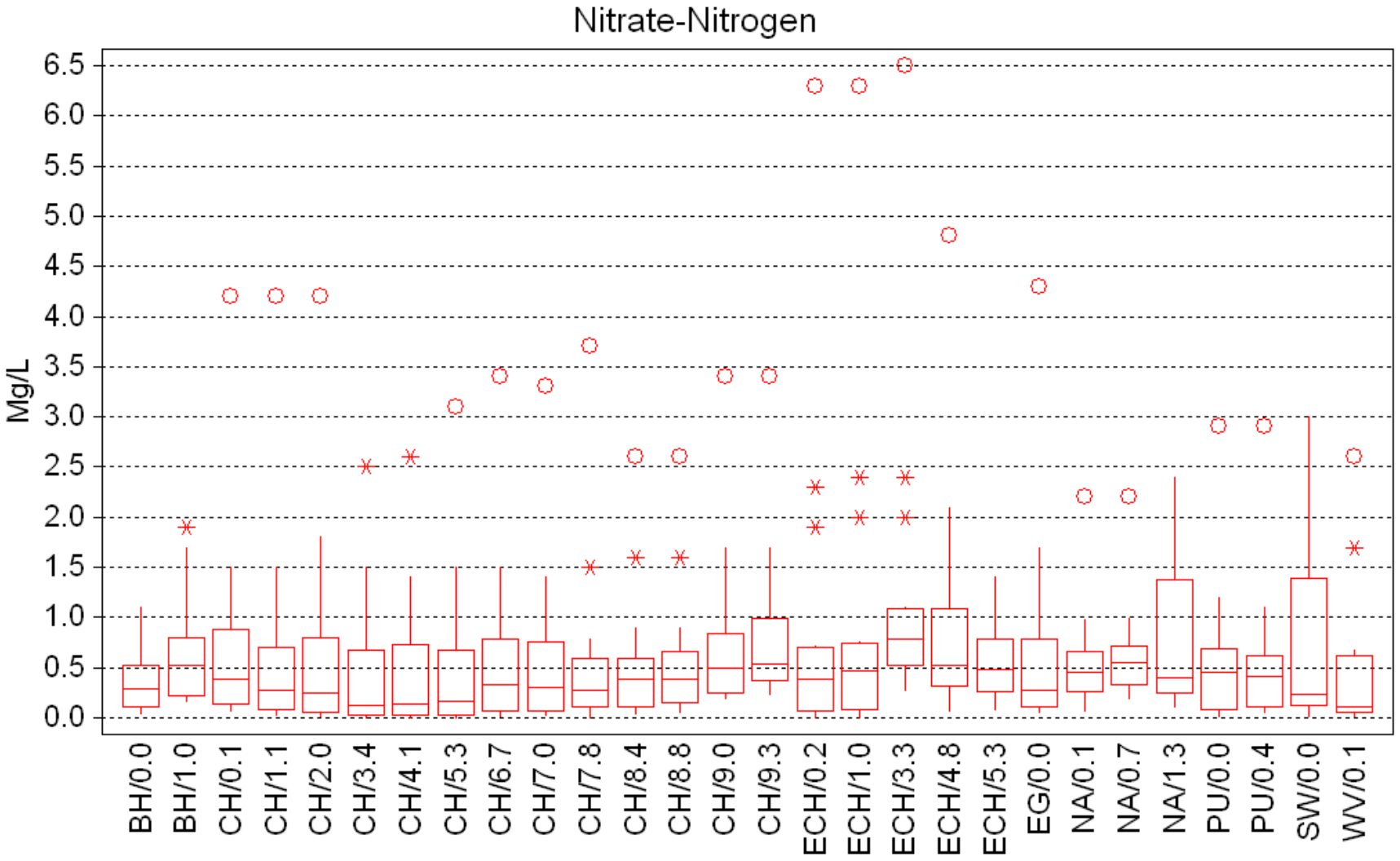

Figure 14. Nitrate-nitrogen measured monthly from October 2007 to September 2008 in the Chimacum watershed. For an explanation of the "box and whiskers," see page 19.

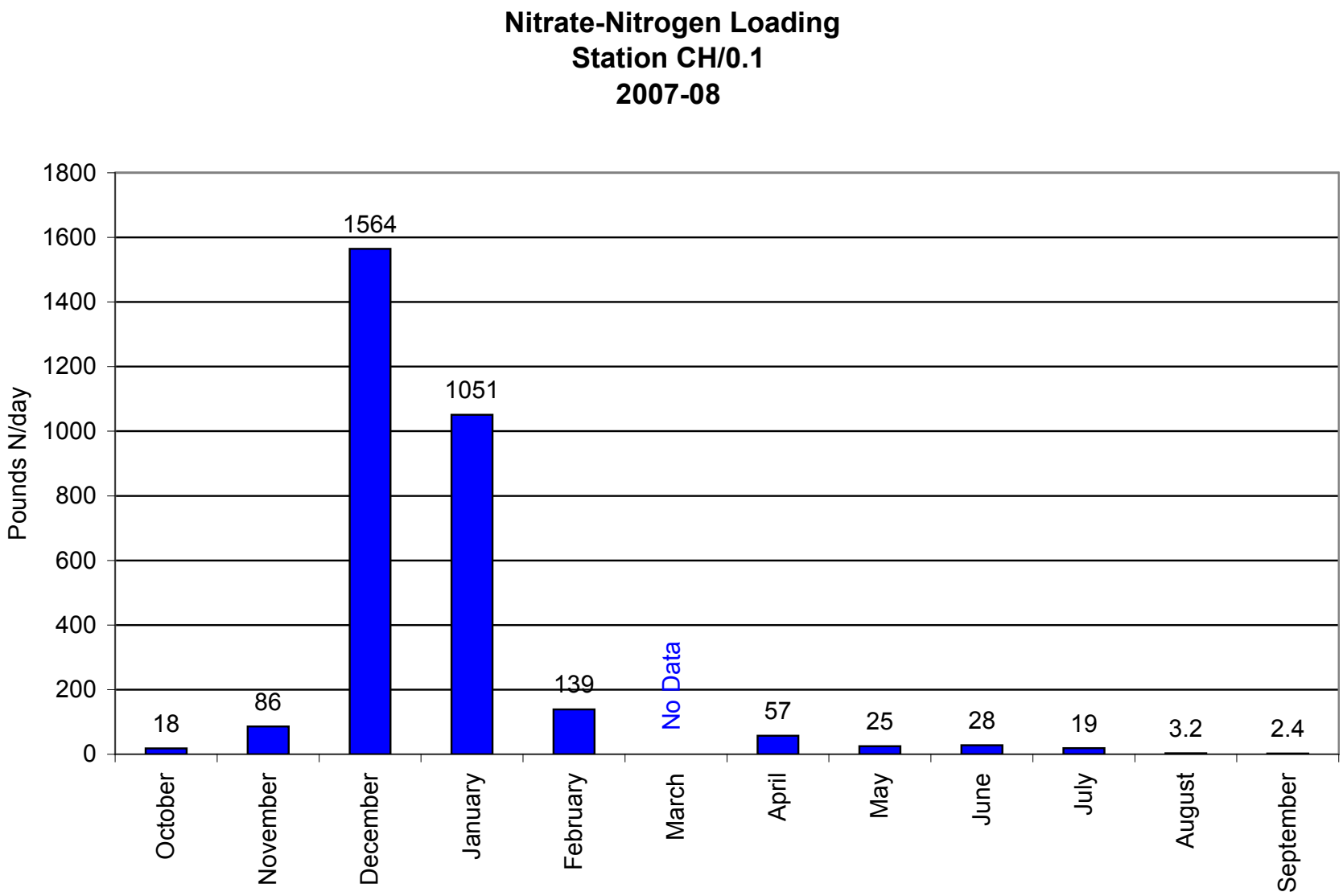

Figure 15. Nitrate-nitrogen loadings at Chimacum Creek downstream station CH/0.1 by month in the 2007-08 water-year.

Temperature

Water temperature has the greatest impact on salmonids during the hot periods of summer. The optimal range for most salmonids is 12-14^{o}C (MacDonald et al. 1991). Lethal levels for adults are dependent on such factors as acclimation and duration, but they are generally in the range of 20-25^{o}C. Salmonid eggs and juveniles are much more sensitive to high temperatures. Juvenile coho salmon, steelhead trout, and resident rainbow and cutthroat trout, which are present during the warmer summer months, are most likely to be affected by elevated temperatures.

Prior to 2006, the state temperature standard for Jefferson County waters required that the 7-day average daily maximum (7-DADMax) temperature not exceed 16 ^{o}C. In other words, the average of the maximum temperatures measured on seven consecutive days should not exceed 16 ^{o}C. In 2006, in order to better protect spawning salmon and incubating eggs, Ecology required that the 7-DADMax temperature not exceed 13 ^{o}C in the Chimacum Creek main stem from September 15 to July 1. At other times of the year the 16^{o}C level was maintained.

Of the 15 temperature data loggers deployed on the Chimacum Creek main stem in 2007, only upstream station CH/9.4 passed both portions of the standard. Station CH/9.0 passed the 16^{o}C portion, but not the 13 ^{o}C portion. The remaining 13 stations failed both portions of the standard.

On East Chimacum Creek, where the standard was kept at 16^{o}C for the entire year, the five upstream-most stations passed, but the two downstream stations failed. On Putaansuu Creek, Naylors Creek, and Barnhouse Creek the upstream stations passed and the downstream stations failed. These streams originate in forested lands and then flow through agricultural lands. Although many trees have been planted in stream buffers in the last 20 years (see CREP Projects under Project Summaries), there still remains much open area with limited streamside vegetation. Planting trees is a gradual process and depends on willing landowners and incentive programs such as CREP.

Temperature graphs of data collected in 2007 are shown in Appendix C. Data loggers were deployed in 2008 in the Chimacum watershed, but the results are not reported here. They will be reported later in a report specific to the Chimacum watershed.

Surface Water Dissolved Oxygen

Water becomes aerated as it flows downstream. The steeper the gradient is, the greater the aeration will be. When water holds the maximum amount of dissolved oxygen possible under “normal” conditions, it is said to be saturated. Warm water has a lower saturation level than cold water. For instance, the saturation level of 20^{o}C water is 8.8 mg/L, compared to 10.9 mg/L for 10^{o}C water.

Aquatic plants add dissolved oxygen to the water by photosynthesis and on bright sunny days the water can become supersaturated (>100%). However, when plants die, their decomposition removes oxygen, causing the DO concentration to decrease.

Fish and aquatic invertebrates need oxygen, and salmonids require higher levels than most species. The following oxygen concentrations with their corresponding effects on salmon and trout were reported by the Environmental Protection Agency (EPA 1986):

DO Concentration (mg/L)	Effect On Salmon and Trout
8	No production impairment
6	Slight production impairment
5	Moderate production impairment
4	Severe production impairment
3	Limit to avoid acute mortality

The state DO standard for Jefferson County waters requires that dissolved oxygen exceed 9.5 mg/L. Of the 28 stations monitored monthly in the Chimacum watershed, 22 stations failed the state standard (Figure 16). Four stations on Chimacum Creek's main stem from RM 3.4 to RM 7.0 were below EPA's *5 mg/L moderate production impairment level* during one or more months and one station on East Chimacum Creek (ECH/1.0) was below the *3 mg/L acute mortality level*. Additional monitoring by the Chimacum School Hydrology Class shows that stations on East Chimacum Creek upstream from station ECH/1.0 were also low in dissolved oxygen. In particular was station ECH/1.7 which was as low as 2.0 mg/L (Figure 17). Saturation levels are shown in Figure 18. Saturation was as low as 22 percent at station ECH/1.0.

Reasons for the low dissolved oxygen levels in the Chimacum watershed have been noted in a previous report (Gately et al. 2007, page 40): low gradient, abundant instream vegetation, and warm water. Planting streamside trees will help the last two reasons; the low gradient is permanent.

Intragravel Dissolved Oxygen

Intragravel dissolved oxygen (IGDO) refers to the dissolved oxygen in the subsurface flow (i.e., the DO in the water flowing through the gravel). Developing salmonid eggs and alevins (sac-fry) as well as invertebrates depend upon an adequate supply of oxygen. DO levels required by salmonid eggs and alevins in the gravel are no less than they are for salmonids above the gravel (see table above). In this study average DO levels for different reaches and years are reported for the purpose of evaluating trends and comparing reaches. Survival of eggs and alevins is dependent on maintaining adequate DO levels throughout the 6-7 month incubation period.

In 1999, the District, aided by Wild Olympic Salmon volunteers, began monitoring intragravel dissolved oxygen on Chimacum Creek. Monitoring was concentrated in lower Chimacum Creek (CH/0.0-CH/0.4) where the summer chum spawn. In 2000 and 2001, additional stream reaches at the sediment basin (CH/9.3) and H. J. Carroll Park (CH/3.0) were added. Adding these reaches to the monitoring program allowed some comparison among three different areas on Chimacum Creek. In 2002, because of vandalism problems, the Hilda Street reach (CH/2.3) was substituted for the H. J. Carroll Park reach (CH/3.0). In recent years the H. J. Carroll Park reach changed from a series of riffles to a long pool, so this reach was not monitored in 2007 and 2008.

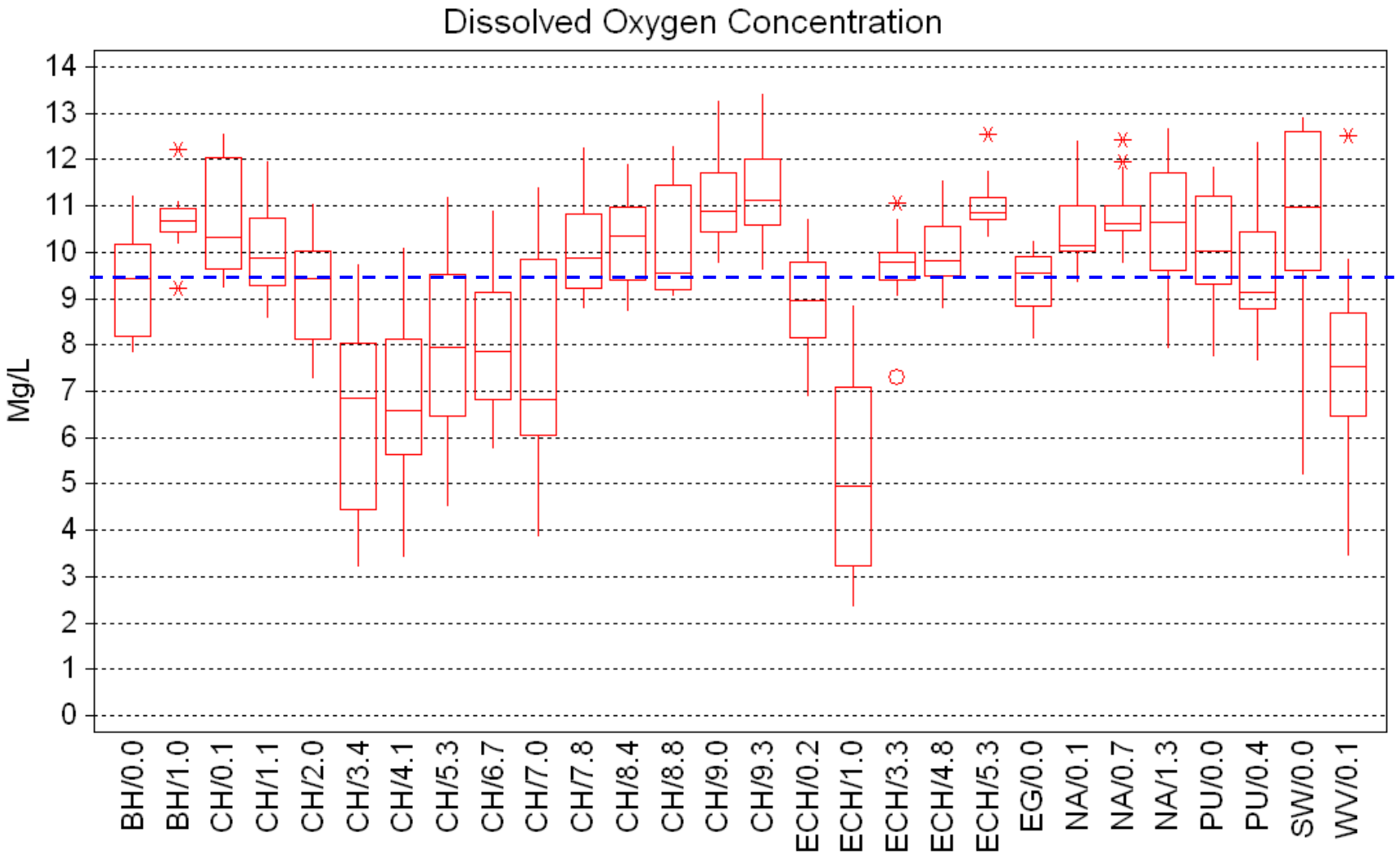

Figure 16. Dissolved oxygen concentration measured monthly from October 2007 to September 2008 in the Chimacum watershed. The dashed line represents the state standard of 9.5 mg/L. For an explanation of the "box and whiskers," see page 19.

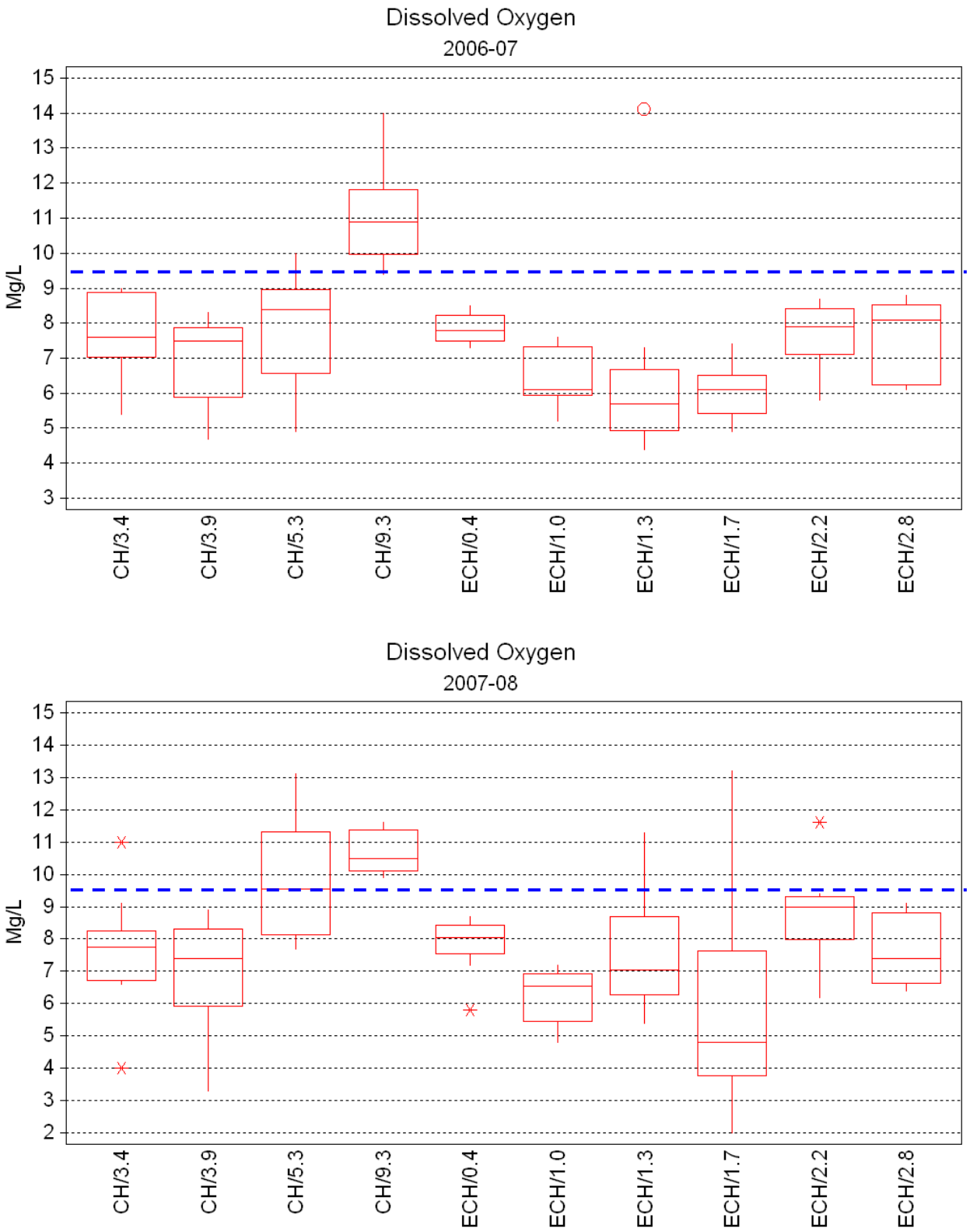

Figure 17. Dissolved oxygen concentrations in Chimacum Creek main stem (CH) and East Chimacum Creek (ECH) monitored monthly from September to June in 2006-07 (top) and 2007-08 (bottom). The dashed line represents the state standard of 9.5 mg/L. For an explanation of the "box and whiskers," see page 19.

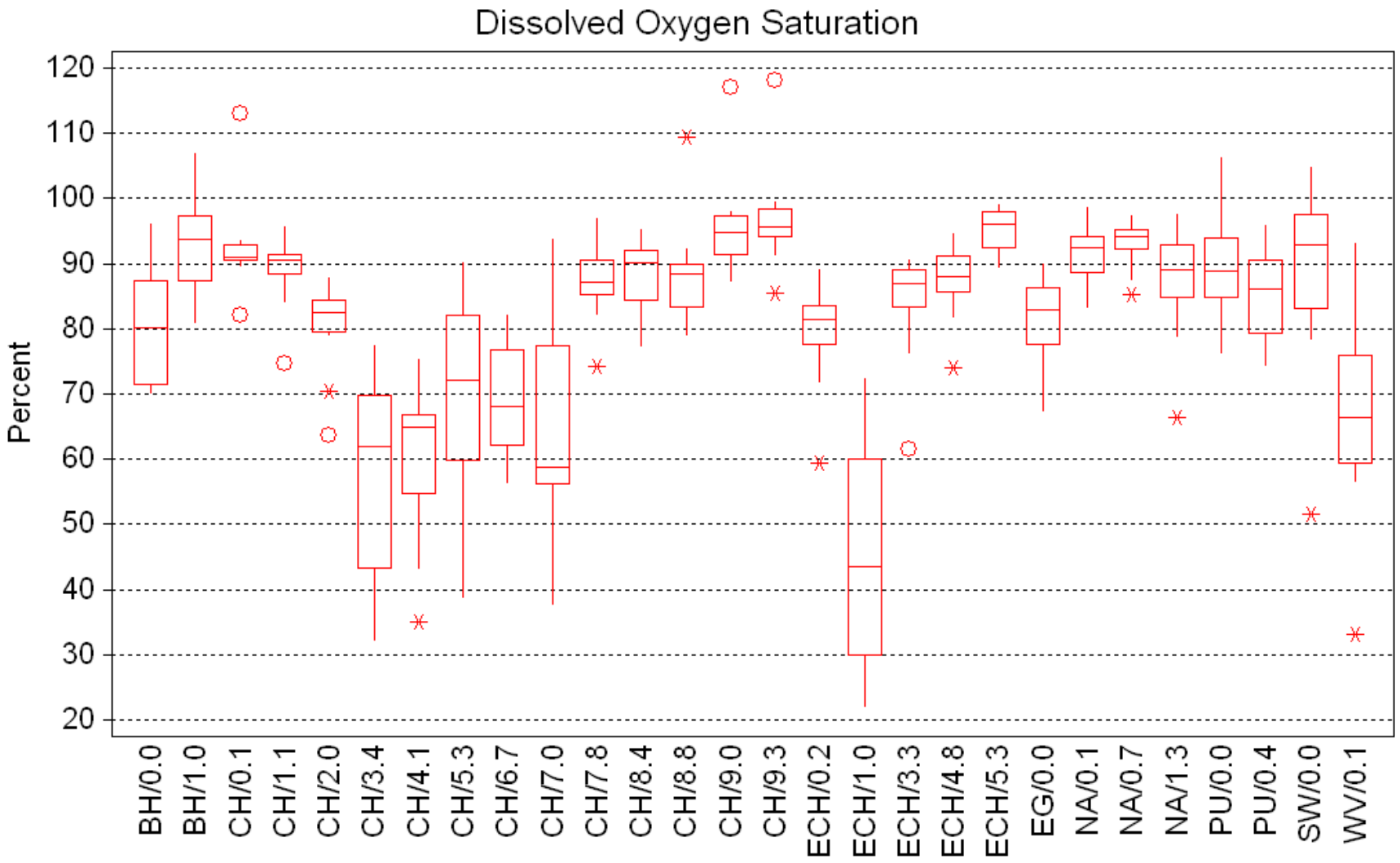

Figure 18. Dissolved oxygen saturation measured monthly from October 2007 to September 2008 in the Chimacum watershed. For an explanation of the "box and whiskers," see page 19.

Figure 19 compares average IGDO levels in 2007 and 2008 to those of past years. As in past years, IGDO levels at the sediment basin reach (CH/9.3) were substantially higher than levels in lower Chimacum Creek. Average IGDO levels at the sediment basin reach were 9.1 mg/L and 8.4 mg/L in 2007 and 2008 respectively compared to 5.4 mg/L and 4.4 mg/L in lower Chimacum Creek. Over the 10-year monitoring period, the average ratio of dissolved oxygen in the gravel to that in the surface water was fairly consistent at each of the reaches. Hilda Street reach ranged from 25% to 28%, Lower Chimacum Creek from 41% to 57%, and the sediment basin reach from 69% to 78%.

In recent years fishery biologists have been concerned about adequate dissolved oxygen levels in the gravel. Recently, Ecology has been interested in determining if a relationship exists between IGDO and surface DO concentrations. Figure 19 shows that average IGDO to surface DO ratios in different reaches of Chimacum Creek are substantially different. If this were not enough to show that the relationship of IGDO to surface DO is not consistent, individual IGDO measurements should be. Figure 20 shows that the ratios of IGDO to surface DO at both lower Chimacum Creek and the sediment basin are extremely variable. Individual measurements in both reaches varied from 0 percent to 100 percent. Based on these results, it appears that there is no relationship between IGDO and surface DO.

Although the data presented in Figure 20 shows that there is no relationship between IGDO and surface DO, it is clear that the IGDO concentration never exceeds the surface concentration. And since surface water is usually the predominant source of water flowing through the gravel, the higher the DO is in the surface water, the greater is the likelihood for it to be high in the gravel water. Various studies (Shumway et al. 1964, Bjornn and Reiser 1991, Malcolm et al. 2003) on the relationship between the IGDO concentration and egg/alevin survival show that survival is directly related to the IGDO concentration.

Turbidity

Turbidity is a measure, based on light scattering, of the suspended matter in the water column. Turbidity measurements are not as precise as other water quality measurements because the reading is constantly changing as the suspended matter settles out. Generally, several samples are analyzed before determining if the standard has been violated. The state turbidity standard for Jefferson County waters requires that turbidity not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10% increase in turbidity when the background turbidity is greater than 50 NTU.

Figure 21 shows turbidity levels at the 28 stations monitored in the Chimacum Creek watershed in 2007-08. Most levels were below 15 NTUs throughout the water-year, but some higher levels were recorded on occasion. The highest levels occurred on October 18, 2007. On that day it was raining and a ditch entering East Chimacum Creek about 300 feet upstream of station ECH/4.8 was cleaned.

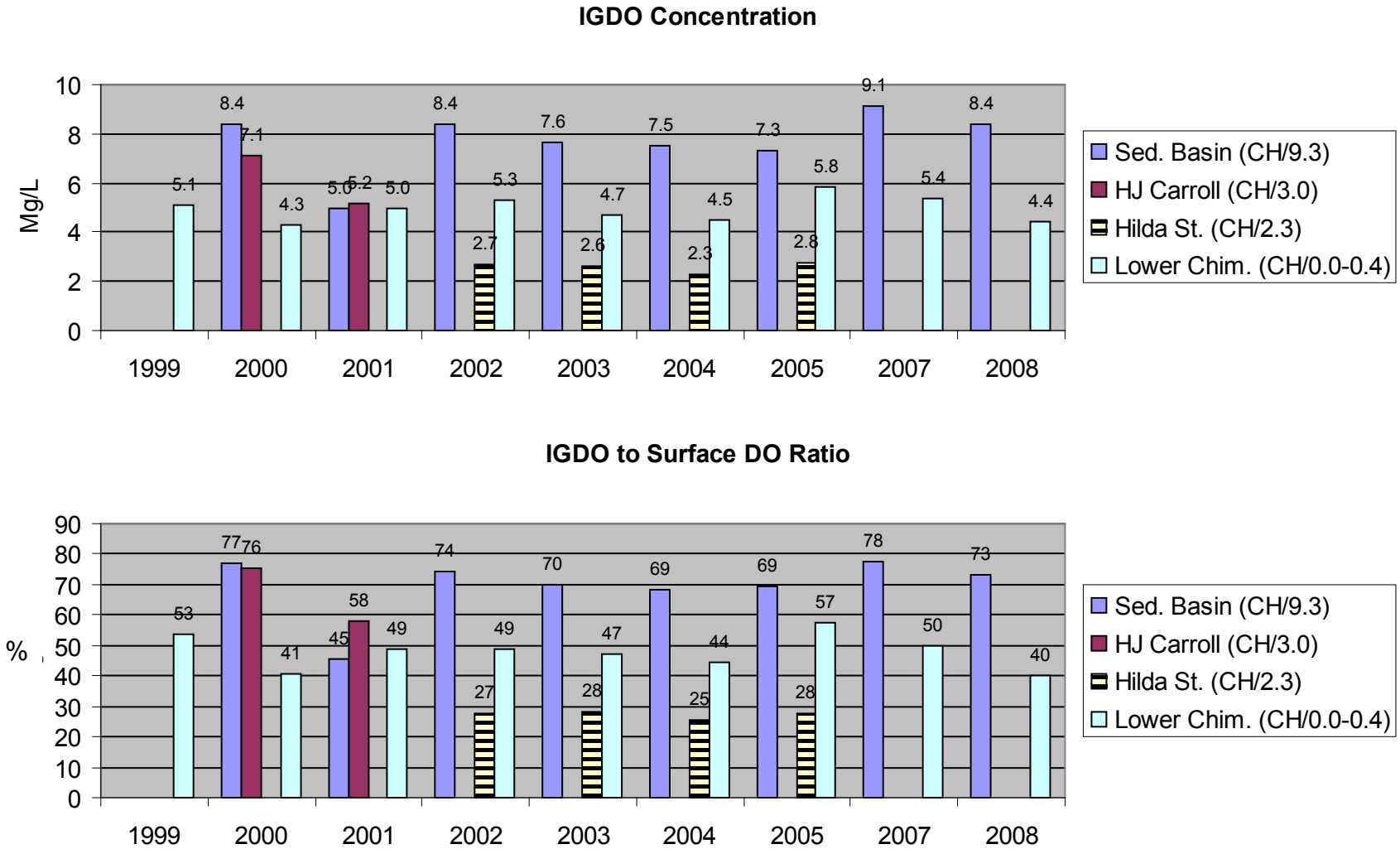

Figure 19. Chimacum Creek average intragravel dissolved oxygen concentrations (top) and average intragravel to surface DO ratios (bottom) for different reaches monitored from 1999 to 2008.

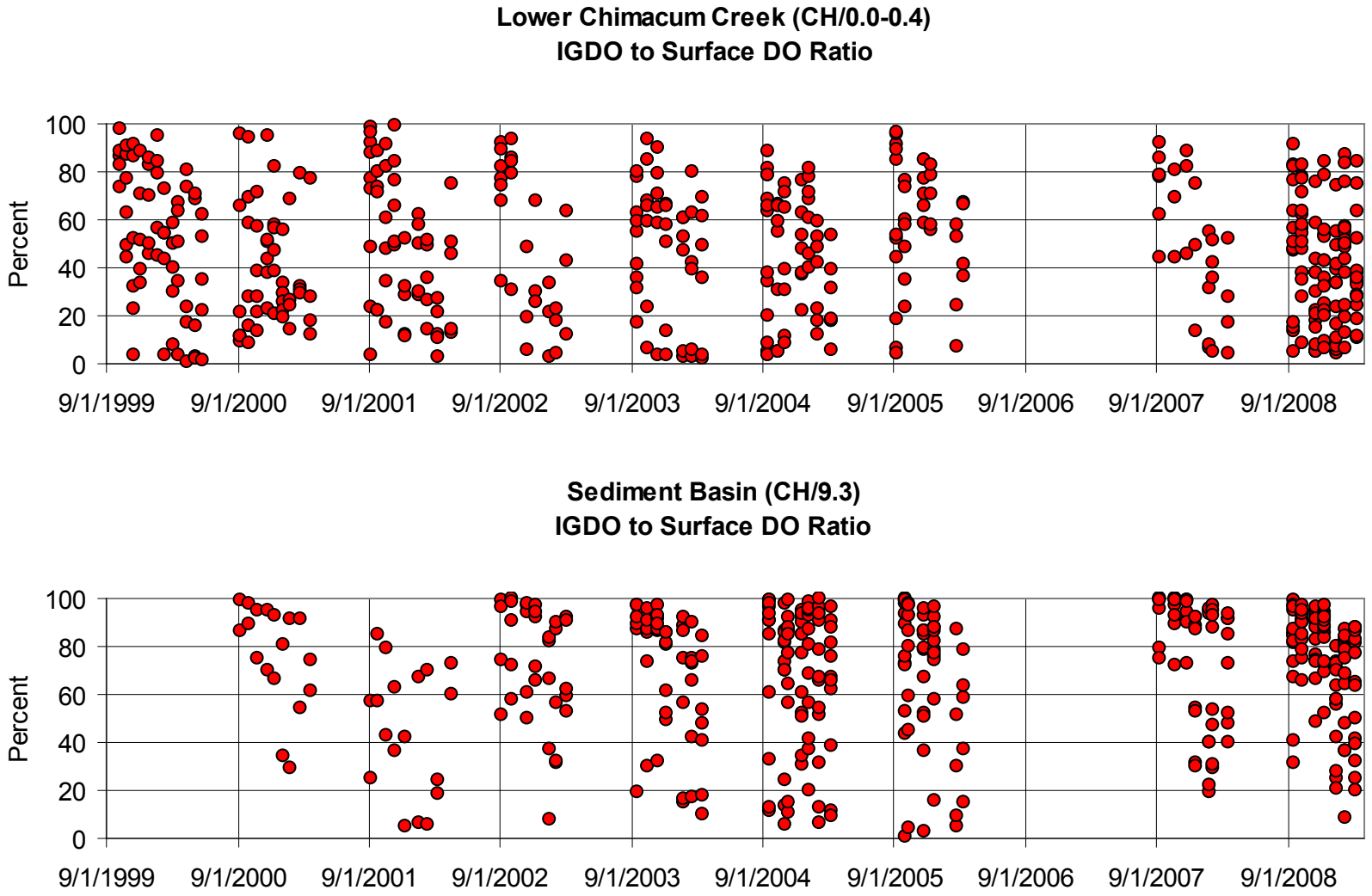

Figure 20. Individual intragravel measurements (expressed as ratios of IGDO to surface DO) monitored at Lower Chimacum Creek and the sediment basin reach from 1999 to 2008.

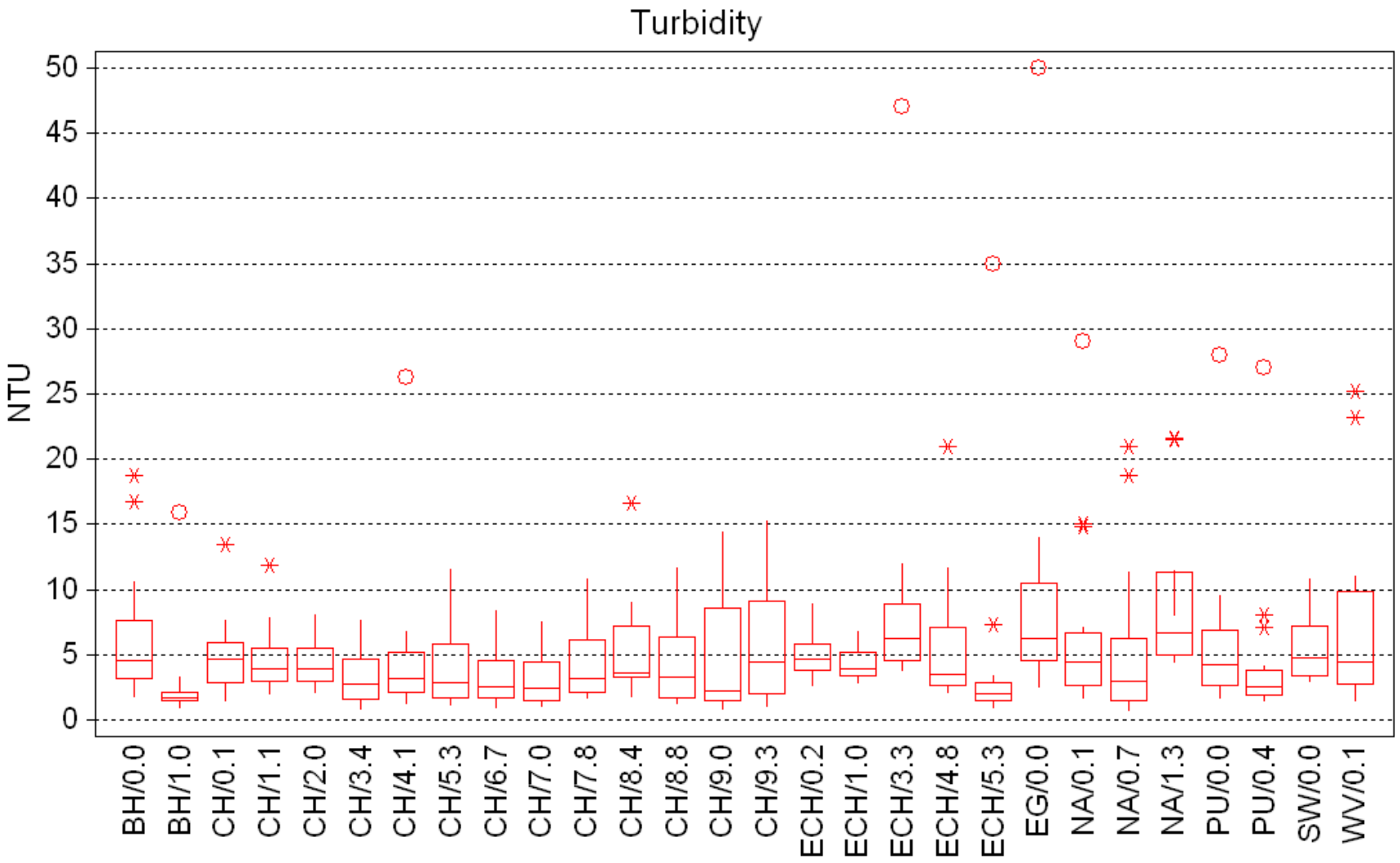

Figure 21. Turbidity measured monthly from October 2007 to September 2008 in the Chimacum watershed. For an explanation of the "box and whiskers," see page 19.

Figure 22 shows turbidity levels monitored at 10 Chimacum Creek stations in 2006-07 and 2007-08 from September to June by the Chimacum School Hydrology Class. Most turbidity levels were below 20 NTU. East Chimacum Creek stations generally had slightly higher levels than did main stem stations, especially stations ECH/2.2 and ECH/2.8. Several high measurements (424 NTU at ECH/1.0) were made on April 14, 2008 when 0.42 inches of rain fell that day.

pH

pH is a measure of the water's acidity (pH<7), neutrality (pH = 7), or basicity (pH > 7). The scale of measurement is logarithmic. Thus, a 1-unit difference represents a 10-fold change; a 2-unit difference represents a 100-fold change, etc.

The state standard for Jefferson County waters requires that pH be within the range of 6.5 to 8.5. Except for 13 measurements, all pH measurements were within this range (Figure 23). All of the 13 measurements were between 6.0 and 6.5. Twelve of the 13 measurements occurred on January 9, 2008; the other measurement (6.42 units) occurred at BH/0.0 on December 5, 2007. It is possible that the low pH measurements were due to instrument/operator error. In the 2003-04 and 2005-06 water-years, all pH measurements passed the state standard (Gately 2005; Gately et al. 2007).

Conductivity

Conductivity refers to the ability of a substance (e.g., water) to conduct an electric current. The unit of measurement for conductivity is the mho, which is the reciprocal of the ohm, the unit of measurement for resistance (i.e., mho=1/ohm). The more dissolved ions in the water, the higher the conductivity will be. Because an increase in temperature will cause an increase in conductivity, for the purpose of comparison measurements are adjusted to the standard temperature of 25^{o} C. The conductivity range for potable water in the United States is 30-1500 μmho/cm (MacDonald et al. 1991). Most Pacific Northwest streams have conductivities near the low end of this range. There is no state standard for conductivity.

Conductivity in the Chimacum watershed ranged from 60 μmho/cm to 364 μmho/cm in 2007-08 (Figure 24). As in previous years, conductivity in Chimacum Creek and its tributaries increased from upstream to downstream (Gately 2005; Gately et al. 2007).

Relative Fish Abundance

Relative Fish Abundance is shown in Appendix D.

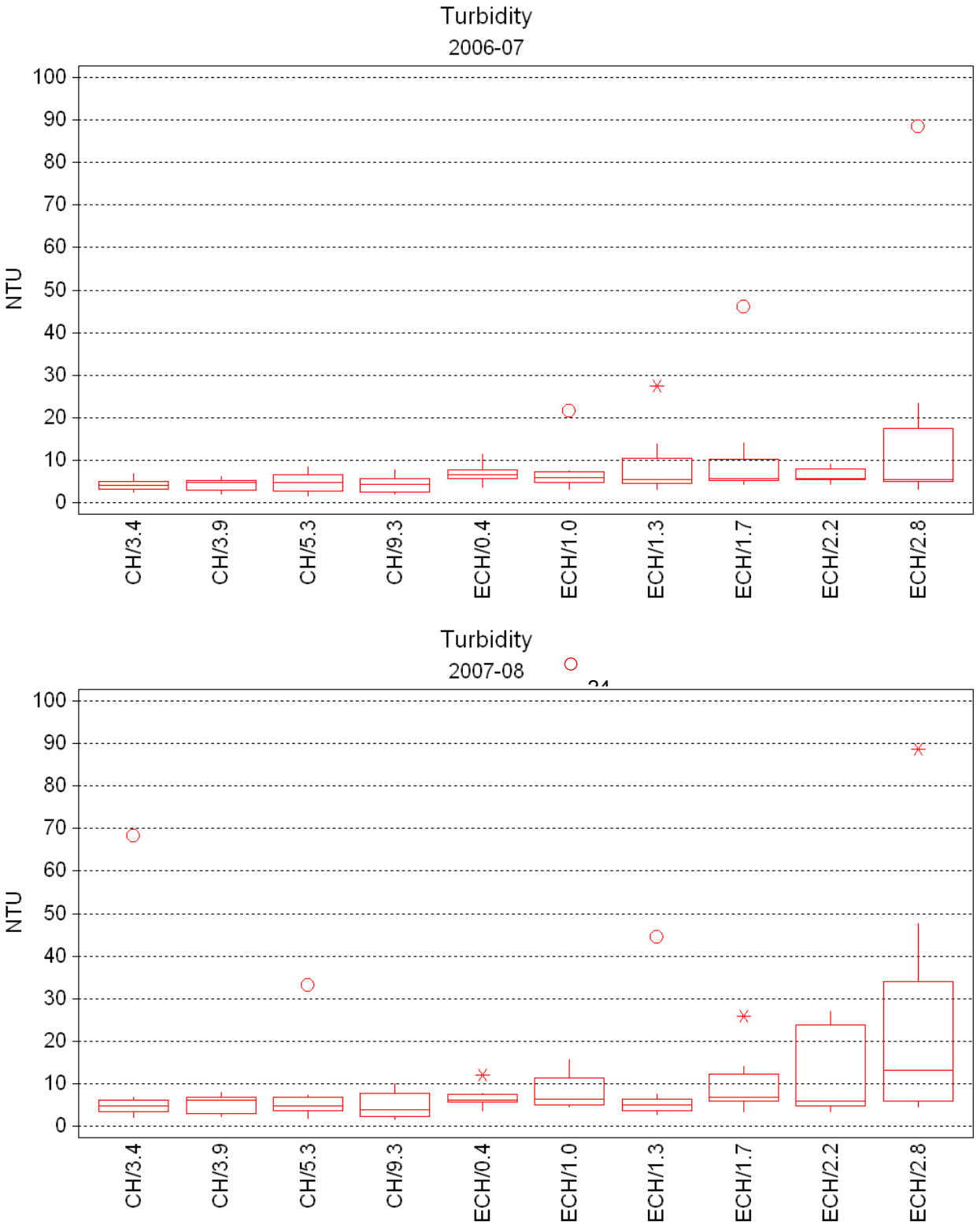

Figure 22. Turbidity in Chimacum Creek main stem (CH) and East Chimacum Creek (ECH) monitored monthly from September to June in 2006-07 (top) and 2007-08 (bottom). For an explanation of the "box and whiskers," see page 19.

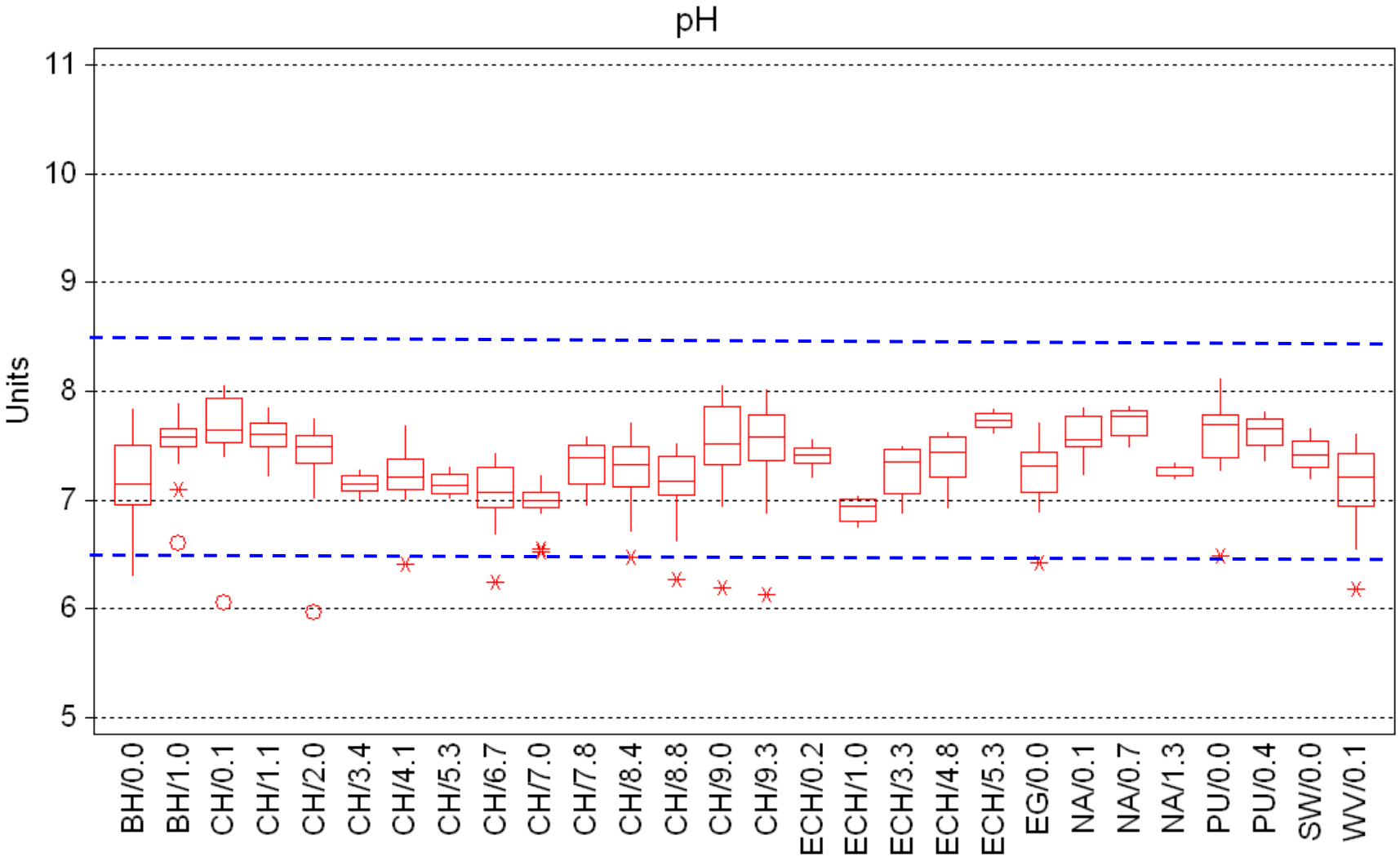

Figure 23. pH measured monthly from October 2007 to September 2008 in the Chimacum watershed. The state standard requires that pH be between 6.5 and 8.5 units. For an explanation of the "box and whiskers," see page 19.

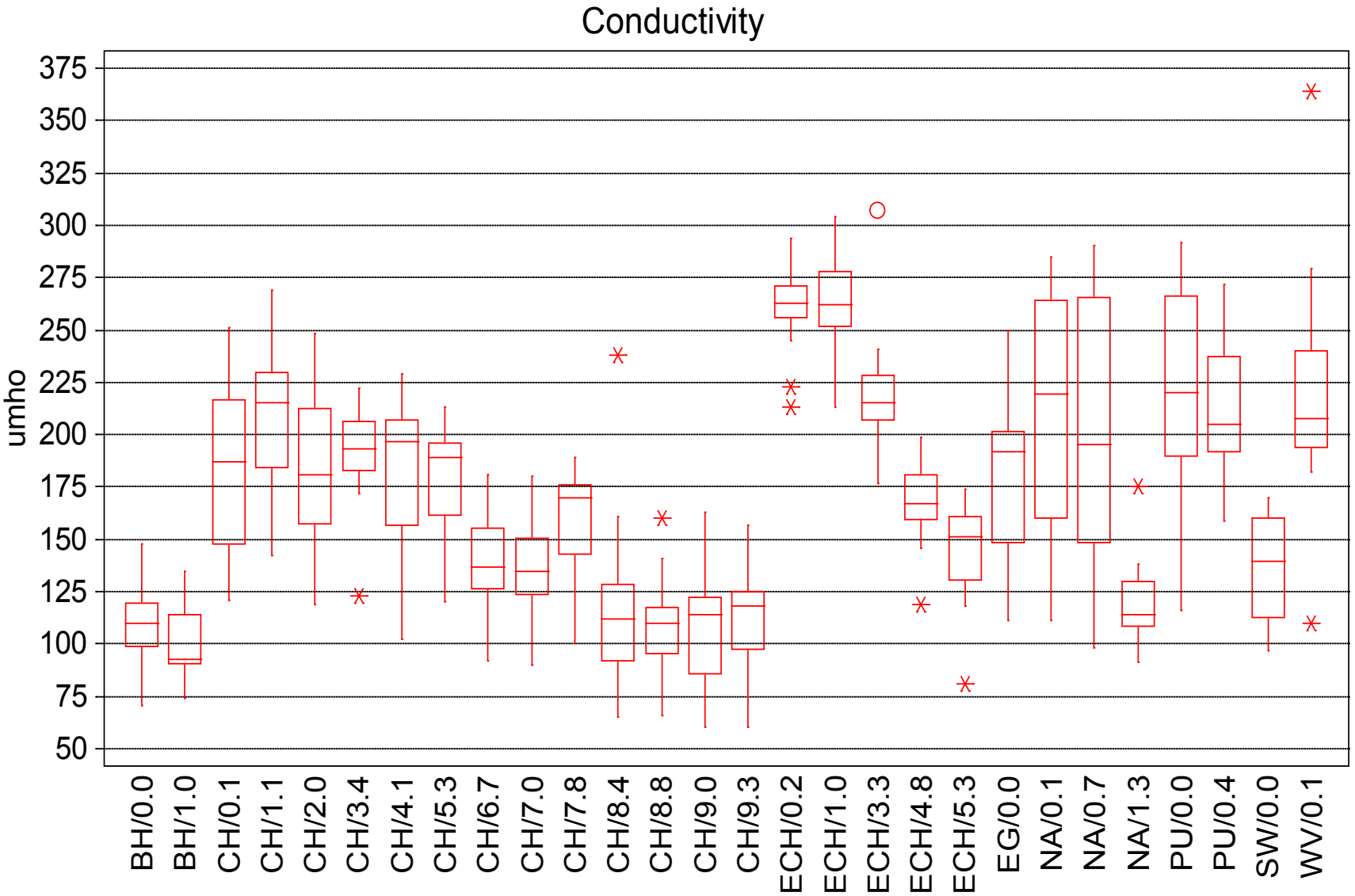

Figure 24. Conductivity measured monthly from October 2007 to September 2008 in the Chimacum watershed. For an explanation of the "box and whiskers," see page 19.

Discovery Bay Watershed

Fecal Coliform

Fecal coliform geometric mean values (GMVs) at 13 stations monitored monthly on Salmon Creek, Snow Creek, and tributaries from February to June 2007 met Part 1 of the state standard (GMV<50 FC/100 mL) except for Uncas Valley Ditch (UVD/0.0), which had a GMV of 60 FC/100 mL (Figure 25). Beginning in February 2008, nineteen stations were monitored twice per month in the Salmon and Snow Creek watersheds. Eighteen of the 19 stations met Part 1 of the standard (Figure 26). Only station TUD/0.4 with a GMV of 269 FC/ 100 mL failed the standard. Between station TUD/0.4 and station TUD/0.0 is about 0.4 miles of wetland. It is notable that the GMV at station TUD/0.0 was only 29 FC/100 mL. It is also notable that station UVD/0.0, which had a GMV of 60 in 2007 had a GMV of 34 in 2008-09. As was the case in the Chimacum watershed, fecal coliform concentrations in Salmon Creek and Snow Creek were highest from May to October (Figures 27 and 28).

Several projects have been completed on Salmon and Snow creeks in the past two years that should help reduce the fecal coliform levels by keeping livestock manure out of the creeks (See Project Summaries on pages 82-91.)

Average fecal coliform loading for Salmon Creek in 2008-09 was 14 billion FC/day, almost identical to the loadings in 2003-04 and 2005-06 (Figure 29). Average Snow Creek loading was 32 billion FC/day, about 2.3 times greater than that of Salmon Creek. Snow Creek average loading had increased steadily to 43 billion FC/day from 2000 to 2005-06. The 2008-09 water-year marks the first decrease since that time period. Loadings in Salmon and Snow Creek were highest from May through November (Figure 30).

Of the four tributaries monitored, Houck Creek, Uncas Valley Ditch, and Tucker Ditch had loadings less than 0.5 billion FC/day (Figure 29). However, Andrews Creek, a tributary of Snow Creek, averaged 4.8 billion FC/day. Andrews Creek had its highest loadings in June, July, and August (Figure 31).

In December 2006, Washington Department of Health (DOH) recommended a downgrade in the shellfish harvesting classification from *Approved* to *Restricted* of approximately 50 acres in the southwestern part of Discovery Bay (Sargeant 2006). This was due to high fecal coliform levels at marine station 48, which is near where Salmon and Snow Creek enter Discovery Bay. The 30 samples collected at this station from November 2001 to September 2006 had a geometric mean value (GMV) of 6.2 FC/100mL and an estimated 90^{th} percentile of 46 FC/100 mL (Sargeant 2006). The standard for marine water states that the GMV should not exceed 14 FC/100 mL and that the estimated 90^{th} percentile should not exceed 43 FC/100mL. Thus, station 48 failed Part 2 of the marine fecal coliform standard. Conditions have improved since that time and DOH has changed the classification of the 50 acres from *Restricted* to *Approved*. The GMV for the 30 samples collected from February 2004 to November 2008 was 2.6 FC/100 mL and the 90^{th} percentile was 8.0 FC/100 mL (Sullivan 2008).

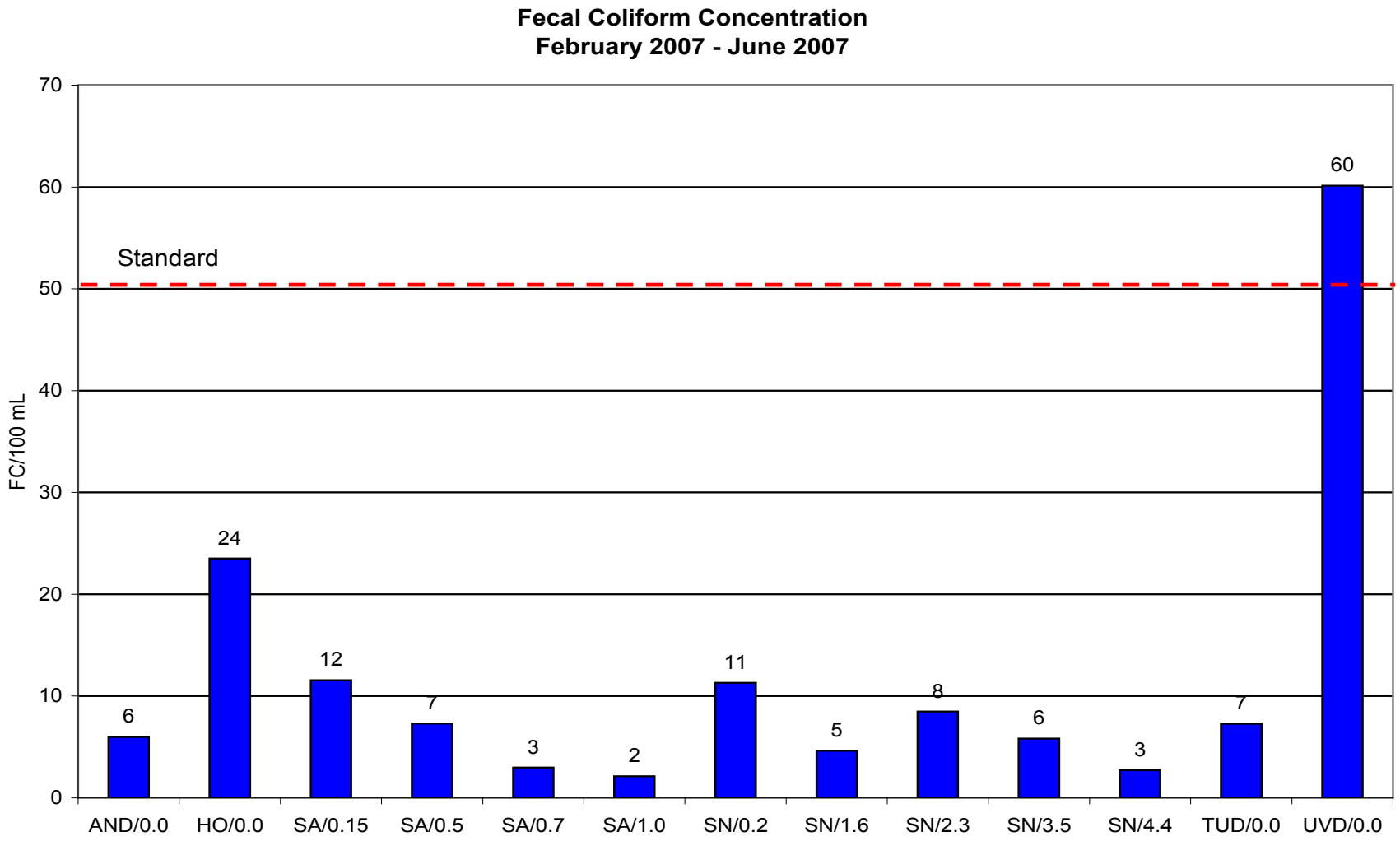

Figure 25. Fecal coliform geometric mean values (GMVs) for stations sampled monthly from February to June 2007 in the Salmon Creek and Snow Creek watersheds. The dotted line represents the state standard.

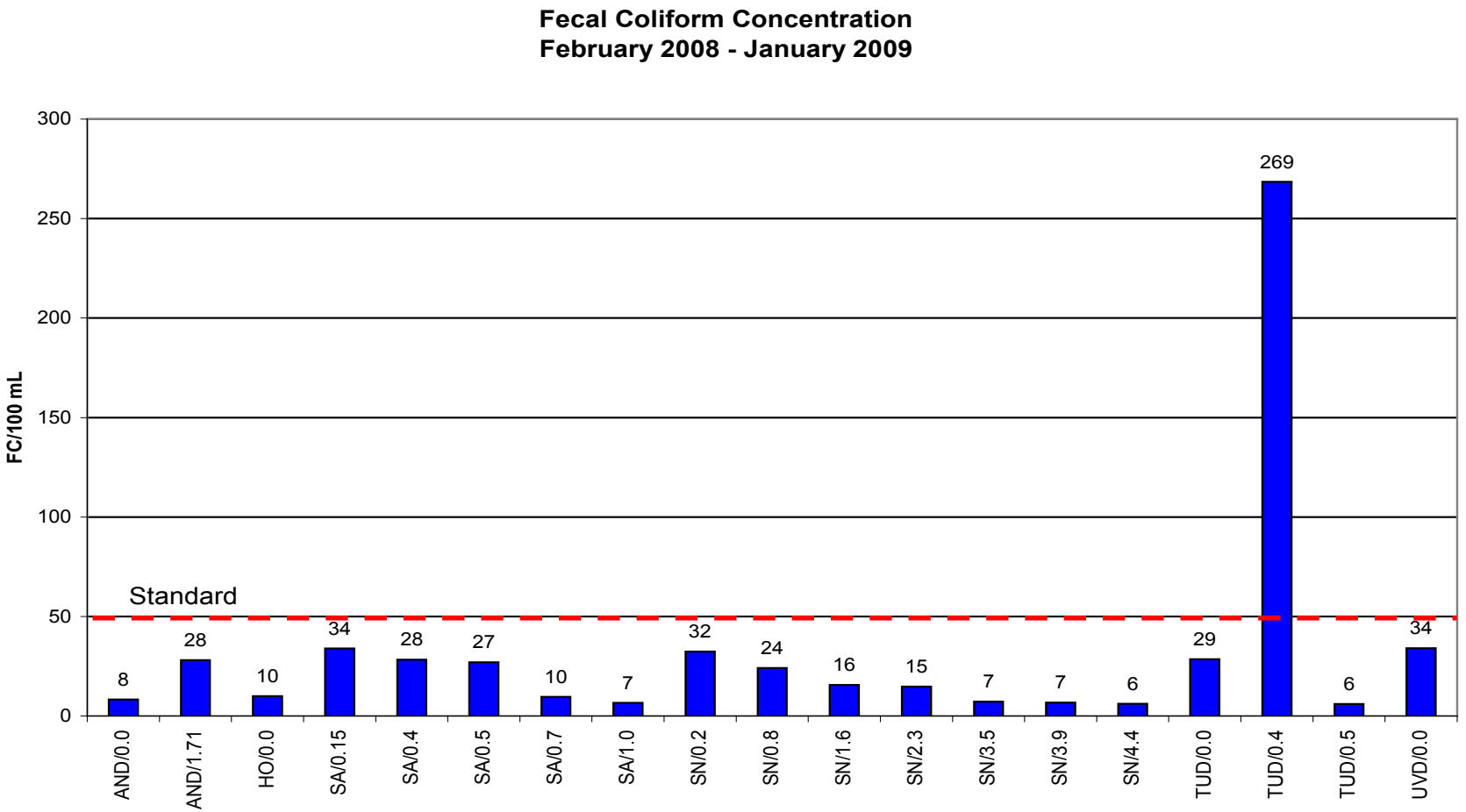

Figure 26. Fecal coliform geometric mean values (GMVs) for stations sampled twice monthly from February 2008 to January 2009 in the Salmon Creek and Snow Creek watersheds.

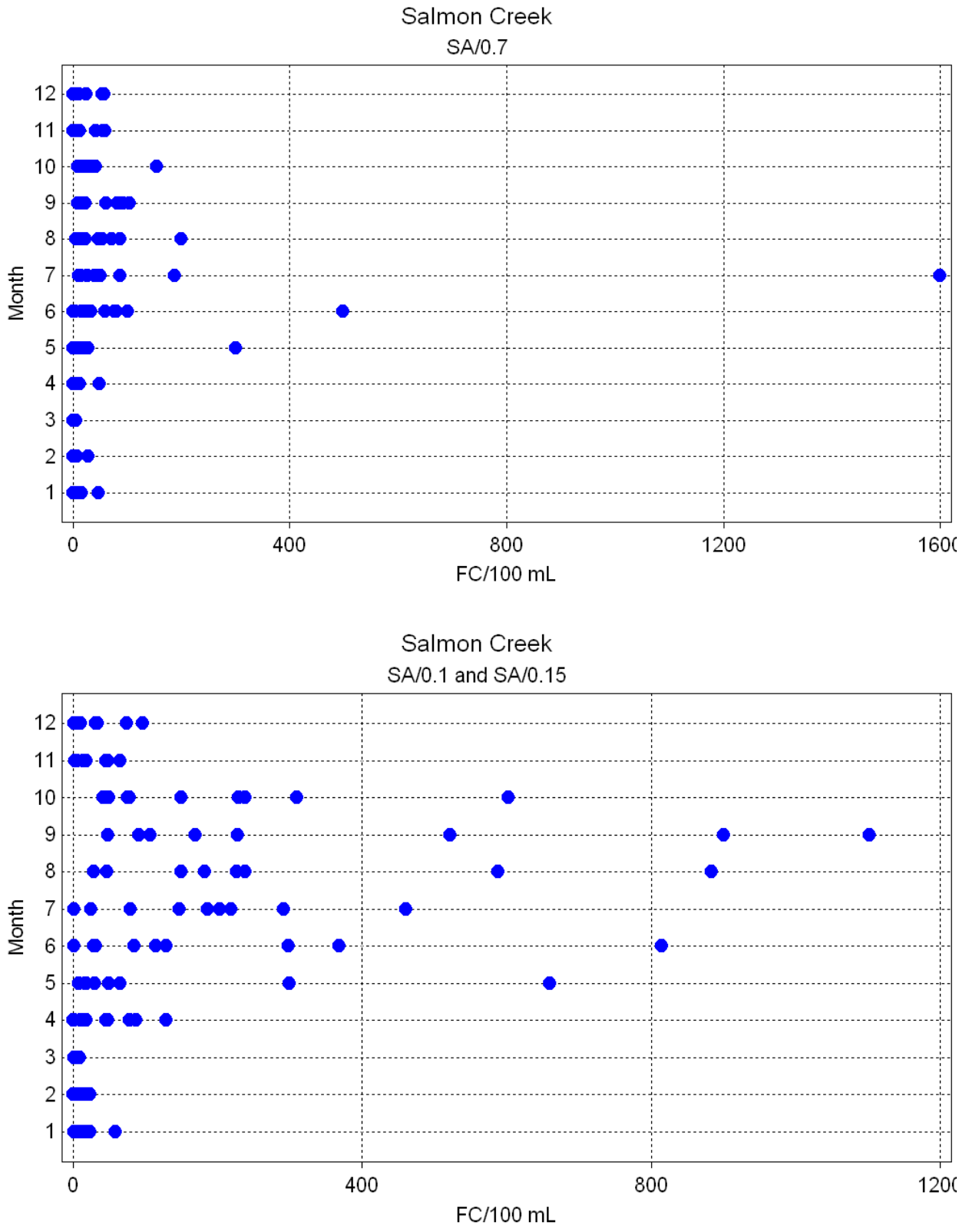

Figure 27. Dot plots showing fecal coliform concentrations by month in samples collected from 2000 to 2009 in Salmon Creek at upstream control station SA/0.7 (top) and stations SA/0.1 and SA/0.15 (bottom).

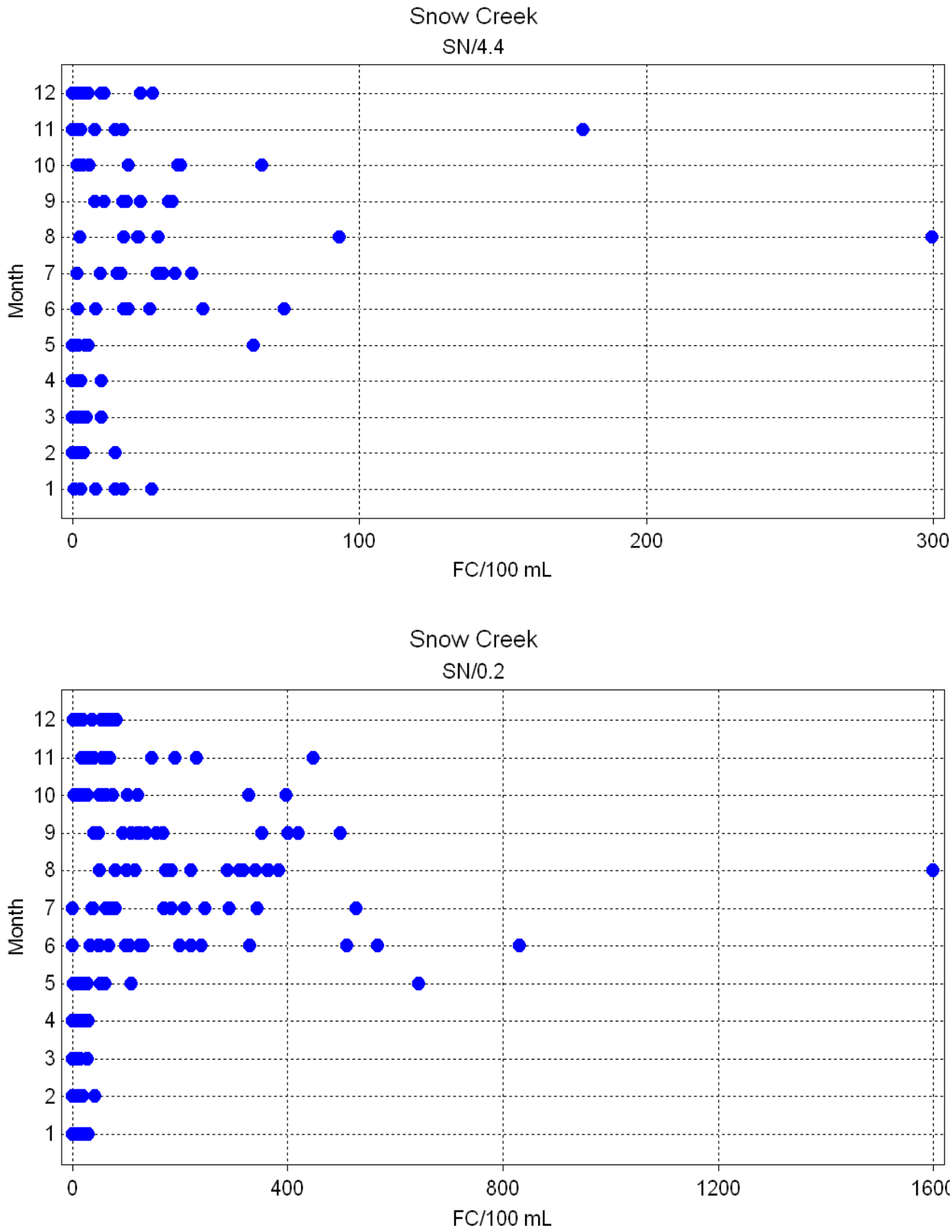

Figure 28. Dot plots showing fecal coliform concentrations by month in samples collected from 1994 to 2009 in Snow Creek at upstream control station SN/4.4 (top) and station SN/0.2 (bottom).

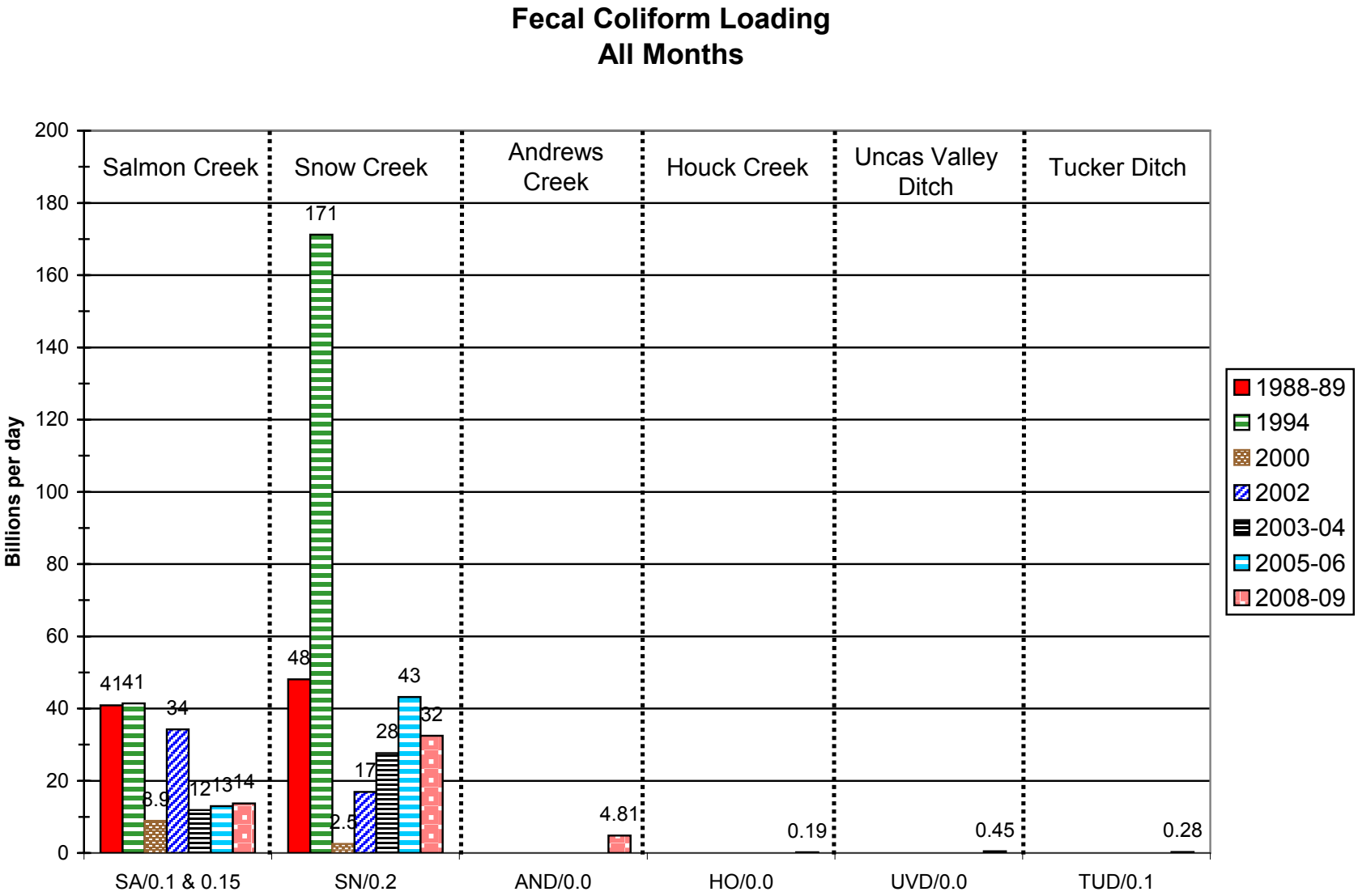

Figure 29. Average fecal coliform loading at downstream stations on Salmon and Snow Creeks and their tributaries monitored monthly in certain years.

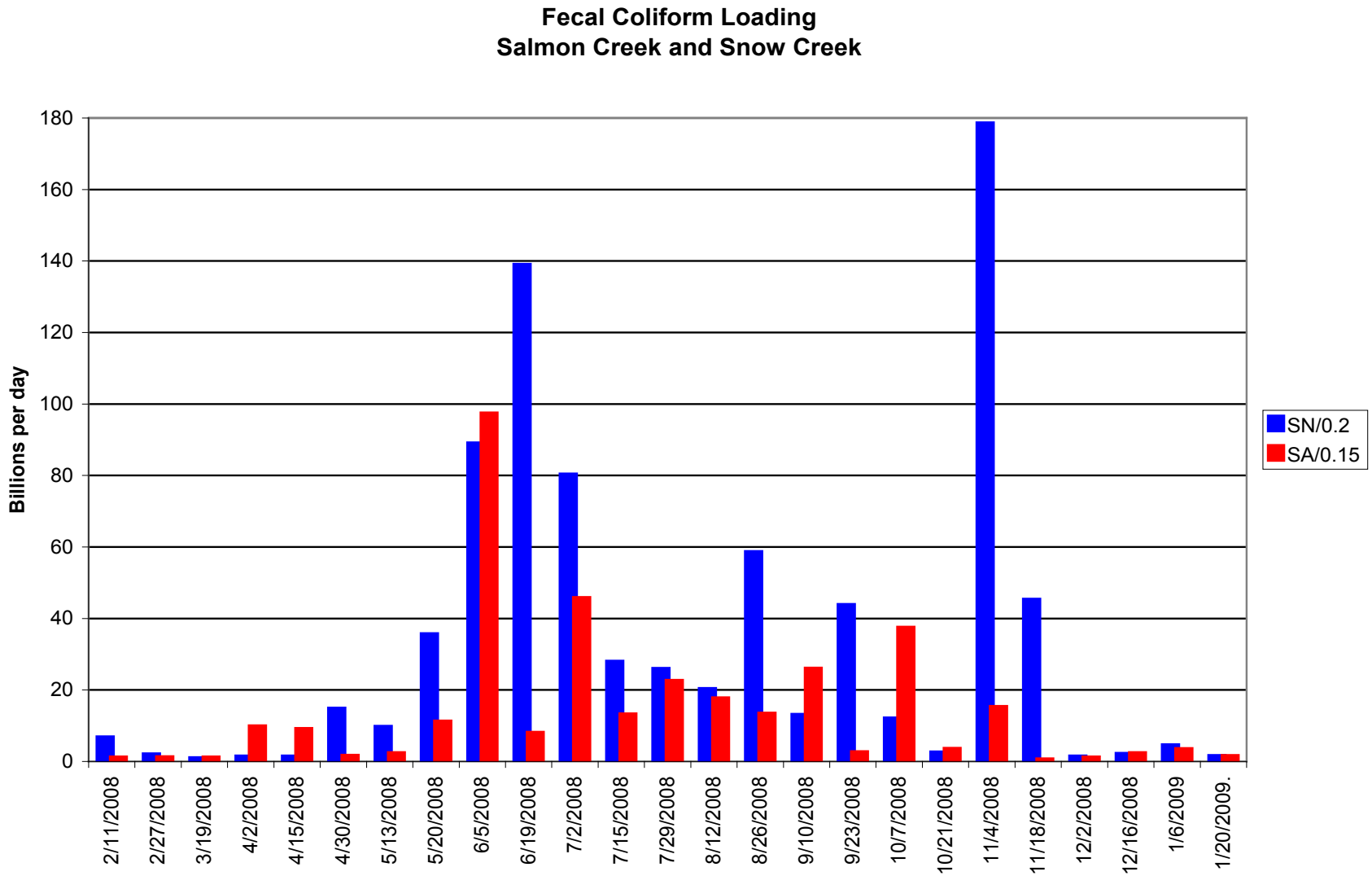

Figure 30. Fecal coliform loading by sample date at downstream stations on Salmon Creek and Snow Creek.

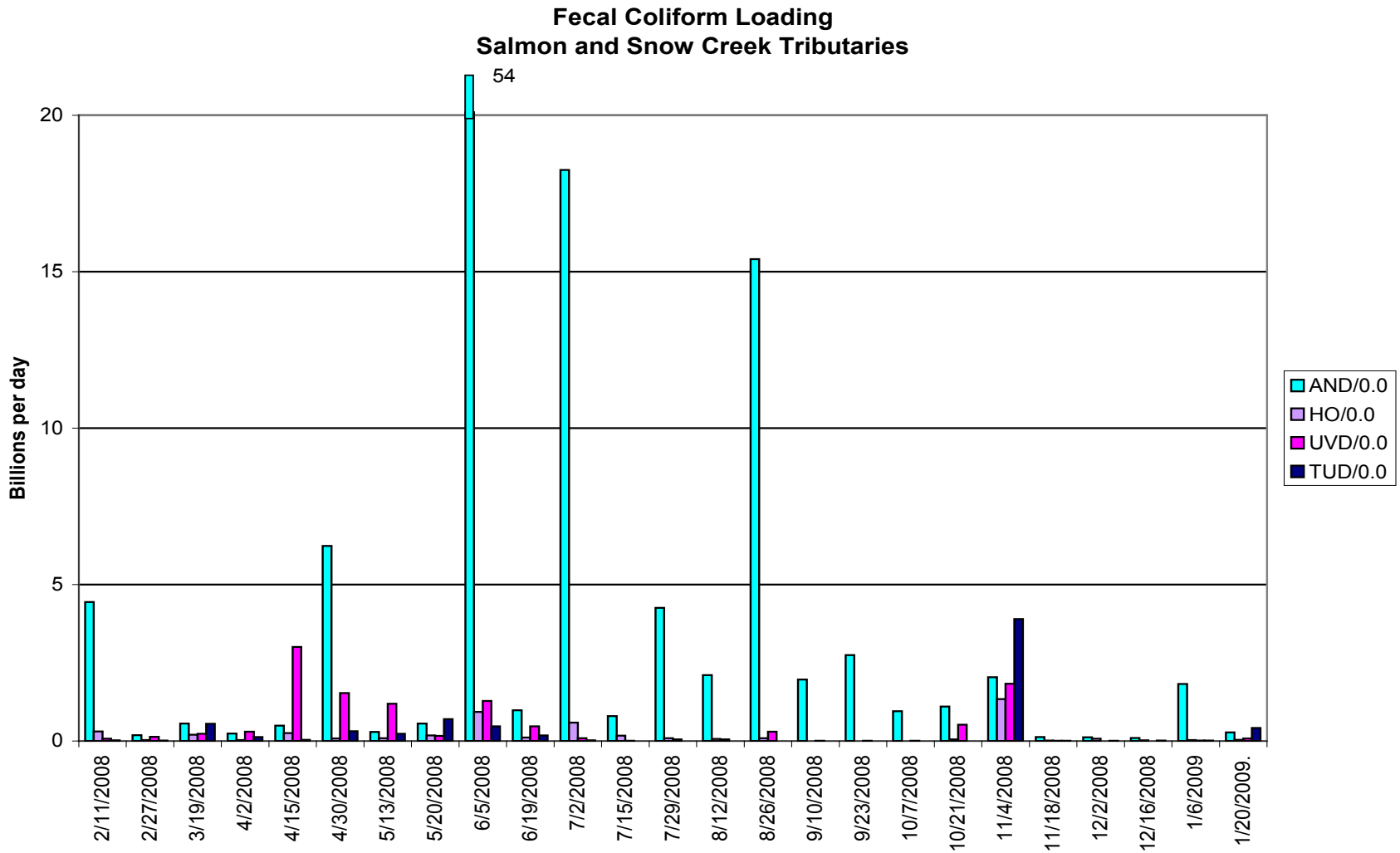

Figure 31. Average fecal coliform loading by sample date at downstream stations of tributaries of Salmon Creek and Snow Creek.

Nitrate-Nitrogen

Nitrate-nitrogen concentrations in samples collected from Snow Creek ranged from 0 mg/L NO_3-N to 1.0 mg/L NO_3-N; Salmon Creek samples ranged from 0 mg/L NO_3-N to 1.4 mg/L NO_3-N (Figure 32).Tributary streams and ditches were somewhat higher. The highest concentration (3.27 mg/L NO_3-N) occurred in Houck Creek in January 2009.

Nitrate-nitrogen loadings for Salmon Creek and Snow Creek were lowest from June to October and highest from January to April (Figure 33). Salmon Creek loading ranged from 0 pounds/day to 107 pounds/day and Snow Creek ranged between 0 pounds/day and 113 pounds/day.

Temperature

Similar to Chimacum Creek, there are currently two different temperature levels making up the temperature standard for Salmon Creek, Snow Creek, and Andrews Creek. From September 1 to July 1 the 7-DADMax temperature should not exceed 13 ^{o}C and from July 2 to August 31 it should not exceed 16^{o}C. All 11 stations monitored on Salmon Creek, Snow Creek, and Andrews Creek failed to pass the 13 ^{o}C part of the standard. On Salmon Creek, the two upper stations passed the 16^{o}C part of the standard, but the downstream station failed to pass it. On Snow Creek and Andrews Creek, only the upstream station passed the 16^{o}C part. Because Andrews Creek flows through Crocker Lake where the surface water warms up, it is unlikely that lower Andrews Creek, downstream of Crocker Lake, will ever pass the temperature standard.

Temperature graphs are shown in Appendix C.

Surface Water Dissolved Oxygen

All 5 stations on Salmon Creek passed the 9.5 mg/L DO Standard (Figure 34). Four of the 7 stations on Snow Creek passed the standard and the other three were only slightly below 9.5 mg/L. Houck Creek, a tributary of Salmon Creek, passed the standard. The upstream station on Andrews Creek failed the standard but all measurements were above 9.0 mg/L. The downstream station on Andrews Creek faired worse with the median DO at 7.1 mg/L and the lowest reading at 4.9 mg/L. The two ditches, Tucker Ditch and Uncas Valley Ditch, failed the standard at all of the stations, but only the downstream stations were severely low. Station UVD/0.0 was the worst at 1.2 mg/L. The two ditches are full of vegetation and it is the decomposition of this vegetation that causes the low DO levels.

Whether or not a stream passes the dissolved oxygen standard is very much dependant upon its passing the temperature standard. At a temperature of 16.0^{o}C and a barometric pressure of 735 millimeters of mercury, the water would have to be 100% saturated to have a concentration of 9.5 mg/L, the level required to pass the DO standard. Anything less than 100% would fail the standard. If the barometric pressure were 760 millimeters of mercury (“average” barometric conditions), saturation would have to be at least 96% in order to pass the standard. Thus, a stream warmer than 16.0^{o}C has little or no chance of passing the dissolved oxygen standard.

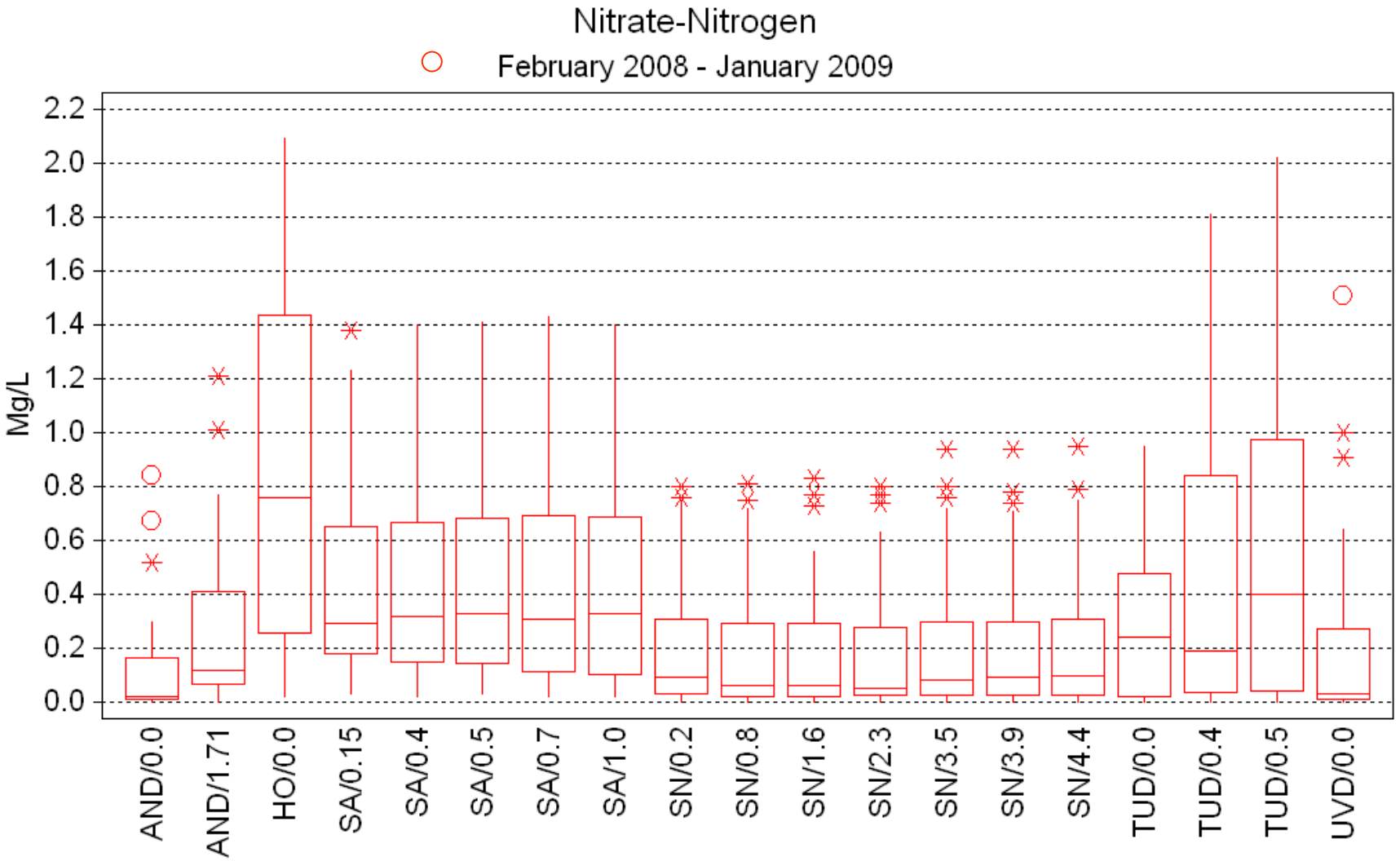

Figure 32. Nitrate-nitrogen concentration measured twice each month from February 2008 to January 2009 in the Salmon-Snow watersheds. For an explanation of the "box and whiskers," see page 19.

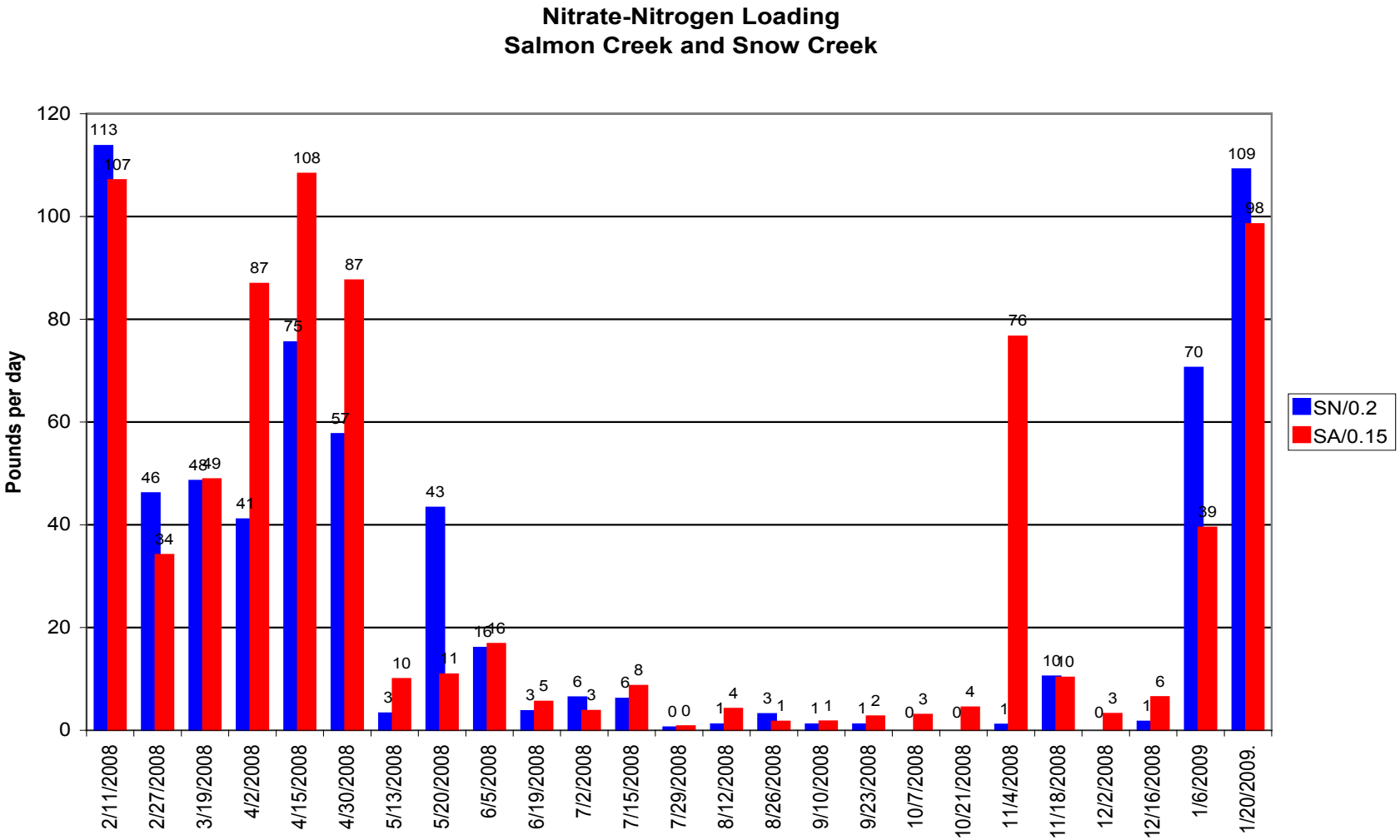

Figure 33. Nitrate-nitrogen loading by sample date at downstream stations on Salmon Creek and Snow Creek.

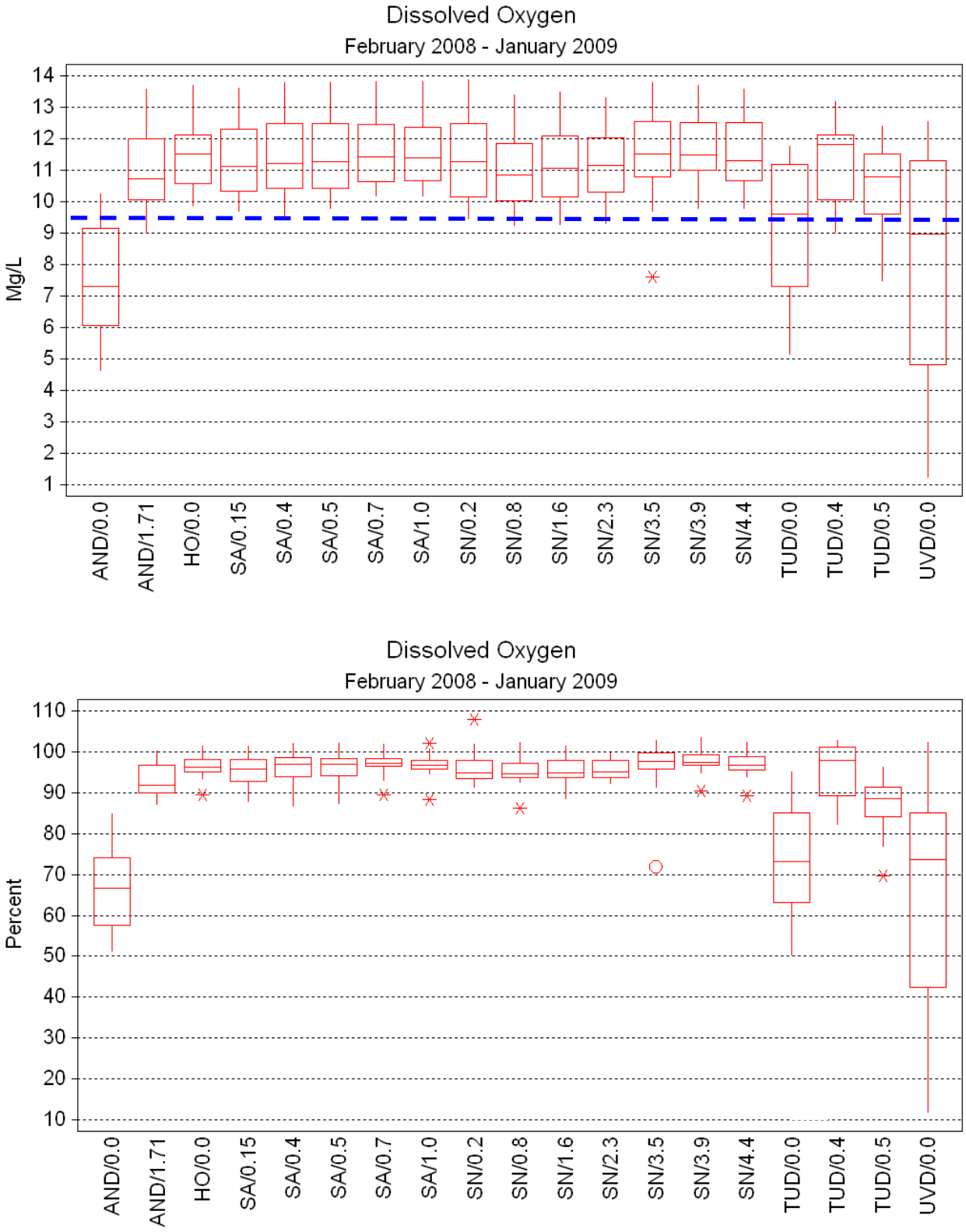

Figure 34. Dissolved oxygen concentration (top) and percent saturation (bottom) measured twice each month from February 2008 to January 2009 in the Salmon-Snow watersheds. For an explanation of the "box and whiskers," see page 19.

Intragravel Dissolved Oxygen

In the 1980s, summer chum salmon experienced a severe drop in abundance in Hood Canal and Strait of Juan de Fuca streams (Ames et al. 2000). This critical situation resulted in the National Marine Fisheries Service listing the summer chum as "threatened" under the Endangered Species Act. Habitat degradation was one of the factors believed responsible for the general decline in summer chum. Since juvenile chum spend about 95 percent of their freshwater stage in the gravel, an adequate level of dissolved oxygen in the gravel is crucial to their survival.

In 2002**,** Washington Department of Fish and Wildlife purchased about 108 acres of farmland along lower Salmon Creek, where most of the summer chum spawn. In the summer of 2003, a new channel, one-half mile long, was constructed. It received its first flow of water on June 23, 2004 (see Salmon Creek WDFW Project in Gately et al. 2007, pages 95-96).

The interesting question to be answered was, "how long would it take for the new channel to become suitable spawning habitat?" With all the new construction of the new channel, there would be a lot of fines to be flushed out. Fortuitously, IGDO monitoring began in Salmon Creek in 2001, so that we have 3 years of baseline data for comparison purposes. Also, we monitor a control reach, immediately upstream of the new channel. One needs to understand, however, that this control reach is not "pristine." For starters, the control reach had been relocated at one time, probably around the early 1900's. Also, until recently cattle were allowed to ford the stream to get from one pasture to another. On November 21, 2008, the fording access was replaced with a bridge and a solar-powered drinking trough was installed (see Project Summary SA/0.7, pages 82-83).

Furthermore, not far upstream at River Mile 1.0, major erosion has been occurring since the 1960s when Houck Creek was diverted over a steep bank. In 2002, JCCD implemented a BMP which stopped the bank erosion (see Project Summary HO/0.0-0.02 in Gately 2003), but fines continued to enter Salmon Creek via Houck Creek due to logging activity in the upper watershed (see Houck Creek Project Summary in Gately 2003 and Gately 2005). Although not "pristine," the control reach at least provided a benchmark for the new channel to reach.

IGDO levels monitored from 2001 to 2008 in Salmon Creek are shown in Figure 35. The average IGDO concentration in the new channel increased from a low of 2.3 mg/L in 2004, the first year water flowed in the new channel, to 8.7 mg/L in 2008. During the same time period, the ratio of IGDO to surface DO increased from 22% to 76%. In 2007, three years after water flowed in the new channel, the average IGDO concentration in the new channel (8.1 mg/L) approximated that of the control reach (7.9 mg/L. The IGDO level reached in 2007 (8.1 mg/L) also approximated that of the original channel (range 6.3-8.2 mg/L) prior to construction.

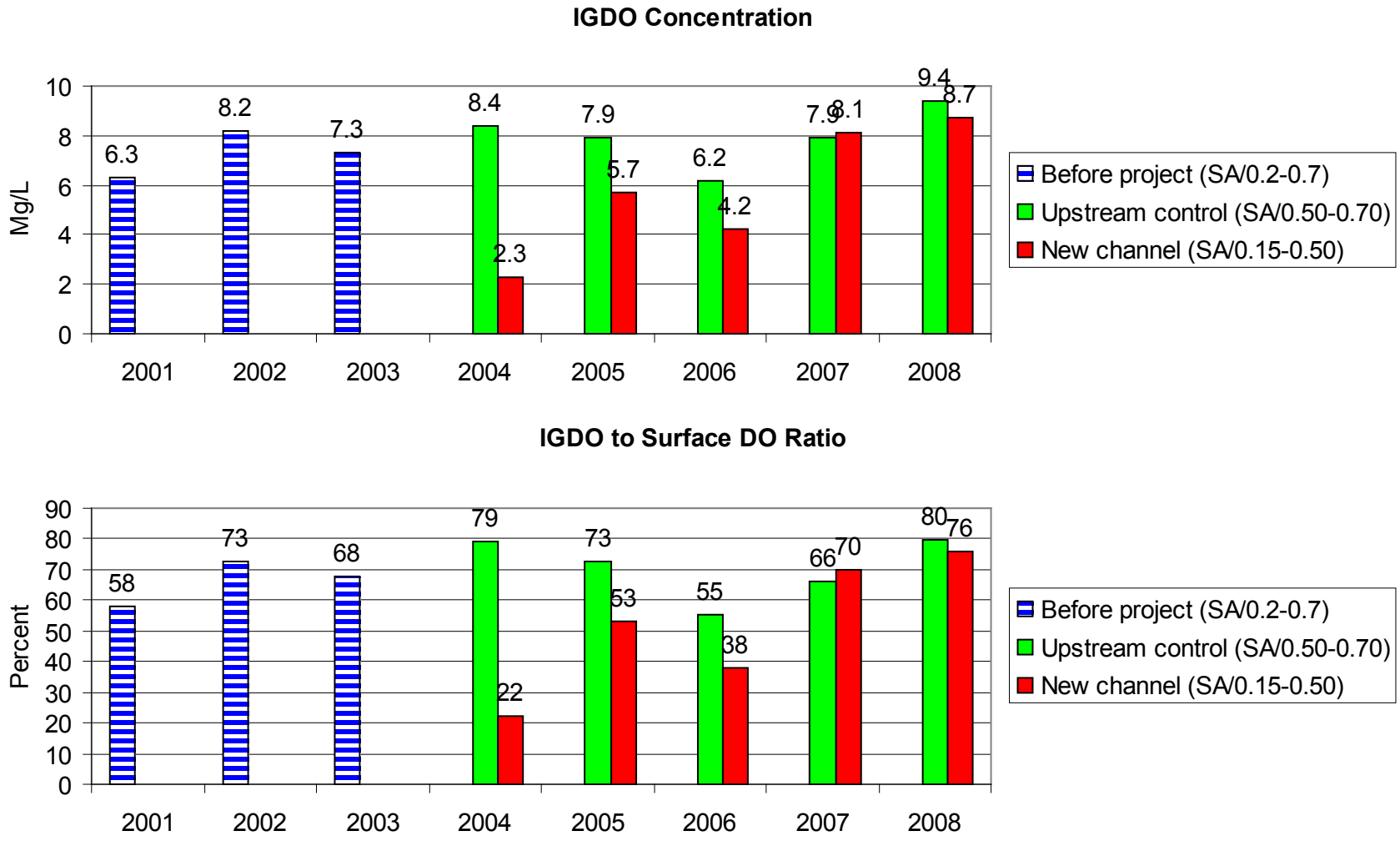

Figure 35. Salmon Creek average intragravel dissolved oxygen concentrations (top) and average intragravel to surface DO ratios (bottom) for the original channel before the project began, the excavated new channel, and the upstream control reach.

Besides its importance to developing salmonid eggs and alevins, an adequate supply of dissolved oxygen is also important to the macroinvertebrates inhabiting the gravel substrate. North Olympic Salmon Coalition began monitoring macroinvertebrates in Salmon Creek in 2003. A Benthic Index of Biotic Integrity (B-IBI) was calculated based on the numbers and kinds of macroinvertebrates present. The higher the B-IBI, the "healthier" the stream conditions are. Macroinvertebrates were collected in riffle areas of the new channel and control reach. It is noteworthy that the B-IBI for the new channel followed a pattern similar to that of the intragravel dissolved oxygen (Figure 36). However, the B-IBI signaled recovery in 2006, one year sooner than the IGDO concentration did. The B-IBI increased from 16 in 2004 to 34 in 2006, equivalent to the B-IBI for the control reach in 2006. Regression of B-IBI on IGDO concentration showed a high correlation ($p=0.0000$, $R^2= 0.95$; Figure 37).

In 2002, we began monitoring IGDO levels upstream and downstream of Houck Creek in order to evaluate a project completed in August 2002 that was designed to stem bank erosion on Houck Creek (see Houck Creek Project Summary in Gately 2003 and Gately 2005). During the five years that monitoring was conducted from 2002 to 2007 (no monitoring in 2006), average IGDO levels ranged from 8.1 mg/L to 10.4 mg/L downstream of Houck Creek compared to a range of 8.6-10.4 mg/L upstream (Figure 38). Over the same time period, the ratio of IGDO to surface DO ranged from 73% to 88% downstream of Houck Creek, compared to 76% to 91% upstream of Houck Creek.

IGDO levels in the reaches both upstream (SA/1.00-1.04) and downstream (SA/0.98-1.00) of Houck Creek (Figure 38) were higher than levels in the original channel (SA/0.2-0.7) and control reach (SA/0.5-0.7) previously discussed (Figure 35). This is attributed to the greater gradient in the vicinity of Houck Creek and consequently better flushing out of the "fines." The channel substrate is much coarser in the vicinity of Houck Creek than it is farther downstream where the new channel and control reach are located.

Turbidity

Of the ambient turbidity measurements made in 2007-08, median levels for Salmon Creek and Snow Creek were slightly higher at downstream stations compared to upstream stations (Figure 39). The highest measurement (18 NTU) occurred at SN/0.2 in November 2009. The highest median levels occurred on Houck Creek (6.4 NTU) and Uncas Valley Ditch (6.2 NTU).

pH

All pH measurements in 2007 and in 2008-09 were within the state standard's range of 6.5 to 8.5 (Figure 40). Downstream stations on Andrews Creek and Uncas Valley Ditch had the lowest values with Tucker Ditch a close third. These same three stations also had the lowest dissolved oxygen levels. This relationship between DO and pH is typical of streams having an abundance of organic matter. The two ditches are full of vegetation as is Andrews Creek downstream from Crocker Lake. Respiration by microbes feeding on vegetation results in oxygen consumption and carbon dioxide production.

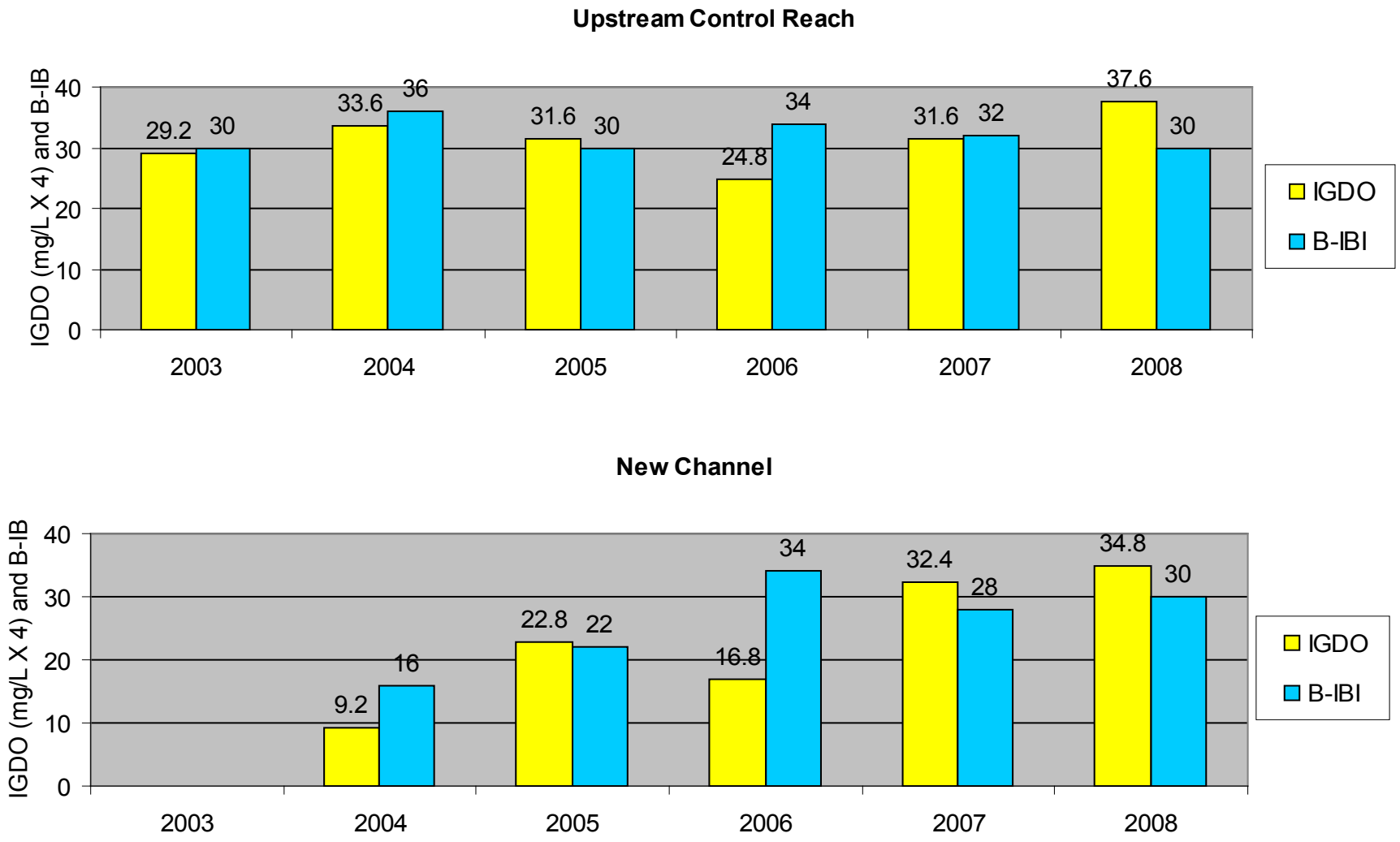

Figure 36. Comparison of the average intragravel dissolved oxygen (IGDO) concentration to the benthic index of biotic integrity (B-IBI) for Salmon Creek's new channel (bottom) and the control reach immediately upstream (top) . IGDO concentration is shown multiplied by 4 to be on a scale similar to the B-IBI.

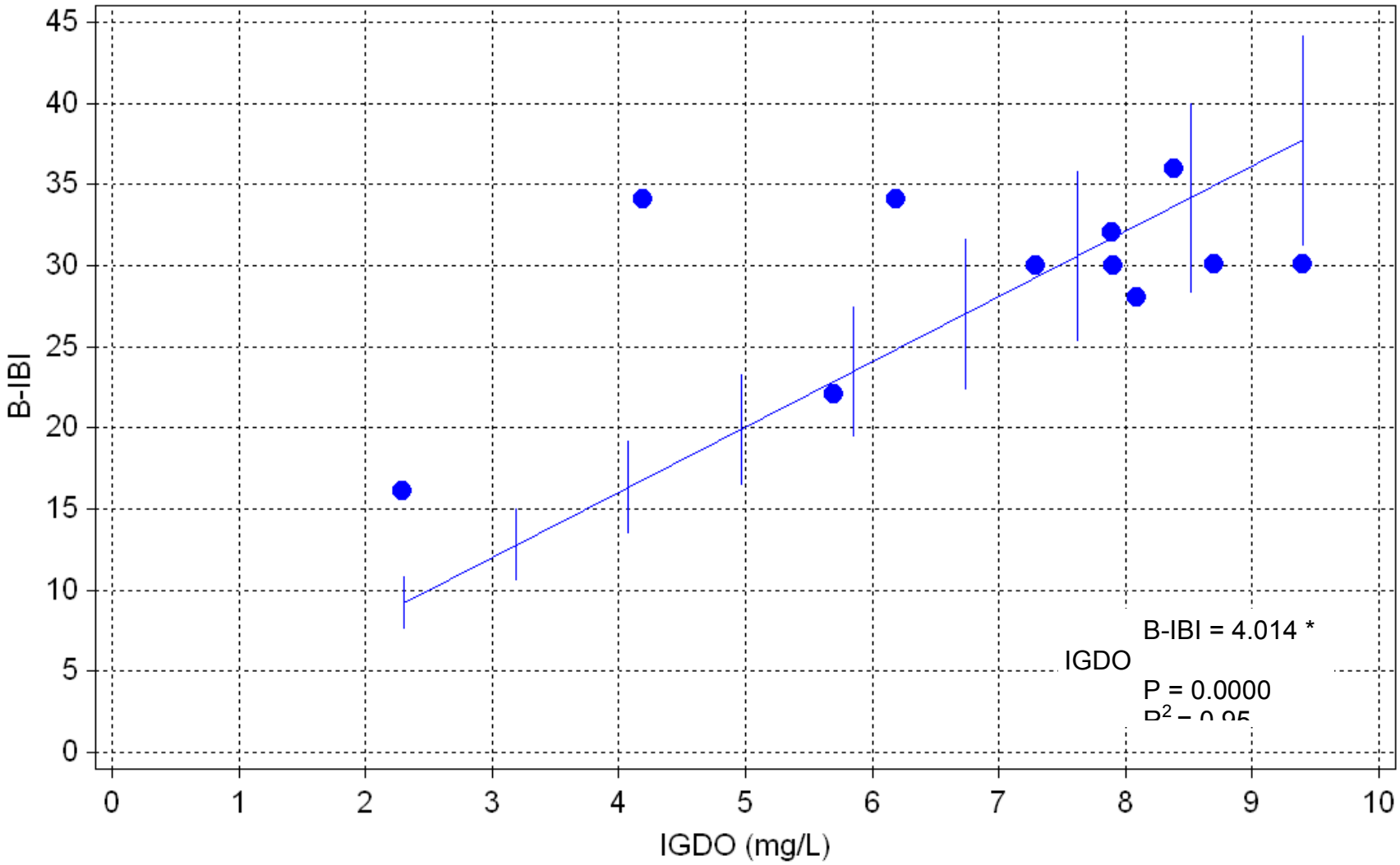

Figure 37. Regression of the benthic index of biotic integrity (B-IBI) on the intragravel dissolved oxygen concentration for data collected from Salmon Creek's new channel and upstream control reach from 2003 to 2008. Vertical bars represent 95 percent confidence limits.

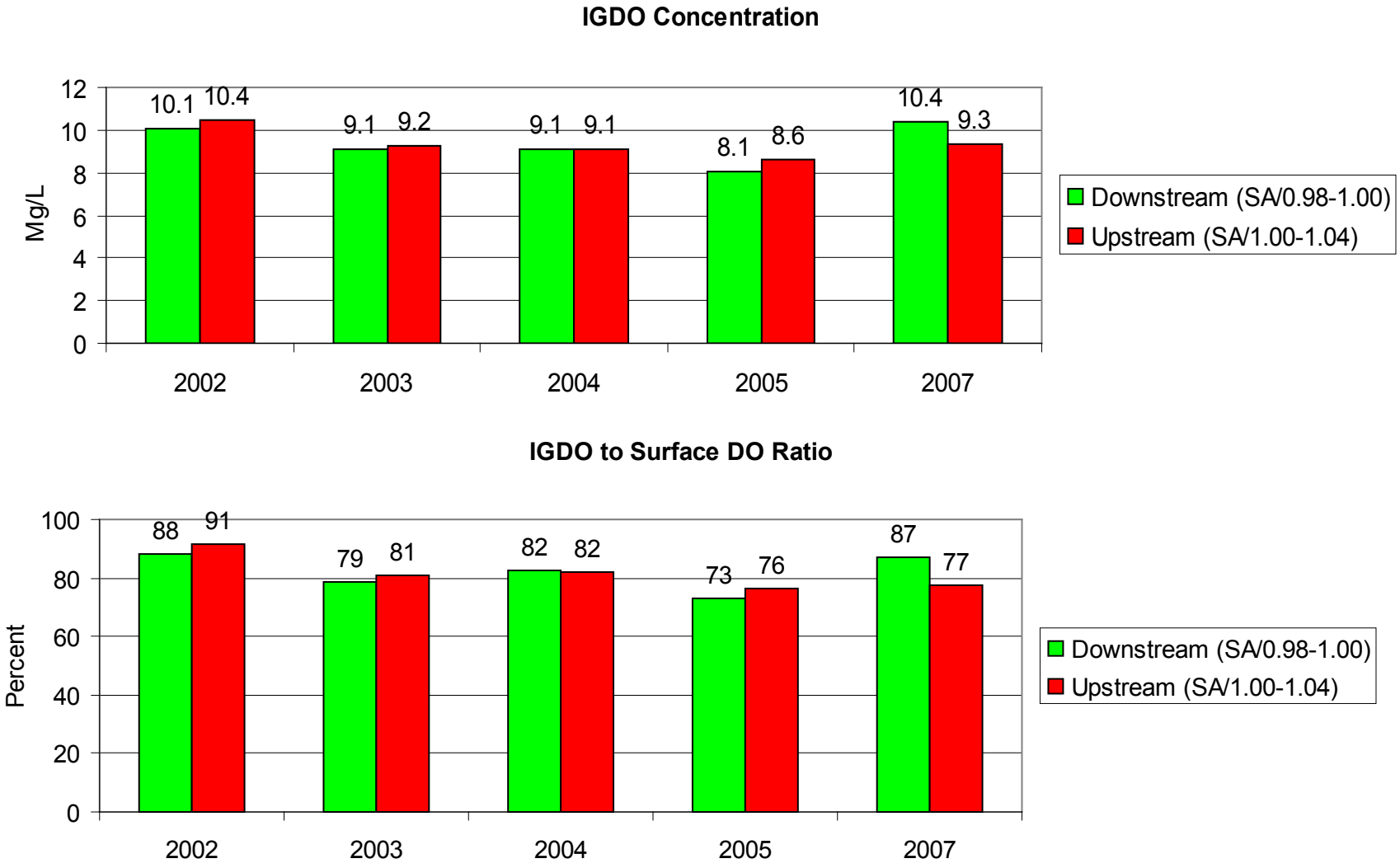

Figure 38. Salmon Creek average intragravel dissolved oxygen concentrations (top) and average intragravel to surface DO ratios (bottom) for the reach immediately downstream from Houck Creek and the reach immediately upstream from Houck Creek.

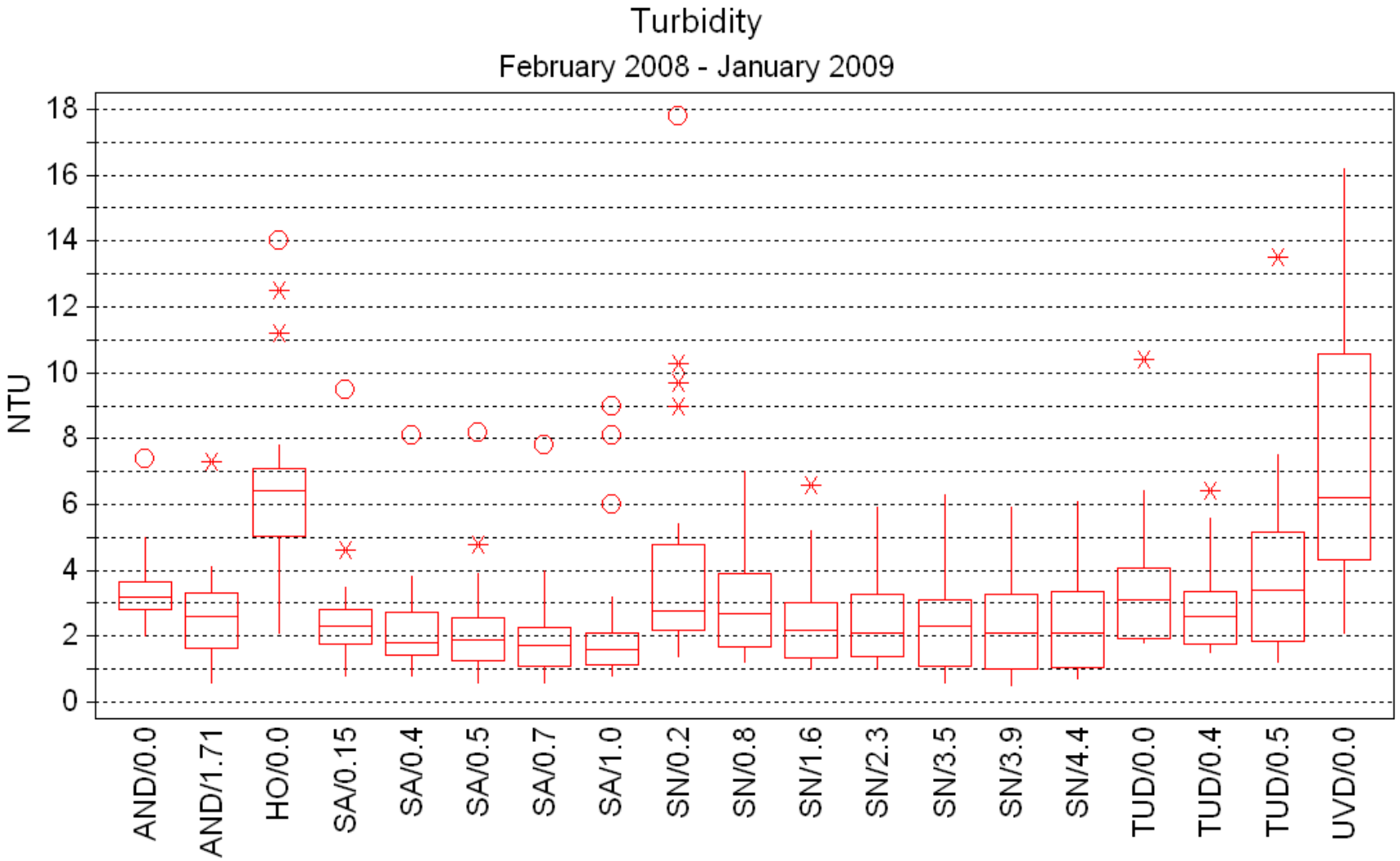

Figure 39. Turbidity measured twice monthly from February 2008 to January 2009 in the Salmon-Snow watersheds. For an explanation of the "box and whiskers," see page 19.

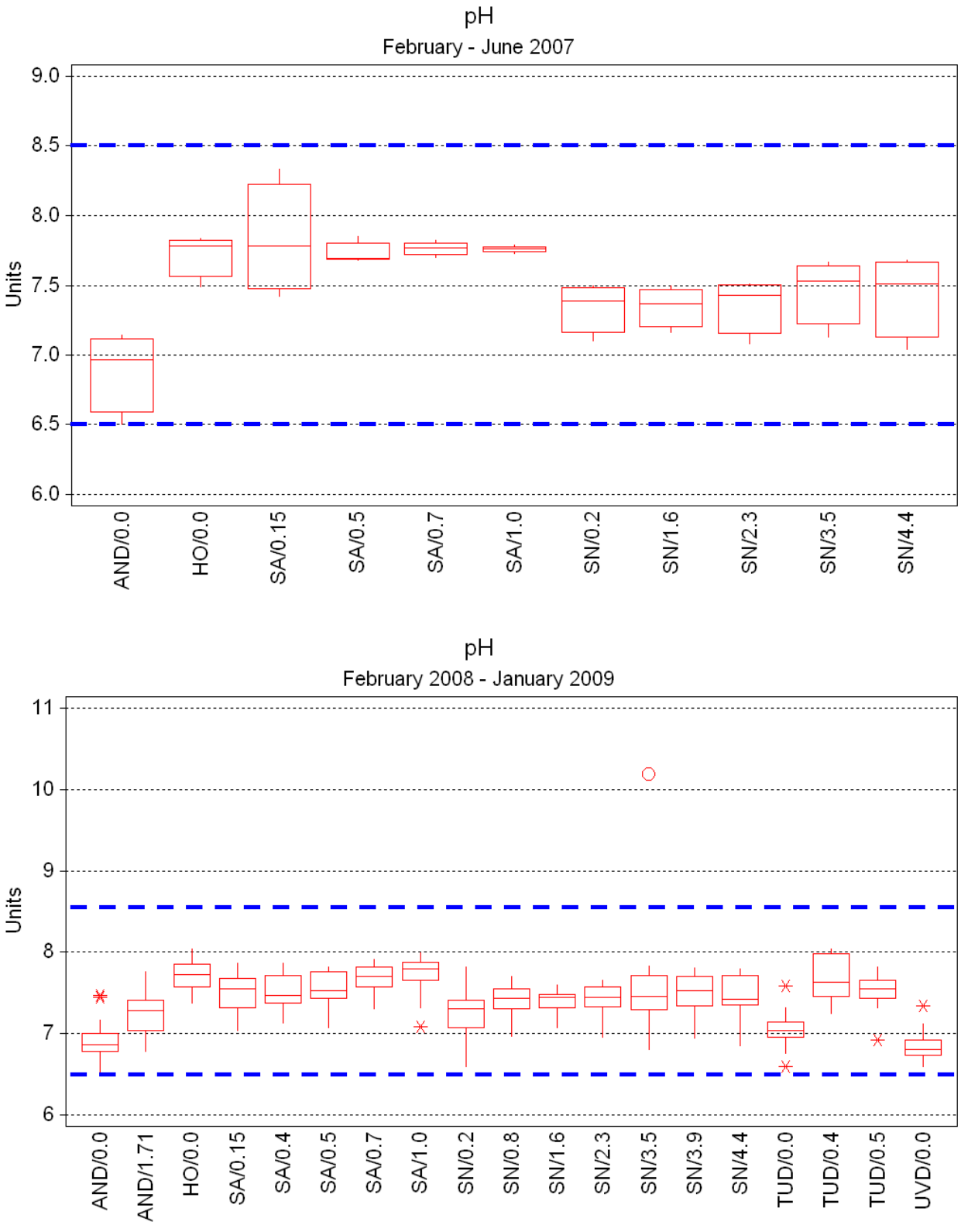

Figure 40. pH measured monthly from February 2007 to June 2007 (top) and twice each month from February 2008 to January 2009 (bottom) in the Salmon-Snow watersheds. The state standard requires that pH be between 6.5 and 8.5 units. For an explanation of the "box and whiskers," see page 19.

Conductivity

Conductivity ranged between 50 μmho/cm and 375 μmho/cm for all the stations monitored on Salmon Creek, Snow Creek, and their tributaries. Median conductivity measurements at Salmon Creek stations (200 μmho/cm) were about twice those for Snow Creek stations (100 μmho/cm) (Figure 41). Conductivity for the two ditches was similar to that of Salmon Creek. Andrews Creek's conductivity was a little lower than Snow Creek's.

Relative Fish Abundance

Figure 42 compares the relative abundance of juvenile coho salmon in Salmon Creek's new channel to that of the control reach. Except for the first three seasons or 9 months after water started flowing in the new channel, relative coho abundance was generally as good as or better in the new channel than it was in the control reach.

See Appendix D for other "relative fish abundance" results.

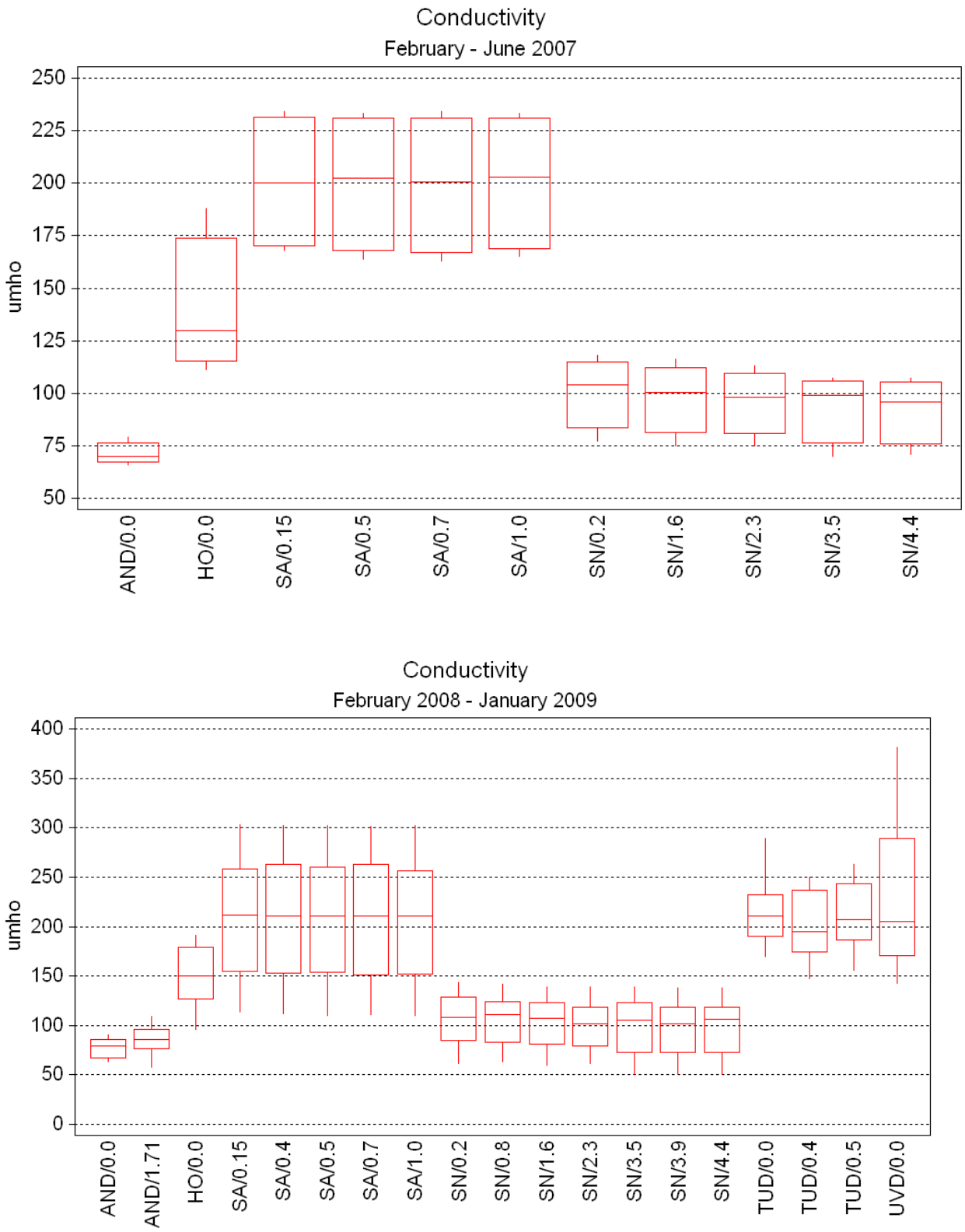

Figure 41. Conductivity measured monthly from February 2007 to June 2007 (top) and twice each month from February 2008 to January 2009 (bottom) in the Salmon-Snow watersheds. For an explanation of the "box and whiskers," see page 19.

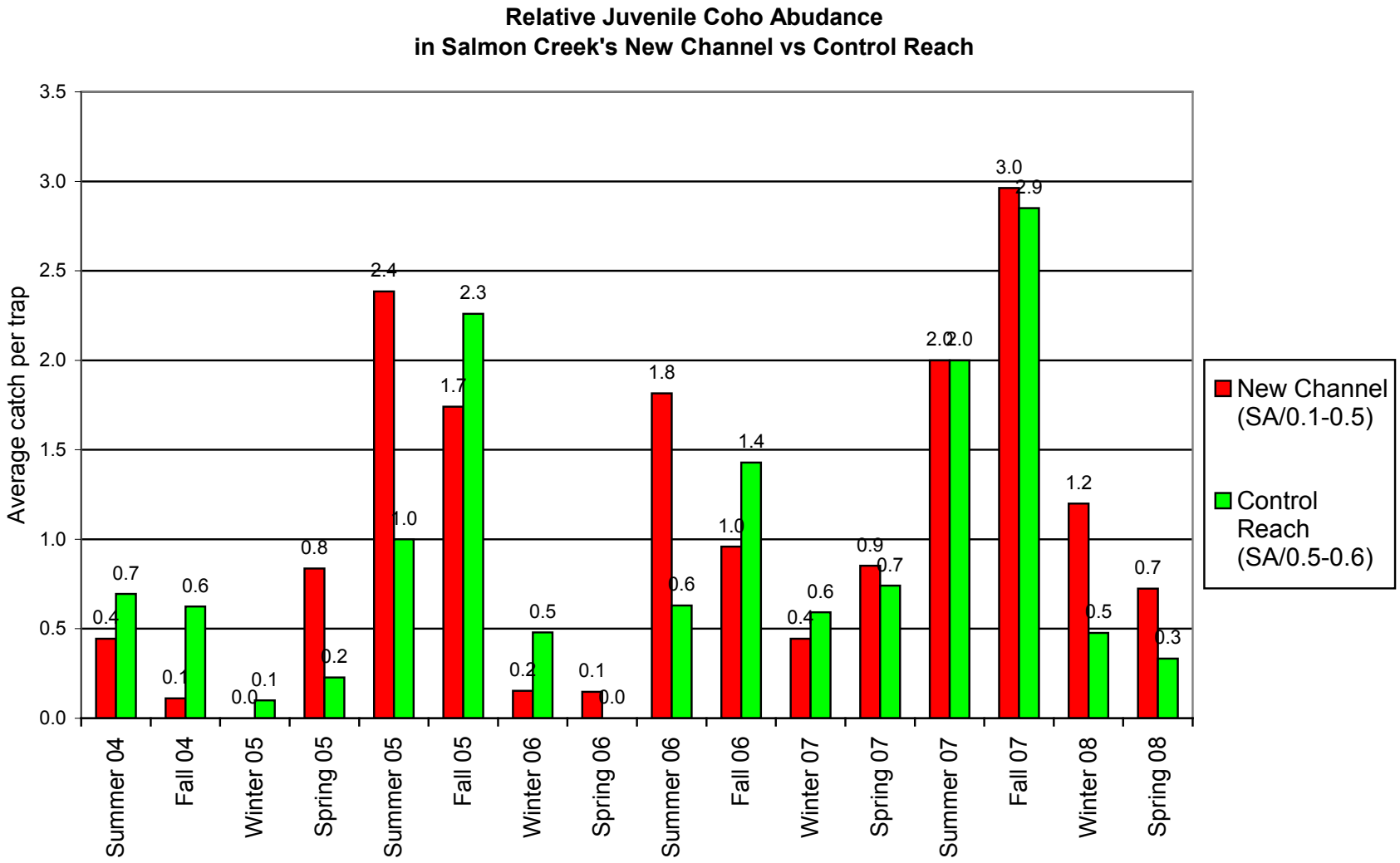

Figure 42. Relative juvenile coho abundance by season in Salmon Creek's new channel compared to the upstream control reach. Water began flowing in the new channel on June 23, 2004

Temperature

For Tarboo Creek, Donovan Creek, and Jakeway Creek, the standard is composed of the single temperature level of 16^{o}C. In 2008 the upstream stations on all three streams passed the standard, whereas the downstream stations failed. Temperature graphs are shown in Appendix C.

Relative Fish Abundance

Relative Fish Abundance is shown in Appendix D.

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PROJECT SUMMARIES AND PICTURES

May 11, 2009

Chimacum Creek
CH/7.5-7.8

Watershed: Chimacum

Waterbody: Chimacum Creek

Station: CH/7.5-7.8

BMP's: Aquatic vegetation removal, LWD placement, riparian fencing, livestock crossing reconstruction, solar powered stock watering trough.

Date installed: 2006, vegetation removal, fencing, crossing reconstruction; 2007, planting; summer 2008, solar powered water trough completed; 2009, replanting.

Installed by: Jefferson County Conservation District, Farm Service Agency, National Fish and Wildlife Foundation

Assisted by: WA Conservation Commission (tree planting)

Problem(s): This channelized stream reach lacked fish habitat including channel diversity/structure and LWD. Lack of riparian cover caused stream temperature to be high. The stream channel was choked with canary grass and bittersweet. Decaying vegetation caused dissolved oxygen to be low.

Solutions: LWD was installed and aquatic vegetation was removed in the summer of 2006. A livestock crossing was rebuilt and 3,600 feet of riparian fencing was installed. Additionally, 3.9 acres were enrolled in the CREP program. In the spring of 2007, a 1,670-ft. buffer with an average width of 50 ft. was planted with 1,875 trees and shrubs. A stock watering trough and heavy use area were installed in September 2008 completing the project.

In spring 2007, a 50-ft. wide riparian buffer was planted with 1,875 trees and shrubs.

In spring 2009, portions of the site were replanted due to heavy mortality.

CREP Overview

In the summer of 2006, aquatic vegetation was removed from the stream channel, LWD was added to the channel, 3600 feet of riparian fencing were installed, and a livestock bridge was rebuilt. A stock watering trough and a heavy use area were installed in the fall of 2008 completing the project.

Chimacum Creek - Private property **CH/7.5-7.8** **Fall 2006/Spring**

May, 11 2009

Chimacum Creek
CH/7.8-8.0

Watershed: Chimacum

Waterbody: Chimacum Creek

Station: CH/7.8-8.0

BMP's: Aquatic vegetation removal, LWD placement, riparian fencing, livestock crossing reconstruction, stock watering trough

Date installed: 2006, vegetation removal, fencing, crossing reconstruction; 2007, planting; 2008, water trough completed; 2009, replanting,

Installed by: Jefferson County Conservation District, Farm Service Agency, National Fish and Wildlife Foundation

Assisted by: WA Conservation Commission (tree planting)

Problem(s): This channelized stream reach lacked fish habitat including channel diversity/structure and LWD. Lack of riparian cover caused high stream temperature. The stream channel was choked with canary grass and bittersweet. Decaying vegetation caused dissolved oxygen to be low.

Solutions: LWD was installed and aquatic vegetation was removed in the summer of 2006. A livestock crossing was rebuilt and 2,900 feet of riparian fencing was installed. Additionally, 2.9 acres were enrolled in the CREP program. In the spring of 2007, a 1,275-ft. buffer with an average width of 50 ft. was planted with 1,450 trees and shrubs. A stock watering trough and heavy use area was installed in September 2008 completing the project installation.

In spring 2007, a 50-ft. wide riparian buffer was planted with 1,450 trees and shrubs.

Seedlings competing with canary grass in summer 2007.

CREP

In summer 2006, aquatic vegetation was removed from the stream channel, LWD was added to the channel, 2,900 feet of riparian fencing was installed, and a livestock bridge was rebuilt. A stock watering trough and a heavy use area was installed in the fall of 2008 completing the project

Chimacum Creek—Private property 2009

CH/7.8-8.0

Fall 2006/Spring

April 27, 2009

East Chimacum Creek
ECH/3.40-3.46

Watershed: Chimacum

Waterbody: East Chimacum Creek

Station: ECH/3.40-3.46

BMP's: Aquatic Vegetation removal, riparian buffer installation.

Date installed: 2007 Vegetation removal and planting site prep. Spring 2008 restoration planting.

Installed by: Jefferson County Conservation District, Farm Service Agency.

Assisted by: WA Conservation Commission (tree planting)

Problem(s): This channelized stream reach lacked fish habitat including channel diversity/structure and LWD. Lack of riparian cover caused high stream temperature. The stream channel was choked with canary grass and bittersweet. Decaying vegetation caused dissolved oxygen to be low.

Solutions: Vegetation was removed in the summer of 2007. Additionally, 2.0 acres were enrolled in the CREP program. In the spring of 2008 a 2.0 acre 300 -ft. buffer with an average width of 150 ft. was planted with 1,000 native trees and shrubs.

CREP planting along both sides of East Chimacum Creek. This projectconsists of 2 acres, 300 feet of buffer on both sides of the creek, and was planted with 1000

Clockwise from upper left: Heavy canary grass competition prior to site prep.
Sitka spruce and red alder seedlings after one growing season.
Stream location and planted seedlings.
Mowed and sprayed planting rows at time of planting.
Center: Site overview.

East Chimacum Creek - Private property **ECH/ 3.40-3.46** **Spring 2008**

June 2009

Swansonville Creek
Hannan Culvert Removal
SW/0.6

Watershed: Chimacum

Waterbody: Swansonville Creek

Station: SW/0.6

BMP's: Undersized culvert removal, stream reconstruction, wetland fill removal.

Date installed: August 2008

Installed by: Jefferson Co. Conservation District

Problem(s): .Undersized culvert in old road fill was completely blocked and prevented fish passage.

Solutions: Removed culvert and wetland fill; reconstructed stream channel. Design and construction funding was provided by DNR Family Forest Fish Passage Program. Technical assistance and project management funding was provided by the Washington Conservation Commission.

Hannan Culvert Removal Project, Swansonville Cr., FFFPP 06-1685
Stream flowing under road fill. Culvert (undersized) has flow in high water.
3 additional plugged culverts removed during project.
At junction SR19 and Swansonville Rd—SE of intersection
NW 1/4, S6, T28N, R1E, Jefferson County


After Culvert and road fill removal

Swansonville Creek **SW/0.6** **August 2008**

June 2009

Salmon Creek
Livestock Bridge
SA/0.7

Watershed: Salmon Creek

Waterbody: Discovery Bay

Station: SA/0.7

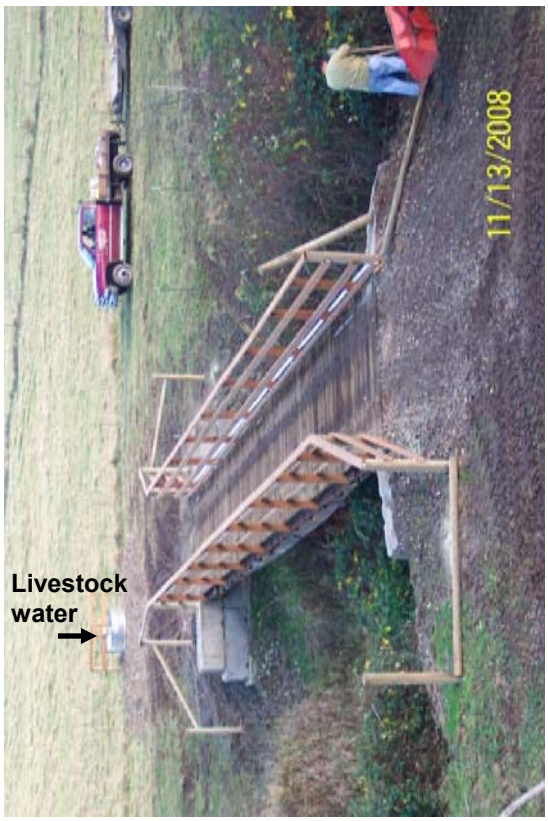
BMP's: Livestock bridge, fencing, livestock water system

Date installed: August 2008

Installed by: Jefferson Co. Conservation District

Problem(s): .Livestock had access to 800 feet of salmon spawning/rearing habitat, thereby impacting water quality.

Solutions: Constructed a bridge for livestock to cross instead of walking across the creek. Constructed a livestock drinking water facility. Installed 614 feet of fence to fence off stream crossing and replace failing fence. Planning, design, and construction funding came from SRFB; technical assistance funding came from the Washington Conservation Commission.



Salmon Cr. Livestock Bridge

Livestock had access to 800 feet of Salmon Creek for crossing. Jefferson Co. Conservation District worked with the landowner to obtain funding for a flatcar bridge crossing, fencing and water system. Funding from Salmon Recovery Funding Board, Conservation Commission and Dept. of Ecology.
Project Management: Jefferson Co. Conservation District

April 29, 2009

Salmon Creek
SRFB Riparian Restoration
SA/0.8-0.9

Watershed: Discovery Bay

Waterbody: Salmon Creek

Station: SA/0.8-0.9

BMP's: Black berry removal and tree planting to restore and enhance stream buffer.

Date installed: Spring 2009

Installed by: Jefferson County Conservation District

Assisted by: SRFB funding.

Problem(s): This portion of stream reach had dense black berry brush along the bank and very few trees on one side of the stream.

Solutions: Establish a new riparian buffer by removing the black berry brush and planting the site with conifers, hardwoods, and native brush species. 350 trees and shrubs were planted on 0.7 acres along one side of Salmon Creek.

SRFB funded restoration project. This project consisted of planting 0.7 acres with 350 native trees and shrubs. The buffer is 300 feet long on the inside bend of Salmon Creek. and averages 100 feet wide.

Upper Right: Planted seedlings along Salmon Creek. Prior to planting, this area was dense blackberry brush, which was mulched before planting. Upper Left: site prep sprayed planting spots prior to planting. Lower Left: Pasture prior to planting. Inset: overview map.

Salmon Creek -Private property **SA/0.8-0.9** **Spring 2009**

May 8, 2009

Snow Creek
SN/0.5-1.0

Watershed: Discovery Bay

Waterbody: Snow Creek

Station: SN/0.5-1.0

BMP's: Riparian fencing, solar powered stock watering trough. Establishment of riparian buffer.

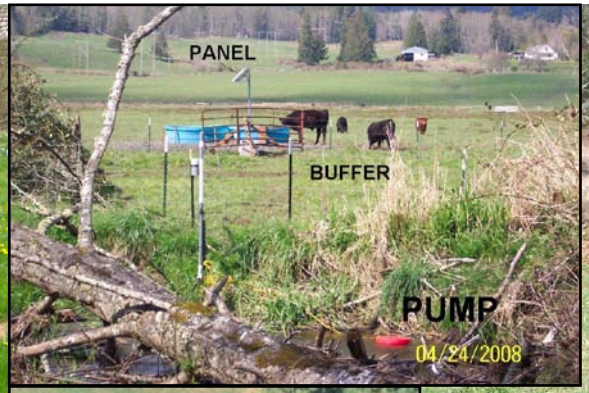
Date installed: 2008, fencing, water trough; 2009, spring site preparation and riparian planting.

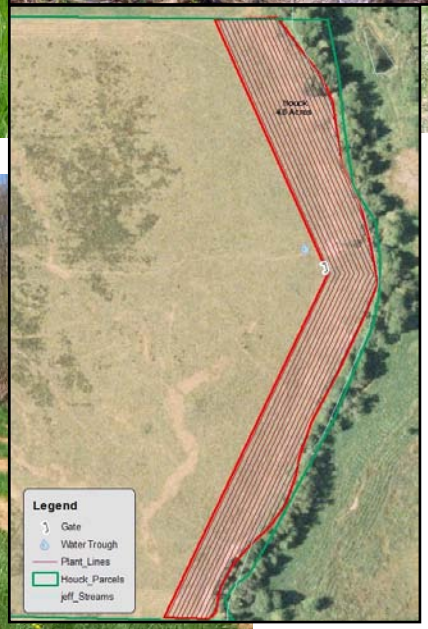
Installed by: Jefferson County Conservation District.

Assisted by: Salmon Recovery Funding Board.

Problem(s): The stream channel lacked riparian cover. Live stock had access to stream channel. Water temperatures exceeded the state standard.

Solutions: Riparian fencing and a solar powered water trough were installed. In the spring of 2009 a 4.8 acre riparian buffer, averaging 160 feet wide, was planted with 2125 native trees and shrubs.





SRFB funded restoration project.
This project consisted of installing a Solar powered livestock watering facility, fencing the buffer to exclude livestock from the restoration area, and planting 4.8 acres with 2125 native trees and shrubs. This buffer is 1600 feet long and averages 160 feet wide.

Upper left: Planted seedlings along Snow Creek. Upper Right: Blackberry brush mulched along stream prior to planting. Lower Left: Site prep sprayed planting rows. Upper Inset: Installed livestock watering facility. Lower Inset: overview map.

Snow Creek-Private property **SN/0.5-1.0** **Spring 2009**

June 2009

Snow Creek
Fencing & Solar Pump System
SN/1.0

Watershed: Snow Cr.

Waterbody: Snow Cr.

Station: SN 1.0

BMP's: Stream fencing and solar water system.

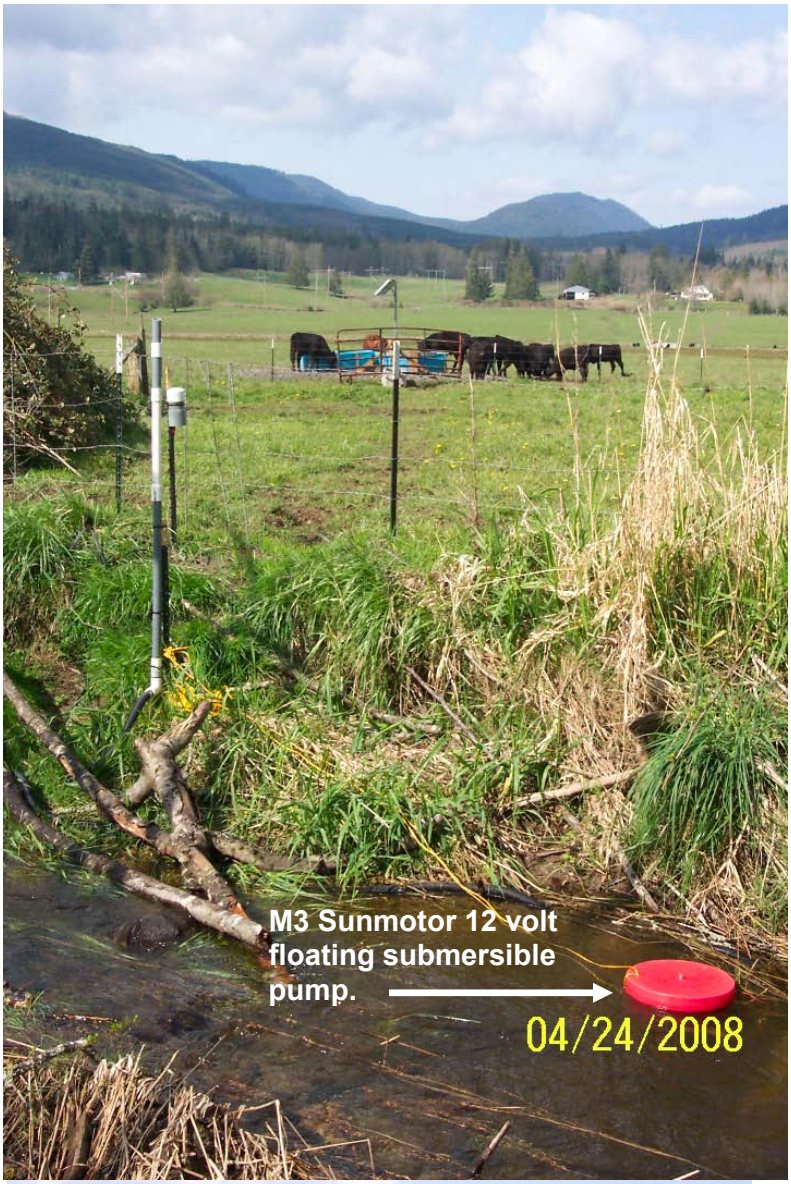
Date installed: Sept. 2007

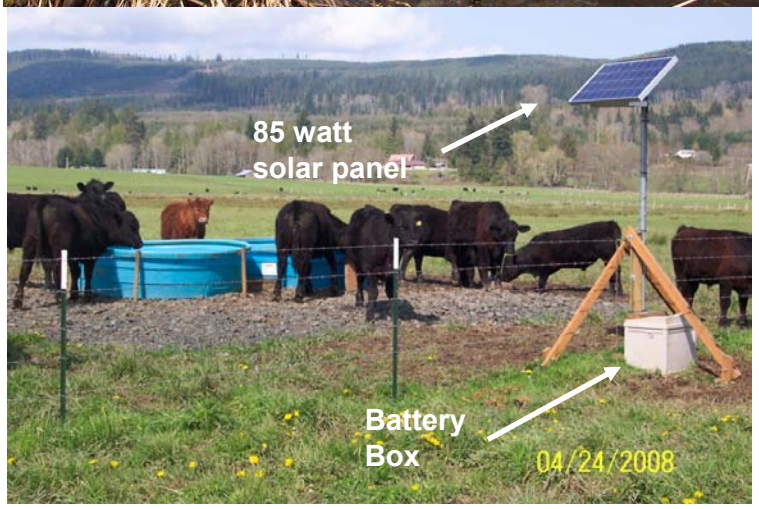
Installed by: Jefferson Co. Conservation District

Assisted by: Centennial Clean Water Fund, Salmon Recovery Funding Board, Jefferson Land trust, and Conservation Commission contributed funding.

Problems: Livestock had access to Snow Creek at a drinking place and to unfenced ditches.

Solutions: Fenced a 150' riparian buffer on Snow Creek as well as ditches ditches for a total of 3,048' of fence). Constructed a solar powered livestock drinking water system, and constructed two stream crossings.





SOLAR POWERED PUMP
Snow Cr., Jefferson Co. WA

Livestock were fenced out of Snow Cr. on this farm several years ago. One gap was left in the fence so livestock could access the creek for drinking water—they also drank from unfenced ditches which flowed into another stream. Additional ditch and stream fencing to protect water quality and salmon habitat depended on development of a reliable alternative system to provide drinking water for the livestock. Jefferson Co. Conservation District set up a solar powered pumping demonstration using an M3 floating pump system and it successfully supplied enough water for 150 beef cattle for two summers. In 2007 a conservation easement was purchased for a 100'-150' creek buffer, the ditches were fenced, and a permanent solar powered pump installation was completed.

Funding for easement, fencing and water system provided by Jefferson Land Trust, WA Salmon Recovery Funding Board, WA Dept. of Ecology through the WRIA 17 Planning Unit. Jefferson Co. Conservation District provided project planning and management using funding from the Washington State Conservation Commission.

Snow Creek **SN/1.0** **September 2007**

April 27, 2009

Snow Creek
SN/1.0-1.2

Watershed: Discovery Bay

Waterbody: Snow Creek

Station: SN/1.0-1.2

BMP's: Aquatic Vegetation removal, riparian fencing, riparian buffer installation.

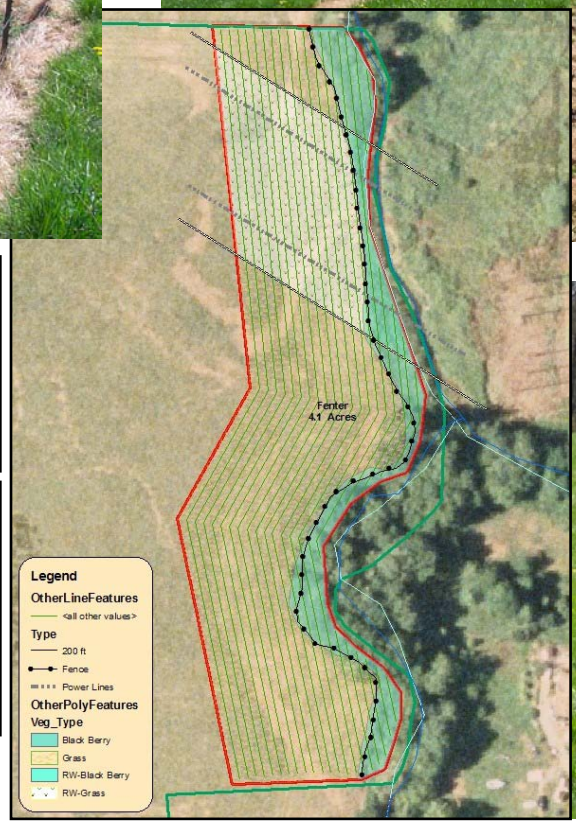
Date installed: Fencing 2008; Site Prep 2009; Planting Spring 2009.

Installed by: Jefferson County Conservation District.

Assisted by: Salmon Recovery Funding Board

Problem(s): The stream channel lacked riparian cover. Live stock had access to stream channel. Water temperatures exceeded the state standard.

Solutions: Riparian fencing was installed. In the spring of 2009 a 4.1 acre riparian buffer, averaging 160 feet wide, was planted with 1950 native trees and shrubs.



SRFB funded riparian restoration project completed by JCCD. This project consisted of establishing a 4.1 acre buffer along 1068 feet of one side of Snow Creek with an average width of 160 feet. The site was planted with 1950 native trees and shrubs.

Upper left: Blackberry brush adjacent to channel was removed before planting. Upper Right: Site prep. spraying in rows completed before trees planted. A 200 foot utility right-of-way on the site required planting brush species only in this area. Lower Right: The site was fenced to exclude live stock from the stream. Inset: Site overview.

Snow Creek—Private property **SN/1.0-1.2** **Spring 2009**

June 2009

Mystery Bay Culvert Project
Mystery Bay

Watershed: Mystery Bay

Waterbody: Mystery Bay

Station: South end of bay

BMP's: Replaced undersized 12" culvert in driveway fill with 5'x7' box culvert .

Date installed: August 2008

Installed by: Jefferson Co. Conservation District

Problem(s): Undersized culvert under driveway fill across south end of Mystery Bay restricted tidal flow and access for marine organisms.

Solutions: Replace 12" culvert with 5' x 7' concrete box culvert.

12” culvert

Mystery Bay Culvert Project Summer 2008

Mystery Bay Culvert Replacement Project

A 12” culvert clogged with barnacles was restricting tidal flows into the salt marsh at the south end of Mystery Bay (Jefferson Co. WA). The culvert was replaced by a concrete utility vault with a 6’ by 5’ opening. This allows full tidal flow as well as improved access for marine life to the salt marsh and mud flats.

Project Management: Jefferson Co. Conservation District

Project Funding:

- Landowners
- WA Dept. of Fish & Wildlife *Landowner Incentive Program*
- WA Conservation Comm. *Professional Engineering & Puget Sound Grants.*

May 5, 2005

Little Quilcene River
HCSEG Project
LQ/0.2-0.5

Watershed: Quilcene Bay

Waterbody: Little Quilcene River

Station: LQ/0.2-0.5

BMP's: Channel restoration, remeandering, tree planting, and LWD placement.

Date installed: In 2008, channel relocation and LWD placement was completed. In the fall of 2008, 4.3 acres were prepared for planting and 1800 native trees and shrubs were planted on both sides of the 1660 foot length of the new stream reach.

Installed by: Hood Canal Salmon Enhancement Group

Assisted by: National Resource Conservation Service and Jefferson County Conservation District.

Problem(s): The old channelized stream reach lacked fish habitat including channel diversity/structure and LWD. Additionally, this area was prone to winter flooding as the stream went over its banks and flooded adjacent properties and across the county road.

Solutions: A new remeandered channel was constructed in 2008. LWD was installed as well as other improvements. Finally, the JCCD was involved by providing site preparations and establishment of the riparian buffer.

Little Quilcene River stream relocation project by: HCSEG.
Site restoration completed by: JCCD.

Upper left: Site prep using a VH Mulcher, due to extreme soil compaction during construction phase. Upper right: Quilcene 4H-Kids assisting by planting some trees on the site. Lower right: Completed planting with 1800 native trees and shrubs. All seedlings were fertilized and a portion of the site mulched with hardwood chips.

This planting restoration site consisted of 4.3 acres (excluding the stream) and 1660 lineal feet on both sides of the stream.

Little Quilcene River - County and Private Property LQ/0.2-0.5 Fall 2008

Appendix A -- QUALITY CONTROL

Field replicates of those parameters measured with the YSI Model 556 water analyzer (temperature, conductivity, pH, and dissolved oxygen) were taken at the sampling sites. Two sets of measurements were taken within a few minutes of one another. Replicate water samples, collected in separate bottles within a few minutes of one another, were taken for fecal coliform, turbidity, and nitrate-nitrogen. A lab replicate for nitrate-nitrogen replicate was collected at the time of analysis at the JCCD lab, frozen, and sent to the University of Washington for analysis. In the Discovery Bay watershed the fecal coliform replicate was collected in a 250 mL bottle and was split at the Twiss lab for duplicate analyses.

Replicate measurements provide an estimate of the random variability (precision) in the results due to the instrument and its operator. The analysis of replicate samples provides an estimate of the variability due to sampling and analysis. The results for different parameters will exhibit different levels of variability due to the nature of the measurement, sampling and/or analytical process. The variability in the fecal coliform counts exhibits a log normal distribution.

The standard deviation is an estimate of the absolute variability of the results and usually increases with the magnitude of the results. Precision is reported as the *relative standard deviation* (RSD). The RSD is usually inversely proportional to the magnitude of the results. Because the RSD is often small, it is multiplied by 100 to express it as a percent.

The **RSD** (in percent) is given by:

$$\textbf{RSD (\%)} = (s / x) \textbf{ X } 100$$

where **s** is the estimate of the standard deviation of the individual results; and **x** is the mean of the replicate results (Zar 1984[1]).

Quality control results of field replicate samples for the Discovery Bay watershed are shown in Tables A-1 and A-2; for the Chimacum watershed monitored by JCCD and JCPH in Tables A-3 and A-4; and for the Chimacum watershed monitored by the Chimacum School Hydrology Class in Table A-5. Lab replicate analyses for nitrate-nitrogen analyzed at the JCCD lab and the University of Washington lab are shown in Table A-6.

Replicate measurements generally showed acceptable precision, especially concerning absolute differences between the two replicates. As is usual, RSDs were highest when values were lowest and near detectable limits.

As is typical, fecal coliform replicates showed the greatest variation. Although much of this variation could simply be due to the uneven distribution of the bacteria in the stream

Table A-1. Quality control results of stations monitored in the Discovery Bay watershed showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) sampled for temperature, conductivity, dissolved oxygen, pH, turbidity, and nitrate-nitrogen. Minimum, maximum, and mean ADs and RSDs are also shown.

Station	Date	Temperature				Conductivity				Dissolved Oxygen				pH				Turbidity				NO3-N			
		R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD
		°C	°C	°C	%	umho	umho	umho	%	mg/L	mg/L	mg/L	%	units	units	units	%	NTU	NTU	NTU	%	mg/L	mg/L	mg/L	%
TUD/0.0	2/11/2008	5.45	5.44	0.01	0.1	170	170	0	0.0	10.24	10.36	0.12	0.82					3.8	4.0	0.2	3.6	0.83	0.83	0.00	0.0
TUD/0.4	2/11/2008	6.33	6.31	0.02	0.2	148	147	1	0.5	12.36	12.28	0.08	0.46					3.8	3.5	0.3	5.8	1.30	1.30	0.00	0.0
SN/1.6	2/27/2008	5.96	5.93	0.03	0.4	83	84	1	0.8	12.16	12.12	0.04	0.23					2.4	2.7	0.3	8.3	0.38	0.39	0.01	1.8
SN/2.3	2/27/2008	6.16	6.14	0.02	0.2	81	82	1	0.9	12.14	12.12	0.02	0.12					3.0	2.1	0.9	25.0	0.36	0.37	0.01	1.9
TUD/0.4	3/19/2008	7.04	6.96	0.08	0.8	174	175	1	0.4	11.90	11.97	0.07	0.41					1.9	1.8	0.1	3.8	0.40	0.42	0.02	3.4
UVD/0.0	3/19/2008																	14.3	13.6	0.7	3.5	0.28	0.26	0.02	5.2
TUD/0.0	4/2/2008	4.41	4.31	0.10	1.6	185	183	2	0.8	11.66	11.65	0.01	0.06					2.3	1.8	0.5	17.2	0.43	0.43	0.00	0.0
TUD/0.4	4/2/2008	6.23	6.25	0.02	0.2	152	154	2	0.9	11.90	11.94	0.04	0.24					2.5	3.2	0.7	17.4	0.79	0.84	0.05	4.3
TUD/0.0	4/15/2008	5.82	5.82	0.00	0.0	181	181	0	0.0	11.74	11.74	0.00	0.00	7.08	7.08	0.00	0.0	2.0	2.6	0.6	18.4	0.43	0.43	0.00	0.0
TUD/0.4	4/15/2008	6.99	6.98	0.01	0.1	152	150	2	0.9	12.44	12.35	0.09	0.51	7.84	7.87	0.03	0.3	3.0	3.0	0.0	0.0	0.80	0.85	0.05	4.3
TUD/0.4	4/30/2008	8.74	8.74	0.00	0.0	170	169	1	0.4	11.93	11.87	0.06	0.36	7.98	7.99	0.01	0.1	2.4	2.6	0.2	5.7	0.71	0.78	0.07	6.6
UVD/0.0	4/30/2008	7.33	7.31	0.02	0.2	170	170	0	0.0	12.11	12.09	0.02	0.12	6.77	6.78	0.01	0.1	8.2	8.1	0.1	0.9	0.06	0.06	0.00	0.0
TUD/0.4	5/13/2008	8.52	8.51	0.01	0.1	185	189	4	1.5	11.84	11.79	0.05	0.30	7.94	7.99	0.05	0.4	1.8	1.6	0.2	8.3	0.20	0.23	0.03	9.9
UVD/0.0	5/13/2008	8.83	8.82	0.01	0.1	210	207	3	1.0	7.56	7.57	0.01	0.09	6.54	6.59	0.05	0.5	5.3	5.4	0.1	1.3	0.01	0.01	0.00	0.0
TUD/0.4	5/20/2008	11.01	11.02	0.01	0.1	201	201	0	0.0	10.54	10.47	0.07	0.47	7.91	7.83	0.08	0.7	1.9	1.6	0.3	12.1	0.09	0.12	0.03	20.2
UVD/0.0	5/20/2008	12.22	12.22	0.00	0.0	247	246	1	0.3	3.95	3.95	0.00	0.00	6.62	6.63	0.01	0.1	4.8	4.9	0.1	1.5	0.02	0.03	0.01	28.3
SN/0.2	6/5/2008	9.82	9.82	0.00	0.0					11.53	12.16	0.63	3.76	6.91	7.44	0.53	5.2	5.5	5.4	0.1	1.3	0.07	0.09	0.02	17.6
TUD/0.0	6/5/2008	9.96	9.95	0.01	0.1					7.64	7.77	0.13	1.19	7.03	7.04	0.01	0.1	2.9	3.5	0.6	13.3	0.05	0.03	0.02	40.8
AND/1.71	6/19/2008																	3.8	3.3	0.5	10.0	0.05	0.05	0.00	5.9
SN/0.2	6/19/2008	10.55	10.54	0.01	0.1	83	83	0	0.0	10.56	10.60	0.04	0.27	6.84	6.94	0.10	1.0	8.8	9.0	0.2	1.6	0.02	0.03	0.01	28.3
SN/0.2	7/2/2008	14.75	14.73	0.02	0.1	106	106	0	0.0	9.47	9.46	0.01	0.07	7.37	7.39	0.02	0.2	2.2	2.2	0.0	0.0	0.09	0.12	0.03	20.2
TUD/0.4	7/2/2008	16.84	16.81	0.03	0.1	238	237	1	0.3	9.58	9.61	0.03	0.22	8.00	8.01	0.01	0.1	1.7	1.6	0.1	4.3	0.06	0.05	0.01	12.9
SN/1.6	7/15/2008	13.91	13.89	0.02	0.1	120	120	0	0.0					7.40	7.45	0.05	0.5	1.1	1.2	0.1	6.1	0.13	0.25	0.12	44.7
SN/2.3	7/15/2008	14.06	14.05	0.01	0.1	117	119	2	1.2					7.41	7.46	0.05	0.5	1.1	1.1	0.0	0.0	0.14	0.17	0.03	13.7
SA/0.15	7/29/2008	12.05	12.02	0.03	0.2	257	260	3	0.8	10.32	10.28	0.04	0.27	7.71	7.70	0.01	0.1	1.8	1.4	0.4	17.7	0.01	0.03	0.02	70.7
SN/0.2	7/29/2008	13.21	13.21	0.00	0.0	129	130	1	0.5	9.73	9.69	0.04	0.29	7.25	7.26	0.01	0.1	1.4	1.4	0.0	0.0	0.01	0.01	0.00	0.0
SA/0.15	8/12/2008	13.34	13.30	0.04	0.2	266	268	2	0.5	10.17	10.02	0.15	1.05	7.78	7.82	0.04	0.4	1.5	1.5	0.0	0.0	0.04	0.23	0.19	96.0
SN/0.2	8/12/2008	13.63	13.62	0.01	0.1	134	133	1	0.5	9.70	9.75	0.05	0.36	7.56	7.52	0.04	0.4	1.5	1.4	0.1	4.9	0.03	0.04	0.01	30.0
SA/0.15	8/26/2008	12.22	12.21	0.01	0.1	262	256	6	1.6	10.51	10.57	0.06	0.40	7.83	7.83	0.00	0.0	2.1	1.9	0.2	7.1	0.07	0.09	0.02	19.7

Table A-1. Quality control results of stations monitored in the Discovery Bay watershed showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) sampled for temperature, conductivity, dissolved oxygen, pH, turbidity, and nitrate-nitrogen. Minimum, maximum, and mean ADs and RSDs are also shown.

Station	Date	Temperature				Conductivity				Dissolved Oxygen				pH				Turbidity				NO3-N			
		R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD
		°C	°C	°C	%	umho	umho	umho	%	mg/L	mg/L	mg/L	%	units	units	units	%	NTU	NTU	NTU	%	mg/L	mg/L	mg/L	%
SN/0.2	8/26/2008	12.44	12.42	0.02	0.1	122	122	0	0.0	10.29	10.09	0.20	1.39	7.21	7.39	0.18	1.7	2.5	2.8	0.3	8.0	0.06	0.07	0.01	14.5
SA/0.15	9/10/2008	12.05	11.99	0.06	0.4	303	303	0	0.0	10.03	9.94	0.09	0.64	7.64	7.69	0.05	0.5	2.7	2.9	0.2	5.1	0.09	0.13	0.05	29.6
SN/0.2	9/10/2008	12.34	12.33	0.01	0.1	144	144	0	0.0	9.81	9.84	0.03	0.22	7.34	7.35	0.01	0.1	2.7	2.7	0.0	0.0	0.03	0.05	0.02	35.4
SA/0.5	9/23/2008	10.04	10.03	0.01	0.1	297	298	1	0.2	9.76	9.80	0.04	0.29	7.57	7.69	0.12	1.1	4.5	4.8	0.3	4.6	0.15	0.15	0.00	1.4
SA/0.7	9/23/2008	9.74	9.75	0.01	0.1	295	296	1	0.2	10.92	10.91	0.01	0.06	7.76	7.76	0.00	0.0	1.6	1.5	0.1	4.6	0.09	0.08	0.01	5.1
SA/0.15	10/7/2008	10.82	10.78	0.04	0.3	278	278	0	0.0	9.71	9.71	0.00	0.00	7.49	7.55	0.06	0.6	1.3	1.8	0.5	22.8	0.17	0.20	0.03	10.6
SN/0.2	10/7/2008	11.34	11.34	0.00	0.0	126	127	1	0.6	10.09	10.06	0.03	0.21	7.08	7.22	0.14	1.4	1.8	1.6	0.2	8.3	0.01	0.01	0.00	0.0
SA/0.15	10/21/2008	6.32	6.30	0.02	0.2	273	284	11	2.8	11.28	11.31	0.03	0.19	7.54	7.57	0.03	0.3	0.7	0.8	0.1	9.4	0.27	0.26	0.01	2.7
SN/0.2	10/21/2008	6.71	6.71	0.00	0.0	130	137	7	3.7	11.41	11.41	0.00	0.00	7.36	7.39	0.03	0.3	1.3	1.5	0.2	10.1	0.01	0.01	0.00	0.0
SA/0.15	11/4/2008	7.81	7.79	0.02	0.2	211	212	1	0.3	10.95	10.90	0.05	0.32	7.10	7.04	0.06	0.6	8.9	9.5	0.6	4.6	1.08	1.16	0.08	5.1
SA/0.7	11/4/2008	7.81	7.80	0.01	0.1	210	213	3	1.0	10.95	11.38	0.43	2.72	7.39	7.56	0.17	1.6	7.2	7.8	0.6	5.7	1.16	1.25	0.09	5.3
SA/0.7	11/18/2008	8.13	8.12	0.01	0.1	238	239	1	0.3	11.29	11.27	0.02	0.13	7.54	7.53	0.01	0.1	0.7	0.8	0.1	9.4	0.54	0.56	0.02	3.1
SN/0.2	11/18/2008	8.60	8.60	0.00	0.0	104	110	6	4.0	10.85	10.89	0.04	0.26	7.25	7.22	0.03	0.3	1.6	2.1	0.5	19.1	0.15	0.15	0.00	1.9
SA/0.15	12/2/2008	7.79	7.78	0.01	0.1	243	245	2	0.6	11.14	11.12	0.02	0.13	7.29	7.21	0.08	0.8	1.6	1.8	0.2	8.3	0.20	0.18	0.02	7.4
SN/0.2	12/2/2008	8.06	8.05	0.01	0.1	122	120	2	1.2	11.11	11.15	0.04	0.25	6.91	6.81	0.10	1.0	1.6	1.9	0.3	12.1	0.01	0.01	0.00	0.0
SA/0.15	12/16/2008	0.18	0.17	0.01	4.0	247	250	3	0.9	13.53	13.54	0.01	0.05	7.66	7.65	0.01	0.1	1.6	1.6	0.0	0.0	0.46	0.46	0.01	0.8
TUD/0.4	12/16/2008	0.14	0.05	0.09	67.0	221	223	2	0.6	12.15	12.09	0.06	0.35	7.49	7.54	0.05	0.5	2.6	2.6	0.0	0.0	0.05	0.05	0.00	5.4
SA/0.15	1/6/2009	3.00	3.00	0.00	0.0	207	204	3	1.0	12.21	12.22	0.01	0.06	7.28	7.34	0.06	0.6	2.4	2.6	0.2	5.7	1.21	1.23	0.02	1.2
SN/0.2	1/6/2009	2.97	2.97	0.00	0.0	120	122	2	1.2	12.44	12.42	0.02	0.11	7.30	7.34	0.04	0.4	4.3	4.6	0.3	4.8	0.74	0.75	0.02	1.4
SN/0.2	1/20/2009	2.15	2.15	0.00	0.0	86	87	1	0.8	13.85	13.87	0.02	0.10	6.97	7.07	0.10	1.0	3.5	4.1	0.6	11.2	0.70	0.77	0.07	6.4
SN/0.8	1/20/2009	2.94	2.94	0.00	0.0	84	85	1	0.8	13.34	13.31	0.03	0.16	6.84	6.97	0.13	1.3	3.8	4.1	0.3	5.4	0.72	0.72	0.01	0.5
Minimum				0.00	0.0			0	0.0			0.00	0.00			0.00	0.0			0.0	0.0			0.00	0.0
Maximum				0.10	67.0			11	4.0			0.63	3.76			0.53	5.2			0.9	25.0			0.19	96.0
Mean				0.02	1.6			2	0.7			0.07	0.43			0.06	0.6			0.3	7.2			0.02	12.5

Table A-2. Quality control results of stations monitored in the Discovery Bay watershed showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) and lab replicates (R2 and R3) sampled for fecal coliform. Minimum, maximum, and mean ADs and RSDs are also shown.

Station	Date	Fecal Coliform								
					Field Rep Comparisons				Lab Rep Comparisons	
		R1	R2	R3	R1-R2 AD	R1-R2 RSD	R1-R3 AD	R1-R3 RSD	R2-R3 AD	R2-R3 RSD
		FC/100 mL	FC/100 mL	FC/100 mL	FC/100 mL	%	FC/100 mL	%	FC/100 mL	%
TUD/0.0	2/11/2008	4	2	6	2	47	2	28	4	71
TUD/0.4	2/11/2008	22	32	18	10	26	4	14	14	40
SN/1.6	2/27/2008	2	1	4	1	47	2	47	3	85
SN/2.3	2/27/2008	12	6	26	6	47	14	52	20	88
TUD/0.4	3/19/2008	2130	1890	1560	240	8	570	22	330	14
UVD/0.0	3/19/2008	32	20	36	12	33	4	8	16	40
TUD/0.0	4/2/2008	18	12	12	6	28	6	28	0	0
TUD/0.4	4/2/2008	96	70	118	26	22	22	15	48	36
TUD/0.0	4/15/2008	4	2	6	2	47	2	28	4	71
TUD/0.4	4/15/2008	18	18	12	0	0	6	28	6	28
TUD/0.4	4/30/2008	16	14	8	2	9	8	47	6	39
UVD/0.0	4/30/2008	138	164	160	26	12	22	10	4	2
TUD/0.4	5/13/2008	260	222	120	38	11	140	52	102	42
UVD/0.0	5/13/2008	284	138	94	146	49	190	71	44	27
TUD/0.4	5/20/2008	296	326	306	30	7	10	2	20	4
UVD/0.0	5/20/2008	46	334	266	288	107	220	100	68	16
SN/0.2	6/5/2008	108	126	133	18	11	25	15	7	4
TUD/0.0	6/5/2008	134	115	147	19	11	13	7	32	17
AND/1.71	6/19/2008	26	22	34	4	12	8	19	12	30
SN/0.2	6/19/2008	242	330	200	88	22	42	13	130	35
SN/0.2	7/2/2008	346	64	76	282	97	270	90	12	12
TUD/0.4	7/2/2008	3040	2760	2810	280	7	230	6	50	1
SN/1.6	7/15/2008	54	58	58	4	5	4	5	0	0
SN/2.3	7/15/2008	50	58	52	8	10	2	3	6	8
SA/0.15	7/29/2008	292	352		60	13				
SN/0.2	7/29/2008	248	292		44	12				
SA/0.15	8/12/2008	228	248	290	20	6	62	17	42	11

Table A-2. Quality control results of stations monitored in the Discovery Bay watershed showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) and lab replicates (R2 and R3) sampled for fecal coliform. Minimum, maximum, and mean ADs and RSDs are also shown.

Station	Date	Fecal Coliform								
					Field Rep Comparisons				Lab Rep Comparisons	
		R1	R2	R3	R1-R2 AD	R1-R2 RSD	R1-R3 AD	R1-R3 RSD	R2-R3 AD	R2-R3 RSD
		FC/100 mL	FC/100 mL	FC/100 mL	FC/100 mL	%	FC/100 mL	%	FC/100 mL	%
SN/0.2	8/12/2008	220	176	186	44	16	34	12	10	4
SA/0.15	8/26/2008	184	790	292	606	88	108	32	498	65
SN/0.2	8/26/2008	312	340	384	28	6	72	15	44	9
SA/0.15	9/10/2008	522	416	332	106	16	190	31	84	16
SN/0.2	9/10/2008	168	138	156	30	14	12	5	18	9
SA/0.5	9/23/2008	150	76	68	74	46	82	53	8	8
SA/0.7	9/23/2008	16	16	10	0	0	6	33	6	33
SA/0.15	10/7/2008	604	582	520	22	3	84	11	62	8
SN/0.2	10/7/2008	64	60	52	4	5	12	15	8	10
SA/0.15	10/21/2008	46	26	34	20	39	12	21	8	19
SN/0.2	10/21/2008	18	28	24	10	31	6	20	4	11
SA/0.15	11/4/2008	50	110	102	60	53	52	48	8	5
SA/0.7	11/4/2008	60	42	58	18	25	2	2	16	23
SA/0.7	11/18/2008	2	2	1	0	0	1	47	1	47
SN/0.2	11/18/2008	150	192	148	42	17	2	1	44	18
SA/0.15	12/2/2008	12	48	10	36	85	2	13	38	93
SN/0.2	12/2/2008	4	36	54	32	113	50	122	18	28
SA/0.15	12/16/2008	34	4	2	30	112	32	126	2	47
TUD/0.4	12/16/2008	170	126	120	44	21	50	24	6	3
SA/0.15	1/6/2009	22	18	20	4	14	2	7	2	7
SN/0.2	1/6/2009	10	22	16	12	53	6	33	6	22
SN/0.2	1/20/2009	2	8	8	6	85	6	85	0	0
SN/0.8	1/20/2009	2	12	12	10	101	10	101	0	0
Minimum					0	0	1	1	0	0
Maximum					606	113	570	126	498	93
Mean					58	33	56	33	39	25

Table A-3. Quality control results for stations monitored in the Chimacum watershed showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) sampled for temperature, conductivity, dissolved oxygen, and pH.

Station	DATE	Temperature				Conductivity				Dissolved Oxygen				pH			
		R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD
		°C	°C	°C	%	umho	umho	umho	%	mg/L	mg/L	mg/L	%	units	units	units	%
CH/1.1	10/18/2007	9.22	9.22	0.00	0.0	214	220	6	2.0	10.20	10.20	0.00	0.0				
CH/3.4	10/18/2007	9.60	9.60	0.00	0.0	201	202	1	0.4	6.84	6.78	0.06	0.6				
CH/5.3	10/18/2007	9.00	9.00	0.00	0.0	192	189	3	1.1	7.94	7.96	0.02	0.2				
CH/7.8	11/15/2007	7.58	7.57	0.01	0.1	181	189	8	3.1	10.06	10.08	0.02	0.1				
NA/0.7	11/15/2007	8.98	8.98	0.00	0.0	267	265	2	0.5	9.74	9.80	0.06	0.4				
ECH/0.2	12/5/2007	8.46	8.46	0.00	0.0	285	286	1	0.2	6.90	6.92	0.02	0.2				
NA/1.3	12/5/2007	6.23	6.22	0.01	0.1	122	138	16	8.7	10.95	10.92	0.03	0.2				
PU/0.4	12/5/2007	7.72	7.72	0.00	0.0	233	233	0	0.0	9.67	9.76	0.09	0.7				
ECH/1.0	1/9/2008	3.28	3.27	0.01	0.2	213	213	0	0.0	8.83	8.83	0.00	0.0				
ECH/3.3	1/9/2008	4.26	4.25	0.01	0.2	177	177	0	0.0	9.78	9.84	0.06	0.4				
ECH/4.8	1/9/2008	4.32	4.31	0.01	0.2	120	119	1	0.6	11.51	11.55	0.04	0.2				
CH/6.7	3/11/2008	7.93	7.91	0.02	0.2	126	126	0	0.0	9.15	9.17	0.02	0.2	6.89	6.75	0.14	1.5
CH/7.0	3/11/2008	7.83	7.81	0.02	0.2	123	123	0	0.0	8.64	8.80	0.16	1.3	6.89	6.97	0.08	0.8
PU/0.0	3/11/2008	7.57	7.58	0.01	0.1	153	152	1	0.5	11.17	11.72	0.55	3.4	7.47	7.28	0.19	1.8
CH/8.4	4/16/2008	6.84	6.83	0.01	0.1	65	65	0	0.0					7.10	7.14	0.04	0.4
CH/8.8	4/16/2008	7.81	7.79	0.02	0.2	66	66	0	0.0					7.10	7.12	0.02	0.2
EG/0.0	4/16/2008	7.13	7.12	0.01	0.1	110	111	1	0.6					7.08	7.06	0.02	0.2
BH/0.0	5/14/2008	10.04	10.01	0.03	0.2	85	85	0	0.0	7.89	7.89	0.00	0.0	6.92	6.94	0.02	0.2
CH/9.0	5/14/2008	9.98	9.98	0.00	0.0	76	76	0	0.0	9.81	9.81	0.00	0.0	7.31	7.30	0.01	0.1
CH/9.3	5/14/2008	9.81	9.79	0.02	0.1	74	74	0	0.0	9.65	9.65	0.00	0.0	7.60	7.61	0.01	0.1
CH/3.4	6/10/2008	10.56	10.54	0.02	0.1	191	189	2	0.7	6.94	7.09	0.15	1.5	7.08	7.05	0.03	0.3
CH/5.3	6/10/2008	10.02	9.90	0.12	0.9	156	156	0	0.0	9.33	9.42	0.09	0.7	6.94	7.04	0.10	1.0
NA/0.1	6/10/2008	9.08	9.09	0.01	0.1	152	147	5	2.4	10.28	10.30	0.02	0.1	7.30	7.24	0.06	0.6
CH/7.8	6/24/2008	10.37	10.35	0.02	0.1	160	161	1	0.4	10.00	10.12	0.12	0.8	7.20	7.32	0.12	1.2
NA/0.7	6/24/2008	9.77	9.76	0.01	0.1	195	191	4	1.5	10.63	10.65	0.02	0.1	7.70	7.73	0.03	0.3
NA/1.3	6/24/2008	9.86	9.85	0.01	0.1	128	128	0	0.0	10.02	10.02	0.00	0.0	7.27	7.22	0.05	0.5
ECH/0.2	7/1/2008	15.01	15.01	0.00	0.0	265	265	0	0.0	8.43	8.37	0.06	0.5	7.48	7.49	0.01	0.1
ECH/1.0	7/1/2008	14.48	14.48	0.00	0.0	260	263	3	0.8	2.64	2.62	0.02	0.5	6.94	6.76	0.18	1.9
PU/0.4	7/1/2008	14.81	14.81	0.00	0.0	244	246	2	0.6	8.84	8.74	0.10	0.8	7.65	7.68	0.03	0.3

Table A-3. Quality control results for stations monitored in the Chimacum watershed showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) sampled for temperature, conductivity, dissolved oxygen, and pH.

Station	DATE	Temperature				Conductivity				Dissolved Oxygen				pH			
		R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD
		°C	°C	°C	%	umho	umho	umho	%	mg/L	mg/L	mg/L	%	units	units	units	%
ECH/3.3	7/22/2008	12.45	12.46	0.01	0.1	239	241	2	0.6	9.38	9.32	0.06	0.5	7.47	7.49	0.02	0.2
ECH/4.8	7/22/2008	11.93	11.92	0.01	0.1	198	184	14	5.2	9.57	9.62	0.05	0.4	7.48	7.59	0.11	1.0
ECH/5.3	7/22/2008	10.70	10.71	0.01	0.1	172	174	2	0.8	10.76	10.85	0.09	0.6	7.83	7.83	0.00	0.0
BH/0.0	8/21/2008	12.38	12.38	0.00	0.0	118	118	0	0.0	9.75	9.76	0.01	0.1	7.62	7.65	0.03	0.3
CH/8.4	8/21/2008	13.39	13.39	0.00	0.0	112	112	0	0.0	8.81	8.76	0.05	0.4	7.44	7.45	0.01	0.1
CH/9.0	8/21/2008	12.35	12.36	0.01	0.1	92	92	0	0.0	9.58	9.80	0.22	1.6	7.66	7.67	0.01	0.1
BH/1.0	9/9/2008	10.62	10.62	0.00	0.0	91	91	0	0.0	10.45	10.40	0.05	0.3	7.88	7.89	0.01	0.1
CH/8.8	9/9/2008	11.87	11.94	0.07	0.4	110	110	0	0.0	9.46	9.48	0.02	0.1	7.41	7.42	0.01	0.1
CH/9.3	9/9/2008	11.01	11.00	0.01	0.1	118	118	0	0.0	10.51	10.46	0.05	0.3	7.98	8.01	0.03	0.3
CH/3.4	9/22/2008	12.88	12.88	0.00	0.0	205	186	19	6.9	5.50	5.56	0.06	0.8	7.08	7.23	0.15	1.5
CH/5.3	9/22/2008	12.29	12.14	0.15	0.9	189	193	4	1.5	8.01	7.91	0.10	0.9	6.90	7.02	0.12	1.2
NA/0.1	9/22/2008	11.04	11.03	0.01	0.1	267	242	25	6.9	9.95	10.09	0.14	1.0	7.46	7.49	0.03	0.3
Minimum				0.00	0.0			0	0.0			0.00	0.0			0.00	0.0
Maximum				0.15	0.9			25	8.7			0.55	3.4			0.19	1.9
Mean				0.02	0.1			3	1.1			0.07	0.5			0.06	0.5

Table A-4. Quality control results for stations monitored in the Chimacum watershed showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) sampled for turbidity, nitrate-nitrogen, and fecal coliform.

Station	DATE	Turbidity				NO3-N				Fecal Coliform			
		R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD
		NTU	NTU	NTU	%	mg/L	mg/L	mg/L	%	FC/100 mL	FC/100 mL	FC/100 mL	%
CH/1.1	10/18/2007	2.0	2.0	0.0	0.0	0.23	0.27	0.04	11.3	62	82	20	19.6
CH/3.4	10/18/2007	1.0	1.0	0.0	0.0	0.12	0.14	0.02	10.9	51	26	25	45.9
CH/5.3	10/18/2007	1.5	1.4	0.1	4.9	0.15	0.16	0.01	4.6	118	42	76	67.2
CH/7.8	11/15/2007	1.5	2.0	0.5	20.2	0.59	0.61	0.02	2.4	32	52	20	33.7
NA/0.1	11/15/2007	1.7	1.7	0.0	0.0	0.61	0.61	0.00	0.0	200	240	40	12.9
NA/0.7	11/15/2007	0.7	0.8	0.1	7.4	0.71	0.73	0.02	2.0	230	410	180	39.8
ECH/0.2	12/5/2007	7.6	7.4	0.2	1.9	6.30	6.30	0.00	0.0	144	144	0	0.0
NA/1.3	12/5/2007	21.0	21.5	0.5	1.7	2.40	2.40	0.00	0.0	68	56	12	13.7
PU/0.4	12/5/2007	7.9	8.1	0.2	1.8	2.90	2.90	0.00	0.0	38	30	8	16.6
ECH/1.0	1/9/2008	4.0	3.4	0.6	11.5	2.00	2.00	0.00	0.0	18	10	8	40.4
ECH/3.3	1/9/2008	6.2	6.9	0.7	7.6	2.40	2.40	0.00	0.0	50	58	8	10.5
ECH/4.8	1/9/2008	5.6	5.8	0.2	2.5	2.10	2.10	0.00	0.0	146	28	118	95.9
CH/0.1	2/6/2008	5.6	5.7	0.1	1.3	0.84	0.89	0.05	4.1	22	20	2	6.7
CH/2.0	2/6/2008	5.2	5.2	0.0	0.0	0.77	0.81	0.04	3.6	16	22	6	22.3
CH/4.1	2/6/2008	5.3	5.3	0.0	0.0	0.72	0.74	0.02	1.9	42	38	4	7.1
CH/6.7	3/11/2008	2.2	2.6	0.4	11.8					28	50	22	39.9
CH/7.0	3/11/2008	2.5	2.6	0.1	2.8					24	18	6	20.2
PU/0.0	3/11/2008	1.9	1.9	0.0	0.0					1	2	1	47.1
CH/8.4	4/16/2008	6.2	6.2	0.0	0.0	0.41	0.38	0.03	5.4	56	60	4	4.9
CH/8.8	4/16/2008	6.4	6.5	0.1	1.1	0.40	0.41	0.01	1.7	52	54	2	2.7
EG/0.0	4/16/2008	3.9	4.3	0.4	6.9	0.29	0.27	0.02	5.1	10	10	0	0.0
BH/0.0	5/14/2008	3.3	3.3	0.0	0.0	0.10	0.10	0.00	0.0	368	426	58	10.3
CH/9.0	5/14/2008	5.2	5.1	0.1	1.4	0.24	0.22	0.02	6.1	24	20	4	12.9
CH/9.3	5/14/2008	5.4	5.4	0.0	0.0	0.27	0.24	0.03	8.3	24	10	14	58.2
CH/3.4	6/10/2008	5.6	5.6	0.0	0.0	0.13	0.13	0.00	2.1	374	332	42	8.4
CH/5.3	6/10/2008	5.0	6.0	1.0	12.9	0.11	0.11	0.01	3.3	332	394	62	12.1
NA/0.1	6/10/2008	29.0	29.0	0.0	0.0	0.18	0.20	0.02	8.6	1660	664	996	60.6
CH/7.8	6/24/2008	2.4	2.2	0.2	6.1	0.42	0.37	0.05	9.0	38	43	5	8.7
NA/0.7	6/24/2008	3.3	3.6	0.3	6.1	0.63	0.63	0.00	0.0	32	44	12	22.3

Table A-4. Quality control results for stations monitored in the Chimacum watershed showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) sampled for turbidity, nitrate-nitrogen, and fecal coliform.

Station	DATE	Turbidity				NO3-N				Fecal Coliform			
		R1	R2	AD	RSD	R1	R2	AD	RSD	R1	R2	AD	RSD
		NTU	NTU	NTU	%	mg/L	mg/L	mg/L	%	FC/100 mL	FC/100 mL	FC/100 mL	%
NA/1.3	6/24/2008	4.8	5.0	0.2	2.9	0.39	0.40	0.01	1.8	10	6	4	35.4
ECH/0.2	7/1/2008	5.1	5.1	0.0	0.0	0.68	0.55	0.13	14.9	228	244	16	4.8
ECH/1.0	7/1/2008	4.1	5.0	0.9	14.0	0.73	0.63	0.10	10.4	208	228	20	6.5
PU/0.4	7/1/2008	2.9	2.8	0.1	2.5	0.73	0.64	0.09	9.3	186	126	60	27.2
ECH/3.3	7/22/2008	7.4	6.9	0.5	4.9	0.89	0.86	0.03	2.1	292	228	64	17.4
ECH/4.8	7/22/2008	3.4	3.2	0.2	4.3	0.47	0.30	0.17	30.6	208	188	20	7.1
ECH/5.3	7/22/2008	1.8	1.9	0.1	3.8	0.51	0.48	0.03	4.7	42	76	34	40.7
CH/0.1	8/5/2008									96	48	48	47.1
CH/1.1	8/5/2008									94	112	18	12.4
CH/2.0	8/5/2008									104	58	46	40.2
BH/0.0	8/21/2008	10.3	16.7	6.4	33.5	0.24	0.23	0.01	4.2	26	38	12	26.5
CH/8.4	8/21/2008					0.10	0.10	0.01	3.6	52	96	44	42.0
CH/9.0	8/21/2008	3.5	1.3	2.2	64.8	0.23	0.23	0.00	0.6	40	20	20	47.1
BH/1.0	9/9/2008	1.6	1.6	0.0	0.0	0.21	0.21	0.00	1.0	10	10	0	0.0
CH/8.8	9/9/2008	1.3	1.3	0.0	0.0	0.14	0.14	0.00	1.5	330	370	40	8.1
CH/9.3	9/9/2008	0.9	1.3	0.4	25.7	0.36	0.40	0.04	7.2	500	360	140	23.0
CH/3.4	9/22/2008	1.4	1.4	0.0	0.0	0.00	0.01	0.01	76.1	42	62	20	27.2
CH/5.3	9/22/2008	1.8	2.0	0.2	7.4	0.00	0.01	0.01	76.1	76	72	4	3.8
NA/0.1	9/22/2008	2.3	2.7	0.4	11.3	0.05	0.07	0.03	30.7	560	768	208	22.2
Minimum				0.0	0.0			0.00	0.0			0	0.0
Maximum				6.4	64.8			0.17	76.1			996	95.9
Mean				0.4	6.5			0.03	8.7			54	24.6

Table A-5. Quality control results of stations in the Chimacum watershed monitored by the Chimacum School Hydrology Class showing the absolute difference (AD) and relative standard deviation (RSD) for field replicates (R1 and R2) sampled for dissolved oxygen and turbidity. Minimum, maximum, and mean ADs and RSDs are also shown.

Station	Date	Dissolved Oxygen				Turbidity			
		R1	R2	AD	RSD	R1	R2	AD	RSD
		mg/L	mg/L	mg/L	%	^{o}C	^{o}C	^{o}C	%
CH/3.4	10/5/2006	8.80	8.80	0.00	0.00	1.9	2.9	1.0	29.5
CH/9.3	11/9/2006	9.70	9.70	0.00	0.00	2.6	3.4	0.8	18.9
ECH/1.3	12/7/2006	6.60	5.70	0.90	10.35	4.1	3.2	0.9	17.4
ECH/1.0	1/11/2007	7.50	7.60	0.10	0.94	5.6	6.3	0.7	8.3
CH/5.3	2/8/2007	8.70	8.80	0.10	0.81	5.2	4.8	0.4	5.7
ECH/0.4	3/8/2007	7.30	7.40	0.10	0.96	6.6	6.6	0.0	0.0
ECH/1.0	4/12/2007	5.60	6.00	0.40	4.88	7.3	7.3	0.0	0.0
ECH/1.3	5/10/2007	4.80	4.90	0.10	1.46	5.9	4.7	1.2	16.0
ECH/2.8	6/7/2007	6.10	6.30	0.20	2.28	4.7	5.5	0.8	11.1
ECH/0.4	9/17/2007	7.00	7.60	0.60	5.81	9.6	12.1	2.5	16.3
ECH/1.0	10/15/2007	5.70	5.60	0.10	1.25	3.7	15.7	12.0	87.5
CH/3.9	11/5/2007	7.50	7.20	0.30	2.89	3.0	2.2	0.8	21.8
CH/9.3	12/10/2007	11.60	11.60	0.00	0.00	6.7	7.0	0.3	3.1
CH/5.3	1/14/2008	8.30	7.70	0.60	5.30	8.7	7.2	1.5	13.3
CH/3.4	3/10/2008	5.40	6.60	1.20	14.14	5.6	5.3	0.3	3.9
ECH/2.8	5/12/2008	8.80	8.70	0.10	0.81	5.1	13.7	8.6	64.7
ECH/2.2	6/2/2008	8.70	11.60	2.90	20.20	20.0	26.6	6.6	20.0
Minimum				0.00	0.00			0.0	0.0
Maximum				2.90	20.20			12.0	87.5
Mean				0.45	4.24			2.3	19.8

Table A-6. Quality control results of nitrate-nitrogen analyses showing absolute differences (AD) and relative standard deviations (RSD) for lab replicates analyzed at the Jefferson County Conservation District (JCCD) and University of Washington (UW) laboratories.

Discovery Bay Watershed							Chimacum Watershed					
Station	Date	JCCD NO3-N	UW NO3-N	AD	RSD		Station	Date	JCCD NO3-N	UW NO3-N	AD	RSD
		mg/L	mg/L	mg/L					mg/L	mg/L	mg/L	
AND/1.71	4/30/08	0.20	0.31	0.11	30.5		ECH/1.0	4/16/08	0.43	0.37	0.06	10.6
TUD/0.0	4/30/08	0.33	0.31	0.02	4.4		PU/0.0	5/14/08	0.33	0.35	0.02	4.2
SA/0.7	5/13/08	0.25	0.38	0.13	29.2		NA/0.7	5/14/08	0.19	0.26	0.07	22.0
HO/0.0	5/13/08	0.65	0.61	0.04	4.5		BH/0.0	6/10/08	0.09	0.13	0.04	23.9
SA/0.4	5/20/08	0.22	0.35	0.13	32.3		NA/0.7	6/10/08	0.23	0.34	0.11	28.5
TUD/0.5	5/20/08	0.23	0.31	0.08	21.0		CH/6.7	6/24/08	0.33	0.18	0.15	41.6
SN/2.3	6/5/08	0.05	0.13	0.08	61.1		NA/1.3	7/1/08	0.40	0.24	0.16	35.4
SA/0.4	6/5/08	0.32	0.44	0.12	23.2		ECH/0.2	7/22/08	0.25	0.34	0.09	22.1
SA/1.0	6/19/08	0.02	0.31	0.29	125.1		CH/8.8	7/22/08	0.22	0.24	0.02	4.9
HO/0.0	7/2/08	0.25	0.27	0.02	5.4		ECH/4.8	8/21/08	0.21	0.32	0.11	28.4
UVD/0.0	7/15/08	0.20	0.00	0.20	137.2		BH/1.0	9/9/08	0.21	0.37	0.16	38.1
SA/0.15	8/12/08	0.04	0.28	0.24	103.0		NA/0.1	9/9/08	0.28	0.42	0.14	28.5
AND/1.71	8/26/08	0.08	0.28	0.20	77.4		NA/0.7	9/22/08	0.21	0.47	0.27	55.5
SA/0.15	9/10/08	0.09	0.34	0.26	84.9		CH/9.0	9/22/08	0.23	0.40	0.17	38.4
SA/0.5	9/23/08	0.15	0.33	0.18	53.0							
Minimum				0.02	4.4		**Minimum**				0.02	4.2
Maximum				0.29	137.2		**Maximum**				0.27	55.5
Mean				0.14	52.8		**Mean**				0.11	27.3

channel, some is probably due to the method because of an uneven distribution in the sample bottle. In the Discovery Bay watershed where both field and lab replicates were analyzed, the average differences for field replicates were 58 and 56 FC/100 mL, compared to 39 FC/100 mL for the lab replicates (Table A-2). The average difference for field replicates in the Chimacum watershed was 54 FC/100 mL (Table A-4).

Differences between the nitrate-nitrogen values analyzed at the JCCD lab and the University of Washington lab averaged 0.14 mg/L for the Discovery Bay samples and 0.11 mg/L for the Chimacum samples (Table A-6). All replicate differences were less than 0.3 mg/L for replicates from both watersheds.

[1] Zar, J. H 1984. Biostatistical Analysis. 2nd ed. Prentice-Hall, Englewood Cliffs, New Jersey. 718 pp.

Appendix B

Water Quality Data - July 1, 2007 to June 30, 2009

StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
AND/0.0	7/5/2007	1130							23				
AND/0.0	7/31/2007	945									0.89		
AND/0.0	7/31/2007	1220	15.6						80				
AND/0.0	7/31/2007	1220	15.6						23				
AND/0.0	8/14/2007	1210	15.7						30				
AND/0.0	8/28/2007	1310	13.9						30				
AND/0.0	9/11/2007	1315							23				
AND/0.0	9/20/2007	950									0.58		
AND/0.0	9/24/2007	1240	9.3						17				
AND/0.0	10/9/2007	1240	10.9						8				
AND/0.0	10/17/2007	1040									0.90		
AND/0.0	10/23/2007	1055	9.8						2				
AND/0.0	11/6/2007	1205	6.1						6				
AND/0.0	11/6/2007	1205	6.1						2				
AND/0.0	11/20/2007	1126	6.2						4				
AND/0.0	12/4/2007	1157	44.4						169				
AND/0.0	12/7/2007	1448									44.30		
AND/0.0	12/18/2007	1137	5.2						1				
AND/0.0	12/18/2007	1138	5.2						6				
AND/0.0	1/2/2008	1140	3.0						1				
AND/0.0	1/2/2008	1140	3.0						2				
AND/0.0	1/17/2008	1225	3.6						1				
AND/0.0	1/23/2008	956									11.36		
AND/0.0	2/11/2008	1313	4.5	66	9.5		3.5	74	16	0.84			
AND/0.0	2/27/2008	1244	6.8	69	10.3		3.0	85	1	0.52			
AND/0.0	3/19/2008	1219	7.7	71	8.9		2.6	75	2	0.30			
AND/0.0	3/27/2008	1012									14.73		
AND/0.0	4/2/2008	1312	7.5	67	9.4		2.4	79	1	0.19			
AND/0.0	4/15/2008	1242	9.3	66	8.1	6.5	2.3	71	1	0.15			
AND/0.0	4/23/2008	958									24.85		
AND/0.0	4/30/2008	1304	10.5	63	8.0	6.6	3.0	72	10	0.10			
AND/0.0	5/13/2008	1306	12.2	65	8.6	6.9	3.1	80	1	0.01			
AND/0.0	5/20/2008	1244	16.5	66	5.6	6.8	2.8	57	2	0.02			
AND/0.0	6/5/2008	1246	13.9		5.7	6.8	3.3	56	154	0.02			
AND/0.0	6/19/2008	1327	16.2	66	7.5	6.8	3.9	76	4	0.01			
AND/0.0	7/2/2008	1406	20.8	68	4.6	6.9	5.0	51	184	0.04			
AND/0.0	7/9/2008	1343									0.79		
AND/0.0	7/15/2008	1244	16.3	86		7.5	2.0		14	0.20			
AND/0.0	7/29/2008	1350	16.1	83	5.7	7.1	3.3	58	96	0.00			
AND/0.0	8/12/2008	1331	15.7	90	6.1	7.0	3.3	62	54	0.02			
AND/0.0	8/26/2008	1000									0.54		
AND/0.0	8/26/2008	1331	16.0	90	5.4	6.9	7.4	55	192	0.01			
AND/0.0	9/10/2008	1321	15.2	88	6.4	6.9	4.1	63	60	0.03			
AND/0.0	9/23/2008	1314	13.1	88	6.0	7.0	4.8	57	52	0.00			
AND/0.0	9/29/2008	1040									0.34		
AND/0.0	10/7/2008	1322	13.8	88	6.1	6.7	3.2	59	12	0.00			
AND/0.0	10/21/2008	1310	9.8	84	7.1	7.2	4.6	62	20	0.00			
AND/0.0	11/4/2008	1258	9.7	87	6.4	7.1	3.5	57	12	0.03			
AND/0.0	11/18/2008	1312	9.3	80	6.6	6.8	2.8	58	1	0.00			
AND/0.0	11/30/2008	1002									2.59		
AND/0.0	12/2/2008	1304	8.1	79	8.2	6.9	2.5	70	1	0.00			
AND/0.0	12/16/2008	1317	2.0	81	10.1	7.5	3.3	74	1	0.02			
AND/0.0	1/6/2009	1258	2.3	83	10.1	6.9	2.7	74	10	0.01			

Appendix B

Water Quality Data - July 1, 2007 to June 30, 2009

StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
AND/0.0	1/20/2009	1234	3.6	79	9.3	6.8	3.0	71	1	0.67			
AND/0.0	2/10/2009	1236	3.4	80	11.3	7.2	2.3	86	1	0.67			
AND/0.0	2/24/2009	1243	6.5	82	10.4	7.2	3.0	85	2	0.54			
AND/0.0	3/3/2009	1253	6.8	84	8.2	7.1	4.0	68	4				
AND/0.0	3/24/2009	1251	7.5	76	10.4	7.5	4.3	87	1	0.61			
AND/0.0	4/7/2009	1304	10.2	76	9.0	7.3		80	2				
AND/0.0	4/21/2009	1314	14.5	76	8.4	7.6	3.0	82	1	0.49			
AND/0.0	5/13/2009	1103	13.4	78	7.4	7.4	3.5	71	1	0.22			
AND/0.0	5/27/2009	1134	16.5	75	6.1	7.3	3.8	62	2	0.36			
AND/0.0	6/3/2009	1149	20.4	76	7.3	7.4	2.2	80	2	0.13			
AND/0.0	6/30/2009	1329	14.6	94	7.2	7.5	2.8	70	2				
AND/1.71	7/5/2007	1145							8				
AND/1.71	7/31/2007	1249	15.6						13				
AND/1.71	8/14/2007	1240	13.6						11				
AND/1.71	8/28/2007	1320	13.2						30				
AND/1.71	9/11/2007	1335							13				
AND/1.71	9/24/2007	1315	9.1						17				
AND/1.71	10/9/2007	1305	9.5						23				
AND/1.71	10/23/2007	1115	8.2						8				
AND/1.71	11/6/2007	1225	5.2						12				
AND/1.71	11/20/2007	1226	5.3						12				
AND/1.71	12/4/2007	1229	47.9						100				
AND/1.71	12/4/2007	1229	47.9						104				
AND/1.71	12/18/2007		5.4						174				
AND/1.71	1/2/2008	1215	3.4						4				
AND/1.71	1/17/2008	1245	3.5						6				
AND/1.71	2/11/2008	1401	4.9		12.1		3.3	96	16	0.77			
AND/1.71	2/27/2008	1403	6.4		12.0		2.4	98	10	0.39			
AND/1.71	3/19/2008	1350	5.5		11.9		2.9	95	56	0.42			
AND/1.71	4/2/2008	1403	5.8		12.0		3.3	96	18	0.56			
AND/1.71	4/15/2008	1407	5.6		12.3	6.9	3.4	99	4	0.41			
AND/1.71	4/30/2008	1354	6.2		12.3	6.8	3.4	100	8	0.20			
AND/1.71	5/13/2008	1354	8.5		11.3	6.9	2.6	97	8	0.04			
AND/1.71	5/20/2008	1326	11.3		10.1	7.4	3.4	92	24	0.07			
AND/1.71	6/5/2008	1334	9.1		10.0	6.9	7.3	87	213	0.16			
AND/1.71	6/19/2008	1441	10.0	58	10.6	7.1	3.3	94	26	0.05			
AND/1.71	6/19/2008	1441					3.8		22	0.05			
AND/1.71	6/19/2008	1441							34				
AND/1.71	7/2/2008	1450	14.4	75	9.2	7.3	3.0	90	86	0.18			
AND/1.71	7/15/2008	1332	13.7	76		7.6	1.9		142	0.45			
AND/1.71	7/29/2008	1430	13.3	91	9.5	7.8	1.4	91	94	0.01			
AND/1.71	8/12/2008	1420	13.9	99	9.0	7.5	1.6	87	20	0.06			
AND/1.71	8/26/2008	1421	12.5	86	10.3	7.6	1.7	97	204	0.08			
AND/1.71	9/10/2008	1434	12.3	109	9.5	7.3	1.2	89	50	0.09			
AND/1.71	9/23/2008	1408	9.2	108	10.1	7.4	1.3	89	42	0.06			
AND/1.71	10/7/2008	1422	11.1	91	9.7	7.1	1.1	88	58	0.09			
AND/1.71	10/21/2008	1353	6.4	99	11.2	7.3	0.6	92	14	0.02			
AND/1.71	11/4/2008	1344	7.9	88	10.8	7.1	3.2	91	146	0.12			
AND/1.71	11/18/2008	1405	8.2	72	10.7	7.3	1.6	91	6	0.41			
AND/1.71	12/2/2008	1355	8.3	81	10.6	7.4	2.4	90	8	0.00			
AND/1.71	12/16/2008	1358	0.1	86	12.9	7.6	1.9	89	10	0.09			
AND/1.71	1/6/2009	1343	3.3	83	12.0	7.2	3.6	91	34	1.21			
AND/1.71	1/20/2009	1313	2.3	64	13.6	6.8	4.1	100	16	1.01			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
AND/1.71	2/10/2009	1314	2.2	79	13.6	7.3	2.7	100	14	0.60			
AND/1.71	2/24/2009	1325	6.1	76	11.8	7.2	6.2	96	42	0.60			
AND/1.71	3/3/2009	1337	5.6	62	11.5	7.1	6.0	92	4				
AND/1.71	3/24/2009	1337	5.4	67	11.9	7.4	3.0	95	6	0.75			
AND/1.71	4/7/2009	1355	7.8	61	11.0	7.2		93	2				
AND/1.71	4/21/2009	1404	11.6	72	9.8	7.6	2.8	90	2	0.54			
AND/1.71	5/13/2009	1157	7.7	58	10.8	7.0	5.5	91	16	0.39			
AND/1.71	5/27/2009	1246	10.4	63	10.4	7.5	4.1	93	2	0.61			
AND/1.71	6/3/2009	1304	14.4	76	10.9	7.6	2.7	106	36	0.29			
AND/1.71	6/30/2009	1429	12.5	91	9.8	7.7	2.3	92	30				
BH/0.0	10/18/2007	1241	8.9	148	8.1	7.4	4.9	70	2030	0.33			
BH/0.0	11/15/2007	1240	8.0	103	8.3	7.2	2.4	70	32	0.48			
BH/0.0	12/5/2007	1255	6.8	127	9.0	6.4	5.0	74	62	0.86			
BH/0.0	1/9/2008	1215	4.0	99	10.3	6.3	3.7	80	16	1.10			
BH/0.0	2/6/2008	1130	2.5	115	11.2		5.3	83	40	0.66			
BH/0.0	3/11/2008	1135	7.5	89	9.6	7.0	4.4	80	24				
BH/0.0	4/16/2008	1135	7.4	71		7.0	3.0		58	0.29			
BH/0.0	5/14/2008	1130	10.0	85	7.9	6.9	3.3	70	426	0.10			
BH/0.0	5/14/2008	1130	10.0	85	7.9	6.9	3.3	70	368	0.10			
BH/0.0	6/10/2008	1255	10.1		9.3	6.8	10.6	83	124	0.09			
BH/0.0	6/24/2008	1235	10.2	148		7.8	4.4		58	0.35			
BH/0.0	7/1/2008	1147	14.8	110		7.2	18.7		208	0.54			
BH/0.0	7/22/2008	1117	13.4	104		7.5	2.8		72	0.07			
BH/0.0	8/5/2008	1238	12.5	98	7.9	7.1	8.5	74	624	0.04			
BH/0.0	8/21/2008	1127	12.4	118	9.8	7.7	16.7	91	38	0.23			
BH/0.0	8/21/2008	1128	12.4	118	9.8	7.6	10.3	91	26	0.24			
BH/0.0	9/9/2008	1222	11.6	120	9.7	7.8	4.8	89	1020	0.25			
BH/0.0	9/22/2008	1110	10.8	114	10.6	7.5	1.8	96	38	0.26			
BH/1.0	10/18/2007	1322	9.4	132	10.8	7.5	15.9	95	450	1.70			
BH/1.0	10/30/2007	1450									0.67		
BH/1.0	11/15/2007	1324	9.2	95	10.6	7.3	1.0	93	1	0.69			
BH/1.0	12/5/2007	1330	8.1	135	11.0	7.1	2.0	94	2	1.70			
BH/1.0	12/11/2007	1130									0.75		
BH/1.0	1/9/2008	1300	6.2	109	10.5	6.6	2.3	85	72	1.90			
BH/1.0	2/6/2008	1158	5.9	123	10.2		1.0	83	8	0.74			
BH/1.0	3/3/2008	1515									0.63		
BH/1.0	3/11/2008	1225	8.3	93	10.9	7.6	1.4	93	1				
BH/1.0	4/16/2008	1230	8.4	74		7.6	1.2		1	0.48			
BH/1.0	5/14/2008	1230	9.5	82	9.2	7.7	1.8	81	4	0.30			
BH/1.0	6/10/2008	1335	9.2		12.2	7.5	1.7	107	6	0.32			
BH/1.0	6/24/2008	1258	9.8	115		7.7	3.3		8	0.60			
BH/1.0	7/1/2008	1240	10.6	94		7.6	1.6		34	0.81			
BH/1.0	7/22/2008	1201	10.3	92		7.6	1.6		146	0.53			
BH/1.0	8/5/2008	1325	11.0	91	10.8	7.8	3.2	98	56	0.17			
BH/1.0	8/21/2008	1220	10.8	90	10.5	7.6	1.3	95	370	0.21			
BH/1.0	9/9/2008	1311	10.6	91	10.4	7.9	1.6	94	10	0.21			
BH/1.0	9/9/2008	1312	10.6	91	10.5	7.9	1.6	94	10	0.21			
BH/1.0	9/22/2008	1145	10.1	86	11.1	7.5	1.7	99	10	0.17			
CAS/0.3	7/5/2007	1105							50				
CAS/0.3	7/31/2007	1125	13.7						30				
CAS/0.3	8/14/2007	1150	14.2						8				
CAS/0.3	12/4/2007	1115	46.9						54				
CAS/0.3	12/18/2007	1115	5.4						2				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CAS/0.3	1/2/2008	1055	4.9						1				
CAS/0.3	1/17/2008	1205	4.8						1				
CH/0.0-0.4/G1122	10/9/2008	1125	8.3									10.5	5.9
CH/0.0-0.4/G1122	11/17/2008	1110	8.2									10.1	0.5
CH/0.0-0.4/G1122	12/10/2008	1015	6.3									11.0	4.7
CH/0.0-0.4/G1122	1/14/2009	1145	6.4									11.0	0.5
CH/0.0-0.4/G1122	2/5/2009	1340	4.7									11.4	5.5
CH/0.0-0.4/G1124	10/9/2008	1125	8.3									10.5	5.0
CH/0.0-0.4/G1124	11/17/2008	1110	8.2									10.1	3.8
CH/0.0-0.4/G1124	12/10/2008	1015	6.3									11.0	5.9
CH/0.0-0.4/G1124	1/14/2009	1145	6.4									11.0	5.4
CH/0.0-0.4/G1124	2/5/2009	1340	4.7									11.4	6.5
CH/0.0-0.4/G1125	10/9/2008	1040	8.3									10.5	4.0
CH/0.0-0.4/G1125	11/17/2008	1045	8.2									10.1	0.6
CH/0.0-0.4/G1125	12/10/2008	945	6.3									11.0	1.0
CH/0.0-0.4/G1125	1/14/2009	1115	6.4									11.0	0.8
CH/0.0-0.4/G1125	2/5/2009	1315	4.7									11.4	2.8
CH/0.0-0.4/G1126	10/9/2008	1040	8.3									10.5	3.7
CH/0.0-0.4/G1126	11/17/2008	1045	8.2									10.1	3.0
CH/0.0-0.4/G1126	11/17/2008	1045	8.2									10.1	3.6
CH/0.0-0.4/G1126	12/10/2008	945	6.3									11.0	4.7
CH/0.0-0.4/G1126	1/14/2009	1115	6.4									11.0	3.7
CH/0.0-0.4/G1126	2/5/2009	1315	4.7									11.4	5.9
CH/0.0-0.4/G114	10/9/2008	1125	8.3									10.5	7.5
CH/0.0-0.4/G114	11/17/2008	1110	8.2									10.1	0.5
CH/0.0-0.4/G114	12/10/2008	1015	6.3									11.0	3.9
CH/0.0-0.4/G114	2/5/2009	1340	4.7									11.4	6.3
CH/0.0-0.4/G1230	10/9/2008	1125	8.3									10.5	5.7
CH/0.0-0.4/G1230	11/17/2008	1110	8.2									10.1	0.5
CH/0.0-0.4/G1230	12/10/2008	1015	6.3									11.0	0.7
CH/0.0-0.4/G1230	1/14/2009	1145	6.4									11.0	0.6
CH/0.0-0.4/G1230	2/5/2009	1340	4.7									11.4	0.7
CH/0.0-0.4/G1231	10/9/2008	1125	8.3									10.5	2.9
CH/0.0-0.4/G1231	11/17/2008	1110	8.2									10.1	0.8
CH/0.0-0.4/G1231	12/10/2008	1015	6.3									11.0	2.2
CH/0.0-0.4/G1231	1/14/2009	1145	6.4									11.0	0.8
CH/0.0-0.4/G1231	2/5/2009	1340	4.7									11.4	1.5
CH/0.0-0.4/G1232	10/9/2008	1125	8.3									10.5	6.5
CH/0.0-0.4/G1232	11/17/2008	1055	8.2									10.1	2.2
CH/0.0-0.4/G1232	12/10/2008	1015	6.3									11.0	3.5
CH/0.0-0.4/G1232	1/14/2009	1145	6.4									11.0	4.3
CH/0.0-0.4/G1232	2/5/2009	1340	4.7									11.4	4.3
CH/0.0-0.4/G1233	10/9/2008	1125	8.3									10.5	8.2
CH/0.0-0.4/G1233	11/17/2008	1055	8.2									10.1	1.8
CH/0.0-0.4/G1233	12/10/2008	1015	6.3									11.0	2.7
CH/0.0-0.4/G1233	1/14/2009	1145	6.4									11.0	6.0
CH/0.0-0.4/G1233	2/5/2009	1340	4.7									11.4	8.6
CH/0.0-0.4/G1234	10/9/2008	1125	8.3									10.5	8.7
CH/0.0-0.4/G1234	11/17/2008	1055	8.2									10.1	5.9
CH/0.0-0.4/G1234	12/10/2008	1015	6.3									11.0	9.2
CH/0.0-0.4/G1234	1/14/2009	1145	6.4									11.0	8.1
CH/0.0-0.4/G1234	2/5/2009	1340	4.7									11.4	9.9
CH/0.0-0.4/G1235	10/9/2008	1040	8.3									10.5	8.1

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/0.0-0.4/G1235	11/17/2008	1045	8.2									10.1	7.6
CH/0.0-0.4/G1235	12/10/2008	945	6.3									11.0	8.6
CH/0.0-0.4/G1235	1/14/2009	1115	6.4									11.0	5.2
CH/0.0-0.4/G1235	1/14/2009	1115	6.4									11.0	4.5
CH/0.0-0.4/G1235	2/5/2009	1315	4.7									11.4	9.5
CH/0.0-0.4/G1236	10/9/2008	1040	8.3									10.5	5.3
CH/0.0-0.4/G1236	11/17/2008	1045	8.2									10.1	2.1
CH/0.0-0.4/G1236	12/10/2008	945	6.3									11.0	2.4
CH/0.0-0.4/G1236	1/14/2009	1115	6.4									11.0	1.8
CH/0.0-0.4/G1236	2/5/2009	1315	4.7									11.4	4.8
CH/0.0-0.4/G1236	2/5/2009	1315	4.7									11.4	5.0
CH/0.0-0.4/G1237	10/9/2008	1040	8.3									10.5	6.7
CH/0.0-0.4/G1237	11/17/2008	1045	8.2									10.1	1.5
CH/0.0-0.4/G1237	12/10/2008	945	6.3									11.0	2.2
CH/0.0-0.4/G1237	1/14/2009	1115	6.4									11.0	1.2
CH/0.0-0.4/G1237	2/5/2009	1315	4.7									11.4	5.7
CH/0.0-0.4/G1238	10/9/2008	1040	8.3									10.5	0.9
CH/0.0-0.4/G1238	11/17/2008	1045	8.2									10.1	3.8
CH/0.0-0.4/G1238	12/10/2008	945	6.3									11.0	6.1
CH/0.0-0.4/G1238	12/10/2008	945	6.3									11.0	5.8
CH/0.0-0.4/G1238	1/14/2009	1115	6.4									11.0	3.7
CH/0.0-0.4/G1238	2/5/2009	1315	4.7									11.4	2.2
CH/0.0-0.4/G1239	10/9/2008	1040	8.3									10.5	6.1
CH/0.0-0.4/G1239	11/17/2008	1045	8.2									10.1	4.4
CH/0.0-0.4/G1239	12/10/2008	945	6.3									11.0	6.1
CH/0.0-0.4/G1239	1/14/2009	1115	6.4									11.0	2.6
CH/0.0-0.4/G1239	2/5/2009	1315	4.7									11.4	6.4
CH/0.1	10/18/2007	910	9.2	226	10.6	8.0	1.5	93	40	0.38	9.00		
CH/0.1	10/30/2007	900									7.47		
CH/0.1	11/15/2007	930	6.8	175		8.0	2.7		1340	1.20	13.30		
CH/0.1	12/5/2007	1000	9.0	251	10.3	8.1	13.5	90	220	4.20	69.10		
CH/0.1	12/11/2007	924									35.90		
CH/0.1	1/9/2008	945	3.0	157	12.1	6.1	7.6	91	36	1.50	######		
CH/0.1	1/22/2008	1230									42.00		
CH/0.1	2/6/2008						5.6		22	0.84			
CH/0.1	2/6/2008	930	3.6	217	12.2		5.7	93	20	0.89	29.00		
CH/0.1	3/3/2008	1500									22.00		
CH/0.1	3/11/2008	945	8.3	126	10.6	7.5	5.7	91	4		16.70		
CH/0.1	4/16/2008	935	7.3	121		7.4	5.9		50	0.40	26.50		
CH/0.1	5/14/2008	925	9.9	147	9.3	7.5	4.2	82	26	0.26	18.00		
CH/0.1	6/10/2008	1015	10.5		12.6	7.5	6.2	113	312	0.22	22.30		
CH/0.1	6/24/2008	930	11.7	239		7.6	3.8		78	0.53	10.40		
CH/0.1	6/26/2008										9.60		
CH/0.1	7/1/2008	940	15.4	208		7.6	3.5		208	0.59	8.00		
CH/0.1	7/22/2008	1020	14.0	187		7.8	2.4		292	0.39	5.50		
CH/0.1	8/5/2008	1025	13.5	189	9.7	7.7	2.9	93	48	0.09	5.30		
CH/0.1	8/5/2008	1025							96				
CH/0.1	8/21/2008	938	14.3	188	9.4	7.7	2.3	92	76	0.13	5.50		
CH/0.1	9/9/2008	1030	12.6	180	9.6	8.0	5.2	90	156	0.08	5.90		
CH/0.1	9/22/2008	925	11.6	145	9.9	7.6	6.1	91	82	0.07	5.80		
CH/0.1	2/4/2009										14.90		
CH/0.27	9/11/2007	1015	12.0		8.9			83					
CH/0.27	9/11/2007	1015	12.0		9.1			85					

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/0.27	10/24/2007	954	9.9		9.8			87					
CH/0.27	10/24/2007	954	9.9		9.6			85					
CH/0.27	11/27/2007	1010	3.0		12.6			95					
CH/0.27	11/27/2007	1010	3.0		12.4			93					
CH/0.27	12/17/2007	955	5.4		11.0			88					
CH/0.27	12/17/2007	955	5.4		11.5			92					
CH/0.27	1/24/2008		1.4		13.1			94					
CH/0.27	1/24/2008		1.4		13.0			94					
CH/0.27	2/5/2008	955	3.9		12.1			93					
CH/0.27	2/5/2008	955	3.9		12.0			92					
CH/0.27	3/21/2008	1010	6.3		12.1			99					
CH/0.27	3/21/2008	1010	6.3		12.1			99					
CH/0.27	9/16/2008	1107	11.6		9.3			86					
CH/0.27	9/16/2008	1107	11.6		9.4			87					
CH/0.27	10/9/2008	1040	8.3		10.5			90				10.5	
CH/0.27	10/9/2008	1040	8.3		10.5			90				10.5	
CH/0.27	11/17/2008	1045	8.2		10.1			86				10.1	
CH/0.27	11/17/2008	1045	8.2		10.0			86				10.1	
CH/0.27	12/10/2008	945	6.3		11.0			90				11.0	
CH/0.27	12/10/2008	945	6.3		10.9			89				11.0	
CH/0.27	1/14/2009	1115	6.4		10.9			89				11.0	
CH/0.27	1/14/2009	1115	6.4		11.0			90				11.0	
CH/0.27	2/5/2009	1355	4.7		11.2			88				11.4	
CH/0.27	2/5/2009	1355	4.7		11.6			91				11.4	
CH/0.27	3/10/2009	1200	2.4		12.7			94				12.8	
CH/0.27	3/10/2009	1200	2.4		12.9			95				12.8	
CH/0.27/G1120	9/11/2007	1015	12.0									9.0	7.1
CH/0.27/G1120	9/11/2007	1015	12.0									9.0	7.2
CH/0.27/G1121	9/11/2007	1015	12.0									9.0	8.3
CH/0.27/G1121	10/24/2007	954	9.9									9.7	4.3
CH/0.27/G1121	10/24/2007	954	9.9									9.7	4.3
CH/0.27/G1121	11/27/2007	1010	3.0									12.5	5.7
CH/0.27/G1121	11/27/2007	1010	3.0									12.5	5.8
CH/0.27/G1121	12/17/2007	955	5.4									11.3	1.5
CH/0.27/G1121	1/24/2008	1010	1.4									13.1	0.8
CH/0.27/G1121	1/24/2008	1010	1.4									13.1	0.8
CH/0.27/G1121	2/5/2008	955	3.9									12.1	0.6
CH/0.27/G1121	2/5/2008	955	3.9									12.1	0.5
CH/0.27/G1121	3/21/2008	1010	6.3									12.1	0.5
CH/0.27/G1122	9/11/2007	1130	12.0									9.0	4.0
CH/0.27/G1122	3/10/2009	1145	2.4									12.8	4.2
CH/0.27/G1123	9/11/2007	1130	12.0									9.0	5.6
CH/0.27/G1124	9/11/2007	1130	12.0									9.0	7.7
CH/0.27/G1124	10/24/2007	1015	9.9									9.7	6.7
CH/0.27/G1124	11/27/2007	1030	3.0									12.5	11.1
CH/0.27/G1124	12/17/2007	1005	5.4									11.3	8.6
CH/0.27/G1124	12/17/2007	1005	5.4									11.3	8.5
CH/0.27/G1124	1/24/2008	1030	1.4									13.1	7.2
CH/0.27/G1124	2/5/2008	955	3.9									12.1	6.2
CH/0.27/G1124	3/21/2008	1010	6.3									12.1	6.3
CH/0.27/G1124	3/21/2008	1010	6.3									12.1	6.4
CH/0.27/G1124	9/16/2008	1045	11.6									9.4	5.3
CH/0.27/G1124	3/10/2009	1145	2.4									12.8	6.7

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/0.27/G1125	9/11/2007	1145	12.0									9.0	7.0
CH/0.27/G1125	10/24/2007	1030	9.9									9.7	7.8
CH/0.27/G1125	11/27/2007	1030	3.0									12.5	10.3
CH/0.27/G1125	12/17/2007	1005	5.4									11.3	5.6
CH/0.27/G1125	1/24/2008	1030	1.4									13.1	1.0
CH/0.27/G1125	2/5/2008	955	3.9									12.1	5.1
CH/0.27/G1125	3/21/2008	1010	6.3									12.1	2.1
CH/0.27/G1125	9/16/2008	1020	11.6									9.4	4.4
CH/0.27/G1125	3/10/2009	1110	2.4									12.8	2.4
CH/0.27/G1126	9/11/2007	1145	12.0									9.0	7.1
CH/0.27/G1126	1/24/2008	1030	1.4									13.1	4.1
CH/0.27/G1126	2/5/2008	955	3.9									12.1	4.3
CH/0.27/G1126	3/21/2008	1010	6.3									12.1	3.4
CH/0.27/G1126	9/16/2008	1020	11.6									9.4	1.3
CH/0.27/G1126	3/10/2009	1110	2.4									12.8	3.7
CH/0.27/G114	3/10/2009	1145	2.4									12.8	4.4
CH/0.27/G1230	9/16/2008	1045	11.6									9.4	4.5
CH/0.27/G1230	3/10/2009	1145	2.4									12.8	1.4
CH/0.27/G1231	9/16/2008	1045	11.6									9.4	1.4
CH/0.27/G1231	3/10/2009	1145	2.4									12.8	1.5
CH/0.27/G1232	9/16/2008	1045	11.6									9.4	7.8
CH/0.27/G1232	3/10/2009	1145	2.4									12.8	3.1
CH/0.27/G1233	9/16/2008	1045	11.6									9.4	7.7
CH/0.27/G1233	3/10/2009	1145	2.4									12.8	8.1
CH/0.27/G1234	9/16/2008	1045	11.6									9.4	4.8
CH/0.27/G1234	3/10/2009	1145	2.4									12.8	10.8
CH/0.27/G1235	9/16/2008	1020	11.6									9.4	1.6
CH/0.27/G1235	3/10/2009	1110	2.4									12.8	4.8
CH/0.27/G1235	3/10/2009	1110	2.4									12.8	5.7
CH/0.27/G1236	9/16/2008	1020	11.6									9.4	7.2
CH/0.27/G1236	3/10/2009	1110	2.4									12.8	4.9
CH/0.27/G1237	9/16/2008	1020	11.6									9.4	8.6
CH/0.27/G1237	3/10/2009	1110	2.4									12.8	4.6
CH/0.27/G1238	9/16/2008	1020	11.6									9.4	0.5
CH/0.27/G1238	9/16/2008	1020	11.6									9.4	0.4
CH/0.27/G1238	3/10/2009	1110	2.4									12.8	3.6
CH/0.27/G1239	9/16/2008	1020	11.6									9.4	6.0
CH/0.27/G1239	3/10/2009	1110	2.4									12.8	9.6
CH/1.1	10/18/2007	945	9.2	214	10.2		2.0	89	62	0.23			
CH/1.1	10/18/2007	945	9.2	220	10.2		2.0	89	82	0.27			
CH/1.1	11/15/2007	955	6.7	235	10.8		3.1	89	60	1.20			
CH/1.1	12/5/2007	940	8.9	225	8.6		11.9	75	178	4.20			
CH/1.1	1/9/2008	940	2.9	142	11.2		7.8	84	58	1.50			
CH/1.1	2/6/2008	945	3.5	209	12.0		4.9	91	22	0.71			
CH/1.1	3/11/2008	940	8.1	239	10.6		5.2	90	18				
CH/1.1	4/16/2008	936	7.3	203	11.4	7.4	5.8	96	62	0.39			
CH/1.1	5/14/2008	945	9.7	219	10.5	7.6	4.0	93	56	0.24			
CH/1.1	6/10/2008	1024	10.4	219	9.8	7.2	7.7	88	478	0.17			
CH/1.1	6/24/2008	944	12.1	212	9.9	7.5	3.9	92	44	0.44			
CH/1.1	7/1/2008	1018	15.9	232	9.0	7.6	4.9	91	166	0.43			
CH/1.1	7/22/2008	925	14.5	269	9.3	7.7	2.9	91	118	0.08			
CH/1.1	8/5/2008	1059	14.2	186	9.3	7.7	2.8	90	112	0.06			
CH/1.1	8/5/2008	1059							94				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/1.1	8/21/2008	949	14.9	183	8.7	7.7	2.4	86	104	0.07			
CH/1.1	9/9/2008	1053	13.4	173	9.5	7.9	2.8	90	128	0.05			
CH/1.1	9/22/2008	948	12.0	158	9.9	7.5	3.1	92	60	0.03			
CH/2.0	10/18/2007	945	9.4	215	9.7	7.8	2.1	85	70	0.25			
CH/2.0	11/15/2007	1000	6.7	172	10.1	7.7	4.0	83	68	1.20			
CH/2.0	12/5/2007	1020	8.9	248	7.3	7.0	8.1	64	180	4.20			
CH/2.0	1/9/2008	1030	2.9	154	10.7	6.0	5.7	80	72	1.80			
CH/2.0	2/6/2008						5.2		16	0.77			
CH/2.0	2/6/2008	1000	3.5	213	11.0		5.2	84	22	0.81			
CH/2.0	3/11/2008	1010	7.9	172	9.9	7.3	5.5	84	14				
CH/2.0	4/16/2008	1010	7.3	119		7.3	6.1		82	0.33			
CH/2.0	5/14/2008	949	10.0	144	7.9	7.6	3.3	70	44	0.19			
CH/2.0	6/10/2008	1037	10.4		9.8	7.2	6.1	88	250	0.16			
CH/2.0	6/24/2008	1000	12.3	231		7.4	4.0		36	0.36			
CH/2.0	7/1/2008	1010	16.3	201		7.6	3.3		208	0.28			
CH/2.0	7/22/2008	1239	14.7	188		7.5	2.8		128	0.04			
CH/2.0	8/5/2008	1120							104				
CH/2.0	8/5/2008	1120	14.2	182	8.3	7.5	3.9	81	58	0.03			
CH/2.0	8/21/2008	1001	15.0	181	8.0	7.6	3.5	79	166	0.04			
CH/2.0	9/9/2008	1108	13.5	172	8.5	7.7	2.6	82	170	0.02			
CH/2.0	9/22/2008	1008	12.3	157	9.2	7.4	2.2	86	32	0.02			
CH/2.3	10/30/2007	1035									6.68		
CH/2.3	12/11/2007	####									30.96		
CH/2.3	3/3/2008	1335									14.58		
CH/3.4	9/17/2007	1337	13.9		4.0		3.4	39					
CH/3.4	10/15/2007	1401	9.2		6.7		2.5	59					
CH/3.4	10/18/2007	1007	9.6	202	6.8		1.0	60	26	0.14			
CH/3.4	10/18/2007	1007	9.6	201	6.8		1.0	60	51	0.12			
CH/3.4	11/5/2007	1350	6.5		8.0		68.2	66					
CH/3.4	11/15/2007	1012	6.3	213	8.1		2.4	66	48	0.87			
CH/3.4	12/5/2007	959	9.0	172	5.1		7.6	45	154	2.50			
CH/3.4	12/10/2007	1358	2.9		7.2		5.9	54					
CH/3.4	1/9/2008	955	2.6	123	9.7		6.7	72	98	1.50			
CH/3.4	1/14/2008	1220	6.1		7.9		6.1	64					
CH/3.4	2/6/2008	1012	2.8	192	9.7		4.3	73	40	0.69			
CH/3.4	2/11/2008	1217	2.2		7.9		6.7	58					
CH/3.4	3/10/2008	1217	7.3		5.4		5.6	45					
CH/3.4	3/10/2008	1217	7.3		6.6		5.3	55					
CH/3.4	3/11/2008	955	7.4	216	8.0		4.1	67	18				
CH/3.4	4/14/2008	1213	8.1		9.1		3.3	78					
CH/3.4	4/16/2008	952	7.1	181	9.3	7.1	4.9	77	96	0.31			
CH/3.4	5/12/2008	1426	11.5		11.0		4.2	101					
CH/3.4	5/14/2008	1001	9.8	195	8.0	7.2	3.1	71	88	0.15			
CH/3.4	6/2/2008	1410	11.5		7.6		2.1	70					
CH/3.4	6/10/2008	1045	10.5	189	7.1	7.1	5.6	64	332	0.13			
CH/3.4	6/10/2008	1050	10.6	191	6.9	7.1	5.6	63	374	0.13			
CH/3.4	6/24/2008	1001	12.5	206	6.9	7.1	2.2	65	34	0.13			
CH/3.4	7/1/2008	1038	18.8	181	3.8	7.3	4.2	40	64	0.03			
CH/3.4	7/22/2008	940	16.2	222	4.5	7.3	1.9	46	80	0.01			
CH/3.4	8/5/2008	950	14.9	205	4.2	7.1	0.9	41	60	0.01			
CH/3.4	8/21/2008	946	15.7	207	3.2	7.2	0.8	32	46	0.02			
CH/3.4	9/9/2008	1022	14.3	189	4.4	7.0	2.0	43	34	0.00			
CH/3.4	9/22/2008	1005	12.9	186	5.6	7.2	1.4	53	62	0.01			

Appendix B

Water Quality Data - July 1, 2007 to June 30, 2009

StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/3.4	9/22/2008	1010	12.9	205	5.5	7.1	1.4	52	42	0.00			
CH/3.9	9/17/2007	1247	14.9		3.3		7.1	33					
CH/3.9	10/15/2007	1137	9.8		6.2		2.6	55					
CH/3.9	11/5/2007	1056	6.3		7.2		2.2	59					
CH/3.9	11/5/2007	1056	6.3		7.5		3.0	61					
CH/3.9	12/10/2007	1109	3.8		6.7		7.9	51					
CH/3.9	1/14/2008	1136	7.0		8.0		6.9	66					
CH/3.9	2/11/2008	1332	5.9		8.3		7.2	67					
CH/3.9	3/10/2008	1330	7.9		5.0		5.2	42					
CH/3.9	4/14/2008	1129	6.1		8.9		3.7	72					
CH/3.9	5/12/2008	1029	8.6		8.4		7.1	72					
CH/3.9	6/2/2008	1320	11.5		7.6		2.7	70					
CH/4.1	10/18/2007	1019	8.9	197	6.5	7.7	3.4	57	500	0.14			
CH/4.1	11/15/2007	1030	6.8	156	8.9	7.4	3.7	73	96	0.89			
CH/4.1	12/5/2007	1058	9.0	183	5.0	7.1	6.8	43	246	2.60			
CH/4.1	1/9/2008	1110	2.9	229	8.6	6.4	26.3	65	48	1.40			
CH/4.1	2/6/2008						5.3		42	0.72			
CH/4.1	2/6/2008	1010	2.8	185	10.1		5.3	75	38	0.74			
CH/4.1	3/11/2008	1030	7.7	153	7.7	7.0	4.6	65	32				
CH/4.1	4/16/2008	1030	7.3	102		7.1	5.1		160	0.27			
CH/4.1	5/14/2008	1010	10.1	128	7.4	7.2	2.9	66	88	0.12			
CH/4.1	6/10/2008	1120	10.9		7.3	7.1	6.8	66	208	0.14			
CH/4.1	6/24/2008	1045	13.0	204		7.5	2.5		42	0.19			
CH/4.1	7/1/2008	1032	18.6	189		7.2	2.2		166	0.06			
CH/4.1	7/22/2008	1055	17.2	217	6.6	7.3	1.5	68	104	0.01			
CH/4.1	8/5/2008	1053	16.6	205	6.4	7.3	1.3	65	26	0.01			
CH/4.1	8/21/2008	1111	16.2	208	3.5	7.2	2.0	35	860	0.02			
CH/4.1	9/9/2008	1155	15.6	211	5.2	7.2	2.0	52	24	0.00			
CH/4.1	9/22/2008	1138	13.2	207	6.0	7.5	1.3	57	98	0.00			
CH/5.3	9/17/2007	1257	14.8		7.8		3.6	77					
CH/5.3	10/15/2007	1151	8.7		8.2		1.8	71					
CH/5.3	10/18/2007	1026	9.0	192	7.9		1.5	69	118	0.15			
CH/5.3	10/18/2007	1026	9.0	189	8.0		1.4	69	42	0.16			
CH/5.3	11/5/2007	1108	6.6		9.4		3.6	77					
CH/5.3	11/15/2007	1024	7.0	213	9.0		2.3	75	70	0.79			
CH/5.3	12/5/2007	1015	8.2	148	4.5		7.3	39	158	3.10			
CH/5.3	12/10/2007	1124	2.3		9.0		5.8	66					
CH/5.3	1/9/2008	1010	3.0	120	9.6		5.7	72	40	1.50			
CH/5.3	1/14/2008	1147	6.9		8.3		8.7	69					
CH/5.3	1/14/2008	1147	6.9		7.7		7.2	64					
CH/5.3	2/6/2008	1025	2.6	160	11.2		6.2	83	48	0.69			
CH/5.3	2/11/2008	1342	5.9		10.8		6.9	87					
CH/5.3	3/10/2008	1339	9.5		13.1		33.2	115					
CH/5.3	3/11/2008	1008	7.7	185	9.4		11.5	79	50				
CH/5.3	4/14/2008	1144	6.7		9.7		4.0	80					
CH/5.3	4/16/2008	1004	7.0	163	10.7	7.1	5.2	89	54	0.31			
CH/5.3	5/12/2008	1039	10.1		11.2		5.5	100					
CH/5.3	5/14/2008	1017	9.8	174	10.1	7.1	3.4	90	166	0.16			
CH/5.3	6/2/2008	1334	12.6		11.8		3.2	111					
CH/5.3	6/10/2008	1102	9.9	156	9.4	7.0	6.0	84	394	0.11			
CH/5.3	6/10/2008	1105	10.0	156	9.3	6.9	5.0	83	332	0.11			
CH/5.3	6/24/2008	1012	11.2	189	9.9	7.3	2.2	90	78	0.18			
CH/5.3	7/1/2008	1053	15.8	197	6.2	7.2	5.9	63	110	0.03			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/5.3	7/22/2008	952	14.3	197	5.5	7.1	1.4	53	44	0.01			
CH/5.3	8/5/2008	1000	13.1	206	7.3	7.2	1.2	70	46	0.01			
CH/5.3	8/21/2008	959	14.4	195	5.1	7.1	1.2	50	82	0.02			
CH/5.3	9/9/2008	1043	12.4	190	7.7	7.1	2.1	72	188	0.00			
CH/5.3	9/22/2008	1027	12.1	193	7.9	7.0	2.0	74	72	0.01			
CH/5.3	9/22/2008	1029	12.3	189	8.0	6.9	1.8	75	76	0.00			
CH/6.7	10/18/2007	1105	9.0	181	7.9	7.4	3.0	69	2100	0.40			
CH/6.7	11/15/2007	1100	7.1	151	7.9	7.4	2.5	66	130	0.80			
CH/6.7	12/5/2007	1130	7.8	177	6.8	6.7	8.4	57	8	3.40			
CH/6.7	1/9/2008	1325	3.9	124	9.7	6.2	5.9	75	26	1.50			
CH/6.7	2/6/2008	1210	2.7	156	10.9		3.9	81	6	0.84			
CH/6.7	3/11/2008	1250	7.9	126	9.2	6.9	2.2	78	28				
CH/6.7	3/11/2008	1256	7.9	126	9.2	6.8	2.6	78	50				
CH/6.7	4/16/2008	1245	7.7	92		7.0	4.9		156	0.33			
CH/6.7	5/14/2008	1255	10.3	110	7.9	7.0	4.0	70	372	0.16			
CH/6.7	6/10/2008	1400	10.5		9.1	6.9	4.9	82	292	0.13			
CH/6.7	6/24/2008	1324	11.7	175		7.4	1.9		58	0.33			
CH/6.7	7/1/2008	1310	15.3	149		7.1	1.5		98	0.54			
CH/6.7	7/22/2008	1221	13.7	137		7.3	1.2		190	0.08			
CH/6.7	8/5/2008	1340	13.4	137	6.9	7.3	1.3	66	92	0.03			
CH/6.7	8/21/2008	1235	14.2	133	5.8	7.1	1.0	56	146	0.06			
CH/6.7	9/9/2008	1334	12.0	129	6.5	7.3	1.7	61	44	0.06			
CH/6.7	9/22/2008	1202	11.7	126	7.3	7.0	2.2	68	74	0.02			
CH/7.0	10/18/2007	1115	9.0	180	6.6	7.2	1.6	57	146	0.30			
CH/7.0	11/15/2007	1110	7.1	150	7.0	7.1	2.2	58	54	0.77			
CH/7.0	12/5/2007	1140	7.7	174	6.7	6.6	7.5	56	20	3.30			
CH/7.0	1/9/2008	1315	3.9	120	10.2	6.5	4.9	78	26	1.40			
CH/7.0	2/6/2008	1205	2.5	151	11.4		4.8	85	18	0.80			
CH/7.0	3/11/2008	1240	7.8	123	8.9	7.0	2.6	75	18				
CH/7.0	3/11/2008	1240	7.8	123	8.6	6.9	2.5	73	24				
CH/7.0	4/16/2008	1240	7.8	90		6.9	4.7		38	0.31			
CH/7.0	5/14/2008	10	10.4	106	8.0	6.9	3.6	72	200	0.14			
CH/7.0	6/10/2008	1345	10.6		10.4	7.0	4.3	94	118	0.12			
CH/7.0	6/24/2008	1308	11.6	173		7.1	1.7		80	0.33			
CH/7.0	7/1/2008	1300	15.4	149		7.0	2.3		140	0.57			
CH/7.0	7/22/2008	1218	13.7	138		7.1	1.2		228	0.07			
CH/7.0	8/5/2008	1335	13.0	135	5.9	7.0	1.2	56	62	0.04			
CH/7.0	8/21/2008	1228	14.1	134	3.9	7.0	1.1	38	80	0.06			
CH/7.0	9/9/2008	1325	11.4	128	5.3	7.2	1.3	49	50	0.06			
CH/7.0	9/22/2008	1150	11.8	128	6.4	6.9	2.7	60	66	0.03			
CH/7.8	10/18/2007	1059	8.9	178	9.5		4.5	82	2760	0.29			
CH/7.8	11/15/2007	1048	7.6	189	10.1		2.0	85	52	0.61			
CH/7.8	11/15/2007	1048	7.6	181	10.1		1.5	85	32	0.59			
CH/7.8	12/5/2007	1042	7.0	178	8.9		10.8	74	144	3.70			
CH/7.8	1/9/2008	1038	3.8	100	11.1		9.0	85	48	1.50			
CH/7.8	2/6/2008	1052	2.5	135	12.2		6.3	91	178	0.78			
CH/7.8	3/11/2008	1027	7.1	153	10.9		2.8	91	24				
CH/7.8	4/16/2008	1038	6.8	135	11.7	7.0	5.9	97	44	0.37			
CH/7.8	5/14/2008	1037	9.5	147	10.6	7.2	3.5	94	48	0.15			
CH/7.8	6/10/2008	1142	9.7	141	9.9	7.1	8.8	88	292	0.11			
CH/7.8	6/24/2008	1043	10.4	161	10.1	7.3	2.2	91	43	0.37			
CH/7.8	6/24/2008	1047	10.4	160	10.0	7.2	2.4	90	38	0.42			
CH/7.8	7/1/2008	1121	14.3	168	8.9	7.4	3.1	87	72	0.28			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/7.8	7/22/2008	1011	13.0	184	9.1	7.5	1.9	87	160	0.10			
CH/7.8	8/5/2008	1018	12.1	173	9.7	7.6	1.7	90	276	0.07			
CH/7.8	8/21/2008	1030	13.7	174	8.8	7.5	3.3	85	1610	0.11			
CH/7.8	9/9/2008	1111	11.2	171	9.8	7.4	1.8	90	118	0.00			
CH/7.8	9/22/2008	1105	11.4	174	9.4	7.4	2.9	86	916	0.01			
CH/8.4	10/18/2007	1146	8.8	161	10.5	7.3	6.4	91	460	0.40			
CH/8.4	11/15/2007	1150	7.9	117	10.7	6.7	2.4	91	26	0.54			
CH/8.4	12/5/2007	1155	6.9	129	11.2	6.8	16.6	93	96	2.60			
CH/8.4	1/9/2008	1125	3.8	90	11.9	6.5	9.0	91	44	1.60			
CH/8.4	2/6/2008	1105	3.2	238	10.2		7.6	77	22	0.90			
CH/8.4	3/11/2008	1055	7.1	91	11.1	7.1	3.5	93	24				
CH/8.4	4/16/2008	1050	6.8	65		7.1	6.2		60	0.38			
CH/8.4	4/16/2008	1055	6.8	65		7.1	6.2		56	0.41			
CH/8.4	5/14/2008	1114	9.6	82	9.3	7.3	4.3	82	120	0.14			
CH/8.4	6/10/2008	1210	9.8		10.7	7.1	8.1	95	278	0.16			
CH/8.4	6/24/2008	1140	10.5	141		7.4	3.1		58	0.41			
CH/8.4	7/1/2008	1110	14.0	118		7.4	3.6		98	0.60			
CH/8.4	7/22/2008	1045	12.8	113		7.7	3.5		94	0.16			
CH/8.4	8/5/2008	1155	12.2	112	9.6	7.6	3.7	90	86	0.07			
CH/8.4	8/21/2008	1055	13.4	112	8.8	7.5	1.8	84	96	0.10			
CH/8.4	8/21/2008	1056	13.4	112	8.8	7.4		84	52	0.10			
CH/8.4	9/9/2008	1151	11.1	108	9.4	7.7	3.3	85	26	0.09			
CH/8.4	9/22/2008	1039	11.2	106	9.4	7.5	2.3	86	48	0.04			
CH/8.8	10/18/2007	1308	8.9	160	9.1	7.1	3.2	79	700	0.38			
CH/8.8	11/15/2007	1312	8.2	113	9.5	7.2	1.4	81	26	0.50			
CH/8.8	12/5/2007	1320	7.0	129	10.8	6.6	11.6	90	50	2.60			
CH/8.8	1/9/2008	1235	3.9	89	11.7	6.3	8.0	90	42	1.60			
CH/8.8	2/6/2008	1150	2.8	110	12.0		6.5	90	12	0.89			
CH/8.8	3/11/2008	1215	7.9	95	10.9	7.1	3.3	92	50				
CH/8.8	4/16/2008	1220	7.8	66		7.1	6.5		54	0.41			
CH/8.8	4/16/2008	1225	7.8	66		7.1	6.4		52	0.40			
CH/8.8	5/14/2008	1220	10.7	82	9.1	7.0	4.7	82	172	0.16			
CH/8.8	6/10/2008	1323	10.0		12.3	6.9	9.3	109	164	0.17			
CH/8.8	6/24/2008	1248	11.9	141		7.4	2.1		42	0.43			
CH/8.8	7/1/2008	1230	14.4	118		7.5	4.0		270	0.68			
CH/8.8	7/22/2008	1149	13.0	113		7.5	1.6		70	0.22			
CH/8.8	8/5/2008	1315	13.1	106	9.4	7.5	2.8	89	520	0.05			
CH/8.8	8/21/2008	1205	12.9	108	9.1	7.3	1.3	86	68	0.14			
CH/8.8	9/9/2008	1256	11.9	110	9.5	7.4	1.3	88	370	0.14			
CH/8.8	9/9/2008	1257	11.9	110	9.5	7.4	1.3	88	330	0.14			
CH/8.8	9/22/2008	1135	11.3	105	9.6	7.2	1.7	88	46	0.06			
CH/9.0	10/18/2007	1234	8.6	163	11.0	7.9	2.3	95	168	0.48			
CH/9.0	11/15/2007	1235	8.4	85	10.6	7.5	1.3	91	2	0.59			
CH/9.0	12/5/2007	1250	7.0	127	11.5	7.0	14.4	96	94	3.40			
CH/9.0	1/9/2008	1210	3.9	85	11.8	6.2	9.8	91	48	1.70			
CH/9.0	2/6/2008	1130	2.9	105	12.2		7.7	92	10	1.00			
CH/9.0	3/11/2008	1130	7.7	99	11.2	7.4	3.6	95	10				
CH/9.0	4/16/2008	1130	7.3	60		7.3	9.0		24	0.50			
CH/9.0	5/14/2008	1130	10.0	76	9.8	7.3	5.2	87	24	0.24			
CH/9.0	5/14/2008	1130	10.0	76	9.8	7.3	5.1	87	20	0.22			
CH/9.0	6/10/2008	1245	9.6		13.3	7.3	13.9	117	194	0.25			
CH/9.0	6/24/2008	1216	10.9	140		7.8	2.1		16	0.58			
CH/9.0	7/1/2008	1145	12.7	116		7.8	2.1		42	0.86			

Appendix B

Water Quality Data - July 1, 2007 to June 30, 2009

StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/9.0	7/22/2008	1115	11.9	119		7.9	1.5		56	0.56			
CH/9.0	8/5/2008	1230	12.8	123	10.4	8.0	1.4	98	52	0.19			
CH/9.0	8/21/2008	1120	12.4	92	9.8	7.7	1.3	92	20	0.23			
CH/9.0	8/21/2008	1122	12.4	92	9.6	7.7	3.5	90	40	0.23			
CH/9.0	9/9/2008	1219	11.8	119	10.5	8.1	0.9	97	940	0.19			
CH/9.0	9/22/2008	1108	10.7	114	10.8	7.4	1.4	97	26	0.23			
CH/9.3	9/11/2007	1135	11.0		10.0			91					
CH/9.3	9/11/2007	1135	11.0		10.1			92					
CH/9.3	9/17/2007	1313	11.7		9.9		2.2	91					
CH/9.3	10/15/2007	1207	8.9		10.1		1.7	88					
CH/9.3	10/18/2007	1257	8.6	157	11.1	7.6	6.5	96	254	0.54			
CH/9.3	10/24/2007	1110	8.8		10.0			87					
CH/9.3	10/24/2007	1110	8.8		10.2			88					
CH/9.3	11/5/2007	1126	6.1		10.9		1.7	89					
CH/9.3	11/15/2007	1257	8.7	128	10.9	7.6	1.1	94	4	0.62			
CH/9.3	11/27/2007	1130	4.2		12.2			95					
CH/9.3	11/27/2007	1130	4.2		12.6			98					
CH/9.3	12/5/2007	1310	7.0	126	11.7	6.9	15.3	97	42	3.40			
CH/9.3	12/10/2007	1145	4.1		11.6		7.0	90					
CH/9.3	12/10/2007	1145	4.1		11.6		6.7	90					
CH/9.3	12/17/2007	1050	5.2		11.8			94					
CH/9.3	12/17/2007	1050	5.2		11.9			95					
CH/9.3	1/9/2008	1230	3.9	85	12.3	6.1	9.4	94	52	1.70			
CH/9.3	1/14/2008	1200	5.9		10.8		9.9	87					
CH/9.3	1/24/2008		2.0		13.3			97					
CH/9.3	1/24/2008		2.0		13.2			97					
CH/9.3	2/5/2008	1110	3.9		12.5			96					
CH/9.3	2/5/2008	1110	3.9		12.5			96					
CH/9.3	2/6/2008	1145	3.0	103	12.2		9.6	91	1	1.00			
CH/9.3	2/11/2008	1357	6.1		11.4		7.9	93					
CH/9.3	3/10/2008	1355	8.9		10.1		2.9	88					
CH/9.3	3/11/2008	1145	7.3	97	11.2	7.5	6.3	94	8				
CH/9.3	3/21/2008	1120	5.8		12.6			102					
CH/9.3	3/21/2008	1120	5.8		12.5			101					
CH/9.3	4/14/2008	1200	6.2		11.4		5.0	93					
CH/9.3	4/16/2008	1145	7.3	60		7.4	8.5		22	0.50			
CH/9.3	5/12/2008	1100	7.8		10.2		8.2	86					
CH/9.3	5/14/2008	1145	9.8	74	9.7	7.6	5.4	86	10	0.24			
CH/9.3	5/14/2008	1145	9.8	74	9.7	7.6	5.4	86	24	0.27			
CH/9.3	6/2/2008	1401	9.7		10.0		2.1	88					
CH/9.3	6/10/2008	1312	9.5		13.4	7.4	15.2	118	152	0.26			
CH/9.3	6/24/2008	1218	11.0	133		7.3	1.9		18	0.67			
CH/9.3	7/1/2008	1205	11.7	121		7.8	3.3		56	1.00			
CH/9.3	7/22/2008	1132	11.0	118		7.8	1.3		28	0.64			
CH/9.3	8/5/2008	1248	12.0	121	10.5	7.9	2.8	98	68	0.27			
CH/9.3	8/21/2008	1140	11.7	116	10.7	7.8	2.1	99	58	0.36			
CH/9.3	9/9/2008	1238	11.0	118	10.5	8.0	1.3	95	360	0.40			
CH/9.3	9/9/2008	1239	11.0	118	10.5	8.0	0.9	96	500	0.36			
CH/9.3	9/16/2008	1155	10.4		10.5			94					
CH/9.3	9/16/2008	1155	10.4		10.6			95					
CH/9.3	9/22/2008	1126	10.1	97	11.1	7.7	3.6	99	32	0.45			
CH/9.3	10/10/2008	1140	8.0		11.2			95				11.2	
CH/9.3	10/10/2008	1140	8.0		11.1			94				11.2	

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/9.3	11/19/2008	1050	5.8		11.6			94				11.6	
CH/9.3	11/19/2008	1050	5.8		11.6			94				11.6	
CH/9.3	12/11/2008	1125	6.4		11.7			96				11.7	
CH/9.3	12/11/2008	1125	6.4		11.7			96				11.7	
CH/9.3	1/13/2009	1045	5.7		11.7			94				11.7	
CH/9.3	1/13/2009	1045	5.7		11.7			94				11.7	
CH/9.3	2/6/2009	1020	5.3		11.7			93				11.7	
CH/9.3	2/6/2009	1020	5.3		11.7			93				11.7	
CH/9.3	3/9/2009	1120	3.6		12.4			95				12.5	
CH/9.3	3/9/2009	1120	3.6		12.5			95				12.5	
CH/9.3/G1144	9/11/2007	1135	11.0									10.1	10.0
CH/9.3/G1144	10/24/2007	1110	8.8									10.1	9.8
CH/9.3/G1144	11/27/2007	1130	4.2									12.4	11.5
CH/9.3/G1144	12/17/2007	1050	5.2									11.9	10.5
CH/9.3/G1144	1/24/2008	1040	2.0									13.3	12.6
CH/9.3/G1144	1/24/2008	1040	2.0									13.3	12.7
CH/9.3/G1144	2/5/2008	1110	3.9									12.5	11.1
CH/9.3/G1144	2/5/2008	1110	3.9									12.5	11.0
CH/9.3/G1144	3/21/2008	1120	5.8									12.6	10.7
CH/9.3/G1144	9/16/2008	1155	10.4									10.6	8.6
CH/9.3/G1144	10/10/2008	1110	8.0									11.2	10.4
CH/9.3/G1144	11/19/2008	1000	5.8									11.6	10.4
CH/9.3/G1144	12/11/2008	1050	6.4									11.7	11.0
CH/9.3/G1144	1/13/2009	1000	5.7									11.7	9.4
CH/9.3/G1144	1/13/2009	1000	5.7									11.7	9.8
CH/9.3/G1144	2/6/2009	945	5.3									11.7	10.2
CH/9.3/G1144	3/9/2009	1040	3.6									12.5	10.9
CH/9.3/G1145	9/11/2007	1135	11.0									10.1	10.1
CH/9.3/G1145	9/11/2007	1135	11.0									10.1	9.8
CH/9.3/G1145	10/24/2007	1110	8.8									10.1	10.1
CH/9.3/G1145	10/24/2007	1110	8.8									10.1	10.2
CH/9.3/G1145	11/27/2007	1130	4.2									12.4	12.3
CH/9.3/G1145	11/27/2007	1130	4.2									12.4	12.4
CH/9.3/G1145	12/17/2007	1050	5.2									11.9	11.0
CH/9.3/G1145	12/17/2007	1050	5.2									11.9	11.0
CH/9.3/G1145	1/24/2008	1040	2.0									13.3	12.6
CH/9.3/G1145	2/5/2008	1110	3.9									12.5	12.1
CH/9.3/G1145	3/21/2008	1120	5.8									12.6	11.5
CH/9.3/G1145	9/16/2008	1155	10.4									10.6	9.0
CH/9.3/G1145	10/10/2008	1110	8.0									11.2	10.1
CH/9.3/G1145	11/19/2008	1000	5.8									11.6	10.5
CH/9.3/G1145	12/11/2008	1050	6.4									11.7	10.0
CH/9.3/G1145	1/13/2009	1000	5.7									11.7	8.3
CH/9.3/G1145	2/6/2009	945	5.3									11.7	9.6
CH/9.3/G1145	3/9/2009	1040	3.6									12.5	10.3
CH/9.3/G1146	10/24/2007	1130	8.8									10.1	10.1
CH/9.3/G1146	11/27/2007	1145	4.2									12.4	11.7
CH/9.3/G1146	12/17/2007	1110	5.2									11.9	6.3
CH/9.3/G1146	1/24/2008	1200	2.0									13.3	5.3
CH/9.3/G1146	2/5/2008	1110	3.9									12.5	6.7
CH/9.3/G1146	3/21/2008	1145	5.8									12.6	7.3
CH/9.3/G1146	3/21/2008	1145	5.8									12.6	6.6
CH/9.3/G1146	9/16/2008	1230	10.4									10.6	3.3

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/9.3/G1146	10/10/2008	1110	8.0									11.2	7.3
CH/9.3/G1146	11/19/2008	1000	5.8									11.6	5.6
CH/9.3/G1146	12/11/2008	1050	6.4									11.7	6.1
CH/9.3/G1146	1/13/2009	1000	5.7									11.7	2.9
CH/9.3/G1146	2/6/2009	945	5.3									11.7	4.3
CH/9.3/G1146	3/9/2009	1040	3.6									12.5	4.9
CH/9.3/G1147	9/11/2007	1200	11.0									10.1	9.7
CH/9.3/G1147	10/24/2007	1130	8.8									10.1	9.4
CH/9.3/G1147	11/27/2007	1145	4.2									12.4	11.2
CH/9.3/G1147	12/17/2007	1110	5.2									11.9	3.6
CH/9.3/G1147	1/24/2008	1200	2.0									13.3	2.9
CH/9.3/G1147	2/5/2008	1110	3.9									12.5	3.8
CH/9.3/G1147	3/21/2008	1145	5.8									12.6	5.0
CH/9.3/G1147	9/16/2008	1230	10.4									10.6	7.1
CH/9.3/G1147	10/10/2008	1110	8.0									11.2	9.2
CH/9.3/G1147	11/19/2008	1000	5.8									11.6	8.6
CH/9.3/G1147	12/11/2008	1050	6.4									11.7	9.8
CH/9.3/G1147	1/13/2009	1000	5.7									11.7	6.5
CH/9.3/G1147	2/6/2009	945	5.3									11.7	8.0
CH/9.3/G1147	3/9/2009	1040	3.6									12.5	8.1
CH/9.3/G1148	9/11/2007	1215	11.0									10.1	10.1
CH/9.3/G1148	10/24/2007	1140	8.8									10.1	10.0
CH/9.3/G1148	11/27/2007	1200	4.2									12.4	12.3
CH/9.3/G1148	12/17/2007	1110	5.2									11.9	11.0
CH/9.3/G1148	1/24/2008	1200	2.0									13.3	12.4
CH/9.3/G1148	2/5/2008	1110	3.9									12.5	11.9
CH/9.3/G1148	3/21/2008	1145	5.8									12.6	11.5
CH/9.3/G1148	9/16/2008	1230	10.4									10.6	8.9
CH/9.3/G1148	10/10/2008	1135	8.0									11.2	10.0
CH/9.3/G1148	11/19/2008	1030	5.8									11.6	11.0
CH/9.3/G1148	12/11/2008	1115	6.4									11.7	10.3
CH/9.3/G1148	1/13/2009	1035	5.7									11.7	8.6
CH/9.3/G1148	2/6/2009	945	5.3									11.7	9.1
CH/9.3/G1148	3/9/2009	1100	3.6									12.5	9.6
CH/9.3/G1149	9/11/2007	1215	11.0									10.1	10.0
CH/9.3/G1149	10/24/2007	1140	8.8									10.1	10.0
CH/9.3/G1149	11/27/2007	1200	4.2									12.4	12.2
CH/9.3/G1149	12/17/2007	1110	5.2									11.9	10.4
CH/9.3/G1149	1/24/2008	1200	2.0									13.3	12.7
CH/9.3/G1149	2/5/2008	1110	3.9									12.5	11.6
CH/9.3/G1149	3/21/2008	1145	5.8									12.6	11.8
CH/9.3/G1149	9/16/2008	1230	10.4									10.6	7.8
CH/9.3/G1149	10/10/2008	1135	8.0									11.2	10.0
CH/9.3/G1149	12/11/2008	1115	6.4									11.7	10.4
CH/9.3/G1149	1/13/2009	1035	5.7									11.7	8.3
CH/9.3/G1149	2/6/2009	1005	5.3									11.7	9.8
CH/9.3/G1149	2/6/2009	1005	5.3									11.7	10.1
CH/9.3/G1149	3/9/2009	1100	3.6									12.5	10.8
CH/9.3/G124	9/11/2007	1200	11.0									10.1	7.6
CH/9.3/G124	10/24/2007	1130	8.8									10.1	7.3
CH/9.3/G124	11/27/2007	1145	4.2									12.4	9.0
CH/9.3/G124	12/17/2007	1110	5.2									11.9	3.7
CH/9.3/G124	1/24/2008	1200	2.0									13.3	5.3

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/9.3/G124	2/5/2008	1110	3.9									12.5	5.9
CH/9.3/G124	3/21/2008	1145	5.8									12.6	9.2
CH/9.3/G124	9/16/2008	1230	10.4									10.6	9.1
CH/9.3/G124	10/10/2008	1110	8.0									11.2	10.2
CH/9.3/G124	11/19/2008	1000	5.8									11.6	9.6
CH/9.3/G124	12/11/2008	1050	6.4									11.7	10.0
CH/9.3/G124	1/13/2009	1000	5.7									11.7	7.4
CH/9.3/G124	2/6/2009	945	5.3									11.7	9.4
CH/9.3/G124	3/9/2009	1040	3.6									12.5	10.1
CH/9.3/G1240	9/16/2008	1155	10.4									10.6	10.1
CH/9.3/G1240	9/16/2008	1155	10.4									10.6	10.2
CH/9.3/G1240	10/10/2008	1110	8.0									11.2	10.5
CH/9.3/G1240	11/19/2008	1000	5.8									11.6	10.2
CH/9.3/G1240	12/11/2008	1050	6.4									11.7	10.6
CH/9.3/G1240	1/13/2009	1000	5.7									11.7	2.4
CH/9.3/G1240	2/6/2009	945	5.3									11.7	1.0
CH/9.3/G1240	3/9/2009	1040	3.6									12.5	2.5
CH/9.3/G1241	9/16/2008	1230	10.4									10.6	10.5
CH/9.3/G1241	10/10/2008	1110	8.0									11.2	11.2
CH/9.3/G1241	10/10/2008	1110	8.0									11.2	10.4
CH/9.3/G1241	11/19/2008	1000	5.8									11.6	10.9
CH/9.3/G1241	11/19/2008	1030	5.8									11.6	10.8
CH/9.3/G1241	12/11/2008	1050	6.4									11.7	10.9
CH/9.3/G1241	1/13/2009	1000	5.7									11.7	8.5
CH/9.3/G1241	2/6/2009	945	5.3									11.7	9.9
CH/9.3/G1241	3/9/2009	1040	3.6									12.5	10.9
CH/9.3/G1242	9/16/2008	1230	10.4									10.6	10.3
CH/9.3/G1242	10/10/2008	1135	8.0									11.2	10.8
CH/9.3/G1242	11/19/2008	1030	5.8									11.6	11.2
CH/9.3/G1242	12/11/2008	1115	6.4									11.7	11.4
CH/9.3/G1242	1/13/2009	1035	5.7									11.7	8.2
CH/9.3/G1242	2/6/2009	1005	5.3									11.7	9.2
CH/9.3/G1242	3/9/2009	1100	3.6									12.5	7.2
CH/9.3/G1242	3/9/2009	1100	3.6									12.5	6.2
CH/9.3/G1243	9/16/2008	1230	10.4									10.6	10.2
CH/9.3/G1243	10/10/2008	1135	8.0									11.2	10.6
CH/9.3/G1243	11/19/2008	1030	5.8									11.6	10.6
CH/9.3/G1243	11/19/2008	1030	5.8									11.6	10.7
CH/9.3/G1243	12/11/2008	1115	6.4									11.7	10.8
CH/9.3/G1243	12/11/2008	1115	6.4									11.7	10.8
CH/9.3/G1243	1/13/2009	1035	5.7									11.7	6.8
CH/9.3/G1243	2/6/2009	1005	5.3									11.7	4.3
CH/9.3/G1243	3/9/2009	1100	3.6									12.5	3.1
CH/9.3/G1244	9/16/2008	1230	10.4									10.6	8.7
CH/9.3/G1244	10/10/2008	1135	8.0									11.2	8.8
CH/9.3/G1244	11/19/2008	1030	5.8									11.6	7.7
CH/9.3/G1244	12/11/2008	1115	6.4									11.7	8.1
CH/9.3/G1244	1/13/2009	1035	5.7									11.7	3.3
CH/9.3/G1244	2/6/2009	1005	5.3									11.7	5.6
CH/9.3/G1244	3/9/2009	1100	3.6									12.5	4.0
CH/9.3/G1245	9/16/2008	1230	10.4									10.6	9.2
CH/9.3/G1245	10/10/2008	1135	8.0									11.2	9.5
CH/9.3/G1245	11/19/2008	1030	5.8									11.6	8.5

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
CH/9.3/G1245	12/11/2008	1115	6.4									11.7	8.6
CH/9.3/G1245	1/13/2009	1035	5.7									11.7	6.8
CH/9.3/G1245	2/6/2009	1005	5.3									11.7	8.8
CH/9.3/G1245	3/9/2009	1100	3.6									12.5	7.9
CH/9.3/G89	9/11/2007	1215	11.0									10.1	8.0
CH/9.3/G89	10/24/2007	1140	8.8									10.1	9.0
CH/9.3/G89	11/27/2007	1200	4.2									12.4	11.3
CH/9.3/G89	12/17/2007	1110	5.2									11.9	6.5
CH/9.3/G89	1/24/2008	1200	2.0									13.3	2.6
CH/9.3/G89	2/5/2008	1110	3.9									12.5	3.7
CH/9.3/G89	3/21/2008	1145	5.8									12.6	6.0
CH/9.3/G89	9/16/2008	1230	10.4									10.6	4.3
CH/9.3/G89	10/10/2008	1135	8.0									11.2	8.4
CH/9.3/G89	11/19/2008	1030	5.8									11.6	8.9
CH/9.3/G89	12/11/2008	1115	6.4									11.7	8.5
CH/9.3/G89	1/13/2009	1035	5.7									11.7	4.9
CH/9.3/G89	2/6/2009	1005	5.3									11.7	7.5
CH/9.3/G89	3/9/2009	1100	3.6									12.5	5.2
ECH/0.2	10/18/2007	1149	9.0	223	9.3		3.0	81	92	0.39			
ECH/0.2	11/15/2007	1154	7.5	291	9.5		3.9	80	36	2.30			
ECH/0.2	12/5/2007	1146	8.5	286	6.9		7.4	60	144	6.30			
ECH/0.2	12/5/2007	1146	8.5	285	6.9		7.6	59	144	6.30			
ECH/0.2	1/9/2008	1130	3.2	213	10.4		4.1	79	18	1.90			
ECH/0.2	2/6/2008	1144	3.7	245	10.7		3.7	82	1	0.72			
ECH/0.2	3/11/2008	1115	7.8	261	9.9		4.8	84	8				
ECH/0.2	4/16/2008	1126	7.8	258	10.5	7.2	7.0	89	10	0.42			
ECH/0.2	5/14/2008	1152	9.9	255	9.5	7.3	4.7	85	18	0.36			
ECH/0.2	6/10/2008	1243	10.3	273	8.7	7.3	5.3	78	50	0.17			
ECH/0.2	6/24/2008	1154	11.6	265	9.2	7.4	4.5	85	24	0.67			
ECH/0.2	7/1/2008	1223	15.0	265	8.4	7.5	5.1	83	244	0.55			
ECH/0.2	7/1/2008	1225	15.0	265	8.4	7.5	5.1	83	228	0.68			
ECH/0.2	7/22/2008	1114	13.3	294	8.7	7.5	3.1	83	100	0.25			
ECH/0.2	8/5/2008	1111	13.2	256	8.7	7.6	2.6	83	104	0.05			
ECH/0.2	8/21/2008	1132	15.0	268	7.8	7.5	6.2	77	156	0.05			
ECH/0.2	9/9/2008	1213	12.8	265	8.1	7.4	4.7	76	136	0.00			
ECH/0.2	9/22/2008	1200	12.4	257	7.7	7.4	8.9	72	114	0.02			
ECH/0.4	9/17/2007	1218	12.8		7.6		12.1	72					
ECH/0.4	9/17/2007	1220	12.8		7.0		9.6	66					
ECH/0.4	10/15/2007	1104	8.6		8.2		3.7	71					
ECH/0.4	11/5/2007	1030	6.1		8.4		6.3	68					
ECH/0.4	12/10/2007	1043	3.8		8.6		6.8	66					
ECH/0.4	1/14/2008	1120	6.5		7.2		5.6	59					
ECH/0.4	2/11/2008	1314	6.9		7.9		5.0	65					
ECH/0.4	3/10/2008	1311	7.9		5.8		7.7	49					
ECH/0.4	4/14/2008	1103	5.2		8.3		5.8	66					
ECH/0.4	5/12/2008	1010	8.6		8.7		7.8	75					
ECH/0.4	6/2/2008	1249	10.2		7.8		5.9	70					
ECH/1.0	9/17/2007	1235	12.5		4.8		4.7	45					
ECH/1.0	10/15/2007	1102	8.5		5.6		15.7	48					
ECH/1.0	10/15/2007	1102	8.5		5.7		3.7	49					
ECH/1.0	10/18/2007	1201	9.0	228	6.3		3.1	55	52	0.47			
ECH/1.0	11/5/2007	1043	6.5		6.4		5.3	53					
ECH/1.0	11/15/2007	1202	7.6	290	6.9		3.6	58	74	2.40			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
ECH/1.0	12/5/2007	1159	8.4	287	5.0		6.8	43	132	6.30			
ECH/1.0	12/10/2007	1056	4.5		6.7		10.2	52					
ECH/1.0	1/9/2008	1142	3.3	213	8.8		4.0	67	18	2.00			
ECH/1.0	1/9/2008	1142	3.3	213	8.8		3.4	67	10	2.00			
ECH/1.0	1/14/2008	1128	6.6		7.2		5.8	59					
ECH/1.0	2/6/2008	1157	3.6	247	8.1		3.2	62	1	0.76			
ECH/1.0	2/11/2008	1322	7.1		7.1		6.9	59					
ECH/1.0	3/10/2008	1321	7.7		6.9		10.0	58					
ECH/1.0	3/11/2008	1126	7.9	260	7.2		5.8	61	6				
ECH/1.0	4/14/2008	1119	6.5		6.7		###	55					
ECH/1.0	4/16/2008	1135	7.9	257	8.5	6.9	5.4	72	12	0.43			
ECH/1.0	5/12/2008	1020	9.7		6.4		4.6	57					
ECH/1.0	5/14/2008	1206	10.0	267	6.6	7.0	4.0	58	20	0.36			
ECH/1.0	6/2/2008	1310	11.1		4.9		4.8	45					
ECH/1.0	6/10/2008	1255	10.5	280	4.9	6.8	3.9	44	54	0.17			
ECH/1.0	6/24/2008	1207	11.0	274	4.5	6.9	3.2	41	24	0.75			
ECH/1.0	7/1/2008	1244	14.5	263	2.6	6.8	5.0	26	228	0.63			
ECH/1.0	7/1/2008	1248	14.5	260	2.6	6.9	4.1	26	208	0.73			
ECH/1.0	7/22/2008	1130	12.8	304	3.5	7.0	4.2	33	292	0.53			
ECH/1.0	8/5/2008	1124	12.4	259	3.5	7.0	2.9	33	106	0.07			
ECH/1.0	8/21/2008	1144	14.6	266	2.5	7.0	3.4	25	920	0.06			
ECH/1.0	9/9/2008	1230	12.2	261	2.4	6.8	5.9	22	184	0.00			
ECH/1.0	9/22/2008	1211	11.7	249	3.1	7.0	5.1	29	416	0.01			
ECH/1.3	9/17/2007	1325	12.5		11.3		44.4	106					
ECH/1.3	10/15/2007	1144	8.9		5.5		3.2	48					
ECH/1.3	11/5/2007	1336	6.9		7.5		2.7	62					
ECH/1.3	12/10/2007	1343	4.1		7.2		3.6	56					
ECH/1.3	1/14/2008	1205	6.2		6.8		4.7	55					
ECH/1.3	2/11/2008	1200	6.7		6.5		5.4	54					
ECH/1.3	3/10/2008	1158	7.2		8.4		6.4	70					
ECH/1.3	4/14/2008	1141	7.9		9.7		5.8	82					
ECH/1.3	5/12/2008	1349	10.1		6.9		7.4	62					
ECH/1.3	6/2/2008	1347	10.2		5.4		3.7	48					
ECH/1.7	9/17/2007	1308	12.1		5.4		11.9	50					
ECH/1.7	10/15/2007	1319	8.5		7.3		4.4	63					
ECH/1.7	11/5/2007	1319	5.9		6.6		14.1	53					
ECH/1.7	12/10/2007	1310	4.1		3.8		11.2	29					
ECH/1.7	1/14/2008	1142	6.2		4.2		7.3	34					
ECH/1.7	2/11/2008	1142	6.3		4.0		6.0	33					
ECH/1.7	3/10/2008	1140	7.0		3.6		6.1	30					
ECH/1.7	4/14/2008	1126	7.9		2.0		25.8	17					
ECH/1.7	5/12/2008	1312	9.2		8.7		6.3	76					
ECH/1.7	6/2/2008	1333	10.9		13.2		3.3	120					
ECH/2.2	9/17/2007	1243	11.9		9.3		26.9	86					
ECH/2.2	10/15/2007	1256	8.8		9.4		5.1	81					
ECH/2.2	11/5/2007	1300	6.1				4.6						
ECH/2.2	12/10/2007	1328	4.2		8.8		23.2	68					
ECH/2.2	1/14/2008	1119	5.9		7.9		5.7	64					
ECH/2.2	2/11/2008	1123	2.4		6.2		6.0	46					
ECH/2.2	3/10/2008	1123	6.6		9.0		6.5	74					
ECH/2.2	4/14/2008	1113	7.7		9.2		4.6	78					
ECH/2.2	5/12/2008	1331	9.9		8.0		3.4	71					
ECH/2.2	6/2/2008	1315	11.0		11.6		26.6	106					

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
ECH/2.2	6/2/2008	1316	11.0		8.7		20.0	79					
ECH/2.8	9/17/2007	1228	12.8		6.4		88.7	61					
ECH/2.8	10/15/2007	1232	8.9		7.4		29.9	64					
ECH/2.8	11/5/2007	1236	6.8		9.1		47.6	75					
ECH/2.8	12/10/2007	1250	4.5		8.9		5.2	70					
ECH/2.8	1/14/2008	1101	6.1		6.8		6.7	55					
ECH/2.8	2/11/2008	1113	2.6		7.3		5.9	54					
ECH/2.8	3/10/2008	1111	6.9		6.4		12.6	53					
ECH/2.8	4/14/2008	1102	7.8		8.8		15.0	75					
ECH/2.8	5/12/2008	1258	9.2		8.7		13.7	76					
ECH/2.8	5/12/2008	1258	9.2		8.8		5.1	77					
ECH/2.8	6/2/2008	1304	11.9				4.5						
ECH/3.3	10/18/2007	1220	8.9	210	9.7		47.0	84	372	0.78			
ECH/3.3	11/15/2007	1215	8.4	231	9.7		4.5	83	144	2.00			
ECH/3.3	12/5/2007	1215	7.7	307	7.3		10.7	62	346	6.50			
ECH/3.3	1/9/2008	1157	4.3	177	9.8		6.9	76	58	2.40			
ECH/3.3	1/9/2008	1157	4.3	177	9.8		6.2	76	50	2.40			
ECH/3.3	2/6/2008	1212	3.3	203	11.1		5.2	84	8	1.10			
ECH/3.3	3/11/2008	1140	7.3	215	10.4		4.2	87	4				
ECH/3.3	4/16/2008	1156	7.1	216	10.7	6.9	4.5	89	106	0.57			
ECH/3.3	5/14/2008	1225	9.7	209	9.8	7.1	6.3	87	132	0.55			
ECH/3.3	6/10/2008	1309	9.7	205	9.4	7.0	12.0	83	352	0.27			
ECH/3.3	6/24/2008	1220	10.3	218	10.0	7.3	3.8	90	64	0.97			
ECH/3.3	7/1/2008	1301	12.8	215	9.4	7.4	6.1	89	208	1.00			
ECH/3.3	7/22/2008	1148	12.5	241	9.3	7.5	6.9	88	228	0.86			
ECH/3.3	7/22/2008	1150	12.5	239	9.4	7.5	7.4	88	292	0.89			
ECH/3.3	8/5/2008	1138	11.6	234	9.5	7.5	9.3	88	352	0.57			
ECH/3.3	8/21/2008	1156	13.1	224	9.1	7.5	4.5	86	104	0.51			
ECH/3.3	9/9/2008	1248	10.9	221	9.8	7.3	3.8	89	128	0.47			
ECH/3.3	9/22/2008	1224	10.7	201	10.0	7.5	8.1	90	86	0.42			
ECH/4.8	10/18/2007	1239	9.0	162	9.6		21.0	83	1590	0.74			
ECH/4.8	11/15/2007	1249	8.7	186	9.5		2.3	82	116	1.50			
ECH/4.8	12/5/2007	1242	7.5	199	8.8		10.5	74	790	4.80			
ECH/4.8	1/9/2008	1231	4.3	119	11.6		5.8	90	28	2.10			
ECH/4.8	1/9/2008	1231	4.3	120	11.5		5.6	90	146	2.10			
ECH/4.8	2/6/2008	1243	3.8	146	11.2		11.7	86	12	1.10			
ECH/4.8	3/11/2008	1205	8.0	157	10.6		7.6	90	18				
ECH/4.8	4/16/2008	1224	7.9	158	11.1	6.9	2.8	94	84	0.52			
ECH/4.8	5/14/2008	1315	10.4	160	10.5	7.2	3.7	94	222	0.36			
ECH/4.8	6/10/2008	1356	9.8	162	9.7	7.2	5.9	86	146	0.32			
ECH/4.8	6/24/2008	1255	10.8	167	10.1	7.6	3.0	92	36	0.62			
ECH/4.8	7/1/2008	1352	12.5	168	9.9	7.6	4.6	93	186	0.61			
ECH/4.8	7/22/2008	1220	11.9	184	9.6	7.6	3.2	89	188	0.30			
ECH/4.8	7/22/2008	1222	11.9	198	9.6	7.5	3.4	89	208	0.47			
ECH/4.8	8/5/2008	1217	12.2	183	9.3	7.4	2.1	87	196	0.12			
ECH/4.8	8/21/2008	1238	12.6	176	9.1	7.5	2.5	85	104	0.21			
ECH/4.8	9/9/2008	1300	11.2	177	9.5	7.4	2.5	86	70	0.32			
ECH/4.8	9/22/2008	1237	10.6	167	9.9	7.5	2.4	90	64	0.07			
ECH/5.3	10/18/2007	1259	9.1	149	10.4		35.0	91	114	0.94			
ECH/5.3	11/15/2007	1304	8.7	153	10.4		1.0	90	2	0.80			
ECH/5.3	12/5/2007	1259	7.4	123	10.9		7.3	92	46	1.40			
ECH/5.3	1/9/2008	1247	4.5	81	12.6		3.4	98	6	1.20			
ECH/5.3	2/6/2008	1258	4.4	118	11.7		3.0	92	16	0.71			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
ECH/5.3	3/11/2008	1220	7.6	150	11.2		1.5	94	10				
ECH/5.3	4/16/2008	1237	7.6	126	11.7	7.7	1.3	99	2	0.48			
ECH/5.3	5/14/2008	1328	9.3	141	11.2	7.8	2.2	98	1	0.31			
ECH/5.3	6/10/2008	1408	9.2	146	10.9	7.7	2.2	95	52	0.23			
ECH/5.3	6/24/2008	1315	9.9	152	10.8	7.8	1.6	96	6	0.66			
ECH/5.3	7/1/2008	1403	11.3	158	10.8	7.8	2.8	99	36	0.71			
ECH/5.3	7/22/2008	1235	10.7	174	10.9	7.8	1.9	98	76	0.48			
ECH/5.3	7/22/2008	1236	10.7	172	10.8	7.8	1.8	97	42	0.51			
ECH/5.3	8/5/2008	1232	11.2	160	10.7	7.8	1.4	98	94	0.13			
ECH/5.3	8/21/2008	1251	11.4	163	10.7	7.7	2.1	98	54	0.25			
ECH/5.3	9/9/2008	1318	10.8	162	10.5	7.7	1.3	95	6	0.28			
ECH/5.3	9/22/2008	1250	10.3	162	10.7	7.6	1.3	96	20	0.08			
EG/0.0	10/18/2007	1155	9.0	215	10.0	7.3	50.0	87	4900	0.80			
EG/0.0	10/30/2007										0.22		
EG/0.0	11/15/2007	1140	8.8	202	9.2	7.0	3.5	80	58	0.95			
EG/0.0	12/5/2007	1158	7.6	226	10.0	6.9	12.0	84	48	4.30			
EG/0.0	12/11/2007	1108									0.24		
EG/0.0	1/9/2008	1130	4.9	140	10.1	6.4	4.9	80	12	1.70			
EG/0.0	2/6/2008	1055	3.3	163	8.9		2.5	68	16	0.63			
EG/0.0	3/3/2008	1448									0.35		
EG/0.0	3/11/2008	1057	7.3	148	9.9	7.2	3.2	83	10				
EG/0.0	4/16/2008	1100	7.1	111		7.1	4.3		10	0.27			
EG/0.0	4/16/2008	1100	7.1	110		7.1	3.9		10	0.29			
EG/0.0	5/14/2008	1112	9.4	131	8.7	7.2	11.0	76	516	0.12			
EG/0.0	6/10/2008	1204	9.4		10.2	7.3	9.4	90	96	0.14			
EG/0.0	6/24/2008	1128	10.3	250		7.4	14.0		8	0.44			
EG/0.0	6/26/2008	1535									0.15		
EG/0.0	7/1/2008	1115	12.5	199		7.5	6.1		166	0.69			
EG/0.0	7/22/2008	1043	12.1	194		7.7	7.7		1140	0.26			
EG/0.0	8/5/2008	1150	12.5	196	8.2	7.3	8.0	77	106	0.07			
EG/0.0	8/21/2008	1050	12.8	190	8.8	7.7	6.3	83	482	0.10			
EG/0.0	9/9/2008	1145	11.8	192	9.3	7.3	5.8	86	410	0.10			
EG/0.0	9/22/2008	1037	10.7	174	9.8	7.5	4.9	89	292	0.05			
EG/0.0	2/4/2009	1510									0.30		
FE/	12/3/2007	1430									4.76		
HO/0.0	2/11/2008	1227	5.7	123	12.1		6.3	97	12	1.70			
HO/0.0	2/27/2008	1148	5.7	146	12.3		6.2	99	2	1.12			
HO/0.0	3/19/2008	1133	5.2	132	12.0		6.9	95	8	0.86			
HO/0.0	4/2/2008	1216	5.5	128	12.0		6.5	96	1	1.24			
HO/0.0	4/15/2008	1202	6.1	109	12.2	7.6	6.5	100	6	1.40			
HO/0.0	4/30/2008	1159	7.2	96	11.8	7.6	6.8	99	2	1.08			
HO/0.0	5/13/2008	1156	8.0	120	11.4	7.6	6.9	97	6	0.65			
HO/0.0	5/20/2008	1200	11.2	138	10.4	7.8	7.8	95	14	0.25			
HO/0.0	6/5/2008	1150	9.1		10.3	7.4	14.0	90	62	0.56			
HO/0.0	6/19/2008	1229	10.6	125	10.7	7.6	5.5	97	8	0.09			
HO/0.0	7/2/2008	1306	13.7	162	9.9	7.9	5.4	95	104	0.25			
HO/0.0	7/15/2008	1126	12.2	166		7.9	7.8		44	0.62			
HO/0.0	7/29/2008	1220	12.8	176	10.0	8.0	6.8	94	20	0.02			
HO/0.0	8/12/2008	1207	13.1	179	10.0	8.0	6.2	95	16	0.07			
HO/0.0	8/26/2008	1211	11.8	191	10.9	8.0	5.0	101	22	0.03			
HO/0.0	9/10/2008	1228											
HO/0.0	9/23/2008	1220											
HO/0.0	10/7/2008	1155											

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
HO/0.0	10/21/2008	1154	7.2	185	11.6	7.8	11.2	96	12	0.43			
HO/0.0	11/4/2008	1148	8.0	183	11.5	7.6	12.5	98	78	2.09			
HO/0.0	11/18/2008	1205	8.0	181	11.3	7.8	2.1	96	4	0.96			
HO/0.0	12/2/2008	1200	7.6	184	11.4	7.8	2.3	96	18	0.66			
HO/0.0	12/16/2008	1213	0.9	177	13.1	7.7	2.5	93	6	1.57			
HO/0.0	1/6/2009	1144	3.0	150	12.5	7.6	5.0	94	4	3.27			
HO/0.0	1/20/2009	1127	2.4	126	13.7	7.4	3.7	101	2	1.94			
HO/0.0	2/10/2009	1124	2.8	156	13.5	7.5	3.5	101	1	1.66			
HO/0.0	2/24/2009	1138	5.5	147	12.1	7.7	8.4	97	16	1.87			
HO/0.0	3/3/2009	1145	5.4	132	11.8	7.6	12.4	95	4				
HO/0.0	3/24/2009	1145	4.8	79	12.2	7.7	6.9	96	2	2.21			
HO/0.0	4/7/2009	1153	6.4	127	11.7	7.6		96	1				
HO/0.0	4/21/2009	1152	9.1	147	10.9	7.8	6.0	95	12	1.76			
HO/0.0	5/13/2009	1026	7.7	116	11.1	7.4	14.4	93	10	1.40			
HO/0.0	5/27/2009	1048	9.8	109	10.9	7.6	7.3	96	4	0.84			
HO/0.0	6/3/2009	1100	13.7	152	10.1	7.8	9.1	97	20	0.34			
HO/0.0	6/30/2009	1207	14.1	170	9.8	7.8	4.4	95	34				
HO/0.02	9/20/2007	1035									0.04		
HO/0.02	10/17/2007	1105									0.02		
HO/0.02	12/7/2007	1352									1.04		
HO/0.02	1/23/2008	1027									0.53		
HO/0.02	3/27/2008	1045									0.40		
HO/0.02	4/23/2008	1027									1.03		
HO/0.02	7/9/2008	1420									0.06		
HO/0.02	8/26/2008	1020									0.04		
HO/0.02	11/30/2008	1040									0.03		
NA/0.1	10/18/2007	1041	9.0	258	9.9		14.8	87	700	0.46			
NA/0.1	11/15/2007	1032	8.4	270	9.9		1.7	85	240	0.61			
NA/0.1	11/15/2007	1032					1.7		200	0.61			
NA/0.1	12/5/2007	1023	7.0	199	10.0		15.0	83	1280	2.20			
NA/0.1	1/9/2008	1019	3.9	111	11.5		7.1	89	46	0.98			
NA/0.1	2/6/2008	1035	2.8	132	12.4		5.7	93	82	0.70			
NA/0.1	3/11/2008	1014	7.0	180	11.2		3.2	93	126				
NA/0.1	4/16/2008	1010	6.7	158	11.9	7.5	5.2	99	32	0.26			
NA/0.1	5/14/2008	1024	9.4	165	10.7	7.5	4.5	94	230	0.16			
NA/0.1	6/10/2008	1115	9.1	147	10.3	7.2	29.0	90	664	0.20			
NA/0.1	6/10/2008	1117	9.1	152	10.3	7.3	29.0	90	1660	0.18			
NA/0.1	6/24/2008	1022	10.0	196	10.7	7.6	4.3	95	220	0.57			
NA/0.1	7/1/2008	1104	12.8	240	10.0	7.9	5.5	94	456	0.67			
NA/0.1	7/22/2008	958	11.9	285	10.2	7.8	2.5	95	294	0.59			
NA/0.1	8/5/2008	1006	12.0	265	10.1	7.8	2.3	94	832	0.25			
NA/0.1	8/21/2008	1015	12.6	269	9.4	7.5	4.0	88	880	0.33			
NA/0.1	9/9/2008	1054	11.3	263	10.1	7.8	2.0	92	664	0.28			
NA/0.1	9/22/2008	1041	11.0	242	10.1	7.5	2.7	92	768	0.07			
NA/0.1	9/22/2008	1045	11.0	267	10.0	7.5	2.3	91	560	0.05			
NA/0.7	10/18/2007	1112	9.1	243	10.0		11.3	87	3440	0.55			
NA/0.7	11/15/2007	1101	9.0	265	9.8		0.8	85	410	0.73			
NA/0.7	11/15/2007	1101	9.0	267	9.7		0.7	85	230	0.71			
NA/0.7	12/5/2007	1055	6.7	170	10.7		18.7	88	368	2.20			
NA/0.7	1/9/2008	1048	3.9	98	12.0		6.6	92	34	0.99			
NA/0.7	2/6/2008	1104	2.8	125	12.4		5.5	93	134	0.69			
NA/0.7	3/11/2008	1040	7.2	180	11.1		2.4	93	192				
NA/0.7	4/16/2008	1048	6.6	147	11.8	7.6	5.7	97	10	0.32			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
NA/0.7	5/14/2008	1052	8.9	150	10.9	7.6	4.0	95	32	0.19			
NA/0.7	6/10/2008	1154	8.7	132	10.7	7.5	21.0	92	394	0.23			
NA/0.7	6/24/2008	1101	9.8	191	10.7	7.7	3.6	94	44	0.63			
NA/0.7	6/24/2008	1102	9.8	195	10.6	7.7	3.3	94	32	0.63			
NA/0.7	7/1/2008	1134	11.0	252	10.6	7.8	1.8	96	106	0.77			
NA/0.7	7/22/2008	1024	10.6	290	10.6	7.9	2.4	96	272	0.68			
NA/0.7	8/5/2008	1029	10.9	267	10.6	7.9	1.5	96	292	0.42			
NA/0.7	8/21/2008	1041	11.1	200	10.3	7.8	1.4	94	560	0.46			
NA/0.7	9/9/2008	1123	10.5	269	10.4	7.8	1.3	94	436	0.39			
NA/0.7	9/22/2008	1117	10.2	270	10.6	7.6	1.3	94	328	0.21			
NA/1.3	11/15/2007	1120	7.2	175	8.0		6.3	66	8	1.90			
NA/1.3	12/5/2007	1112	6.2	138	10.9		21.5	89	56	2.40			
NA/1.3	12/5/2007	1112	6.2	122	11.0		21.0	89	68	2.40			
NA/1.3	1/9/2008	1104	3.7	91	11.7		6.5	89	12	0.89			
NA/1.3	2/6/2008	1115	2.1	102	12.7		6.9	93	8	0.66			
NA/1.3	3/11/2008	1050	6.5	112	10.5		4.6	86	2				
NA/1.3	4/16/2008	1057	6.0	110	12.0	7.2	8.1	98	1	0.23			
NA/1.3	5/14/2008	1103	9.0	111	10.7	7.3	7.7	93	10	0.11			
NA/1.3	6/10/2008	1206	8.6	116	10.6	7.2	21.6	91	394	0.24			
NA/1.3	6/24/2008	1115	9.9	128	10.0	7.2	5.0	89	6	0.40			
NA/1.3	6/24/2008	1116	9.9	128	10.0	7.3	4.8	89	10	0.39			
NA/1.3	7/1/2008	1146	12.9	127	8.3	7.3	4.4	79	46	0.40			
NA/1.3	8/5/2008												
NA/1.3	8/21/2008	1050							224				
NA/1.3	9/9/2008	1130											
NA/1.3	9/22/2008	1125											
PU/0.0	10/18/2007	1035	8.8	277	10.0	7.4	3.1	87	430	0.45			
PU/0.0	11/15/2007	1025	8.1	197	9.8	7.7	3.8	83	12	0.94			
PU/0.0	12/5/2007	1050	7.7	257	10.5	7.4	7.2	89	100	2.90			
PU/0.0	1/9/2008	1100	4.2	189	11.4	6.5	9.5	89	16	1.20			
PU/0.0	2/6/2008	1015	3.3	195	11.8		6.2	90	2	0.53			
PU/0.0	3/11/2008	1020	7.6	152	11.7	7.3	1.9	99	2				
PU/0.0	3/11/2008	1025	7.6	153	11.2	7.5	1.9	94	1				
PU/0.0	4/16/2008	1025	7.2	116		7.6	4.7		80	0.25			
PU/0.0	5/14/2008	1010	9.9	158	9.4	7.8	8.7	84	484	0.33			
PU/0.0	6/10/2008	1115	8.9		10.7	7.3	28.0	93	3430	0.62			
PU/0.0	6/24/2008	1045	13.5	220		7.6	6.4		288	0.50			
PU/0.0	7/1/2008	1030	15.2	199		7.8	6.3		208	0.70			
PU/0.0	7/22/2008	1049	14.0	292	9.2	7.9	3.8	89	292	0.14			
PU/0.0	8/5/2008	1047	15.7	266	8.5	7.8	3.1	86	500	0.07			
PU/0.0	8/21/2008	1105	14.6	272	7.8	7.7	2.0	76	28	0.05			
PU/0.0	9/9/2008	1150	16.4	263	9.4	7.8	2.3	96	16	0.01			
PU/0.0	9/22/2008	1132	13.4	267	11.1	8.1	1.7	106	6	0.04			
PU/0.4	10/18/2007	1135	9.0	269	8.9		1.9	77	10	0.38			
PU/0.4	11/15/2007	1142	6.9	272	9.0		1.5	74	1	0.93			
PU/0.4	12/5/2007	1130	7.7	233	9.8		8.1	82	30	2.90			
PU/0.4	12/5/2007	1130	7.7	233	9.7		7.9	82	38	2.90			
PU/0.4	1/9/2008	1118	4.2	175	12.4		7.1	96	2	1.10			
PU/0.4	2/6/2008	1131	3.3	190	12.0		4.1	91	1	0.47			
PU/0.4	3/11/2008	1101	7.6	210	10.4		1.9	88	6				
PU/0.4	4/16/2008	1111	7.0	195	11.4	7.6	3.3	95	18	0.25			
PU/0.4	5/14/2008	1119	9.4	240	10.4	7.8	2.6	92	12	0.36			
PU/0.4	6/10/2008	1221	8.7	159	10.5	7.4	27.0	90	352	0.64			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
PU/0.4	6/24/2008	1130	12.2	221	9.1	7.6	3.3	85	14	0.46			
PU/0.4	7/1/2008	1203	14.8	246	8.7	7.7	2.8	86	126	0.64			
PU/0.4	7/1/2008	1206	14.8	244	8.8	7.7	2.9	87	186	0.73			
PU/0.4	7/22/2008	925	13.4	204		7.8	1.8		16	0.41			
PU/0.4	8/5/2008	1128	13.7	206	9.0	7.7	2.4	87	50	0.05			
PU/0.4	8/21/2008	1013	14.2	200	7.7	7.5	1.9	75	44	0.07			
PU/0.4	9/9/2008	1119	12.6	198	8.6	7.8	1.5	81	4	0.06			
PU/0.4	9/22/2008	1017	11.4	186	8.6	7.4	1.8	79	16	0.09			
SA/0.15	7/5/2007	1040							80				
SA/0.15	7/31/2007	1100	13.1						220				
SA/0.15	8/14/2007	1105	13.7						30				
SA/0.15	8/28/2007	1115	12.6						240				
SA/0.15	9/11/2007	1130	13.2						170				
SA/0.15	9/24/2007	1040	9.1						900				
SA/0.15	9/25/2007	1120	10.7		10.4			94				10.4	
SA/0.15	9/25/2007	1120	10.7		10.3			93				10.3	
SA/0.15	9/25/2007	1255	11.0										
SA/0.15	10/9/2007	1030	8.9						240				
SA/0.15	10/16/2007	1025	9.4		9.6			84				9.6	
SA/0.15	10/16/2007	1025	9.4		9.7			85				9.7	
SA/0.15	10/16/2007	1150	9.8										
SA/0.15	10/23/2007	925	8.0						80				
SA/0.15	11/6/2007	1025	5.4						6				
SA/0.15	11/20/2007	1050	5.3						4				
SA/0.15	11/21/2007	1010	4.1		12.5			97				12.5	
SA/0.15	11/21/2007	1010	4.1		12.5			97				12.5	
SA/0.15	12/4/2007	1034	45.3						96				
SA/0.15	12/18/2007	1035	5.2						32				
SA/0.15	12/18/2007	1038	5.2						32				
SA/0.15	1/2/2008	959	3.1						8				
SA/0.15	1/2/2008	959	3.1						2				
SA/0.15	1/2/2008	1025	3.6		12.7			97				12.7	
SA/0.15	1/17/2008	1125	3.3						14				
SA/0.15	1/17/2008	1125	3.3						6				
SA/0.15	2/11/2008	1040	4.6	128	12.3		3.5	96	2	1.10			
SA/0.15	2/20/2008	1025	4.2		13.2			102					
SA/0.15	2/20/2008	1025	4.2		13.2			102					
SA/0.15	2/27/2008	1019	5.4	160	12.1		2.1	97	4	0.64			
SA/0.15	3/19/2008	1010	4.6	158	12.4		2.6	97	2	0.50			
SA/0.15	4/2/2008	1040	3.9	135	12.8		2.5	98	18	0.74			
SA/0.15	4/15/2008	1036	5.3	125	12.7	7.4	3.2	101	12	0.67			
SA/0.15	4/30/2008	1025	5.8	114	12.5	7.4	2.8	101	2	0.58			
SA/0.15	5/13/2008	947	7.6	153	11.4	7.3	2.3	96	8	0.17			
SA/0.15	5/20/2008	1009	11.0	176	10.2	7.5	2.4	93	50	0.22			
SA/0.15	6/5/2008	1014	9.1		10.6	7.3	4.6	93	369	0.29			
SA/0.15	6/19/2008	1040	9.5	163	11.2	7.6	2.3	98	32	0.10			
SA/0.15	7/2/2008	1034	13.3	211	10.3	7.9	2.0	99	462	0.16			
SA/0.15	7/15/2008	956	12.3	244		7.7	1.4		188	0.55			
SA/0.15	7/29/2008	1037	12.0	260	10.3	7.7	1.4	96	292	0.03			
SA/0.15	7/29/2008	1039	12.1	257	10.3	7.7	1.8	96	352	0.01			
SA/0.15	8/12/2008	1025	13.3	268	10.0	7.8	1.5	96	228	0.23			
SA/0.15	8/12/2008	1027	13.3	266	10.2	7.8	1.5	97	248	0.04			
SA/0.15	8/12/2008	1027							290				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.15	8/26/2008	1038	12.2	256	10.6	7.8	1.9	99	184	0.09			
SA/0.15	8/26/2008	1040							292				
SA/0.15	8/26/2008	1040	12.2	262	10.5	7.8	2.1	98	790	0.07			
SA/0.15	9/8/2008	1225	14.4		9.2			90				8.8	
SA/0.15	9/8/2008	1225	14.4		8.8			86				9.2	
SA/0.15	9/10/2008	1053	12.0	303	9.9	7.7	2.9	92	522	0.13			
SA/0.15	9/10/2008	1055							332				
SA/0.15	9/10/2008	1055	12.1	303	10.0	7.6	2.7	93	416	0.09			
SA/0.15	9/23/2008	1046	9.6	295	10.2	7.6	3.4	90	48	0.22			
SA/0.15	10/7/2008	1031	10.8	278	9.7	7.6	1.8	88	604	0.20			
SA/0.15	10/7/2008	1035							520				
SA/0.15	10/7/2008	1035	10.8	278	9.7	7.5	1.3	88	582	0.17			
SA/0.15	10/21/2008	1034							34				
SA/0.15	10/21/2008	1034	6.3	273	11.3	7.5	0.7	92	26	0.27			
SA/0.15	10/21/2008	1035	6.3	284	11.3	7.6	0.8	92	46	0.26			
SA/0.15	10/22/2008	1240	7.5									10.9	
SA/0.15	10/22/2008	1240	7.5									10.9	
SA/0.15	11/4/2008	1014	7.8	212	10.9	7.0	9.5	92	50	1.16			
SA/0.15	11/4/2008	1024	7.8	211	11.0	7.1	8.9	93	110	1.08			
SA/0.15	11/4/2008	1024	7.8	211	11.0	7.1		93	102				
SA/0.15	11/13/2008	1150	8.9		10.7			93				10.6	
SA/0.15	11/13/2008	1150	8.9		10.6			92				10.6	
SA/0.15	11/18/2008	1037	8.2	241	10.9	7.3	1.3	93	4	0.56			
SA/0.15	12/2/2008								10				
SA/0.15	12/2/2008	1036	7.8	245	11.1	7.2	1.8	94	12	0.18			
SA/0.15	12/2/2008	1037	7.8	243	11.1	7.3	1.6	94	48	0.20			
SA/0.15	12/16/2008								4				
SA/0.15	12/16/2008	1042	0.2	250	13.5	7.7	1.6	94	34	0.46			
SA/0.15	12/16/2008	1045	0.2	247	13.5	7.7	1.6	94	2	0.46			
SA/0.15	1/6/2009								20				
SA/0.15	1/6/2009	1037	3.0	204	12.2	7.3	2.6	92	22	1.23			
SA/0.15	1/6/2009	1039	3.0	207	12.2	7.3	2.4	92	18	1.21			
SA/0.15	1/15/2009	1210	4.2		12.5			97				12.4	
SA/0.15	1/15/2009	1210	4.2		12.3			95				12.4	
SA/0.15	1/20/2009	1020	2.3	145	13.6	7.1	2.4	100	4	1.38			
SA/0.15	2/9/2009	1135	3.8		12.4			95				12.5	
SA/0.15	2/9/2009	1135	3.8		12.5			96				12.5	
SA/0.15	2/10/2009	1016	2.5	192	13.6	7.1	1.6	101	1	0.70			
SA/0.15	2/24/2009	1022	5.6	177	11.9	7.2	6.1	96	18	0.62			
SA/0.15	3/3/2009	1021	4.5	114	12.1	7.4	7.9	95	4				
SA/0.15	3/11/2009	1145	2.5		13.3			99				13.4	
SA/0.15	3/11/2009	1145	2.5		13.4			99				13.4	
SA/0.15	3/24/2009	1034	4.4	157	12.4	7.4	2.7	97	4	0.75			
SA/0.15	4/7/2009	1019	6.2	132	12.0	7.3		98	1				
SA/0.15	4/7/2009	1022							2				
SA/0.15	4/7/2009	1022	6.2	131	11.9	7.3		97	1				
SA/0.15	4/21/2009	1027	8.7	176	11.4	7.3	3.3	99	2	0.63			
SA/0.15	4/21/2009	1029							2				
SA/0.15	4/21/2009	1029	8.8	176	11.3	7.3	2.5	98	4	0.63			
SA/0.15	5/13/2009								24				
SA/0.15	5/13/2009	910	7.7	139	10.9	7.3	5.6	92	24	0.62			
SA/0.15	5/13/2009	912	7.7	141	10.9	7.3	5.3	92	32	0.61			
SA/0.15	5/27/2009								6				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.15	5/27/2009	918	9.7	159	10.8	7.1	2.9	95	4	0.87			
SA/0.15	5/27/2009	920	9.7	159	10.8	7.1	3.5	95	4	0.66			
SA/0.15	6/3/2009								8				
SA/0.15	6/3/2009	922	12.6	199	10.2	7.1	3.1	96	8	0.32			
SA/0.15	6/3/2009	925	12.7	199	10.1	7.2	2.9	96	18	0.30			
SA/0.15	6/30/2009								46				
SA/0.15	6/30/2009	1035	11.5	261	11.5	7.4	1.4	105	48				
SA/0.15	6/30/2009	1037	11.5	261	11.4	7.4	2.1	105	58				
SA/0.15-0.50	3/18/2008	1135	5.9		13.0			105					
SA/0.15-0.50	3/18/2008	1135	5.9		13.1			106					
SA/0.15-0.50/G067	9/8/2008	1105	14.4									9.0	7.4
SA/0.15-0.50/G067	10/22/2008	1100	7.5									10.9	8.5
SA/0.15-0.50/G1003	10/16/2007	1025	9.4									9.7	7.8
SA/0.15-0.50/G1003	11/21/2007	1010	4.1									12.5	10.8
SA/0.15-0.50/G1003	1/2/2008	1040	3.6									12.7	0.4
SA/0.15-0.50/G1004	9/25/2007	1120	10.7									10.4	6.0
SA/0.15-0.50/G1004	9/25/2007	1120	10.7									10.4	5.3
SA/0.15-0.50/G1004	1/15/2009	1030	4.2									12.4	5.7
SA/0.15-0.50/G1004	3/11/2009	1020	2.5									13.4	4.3
SA/0.15-0.50/G1006	9/25/2007	1145	10.7									10.4	1.7
SA/0.15-0.50/G1007	9/25/2007	1200	10.7									10.4	6.9
SA/0.15-0.50/G1007	10/16/2007	1100	9.4									9.7	7.2
SA/0.15-0.50/G1007	11/21/2007	1100	4.1									12.5	8.0
SA/0.15-0.50/G1007	1/2/2008	1100	3.6									12.7	9.3
SA/0.15-0.50/G1007	2/20/2008	1050	4.2									13.2	9.2
SA/0.15-0.50/G1007	3/18/2008	1155	5.9									13.1	9.5
SA/0.15-0.50/G1007	11/13/2008	1015	8.9									10.6	8.6
SA/0.15-0.50/G1007	12/4/2008	1130	6.0									11.9	9.9
SA/0.15-0.50/G1007	1/15/2009	1030	4.2									12.4	10.8
SA/0.15-0.50/G1007	3/11/2009	1020	2.5									13.4	11.6
SA/0.15-0.50/G1023	3/12/2009	1045	2.3									13.4	10.7
SA/0.15-0.50/G1023	3/12/2009	1045	2.3									13.4	10.8
SA/0.15-0.50/G1024	3/12/2009	1045	2.3									13.4	10.8
SA/0.15-0.50/G1025	3/12/2009	1045	2.3									13.4	11.1
SA/0.15-0.50/G1027	3/12/2009	1045	2.3									13.4	11.7
SA/0.15-0.50/G1029	3/12/2009	1045	2.3									13.4	8.2
SA/0.15-0.50/G103	9/25/2007	1145	10.7									10.4	0.7
SA/0.15-0.50/G103	10/16/2007	1100	9.4									9.7	5.2
SA/0.15-0.50/G103	11/21/2007	1100	4.1									12.5	6.5
SA/0.15-0.50/G103	11/21/2007	1100	4.1									12.5	6.0
SA/0.15-0.50/G103	1/2/2008	1100	3.6									12.7	3.7
SA/0.15-0.50/G103	2/20/2008	1050	4.2									13.2	6.3
SA/0.15-0.50/G103	3/18/2008	1155	5.9									13.1	1.9
SA/0.15-0.50/G103	9/8/2008	1105	14.4									9.0	0.5
SA/0.15-0.50/G103	10/22/2008	1100	7.5									10.9	0.7
SA/0.15-0.50/G103	11/13/2008	1015	8.9									10.6	0.6
SA/0.15-0.50/G103	12/4/2008	1130	6.0									11.9	0.8
SA/0.15-0.50/G103	1/15/2009	1030	4.2									12.4	1.1
SA/0.15-0.50/G1033	3/12/2009	1130	2.3									13.4	12.0
SA/0.15-0.50/G1035	3/12/2009	1130	2.3									13.4	9.4
SA/0.15-0.50/G1100	9/25/2007	1120	10.7									10.4	4.3
SA/0.15-0.50/G1102	9/25/2007	1120	10.7									10.4	8.0
SA/0.15-0.50/G1102	10/16/2007	1025	9.4									9.7	8.2

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.15-0.50/G1102	11/21/2007	1010	4.1									12.5	11.6
SA/0.15-0.50/G1102	1/2/2008	1040	3.6									12.7	12.9
SA/0.15-0.50/G1102	1/2/2008	1040	3.6									12.7	12.5
SA/0.15-0.50/G1102	2/20/2008	1025	4.2									13.2	11.9
SA/0.15-0.50/G1102	3/18/2008	1155	5.9									13.1	12.4
SA/0.15-0.50/G1102	9/8/2008	1015	14.4									9.0	7.8
SA/0.15-0.50/G1102	10/22/2008	1100	7.5									10.9	10.7
SA/0.15-0.50/G1102	10/22/2008	1100	7.5									10.9	11.1
SA/0.15-0.50/G1102	11/13/2008	1145	8.9									10.6	10.1
SA/0.15-0.50/G1102	12/4/2008	1130	6.0									11.9	11.6
SA/0.15-0.50/G1102	1/15/2009	1030	4.2									12.4	10.6
SA/0.15-0.50/G1102	3/11/2009	1020	2.5									13.4	11.7
SA/0.15-0.50/G1103	9/25/2007	1145	10.7									10.4	7.1
SA/0.15-0.50/G1103	10/16/2007	1100	9.4									9.7	7.0
SA/0.15-0.50/G1103	11/21/2007	1100	4.1									12.5	10.7
SA/0.15-0.50/G1103	1/2/2008	1100	3.6									12.7	9.5
SA/0.15-0.50/G1103	2/20/2008	1050	4.2									13.2	9.9
SA/0.15-0.50/G1103	2/20/2008	1050	4.2									13.2	10.1
SA/0.15-0.50/G1103	3/18/2008	1155	5.9									13.1	11.6
SA/0.15-0.50/G1103	3/18/2008	1155	5.9									13.1	11.7
SA/0.15-0.50/G1103	9/8/2008	1030	14.4									9.0	6.7
SA/0.15-0.50/G1103	10/22/2008	1100	7.5									10.9	8.2
SA/0.15-0.50/G1103	1/15/2009	1030	4.2									12.4	11.1
SA/0.15-0.50/G1103	3/11/2009	1020	2.5									13.4	7.7
SA/0.15-0.50/G1104	9/25/2007	1145	10.7									10.4	4.9
SA/0.15-0.50/G1104	10/16/2007	1100	9.4									9.7	6.0
SA/0.15-0.50/G1104	9/8/2008	1030	14.4									9.0	4.1
SA/0.15-0.50/G1104	10/22/2008	1100	7.5									10.9	8.9
SA/0.15-0.50/G1104	11/13/2008	1015	8.9									10.6	8.5
SA/0.15-0.50/G1105	10/16/2007	1100	9.4									9.7	8.4
SA/0.15-0.50/G1105	11/21/2007	1100	4.1									12.5	11.6
SA/0.15-0.50/G1105	1/2/2008	1100	3.6									12.7	11.4
SA/0.15-0.50/G1105	2/20/2008	1050	4.2									13.2	12.0
SA/0.15-0.50/G1105	3/18/2008	1155	5.9									13.1	11.7
SA/0.15-0.50/G1105	9/8/2008	1105	14.4									9.0	8.2
SA/0.15-0.50/G1105	10/22/2008	1120	7.5									10.9	10.7
SA/0.15-0.50/G1105	11/13/2008	1045	8.9									10.6	7.1
SA/0.15-0.50/G1105	12/4/2008	1200	6.0									11.9	10.6
SA/0.15-0.50/G1105	1/15/2009	1130	4.2									12.4	10.3
SA/0.15-0.50/G1105	3/11/2009	1120	2.5									13.4	10.2
SA/0.15-0.50/G1106	9/25/2007	1200	10.7									10.4	9.2
SA/0.15-0.50/G1106	10/16/2007	1100	9.4									9.7	8.9
SA/0.15-0.50/G1107	9/25/2007	1220	10.7									10.4	7.6
SA/0.15-0.50/G1107	10/16/2007	1115	9.4									9.7	8.7
SA/0.15-0.50/G1107	10/16/2007	1115	9.4									9.7	8.3
SA/0.15-0.50/G1107	11/21/2007	1100	4.1									12.5	12.0
SA/0.15-0.50/G1107	1/2/2008	1100	3.6									12.7	11.7
SA/0.15-0.50/G1107	9/8/2008	1140	14.4									9.0	8.3
SA/0.15-0.50/G1107	10/22/2008	1120	7.5									10.9	9.3
SA/0.15-0.50/G1107	11/13/2008	1130	8.9									10.6	9.6
SA/0.15-0.50/G1107	12/4/2008	1200	6.0									11.9	11.1
SA/0.15-0.50/G1107	1/15/2009	1130	4.2									12.4	10.5
SA/0.15-0.50/G1107	3/11/2009	1120	2.5									13.4	10.1

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.15-0.50/G1108	9/25/2007	1220	10.7									10.4	8.6
SA/0.15-0.50/G1110	3/12/2009	1045	2.3									13.4	2.5
SA/0.15-0.50/G1112	3/12/2009	1045	2.3									13.4	9.8
SA/0.15-0.50/G1114	3/12/2009	1045	2.3									13.4	11.3
SA/0.15-0.50/G1115	3/12/2009	1045	2.3									13.4	10.4
SA/0.15-0.50/G1116	3/12/2009	1130	2.3									13.4	11.6
SA/0.15-0.50/G1117	3/12/2009	1130	2.3									13.4	12.4
SA/0.15-0.50/G1119	3/12/2009	1130	2.3									13.4	13.1
SA/0.15-0.50/G1200	9/8/2008	1030	14.4									9.0	7.2
SA/0.15-0.50/G1200	10/22/2008	1100	7.5									10.9	6.8
SA/0.15-0.50/G1200	11/13/2008	1015	8.9									10.7	8.5
SA/0.15-0.50/G1200	12/4/2008	1130	6.0									11.9	10.6
SA/0.15-0.50/G1200	1/15/2009	1030	4.2									12.4	11.4
SA/0.15-0.50/G1200	3/11/2009	1020	2.5									13.4	11.8
SA/0.15-0.50/G1201	9/8/2008	1030	14.4									9.0	7.9
SA/0.15-0.50/G1201	10/22/2008	1100	7.5									10.9	9.4
SA/0.15-0.50/G1201	11/13/2008	1015	8.9									10.6	7.8
SA/0.15-0.50/G1201	12/4/2008	1130	6.0									11.9	10.3
SA/0.15-0.50/G1201	1/15/2009	1030	4.2									12.4	3.1
SA/0.15-0.50/G1201	3/11/2009	1020	2.5									13.4	10.9
SA/0.15-0.50/G1202	9/8/2008	1030	14.4									9.0	8.0
SA/0.15-0.50/G1202	10/22/2008	1100	7.5									10.9	9.3
SA/0.15-0.50/G1202	11/13/2008	1015	8.9									10.6	9.6
SA/0.15-0.50/G1202	12/4/2008	1130	6.0									11.9	10.6
SA/0.15-0.50/G1202	1/15/2009	1030	4.2									12.4	11.1
SA/0.15-0.50/G1202	3/11/2009	1020	2.5									13.4	12.4
SA/0.15-0.50/G1203	9/8/2008	1105	14.4									9.0	7.7
SA/0.15-0.50/G1203	9/8/2008	1105	14.4									9.0	8.2
SA/0.15-0.50/G1203	10/22/2008	1120	7.5									10.9	8.6
SA/0.15-0.50/G1203	11/13/2008	1015	8.9									10.6	8.1
SA/0.15-0.50/G1203	12/4/2008	1130	6.0									11.9	9.9
SA/0.15-0.50/G1203	12/4/2008	1130	6.0									11.9	9.8
SA/0.15-0.50/G1203	1/15/2009	1030	4.2									12.4	11.6
SA/0.15-0.50/G1203	3/11/2009	1020	2.5									13.4	12.7
SA/0.15-0.50/G1204	9/8/2008	1105	14.4									9.0	7.8
SA/0.15-0.50/G1204	10/22/2008	1100	7.5									10.9	8.3
SA/0.15-0.50/G1204	11/13/2008	1015	8.9									10.6	7.4
SA/0.15-0.50/G1204	12/4/2008	1130	6.0									11.9	8.8
SA/0.15-0.50/G1204	1/15/2009	1030	4.2									12.4	10.2
SA/0.15-0.50/G1204	3/11/2009	1020	2.5									13.4	10.2
SA/0.15-0.50/G1205	9/8/2008	1105	14.4									9.0	7.3
SA/0.15-0.50/G1205	10/22/2008	1120	7.5									10.9	9.3
SA/0.15-0.50/G1205	11/13/2008	1045	8.9									10.6	9.5
SA/0.15-0.50/G1205	12/4/2008	1200	6.0									11.9	11.3
SA/0.15-0.50/G1205	1/15/2009	1130	4.2									12.4	10.1
SA/0.15-0.50/G1205	3/11/2009	1120	2.5									13.4	9.1
SA/0.15-0.50/G1206	9/8/2008	1105	14.4									9.0	8.7
SA/0.15-0.50/G1206	10/22/2008	1120	7.5									10.9	11.3
SA/0.15-0.50/G1206	11/13/2008	1045	8.9									10.6	10.3
SA/0.15-0.50/G1206	11/13/2008	1045	8.9									10.6	10.6
SA/0.15-0.50/G1206	12/4/2008	1200	6.0									11.9	12.2
SA/0.15-0.50/G1206	1/15/2009	1130	4.2									12.4	10.5
SA/0.15-0.50/G1206	3/11/2009	1020	2.5									13.4	13.2

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.15-0.50/G1207	9/8/2008	1140	14.4									9.0	0.9
SA/0.15-0.50/G1207	10/22/2008	1120	7.5									10.9	1.6
SA/0.15-0.50/G1207	11/13/2008	1045	8.9									10.6	2.0
SA/0.15-0.50/G1207	12/4/2008	1200	6.0									11.9	2.1
SA/0.15-0.50/G1207	1/15/2009	1130	4.2									12.4	9.4
SA/0.15-0.50/G1207	3/11/2009	1120	2.5									13.4	12.3
SA/0.15-0.50/G1208	9/8/2008	1140	14.4									9.0	8.5
SA/0.15-0.50/G1208	10/22/2008	1120	7.5									10.9	9.7
SA/0.15-0.50/G1208	11/13/2008	1045	8.9									10.6	8.7
SA/0.15-0.50/G1208	12/4/2008	1200	6.0									11.9	10.5
SA/0.15-0.50/G1208	1/15/2009	1130	4.2									12.4	11.7
SA/0.15-0.50/G1208	3/11/2009	1120	2.5									13.4	12.3
SA/0.15-0.50/G1209	9/8/2008	1140	14.4									9.0	1.7
SA/0.15-0.50/G1209	10/22/2008	1120	7.5									10.9	5.0
SA/0.15-0.50/G1209	11/13/2008	1045	8.9									10.6	3.0
SA/0.15-0.50/G1209	12/4/2008	1200	6.0									11.9	5.3
SA/0.15-0.50/G1209	1/15/2009	1130	4.2									12.4	8.2
SA/0.15-0.50/G1209	3/11/2009	1120	2.5									13.4	10.6
SA/0.15-0.50/G1210	9/8/2008	1140	14.4									9.0	8.4
SA/0.15-0.50/G1210	10/22/2008	1120	7.5									10.9	8.6
SA/0.15-0.50/G1210	11/13/2008	1045	8.9									10.6	9.7
SA/0.15-0.50/G1210	12/4/2008	1230	6.0									11.9	11.7
SA/0.15-0.50/G1210	3/11/2009	1120	2.5									13.4	12.1
SA/0.15-0.50/G1211	9/8/2008	1140	14.4									9.0	6.2
SA/0.15-0.50/G1211	10/22/2008	1120	7.5									10.9	3.7
SA/0.15-0.50/G1211	11/13/2008	1045	8.9									10.6	0.8
SA/0.15-0.50/G1211	12/4/2008	1230	6.0									11.9	3.1
SA/0.15-0.50/G1211	1/15/2009	1130	4.2									12.4	11.1
SA/0.15-0.50/G1211	3/11/2009	1120	2.5									13.4	12.5
SA/0.15-0.50/G1211	3/11/2009	1120	2.5									13.4	12.7
SA/0.15-0.50/G1212	9/8/2008	1140	14.4									9.0	6.1
SA/0.15-0.50/G1213	9/8/2008	1200	14.4									9.0	5.3
SA/0.15-0.50/G1213	10/22/2008	1200	7.5									10.9	8.2
SA/0.15-0.50/G1213	11/13/2008	1045	8.9									10.6	7.2
SA/0.15-0.50/G1213	12/4/2008	1230	6.0									11.9	8.4
SA/0.15-0.50/G1213	1/15/2009	1130	4.2									12.4	9.2
SA/0.15-0.50/G1213	3/11/2009	1120	2.5									13.4	11.2
SA/0.15-0.50/G1214	9/8/2008	1200	14.4									9.0	8.0
SA/0.15-0.50/G1214	10/22/2008	1200	7.5									10.9	9.0
SA/0.15-0.50/G1214	11/13/2008	1045	8.9									10.6	8.3
SA/0.15-0.50/G1214	12/4/2008	1230	6.0									11.9	11.1
SA/0.15-0.50/G1214	1/15/2009	1130	4.2									12.4	7.9
SA/0.15-0.50/G1214	3/11/2009	1120	2.5									13.4	11.2
SA/0.15-0.50/G1215	9/8/2008	1200	14.4									9.0	7.6
SA/0.15-0.50/G1215	10/22/2008	1200	7.5									10.9	8.7
SA/0.15-0.50/G1215	11/13/2008	1130	8.9									10.6	8.5
SA/0.15-0.50/G1215	12/4/2008	1230	6.0									11.9	11.2
SA/0.15-0.50/G1215	1/15/2009	1130	4.2									12.4	8.7
SA/0.15-0.50/G1215	1/15/2009	1130	4.2									12.4	8.6
SA/0.15-0.50/G1215	3/11/2009	1120	2.5									13.4	10.1
SA/0.15-0.50/G1216	9/8/2008	1200	14.4									9.0	7.7
SA/0.15-0.50/G1216	10/22/2008	1200	7.5									10.9	8.1
SA/0.15-0.50/G1216	11/13/2008	1130	8.9									10.6	8.7

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.15-0.50/G1216	12/4/2008	1230	6.0									11.9	10.4
SA/0.15-0.50/G1216	1/15/2009	1130	4.2									12.4	8.4
SA/0.15-0.50/G1216	3/11/2009	1120	2.5									13.4	9.0
SA/0.15-0.50/G1217	9/8/2008	1200	14.4									9.0	8.0
SA/0.15-0.50/G1218	9/8/2008	1200	14.4									9.0	9.1
SA/0.15-0.50/G1218	10/22/2008	1200	7.5									10.9	8.5
SA/0.15-0.50/G1218	11/13/2008	1130	8.9									10.6	10.1
SA/0.15-0.50/G1218	12/4/2008	1230	6.0									11.9	11.6
SA/0.15-0.50/G1218	1/15/2009	1130	4.2									12.4	10.8
SA/0.15-0.50/G1218	3/11/2009	1120	2.5									13.4	12.5
SA/0.15-0.50/G1219	9/8/2008	1200	14.4									9.0	7.7
SA/0.15-0.50/G1219	10/22/2008	1200	7.5									10.9	10.8
SA/0.15-0.50/G1219	11/13/2008	1130	8.9									10.6	9.9
SA/0.15-0.50/G1219	12/4/2008	1230	6.0									11.9	11.7
SA/0.15-0.50/G1219	1/15/2009	1130	4.2									12.4	9.4
SA/0.15-0.50/G1219	3/11/2009	1120	2.5									13.4	8.0
SA/0.15-0.50/G1221	3/12/2009	1045	2.3									13.4	12.4
SA/0.15-0.50/G1222	3/12/2009	1045	2.3									13.4	11.0
SA/0.15-0.50/G1223	3/12/2009	1045	2.3									13.4	10.3
SA/0.15-0.50/G1224	3/12/2009	1045	2.3									13.4	12.5
SA/0.15-0.50/G1226	3/12/2009	1130	2.3									13.4	11.2
SA/0.15-0.50/G1227	3/12/2009	1130	2.3									13.4	11.6
SA/0.15-0.50/G1228	3/12/2009	1130	2.3									13.4	13.2
SA/0.15-0.50/G125	3/12/2009	1130	2.3									13.4	13.1
SA/0.15-O.50/G1004	2/9/2009	950	3.8									12.5	4.1
SA/0.15-O.50/G1007	2/9/2009	1030	3.8									12.5	11.3
SA/0.15-O.50/G103	2/9/2009	950	3.8									12.5	2.4
SA/0.15-O.50/G1102	2/9/2009	950	3.8									12.5	12.2
SA/0.15-O.50/G1103	2/9/2009	950	3.8									12.5	12.2
SA/0.15-O.50/G1105	2/9/2009	1030	3.8									12.5	9.1
SA/0.15-O.50/G1107	2/9/2009	1030	3.8									12.5	9.2
SA/0.15-O.50/G1200	2/9/2009	950	3.8									12.5	11.3
SA/0.15-O.50/G1201	2/9/2009	950	3.8									12.5	9.5
SA/0.15-O.50/G1202	2/9/2009	950	3.8									12.5	10.6
SA/0.15-O.50/G1203	2/9/2009	950	3.8									12.5	11.1
SA/0.15-O.50/G1203	2/9/2009	950	3.8									12.5	11.2
SA/0.15-O.50/G1204	2/9/2009	1030	3.8									12.5	10.4
SA/0.15-O.50/G1205	2/9/2009	1030	3.8									12.5	10.0
SA/0.15-O.50/G1206	2/9/2009	1030	3.8									12.5	11.7
SA/0.15-O.50/G1207	2/9/2009	1030	3.8									12.5	10.6
SA/0.15-O.50/G1208	2/9/2009	1030	3.8									12.5	9.2
SA/0.15-O.50/G1209	2/9/2009	1030	3.8									12.5	10.3
SA/0.15-O.50/G1210	2/9/2009	1030	3.8									12.5	10.8
SA/0.15-O.50/G1211	2/9/2009	1110	3.8									12.5	8.0
SA/0.15-O.50/G1213	2/9/2009	1110	3.8									12.5	8.1
SA/0.15-O.50/G1214	2/9/2009	1110	3.8									12.5	10.1
SA/0.15-O.50/G1215	2/9/2009	1110	3.8									12.5	8.3
SA/0.15-O.50/G1216	2/9/2009	1110	3.8									12.5	9.0
SA/0.15-O.50/G1218	2/9/2009	1110	3.8									12.5	12.4
SA/0.15-O.50/G1219	2/9/2009	1110	3.8									12.5	9.0
SA/0.4	7/5/2007	1050							80				
SA/0.4	7/31/2007	1110	12.7						170				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.4	7/31/2007	1110	12.7						200				
SA/0.4	8/14/2007	1115	13.4						300				
SA/0.4	8/28/2007	1130	12.8						80				
SA/0.4	9/11/2007	1145	13.2						500				
SA/0.4	9/11/2007	1145	13.2						500				
SA/0.4	9/24/2007	1055	9.2						900				
SA/0.4	10/9/2007	1105	9.3						30				
SA/0.4	10/23/2007	945	8.2						80				
SA/0.4	10/23/2007	945	8.2						50				
SA/0.4	11/6/2007	1040	6.1						6				
SA/0.4	11/20/2007	1020	5.4						6				
SA/0.4	12/4/2007	1044	45.5						51				
SA/0.4	12/18/2007	1040	5.8						16				
SA/0.4	1/2/2008	1010	3.0						1				
SA/0.4	1/17/2008	1130	3.3						3				
SA/0.4	2/11/2008	1103	4.6	129	12.5		2.7	98	30	1.10			
SA/0.4	2/27/2008	1045	5.5	160	12.3		1.7	99	2	0.66			
SA/0.4	3/19/2008	1030	4.6	154	12.4		1.8	97	1	0.52			
SA/0.4	4/2/2008	1103	4.0	134	12.8		2.1	99	2	0.76			
SA/0.4	4/15/2008	1100	5.3	123	12.8	7.6	2.3	102	8	0.68			
SA/0.4	4/30/2008	1051	6.0	112	12.6	7.5	2.8	102	1	0.56			
SA/0.4	5/13/2008	1018	7.5	151	11.7	7.4	1.8	98	6	0.20			
SA/0.4	5/20/2008	1038	10.8	173	10.3	7.7	2.9	94	28	0.22			
SA/0.4	6/5/2008	1043	9.0		10.5	7.4	3.8	91	130	0.32			
SA/0.4	6/19/2008	1107	9.6	163	11.2	7.7	1.8	99	36	0.10			
SA/0.4	7/2/2008	1101	13.0	212	10.5	7.8	2.3	100	602	0.18			
SA/0.4	7/15/2008	1013	12.2	243		7.8	1.4		248	0.55			
SA/0.4	7/29/2008	1105	12.2	259	10.4	7.8	1.0	97	352	0.02			
SA/0.4	8/12/2008	1048	13.1	270	10.3	7.9	1.6	98	396	0.03			
SA/0.4	8/26/2008	1100	12.4	266	10.6	7.8	1.7	99	650	0.03			
SA/0.4	9/10/2008	1114	12.2	302	9.9	7.5	2.9	92	226	0.11			
SA/0.4	9/23/2008	1111	9.9	297	9.8	7.4	2.8	87	52	0.16			
SA/0.4	10/7/2008	1102	10.9	278	9.6	7.4	1.4	87	194	0.13			
SA/0.4	10/21/2008	1055	6.7	278	11.2	7.4	1.0	92	52	0.21			
SA/0.4	11/4/2008	1041	7.8	210	11.2	7.2	8.1	95	86	1.17			
SA/0.4	11/18/2008	1056	8.1	241	11.0	7.3	0.8	94	1	0.58			
SA/0.4	12/2/2008	1057	7.8	243	11.2	7.3	1.1	95	8	0.24			
SA/0.4	12/16/2008	1104	0.4	249	13.6	7.5	1.2	95	2	0.53			
SA/0.4	1/6/2009	1055	2.9	207	12.6	7.2	1.8	94	22	1.23			
SA/0.4	1/20/2009	1036	2.3	144	13.8	7.1	1.8	102	52	1.40			
SA/0.4	2/10/2009	1030	2.5	192	13.7	7.1	1.3	102	2	0.70			
SA/0.4	2/24/2009	1040	5.5	175	12.1	7.3	4.6	97	10	0.63			
SA/0.4	3/3/2009	1051	4.6	114	12.0	7.4	7.3	94	2				
SA/0.4	3/24/2009	1049	4.4	155	12.5	7.4	2.5	98	4	0.75			
SA/0.4	4/7/2009	1039	6.3	130	11.9	7.3		97	2				
SA/0.4	4/21/2009	1046	8.7	174	11.5	7.3	2.1	99	1	0.65			
SA/0.4	5/13/2009	932	7.6	141	11.1	7.3	4.7	93	4	0.69			
SA/0.4	5/27/2009	946	9.5	159	11.2	7.1	3.1	98	36	0.81			
SA/0.4	6/3/2009	949	12.6	198	10.5	7.2	3.4	99	16	0.32			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.4	6/30/2009	1058	11.6	259	11.2	7.3	1.5	103	24				
SA/0.5	9/26/2007	1020	9.9		10.3			92				10.3	
SA/0.5	9/26/2007	1020	9.9		10.1			90				10.1	
SA/0.5	10/10/2007	1110	10.1		9.6			86				9.6	
SA/0.5	10/10/2007	1110	10.1		9.5			85				9.5	
SA/0.5	11/20/2007	1040	5.8		12.2			98				12.2	
SA/0.5	11/20/2007	1040	5.8		12.3			99				12.3	
SA/0.5	1/22/2008	1035	1.6		13.7			99				13.7	
SA/0.5	1/22/2008	1035	1.6		13.8			100				13.8	
SA/0.5	2/11/2008	1110	4.6	127	12.4		3.1	97	16	1.10			
SA/0.5	2/12/2008	1015	4.7		13.0			102					
SA/0.5	2/12/2008	1015	4.7		12.7			100					
SA/0.5	2/27/2008	1052	5.5	161	12.3		2.0	99	1	0.68			
SA/0.5	3/19/2008	1037	4.7	154	12.4		2.2	98	1	0.52			
SA/0.5	4/2/2008	1110	4.0	133	12.8		1.9	99	2	0.76			
SA/0.5	4/15/2008	1108	5.3	121	12.8	7.4	2.6	102	12	0.69			
SA/0.5	4/30/2008	1057	5.9	110	12.5	7.5	2.6	101	4	0.58			
SA/0.5	5/13/2008	1028	7.5	152	11.6		1.6	98	18	0.23			
SA/0.5	5/20/2008	1046	10.8	174	10.4	7.7	2.2	95	22	0.26			
SA/0.5	6/5/2008	1052	9.0		10.4	7.5	3.9	91	141	0.33			
SA/0.5	6/19/2008	1119	9.6	163	11.2	7.8	1.8	98	41	0.11			
SA/0.5	7/2/2008	1112	12.8	212	10.4	7.8	2.2	98	214	0.18			
SA/0.5	7/15/2008	1029	12.1	244		7.7	1.3		144	0.62			
SA/0.5	7/29/2008	1117	12.2	259	10.4	7.8	1.2	97	228	0.03			
SA/0.5	8/12/2008	1103	13.0	267	10.2	7.8	1.9	97	664	0.03			
SA/0.5	8/26/2008	1109	12.2	262	10.8	7.8	1.0	101	124	0.03			
SA/0.5	9/10/2008	1146	12.2	302	9.9	7.7	2.9	92	236	0.12			
SA/0.5	9/11/2008	1020	11.0		9.7			88					
SA/0.5	9/11/2008	1020	11.0		9.6			87					
SA/0.5	9/23/2008	1140	10.0	298	9.8	7.7	4.8	87	150	0.15			
SA/0.5	9/23/2008	1144							68				
SA/0.5	9/23/2008	1144	10.0	297	9.8	7.6	4.5	87	76	0.15			
SA/0.5	10/7/2008	1111	10.9	278	9.8	7.5	1.0	89	196	0.13			
SA/0.5	10/21/2008	1101	6.7	280	11.4	7.5	0.6	94	56	0.21			
SA/0.5	10/27/2008	1225	7.1		11.1			92					
SA/0.5	10/27/2008	1225	7.1		11.1			92					
SA/0.5	11/4/2008	1049	7.8	210	11.2	7.3	8.2	95	34	1.21			
SA/0.5	11/14/2008	1205	7.4		11.2			94				11.2	
SA/0.5	11/14/2008	1205	7.4		11.2			94				11.2	
SA/0.5	11/18/2008	1106	8.2	241	11.0	7.4	0.7	94	2	0.61			
SA/0.5	12/2/2008	1101	7.8	240	11.3	7.4	0.9	96	10	0.25			
SA/0.5	12/4/2008	1255	6.0		11.9			96				11.9	
SA/0.5	12/4/2008	1255	6.0									11.9	
SA/0.5	12/8/2008	1030	5.4		12.0			96				12.0	
SA/0.5	12/8/2008	1030	5.4		12.0			96				12.0	
SA/0.5	12/16/2008	1111	0.4	249	13.5	7.5	1.2	95	2	0.55			
SA/0.5	1/6/2009	1100	2.9	206	12.6	7.3	1.4	94	18	1.24			
SA/0.5	1/16/2009	1215	3.7		12.6			96				12.7	
SA/0.5	1/16/2009	1215	3.7		12.7			97				12.7	

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.5	1/20/2009	1042	2.3	143	13.8	7.1	2.0	102	32	1.41			
SA/0.5	2/10/2009	1035	2.5	191	13.7	7.2	1.2	101	4	0.71			
SA/0.5	2/12/2009	1125	2.4		13.1			97				13.2	
SA/0.5	2/12/2009	1125	2.4		13.2			98				13.2	
SA/0.5	2/24/2009	1045	5.5	176	12.1	7.3	3.8	97	8	0.64			
SA/0.5	3/3/2009	1045	4.5	110	12.3	7.4	7.0	96	2				
SA/0.5	3/24/2009	1055	4.4	155	12.5	7.4	8.2	98	4	0.75			
SA/0.5	4/7/2009	1045	6.3	129	11.9	7.4		97	1				
SA/0.5	4/21/2009	1052	8.7	175	11.5	7.4	2.2	100	4	0.67			
SA/0.5	5/13/2009	937	7.6	136	11.0	7.3	5.3	93	6	0.66			
SA/0.5	5/27/2009	954	9.4	159	11.2	7.2	3.4	99	82	0.93			
SA/0.5	6/3/2009	957	12.5	198	10.5	7.2	2.5	99	30	0.41			
SA/0.5	6/30/2009	1106	11.4	257	11.2	7.5	1.5	103	8				
SA/0.5-0.7/G1020	10/27/2008	1115	7.1									11.1	9.1
SA/0.5-0.7/G1020	11/14/2008	1035	7.4									11.2	9.0
SA/0.5-0.7/G1020	12/8/2008	1030	5.4									12.0	9.7
SA/0.5-0.7/G1020	1/16/2009	1030	3.7									12.7	8.2
SA/0.5-0.7/G1023	10/27/2008	1115	7.1									11.1	4.7
SA/0.5-0.7/G1023	11/14/2008	1035	7.4									11.2	3.7
SA/0.5-0.7/G1023	12/8/2008	1030	5.4									12.0	6.8
SA/0.5-0.7/G1024	10/27/2008	1115	7.1									11.1	8.0
SA/0.5-0.7/G1024	11/14/2008	1035	7.4									11.2	8.7
SA/0.5-0.7/G1024	12/8/2008	1100	5.4									12.0	10.0
SA/0.5-0.7/G1024	1/16/2009	1030	3.7									12.7	10.2
SA/0.5-0.7/G1024	2/12/2009	1020	2.4									13.2	12.1
SA/0.5-0.7/G1024	2/12/2009	1020	2.4									13.2	12.0
SA/0.5-0.7/G1025	10/27/2008	1115	7.1									11.1	8.6
SA/0.5-0.7/G1025	11/14/2008	1035	7.4									11.2	9.3
SA/0.5-0.7/G1025	12/8/2008	1100	5.4									12.0	10.9
SA/0.5-0.7/G1025	1/16/2009	1030	3.7									12.7	10.9
SA/0.5-0.7/G1025	1/16/2009	1030	3.7									12.7	10.8
SA/0.5-0.7/G1025	2/12/2009	1020	2.4									13.2	11.4
SA/0.5-0.7/G1027	10/27/2008	1115	7.1									11.1	8.2
SA/0.5-0.7/G1027	11/14/2008	1050	7.4									11.2	7.4
SA/0.5-0.7/G1027	12/8/2008	1100	5.4									12.0	8.9
SA/0.5-0.7/G1027	1/16/2009	1130	3.7									12.7	7.8
SA/0.5-0.7/G1027	2/12/2009	1020	2.4									13.2	12.2
SA/0.5-0.7/G1029	10/27/2008	1115	7.1									11.1	5.9
SA/0.5-0.7/G1029	11/14/2008	1050	7.4									11.2	7.5
SA/0.5-0.7/G1029	12/8/2008	1100	5.4									12.0	5.4
SA/0.5-0.7/G1029	1/16/2009	1130	3.7									12.7	9.1
SA/0.5-0.7/G1029	2/12/2009	1020	2.4									13.2	8.8
SA/0.5-0.7/G1033	10/27/2008	1115	7.1									11.1	9.7
SA/0.5-0.7/G1033	11/14/2008	1140	7.4									11.2	9.4
SA/0.5-0.7/G1033	12/8/2008	1130	5.4									12.0	9.8
SA/0.5-0.7/G1033	1/16/2009	1130	3.7									12.7	10.6
SA/0.5-0.7/G1033	2/12/2009	1110	2.4									13.2	12.2
SA/0.5-0.7/G1035	10/27/2008	1115	7.1									11.1	8.9
SA/0.5-0.7/G1035	11/14/2008	1140	7.4									11.2	8.2

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.5-0.7/G1035	12/8/2008	1130	5.4									12.0	8.6
SA/0.5-0.7/G1035	1/16/2009	1130	3.7									12.7	8.8
SA/0.5-0.7/G1035	2/12/2009	1110	2.4									13.2	11.5
SA/0.5-0.7/G1110	10/27/2008	1115	7.1									11.1	9.1
SA/0.5-0.7/G1110	11/14/2008	1035	7.4									11.2	9.7
SA/0.5-0.7/G1110	12/8/2008	1030	5.4									12.0	8.7
SA/0.5-0.7/G1110	1/16/2009	1030	3.7									12.7	8.9
SA/0.5-0.7/G1110	2/12/2009	1020	2.4									13.2	8.8
SA/0.5-0.7/G1112	1/16/2009	1030	3.7									12.7	10.5
SA/0.5-0.7/G1112	2/12/2009	1020	2.4									13.2	11.2
SA/0.5-0.7/G1114	11/14/2008	1050	7.4									11.2	7.4
SA/0.5-0.7/G1114	12/8/2008	1100	5.4									12.0	8.5
SA/0.5-0.7/G1114	1/16/2009	1130	3.7									12.7	8.7
SA/0.5-0.7/G1114	2/12/2009	1020	2.4									13.2	12.4
SA/0.5-0.7/G1115	10/27/2008	1115	7.1									11.1	9.3
SA/0.5-0.7/G1115	11/14/2008	1050	7.4									11.2	8.6
SA/0.5-0.7/G1115	12/8/2008	1100	5.4									12.0	9.7
SA/0.5-0.7/G1115	1/16/2009	1130	3.7									12.7	8.2
SA/0.5-0.7/G1115	2/12/2009	1020	2.4									13.2	10.3
SA/0.5-0.7/G1116	10/27/2008	1115	7.1									11.1	9.8
SA/0.5-0.7/G1116	11/14/2008	1140	7.4									11.2	9.6
SA/0.5-0.7/G1116	12/8/2008	1130	5.4									12.0	10.4
SA/0.5-0.7/G1116	1/16/2009	1130	3.7									12.7	10.3
SA/0.5-0.7/G1116	2/12/2009	1110	2.4									13.2	12.0
SA/0.5-0.7/G1117	10/27/2008	1115	7.1									11.1	4.8
SA/0.5-0.7/G1117	11/14/2008	1140	7.4									11.2	6.9
SA/0.5-0.7/G1117	12/8/2008	1130	5.4									12.0	7.4
SA/0.5-0.7/G1117	1/16/2009	1130	3.7									12.7	9.6
SA/0.5-0.7/G1117	2/12/2009	1110	2.4									13.2	11.9
SA/0.5-0.7/G1119	10/27/2008	1115	7.1									11.1	10.7
SA/0.5-0.7/G1119	11/14/2008	1140	7.4									11.2	10.9
SA/0.5-0.7/G1119	12/8/2008	1130	5.4									12.0	11.6
SA/0.5-0.7/G1119	1/16/2009	1130	3.7									12.7	12.4
SA/0.5-0.7/G1119	2/12/2009	1110	2.4									13.2	13.1
SA/0.5-0.7/G1221	10/27/2008	1115	7.1									11.1	7.7
SA/0.5-0.7/G1221	10/27/2008	1115	7.1									11.1	8.0
SA/0.5-0.7/G1221	11/14/2008	1035	7.4									11.2	8.4
SA/0.5-0.7/G1221	11/14/2008	1035	7.4									11.2	8.6
SA/0.5-0.7/G1221	12/8/2008	1030	5.4									12.0	9.3
SA/0.5-0.7/G1221	1/16/2009	1030	3.7									12.7	9.9
SA/0.5-0.7/G1221	2/12/2009	1020	2.4									13.2	12.3
SA/0.5-0.7/G1222	10/27/2008	1115	7.1									11.1	8.8
SA/0.5-0.7/G1222	11/14/2008	1035	7.4									11.2	8.8
SA/0.5-0.7/G1222	12/8/2008	1100	5.4									12.0	10.6
SA/0.5-0.7/G1222	1/16/2009	1030	3.7									12.7	5.3
SA/0.5-0.7/G1222	2/12/2009	1020	2.4									13.2	12.3
SA/0.5-0.7/G1223	10/27/2008	1115	7.1									11.1	8.6
SA/0.5-0.7/G1223	11/14/2008	1035	7.4									11.2	7.0
SA/0.5-0.7/G1223	12/8/2008	1100	5.4									12.0	8.7

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.5-0.7/G1223	12/8/2008	1100	5.4									12.0	9.0
SA/0.5-0.7/G1223	1/16/2009	1030	3.7									12.7	10.9
SA/0.5-0.7/G1223	2/12/2009	1020	2.4									13.2	11.5
SA/0.5-0.7/G1224	10/27/2008	1115	7.1									11.1	9.7
SA/0.5-0.7/G1224	11/14/2008	1050	7.4									11.2	10.0
SA/0.5-0.7/G1224	12/8/2008	1100	5.4									12.0	10.8
SA/0.5-0.7/G1224	1/16/2009	1130	3.7									12.7	9.3
SA/0.5-0.7/G1224	2/12/2009	1020	2.4									13.2	11.3
SA/0.5-0.7/G1225	10/27/2008	1115	7.1									11.1	10.7
SA/0.5-0.7/G1226	10/27/2008	1115	7.1									11.1	10.1
SA/0.5-0.7/G1226	11/14/2008	1140	7.4									11.2	9.9
SA/0.5-0.7/G1226	12/8/2008	1130	5.4									12.0	10.8
SA/0.5-0.7/G1226	1/16/2009	1130	3.7									12.7	11.5
SA/0.5-0.7/G1226	2/12/2009	1110	2.4									13.2	12.3
SA/0.5-0.7/G1227	10/27/2008	1115	7.1									11.1	9.0
SA/0.5-0.7/G1227	11/14/2008	1140	7.4									11.2	8.4
SA/0.5-0.7/G1227	12/8/2008	1130	5.4									12.0	8.7
SA/0.5-0.7/G1227	1/16/2009	1130	3.7									12.7	8.5
SA/0.5-0.7/G1227	2/12/2009	1110	2.4									13.2	10.0
SA/0.5-0.7/G1228	10/27/2008	1115	7.1									11.1	10.7
SA/0.5-0.7/G1228	11/14/2008	1140	7.4									11.2	10.6
SA/0.5-0.7/G1228	12/8/2008	1130	5.4									12.0	12.1
SA/0.5-0.7/G1228	1/16/2009	1130	3.7									12.7	11.8
SA/0.5-0.7/G1228	2/12/2009	1110	2.4									13.2	13.3
SA/0.5-0.7/G125	10/27/2008	1115	7.1									11.1	8.8
SA/0.5-0.7/G125	11/14/2008	1140	7.4									11.2	10.2
SA/0.5-0.7/G125	12/8/2008	1130	5.4									12.0	10.7
SA/0.5-0.7/G125	1/16/2009	1130	3.7									12.7	11.9
SA/0.5-0.7/G125	2/12/2009	1110	2.4									13.2	12.6
SA/0.50-0.70	3/14/2008	1035	5.5		13.0			104					
SA/0.50-0.70	3/14/2008	1035	5.5		13.1			105					
SA/0.50-0.70/G1020	9/26/2007	1020	9.9									10.2	8.3
SA/0.50-0.70/G1020	10/10/2007	1110	10.1									9.6	6.7
SA/0.50-0.70/G1020	11/20/2007	1040	5.8									12.3	8.1
SA/0.50-0.70/G1020	1/22/2008	1035	1.6									13.8	11.8
SA/0.50-0.70/G1020	2/12/2008	1015	4.7									12.9	8.9
SA/0.50-0.70/G1020	3/14/2008	1035	5.5									13.1	12.5
SA/0.50-0.70/G1020	9/11/2008	1020	11.0									9.5	8.5
SA/0.50-0.70/G1022	9/26/2007	1020	9.9									10.2	6.8
SA/0.50-0.70/G1022	10/10/2007	1110	10.1									9.6	8.7
SA/0.50-0.70/G1022	11/20/2007	1040	5.8									12.3	11.5
SA/0.50-0.70/G1022	1/22/2008	1035	1.6									13.8	4.6
SA/0.50-0.70/G1022	2/12/2008	1015	4.7									12.9	3.7
SA/0.50-0.70/G1022	3/14/2008	1035	5.5									13.1	2.4
SA/0.50-0.70/G1023	9/26/2007	1020	9.9									10.2	6.6
SA/0.50-0.70/G1023	10/10/2007	1110	10.1									9.6	5.6
SA/0.50-0.70/G1023	11/20/2007	1040	5.8									12.3	8.9
SA/0.50-0.70/G1023	1/22/2008	1035	1.6									13.8	12.3

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.50-0.70/G1023	2/12/2008	1015	4.7									12.9	11.2
SA/0.50-0.70/G1023	3/14/2008	1035	5.5									13.1	3.4
SA/0.50-0.70/G1023	9/11/2008	1020	11.0									9.5	4.1
SA/0.50-0.70/G1024	9/26/2007	1100	9.9									10.2	0.8
SA/0.50-0.70/G1024	9/26/2007	1100	9.9									10.2	0.6
SA/0.50-0.70/G1024	10/10/2007	1145	10.1									9.6	0.6
SA/0.50-0.70/G1024	11/20/2007	1135	5.8									12.3	6.6
SA/0.50-0.70/G1024	11/20/2007	1135	5.8									12.3	7.1
SA/0.50-0.70/G1024	1/22/2008	1200	1.6									13.8	10.2
SA/0.50-0.70/G1024	3/14/2008	1115	5.5									13.1	6.7
SA/0.50-0.70/G1024	3/14/2008	1115	5.5									13.1	7.0
SA/0.50-0.70/G1024	9/11/2008	1105	11.0									9.5	5.1
SA/0.50-0.70/G1025	9/26/2007	1100	9.9									10.2	3.1
SA/0.50-0.70/G1025	10/10/2007	1145	10.1									9.6	8.3
SA/0.50-0.70/G1025	2/12/2008	1045	4.7									12.9	10.1
SA/0.50-0.70/G1025	3/14/2008	1115	5.5									13.1	10.0
SA/0.50-0.70/G1025	9/11/2008	1105	11.0									9.5	6.5
SA/0.50-0.70/G1027	9/26/2007	1100	9.9									10.2	5.3
SA/0.50-0.70/G1027	10/10/2007	1145	10.1									9.6	6.3
SA/0.50-0.70/G1027	11/20/2007	1135	5.8									12.3	9.0
SA/0.50-0.70/G1027	1/22/2008	1200	1.6									13.8	7.7
SA/0.50-0.70/G1027	2/12/2008	1045	4.7									12.9	6.2
SA/0.50-0.70/G1027	3/14/2008	1115	5.5									13.1	10.7
SA/0.50-0.70/G1027	9/11/2008	1105	11.0									9.5	7.7
SA/0.50-0.70/G1029	9/26/2007	1100	9.9									10.2	0.5
SA/0.50-0.70/G1029	10/10/2007	1145	10.1									9.6	0.6
SA/0.50-0.70/G1029	11/20/2007	1135	5.8									12.3	5.2
SA/0.50-0.70/G1029	1/22/2008	1200	1.6									13.8	0.9
SA/0.50-0.70/G1029	2/12/2008	1045	4.7									12.9	3.7
SA/0.50-0.70/G1029	3/14/2008	1115	5.5									13.1	7.2
SA/0.50-0.70/G1029	9/11/2008	1155	11.0									9.5	3.7
SA/0.50-0.70/G1030	9/26/2007	1100	9.9									10.2	8.4
SA/0.50-0.70/G1031	9/26/2007	1130	9.9									10.2	3.4
SA/0.50-0.70/G1031	10/10/2007	1225	10.1									9.6	8.4
SA/0.50-0.70/G1031	11/20/2007	1135	5.8									12.3	7.2
SA/0.50-0.70/G1031	1/22/2008	1200	1.6									13.8	7.1
SA/0.50-0.70/G1031	2/12/2008	1045	4.7									12.9	11.9
SA/0.50-0.70/G1031	3/14/2008	1115	5.5									13.1	4.7
SA/0.50-0.70/G1033	9/26/2007	1130	9.9									10.2	7.6
SA/0.50-0.70/G1033	10/10/2007	1225	10.1									9.6	7.2
SA/0.50-0.70/G1033	11/20/2007	1220	5.8									12.3	10.8
SA/0.50-0.70/G1033	1/22/2008	1225	1.6									13.8	11.7
SA/0.50-0.70/G1033	2/12/2008	1125	4.7									12.9	9.6
SA/0.50-0.70/G1033	3/14/2008	1140	5.5									13.1	11.3
SA/0.50-0.70/G1033	9/11/2008	1155	11.0									9.5	7.6
SA/0.50-0.70/G1035	9/26/2007	1130	9.9									10.2	8.2
SA/0.50-0.70/G1035	10/10/2007	1225	10.1									9.6	7.5

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.50-0.70/G1035	11/20/2007	1220	5.8									12.3	10.2
SA/0.50-0.70/G1035	1/22/2008	1225	1.6									13.8	9.6
SA/0.50-0.70/G1035	2/12/2008	1125	4.7									12.9	7.6
SA/0.50-0.70/G1035	3/14/2008	1140	5.5									13.1	10.4
SA/0.50-0.70/G1035	9/11/2008	1215	11.0									9.5	7.2
SA/0.50-0.70/G1110	9/26/2007	1020	9.9									10.2	7.8
SA/0.50-0.70/G1110	10/10/2007	1110	10.1									9.6	7.9
SA/0.50-0.70/G1110	11/20/2007	1040	5.8									12.3	10.4
SA/0.50-0.70/G1110	1/22/2008	1035	1.6									13.8	12.6
SA/0.50-0.70/G1110	2/12/2008	1015	4.7									12.9	9.6
SA/0.50-0.70/G1110	2/12/2008	1015	4.7									12.9	9.6
SA/0.50-0.70/G1110	3/14/2008	1035	5.5									13.1	11.8
SA/0.50-0.70/G1110	9/11/2008	1020	11.0									9.5	8.8
SA/0.50-0.70/G1111	9/26/2007	1020	9.9									10.2	5.5
SA/0.50-0.70/G1111	10/10/2007	1110	10.1									9.6	3.1
SA/0.50-0.70/G1111	10/10/2007	1110	10.1									9.6	2.9
SA/0.50-0.70/G1111	11/20/2007	1040	5.8									12.3	2.5
SA/0.50-0.70/G1111	1/22/2008	1035	1.6									13.8	4.5
SA/0.50-0.70/G1111	2/12/2008	1015	4.7									12.9	4.1
SA/0.50-0.70/G1111	3/14/2008	1035	5.5									13.1	6.5
SA/0.50-0.70/G1111	9/11/2008	1020	11.0									9.5	4.5
SA/0.50-0.70/G1112	9/26/2007	1130	9.9									10.2	9.3
SA/0.50-0.70/G1112	10/10/2007	1145	10.1									9.6	7.9
SA/0.50-0.70/G1112	11/20/2007	1135	5.8									12.3	10.5
SA/0.50-0.70/G1112	9/11/2008	1105	11.0									9.5	8.3
SA/0.50-0.70/G1113	9/26/2007	1130	9.9									10.2	8.1
SA/0.50-0.70/G1113	11/20/2007	1135	5.8									12.3	10.9
SA/0.50-0.70/G1114	9/26/2007	1130	9.9									10.2	8.4
SA/0.50-0.70/G1114	10/10/2007	1145	10.1									9.6	6.3
SA/0.50-0.70/G1114	11/20/2007	1135	5.8									12.3	7.8
SA/0.50-0.70/G1114	1/22/2008	1200	1.6									13.8	6.0
SA/0.50-0.70/G1114	1/22/2008	1200	1.6									13.8	5.6
SA/0.50-0.70/G1114	2/12/2008	1045	4.7									12.9	5.7
SA/0.50-0.70/G1114	3/14/2008	1115	5.5									13.1	9.9
SA/0.50-0.70/G1114	9/11/2008	1105	11.0									9.5	8.2
SA/0.50-0.70/G1115	9/26/2007	1130	9.9									10.2	5.6
SA/0.50-0.70/G1115	10/10/2007	1145	10.1									9.6	4.1
SA/0.50-0.70/G1115	11/20/2007	1135	5.8									12.3	9.7
SA/0.50-0.70/G1115	1/22/2008	1200	1.6									13.8	7.2
SA/0.50-0.70/G1115	2/12/2008	1045	4.7									12.9	6.3
SA/0.50-0.70/G1115	3/14/2008	1115	5.5									13.1	8.0
SA/0.50-0.70/G1115	9/11/2008	1105	11.0									9.5	4.7
SA/0.50-0.70/G1116	9/26/2007	1130	9.9									10.2	7.1
SA/0.50-0.70/G1116	10/10/2007	1225	10.1									9.6	8.8
SA/0.50-0.70/G1116	11/20/2007	1220	5.8									12.3	11.3
SA/0.50-0.70/G1116	1/22/2008	1225	1.6									13.8	11.8
SA/0.50-0.70/G1116	3/14/2008	1140	5.5									13.1	9.7

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.50-0.70/G1116	9/11/2008	1155	11.0									9.5	8.0
SA/0.50-0.70/G1117	9/26/2007	1130	9.9									10.2	8.2
SA/0.50-0.70/G1117	10/10/2007	1225	10.1									9.6	6.7
SA/0.50-0.70/G1117	11/20/2007	1220	5.8									12.3	10.0
SA/0.50-0.70/G1118	9/26/2007	1130	9.9									10.2	8.9
SA/0.50-0.70/G1118	10/10/2007	1225	10.1									9.6	7.8
SA/0.50-0.70/G1118	11/20/2007	1220	5.8									12.3	10.9
SA/0.50-0.70/G1119	9/26/2007	1130	9.9									10.2	8.6
SA/0.50-0.70/G1119	10/10/2007	1225	10.1									9.6	5.7
SA/0.50-0.70/G1119	11/20/2007	1220	5.8									12.3	10.5
SA/0.50-0.70/G1119	1/22/2008	1225	1.6									13.8	13.3
SA/0.50-0.70/G1119	2/12/2008	1125	4.7									12.9	12.1
SA/0.50-0.70/G1119	9/11/2008	1215	11.0									9.5	9.3
SA/0.50-0.70/G1220	9/11/2008	1020	11.0									9.5	8.9
SA/0.50-0.70/G1221	9/11/2008	1020	11.0									9.5	8.7
SA/0.50-0.70/G1222	9/11/2008	1105	11.0									9.5	9.1
SA/0.50-0.70/G1223	9/11/2008	1105	11.0									9.5	8.1
SA/0.50-0.70/G1224	9/11/2008	1105	11.0									9.5	8.2
SA/0.50-0.70/G1225	9/11/2008	1155	11.0									9.5	7.9
SA/0.50-0.70/G1226	9/11/2008	1155	11.0									9.5	7.0
SA/0.50-0.70/G1227	9/11/2008	1155	11.0									9.5	7.7
SA/0.50-0.70/G1228	9/11/2008	1215	11.0									9.5	8.9
SA/0.50-0.70/G1229	9/11/2008	1215	11.0									9.5	9.2
SA/0.50-0.70/G123	11/20/2007	1135	5.8									12.3	10.7
SA/0.50-0.70/G123	1/22/2008	1200	1.6									13.8	5.6
SA/0.50-0.70/G123	2/12/2008	1045	4.7									12.9	9.8
SA/0.50-0.70/G123	3/14/2008	1115	5.5									13.1	7.0
SA/0.50-0.70/G125	11/20/2007	1220	5.8									12.3	11.0
SA/0.50-0.70/G125	1/22/2008	1225	1.6									13.8	12.7
SA/0.50-0.70/G125	2/12/2008	1125	4.7									12.9	12.0
SA/0.50-0.70/G125	3/14/2008	1140	5.5									13.1	11.2
SA/0.50-0.70/G125	9/11/2008	1155	11.0									9.5	8.1
SA/0.6	8/14/2007	1125	12.9						130				
SA/0.6	8/28/2007	1140	12.3						240				
SA/0.6	9/11/2007	1155	13.0						1600				
SA/0.6	9/11/2007	1155	13.0						1600				
SA/0.6	9/24/2007	1108	9.1						280				
SA/0.6	10/9/2007	1125	9.2						240				
SA/0.6	10/9/2007	1125	9.2						80				
SA/0.6	10/23/2007	955	8.2						130				
SA/0.6	11/6/2007	1050	6.0						10				
SA/0.6	11/20/2007	1035	5.6						2				
SA/0.6	12/4/2007	1050	44.8						70				
SA/0.6	12/18/2007	1155	5.6						17				
SA/0.6	1/2/2008	1021	3.1						1				
SA/0.6	1/17/2008	1145	3.5						8				
SA/0.7	7/5/2007	1120							1600				
SA/0.7	7/31/2007	1025									4.14		

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.7	7/31/2007	1135	12.1						50				
SA/0.7	8/14/2007	1155	12.9						50				
SA/0.7	8/14/2007	1155	12.9						50				
SA/0.7	8/28/2007	1255	12.5						23				
SA/0.7	8/28/2007	1255	12.5						13				
SA/0.7	9/20/2007	1110									2.32		
SA/0.7	9/24/2007	1126	9.0						23				
SA/0.7	10/9/2007	1145	9.1						13				
SA/0.7	10/17/2007	1130									2.63		
SA/0.7	10/23/2007	1020	8.2						17				
SA/0.7	11/6/2007	1140	6.0						6				
SA/0.7	11/20/2007	1105	5.5						4				
SA/0.7	12/4/2007	1130	45.0						59				
SA/0.7	12/7/2007	1245									24.37		
SA/0.7	12/18/2007	1125	5.2						12				
SA/0.7	1/2/2008	1110	3.4						3				
SA/0.7	1/17/2008	1213	3.3						5				
SA/0.7	1/23/2008	1043									19.09		
SA/0.7	1/23/2008	1200									17.00		
SA/0.7	2/11/2008	1205	4.7	127	12.4		2.9	97	6	1.10	18.00		
SA/0.7	2/27/2008	1132	5.6	157	12.3		1.5	99	1	0.68	9.80		
SA/0.7	3/19/2008	1114	4.7	151	12.4		1.7	97	2	0.53	18.00		
SA/0.7	3/27/2008	1104									12.23		
SA/0.7	4/2/2008	1153	4.2	132	12.7		2.4	99	1	0.78	21.70		
SA/0.7	4/15/2008	1145	5.4	123	12.7	7.5	2.2	102	4	0.72	29.90		
SA/0.7	4/23/2008	1044									38.02		
SA/0.7	4/30/2008	1142	6.0	111	12.5	7.6	2.7	101	8	0.63	27.90		
SA/0.7	5/13/2008	1131	7.6	150	11.7	7.7	1.8	99	2	0.25	10.50		
SA/0.7	5/20/2008	1143	10.7	173	10.3	7.8	2.1	93	2	0.25	8.90		
SA/0.7	6/5/2008	1128	8.9		10.3	7.6	4.0	89	35	0.31	10.70		
SA/0.7	6/19/2008	1205	9.5	161	11.0	7.8	1.8	97	18	0.12	9.90		
SA/0.7	7/2/2008	1213	12.6	209	10.3	7.8	2.4	97	42	0.21	4.00		
SA/0.7	7/9/2008	1436									3.62		
SA/0.7	7/15/2008	1108	11.8	245		7.8	1.6		28	0.65	2.80		
SA/0.7	7/29/2008	1200	12.2	259	10.4	7.9	1.0	97	50	0.02	3.10		
SA/0.7	8/12/2008	1147	12.7	265	10.2	7.8	1.3	96	86	0.03	3.10		
SA/0.7	8/26/2008	1105									2.92		
SA/0.7	8/26/2008	1151	11.9	266	10.9	7.9	0.9	101	46	0.03	2.90		
SA/0.7	9/10/2008	1208	11.8	301	10.6	7.9	1.1	98	82	0.10	2.00		
SA/0.7	9/23/2008	1200	9.8	296	10.9	7.8	1.5	97	16	0.08	2.00		
SA/0.7	9/23/2008	1203							10				
SA/0.7	9/23/2008	1203	9.7	295	10.9	7.8	1.6	97	16	0.09			
SA/0.7	10/7/2008	1137	10.6	277	10.8	7.8	0.9	97	30	0.09	2.50		
SA/0.7	10/21/2008	1123	6.5	277	12.0	7.7	0.6	99	10	0.18	2.90		
SA/0.7	11/4/2008	1130	7.8	213	11.4	7.6	7.8	96	60	1.25	12.20		
SA/0.7	11/4/2008	1133	7.8	210	11.4	7.4		97	58				
SA/0.7	11/4/2008	1133	7.8	210	11.0	7.4	7.2	93	42	1.16			
SA/0.7	11/18/2008	1140	8.1	239	11.3	7.5	0.8	96	2	0.56	3.30		
SA/0.7	11/18/2008	1144	8.1	238	11.3	7.5	0.7	96	2	0.54			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.7	11/19/2008	1144	8.1		11.3	7.5		96					
SA/0.7	11/30/2008	1100									3.18		
SA/0.7	12/2/2008	1142	7.9	241	11.5	7.6	1.0	97	6	0.24	2.90		
SA/0.7	12/16/2008	1157	0.5	249	13.6	7.6	1.2	95	2	0.54	2.50		
SA/0.7	1/6/2009	1129	2.9	205	12.7	7.5	1.9	95	16	1.25	5.90		
SA/0.7	1/20/2009	1111	2.3	143	13.8	7.3	1.8	102	2	1.43	13.20		
SA/0.7	2/10/2009	1108	2.5	189	13.7	7.4	1.4	102	1	0.73			
SA/0.7	2/24/2009	1120	5.5	174	12.1	7.6	3.5	97	8	0.65			
SA/0.7	3/3/2009	1129	4.6	113	12.1	7.6	6.1	95	1				
SA/0.7	3/24/2009	1129	4.4	156	12.5	7.7	2.6	97	1	0.75			
SA/0.7	4/7/2009	1136	6.4	129	11.7	7.6		96	1				
SA/0.7	4/21/2009	1130	8.5	173	11.3	7.8	2.2	97	1	0.70			
SA/0.7	5/13/2009	1012	7.6	138	11.0	7.4	4.6	93	6	0.67			
SA/0.7	5/27/2009	1033	9.4	157	11.0	7.5	2.3	97	8	0.83			
SA/0.7	6/3/2009	1031	12.3	199	11.3	7.5	2.9	105	18	0.35			
SA/0.7	6/30/2009	1146	11.1	261	11.0	7.6	1.9	101	12				
SA/0.98	9/20/2007	1015	10.0		10.3			92				10.3	
SA/0.98	9/20/2007	1015	10.0		10.4			93				10.4	
SA/0.98	10/23/2007	1055	8.4		11.1			95				11.1	
SA/0.98	10/23/2007	1055	8.4		11.0			94				11.0	
SA/0.98	11/7/2007	1035	7.0		11.4			95				11.4	
SA/0.98	11/7/2007	1035	7.0		11.7			97				11.7	
SA/0.98	1/23/2008	1050	1.3		13.8			99				13.8	
SA/0.98	1/23/2008	1050	1.3		14.0			100				14.0	
SA/0.98	2/19/2008	1010	2.8		13.6			102					
SA/0.98	2/19/2008	1010	2.8		13.8			103					
SA/0.98-1.00	3/20/2008	1021	4.6		13.3			104					
SA/0.98-1.00	3/20/2008	1021	4.6		13.2			103					
SA/0.98-1.00/G1150	9/20/2007	1015	10.0									10.4	10.1
SA/0.98-1.00/G1150	9/20/2007	1015	10.0									10.4	10.3
SA/0.98-1.00/G1150	10/23/2007	1055	8.4									11.1	10.5
SA/0.98-1.00/G1150	11/7/2007	1035	7.0									11.6	11.5
SA/0.98-1.00/G1150	1/23/2008	1050	1.3									13.9	13.6
SA/0.98-1.00/G1150	2/19/2008	1030	2.8									13.7	13.5
SA/0.98-1.00/G1150	3/20/2008	1021	4.6									13.3	13.6
SA/0.98-1.00/G1151	9/20/2007	1015	10.0									10.4	7.8
SA/0.98-1.00/G1151	10/23/2007	1055	8.4									11.1	8.5
SA/0.98-1.00/G1151	11/7/2007	1035	7.0									11.6	9.7
SA/0.98-1.00/G1152	9/20/2007	1015	10.0									10.4	9.9
SA/0.98-1.00/G1152	10/23/2007	1055	8.4									11.1	10.5
SA/0.98-1.00/G1152	11/7/2007	1035	7.0									11.6	10.9
SA/0.98-1.00/G1153	9/20/2007	1035	10.0									10.4	9.4
SA/0.98-1.00/G1153	10/23/2007	1055	8.4									11.1	10.6
SA/0.98-1.00/G1153	11/7/2007	1055	7.0									11.6	10.9
SA/0.98-1.00/G1154	9/20/2007	1035	10.0									10.4	9.5
SA/0.98-1.00/G1154	10/23/2007	1055	8.4									11.1	9.1
SA/0.98-1.00/G1154	11/7/2007	1055	7.0									11.6	9.2
SA/0.98-1.00/G1155	9/20/2007	1035	10.0									10.4	7.3
SA/0.98-1.00/G1155	10/23/2007	1055	8.4									11.1	8.1
SA/0.98-1.00/G1155	10/23/2007	1055	8.4									11.1	7.8
SA/0.98-1.00/G1155	11/7/2007	1055	7.0									11.6	8.7

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/0.98-1.00/G1155	1/23/2008	1115	1.3									13.9	13.2
SA/0.98-1.00/G1155	2/19/2008	1030	2.8									13.7	12.0
SA/0.98-1.00/G1155	3/20/2008	1021	4.6									13.3	11.3
SA/0.98-1.00/G1156	9/20/2007	1035	10.0									10.4	9.5
SA/0.98-1.00/G1156	10/23/2007	1055	8.4									11.1	8.0
SA/0.98-1.00/G1156	11/7/2007	1055	7.0									11.6	9.0
SA/0.98-1.00/G1156	2/19/2008	1030	2.8									13.7	10.3
SA/0.98-1.00/G1156	2/19/2008	1030	2.8									13.7	9.7
SA/0.98-1.00/G1156	3/20/2008	1021	4.6									13.3	12.1
SA/0.98-1.00/G1156	3/20/2008	1021	4.6									13.3	13.1
SA/0.98-1.00/G132	10/23/2007	1125	8.4									11.1	9.1
SA/0.98-1.00/G132	11/7/2007	1110	7.0									11.6	9.9
SA/0.98-1.00/G133	9/20/2007	1050	10.0									10.4	8.0
SA/0.98-1.00/G133	10/23/2007	1125	8.4									11.1	9.3
SA/0.98-1.00/G133	11/7/2007	1110	7.0									11.6	10.1
SA/0.98-1.00/G133	1/23/2008	1115	1.3									13.9	13.4
SA/0.98-1.00/G133	2/19/2008	1030	2.8									13.7	12.8
SA/0.98-1.00/G133	3/20/2008	1021	4.6									13.3	11.5
SA/0.98-1.00/G40	9/20/2007	1050	10.0									10.4	8.5
SA/0.98-1.00/G40	10/23/2007	1125	8.4									11.1	9.5
SA/0.98-1.00/G40	11/7/2007	1055	7.0									11.6	10.1
SA/0.98-1.00/G40	11/7/2007	1055	7.0									11.6	10.1
SA/0.98-1.00/G40	2/19/2008	1030	2.8									13.7	11.3
SA/0.98-1.00/G40	3/20/2008	1021	4.6									13.3	11.6
SA/1.0	9/20/2007	1125	10.1		10.3			92				10.3	
SA/1.0	9/20/2007	1125	10.1		10.3			92				10.3	
SA/1.0	10/23/2007	1145	8.4		10.9			94				10.9	
SA/1.0	10/23/2007	1145	8.4		10.9			94				10.9	
SA/1.0	11/7/2007	1130	7.1		11.5			96				11.5	
SA/1.0	11/7/2007	1130	7.1		11.5			96				11.5	
SA/1.0	1/23/2008	1134	1.3		14.0			100				14.0	
SA/1.0	1/23/2008	1134	1.3		14.0			100				14.0	
SA/1.0	2/11/2008	1230	4.6	125	12.4		9.0	97	1	1.10			
SA/1.0	2/27/2008	1152	5.5	158	12.2		1.6	98	1	0.68			
SA/1.0	3/19/2008	1136	4.7	154	12.1		1.6	95	1	0.51			
SA/1.0	4/2/2008	1220	4.2	132	12.6		2.0	98	4	0.73			
SA/1.0	4/15/2008	1205	5.5	124	12.6	7.6	2.3	101	2	0.70			
SA/1.0	4/30/2008	1201	6.0	110	12.4	7.6	2.6	101	2	0.66			
SA/1.0	5/13/2008	1200	7.6	150	11.6	7.7	1.8	98	1	0.24			
SA/1.0	5/20/2008	1203	10.6	172	10.6	7.9	2.0	95	4	0.27			
SA/1.0	6/5/2008	1155	8.9		10.2	7.1	3.2	88	30	0.33			
SA/1.0	6/19/2008	1233	9.6	162	10.9	7.9	1.5	96	6	0.02			
SA/1.0	7/2/2008	1311	12.8	212	10.2	7.9	1.8	97	32	0.21			
SA/1.0	7/15/2008	1130	11.8	246		7.8	1.2		20	0.62			
SA/1.0	7/29/2008	1224	12.0	260	10.4	8.0	1.3	97	36	0.02			
SA/1.0	8/12/2008	1210	12.7	268	10.3	8.0	1.1	97	112	0.04			
SA/1.0	8/26/2008	1214	11.9	265	10.9	8.0	1.0	101	110	0.03			
SA/1.0	9/10/2008	1228	11.6	302	10.4	7.9	0.8	96	36	0.11			
SA/1.0	9/23/2008	1226	9.6	297	10.8	7.9	0.8	96	6	0.07			
SA/1.0	10/7/2008	1155	10.4	232	10.9	7.9	0.9	97	8	0.08			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/1.0	10/21/2008	1157	6.4	278	12.0	7.8	1.1	98	2	0.21			
SA/1.0	11/4/2008	1150	7.8	210	11.4	7.7	6.0	96	34	1.17			
SA/1.0	11/18/2008	1208	8.0	240	11.2	7.7	1.0	95	1	0.58			
SA/1.0	12/2/2008	1203	7.8	243	11.4	7.7	8.1	97	20	0.27			
SA/1.0	12/16/2008	1215	0.4	250	13.6	7.6	1.3	95	4	0.58			
SA/1.0	1/6/2009	1146	2.8	208	12.7	7.4	1.9	95	1	1.13			
SA/1.0	1/20/2009	1129	2.3	142	13.8	7.3	1.7	102	10	1.40			
SA/1.0	2/10/2009	1126	2.4	192	13.7	7.4	1.3	102	24	0.71			
SA/1.0	2/24/2009	1141	5.4	175	12.1	7.7	3.1	97	1	0.61			
SA/1.0	3/3/2009	1148	4.6	111	12.2	7.6	6.0	96	1				
SA/1.0	3/24/2009	1148	4.4	152	12.4	7.7	2.2	97	1	0.64			
SA/1.0	4/7/2009	1200	6.4	129	11.6	7.6		95	1				
SA/1.0	4/21/2009	1155	8.4	173	11.1	7.8	2.6	95	1	0.65			
SA/1.0	5/13/2009	1029	7.6	139	11.1	7.4	6.4	93	1	0.61			
SA/1.0	5/27/2009	1052	9.4	160	11.0	7.5		97	4	0.67			
SA/1.0	6/3/2009	1105	12.3	199	10.5	7.6	2.5	99	10	0.39			
SA/1.0	6/30/2009	1212	11.1	261	10.9	7.6	1.7	99	10				
SA/1.00	2/19/2008	1100	3.0		13.4			101					
SA/1.00	2/19/2008	1100	3.0		13.5			101					
SA/1.00-1.04	3/20/2008	1115	4.7		13.2			104					
SA/1.00-1.04/G1127	9/20/2007	1125	10.1									10.3	8.8
SA/1.00-1.04/G1127	10/23/2007	1145	8.4									10.9	8.9
SA/1.00-1.04/G1127	11/7/2007	1120	7.1									11.5	10.1
SA/1.00-1.04/G1129	9/20/2007	1150	10.1									10.3	5.2
SA/1.00-1.04/G1129	10/23/2007	1210	8.4									10.9	3.4
SA/1.00-1.04/G1129	10/23/2007	1210	8.4									10.9	2.3
SA/1.00-1.04/G1129	11/7/2007	1145	7.1									11.5	2.3
SA/1.00-1.04/G1129	11/7/2007	1145	7.1									11.5	1.2
SA/1.00-1.04/G1140	9/20/2007	1150	10.1									10.3	9.5
SA/1.00-1.04/G1140	10/23/2007	1210	8.4									10.9	8.8
SA/1.00-1.04/G1140	11/7/2007	1145	7.1									11.5	9.6
SA/1.00-1.04/G1140	1/23/2008	1134	1.3									14.0	13.7
SA/1.00-1.04/G1140	2/19/2008	1115	2.9									13.5	13.7
SA/1.00-1.04/G1140	2/19/2008	1115	2.9									13.5	13.5
SA/1.00-1.04/G1140	3/20/2008	1115	4.7									13.2	12.2
SA/1.00-1.04/G1140	3/20/2008	1115	4.7									13.2	12.9
SA/1.00-1.04/G1141	9/20/2007	1150	10.1									10.3	9.6
SA/1.00-1.04/G1141	11/7/2007	1145	7.1									11.5	10.9
SA/1.00-1.04/G1141	1/23/2008	1200	1.3									14.0	11.3
SA/1.00-1.04/G1141	1/23/2008	1200	1.3									14.0	10.5
SA/1.00-1.04/G1141	2/19/2008	1115	2.9									13.5	12.2
SA/1.00-1.04/G1141	3/20/2008	1115	4.7									13.2	12.3
SA/1.00-1.04/G1143	9/20/2007	1150	10.1									10.3	10.1
SA/1.00-1.04/G1143	11/7/2007	1145	7.1									11.5	9.4
SA/1.00-1.04/G1143	1/23/2008	1200	1.3									14.0	6.1
SA/1.00-1.04/G1143	2/19/2008	1115	2.9									13.5	5.0
SA/1.00-1.04/G1143	3/20/2008	1115	4.7									13.2	7.8
SA/1.00-1.04/G46	9/20/2007	1125	10.1									10.3	9.4
SA/1.00-1.04/G46	10/23/2007	1145	8.4									10.9	10.1

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SA/1.00-1.04/G46	11/7/2007	1120	7.1									11.5	10.6
SA/1.00-1.04/G75	10/23/2007	1210	8.4									10.9	5.4
SA/1.00-1.04/G75	1/23/2008	1134	1.3									14.0	12.8
SA/1.00-1.04/G75	2/19/2008	1115	2.9									13.5	11.7
SA/1.00-1.04/G75	3/20/2008	1115	4.7									13.2	11.9
SN/0.2	7/5/2007	1020							70				
SN/0.2	7/5/2007	1020							170				
SN/0.2	7/31/2007	950	12.4						80				
SN/0.2	8/14/2007	950	13.7						1600				
SN/0.2	8/28/2007	1005	12.9						50				
SN/0.2	9/11/2007	1110	13.1						500				
SN/0.2	9/24/2007	1010	9.8						50				
SN/0.2	10/9/2007	1010	9.6						50				
SN/0.2	10/23/2007	915	8.7						23				
SN/0.2	11/6/2007	955	5.5						40				
SN/0.2	11/6/2007	955	5.5						72				
SN/0.2	11/20/2007	1010	5.6						30				
SN/0.2	12/4/2007	1006	43.9						83				
SN/0.2	12/18/2007	942	5.9						76				
SN/0.2	1/2/2008	930	3.2						10				
SN/0.2	1/17/2008	1110	3.8						3				
SN/0.2	2/11/2008	1005	4.4	91	12.5			98	10	0.80			
SN/0.2	2/27/2008	1000	5.2	89	12.6		2.4	100	4	0.48			
SN/0.2	3/19/2008	940	4.6	78	12.4		3.1	97	1	0.34			
SN/0.2	4/2/2008	1008	4.1	86	12.7		2.5	98	2	0.33			
SN/0.2	4/15/2008	1020	5.8	69	12.5	7.2	10.3	101	1	0.30			
SN/0.2	4/30/2008	1000	5.7	62	12.6		9.7	101	10	0.18			
SN/0.2	5/13/2008	921	7.8	74	11.5	6.6	3.0	98	14	0.02			
SN/0.2	5/20/2008	950	11.2	73	10.4	7.1	3.4	95	54	0.30			
SN/0.2	6/5/2008	952	9.8		12.2	7.4	5.4	108	108	0.09			
SN/0.2	6/5/2008	954							133				
SN/0.2	6/5/2008	954	9.8		11.5	6.9	5.5	102	126	0.07			
SN/0.2	6/19/2008	1010	10.5	83	10.6	6.9	9.0	96	242	0.03			
SN/0.2	6/19/2008	1015							200				
SN/0.2	6/19/2008	1015	10.6	83	10.6	6.8	8.8	95	330	0.02			
SN/0.2	7/2/2008	1003	14.7	106	9.5	7.4	2.2	93	346	0.12			
SN/0.2	7/2/2008	1006							76				
SN/0.2	7/2/2008	1006	14.8	106	9.5	7.4	2.2	93	64	0.09			
SN/0.2	7/15/2008	939	13.2	121		7.6	2.6		208	0.20			
SN/0.2	7/29/2008	1015	13.2	130	9.7	7.3	1.4	92	248	0.01			
SN/0.2	7/29/2008	1018	13.2	129	9.7	7.3	1.4	93	292	0.00			
SN/0.2	8/12/2008	1004	13.6	133	9.8	7.5	1.4	94	220	0.04			
SN/0.2	8/12/2008	1007							186				
SN/0.2	8/12/2008	1007	13.6	134	9.7	7.6	1.5	93	176	0.03			
SN/0.2	8/26/2008	1015	12.4	122	10.1	7.4	2.8	95	312	0.07			
SN/0.2	8/26/2008	1018							384				
SN/0.2	8/26/2008	1018	12.4	122	10.3	7.2	2.5	97	340	0.06			
SN/0.2	9/10/2008	1026	12.3	144	9.8	7.4	2.7	92	168	0.05			
SN/0.2	9/10/2008	1029							156				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SN/0.2	9/10/2008	1029	12.3	144	9.8	7.3	2.7	92	138	0.03			
SN/0.2	9/23/2008	1008	10.1	143	10.2	7.5	4.9	91	354	0.03			
SN/0.2	10/7/2008	1012	11.3	127	10.1	7.2	1.6	92	64	0.00			
SN/0.2	10/7/2008	1014							52				
SN/0.2	10/7/2008	1014	11.3	126	10.1	7.1	1.8	93	60	0.00			
SN/0.2	10/21/2008	1012	6.7	137	11.4	7.4	1.5	94	18	0.00			
SN/0.2	10/21/2008	1014							24				
SN/0.2	10/21/2008	1014	6.7	130	11.4	7.4	1.3	94	28	0.00			
SN/0.2	11/4/2008	957	8.1	89	10.9	6.7	17.8	93	450	0.01			
SN/0.2	11/18/2008								148				
SN/0.2	11/18/2008	1011	8.6	110	10.9	7.2	2.1	94	150	0.15			
SN/0.2	11/18/2008	1013	8.6	104	10.9	7.3	1.6	94	192	0.15			
SN/0.2	11/19/2008	1013	8.6		10.9	7.3		94					
SN/0.2	12/2/2008								54				
SN/0.2	12/2/2008	1010	8.1	120	11.2	6.8	1.9	95	4	0.00			
SN/0.2	12/2/2008	1012	8.1	122	11.1	6.9	1.6	95	36	0.00			
SN/0.2	12/16/2008	1017	0.0	130	13.6	7.8	2.3	94	8	0.03			
SN/0.2	1/6/2009								16				
SN/0.2	1/6/2009	1014	3.0	122	12.4	7.3	4.6	93	10	0.75			
SN/0.2	1/6/2009	1015	3.0	120	12.4	7.3	4.3	93	22	0.74			
SN/0.2	1/20/2009								8				
SN/0.2	1/20/2009	954	2.2	87	13.9	7.1	4.1	102	2	0.77			
SN/0.2	1/20/2009	956	2.2	86	13.9	7.0	3.5	102	8	0.70			
SN/0.2	2/10/2009	951	2.6	111	13.6	7.3	2.1	101	4	0.58			
SN/0.2	2/10/2009	954	2.6	111	13.7	7.1	2.3	102	4	0.35			
SN/0.2	2/10/2009	954	2.6	111	13.7	7.1	2.3	102	6	0.35			
SN/0.2	2/24/2009								10				
SN/0.2	2/24/2009	1000	5.4	109	12.2	7.3	6.0	97	12	0.35			
SN/0.2	2/24/2009	1002	5.4	108	12.2	7.2	5.2	98	10	0.12			
SN/0.2	3/3/2009	1000	4.6	73	12.2	7.6	9.7	96	28				
SN/0.2	3/24/2009								8				
SN/0.2	3/24/2009	1004	4.6	94	12.6	7.6	2.9	98	1	0.50			
SN/0.2	3/24/2009	1006	4.6	93	12.6	7.5	3.0	98	4	0.67			
SN/0.2	4/7/2009	955	6.1	83	12.2	7.5		99	2				
SN/0.2	4/7/2009	958							4				
SN/0.2	4/7/2009	958	6.1	83	12.1	7.4		99	1				
SN/0.2	4/21/2009	1004	9.1	97	11.4	7.4	2.6	100	6	0.37			
SN/0.2	4/21/2009	1008							2				
SN/0.2	4/21/2009	1008	9.1	97	11.4	7.2	3.2	99	2	0.37			
SN/0.2	5/13/2009								6				
SN/0.2	5/13/2009	847	8.7	87	10.8	7.5	4.9	93	14	0.28			
SN/0.2	5/13/2009	849	8.7	89	10.8	7.5	4.7	93	16	0.29			
SN/0.2	5/27/2009								58				
SN/0.2	5/27/2009	854	11.8	94	10.4	7.1	4.6	96	36	0.97			
SN/0.2	5/27/2009	856	11.8	92	10.4	7.1	4.8	96	48	0.38			
SN/0.2	6/3/2009								30				
SN/0.2	6/3/2009	901	14.5	105	9.7	7.0	3.3	95	16	0.52			
SN/0.2	6/3/2009	903	14.5	106	9.6	7.0	3.2	94	26	0.13			
SN/0.2	6/30/2009								70				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SN/0.2	6/30/2009	1005	12.0	135	11.3	7.4	1.9	105	46				
SN/0.2	6/30/2009	1008	12.0	134	11.2	7.5	1.9	104	54				
SN/0.7	11/18/2008								1				
SN/0.8	7/5/2007	1230							30				
SN/0.8	7/31/2007	915									6.31		
SN/0.8	7/31/2007	1300	15.1						280				
SN/0.8	8/14/2007	1250	15.1						30				
SN/0.8	8/28/2007	1335	14.8						80				
SN/0.8	9/11/2007	1345							23				
SN/0.8	9/20/2007	915									3.94		
SN/0.8	9/24/2007	1145	10.0						80				
SN/0.8	10/9/2007	1345	10.5						170				
SN/0.8	10/17/2007	950									4.01		
SN/0.8	10/23/2007	1125	9.0						23				
SN/0.8	11/6/2007	13	6.0						220				
SN/0.8	11/20/2007	1245	5.9						30				
SN/0.8	12/4/2007	1249	46.6						97				
SN/0.8	12/4/2007	1249	46.6						98				
SN/0.8	12/7/2007	1418									80.00		
SN/0.8	12/7/2007	1418											
SN/0.8	12/18/2007		5.4						31				
SN/0.8	1/2/2008	1225	3.4						4				
SN/0.8	1/17/2008	1255	3.7						5				
SN/0.8	1/23/2008	924									30.82		
SN/0.8	1/23/2008	1045									29.00		
SN/0.8	2/11/2008	1414	5.4	90	12.1		3.2	96	50	0.81	26.30		
SN/0.8	2/27/2008	1414	6.7	87	11.9		2.7	98	1	0.34	17.70		
SN/0.8	3/19/2008	1400	6.1	76	11.9		2.8	97	4	0.31	26.30		
SN/0.8	3/27/2008	944									26.98		
SN/0.8	4/2/2008	1411	7.1	86	11.7		2.7	97	2	0.29	22.90		
SN/0.8	4/15/2008	1417	6.9	67	11.8	7.2	4.2	98	6	0.27	46.50		
SN/0.8	4/23/2008	925									61.37		
SN/0.8	4/30/2008	1404	7.2	63	11.7	7.3	5.7	98	2	0.12	59.10		
SN/0.8	5/13/2008	1405	8.7	68	11.2	7.4	3.0	97	6	0.01	27.40		
SN/0.8	5/20/2008	1337	11.1	74	10.4	7.4	3.8	94	14	0.02	26.60		
SN/0.8	6/5/2008	1344	10.4		9.6	7.3	5.6	86	77	0.05	33.40		
SN/0.8	6/19/2008	1454	12.4	81	10.1	7.5	3.1	95	20	0.02	23.30		
SN/0.8	7/2/2008	1502	16.2	107	9.2	7.6	7.0	93	52	0.09	9.40		
SN/0.8	7/9/2008	1305									5.64		
SN/0.8	7/15/2008	1343	15.5	121		7.6	2.0		86	0.15	5.40		
SN/0.8	7/29/2008	1439	14.7	128	9.5	7.7	1.5	94	166	0.00	4.20		
SN/0.8	8/12/2008	1431	15.2	131	9.6	7.7	1.3	95	106	0.02	3.70		
SN/0.8	8/26/2008	938									6.13		
SN/0.8	8/26/2008	1434	13.6	122	10.6	7.7	1.6	102	1280	0.06	7.60		
SN/0.8	9/10/2008	1446	14.4	141	9.6	7.5	1.2	94	118	0.03	3.10		
SN/0.8	9/23/2008	1420	11.1	142	10.2	7.5	3.1	93	840	0.00	5.00		
SN/0.8	10/7/2008	1434	12.2	117	10.0	7.4	1.7	93	50	0.00	7.50		
SN/0.8	10/21/2008	1404	7.9	133	11.3	7.5	1.2	96	8	0.00	5.20		
SN/0.8	11/4/2008	1355	8.3	114	10.8	7.4	6.9	93	40	0.42	16.10		

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SN/0.8	11/18/2008	1416	8.9	108	10.8	7.3	1.5	94	50	0.13	12.20		
SN/0.8	11/30/2008	927									6.25		
SN/0.8	12/2/2008	1408	9.0	118	10.9	7.4	1.7	95	18	0.00	11.50		
SN/0.8	12/16/2008	1408	0.3	126	13.4	7.4	1.7	93	6	0.03	9.50		
SN/0.8	1/6/2009	1355	3.5	117	12.3	7.2	2.3	94	32	0.75	17.30		
SN/0.8	1/20/2009								12				
SN/0.8	1/20/2009	1325	2.9	85	13.3	7.0	4.1	100	2	0.72	26.40		
SN/0.8	1/20/2009	1327	2.9	84	13.3	6.8	3.8	100	12	0.72			
SN/0.8	2/10/2009	1324	3.0	108	13.4	7.3	2.2	100	6	0.37			
SN/0.8	2/24/2009	1337	6.6	105	11.7	7.3	4.5	97	6	0.14			
SN/0.8	3/3/2009	1355	6.1	77	11.5	7.4	6.7	93	10				
SN/0.8	3/24/2009	1347	6.2	93	11.7	7.5	2.7	95	4	0.64			
SN/0.8	4/7/2009	1405	9.2	82	10.5	7.4		92	2				
SN/0.8	4/21/2009	1413	13.0	95	9.5	7.6	2.6	90	10	0.34			
SN/0.8	5/13/2009	1209	9.1	86	10.5	7.2	4.8	91	14	0.27			
SN/0.8	5/27/2009	1257	13.0	93	9.3	7.4	3.9	88	24	0.42			
SN/0.8	6/3/2009	1315	17.1	104	10.1	7.5	3.2	104	34	0.19			
SN/0.8	6/30/2009	1438	15.5	133	9.5	7.6	1.9	95	46				
SN/1.6	7/5/2007	1125							30				
SN/1.6	7/31/2007	1210	13.5						80				
SN/1.6	8/14/2007	1200	13.9						30				
SN/1.6	8/28/2007	1300	13.9						4				
SN/1.6	9/11/2007	1301							80				
SN/1.6	9/24/2007	1138	9.9						50				
SN/1.6	10/9/2007	1230	10.1						13				
SN/1.6	10/23/2007	1030	8.4						8				
SN/1.6	11/6/2007	1155	5.8						2				
SN/1.6	11/20/2007	1115	5.5						18				
SN/1.6	11/20/2007	1116	5.5						10				
SN/1.6	12/4/2007	1145	45.1						75				
SN/1.6	12/18/2007	1130	5.5						52				
SN/1.6	1/2/2008	1125	3.1						8				
SN/1.6	1/17/2008	1220	3.7						3				
SN/1.6	2/11/2008	1253	4.8	88	12.2		3.6	96	110	0.83			
SN/1.6	2/27/2008	1214	6.0	83	12.2		2.4	99	4	0.38			
SN/1.6	2/27/2008	1214	5.9	84	12.2		2.7	99	2	0.39			
SN/1.6	2/27/2008	1214							1				
SN/1.6	3/19/2008	1200	5.2	73	12.1		2.3	97	8	0.31			
SN/1.6	4/2/2008	1244	6.0	83	12.1		2.2	98	1	0.29			
SN/1.6	4/15/2008	1225	6.5	66	12.1	7.2	3.8	99	8	0.27			
SN/1.6	4/30/2008	1245	6.6	60	12.1	7.1	5.2	99	2	0.12			
SN/1.6	5/13/2008	1241	8.3	74	11.5	7.3	2.5	98	6	0.01			
SN/1.6	5/20/2008	1220	11.0	69	10.3	7.3	2.9	94	18	0.03			
SN/1.6	6/5/2008	1220	9.9		10.0	7.1	4.9	88	70	0.06			
SN/1.6	6/19/2008	1259	11.8	80	10.3	7.3	3.2	95	34	0.10			
SN/1.6	7/2/2008	1338	15.7	104	9.3	7.4	1.8	93	72	0.06			
SN/1.6	7/15/2008	1211	13.9	120		7.5	1.2		54	0.25			
SN/1.6	7/15/2008	1212							58				
SN/1.6	7/15/2008	1212	13.9	120		7.4	1.1		58	0.13			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SN/1.6	7/29/2008	1326	13.9	126	9.8	7.6	1.0	94	130	0.01			
SN/1.6	8/12/2008	1232	14.1	131	9.7	7.5	1.1	95	62	0.02			
SN/1.6	8/26/2008	1237	12.9	120	10.7	7.6	1.4	101	730	0.03			
SN/1.6	9/10/2008	1250	12.8	139	9.8	7.5	1.2	92	68	0.04			
SN/1.6	9/23/2008	1249	10.4	139	10.4	7.5	1.2	93	86	0.00			
SN/1.6	10/7/2008	1224	11.8	124	10.1	7.4	1.8	93	14	0.00			
SN/1.6	10/21/2008	1223	7.1	133	11.5	7.5	1.1	96	16	0.00			
SN/1.6	11/4/2008	1212	8.0	110	11.0	7.3	6.6	94	24	0.56			
SN/1.6	11/18/2008	1231	8.8	104	10.8	7.5	1.9	94	8	0.23			
SN/1.6	12/2/2008	1244	8.7	114	11.1	7.3	2.0	96	1	0.02			
SN/1.6	12/16/2008	1257	0.3	123	13.5	7.5	1.4	94	2	0.05			
SN/1.6	1/6/2009	1236	3.1	113	12.5	7.6	2.6	94	4	0.77			
SN/1.6	1/20/2009	1148	2.7	82	13.4	7.3	2.2	100	2	0.73			
SN/1.6	2/10/2009	1144	2.6	105	13.5	7.4	2.1	100	1	0.50			
SN/1.6	2/24/2009	1201	6.0	102	12.0	7.5	4.6	97	2	0.32			
SN/1.6	3/3/2009	1230	5.5	72	11.5	7.3	6.6	92	1				
SN/1.6	3/24/2009	1232	5.8	88	11.8	7.4	2.9	95	4	0.45			
SN/1.6	4/7/2009	1244	8.3	80	10.8	7.4		93	2				
SN/1.6	4/21/2009	1254	11.8	93	9.8	7.9	2.8	91	1	0.37			
SN/1.6	5/13/2009	1046	8.9	85	10.4	7.5	4.5	90	4	0.28			
SN/1.6	5/27/2009	1112	12.1	91	9.7	7.5	4.1	90	4	0.58			
SN/1.6	6/3/2009	1128	15.7	103	9.2	7.5	2.3	93	20	0.17			
SN/1.6	6/30/2009	1306	13.5	131	9.7	7.4	1.7	93	32				
SN/2.3	2/11/2008	1303	4.8	85	12.3		3.4	96	16	0.80			
SN/2.3	2/27/2008	1231	6.1	82	12.1		2.1	99	12	0.37			
SN/2.3	2/27/2008	1231	6.2	81	12.1		3.0	99	26	0.36			
SN/2.3	2/27/2008	1231							6				
SN/2.3	3/19/2008	1209	5.3	71	12.0		2.7	95	8	0.31			
SN/2.3	4/2/2008	1255	6.3	81	11.9		2.2	97	4	0.25			
SN/2.3	4/15/2008	1233	6.6	70	12.0	7.1	3.3	99	2	0.24			
SN/2.3	4/30/2008	1254	6.6	62	12.1	7.0	4.9	99	1	0.10			
SN/2.3	5/13/2008	1256	8.4	70	11.5	7.4	2.3	98	2	0.01			
SN/2.3	5/20/2008	1232	10.9	66	10.3	7.3	3.3	94	24	0.02			
SN/2.3	6/5/2008	1237	10.0		10.5	7.0	5.1	93	45	0.05			
SN/2.3	6/19/2008	1314	12.0	78	10.3	7.4	3.3	95	44	0.04			
SN/2.3	7/2/2008	1349	15.9	101	9.3	7.5	1.9	94	68	0.06			
SN/2.3	7/15/2008	1226	14.1	119		7.5	1.1		50	0.17			
SN/2.3	7/15/2008	1227							52				
SN/2.3	7/15/2008	1227	14.1	117		7.4	1.1		58	0.14			
SN/2.3	7/29/2008	1338	14.0	124	9.6	7.7	1.0	93	96	0.00			
SN/2.3	8/12/2008	1316	14.4	119	9.6	7.7	1.0	94	68	0.02			
SN/2.3	8/26/2008	1322	13.0	119	10.5	7.7	1.5	100	76	0.03			
SN/2.3	9/10/2008	1304	13.1	137	9.7	7.7	1.1	92	126	0.04			
SN/2.3	9/23/2008	1305	10.7	139	10.4	7.5	1.0	94	98	0.00			
SN/2.3	10/7/2008	1312	12.1	120	10.0	7.5	1.7	93	20	0.00			
SN/2.3	10/21/2008	1300	7.5	131	11.5	7.4	1.2	97	12	0.00			
SN/2.3	11/4/2008	1250	7.9	107	11.2	7.4	5.9	95	40	0.63			
SN/2.3	11/18/2008	1304	8.9	102	10.8	7.3	1.8	94	2	0.18			
SN/2.3	12/2/2008	1254	8.6	93	11.1	7.4	1.9	96	8	0.05			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SN/2.3	12/16/2008	1307	0.8	120	13.2	7.6	1.9	94	2	0.05			
SN/2.3	1/6/2009	1245	3.0	111	12.4	7.6	2.3	93	10	0.77			
SN/2.3	1/20/2009	1224	2.9	80	13.3	7.0	2.7	100	2	0.74			
SN/2.3	2/10/2009	1228	2.7	103	13.5	7.4	2.3	101	1	0.51			
SN/2.3	2/24/2009	1232	6.5	98	11.9	7.5	5.3	98	4	0.33			
SN/2.3	3/3/2009	1243	5.6	75	11.5	7.3	6.5	92	10				
SN/2.3	3/24/2009	1243	5.9	87	11.7	7.5	3.1	95	1	0.59			
SN/2.3	4/7/2009	1256	8.4	77	10.8	7.4		93	1				
SN/2.3	4/21/2009	1305	12.2	90	9.7	7.7	2.8	90	1	0.37			
SN/2.3	5/13/2009	1054	9.0	83	10.3	7.4	3.7	90	6	0.28			
SN/2.3	5/27/2009	1120	12.3	86	9.6	7.5	3.5	90	2	0.45			
SN/2.3	6/3/2009	1139	16.1	70	9.2	7.5	3.1	93	12	0.22			
SN/2.3	6/30/2009	1318	13.5	129	10.1	7.5	1.3	97	38				
SN/3.5	7/5/2007	1140							30				
SN/3.5	7/31/2007	1235	13.2						50				
SN/3.5	8/14/2007	1225	13.4						30				
SN/3.5	8/14/2007	1225	13.4						17				
SN/3.5	8/28/2007	1315	13.0						22				
SN/3.5	9/11/2007	1325							17				
SN/3.5	9/24/2007	1300	9.5						23				
SN/3.5	9/24/2007	1300	9.5						27				
SN/3.5	10/9/2007	1250	9.1						50				
SN/3.5	10/9/2007	1250	9.1						30				
SN/3.5	10/23/2007	1105	8.1						13				
SN/3.5	10/23/2007	1105	8.1						13				
SN/3.5	11/6/2007	1215	5.5						2				
SN/3.5	11/20/2007	1205	5.2						40				
SN/3.5	12/4/2007	1216	43.7						47				
SN/3.5	12/18/2007	1150	5.3						16				
SN/3.5	1/2/2008	1158	3.1						2				
SN/3.5	1/17/2008	1230	3.5						5				
SN/3.5	2/11/2008	1325	4.4	81	12.6		2.9	98	16	0.80			
SN/3.5	2/27/2008	1259	5.7	78	12.5		2.4	100	1	0.28			
SN/3.5	3/19/2008	1230	4.3	65	12.5		2.8	98	1	0.31			
SN/3.5	4/2/2008	1327	4.7	78	12.6		2.3	99	1	0.30			
SN/3.5	4/15/2008	1253	5.0	54	12.9	7.2	3.4	102	1	0.23			
SN/3.5	4/30/2008	1319	4.9	50	12.9	7.0	5.2	102	4	0.09			
SN/3.5	5/13/2008	1319	7.1	60	12.1	7.5	2.3	101	1	0.01			
SN/3.5	5/20/2008	1256	9.2	64	11.2	7.5	3.6	98	4	0.01			
SN/3.5	6/5/2008	1300	8.2		10.7	7.3	5.7	91	25	0.06			
SN/3.5	6/19/2008	1342	9.8	76	11.1	7.5	2.8	98	20	0.02			
SN/3.5	7/2/2008	1417	14.6	100	9.7	7.8	1.3	95	58	0.05			
SN/3.5	7/15/2008	1301	13.6	114		7.7	1.1		38	0.14			
SN/3.5	7/29/2008	1401	13.3	120	10.0	7.8	1.0	95	78	0.00			
SN/3.5	8/12/2008	1343	14.1	125	9.9	7.7	1.0	96	42	0.02			
SN/3.5	8/26/2008	1346	12.4	115	11.0	7.8	1.6	103	80	0.06			
SN/3.5	9/10/2008	1333	12.6	137	10.2	7.6	0.7	96	32	0.04			
SN/3.5	9/23/2008	1331	10.0	139	11.0	7.6	0.8	98	8	0.00			
SN/3.5	10/7/2008	1335	10.8	131	10.7	7.5	0.9	97	22	0.06			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SN/3.5	10/21/2008	1323	6.7	136	12.0	7.6	0.6	99	2	0.00			
SN/3.5	11/4/2008	1311	7.5	105	11.6	7.3	6.3	97	40	0.76			
SN/3.5	11/18/2008	1323	8.4	112	11.2	7.4	1.3	96	2	0.48			
SN/3.5	12/2/2008	1323	8.4	106	11.4	7.4	3.9	98	10	0.11			
SN/3.5	12/16/2008	1327	0.0	127	13.8	7.5	1.8	96	1	0.08			
SN/3.5	1/6/2009	1311	2.9	110	12.8	7.2	2.8	95	4	0.94			
SN/3.5	1/20/2009	1244	2.7	71	13.6	6.8	2.8	102	1	0.72			
SN/3.5	2/10/2009	1245	2.0	101	14.1	7.2	2.6	103	4	0.25			
SN/3.5	2/24/2009	1253	5.3	92	12.3	7.4	6.6	98	8	0.29			
SN/3.5	3/3/2009	1306	4.9	61	12.0	7.3	8.0	95	6				
SN/3.5	3/24/2009	1306	4.7	82	12.4	7.7	3.3	97	1	0.58			
SN/3.5	4/7/2009	1324	6.7	66	11.7	7.4		96	1				
SN/3.5	4/21/2009	1328	10.6	74	10.4	7.7	1.8	94	2	0.24			
SN/3.5	5/13/2009	1114	6.9	72	11.4	7.2	3.6	94	1	0.26			
SN/3.5	5/27/2009	1150	9.6	81	10.9	7.4	2.4	96	12	0.32			
SN/3.5	6/3/2009	1201	13.8	100	9.8	7.4	2.0	95	8	0.15			
SN/3.5	6/30/2009	1341	12.7	124	10.6	7.5	1.4	100	26				
SN/3.9	7/5/2007	1135							13				
SN/3.9	7/5/2007	1135							30				
SN/3.9	7/31/2007	1242	13.1						14				
SN/3.9	8/14/2007	1230	13.2						30				
SN/3.9	8/28/2007	1330	12.7						13				
SN/3.9	8/28/2007	1330	12.7						13				
SN/3.9	9/11/2007	1330							22				
SN/3.9	9/24/2007	1305	9.3						17				
SN/3.9	9/24/2007	1305	9.3						50				
SN/3.9	10/9/2007	1300	9.1						17				
SN/3.9	10/23/2007	1110	8.0						2				
SN/3.9	11/6/2007	1220	5.6						3				
SN/3.9	11/20/2007	1208	5.1						46				
SN/3.9	11/20/2007	1208	5.1						36				
SN/3.9	12/4/2007	1220	43.7						39				
SN/3.9	12/18/2007	1155	5.3						13				
SN/3.9	1/2/2008	1202	3.0						1				
SN/3.9	1/17/2008	1240	3.5						1				
SN/3.9	2/11/2008	1334	4.3	81	12.6		2.5	97	4	0.74			
SN/3.9	2/27/2008	1309	5.5	76	12.4		2.0	99	1	0.24			
SN/3.9	3/19/2008	1238	4.3	65	12.5		2.4	97	1	0.31			
SN/3.9	4/2/2008	1336	4.6	77	12.6		2.1	98	2	0.30			
SN/3.9	4/15/2008	1303	4.9	56	12.7	7.2	3.4	100	2	0.24			
SN/3.9	4/30/2008	1327	4.9	50	12.9	6.9	5.0	102	10	0.09			
SN/3.9	5/13/2008	1328	7.2	62	12.0	7.4	2.4	100	2	0.01			
SN/3.9	5/20/2008	1303	9.2	64	11.2	7.4	3.2	98	1	0.01			
SN/3.9	6/5/2008	1307	8.2		10.6	7.2	5.5	90	17	0.06			
SN/3.9	6/19/2008	1414	9.7	75	11.0	7.5	2.4	97	10	0.02			
SN/3.9	7/2/2008	1425	14.6	99	9.8	7.8	1.2	96	68	0.04			
SN/3.9	7/15/2008	1310	13.8	113		7.7	1.0		36	0.10			
SN/3.9	7/29/2008	1407	13.2	120	10.1	7.8	0.9	96	40	0.00			
SN/3.9	8/12/2008	1351	13.9	125	10.0	7.8	0.9	96	22	0.02			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SN/3.9	8/26/2008	1355	12.3	119	11.1	7.7	1.2	103	330	0.06			
SN/3.9	9/10/2008	1347	12.5	136	10.3	7.7	0.6	97	22	0.04			
SN/3.9	9/23/2008	1338	9.9	138	11.0	7.7	0.8	98	12	0.00			
SN/3.9	10/7/2008	1342	10.7	132	11.0	7.6	0.9	99	24	0.10			
SN/3.9	10/21/2008	1331	6.5	132	12.1	7.6	0.5	99	1	0.00			
SN/3.9	11/4/2008	1318	7.5	105	11.6	7.4	5.9	97	32	0.78			
SN/3.9	11/18/2008	1330	8.3	112	11.4	7.4	1.1	97	1	0.51			
SN/3.9	12/2/2008	1330	8.2	116	11.4	7.5	4.2	97	6	0.13			
SN/3.9	12/16/2008	1334	0.0	99	13.7	7.4	1.7	95	4	0.09			
SN/3.9	1/6/2009	1320	2.8	110	12.7	7.3	2.5	95	2	0.94			
SN/3.9	1/20/2009	1251	2.7	71	13.6	7.0	4.0	101	1	0.71			
SN/3.9	2/10/2009	1254	2.0	100	14.1	7.3	2.7	103	24	0.21			
SN/3.9	2/24/2009	1302	5.3	92	12.3	7.3	6.2	98	4	0.26			
SN/3.9	3/3/2009	1316	4.8	62	12.0	7.2	7.5	94	4				
SN/3.9	3/24/2009	1313	4.6	83	12.4	7.5	3.3	97	1	0.54			
SN/3.9	4/7/2009	1331	6.6	66	11.6	7.5		95	2				
SN/3.9	4/21/2009	1338	10.6	83	10.3	7.7	1.9	93	8	0.20			
SN/3.9	5/13/2009	1123	6.9	72	11.3	7.2	3.5	94	6	0.28			
SN/3.9	5/27/2009	1200	9.6	82	11.4	7.3	2.8	100	16	0.42			
SN/3.9	6/3/2009	1208	13.9	100	10.6	7.4	2.7	102	1	0.28			
SN/3.9	6/30/2009	1348	13.1	122	10.5	7.5	1.3	100	14				
SN/4.4	2/11/2008	1348	4.2	80	12.5		2.5	97	1	0.75			
SN/4.4	2/27/2008	1346	5.6	76	12.4		1.8	99	4	0.23			
SN/4.4	3/19/2008	1335	4.7	66	12.4		2.1	97	1	0.30			
SN/4.4	4/2/2008	1350	4.6	78	12.6		2.1	98	2	0.33			
SN/4.4	4/15/2008	1353	4.8	57	12.8	7.2	3.4	101	2	0.24			
SN/4.4	4/30/2008	1339	5.1	50	12.7	7.1	4.4	101	1	0.10			
SN/4.4	5/13/2008	1338	7.1	63	12.0	7.4	2.3	100	6	0.01			
SN/4.4	5/20/2008	1313	9.1	64	11.2	7.4	3.4	97	2	0.01			
SN/4.4	6/5/2008	1320	8.2		10.5	7.1	5.1	89	20	0.06			
SN/4.4	6/19/2008	1427	9.6	75	11.0	7.5	3.0	97	8	0.02			
SN/4.4	7/2/2008	1436	14.4	100	9.8	7.7	1.3	96	30	0.04			
SN/4.4	7/15/2008	1319	13.9	112		7.8	1.0		42	0.10			
SN/4.4	7/29/2008	1417	13.0	119	10.0	7.8	0.7	95	32	0.00			
SN/4.4	8/12/2008	1404	13.8	114	9.9	7.8	0.9	95	18	0.02			
SN/4.4	8/26/2008	1406	12.1	119	11.0	7.8	1.4	102	300	0.06			
SN/4.4	9/10/2008	1417	12.8	137	10.1	7.7	0.7	96	34	0.05			
SN/4.4	9/23/2008	1350	10.0	138	10.6	7.8	1.0	94	18	0.00			
SN/4.4	10/7/2008	1405	10.7	133	10.7	7.4	0.8	97	4	0.10			
SN/4.4	10/21/2008	1341	6.5	136	11.9	7.7	1.0	98	2	0.00			
SN/4.4	11/4/2008	1330	7.4	106	11.4	7.4	6.1	96	18	0.79			
SN/4.4	11/18/2008	1340	8.2	106	11.2	7.3	1.6	96	1	0.52			
SN/4.4	12/2/2008	1341	8.2	111	11.2	7.5	4.4	96	2	0.13			
SN/4.4	12/16/2008	1344	0.1	128	13.6	7.4	1.7	94	4	0.10			
SN/4.4	1/6/2009	1330	2.7	109	12.6	7.4	2.8	94	8	0.95			
SN/4.4	1/20/2009	1303	2.7	71	13.5	6.9	3.4	101	1	0.71			
SN/4.4	2/10/2009	1303	1.9	101	14.0	7.2	2.7	102	2	0.22			
SN/4.4	2/24/2009	1313	5.4	92	12.2	7.4	5.8	98	2	0.25			
SN/4.4	3/3/2009	1326	4.8	61	11.9	7.3	6.9	94	4				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
SN/4.4	3/24/2009	1325	4.6	76	12.3	7.5	3.9	96	1	0.59			
SN/4.4	4/7/2009	1342	6.6	66	11.6	7.4		95	1				
SN/4.4	4/21/2009	1351	10.5	77	10.3	7.8	1.9	93	2	0.19			
SN/4.4	5/13/2009	1144	6.9	72	11.3	7.2	3.8	93	10	0.26			
SN/4.4	5/27/2009	1213	9.7	81	11.1	7.5	2.8	98	20	0.33			
SN/4.4	6/3/2009	1251	14.6	99	11.0	7.5	2.3	107	4	0.13			
SN/4.4	6/30/2009	1417	13.8	122	10.2	7.5	1.9	99	18				
SW/0.0	10/30/2007	1530									0.03		
SW/0.0	11/15/2007	1233	8.0	160	9.9		3.0	84	30	1.40			
SW/0.0	12/5/2007	1229	7.3	111	11.0		10.8	92	40	3.00			
SW/0.0	12/11/2007	1230									0.19		
SW/0.0	1/9/2008	1216	3.8	97	12.9		7.4	99	8	2.20			
SW/0.0	2/6/2008	1229	2.4	112	12.6		4.5	93	14	0.98			
SW/0.0	3/3/2008	1548									0.17		
SW/0.0	3/11/2008	1154	7.3	136	11.3		3.1	95	8				
SW/0.0	4/16/2008	1213	6.8	135	12.7	7.5	4.1	105	12	0.24			
SW/0.0	5/14/2008	1253	9.8	146	11.0	7.7	5.0	97	100	0.12			
SW/0.0	6/10/2008	1335	9.5	143	10.4	7.4	7.2	91	312	0.11			
SW/0.0	6/24/2008	1239	11.3	163	8.6	7.4	3.4	78	36	0.36			
SW/0.0	7/1/2008	1319	14.9	170	5.2	7.2	5.9	51	166	0.17			
SW/0.0	7/22/2008	1210					7.5		640	0.01			
SW/0.0	8/5/2008	1200					3.3		130	0.02			
SW/0.0	8/21/2008	1218							54				
SW/0.0	9/9/2008												
SW/0.0	9/22/2008	1230											
SW/0.0	2/4/2009	1535									0.07		
TUD/0.0	7/5/2007	1040							23				
TUD/0.0	12/4/2007	1028	46.6						198				
TUD/0.0	12/18/2007	1015	5.8						80				
TUD/0.0	1/2/2008	955	4.2						2				
TUD/0.0	1/17/2008	1120	4.0						58				
TUD/0.0	2/11/2008	1030	5.5	170	10.2		3.8	82	6	0.83			
TUD/0.0	2/11/2008	1030	5.4	170	10.4		4.0	83	4	0.83			
TUD/0.0	2/11/2008	1030							2				
TUD/0.0	2/27/2008	1016	5.1	196	10.7		3.1	85	4	0.38			
TUD/0.0	3/19/2008	1007	4.8	210	10.9		4.2	85	94	0.19			
TUD/0.0	4/2/2008	1034							14				
TUD/0.0	4/2/2008	1034	4.4	185	11.7		2.3	91	12	0.43			
TUD/0.0	4/2/2008	1034	4.3	183	11.7		1.8	91	18	0.43			
TUD/0.0	4/15/2008	1034	5.8	181	11.7	7.1	2.6	95	4	0.43			
TUD/0.0	4/15/2008	1034	5.8	181	11.7	7.1	2.0	95	2	0.43			
TUD/0.0	4/15/2008	1034							6				
TUD/0.0	4/30/2008	1023	6.7	187	11.5	7.0	1.9	95	34	0.33			
TUD/0.0	5/13/2008	943	8.2	210	8.6	7.0	1.8	73	68	0.02			
TUD/0.0	5/20/2008	1006	11.4	222	6.7	7.1	2.3	61	240	0.24			
TUD/0.0	6/5/2008	1010							147				
TUD/0.0	6/5/2008	1010	10.0		7.6	7.0	2.9	68	115	0.05			
TUD/0.0	6/5/2008	1010	10.0		7.8	7.0	3.5	69	134	0.03			
TUD/0.0	6/19/2008	1033	10.0	223	6.9	6.8	3.8	62	56	0.01			

Appendix B

Water Quality Data - July 1, 2007 to June 30, 2009

StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
TUD/0.0	7/2/2008	1032	14.3	277	5.2	7.2	6.4	50	18	0.04			
TUD/0.0	7/29/2008	1036											
TUD/0.0	8/26/2008	1038											
TUD/0.0	9/10/2008	1052											
TUD/0.0	9/23/2008	1040											
TUD/0.0	10/21/2008	1034											
TUD/0.0	11/4/2008	1011	7.8	236	7.6	6.6	10.4	64	976	0.53			
TUD/0.0	11/18/2008	1033	8.0	289	5.9	7.0	3.2	50	6	0.00			
TUD/0.0	12/2/2008	1032	7.7	208	7.8	6.9	2.6	66	8	0.00			
TUD/0.0	12/16/2008	1038	0.3	284	10.4	7.6	1.9	73	18	0.00			
TUD/0.0	1/6/2009	1032	4.0	212	9.6	7.3	4.2	74	8	0.95			
TUD/0.0	1/20/2009	1016	1.2	217	11.8	7.0	1.9	84	96	0.53			
TUD/0.0	2/10/2009	1010	2.2	241	11.1	7.0	1.7	81	16	0.05			
TUD/0.0	2/10/2009	1012	2.2	237	11.1	7.0	1.7	82	6	0.04			
TUD/0.0	2/10/2009	1012	2.2	237	11.1	7.0	1.7	82	6	0.03			
TUD/0.0	2/24/2009	1017	5.5	223	10.5	7.2	4.3	84	268	0.13			
TUD/0.0	3/3/2009								52				
TUD/0.0	3/3/2009	1016	5.2	179	10.8	7.4	4.9	86	34				
TUD/0.0	3/3/2009	1017	5.2	174	10.7	7.3	7.1	85	56				
TUD/0.0	3/24/2009								4				
TUD/0.0	3/24/2009	1028	4.7	214	11.5	7.3	1.7	90	8	0.31			
TUD/0.0	3/24/2009	1031	4.8	214	11.5	7.3	2.6	90	4	0.40			
TUD/0.0	4/7/2009	1016	5.7	188	11.5	7.3		93	1				
TUD/0.0	4/21/2009	1023	8.5	165	9.4	7.2	1.7	81	28	0.17			
TUD/0.0	5/13/2009	907	8.3	194	8.6	7.3	2.5	74	14	0.21			
TUD/0.0	5/27/2009	912	10.2	212	6.9	7.0	2.0	62	84	0.30			
TUD/0.0	6/3/2009	920	11.9	232	5.0	7.0	5.2	47	22	0.46			
TUD/0.0	6/30/2009	1028	9.8	321	3.8	7.8	7.2	34	10				
TUD/0.1	12/7/2007	1100									0.22		
TUD/0.1	1/23/2008	1145									0.42		
TUD/0.1	3/27/2008	1126									0.23		
TUD/0.1	4/23/2008	1108									0.48		
TUD/0.1	7/9/2008	1500									0.04		
TUD/0.1	8/12/2008	1140									0.00		
TUD/0.1	8/26/2008	920									0.00		
TUD/0.1	11/30/2008	1118									0.04		
TUD/0.4	7/5/2007	1100							170				
TUD/0.4	12/4/2007	1059	48.6						186				
TUD/0.4	12/18/2007	1100	5.9						286				
TUD/0.4	1/2/2008	1025	3.4						66				
TUD/0.4	1/17/2008	1150	4.0						524				
TUD/0.4	1/17/2008	1150	4.0						512				
TUD/0.4	2/11/2008	1118	6.3	147	12.3		3.5	100	22	1.30			
TUD/0.4	2/11/2008	1120	6.3	148	12.4		3.8	101	18	1.30			
TUD/0.4	2/11/2008	1120							32				
TUD/0.4	2/27/2008	1102	6.7	177	12.5		1.9	103	262	0.68			
TUD/0.4	3/19/2008	1043							1890				
TUD/0.4	3/19/2008	1043	7.0	174	11.9		1.9	99	1560	0.40			
TUD/0.4	3/19/2008	1043	7.0	175	12.0		1.8	99	2130	0.42			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
TUD/0.4	4/2/2008	1120	6.3	154	11.9		3.2	97	96	0.84			
TUD/0.4	4/2/2008	1120							70				
TUD/0.4	4/2/2008	1120	6.2	152	11.9		2.5	97	118	0.79			
TUD/0.4	4/15/2008	1114							12				
TUD/0.4	4/15/2008	1114	7.0	152	12.4	7.8	3.0	103	18	0.80			
TUD/0.4	4/15/2008	1114	7.0	150	12.4	7.9	3.0	103	18	0.85			
TUD/0.4	4/30/2008	1105	8.7	169	11.9	8.0	2.6	103	16	0.78			
TUD/0.4	4/30/2008	1105	8.7	170	11.9	8.0	2.4	103	14	0.71			
TUD/0.4	4/30/2008	1105							8				
TUD/0.4	5/13/2008	1038	8.5	185	11.8	7.9	1.8	102	222	0.20			
TUD/0.4	5/13/2008	1038	8.5	189	11.8	8.0	1.6	102	260	0.23			
TUD/0.4	5/13/2008	1038							170				
TUD/0.4	5/20/2008	1056	11.0	201	10.5	7.8	1.6	95	296	0.12			
TUD/0.4	5/20/2008	1100	11.0	201	10.5	7.9	1.9	96	326	0.09			
TUD/0.4	5/20/2008	1100							306				
TUD/0.4	6/5/2008	1100	9.8		9.7	7.5	6.4	85	497	0.14			
TUD/0.4	6/19/2008	1129	13.8	205	10.5	8.0	3.3	101	1300	0.06			
TUD/0.4	7/2/2008	1124	16.8	237	9.6	8.0	1.6	99	3040	0.05			
TUD/0.4	7/2/2008	1127							2810				
TUD/0.4	7/2/2008	1127	16.8	238	9.6	8.0	1.7	98	2760	0.06			
TUD/0.4	7/15/2008	1037	16.2	245		7.6	1.9		3950	0.19			
TUD/0.4	7/29/2008	1127	16.0	250	9.0	7.8	2.0	91	1200	0.00			
TUD/0.4	8/12/2008	1109					2.8		374	0.01			
TUD/0.4	8/26/2008	1123	17.6				1.5		352	0.01			
TUD/0.4	9/10/2008	1122											
TUD/0.4	9/23/2008	1130											
TUD/0.4	10/7/2008	1120											
TUD/0.4	10/21/2008	1108											
TUD/0.4	11/4/2008	1102	9.2	220	10.2	7.4	5.6	89	744	1.76			
TUD/0.4	11/18/2008	1114	8.6	239	9.5	7.3	1.5	82	262	0.00			
TUD/0.4	12/2/2008	1109	8.8	239	10.3	7.5	2.7	89	222	0.00			
TUD/0.4	12/16/2008								120				
TUD/0.4	12/16/2008	1128	0.1	223	12.1	7.5	2.6	84	170	0.05			
TUD/0.4	12/16/2008	1130	0.1	221	12.2	7.5	2.6	84	126	0.05			
TUD/0.4	1/6/2009	1106	4.1	180	12.0	7.4	5.2	93	54	1.81			
TUD/0.4	1/20/2009	1049	3.3	186	13.2	7.4	4.9	100	80	1.16			
TUD/0.4	2/10/2009	1042	3.0	206	13.3	7.3	3.1	100	3330	0.53			
TUD/0.4	2/24/2009								228				
TUD/0.4	2/24/2009	1052	7.0	194	11.7	7.5	6.1	97	202	0.59			
TUD/0.4	2/24/2009	1054	7.1	194	11.7	7.5	6.8	98	232	0.48			
TUD/0.4	3/3/2009								82				
TUD/0.4	3/3/2009	1100	6.4	147	11.5	7.6	6.7	94	82				
TUD/0.4	3/3/2009	1102	6.4	146	11.5	7.5	6.8	94	86				
TUD/0.4	3/24/2009	1102	7.0	186	12.2	7.6	2.2	101	4	0.75			
TUD/0.4	4/7/2009	1053	8.8	178	11.5	7.6		100	2				
TUD/0.4	4/21/2009	1059	11.4	207	10.9	7.6	5.3	100	6	0.58			
TUD/0.4	5/13/2009	945	8.7	168	10.8	7.4	4.4	93	12	0.71			
TUD/0.4	5/27/2009	1008	10.4	211	10.9	7.3	2.6	98	4	0.86			
TUD/0.4	6/3/2009	1005	14.3	247	10.3	7.4	2.3	100	254	0.22			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
TUD/0.4	6/30/2009	1116	13.6	258	9.7	7.6	1.6	94	26				
TUD/0.5	7/5/2007	1115							240				
TUD/0.5	12/4/2007	1120	54.9						94				
TUD/0.5	12/18/2007	1120	5.3						46				
TUD/0.5	1/2/2008	1100	3.9						2				
TUD/0.5	1/17/2008	1210	3.9						6				
TUD/0.5	2/11/2008	1150	5.7	156	11.4		6.1	92	1	1.30			
TUD/0.5	2/27/2008	1121	5.7	190	11.3		2.7	91	4	0.81			
TUD/0.5	3/19/2008	1105	5.4	186	11.0		1.8	88	2	0.53			
TUD/0.5	4/2/2008	1145	4.9	166	11.6		2.1	91	1	0.96			
TUD/0.5	4/15/2008	1126	6.2	166	11.6	7.5	3.0	95	1	1.00			
TUD/0.5	4/30/2008	1134	7.2	181	11.6	7.8	3.5	96	4	0.92			
TUD/0.5	5/13/2008	1119	8.1	196	10.8	7.7	4.8	92	4	0.51			
TUD/0.5	5/20/2008	1129	10.6	207	9.6	7.7	5.4	86	4	0.23			
TUD/0.5	6/5/2008	1120	9.4		9.6	7.6	13.5	84	65	0.22			
TUD/0.5	6/19/2008	1149	9.5	196	10.2	7.8	4.5	89	14	0.14			
TUD/0.5	7/2/2008	1158	12.0	244	9.3	7.7	3.8	86	548	0.13			
TUD/0.5	7/15/2008	1055	11.1	254		7.5	7.2		72	0.40			
TUD/0.5	7/29/2008	1151	11.7	263	8.6	7.3	3.4	79	54	0.00			
TUD/0.5	8/12/2008	1139	12.0	260	7.5	6.9	1.7	70	40	0.01			
TUD/0.5	8/26/2008	1142	11.8				1.6		26	0.01			
TUD/0.5	9/10/2008	1155											
TUD/0.5	9/23/2008	1150											
TUD/0.5	10/7/2008	1125											
TUD/0.5	10/21/2008	1118											
TUD/0.5	11/4/2008	1119	8.4	226	10.3	7.5	7.5	88	1	1.83			
TUD/0.5	11/18/2008	1132	8.4	241	9.0	7.4	1.8	77	1	0.00			
TUD/0.5	12/2/2008	1134	7.9	245	10.0	7.6	1.2	85	1	0.00			
TUD/0.5	12/16/2008	1149	2.2	234	11.1	7.6	2.0	81	1	0.06			
TUD/0.5	1/6/2009	1122	3.6	194	11.7	7.5	5.0	89	10	2.02			
TUD/0.5	1/20/2009	1104	3.0	207	12.4	7.4	1.7	93	2	1.31			
TUD/0.5	2/10/2009	1057	3.1	214	11.9	7.4	1.5	90	1	0.61			
TUD/0.5	2/24/2009	1113	5.5	207	11.3	7.6	4.6	91	6	0.66			
TUD/0.5	3/3/2009	1118	5.5	159	11.3	7.6	5.6	90	6				
TUD/0.5	3/24/2009	1121	5.1	206	11.3	7.6	3.2	90	10	0.75			
TUD/0.5	4/7/2009	1129	6.8	195	10.9	7.7		90	2				
TUD/0.5	4/21/2009	1116	8.4	221	10.4	7.6	3.9	90	1	0.70			
TUD/0.5	5/13/2009	1001	8.2	165	10.2	7.4	5.2	87	1	0.69			
TUD/0.5	5/27/2009	1027	9.7	230	10.1	7.4	7.8	89	22	0.79			
TUD/0.5	6/3/2009	1024	11.6	260	9.7	7.5	6.5	89	14	0.37			
TUD/0.5	6/30/2009	1138	10.7	275	9.7	7.6	4.2	87	58				
UVD/0.0	7/5/2007	1050							11				
UVD/0.0	12/7/2007	1145									0.50		
UVD/0.0	12/18/2007	1045	5.8						86				
UVD/0.0	1/2/2008	1010	3.2						6				
UVD/0.0	1/17/2008	1130	3.9						12				
UVD/0.0	1/23/2008	1133									0.24		
UVD/0.0	2/11/2008	1100	5.3	143	11.2		10.4	90	10	1.00			
UVD/0.0	2/27/2008	1042	4.8	186	10.7		6.5	84	34	0.18			

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
UVD/0.0	3/19/2008	1027							20				
UVD/0.0	3/19/2008	1027					14.3		36	0.28			
UVD/0.0	3/19/2008	1027	4.6	174	10.7		13.6	84	32	0.26			
UVD/0.0	3/27/2008	1140									0.20		
UVD/0.0	4/2/2008	1056	4.4	160	12.0		12.8	93	34	0.64			
UVD/0.0	4/15/2008	1055	6.2	165	12.6	6.8	10.8	102	252	0.41			
UVD/0.0	4/23/2008	1117											
UVD/0.0	4/30/2008	1043							160				
UVD/0.0	4/30/2008	1043	7.3	170	12.1	6.8	8.2	101	164	0.06			
UVD/0.0	4/30/2008	1043	7.3	170	12.1	6.8	8.1	101	138	0.06			
UVD/0.0	5/13/2008	1007	8.8	207	7.6	6.6	5.4	66	284	0.01			
UVD/0.0	5/13/2008	1008	8.8	210	7.6	6.5	5.3	66	138	0.01			
UVD/0.0	5/13/2008	1008							94				
UVD/0.0	5/20/2008	1032	12.2	246	4.0	6.6	4.9	37	46	0.03			
UVD/0.0	5/20/2008	1034	12.2	247	4.0	6.6	4.8	37	334	0.02			
UVD/0.0	5/20/2008	1034							266				
UVD/0.0	6/5/2008	1021	10.2		8.1	6.7	16.2	73	300	0.29			
UVD/0.0	6/19/2008	1059	11.0	205	8.2	6.7	5.5	74	118	0.02			
UVD/0.0	7/2/2008	1054	15.5	290	2.1	6.8	6.2	21	54	0.05			
UVD/0.0	7/9/2008	1515									0.02		
UVD/0.0	7/15/2008	1019	14.1	346		6.9	5.0		10	0.20			
UVD/0.0	7/29/2008	1101	13.7	381	1.2	7.0	4.0	12	40	0.00			
UVD/0.0	8/12/2008	1045					2.7		40	0.01			
UVD/0.0	8/12/2008	1150									0.00		
UVD/0.0	8/26/2008	920									0.00		
UVD/0.0	8/26/2008	1055	12.5				5.8		260	0.01			
UVD/0.0	9/10/2008	1111	12.0				3.7		14	0.03			
UVD/0.0	9/23/2008	1107	9.4				4.4		8	0.00			
UVD/0.0	10/7/2008	1056	10.4	366		6.9	3.1		10	0.00			
UVD/0.0	10/21/2008	1053	5.5				2.1		448	0.00			
UVD/0.0	11/4/2008	1039	8.3	315	4.0	6.9	10.3	35	376	0.07			
UVD/0.0	11/18/2008	1051	8.9	252	5.1	6.7	4.2	44	4	0.00			
UVD/0.0	11/30/2008	1129									0.06		
UVD/0.0	12/2/2008	1052	8.2	204	7.4	6.8	11.0	64	1	0.00			
UVD/0.0	12/16/2008	1101	0.6	214	9.8	7.3	8.9	69	2	0.03			
UVD/0.0	1/6/2009	1051	4.2	161	10.0	7.1	13.7	78	6	1.51			
UVD/0.0	1/20/2009	1033	1.2	176	11.6	7.0	6.4	83	16	0.91			
UVD/0.0	2/10/2009	1027	2.3	199	10.5	7.0	5.9	77	16	0.04			
UVD/0.0	2/24/2009	1037	5.2	175	10.4	7.2	22.5	83	148	0.12			
UVD/0.0	3/3/2009	1036	5.2	141	10.5	7.4	21.7	84	1				
UVD/0.0	3/24/2009	1047	4.6	180	10.9	7.3	8.8	85	2	0.54			
UVD/0.0	4/7/2009	1036	5.4	161	12.1	7.3		97	16				
UVD/0.0	4/21/2009	1044	8.7	195	9.5	7.2	6.6	82	22	0.25			
UVD/0.0	5/13/2009	929	8.7	146	9.7	7.2	13.6	84	348	0.59			
UVD/0.0	5/27/2009	942	10.8	189	7.7	6.8	7.4	70	40	0.90			
UVD/0.0	6/3/2009	944	15.0	226	2.7	6.8	7.6	27	10	0.21			
UVD/0.0	6/30/2009	1054	12.1	323	2.3	7.1	6.0	22	8				
WUR/2	10/9/2007	1015	10.4						50				
WUR/3	10/9/2007	1015	10.3						30				

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StationID	DATE	TIME	Temp	Cond	DO	pH	Turb	Sat	FC	NO3-N	Flow	SDO	IGDO
			C	umho	mg/L	units	NTU	%	FC/100 mL	mg/L		mg/L	mg/L
WUR-1	7/31/2007	1015							900				
WUR-1	8/14/2007	1006							50				
WUR-2	7/31/2007	1025							500				
WUR-2	8/14/2007	1010							80				
WUR-2	8/28/2007	1100	13.7						17				
WUR-2	9/11/2007	1114	13.8						17				
WUR-2	9/24/2007		10.6						50				
WUR-3	7/25/2007								220				
WUR-3	7/31/2007	1025							130				
WUR-3	8/28/2007	1100	13.3						80				
WUR-3	9/11/2007	1115	13.6						23				
WUR-3	9/24/2007		10.6						80				
WUR-4	7/31/2007	1030							130				
WUR-4	8/14/2007	1010							50				
WUR-5	7/31/2007	1035							140				
WUR-5	8/14/2007	1010							50				
WV/0.1	10/18/2007	1140	9.2	279	7.5	7.2	11.0	66	1300	0.44			
WV/0.1	10/30/2007	1300									0.05		
WV/0.1	11/15/2007	1130	9.1	221	8.7	7.2	23.2	76	82	0.62			
WV/0.1	12/5/2007	1205	7.7	364	7.9	6.6	10.0	67	40	2.60			
WV/0.1	12/11/2007	1045									0.27		
WV/0.1	1/9/2008	1140	4.7	185	8.5	6.2	4.0	66	4	1.70			
WV/0.1	2/6/2008	1055	2.6	110	12.5		2.7	93	10	0.68			
WV/0.1	3/3/2008	1425									0.22		
WV/0.1	3/11/2008	1102	7.7	182	9.9	7.2	2.8	83	2				
WV/0.1	5/14/2008	1110					5.3			0.11			
WV/0.1	6/10/2008	1153	10.4		7.5	6.7	25.2	68	292	0.11			
WV/0.1	6/24/2008	1118	11.9	260		7.5	5.1		74	0.23			
WV/0.1	6/26/2008	1500									0.07		
WV/0.1	7/1/2008	1105	13.0	213		7.2	4.5		186	0.09			
WV/0.1	7/22/2008	1038	12.6	208		7.5	3.3		102	0.03			
WV/0.1	8/5/2008	1140	12.3	206	6.1	7.4	1.5	57	60	0.03			
WV/0.1	8/21/2008	1041	13.5	210	3.5	7.2	9.0	33	38	0.04			
WV/0.1	9/9/2008	1134	11.9	206	6.6	7.6	2.2	62	68	0.05			
WV/0.1	9/22/2008	1031	11.5	201	6.4	7.2	1.9	59	32	0.02			
WV/0.1	2/4/2009	1455									0.25		

Appendix C – Temperature

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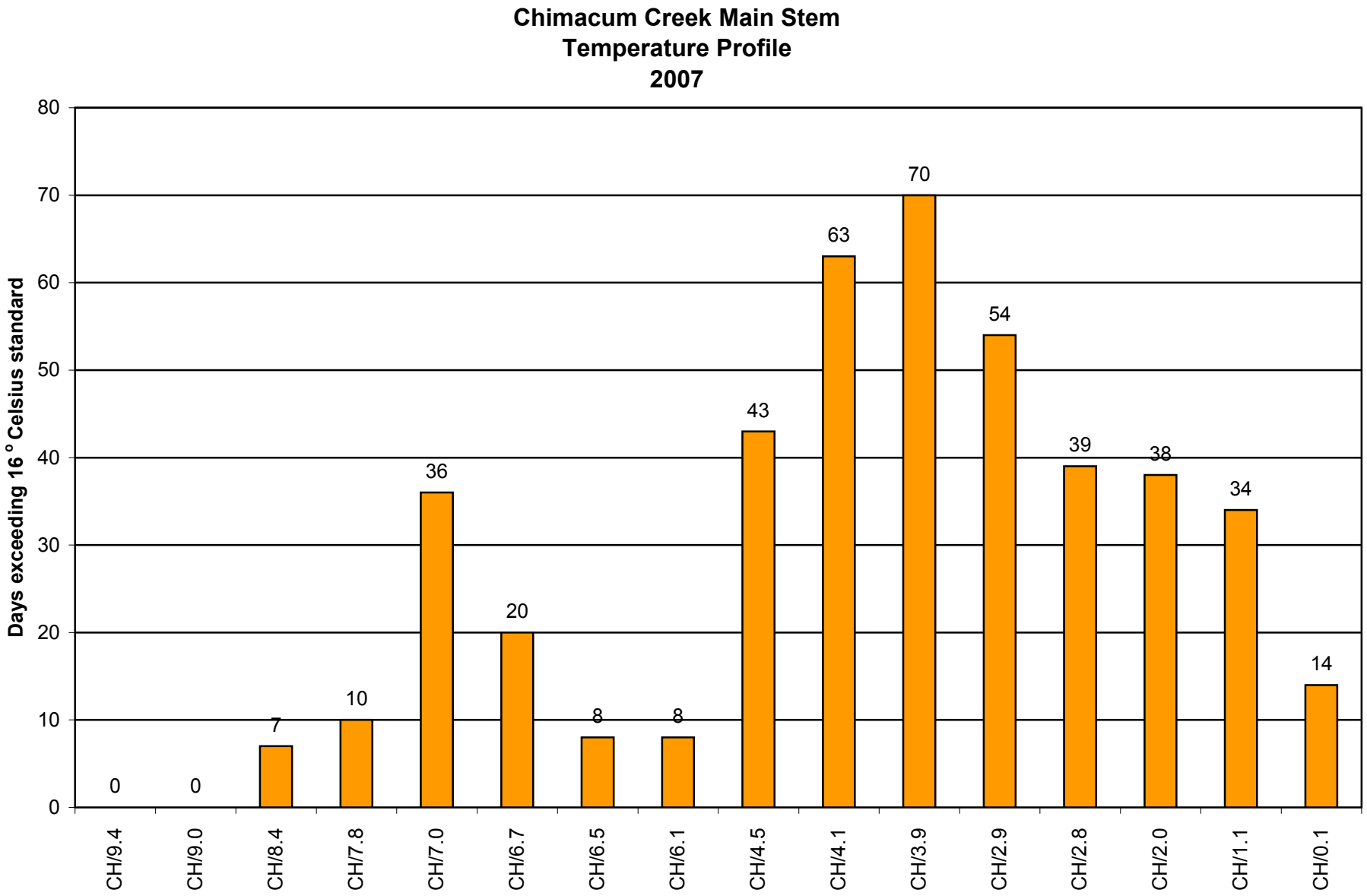


Figure . Number of days exceeding the 7-DADMax 16° C temperature standard at stations monitored on the Chimacum Creek main stem in 2007. M:\Water Quality\DATA\Temperature Data Loggers\temp 07\Excel 07\Summary_07_temp.xls 7/23/2009

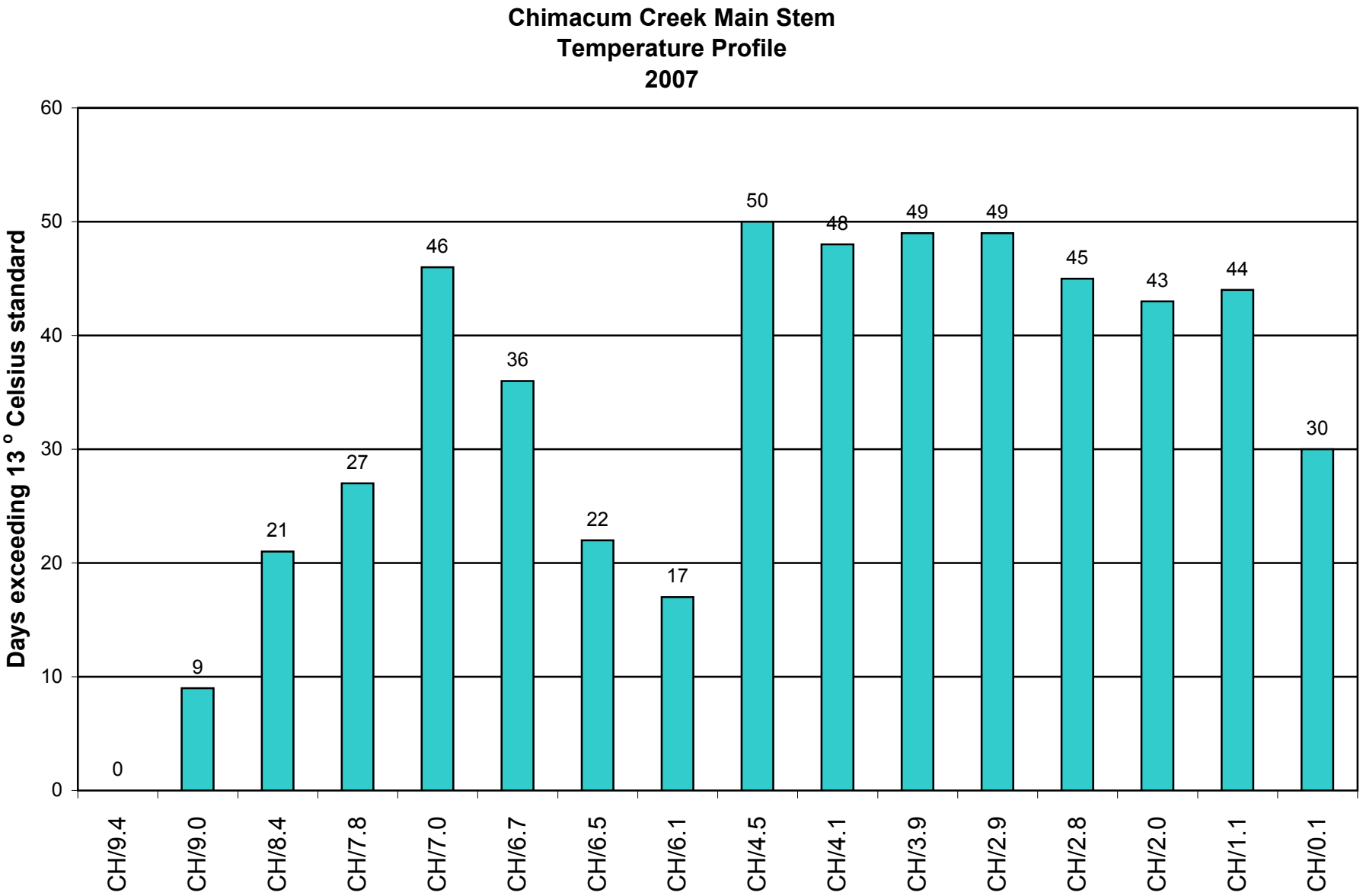


Figure . Number of days exceeding the 13° C temperature standard at stations monitored on the Chimacum Creek main stem in 2007. M:\Water Quality\DATA\Temperature Data Loggers\temp 07\Excel 07\Summary_07_temp 2.xls 7/23/2009

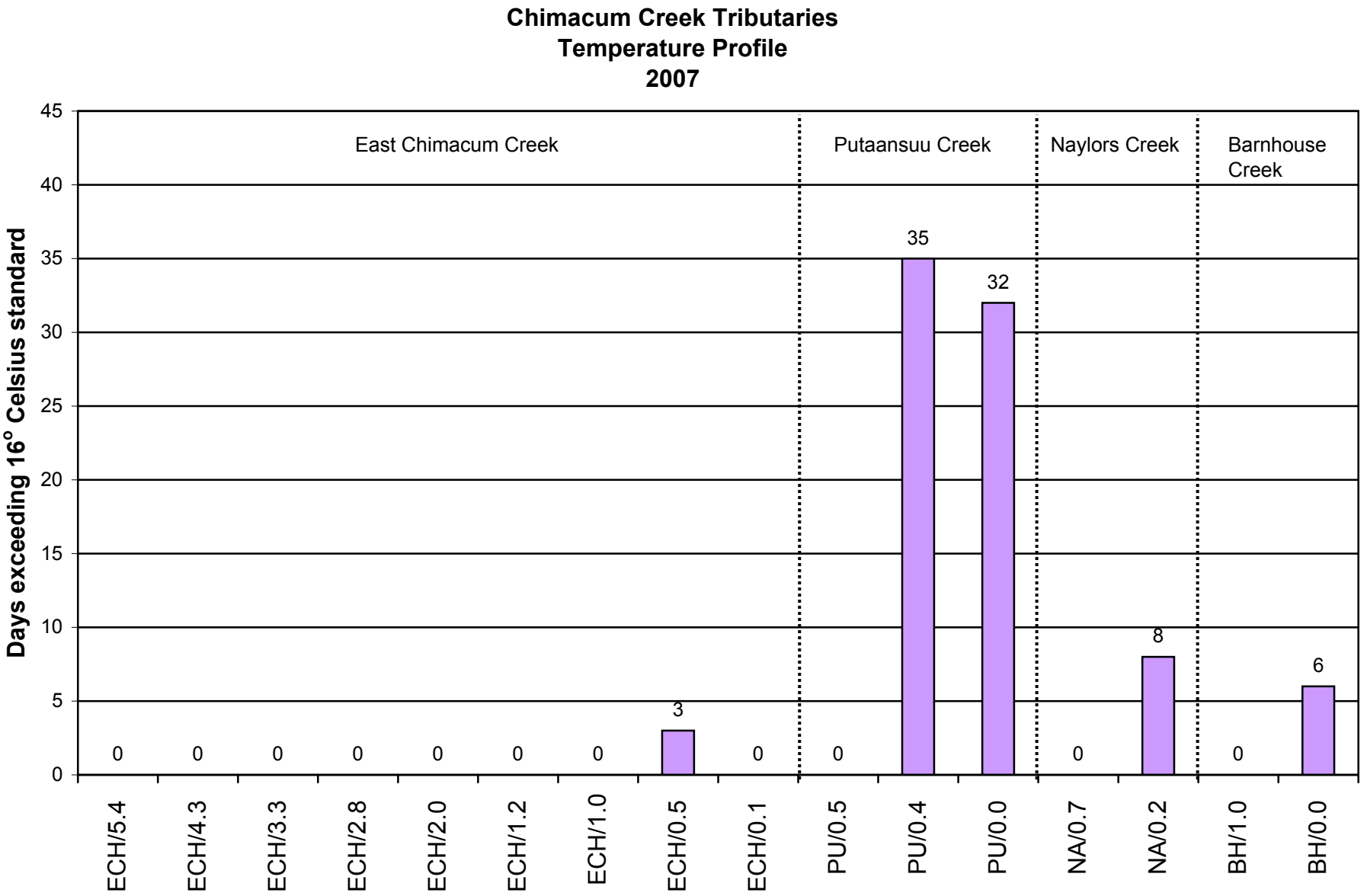


Figure . Number of days exceeding the 16° C temperature standard at stations monitored on Chimacum Creek tributaries in 2007. M:\Water Quality\DATA\Temperature Data Loggers\temp 07\Excel 07\Summary_07_temp 3.xls 7/23/2009

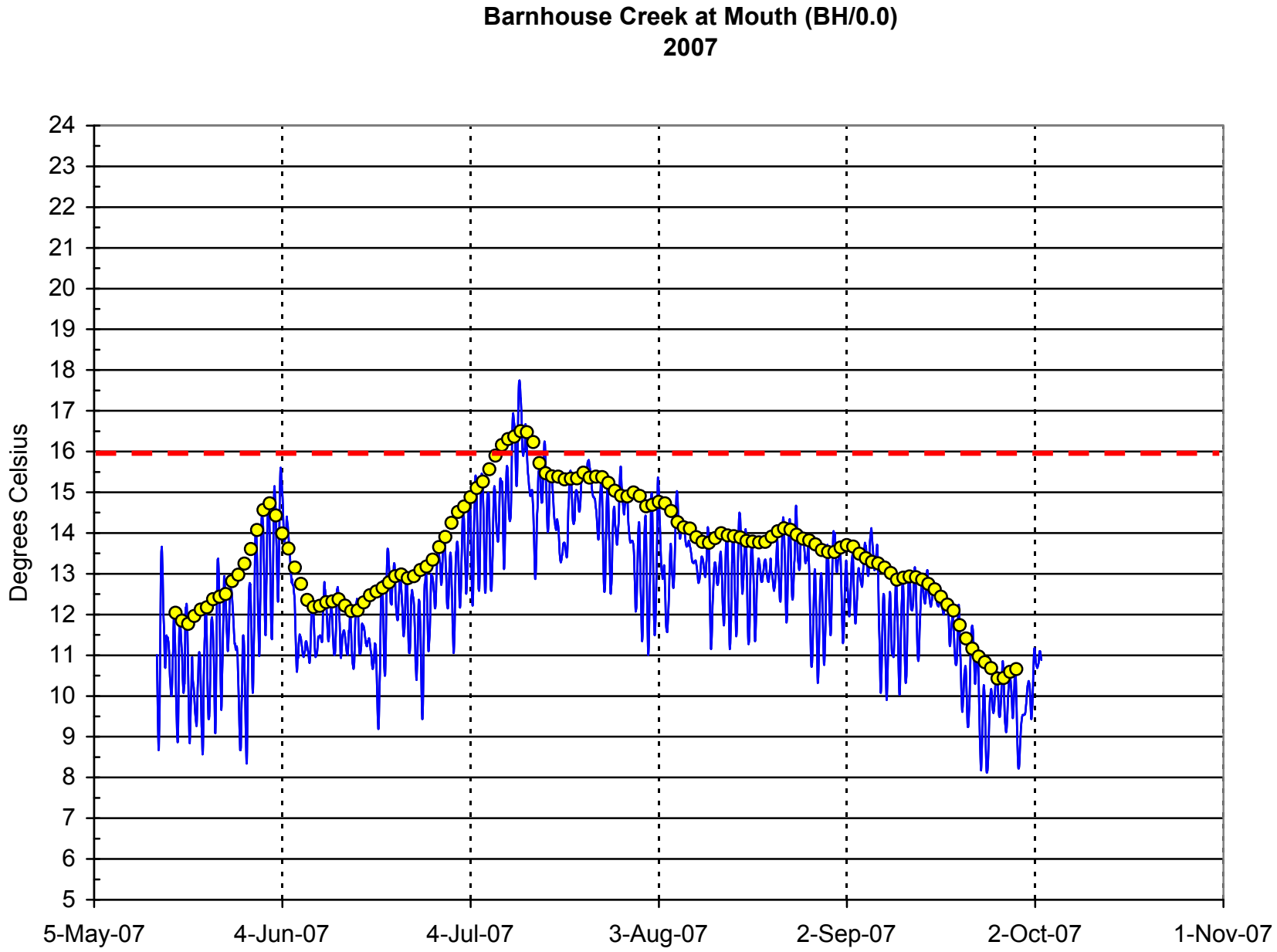


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station BH/0.0 on Barnhouse Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. BH_0_0 cht.xls 7/23/2009

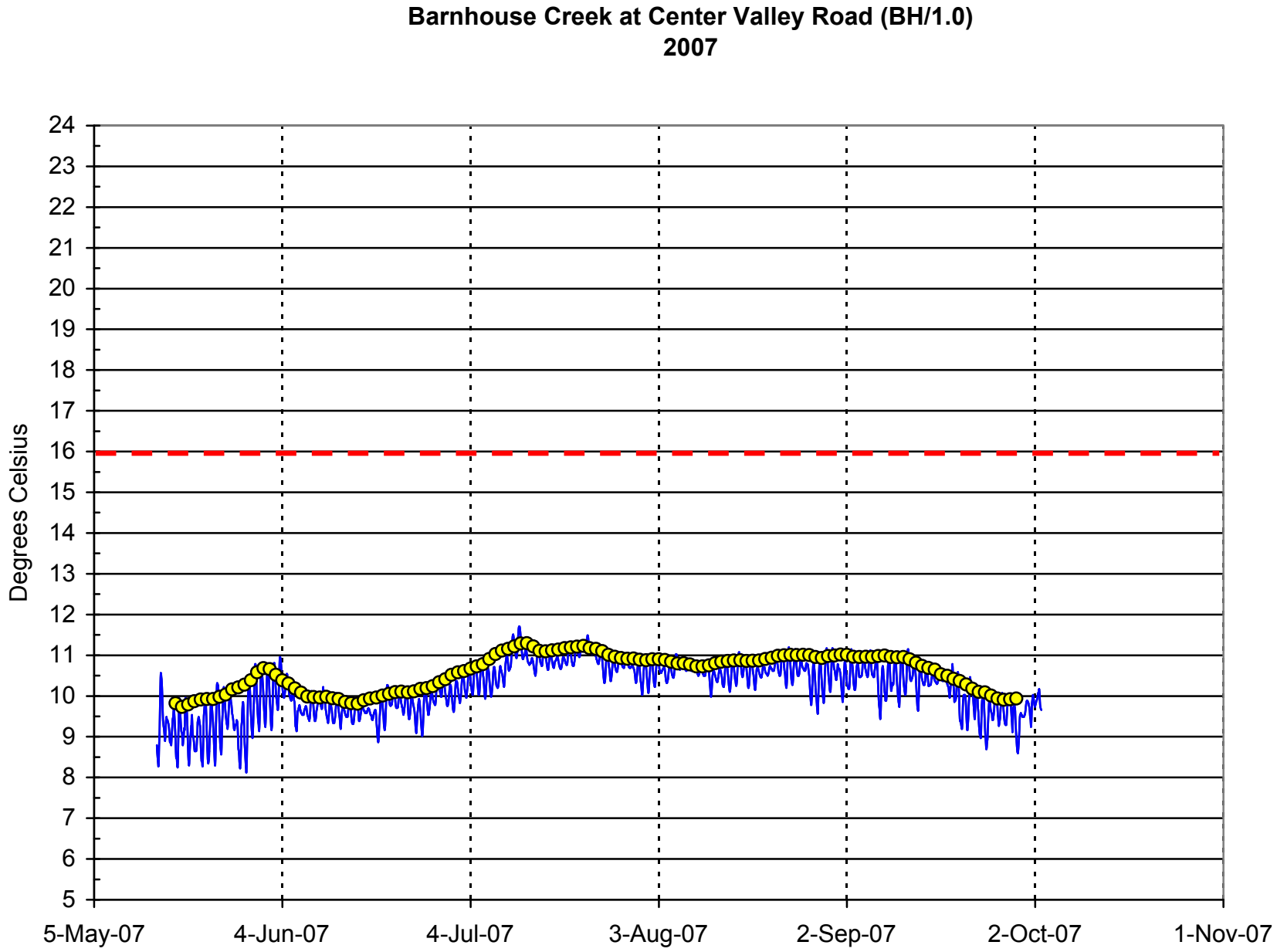


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station BH/1.0 on Barnhouse Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. BH_1_0 cht.xls 7/23/2009

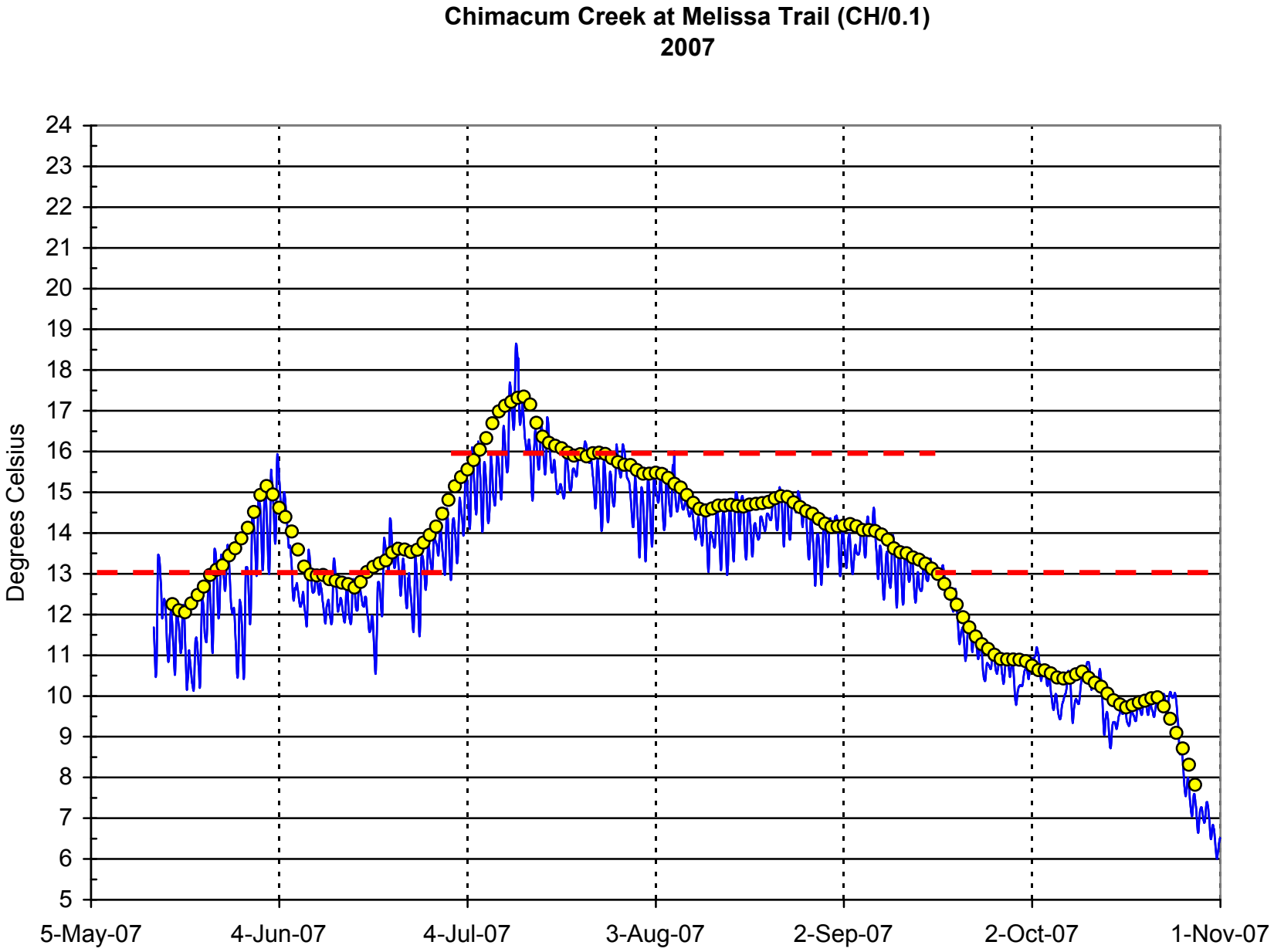


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/0.1 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_0_1 cht.xls 7/23/2009

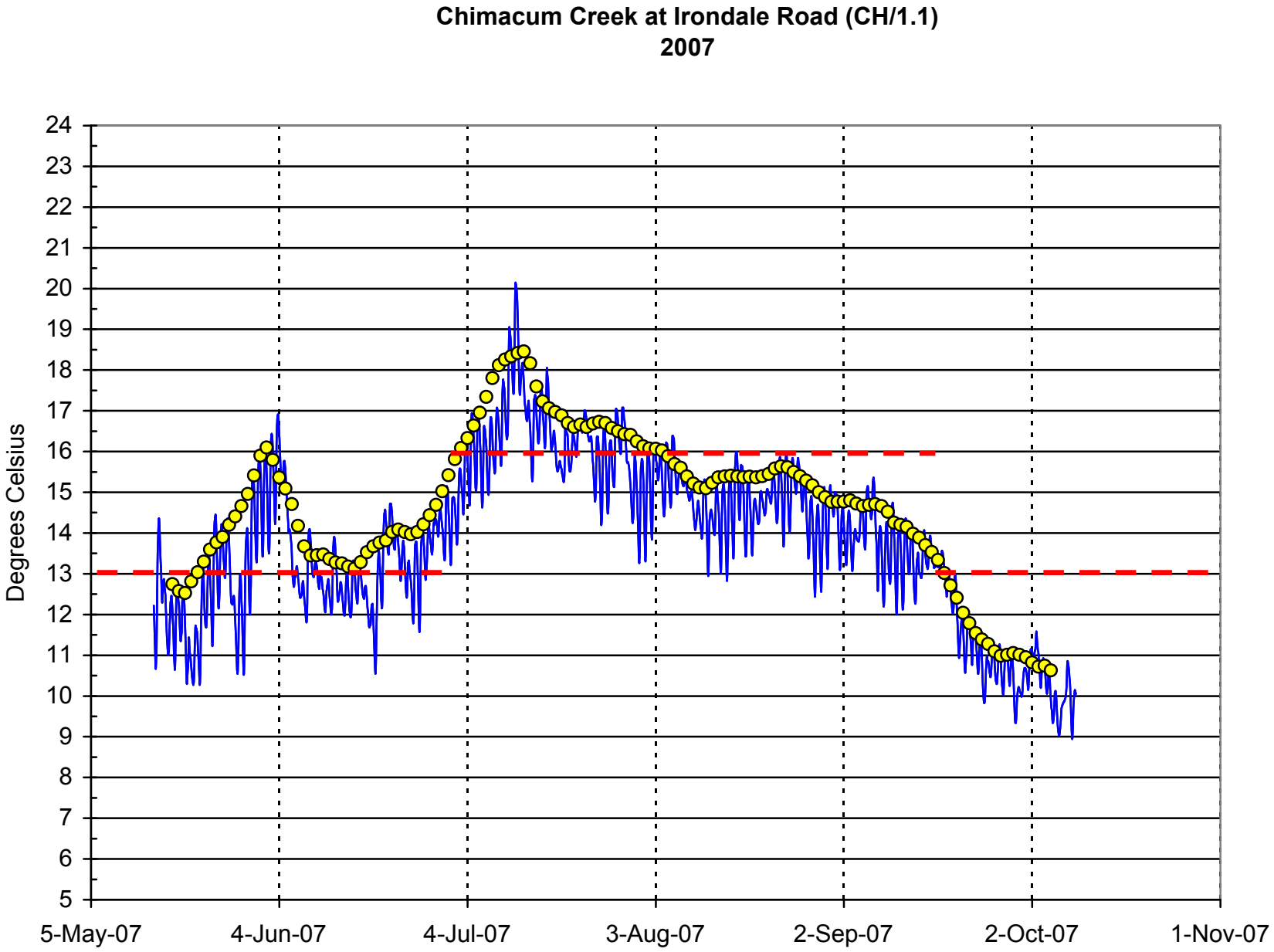


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/1.1 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_1_1 cht.xls 7/23/2009

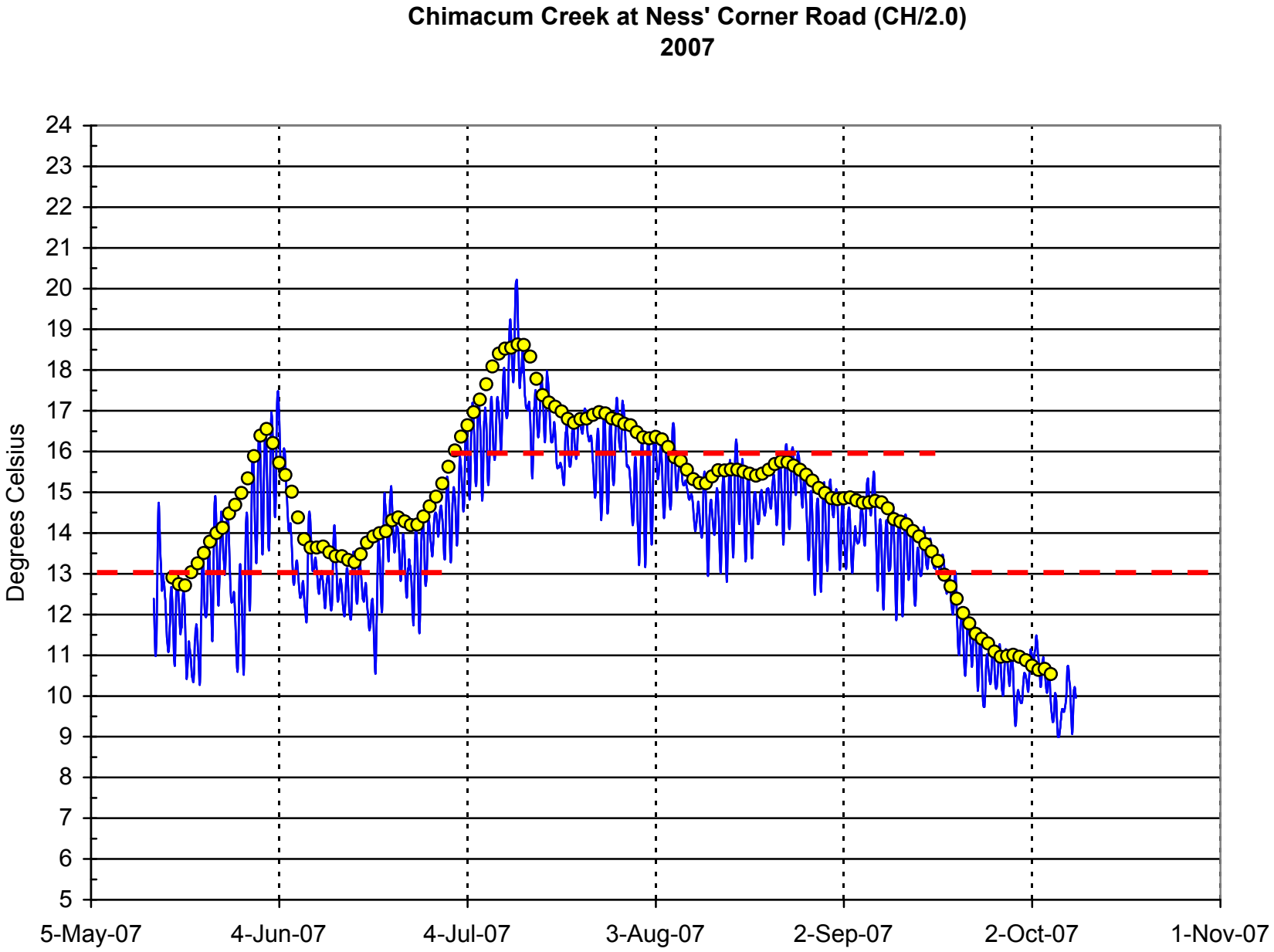


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/2.0 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_2_0 cht.xls 7/23/2009

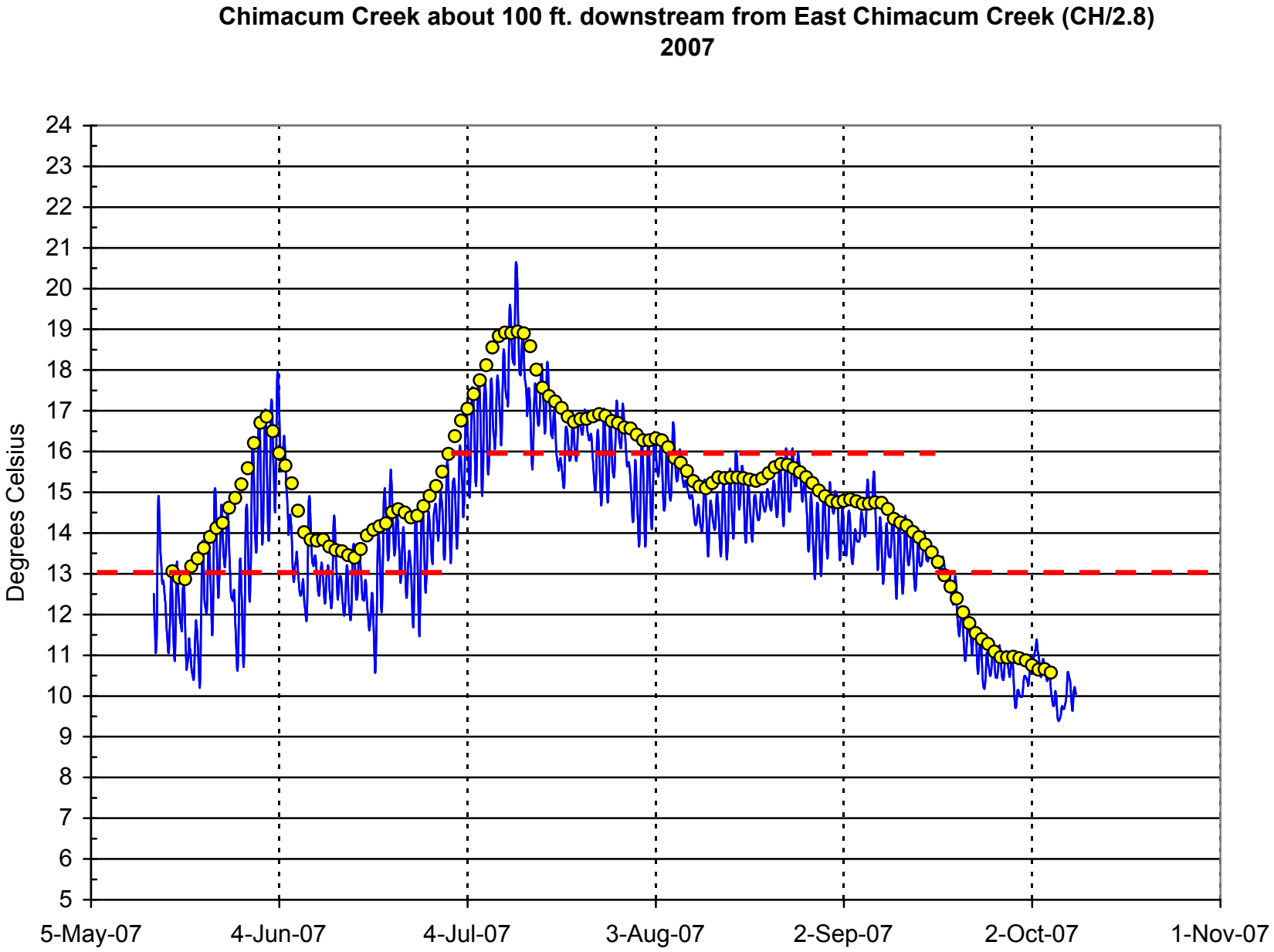


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/2.8 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_2_8 cht.xls 7/23/2009

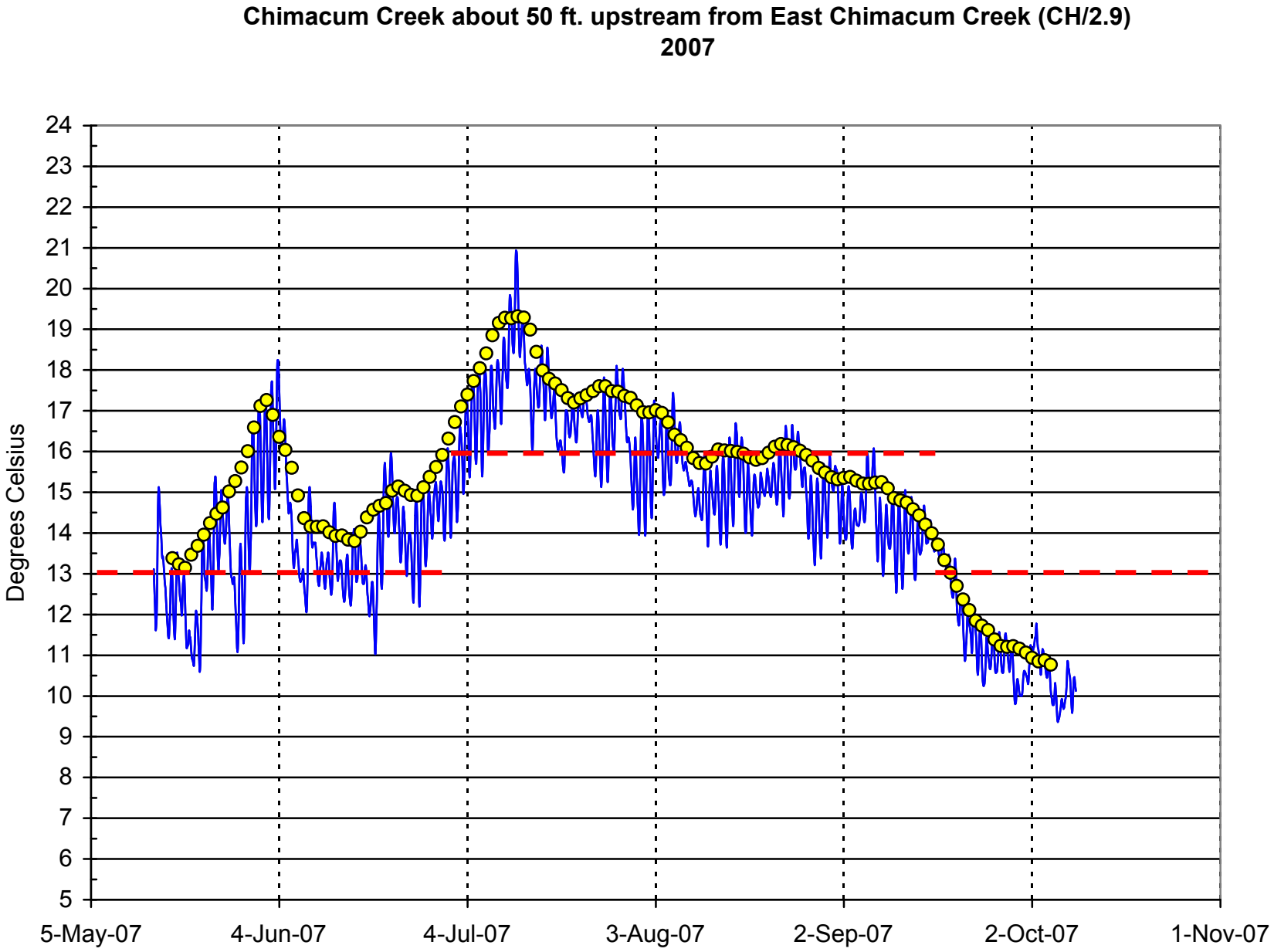


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/2.9 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_2_9 cht.xls 7/23/2009

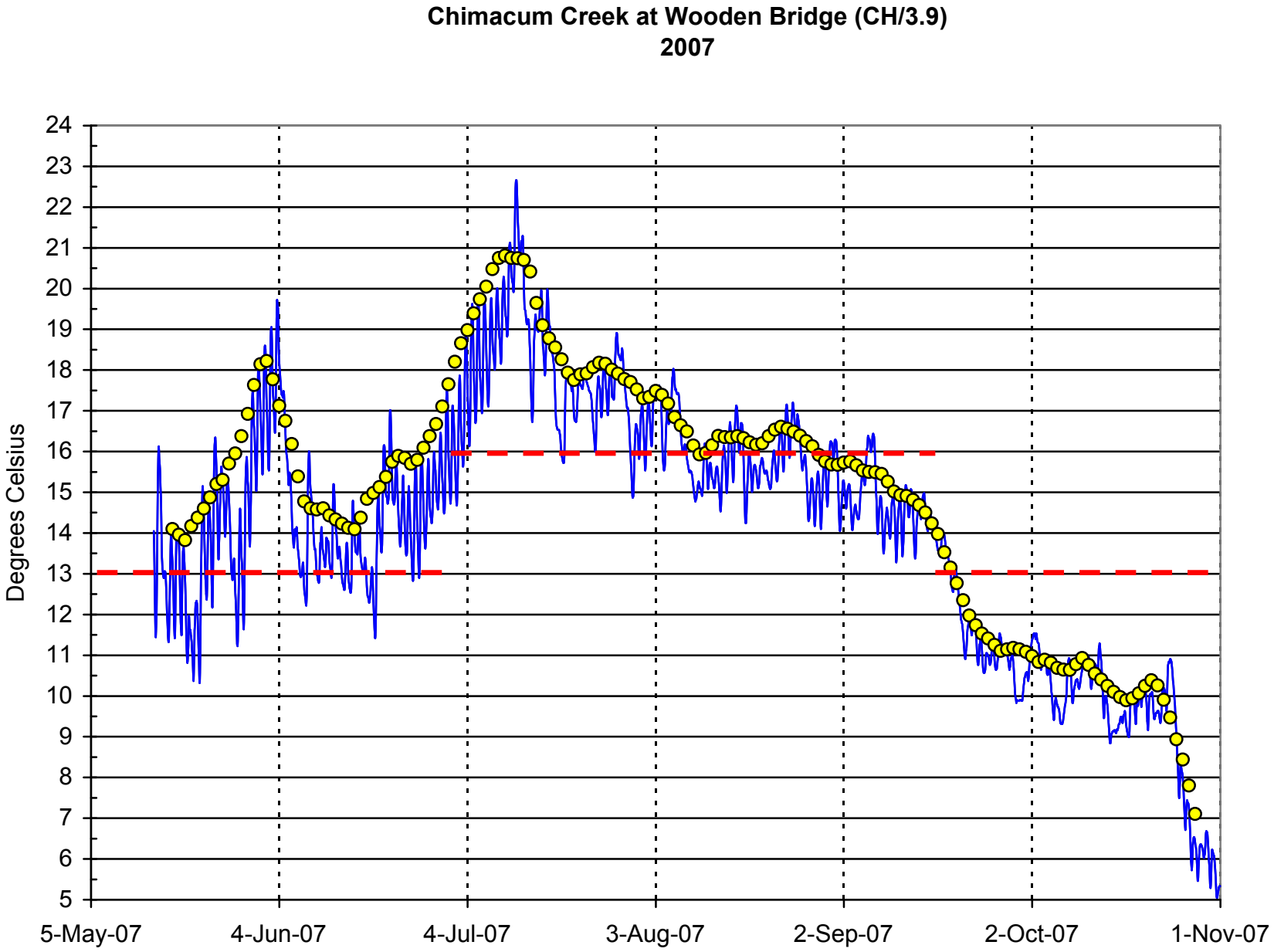


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/3.9 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_3_9 cht.xls 7/23/2009

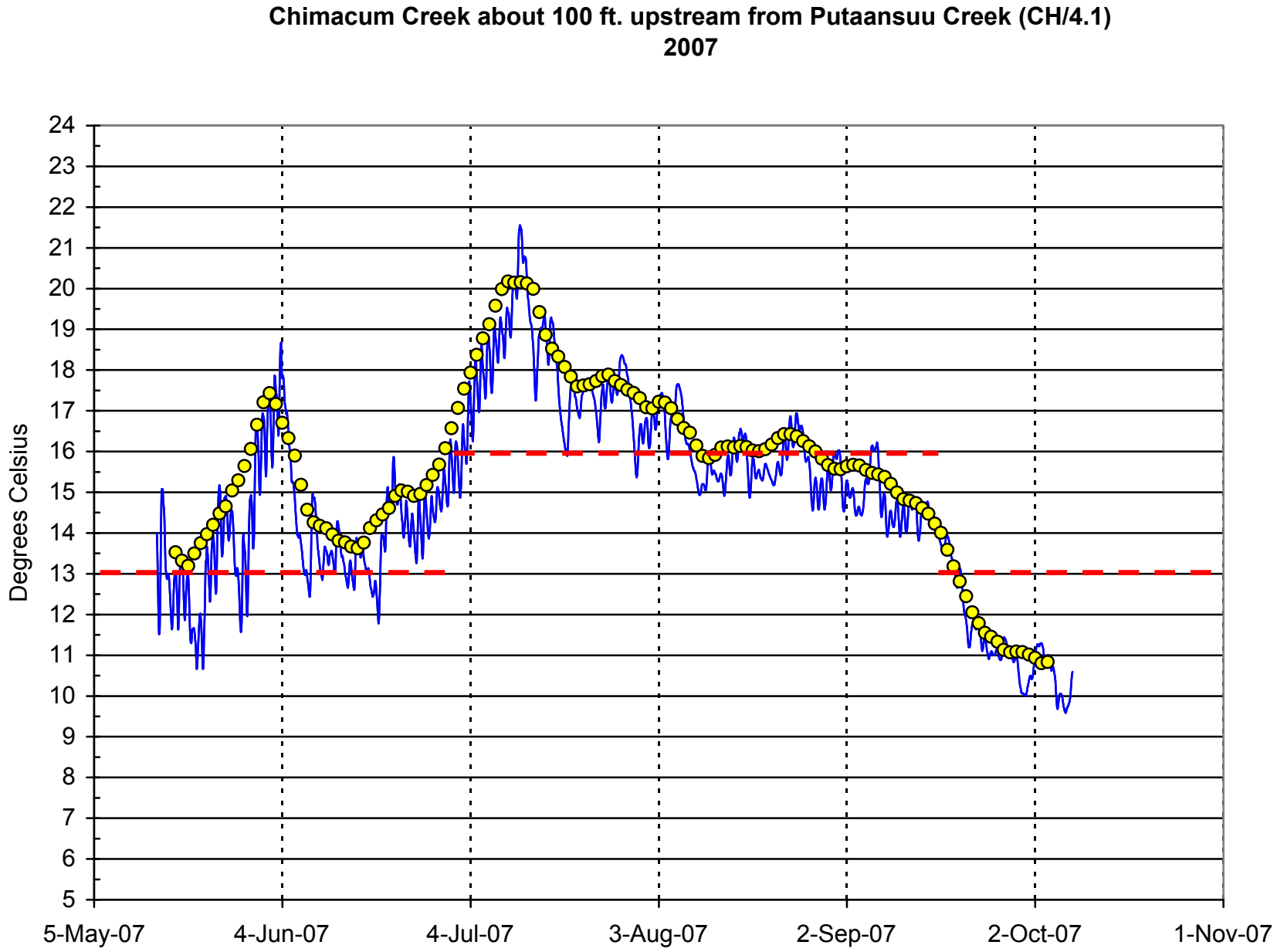
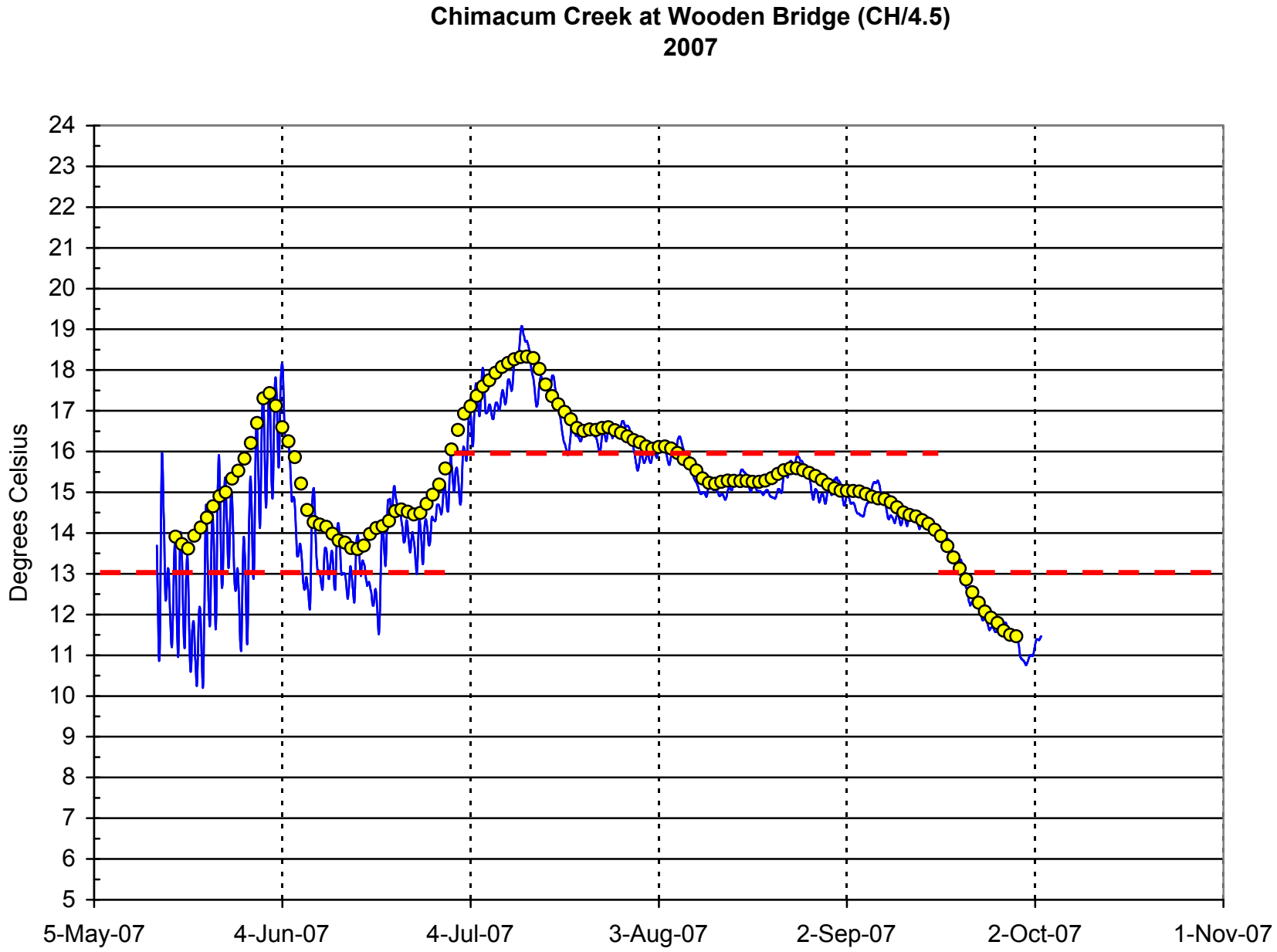


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/4.1 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_4_1 cht.xls 7/23/2009



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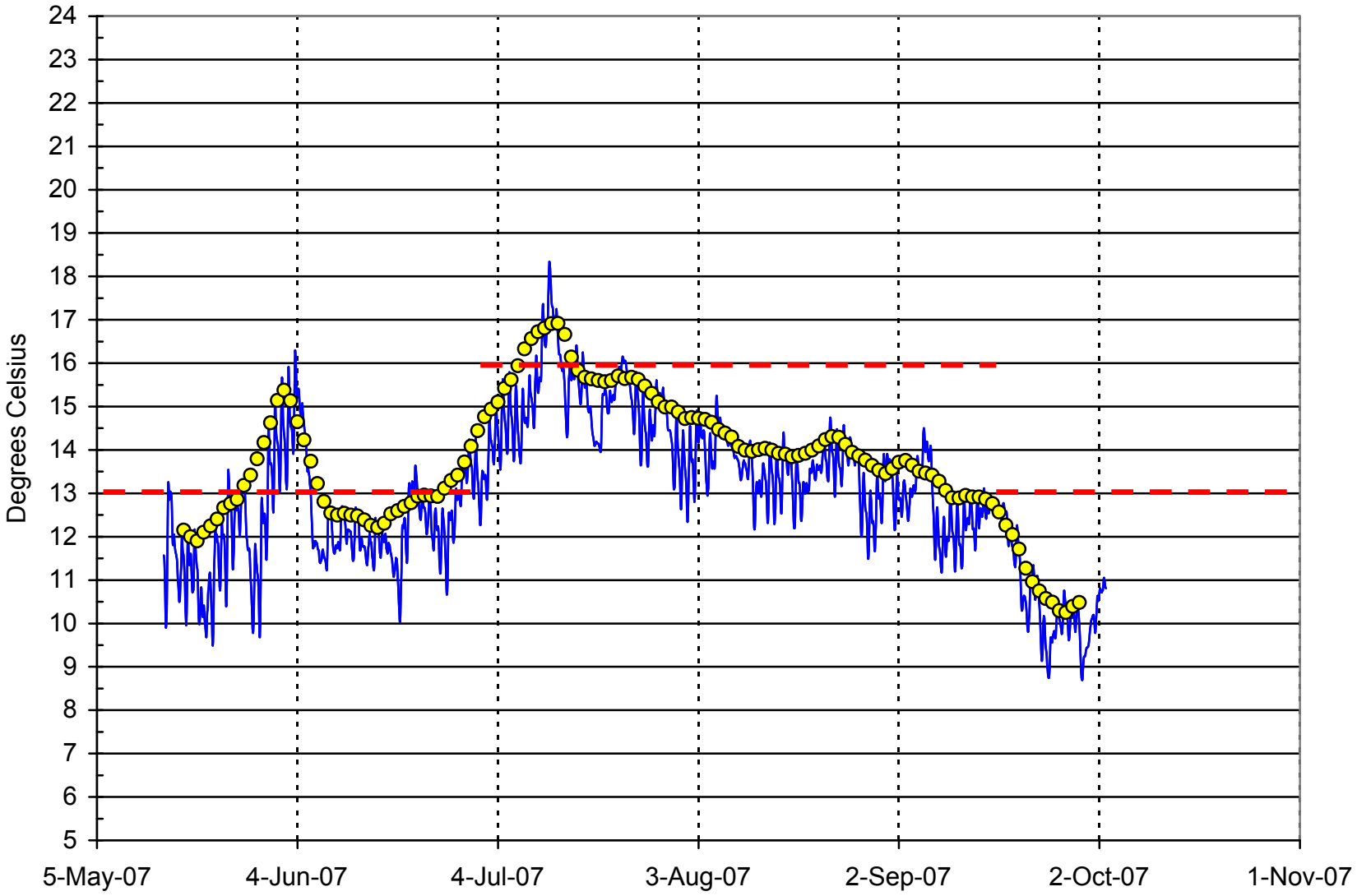

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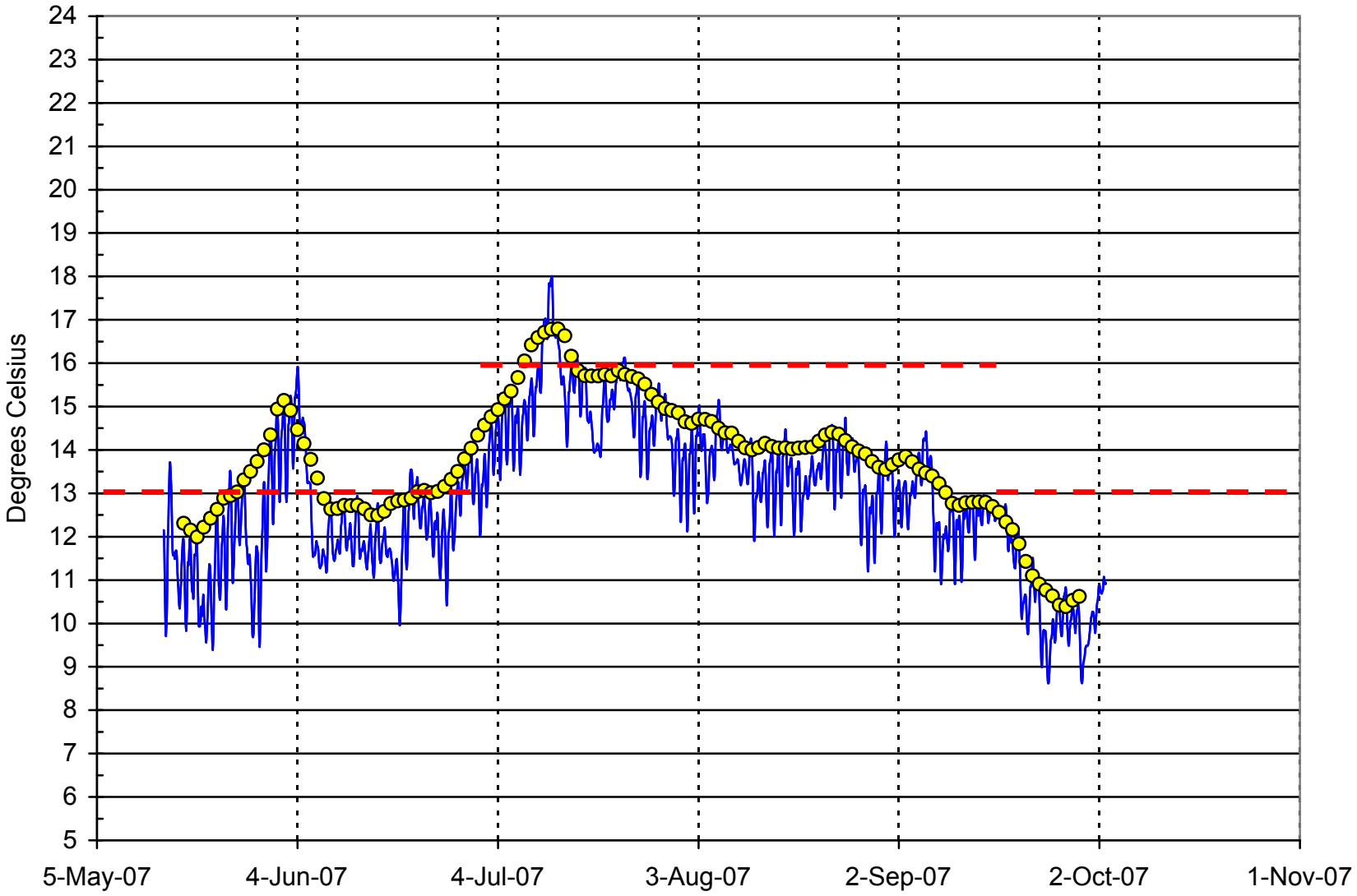


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/6.5 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_6_5 cht.xls 7/23/2009

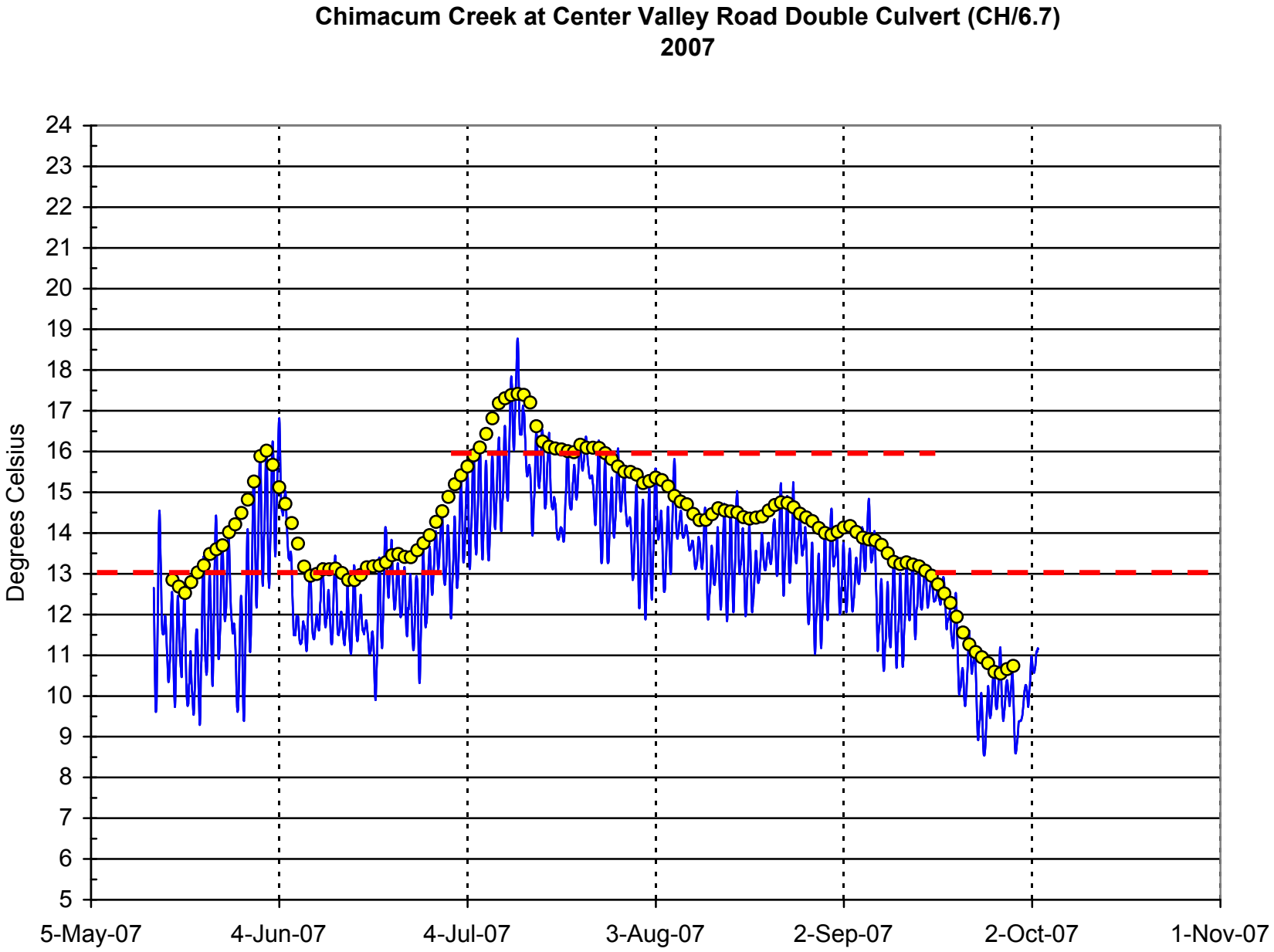


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/6.7 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_6_7 cht.xls 7/23/2009

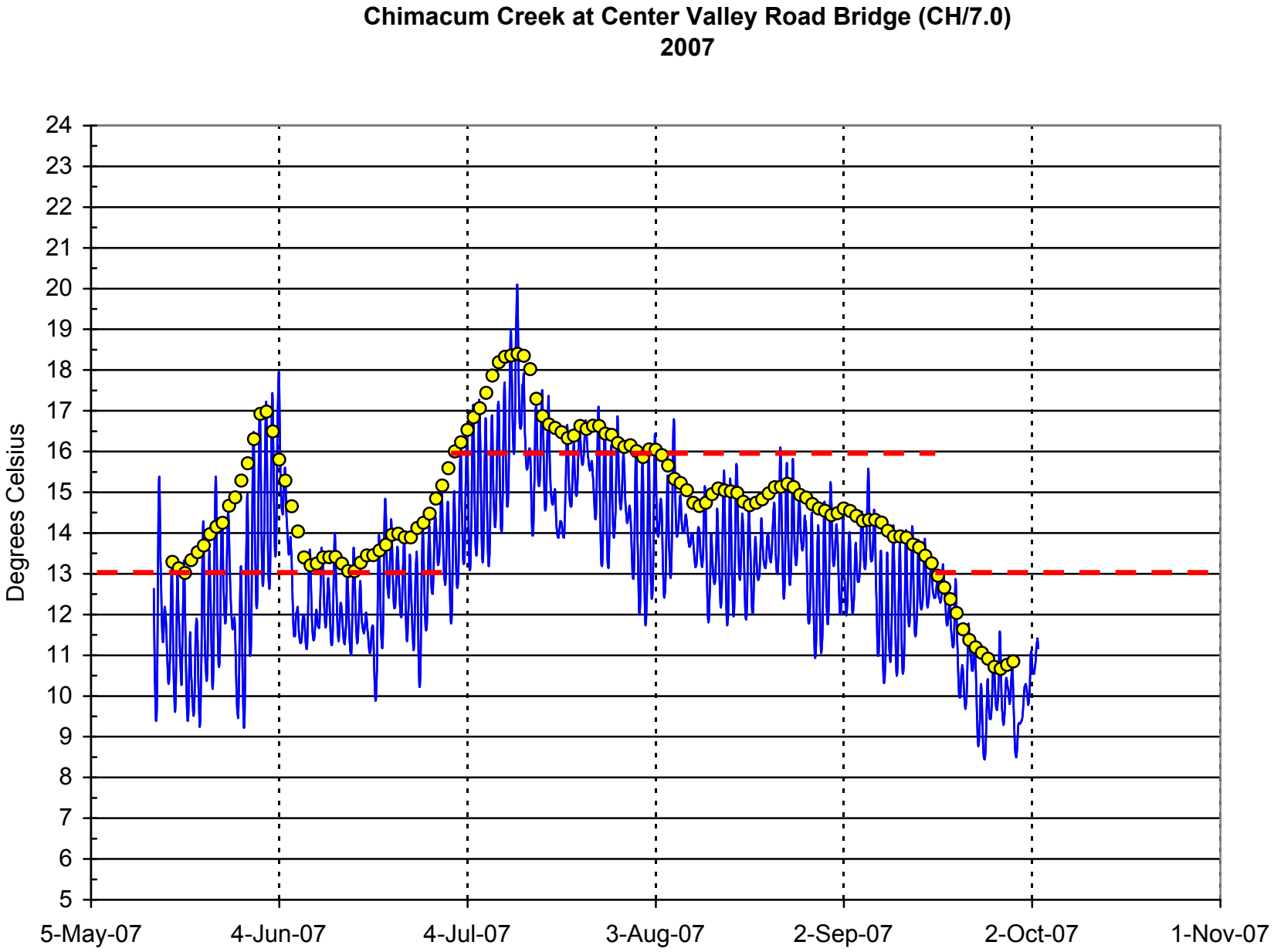
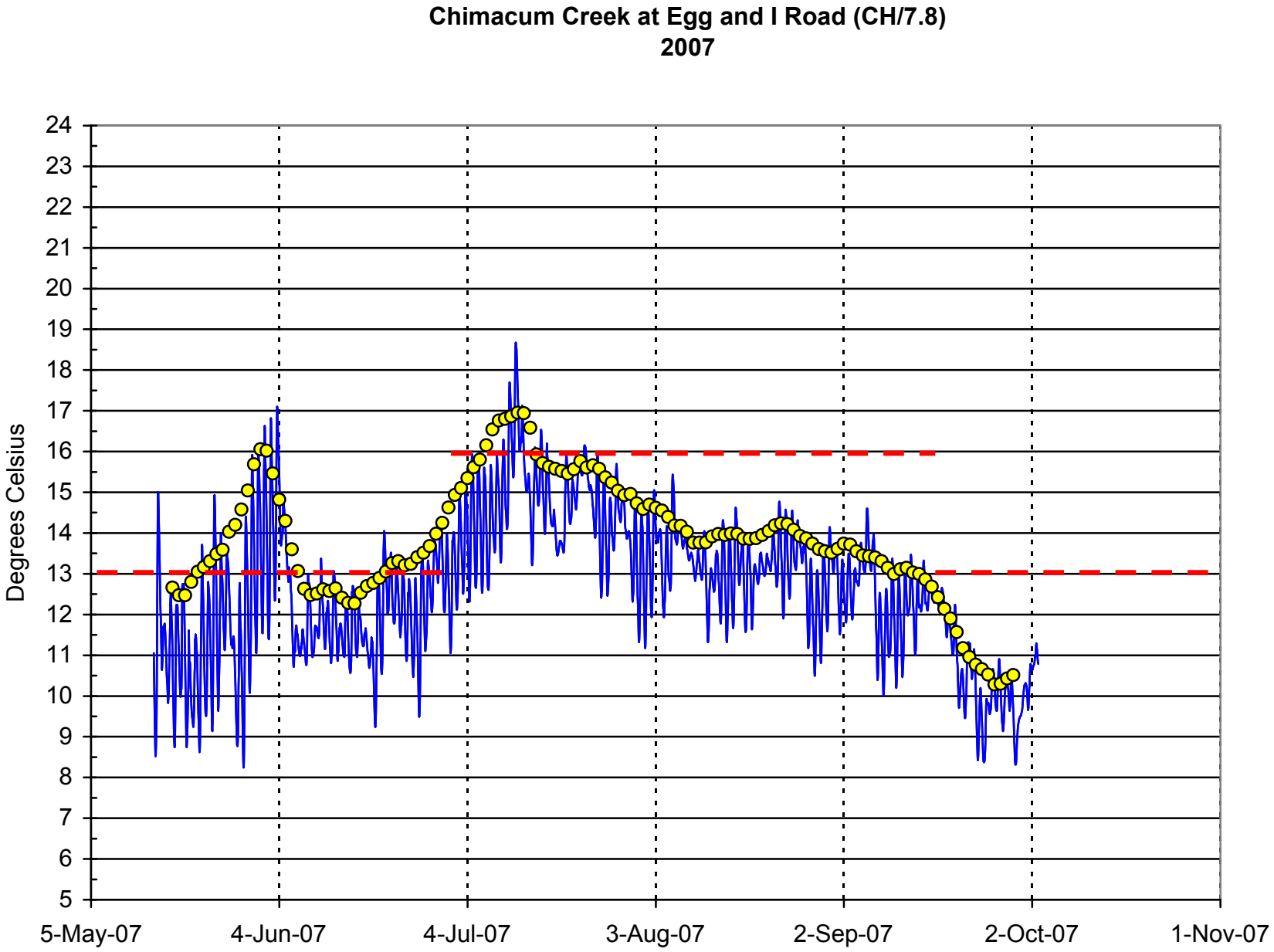


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/7.0 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_7_0 cht.xls 7/23/2009



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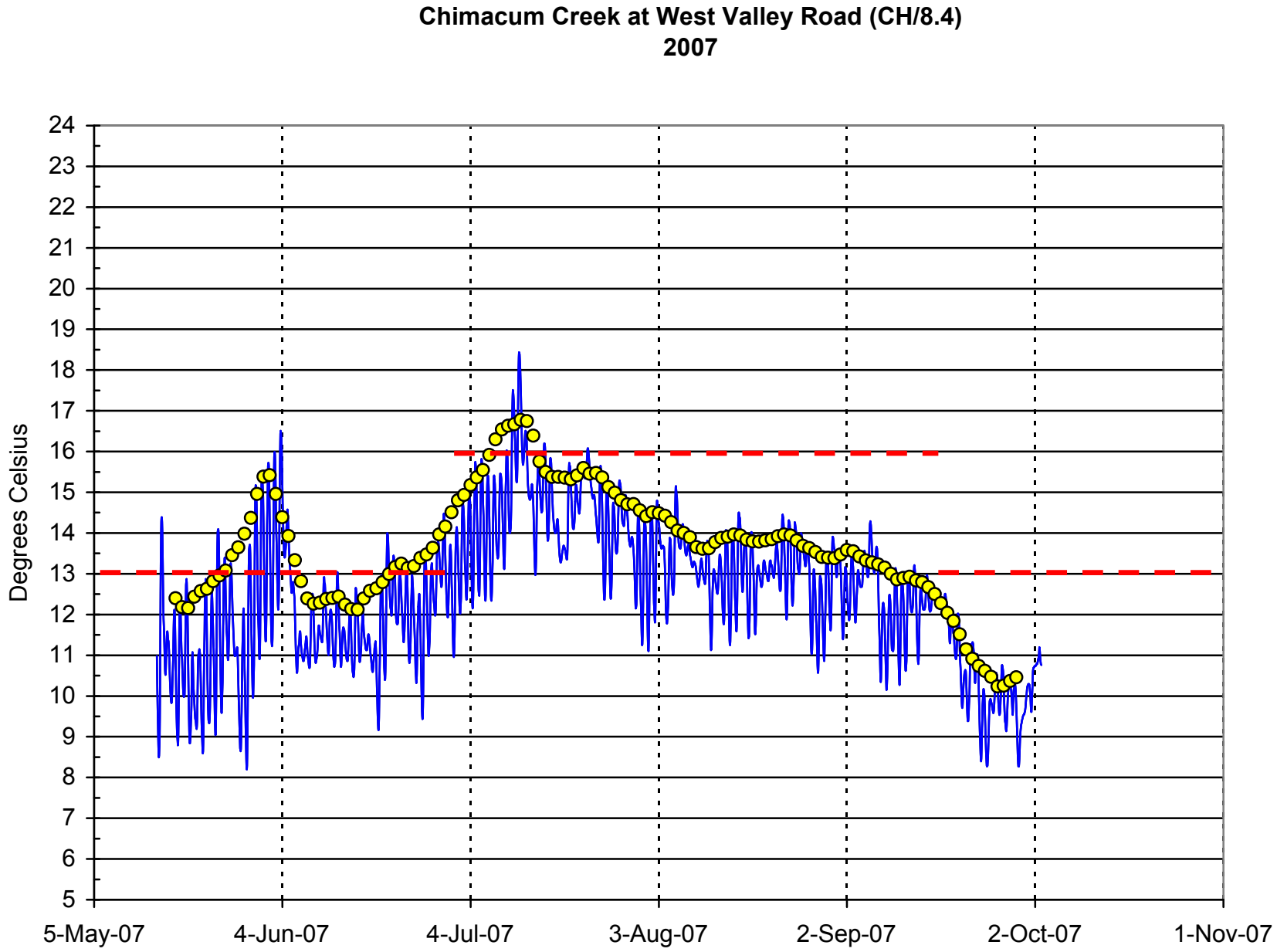


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/8.4 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_8_4 cht.xls 7/23/2009

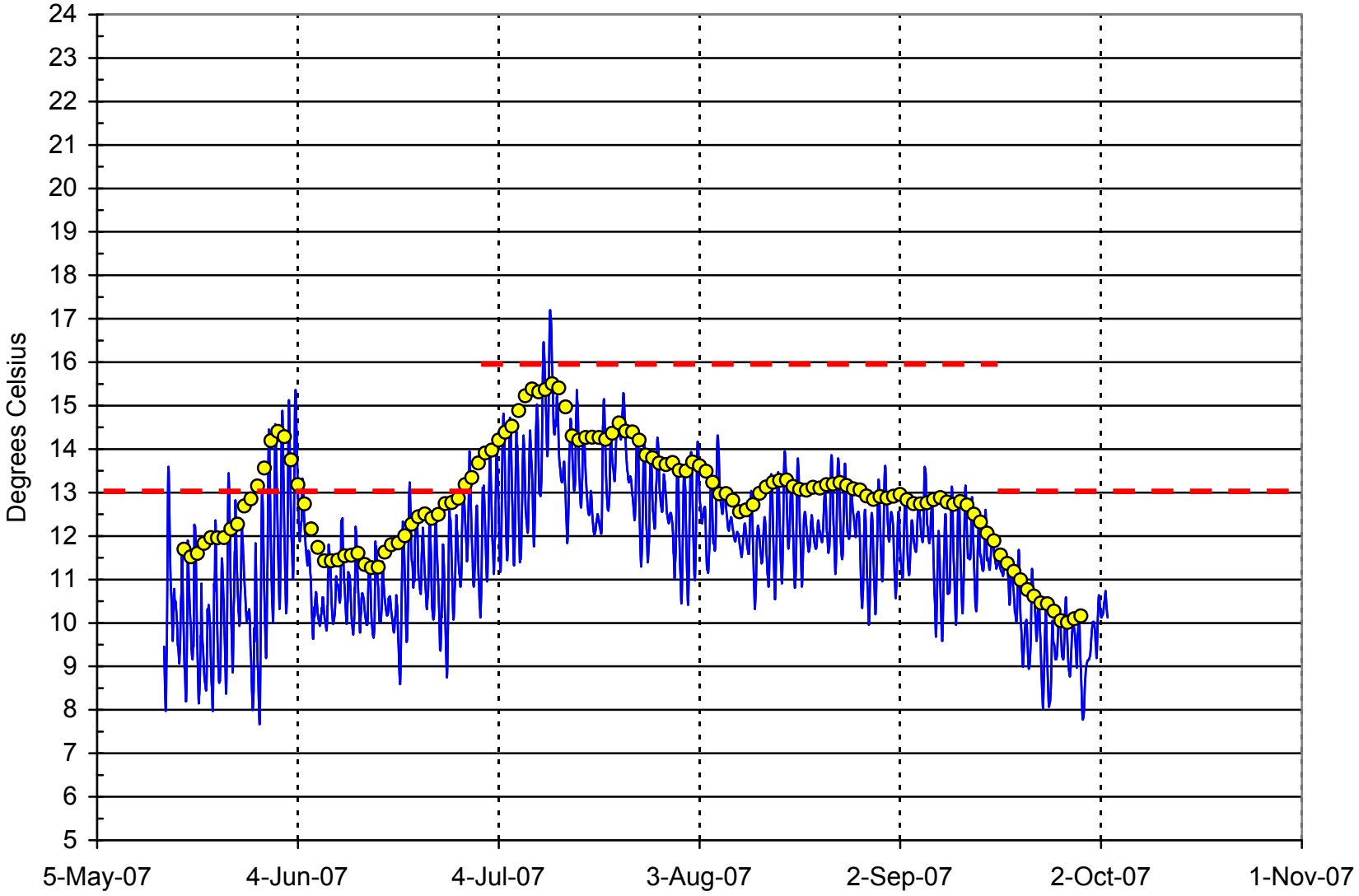
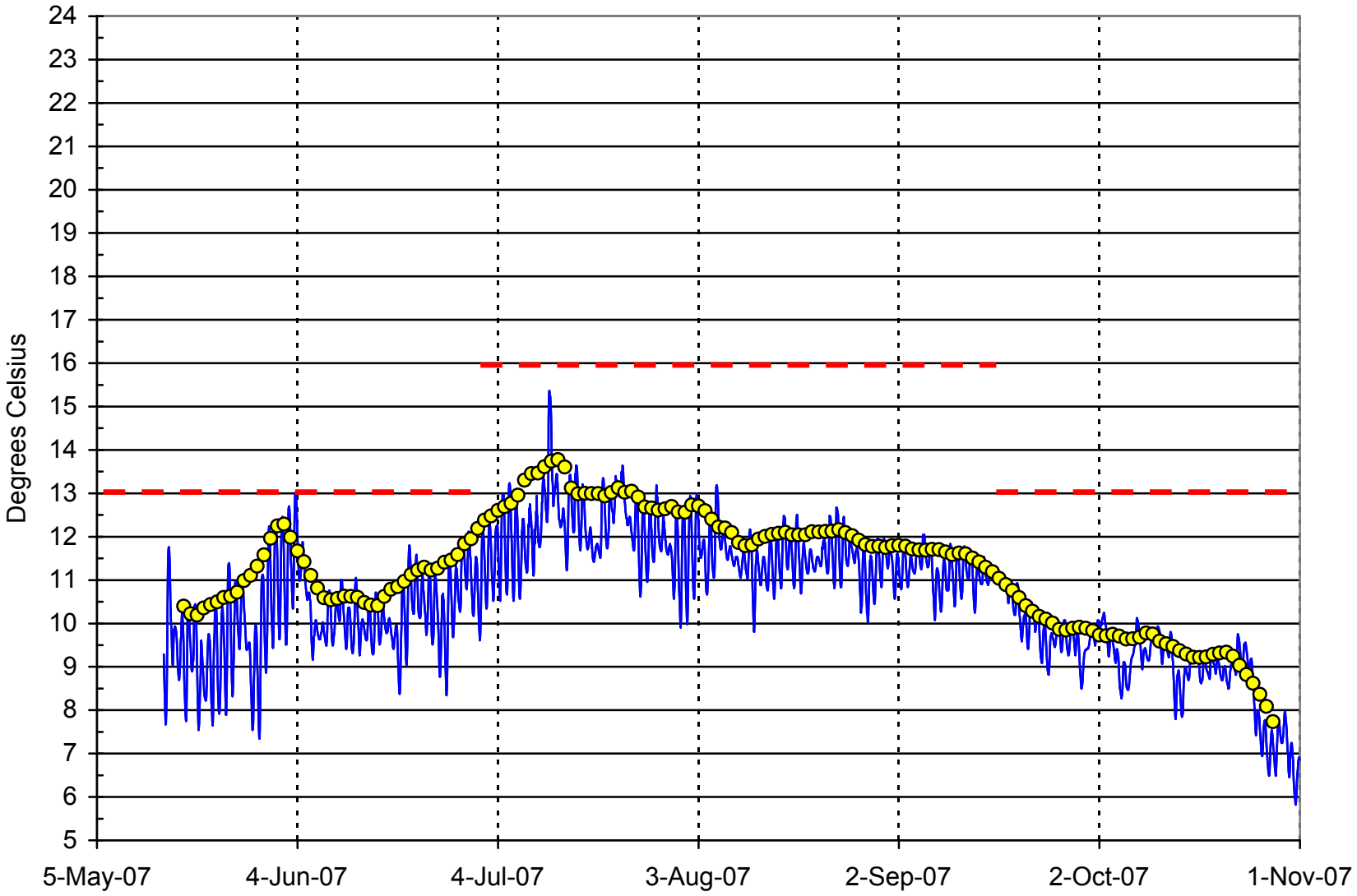


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station CH/9.0 on Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria. CH_9_0 cht.xls 7/23/2009



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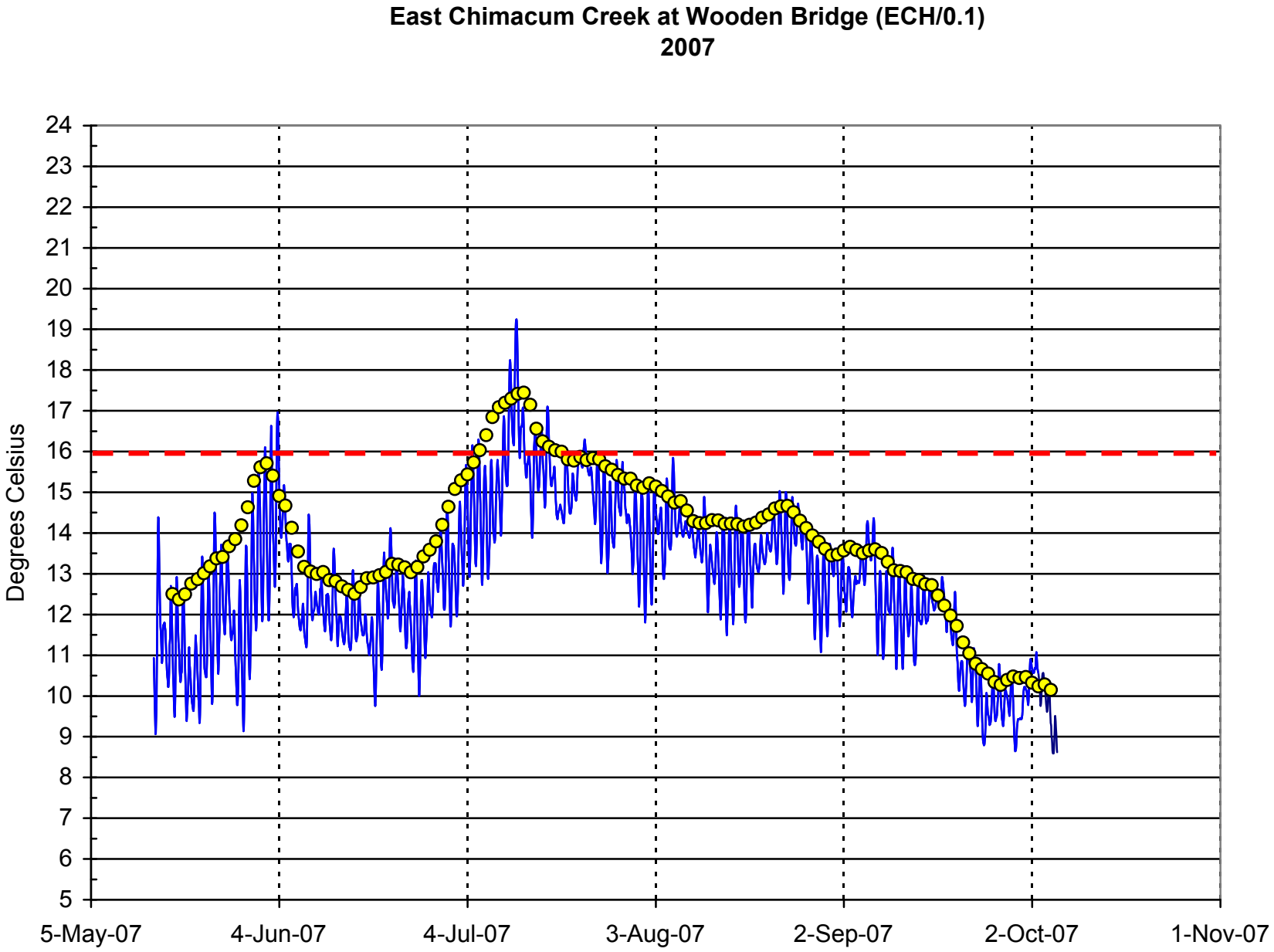

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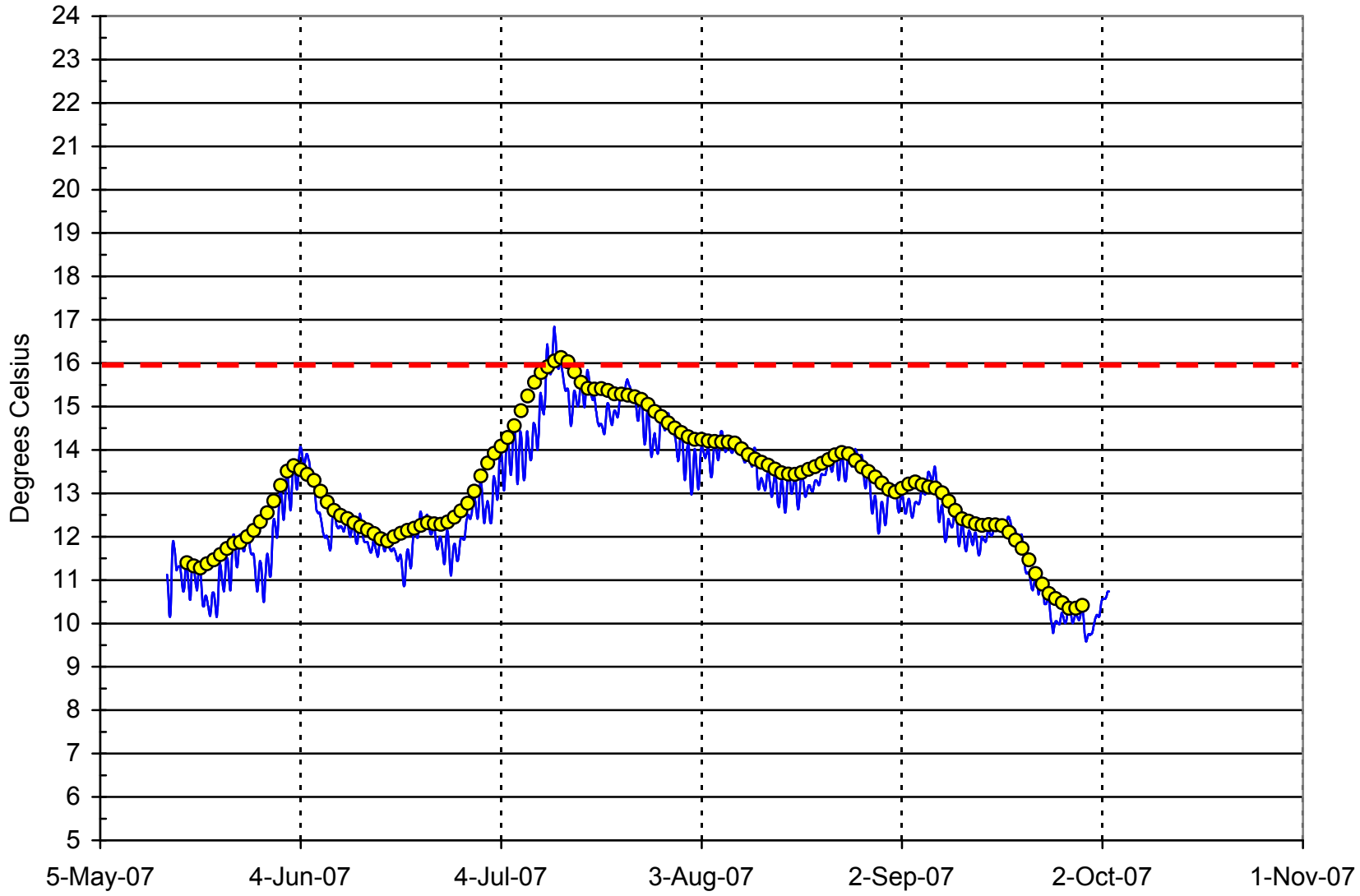


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station ECH/0.5 on East Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. ECH_0_5 cht.xls 7/23

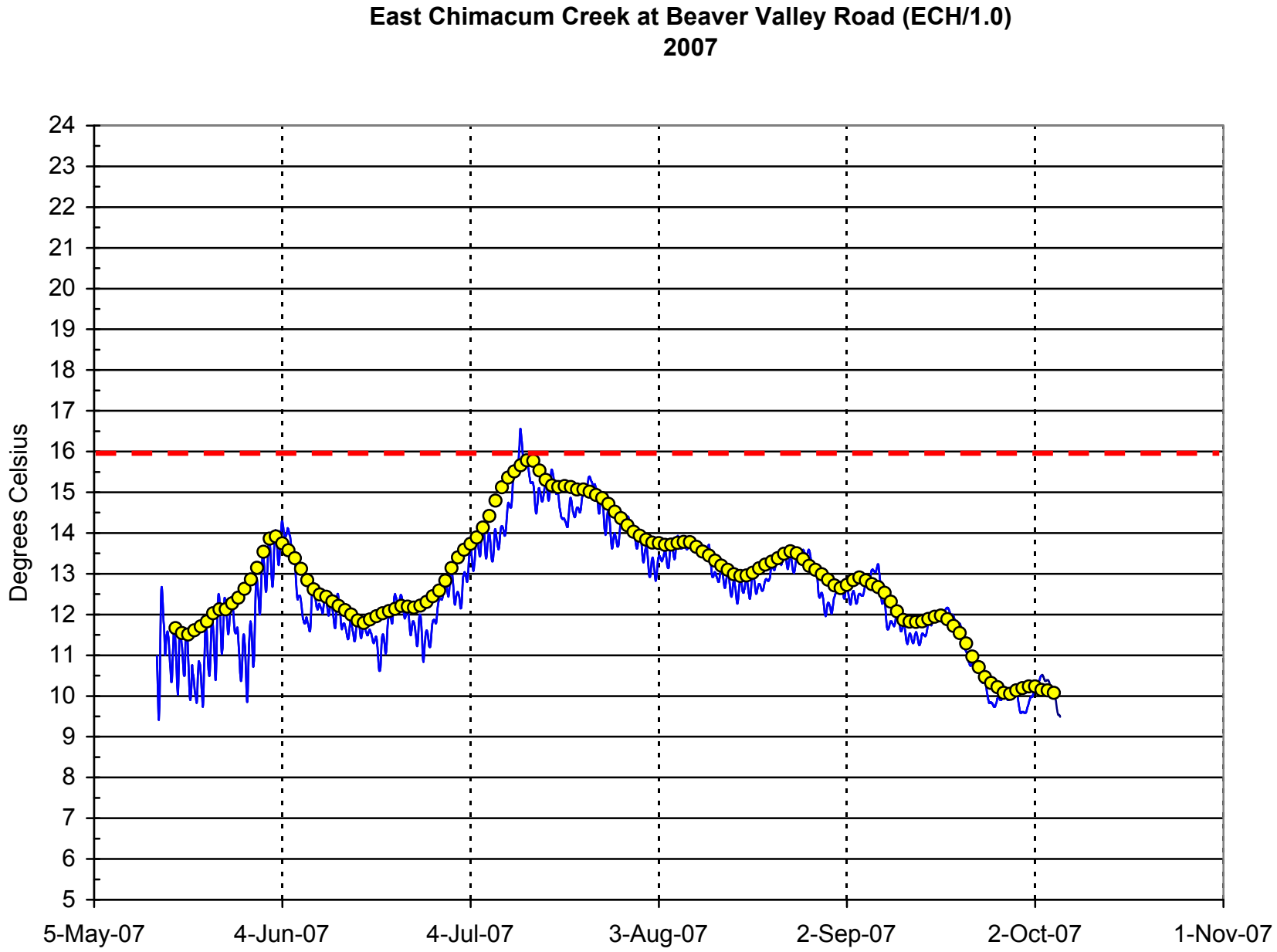


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station ECH/1.0 on East Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. ECH_1_0 cht.xls 7/23

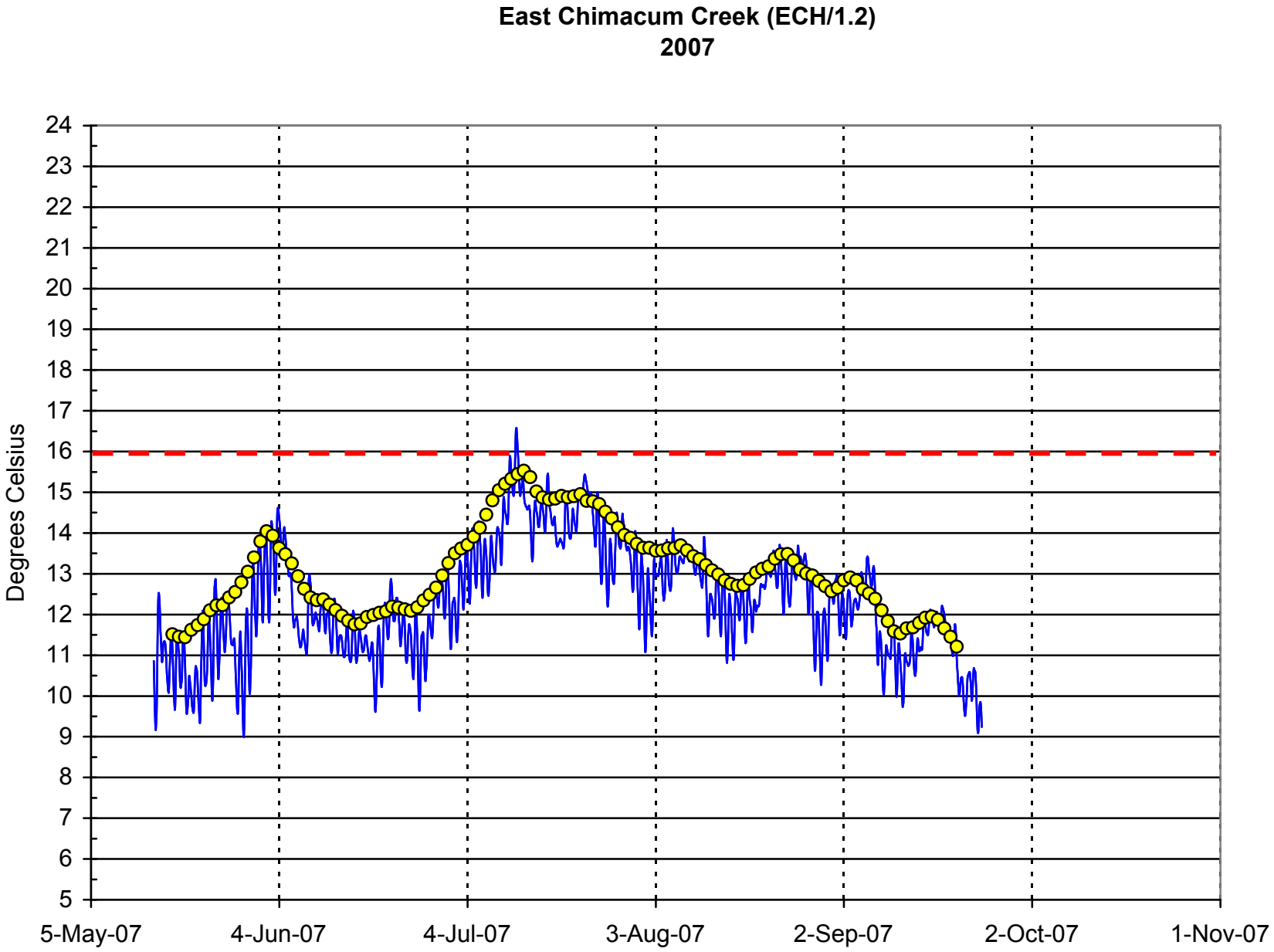


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station ECH/1.2 on East Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. ECH_1_2 cht.xls 7/23

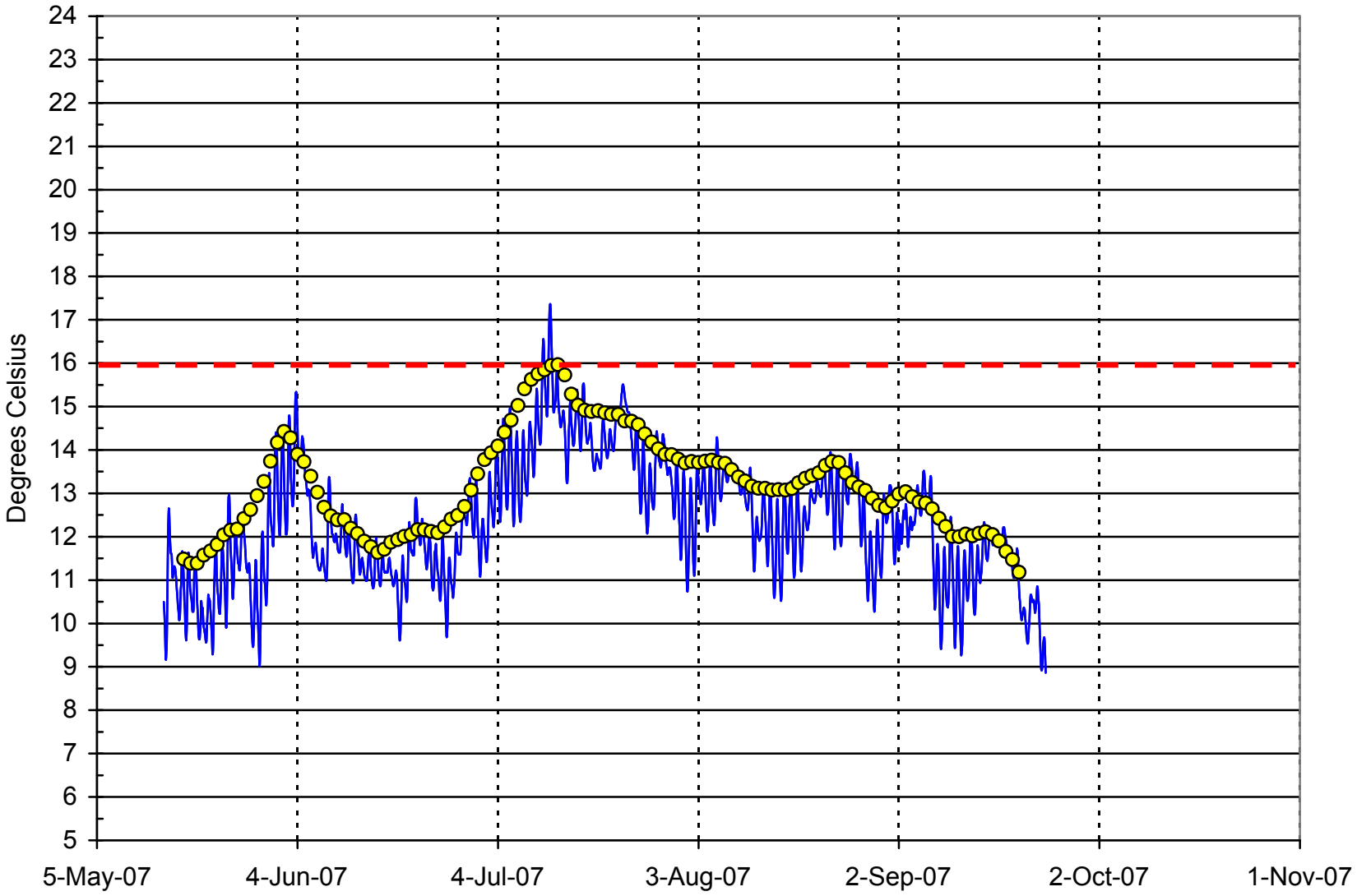
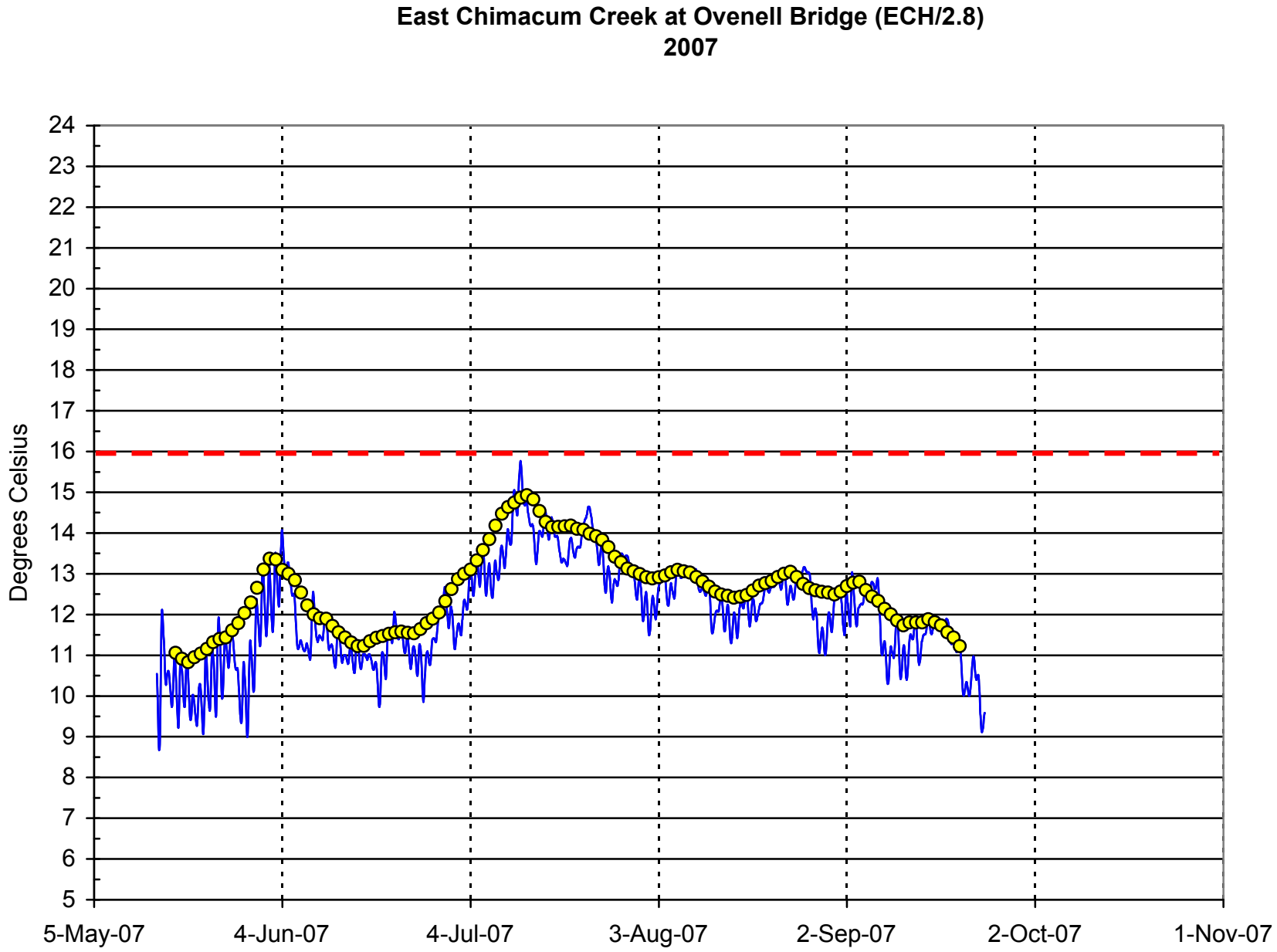


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station ECH/2.0 on East Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. ECH_2_0 cht.xls 7/23



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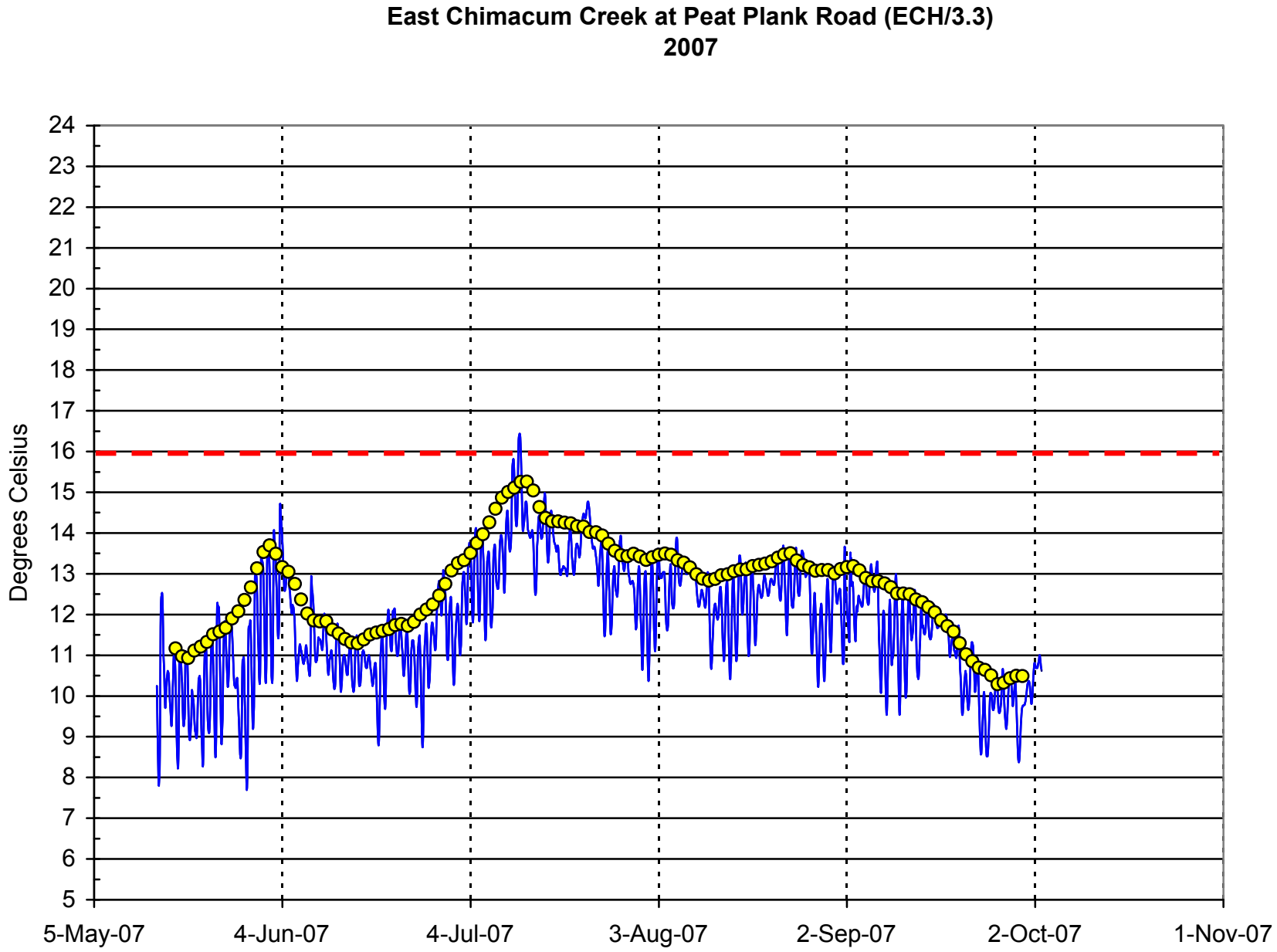

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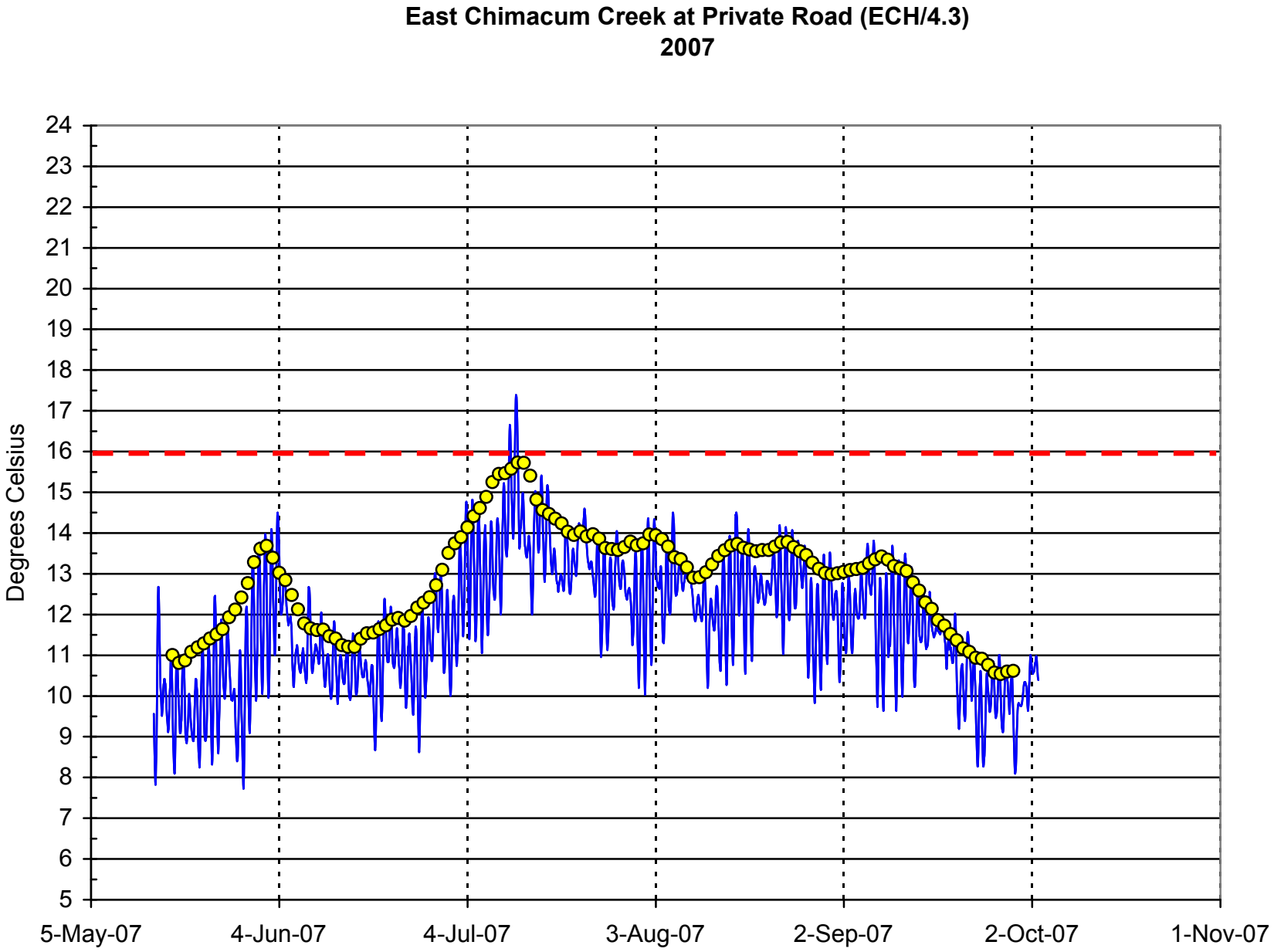

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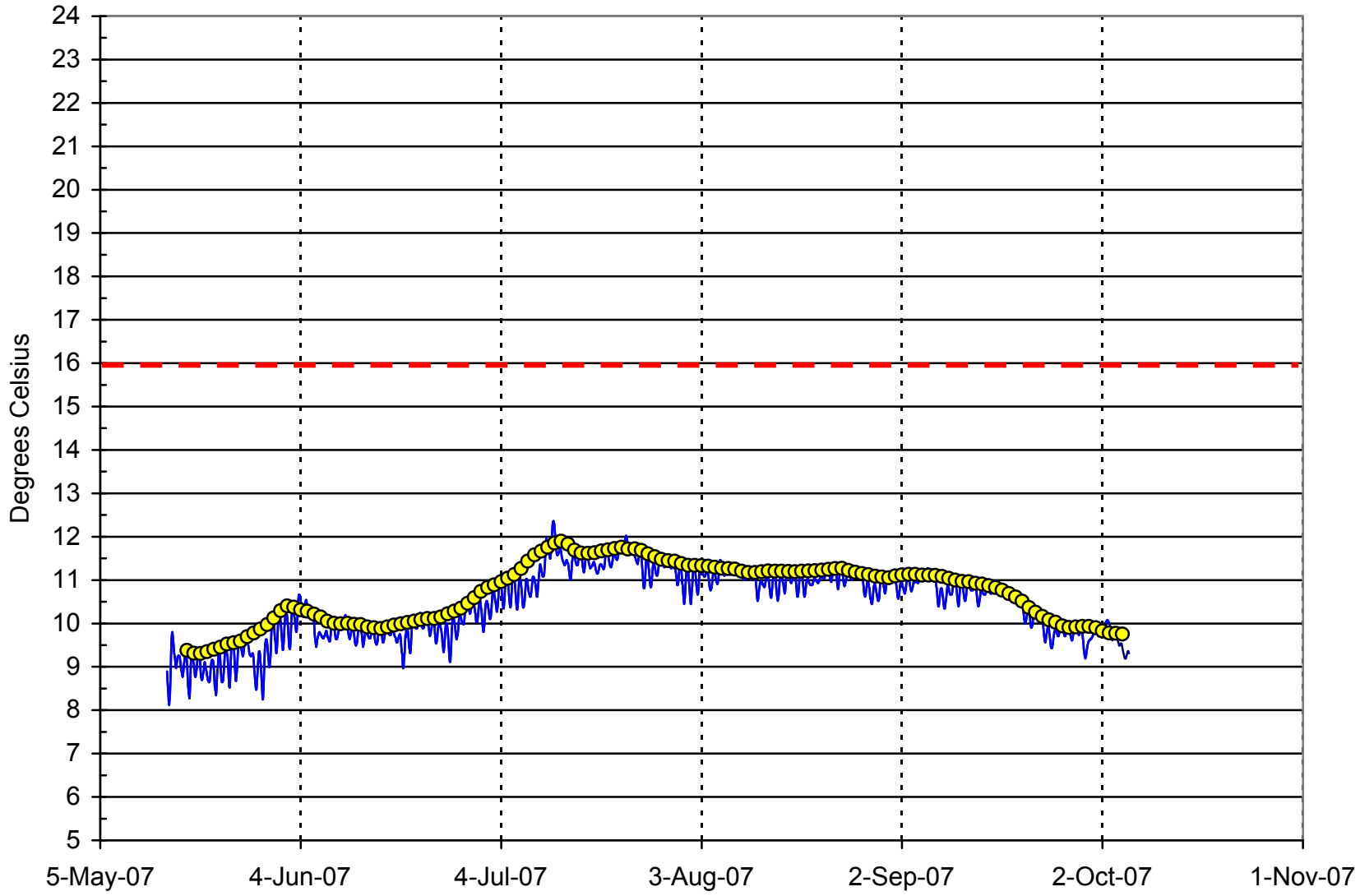
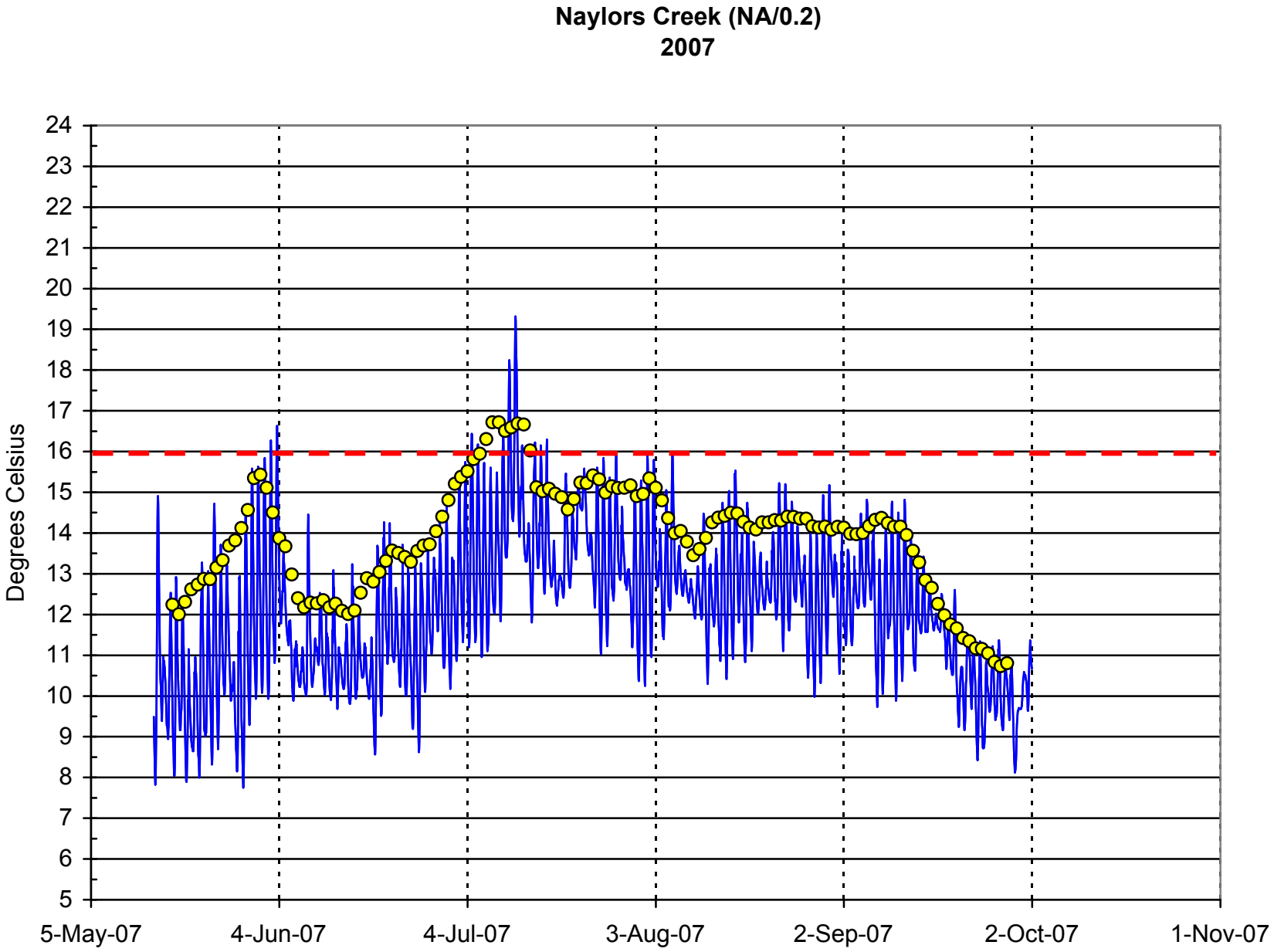


Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station ECH/5.4 on East Chimacum Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. ECH_5_4 cht.xls 7/23



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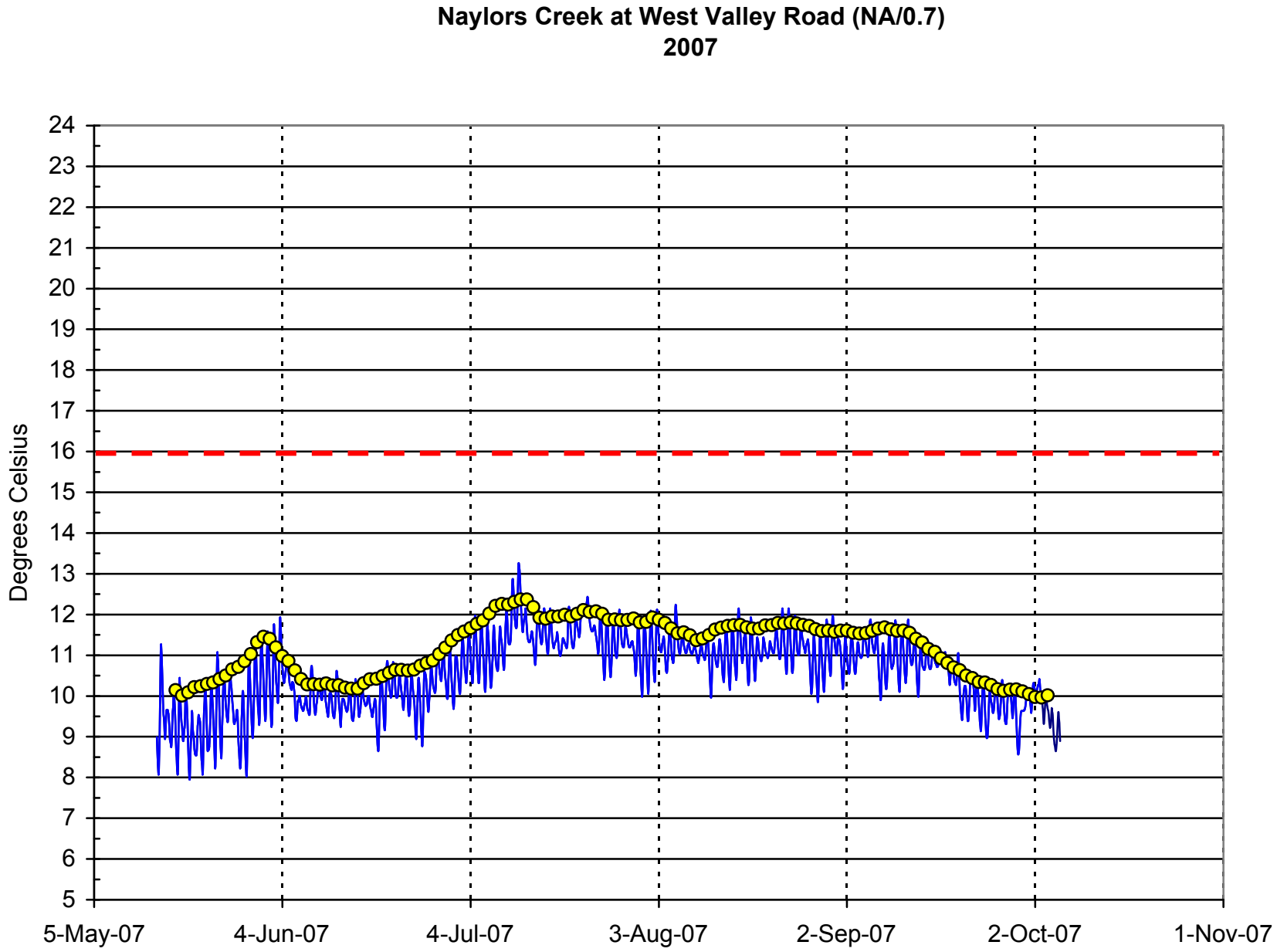

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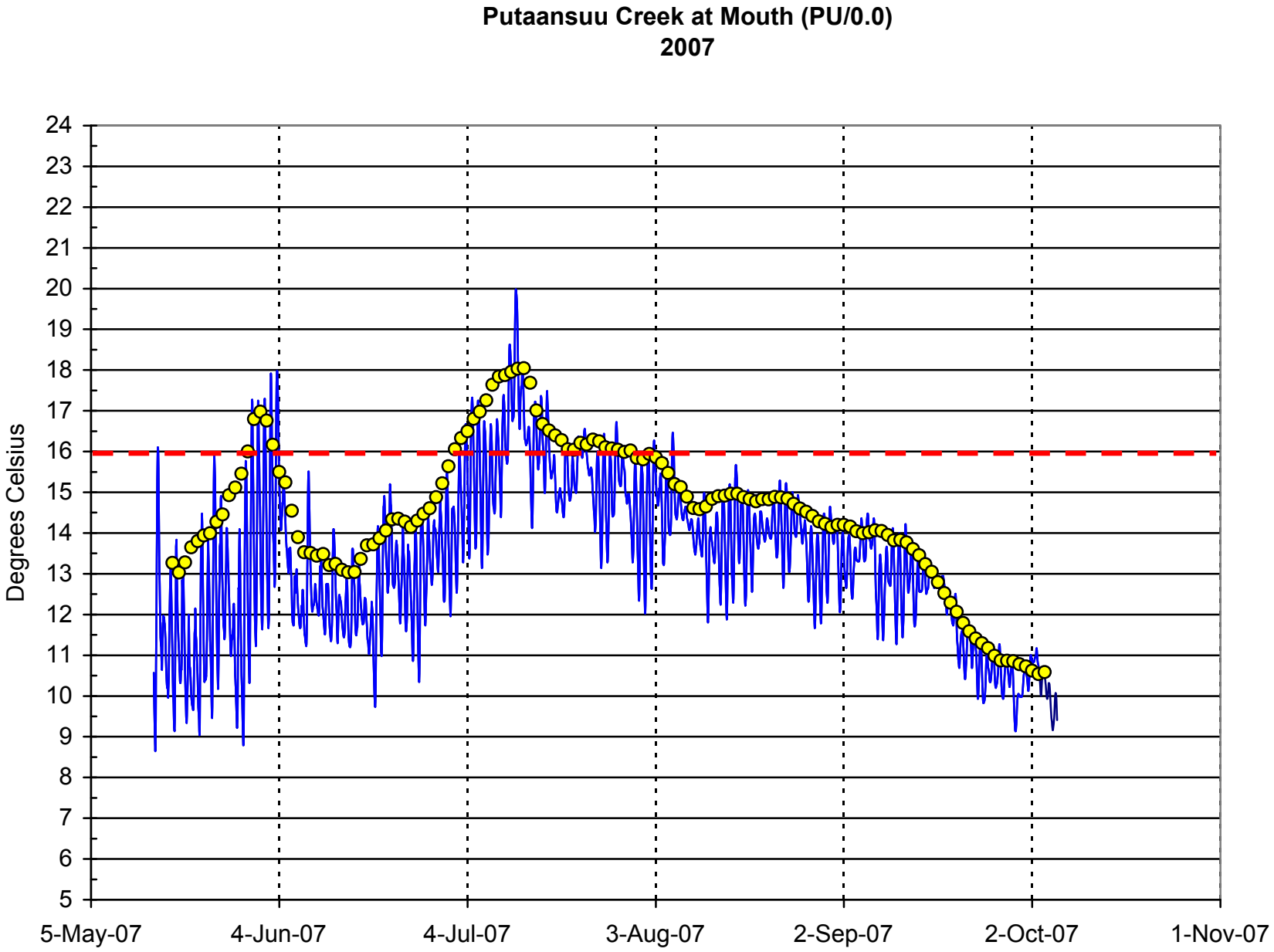

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station PU/0.0 on Putaansuu Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. PU_0_0 cht.xls 7/23/2009

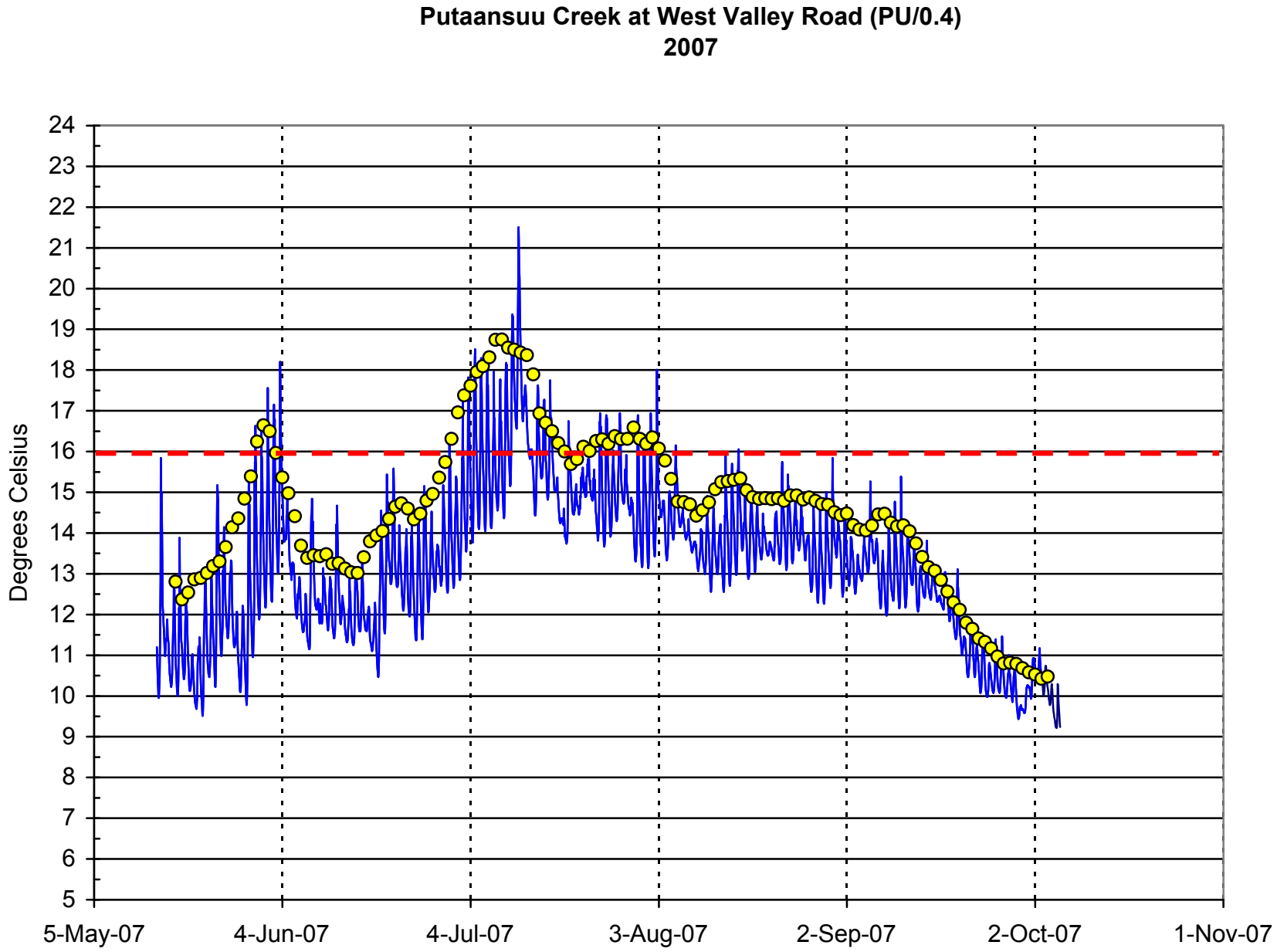

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station PU/0.4 on Putaansuu Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. PU_0_4 cht.xls 7/23/2009

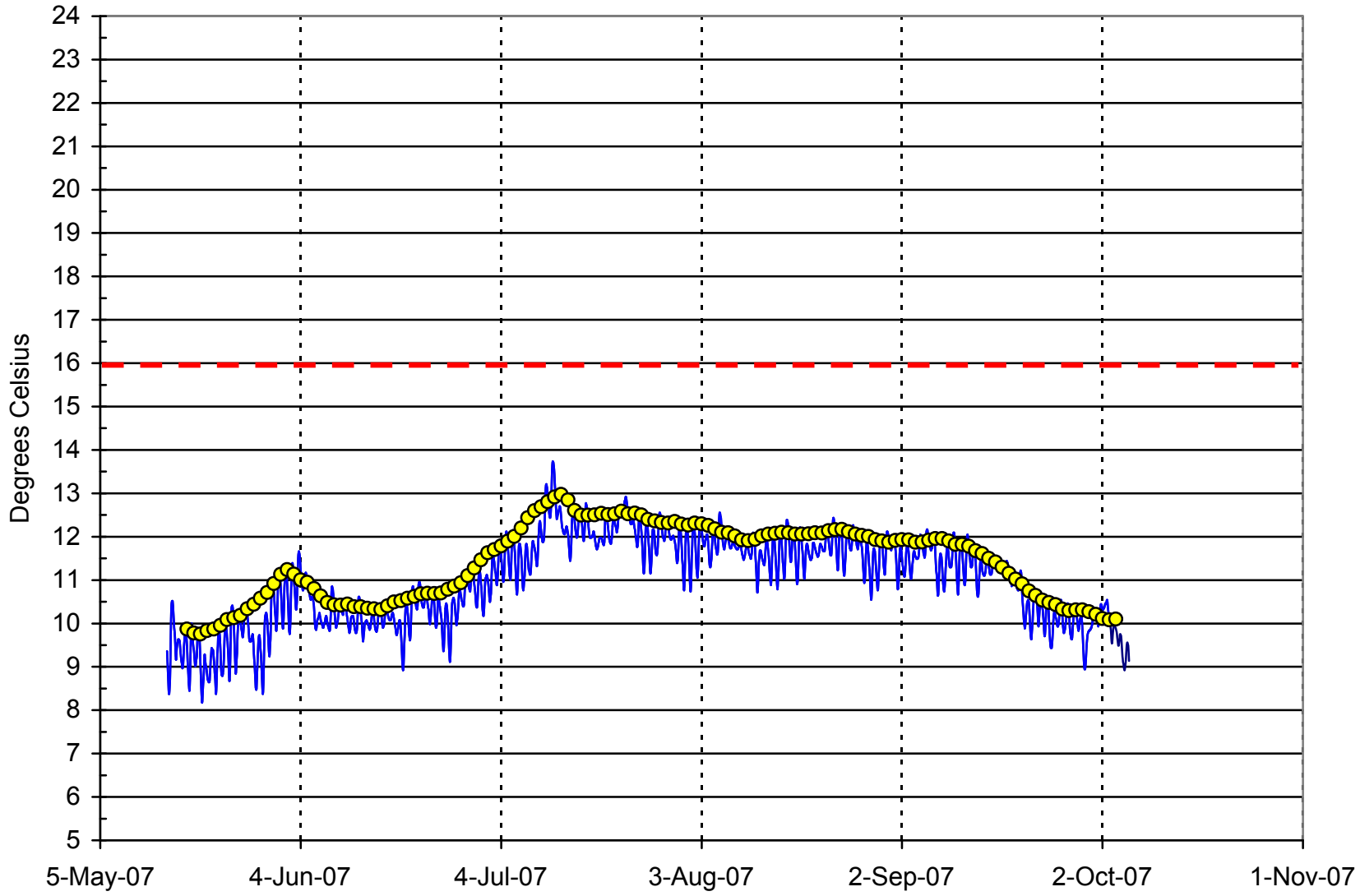

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station PU/0.5 on Putaansuu Creek in 2007. Dashed line shows the 7-DADMax criteria for spawning and rearing. PU_0_5 cht.xls 7/23/2009

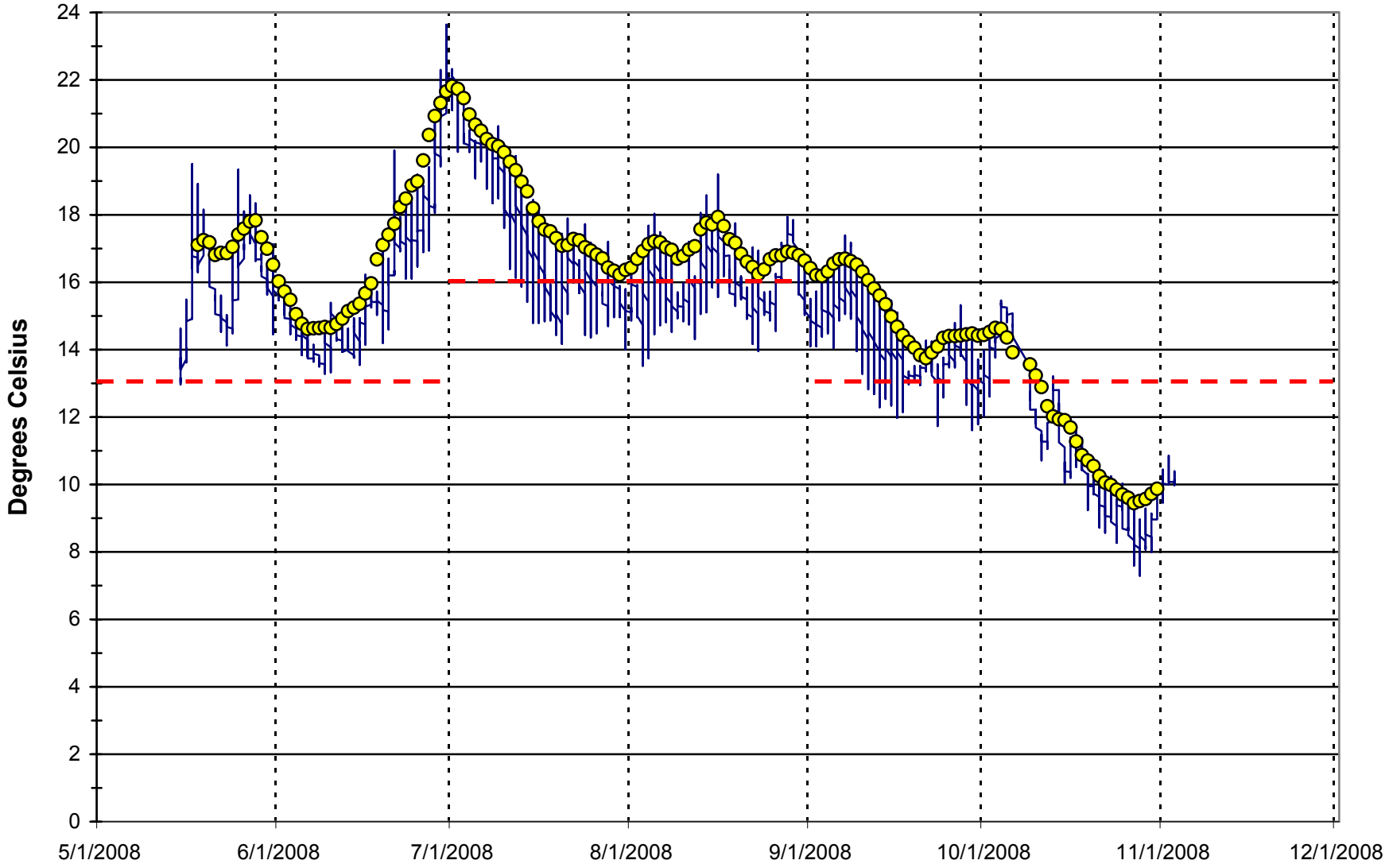

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station AND/0.0 on Andrews Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp

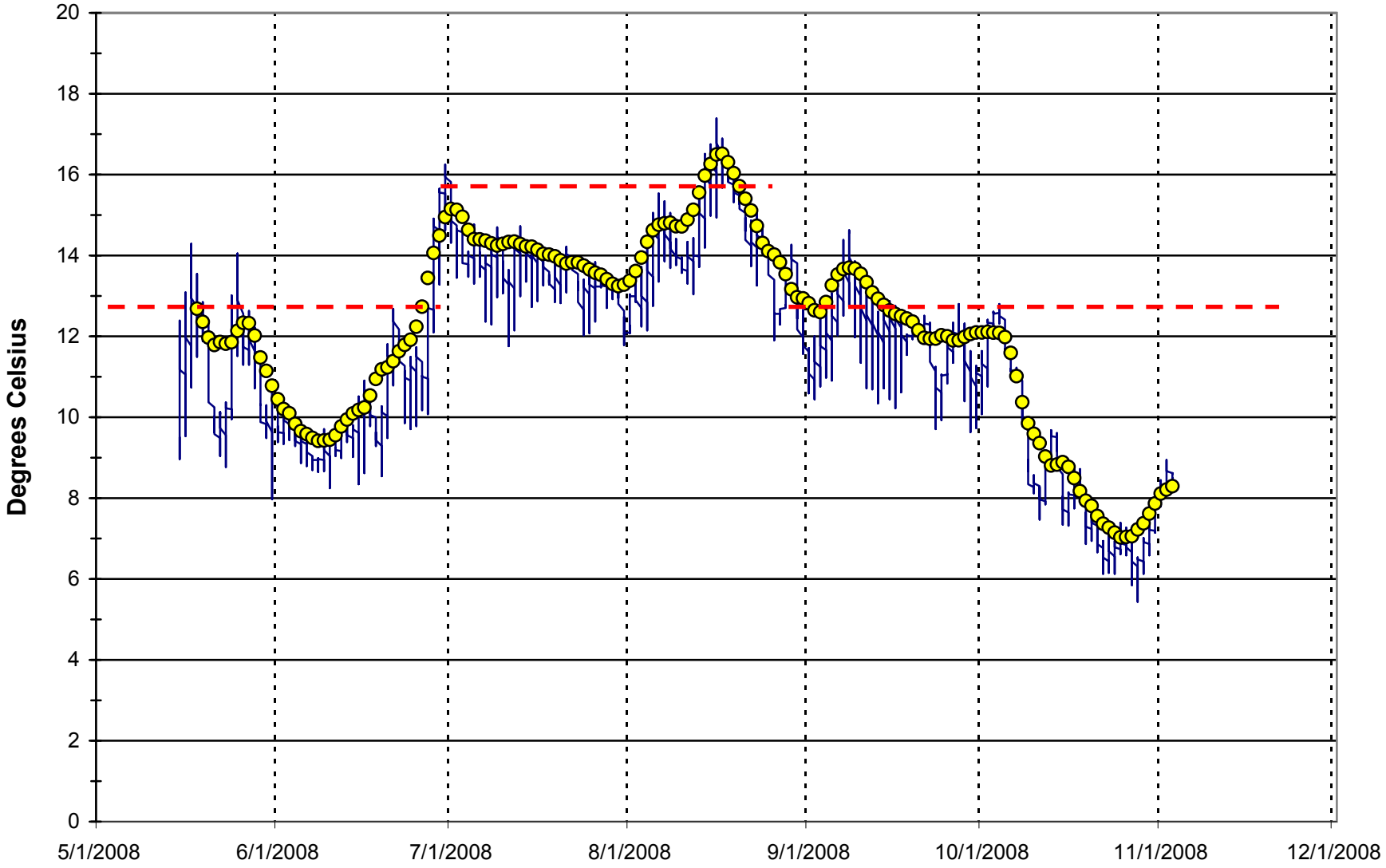

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station AND/1.0 on Andrews Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp

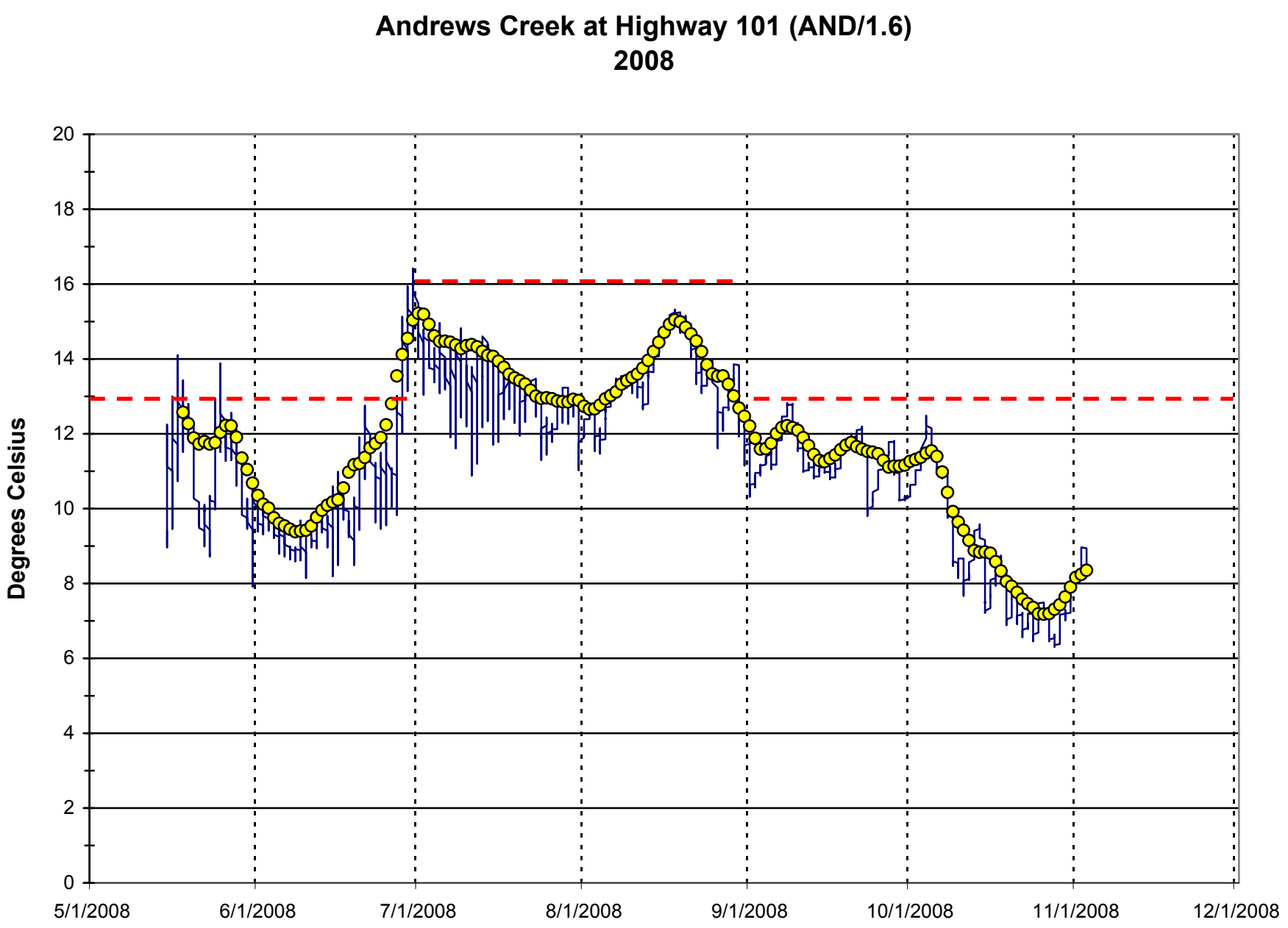

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station AND/1.6 on Andrews Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp

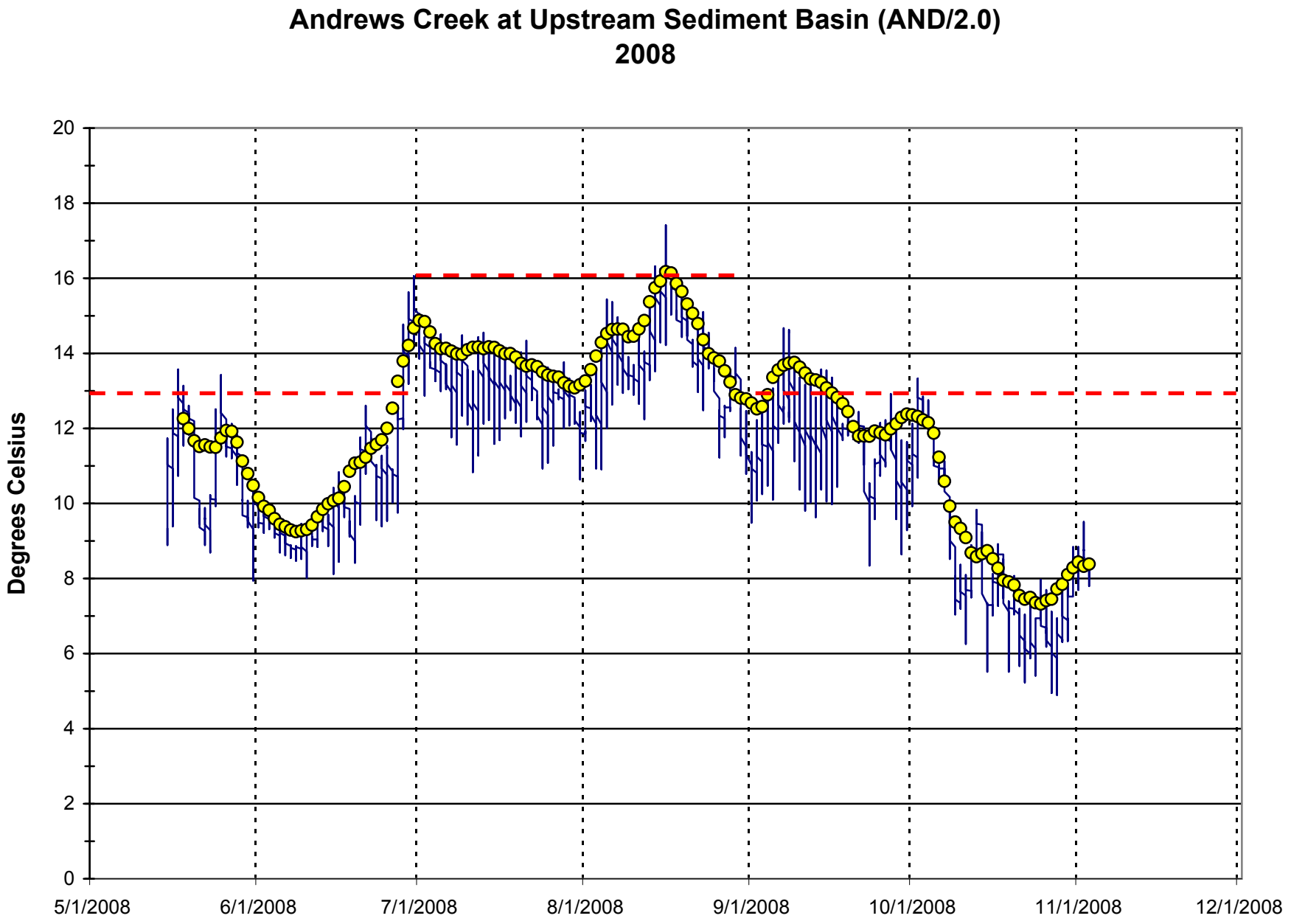

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station AND/2.0 on Andrews Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp

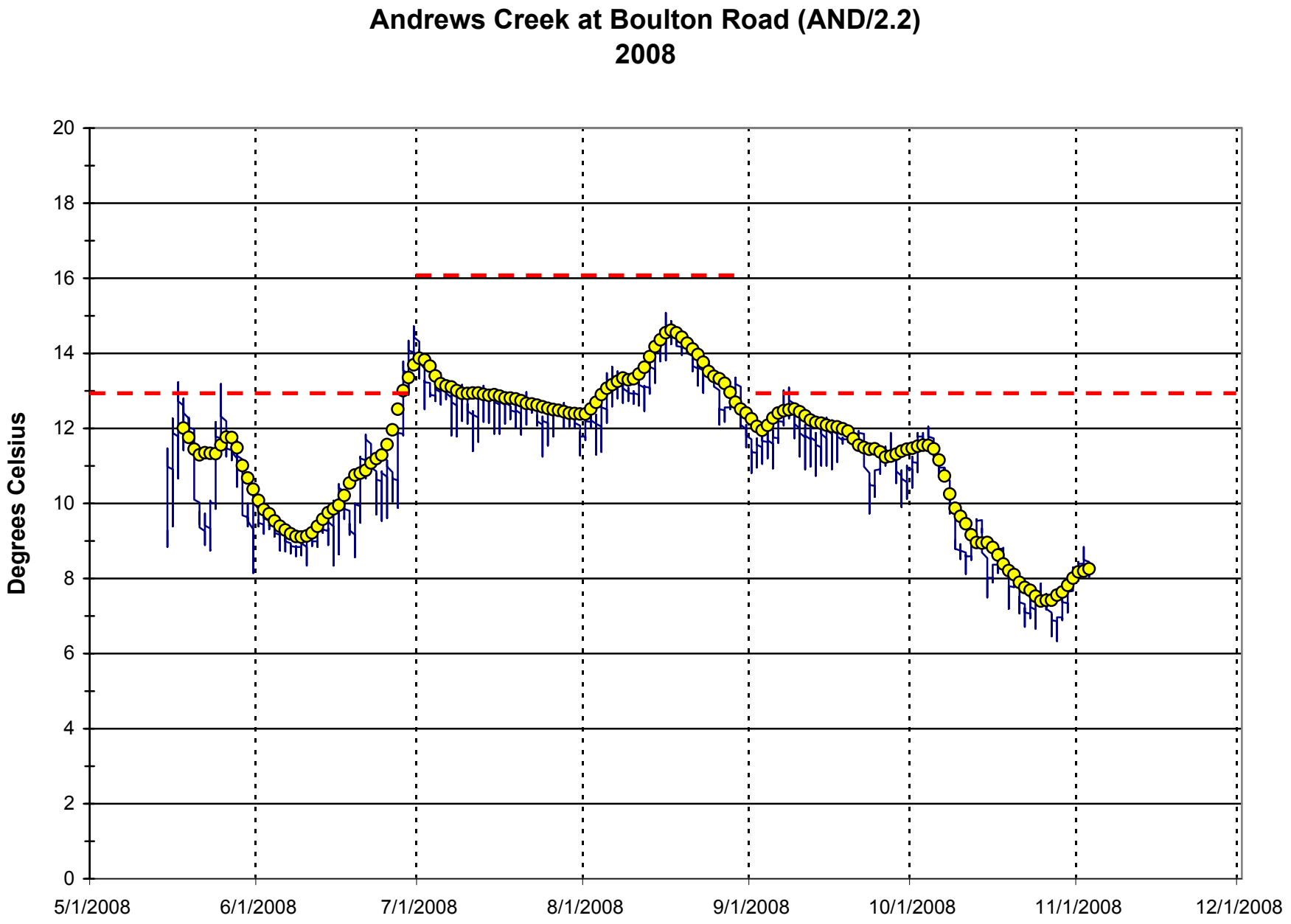

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station AND/2.2 on Andrews Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp

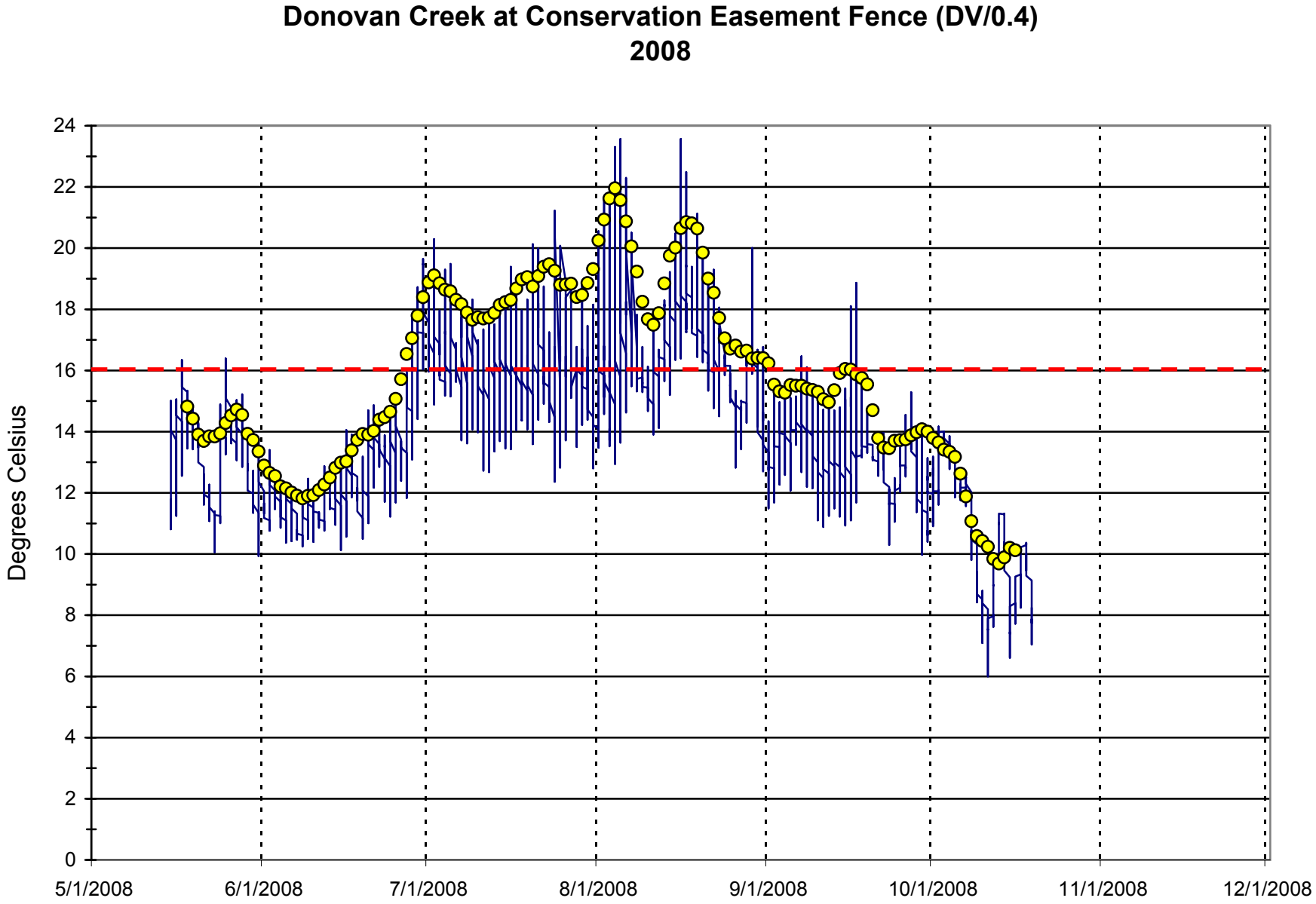

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station DV/0.4 on Donovan Creek in 2007. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data L

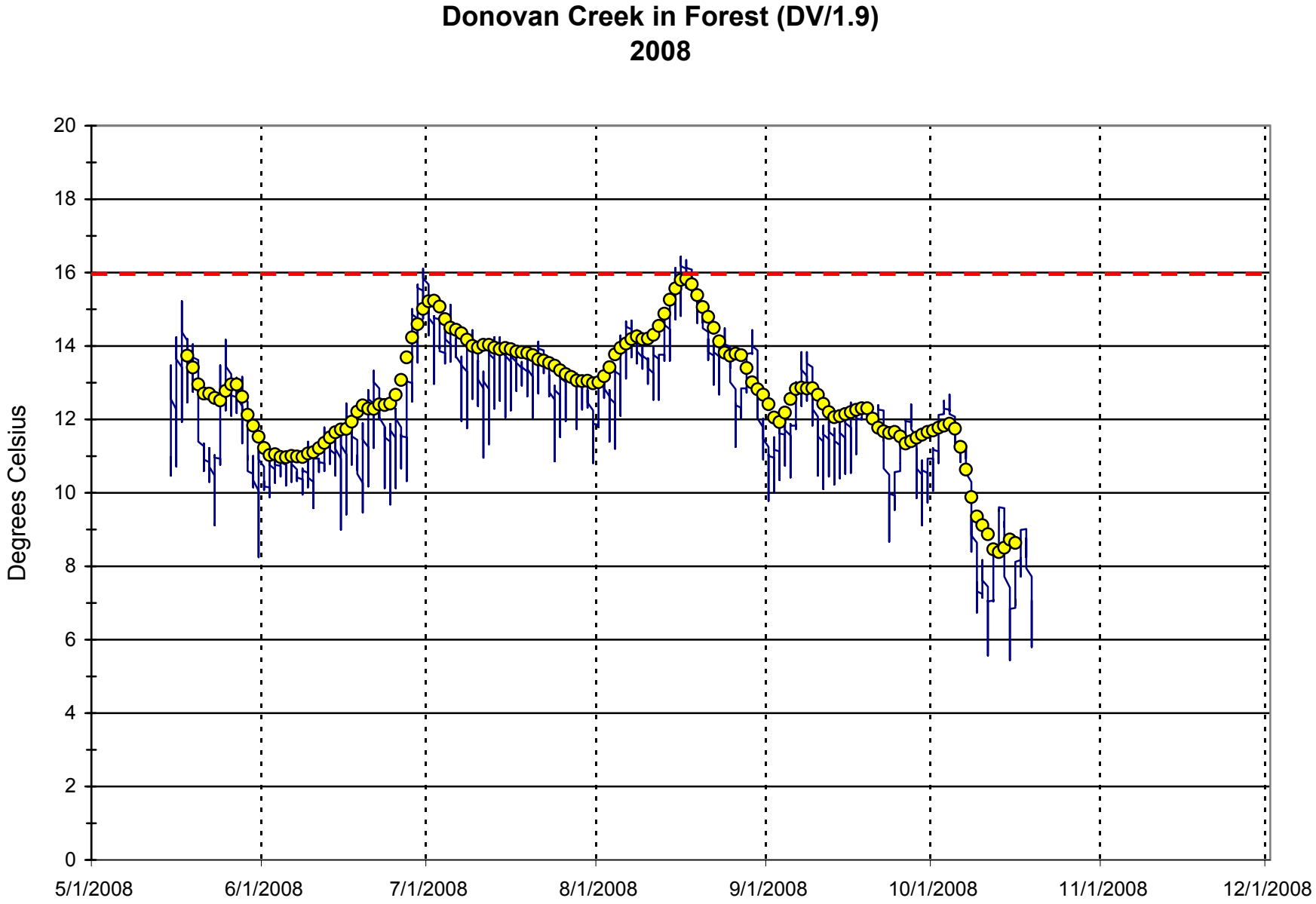

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station DV/1.9 on Donovan Creek in 2007. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data L

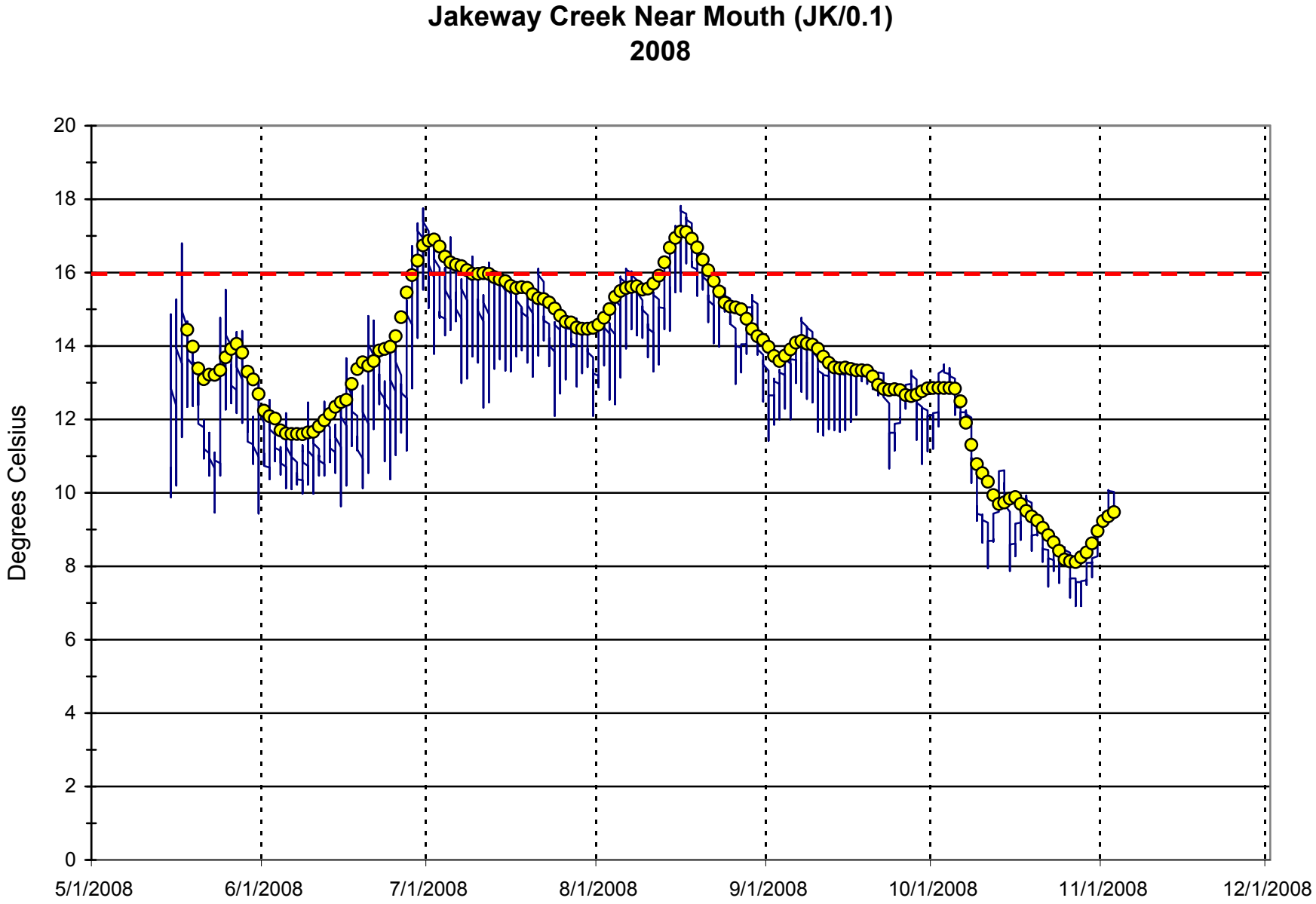

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station JK/0.1 on Jakeway Creek in 2007. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data L

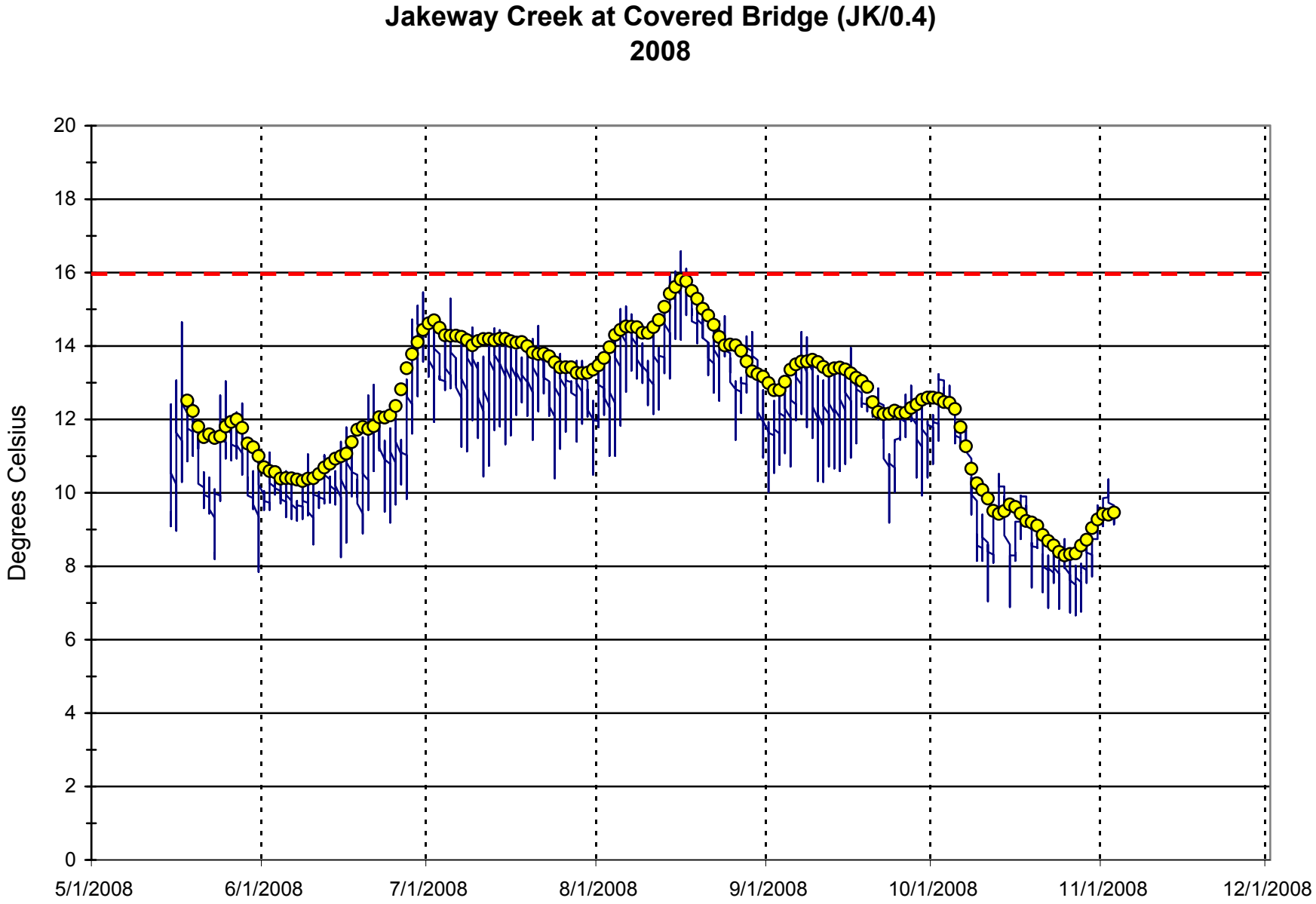

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station JK/0.4 on Jakeway Creek in 2007. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data L

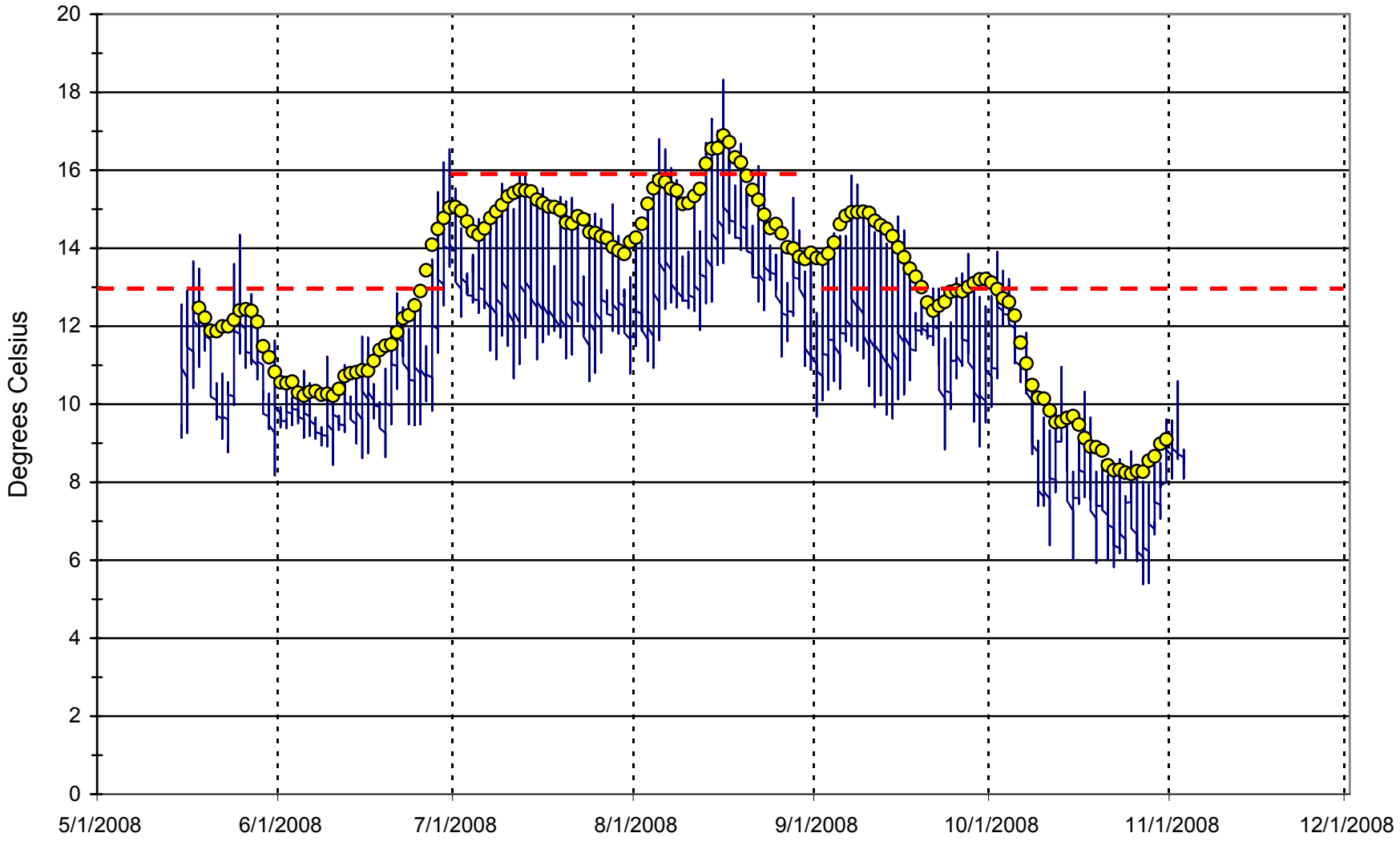

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station SA/0.15 on Salmon Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data L

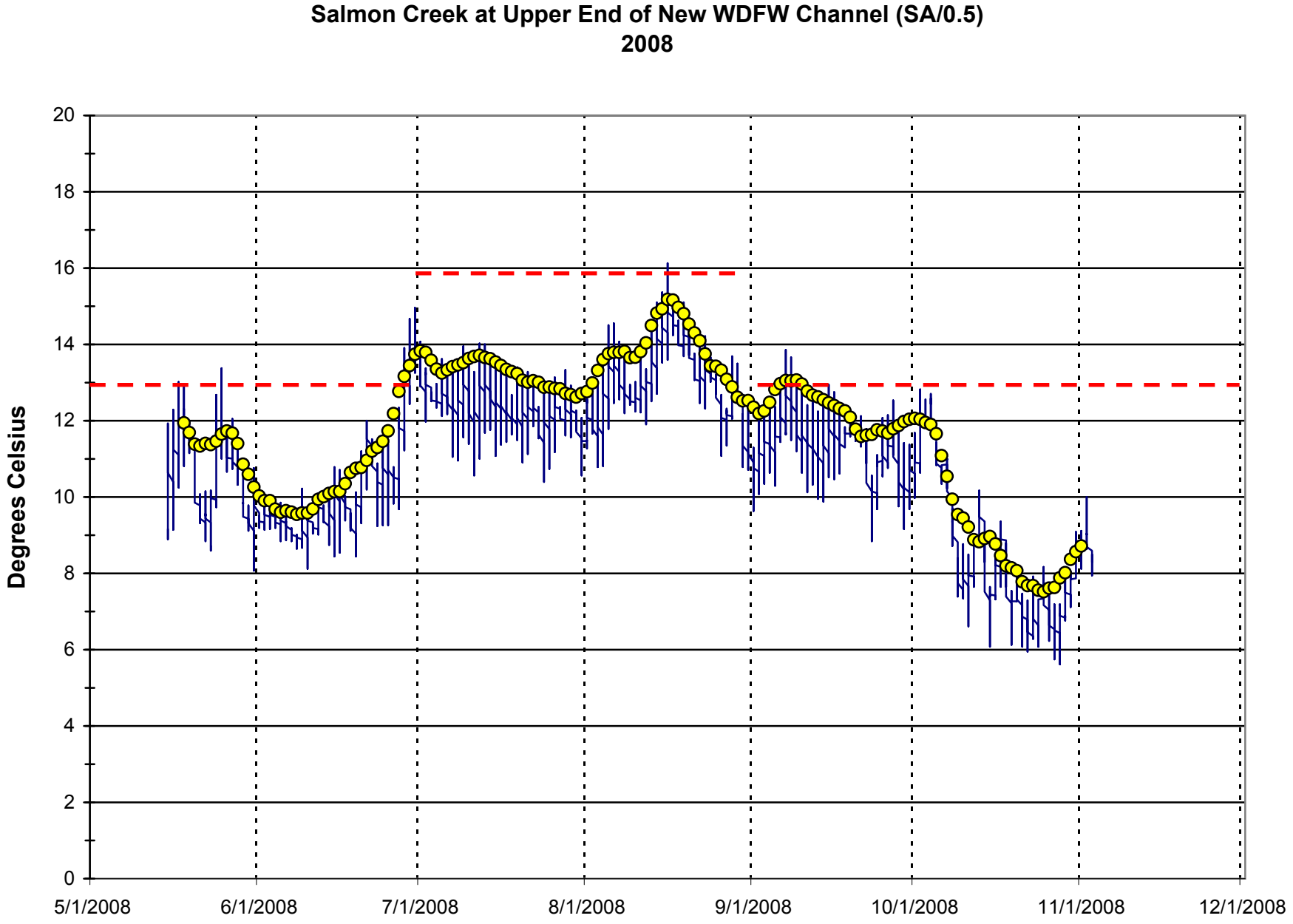

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station SA/0.5 on Salmon Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp 08

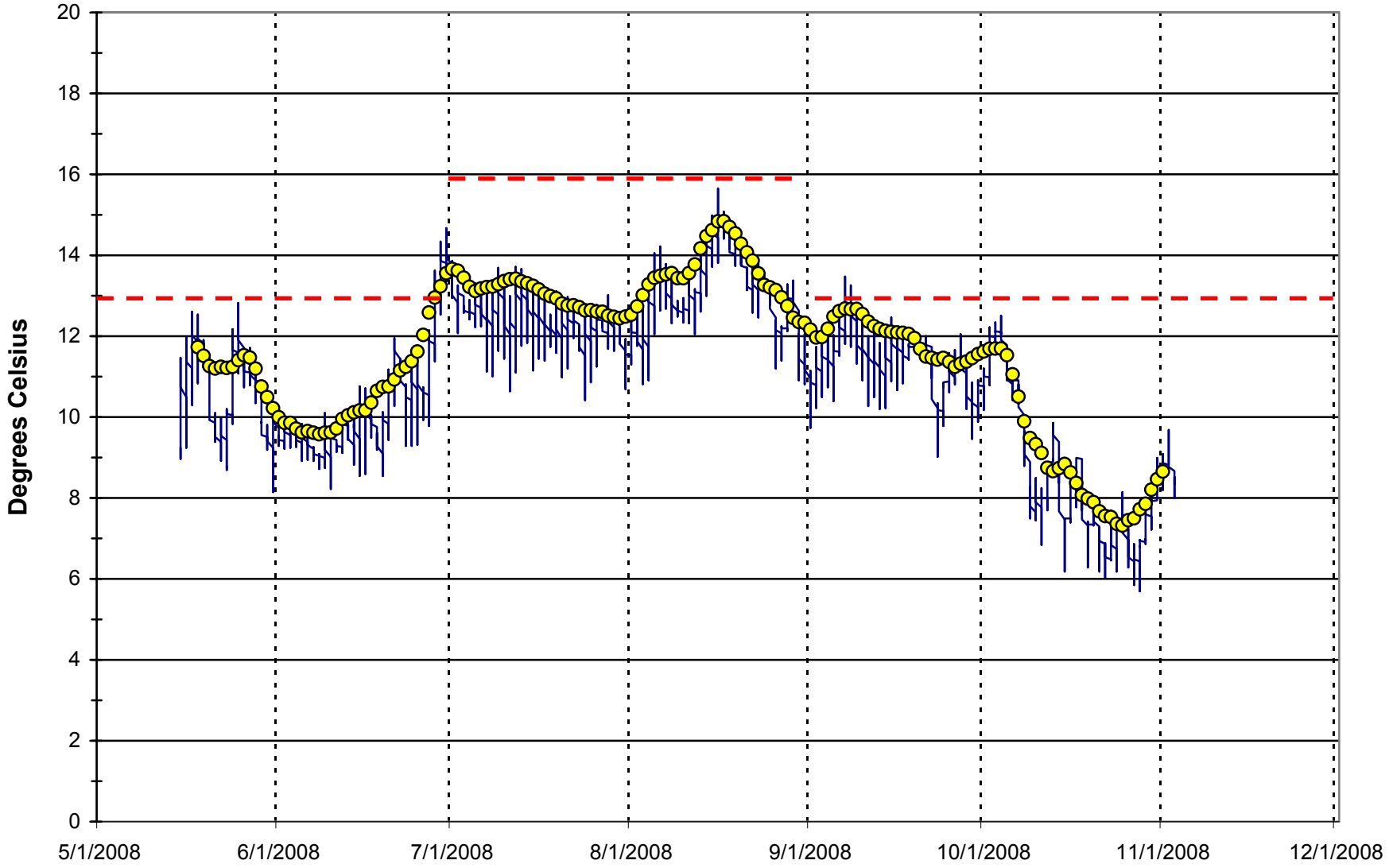

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station SA/0.7 on Salmon Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp 08

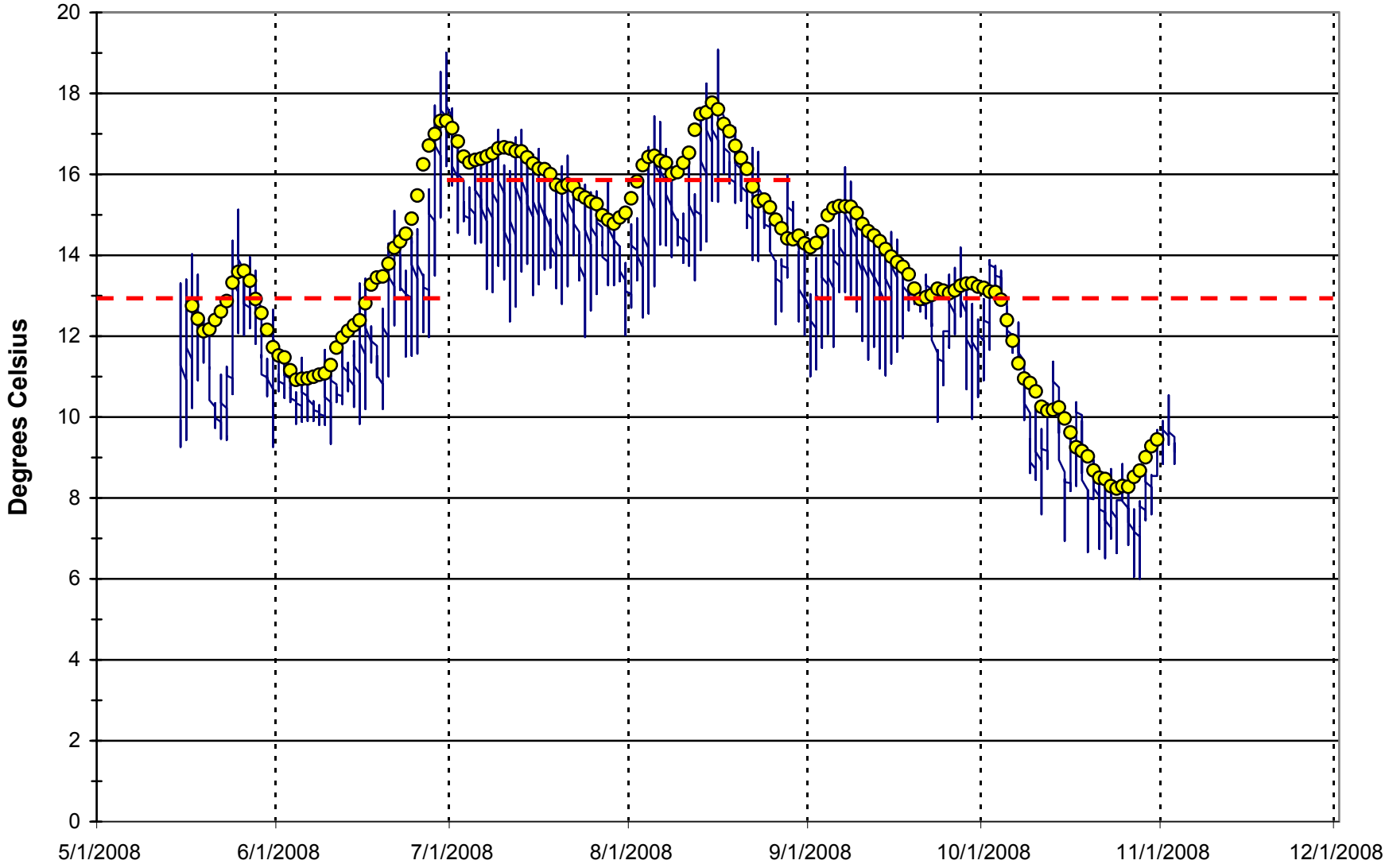

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station SN/0.2 on Snow Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp 08\E

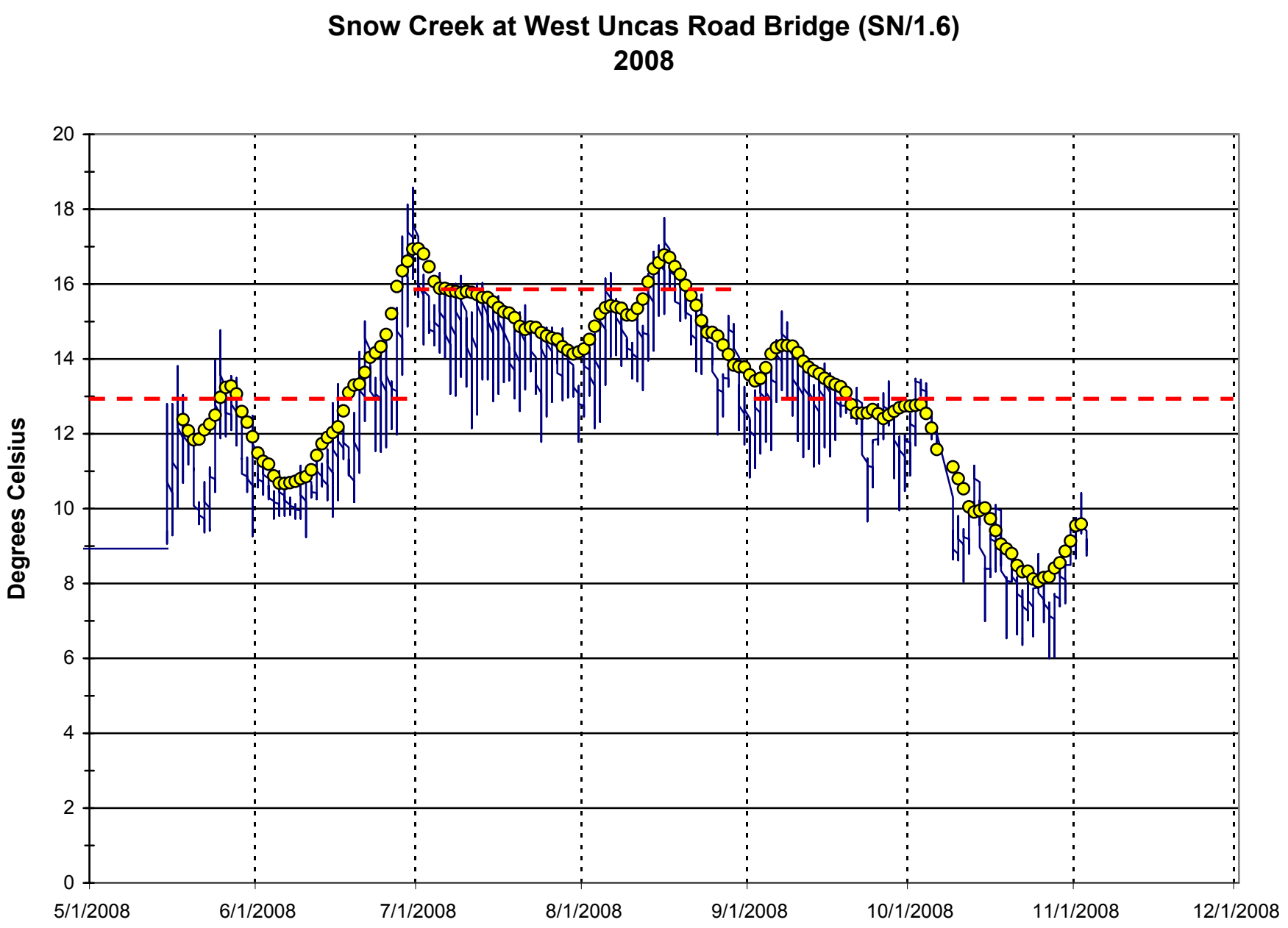

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station SN/1.6 on Snow Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp 08\E

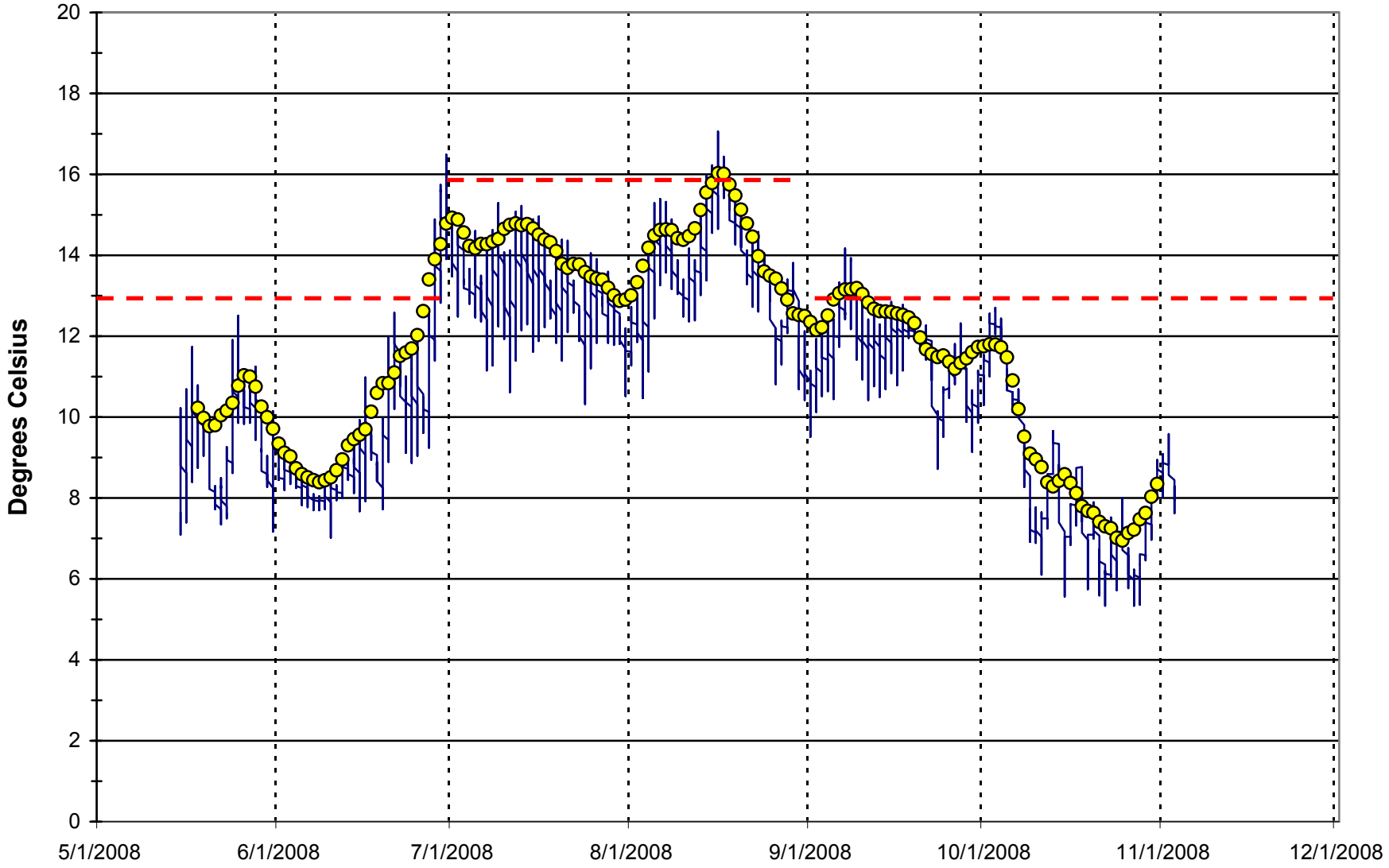

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station SN/4.4 on Snow Creek in 2008. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Loggers\Temp 08\E

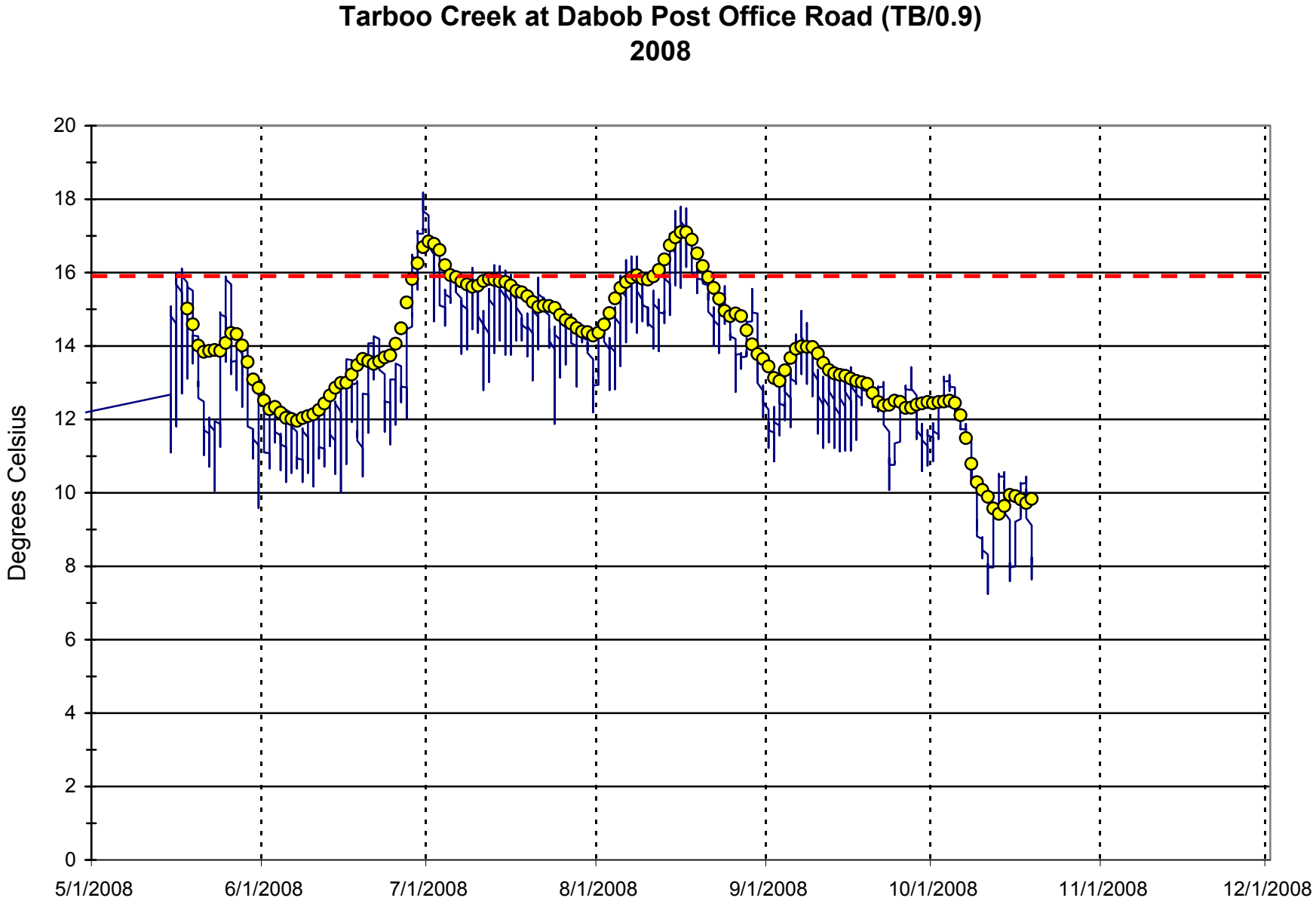

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station TB/0.9 on Tarboo Creek in 2007. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Lo

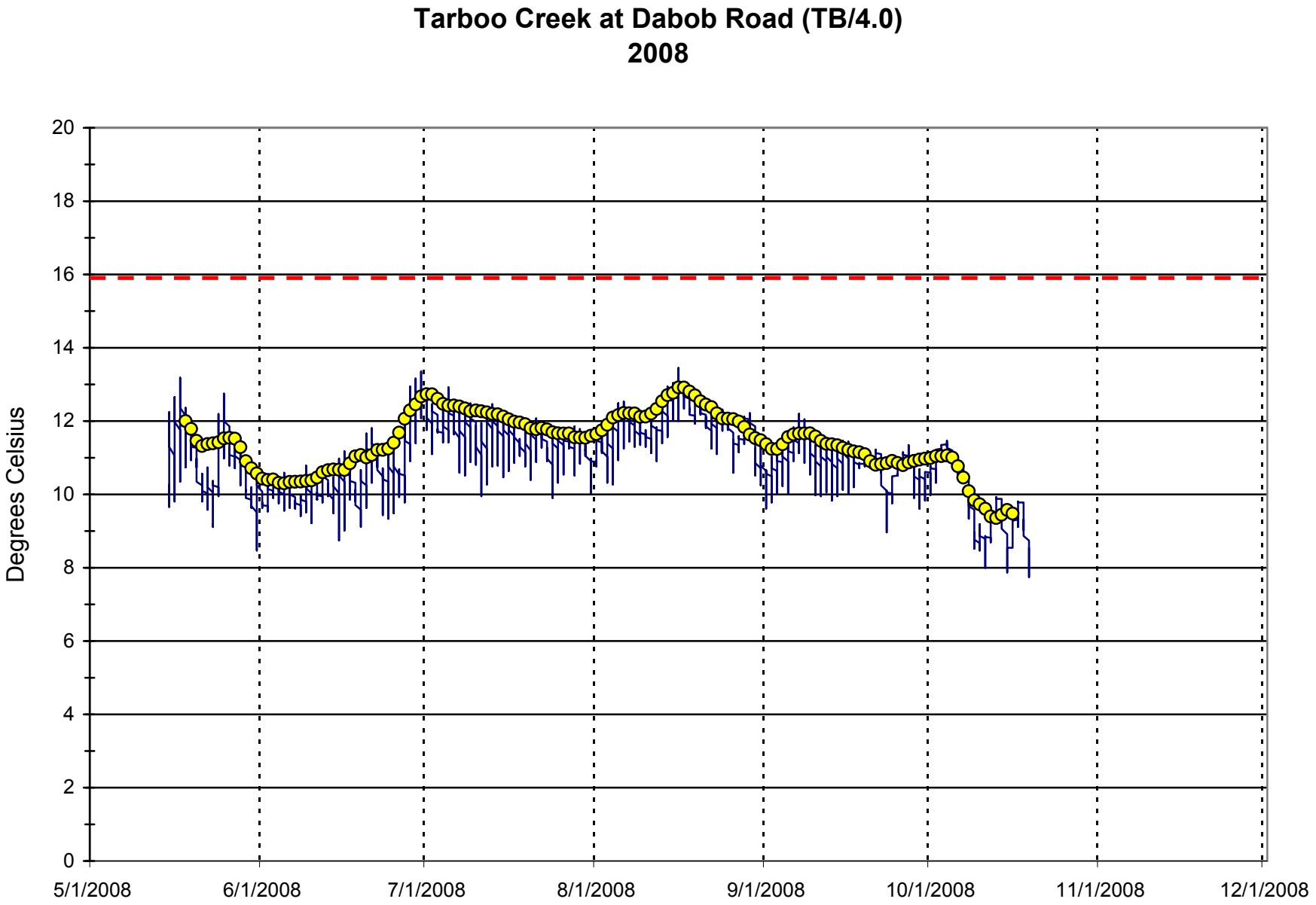

Figure . Hourly temperature profile with 7-day average daily maximum temperatures (7-DADMax; circles) occurring at station TB/4.0 on Tarboo Creek in 2007. Dashed line represents the state standard. M:\Water Quality\DATA\Temperature Data Lo

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
AND/0.8-1.5	1996	3	0.06	0.00	0.18	1.29	0.00	0.00	0.00	0.00	0.00	2.06	0.00
AND/0.8-1.5	1997	3	0.00	0.00	0.00	0.58	0.33	0.00	0.00	0.00	0.00	0.42	0.00
AND/0.8-1.5	1998	2	0.08	0.00	0.08	0.00	0.42	0.17	0.92	0.00	0.00	0.42	0.00
AND/0.8-1.5	1999	3	0.00	0.00	0.29	0.52	0.14	0.00	0.00	0.05	0.00	0.29	0.00
AND/0.8-1.5	2003	3	0.00	0.00	0.40	0.20	0.00	0.00	0.00	0.00	0.00	2.20	0.00
AND/0.8-1.5	2005	3	0.00	0.00	2.00	0.50	0.00	0.00	0.00	0.00	0.00	4.50	0.00
AND/0.8-1.5	2005	4	0.00	0.00	2.08	0.00	0.25	0.00	0.00	0.00	0.00	6.33	0.00
AND/0.8-1.5	2006	3	0.00	0.00	1.74	0.26	0.04	0.00	0.00	0.00	0.00	2.44	0.00
AND/0.8-1.5	2007	1	0.00	0.00	4.00	0.00	0.67	0.33	0.00	0.00	0.00	1.67	0.00
AND/0.8-1.5	2007	2	0.00	0.00	2.33	0.67	0.00	0.06	0.00	0.00	0.00	2.44	0.00
AND/0.8-1.5	2007	3	0.00	0.00	2.33	1.00	0.00	0.00	0.00	0.00	0.00	3.86	0.00
AND/1.6-2.0	1996	3	0.08	0.00	0.00	0.00	1.25	0.00	0.00	0.25	0.00	0.83	0.00
AND/1.6-2.0	1998	2	0.00	0.00	0.00	0.14	0.32	0.07	0.00	0.00	0.00	0.04	0.00
AND/1.6-2.0	1998	3	0.00	0.00	0.00	1.05	0.73	0.14	0.00	0.14	0.00	0.25	0.00
AND/1.6-2.0	1998	4	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
AND/1.6-2.0	1999	2	0.00	0.00	1.78	0.00	0.44	0.00	0.00	0.00	0.00	0.11	0.00
AND/1.6-2.0	1999	3	0.00	0.00	0.74	0.11	0.07	0.00	0.00	0.00	0.00	0.19	0.00
AND/1.6-2.0	2003	3	0.00	0.00	1.17	0.42	0.83	0.00	0.00	0.00	0.00	5.17	0.00
AND/1.6-2.0	2005	3	0.00	0.00	9.29	0.29	0.14	0.00	0.00	0.00	0.00	3.29	0.00
AND/1.6-2.0	2006	3	0.00	0.00	7.08	0.50	0.00	0.00	0.00	0.00	0.00	2.33	0.00
AND/2.2	1996	3	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
BH/0.0-0.1	1996	3	0.00	0.00	1.73	0.00	0.35	0.02	0.10	0.06	0.00	0.08	13.10
BI/0.0-0.2	2002	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BI/0.2-0.3	2001	4	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
BI/0.2-0.3	2002	3	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/1.8	2002	3	0.00	0.00	0.23	0.83	0.03	0.03	0.00	0.05	0.00	0.55	0.18
CH/1.9-2.0	1999	1	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.13	0.00	0.25	0.00
CH/1.9-2.0	1999	2	0.00	0.00	0.31	0.19	0.00	0.00	0.00	0.19	0.00	0.56	1.38
CH/1.9-2.0	1999	3	0.00	0.00	0.19	1.25	0.00	0.00	0.00	0.13	0.00	0.38	1.38
CH/1.9-2.0	1999	4	0.00	0.00	0.50	0.25	0.00	0.00	0.00	0.25	0.00	0.50	0.25
CH/1.9-2.0	2000	1	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13
CH/1.9-2.0	2000	2	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
CH/1.9DRB	1999	1	0.00	0.00	1.25	0.13	0.00	0.00	0.00	0.50	0.00	0.00	8.13
CH/1.9DRB	1999	2	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.69
CH/1.9DRB	1999	3	0.00	0.00	1.38	0.19	0.00	0.00	0.00	0.00	0.00	0.31	22.25
CH/1.9DRB	1999	4	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75
CH/1.9DRB	2000	1	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.63
CH/1.9DRB	2000	2	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.50
CH/10.0-10.6	2007	4	0.00	0.00	1.00	0.00	0.64	0.00	0.00	0.14	0.00	0.00	0.00
CH/11.6-11	2002	2	0.00	0.00	0.46	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00
CH/11.75-11.8	2002	2	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
CH/11.8-11.96	2002	2	0.00	0.00	0.00	0.00	0.06	0.00	0.94	0.00	0.00	0.00	0.00
CH/11.96-12.23	2002	2	0.00	0.00	0.19	0.00	0.19	0.00	3.05	0.00	0.00	0.00	0.00
CH/12.39-12.58	2002	2	0.00	0.00	5.77	0.00	0.00	0.00	1.38	0.00	0.00	0.00	0.00
CH/12.7-12.8	2002	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/12.8-13.05	2002	2	0.00	0.52	0.00	0.00	0.00	0.00	38.14	0.00	0.00	0.00	0.00
CH/2.47	1998	2	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.25	0.00	0.75	0.50
CH/2.8	1996	2	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	1.38	0.63
CH/2.8	1996	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/2.94-3.06	2001	2	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.25	0.00	1.00	0.00
CH/3.4-3.5	2002	2	0.00	0.00	2.33	0.17	0.83	0.00	0.00	0.17	0.00	0.17	2.50
CH/3.4-3.5	2002	3	0.00	0.00	0.37	0.85	0.31	0.00	0.00	0.10	0.00	0.24	0.80
CH/3.4-3.5	2003	1	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
CH/3.4-3.5	2003	2	0.00	0.00	1.50	0.33	0.00	0.00	0.00	0.33	0.00	0.67	1.33
CH/3.4-3.5	2003	3	0.00	0.00	0.00	1.56	0.11	0.00	0.00	0.00	0.00	0.22	0.11
CH/3.4-3.5	2003	4	0.00	0.00	0.18	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.09
CH/3.8-3.9	1996	2	0.00	0.00	0.00	0.00	1.39	0.00	0.00	0.00	0.00	0.00	6.06
CH/3.8-3.9	1996	3	0.00	0.00	0.00	0.50	0.17	0.00	0.00	0.00	0.00	0.00	4.67
CH/3.8-3.9	1996	4	0.00	0.00	0.33	1.28	0.03	0.00	0.00	0.00	0.00	0.08	2.53
CH/3.8-3.9	1997	1	0.00	0.00	0.11	0.33	0.06	0.00	0.22	0.00	0.00	0.00	1.78
CH/3.8-3.9	1997	2	0.00	0.00	0.29	1.32	0.64	0.00	0.04	0.04	0.00	0.11	8.57
CH/3.8-3.9	1997	3	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.33	8.83
CH/3.8-3.9	1997	4	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/3.8-3.9	1998	1	0.00	0.00	0.38	1.13	0.00	0.00	0.00	0.00	0.00	0.00	3.13
CH/3.8-3.9	1998	2	0.00	0.00	0.17	1.67	0.00	0.00	0.00	0.00	0.00	0.67	5.17
CH/3.8-3.9	1998	3	0.00	0.00	0.13	1.63	0.50	0.00	0.00	0.00	0.00	0.00	3.50
CH/3.8-3.9	1998	4	0.00	0.00	0.00	0.25	0.13	0.00	0.00	0.00	0.00	0.13	0.13
CH/3.8-3.9	1999	1	0.00	0.00	0.25	1.25	0.00	0.00	0.00	0.00	0.00	0.00	2.75
CH/3.8-3.9	1999	2	0.00	0.00	0.13	0.88	0.25	0.00	0.00	0.00	0.00	0.00	9.25
CH/3.8-3.9	1999	3	0.00	0.00	0.17	1.72	0.19	0.00	0.03	0.06	0.00	0.19	6.31
CH/3.8-3.9	1999	4	0.00	0.00	0.00	0.83	0.33	0.00	0.00	0.00	0.00	0.00	2.00
CH/3.8-3.9	2000	1	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.13	0.25
CH/3.8-3.9	2000	2	0.00	0.00	0.00	1.00	0.17	0.00	0.00	0.00	0.00	0.50	7.00
CH/3.8-3.9	2000	3	0.00	0.00	0.00	3.25	0.00	0.00	0.00	0.00	0.00	0.00	8.00
CH/3.8-3.9	2000	4	0.00	0.00	0.10	0.30	0.10	0.00	0.00	0.00	0.00	0.00	3.90
CH/3.8-3.9	2001	1	0.00	0.00	0.33	0.33	0.00	0.00	0.00	0.00	0.00	0.00	5.33
CH/3.8-3.9	2001	2	0.00	0.00	0.00	2.75	0.50	0.00	0.00	0.00	0.00	0.25	14.50
CH/3.8-3.9	2001	3	0.00	0.00	0.75	4.50	0.00	0.00	0.00	0.00	0.00	0.25	3.00
CH/3.8-3.9	2001	4	0.00	0.00	0.50	3.50	0.00	0.00	0.00	0.00	0.00	0.00	3.00
CH/3.8-3.9	2002	1	0.00	0.00	1.25	0.75	0.00	0.00	0.00	0.00	0.00	0.00	3.75
CH/3.8-3.9	2002	2	0.00	0.00	0.00	2.75	0.00	0.00	0.00	0.00	0.00	0.50	11.50
CH/3.8-3.9	2002	3	0.00	0.00	0.00	3.33	0.00	0.00	0.00	0.00	0.00	0.33	19.33

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
CH/3.8-3.9	2002	4	0.00	0.00	1.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	4.17
CH/3.8-3.9	2003	1	0.00	0.00	3.00	2.00	0.25	0.25	0.00	0.00	0.00	2.25	2.50
CH/3.8-3.9	2003	2	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.25
CH/3.8-3.9	2003	3	0.00	0.00	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.25	9.13
CH/3.8-3.9	2003	4	0.00	0.00	0.06	0.75	0.13	0.00	0.00	0.00	0.00	0.00	2.31
CH/3.8-3.9	2004	1	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
CH/3.8-3.9	2004	2	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	14.00
CH/3.9-4.0	1996	2	0.00	0.00	0.00	0.00	2.61	0.00	0.00	0.00	0.00	0.00	4.61
CH/3.9-4.0	1996	3	0.00	0.00	0.00	1.00	0.17	0.00	0.00	0.00	0.00	0.00	5.00
CH/3.9-4.0	1996	4	0.00	0.00	0.26	1.71	0.00	0.00	0.00	0.00	0.00	0.06	4.00
CH/3.9-4.0	1997	1	0.00	0.00	0.28	0.50	0.00	0.00	0.00	0.06	0.00	0.00	3.00
CH/3.9-4.0	1997	2	0.00	0.00	0.00	1.25	0.39	0.00	0.04	0.00	0.00	0.21	9.64
CH/3.9-4.0	1997	3	0.00	0.00	0.00	0.50	0.33	0.00	0.00	0.00	0.00	0.00	3.50
CH/3.9-4.0	1997	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/3.9-4.0	1998	1	0.00	0.00	0.00	2.00	0.13	0.00	0.00	0.00	0.00	0.25	11.50
CH/3.9-4.0	1998	2	0.00	0.00	1.00	2.50	0.33	0.00	0.00	0.00	0.00	0.00	16.50
CH/3.9-4.0	1998	3	0.00	0.00	0.00	1.80	0.80	0.00	0.00	0.00	0.00	0.10	4.90
CH/3.9-4.0	1998	4	0.00	0.00	0.00	2.86	0.14	0.00	0.00	0.00	0.00	0.00	2.14
CH/3.9-4.0	1999	1	0.00	0.00	0.50	0.50	0.25	0.00	0.00	0.00	0.00	0.00	6.75
CH/3.9-4.0	1999	2	0.00	0.00	0.00	3.30	0.50	0.00	0.00	0.00	0.00	0.30	9.40
CH/3.9-4.0	1999	3	0.00	0.00	0.17	2.50	0.17	0.00	0.00	0.17	0.00	0.17	3.67
CH/3.9-4.0	1999	4	0.00	0.00	0.33	1.50	0.83	0.00	0.00	0.00	0.00	0.17	1.67
CH/3.9-4.0	2000	1	0.00	0.00	0.25	0.00	0.13	0.00	0.00	0.00	0.00	0.00	1.38
CH/3.9-4.0	2000	2	0.00	0.00	0.83	3.83	1.17	0.00	0.00	0.00	0.00	0.33	5.17
CH/3.9-4.0	2000	3	0.00	0.00	0.00	2.75	0.75	0.00	0.00	0.00	0.00	0.00	1.75
CH/3.9-4.0	2000	4	0.00	0.00	0.30	1.00	1.00	0.00	0.00	0.00	0.00	0.10	4.80
CH/3.9-4.0	2001	1	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	10.50
CH/3.9-4.0	2001	2	0.00	0.00	0.00	3.00	0.25	0.00	0.00	0.00	0.00	0.50	15.00
CH/3.9-4.0	2001	3	0.00	0.00	0.50	5.50	0.25	0.00	0.00	0.00	0.25	0.00	4.00
CH/3.9-4.0	2001	4	0.00	0.00	1.00	2.00	0.50	0.00	0.00	0.00	0.00	0.50	4.50
CH/3.9-4.0	2002	1	0.00	0.00	0.25	1.50	0.00	0.00	0.00	0.00	0.00	0.25	6.50
CH/3.9-4.0	2002	2	0.00	0.00	0.00	3.00	0.75	0.00	0.00	0.00	0.00	0.75	5.00
CH/3.9-4.0	2002	3	0.00	0.00	0.67	7.17	0.50	0.00	0.00	0.00	0.00	0.83	14.17
CH/3.9-4.0	2002	4	0.00	0.00	0.83	1.17	0.33	0.00	0.00	0.00	0.00	0.50	1.67
CH/3.9-4.0	2003	1	0.00	0.00	1.75	3.00	0.00	0.00	0.00	0.00	0.00	0.25	2.00
CH/3.9-4.0	2003	2	0.00	0.00	0.25	0.75	0.50	0.00	0.00	0.00	0.00	0.25	5.00
CH/3.9-4.0	2003	3	0.00	0.00	0.38	2.50	0.63	0.00	0.00	0.00	0.00	0.38	12.25
CH/3.9-4.0	2003	4	0.00	0.00	0.31	0.63	0.38	0.00	0.00	0.00	0.00	0.06	2.56
CH/3.9-4.0	2004	1	0.00	0.00	1.50	3.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
CH/3.9-4.0	2004	2	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.50	17.50
CH/5.3-5.7	1996	3	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	17.00

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
CH/5.3-5.7	1997	1	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	3.10
CH/5.3-5.7	1997	2	0.00	0.00	0.12	1.32	0.26	0.00	0.03	0.00	0.09	0.38	14.62
CH/5.3-5.7	1997	3	0.00	0.00	0.00	0.80	0.07	0.00	0.00	0.00	0.00	0.80	19.40
CH/5.3-5.7	1997	4	0.00	0.00	0.20	0.73	0.13	0.00	0.00	0.00	0.00	0.33	5.60
CH/5.3-5.7	1999	3	0.00	0.00	0.07	0.40	0.00	0.00	0.00	0.00	0.00	0.17	9.70
CH/5.3-5.7	2009	1	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/5.70-5.73	1996	3	0.00	0.00	0.14	0.29	0.29	0.00	0.00	0.00	0.00	0.14	10.29
CH/5.70-5.73	1997	1	0.00	0.00	0.40	0.50	0.10	0.00	0.00	0.00	0.00	0.20	2.90
CH/5.70-5.73	1997	2	0.00	0.00	0.04	0.96	0.13	0.00	0.00	0.00	0.00	0.38	13.83
CH/5.70-5.73	1997	3	0.00	0.00	0.10	0.90	0.20	0.00	0.00	0.00	0.00	0.30	12.00
CH/5.70-5.73	1997	4	0.00	0.00	0.40	0.60	0.30	0.00	0.00	0.00	0.00	0.20	2.70
CH/5.73-5.92	1996	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
CH/5.73-5.92	1997	1	0.00	0.00	0.30	0.60	0.20	0.00	0.00	0.00	0.00	0.10	6.60
CH/5.73-5.92	1997	2	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00	5.25
CH/5.98-5.99	1998	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00
CH/5.98-5.99	1998	4	0.00	0.00	0.58	0.38	0.08	0.00	0.00	0.04	0.00	0.21	4.33
CH/5.98-5.99	1999	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.92
CH/5.98-5.99	1999	2	0.00	0.00	0.50	0.08	0.08	0.00	0.00	0.00	0.00	0.08	24.33
CH/5.98-5.99	1999	3	0.00	0.00	1.13	0.37	0.03	0.00	0.00	0.00	0.00	0.07	19.43
CH/5.98-5.99	1999	4	0.00	0.00	2.75	0.08	0.00	0.00	0.00	0.00	0.00	0.00	2.58
CH/5.98-5.99	2000	1	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	4.29
CH/5.98-5.99	2000	2	0.00	0.00	0.26	0.87	0.17	0.00	0.00	0.00	0.00	0.04	18.09
CH/5.98-5.99	2000	3	0.00	0.00	0.50	0.30	0.10	0.00	0.00	0.00	0.00	0.00	20.40
CH/5.98-5.99	2001	3	0.00	0.00	3.38	0.94	0.19	0.00	0.00	0.00	0.00	1.00	133.88
CH/5.98-6.13	1996	3	0.00	0.00	0.07	0.79	0.93	0.00	0.00	0.07	0.00	0.07	0.07
CH/5.98-6.13	1996	4	0.00	0.00	0.75	0.63	0.25	0.00	0.00	0.25	0.00	0.13	0.13
CH/5.98-6.13	1997	1	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00
CH/5.99-6.10	1998	3	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.50	0.00	0.00	1.00
CH/5.99-6.10	1998	4	0.00	0.00	0.45	0.41	0.82	0.00	0.00	0.14	0.00	0.09	1.45
CH/5.99-6.10	1999	1	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.17	0.00	0.00	0.42
CH/5.99-6.10	1999	2	0.00	0.00	2.50	0.50	0.25	0.00	0.00	0.00	0.08	0.00	7.17
CH/5.99-6.10	1999	3	0.00	0.00	1.97	0.53	0.23	0.00	0.00	0.00	0.00	0.07	10.53
CH/5.99-6.10	1999	4	0.00	0.00	2.67	0.67	0.08	0.00	0.00	0.08	0.00	0.08	3.00
CH/5.99-6.10	2000	1	0.00	0.00	2.00	0.43	0.00	0.00	0.00	0.00	0.00	0.07	0.50
CH/5.99-6.10	2000	2	0.00	0.00	0.92	1.27	0.31	0.00	0.00	0.00	0.00	0.19	7.38
CH/5.99-6.10	2000	3	0.00	0.00	1.21	0.71	0.21	0.00	0.00	0.00	0.00	0.00	11.64
CH/5.99-6.10	2001	3	0.00	0.00	3.44	1.00	0.69	0.00	0.00	0.00	0.00	0.06	24.56
CH/5.99-6.10	2002	2	0.00	0.00	0.25	0.25	0.50	0.00	0.00	0.00	0.00	0.25	2.50
CH/5.99-6.10	2002	3	0.00	0.00	2.11	0.22	0.50	0.00	0.00	0.00	0.00	0.06	14.28
CH/5.99-6.10	2003	2	0.00	0.00	0.00	0.17	1.00	0.00	0.00	0.00	0.00	0.17	6.00
CH/5.99-6.10	2003	3	0.00	0.00	0.33	0.50	0.67	0.17	0.00	0.00	0.00	0.33	2.83

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
CH/5.99-6.10	2003	4	0.00	0.00	0.74	0.11	0.22	0.00	0.00	0.00	0.00	0.07	2.11
CH/6.10-6.13	1998	3	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/6.10-6.13	1998	4	0.00	0.00	0.77	1.05	0.36	0.00	0.00	0.09	0.00	0.00	0.32
CH/6.10-6.13	1999	1	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.80
CH/6.10-6.13	1999	2	0.00	0.00	0.08	0.50	0.92	0.00	0.00	0.17	0.00	0.17	0.58
CH/6.10-6.13	1999	3	0.00	0.00	0.30	1.23	0.20	0.00	0.00	0.17	0.07	0.20	0.87
CH/6.10-6.13	1999	4	0.00	0.00	2.64	0.55	0.00	0.00	0.00	0.00	0.00	0.00	1.00
CH/6.10-6.13	2000	1	0.00	0.00	3.86	0.57	0.57	0.00	0.00	0.14	0.00	0.07	0.57
CH/6.10-6.13	2000	2	0.00	0.00	1.26	0.61	0.48	0.00	0.00	0.17	0.00	0.17	2.96
CH/6.10-6.13	2000	3	0.00	0.00	0.50	0.14	0.21	0.00	0.00	0.00	0.00	0.14	4.21
CH/6.10-6.13	2001	3	0.00	0.00	0.38	0.63	1.38	0.00	0.00	0.00	0.00	0.06	1.69
CH/6.10-6.13	2002	2	0.00	0.00	0.50	2.00	1.75	0.00	0.00	0.00	0.00	0.00	8.75
CH/6.10-6.13	2002	3	0.00	0.00	2.06	0.56	0.22	0.00	0.00	0.00	0.00	0.22	7.83
CH/6.10-6.13	2003	2	0.00	0.00	0.33	1.00	0.00	0.00	0.00	0.00	0.00	0.17	5.83
CH/6.10-6.13	2003	3	0.00	0.00	0.48	0.45	0.06	0.00	0.00	0.00	0.00	0.18	6.70
CH/6.10-6.13	2003	4	0.00	0.00	1.36	0.22	0.14	0.00	0.00	0.00	0.00	0.03	1.97
CH/6.10-6.13	2004	1	0.00	0.00	1.50	0.17	0.06	0.00	0.00	0.00	0.00	0.00	1.92
CH/6.10-6.13	2004	2	0.00	0.00	0.33	0.44	0.11	0.04	0.00	0.00	0.00	0.15	9.37
CH/6.10-6.13	2004	3	0.00	0.00	0.48	0.56	0.11	0.00	0.00	0.00	0.00	0.11	8.81
CH/6.10-6.13	2006	2	0.00	0.00	0.47	1.33	0.07	0.00	0.00	0.00	0.00	0.33	13.20
CH/6.10-6.13	2006	3	0.00	0.00	0.83	0.83	0.17	0.00	0.00	0.00	0.00	0.17	31.00
CH/6.10-6.13	2007	2	0.00	0.00	0.28	0.44	0.00	0.00	0.00	0.25	0.00	0.06	15.06
CH/6.2-6.5	2000	3	0.00	0.00	0.05	0.35	0.35	0.00	0.00	0.25	0.00	0.10	0.05
CH/6.2-6.5	2001	1	0.00	0.00	0.60	0.00	0.55	0.00	0.00	0.00	0.00	0.05	0.00
CH/6.2-6.5	2001	2	0.00	0.00	0.83	1.94	1.14	0.00	0.00	0.00	0.00	0.03	0.03
CH/6.2-6.5	2001	3	0.00	0.00	0.71	1.25	2.04	0.00	0.00	0.00	0.00	0.08	0.25
CH/6.2-6.5	2002	2	0.00	0.00	0.17	0.67	3.00	0.00	0.00	0.17	0.00	0.33	0.50
CH/6.2-6.5	2002	3	0.00	0.00	0.36	0.64	0.70	0.03	0.00	0.03	0.00	0.15	0.12
CH/6.2-6.5	2002	4	0.00	0.00	0.41	0.26	0.31	0.00	0.00	0.03	0.00	0.03	0.10
CH/6.2-6.5	2003	1	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00
CH/6.2-6.5	2003	2	0.00	0.00	0.30	0.67	0.24	0.00	0.00	0.06	0.00	0.33	0.70
CH/6.2-6.5	2003	3	0.00	0.00	0.58	0.48	0.12	0.00	0.00	0.03	0.00	0.21	2.42
CH/6.2-6.5	2003	4	0.00	0.00	0.52	0.09	0.06	0.00	0.00	0.00	0.00	0.03	0.48
CH/6.2-6.5	2004	1	0.00	0.00	0.39	0.00	0.03	0.00	0.00	0.00	0.00	0.03	0.61
CH/6.2-6.5	2004	2	0.00	0.00	0.56	0.26	0.26	0.00	0.00	0.15	0.00	0.11	9.19
CH/6.2-6.5	2004	3	0.00	0.00	0.15	0.74	0.04	0.00	0.00	0.04	0.00	0.11	6.59
CH/7.0	2004	2	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.50
CH/7.0	2004	3	0.00	0.00	2.33	0.33	0.50	0.00	0.00	0.08	0.00	0.00	7.50
CH/7.3	2004	2	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
CH/7.3	2004	3	0.00	0.00	0.50	0.42	0.08	0.00	0.00	0.00	0.00	0.00	0.83
CH/7.8	2004	2	0.00	0.00	1.50	0.50	1.00	0.00	0.00	0.00	0.00	0.00	17.50

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
CH/7.8	2004	3	0.00	0.00	1.17	0.33	0.58	0.00	0.08	0.00	0.00	0.25	6.75
CH/8.98-9.20	1996	2	0.00	0.00	1.29	0.00	0.93	0.14	0.00	0.07	0.00	0.00	2.71
CH/8.98-9.20	1996	3	0.00	0.00	1.98	0.00	1.20	0.00	0.00	0.18	0.00	0.00	1.60
CH/8.98-9.20	1996	4	0.00	0.00	0.25	0.00	1.25	0.00	0.00	0.00	0.00	0.00	1.75
CH/8.98-9.20	2000	2	0.00	0.00	0.81	0.00	0.69	0.06	0.00	0.00	0.00	0.00	0.06
CH/8.98-9.20	2000	3	0.00	0.00	1.33	0.00	1.33	0.00	0.00	0.00	0.00	0.00	0.00
CH/8.98-9.20	2000	4	0.00	0.00	4.14	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00
CH/8.98-9.20	2001	1	0.00	0.00	2.72	0.17	0.61	0.00	0.00	0.00	0.00	0.00	0.00
CH/8.98-9.20	2001	2	0.00	0.00	0.58	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/8.98-9.20	2001	3	0.00	0.00	5.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50
CH/9.0 W	1998	3	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	2.33
CH/9.20-9.38	1996	2	0.00	0.00	0.71	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.79
CH/9.20-9.38	1996	3	0.00	0.00	5.00	0.00	0.38	0.00	0.00	0.12	0.00	0.00	0.42
CH/9.20-9.38	1996	4	0.00	0.00	16.67	0.00	2.67	0.17	0.00	0.17	0.00	0.00	0.00
CH/9.20-9.38	1998	2	0.00	0.00	2.00	0.00	2.80	0.00	0.00	0.20	0.00	0.00	0.00
CH/9.20-9.38	2000	2	0.00	0.00	0.44	0.00	0.75	0.25	0.00	0.06	0.00	0.00	0.00
CH/9.20-9.38	2000	3	0.00	0.00	0.83	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.20-9.38	2000	4	0.00	0.00	0.07	0.00	0.79	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.20-9.38	2001	1	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.20-9.38	2001	2	0.00	0.00	0.33	0.00	0.33	0.17	0.00	0.00	0.00	0.00	0.00
CH/9.20-9.38	2001	3	0.00	0.00	5.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.38-9.40	1996	2	0.00	0.00	0.14	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.38-9.40	1996	3	0.00	0.00	3.50	0.00	0.64	0.00	0.00	1.02	0.00	0.00	0.02
CH/9.38-9.40	1996	4	0.00	0.00	1.67	0.00	3.67	0.00	0.00	0.17	0.00	0.00	0.00
CH/9.38-9.40	2000	2	0.00	0.00	0.88	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.38-9.40	2000	3	0.00	0.00	0.67	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.38-9.40	2000	4	0.00	0.00	3.93	0.00	0.43	0.00	0.00	0.14	0.00	0.00	0.00
CH/9.38-9.40	2001	1	0.00	0.00	0.28	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.38-9.40	2001	2	0.00	0.00	0.25	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.38-9.40	2001	3	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.40-9.44	1996	2	0.00	0.00	1.57	0.00	1.86	0.00	0.00	0.14	0.00	0.00	0.00
CH/9.40-9.44	1996	3	0.00	0.00	5.46	0.00	0.78	0.00	0.00	0.46	0.00	0.00	0.00
CH/9.40-9.44	1996	4	0.00	0.00	7.67	0.00	1.83	0.00	0.00	1.00	0.00	0.00	0.00
CH/9.40-9.44	1999	2	0.00	0.00	6.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.40-9.44	2000	2	0.00	0.00	0.30	0.00	1.70	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.40-9.44	2000	3	0.00	0.00	2.33	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.40-9.44	2000	4	0.00	0.00	2.21	0.00	1.14	0.00	0.00	0.07	0.00	0.00	0.00
CH/9.40-9.44	2001	1	0.00	0.00	0.17	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.40-9.44	2001	2	0.00	0.00	0.25	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.40-9.44	2001	3	0.00	0.00	1.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.40-9.44	2002	2	0.00	0.00	7.55	0.00	1.41	0.00	0.00	0.00	0.00	0.00	0.00

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
CH/9.40-9.44	2008	3	0.00	0.00	5.60	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2006	2	0.00	0.00	1.22	0.03	1.67	0.03	0.00	0.08	0.00	0.00	0.00
CH/9.7-10.7	2006	3	0.00	0.00	2.42	0.06	1.06	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2006	4	0.00	0.07	0.70	0.00	0.41	0.00	0.00	0.04	0.00	0.00	0.00
CH/9.7-10.7	2007	1	0.00	0.00	0.83	0.22	0.17	0.00	0.00	0.06	0.00	0.00	0.00
CH/9.7-10.7	2007	2	0.00	0.00	1.10	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2007	3	0.00	0.00	1.33	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2007	4	0.00	0.00	1.54	0.00	0.62	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2008	1	0.00	0.00	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2008	2	0.00	0.00	1.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2008	3	0.00	0.00	5.06	0.00	0.90	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2008	4	0.00	0.00	4.67	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.00
CH/9.7-10.7	2009	1	0.00	0.00	2.25	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
DV/0.0-0.4	1996	2	0.00	11.33	1.67	0.17	4.17	0.00	0.00	5.33	0.00	1.67	0.00
DV/0.0-0.4	1996	3	0.00	0.00	1.92	0.08	0.00	0.00	0.00	5.00	0.00	1.83	0.00
DV/0.0-0.4	1996	4	0.00	0.00	0.50	0.75	0.00	0.00	0.00	2.00	0.00	1.50	0.00
DV/0.0-0.4	1997	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.33
DV/0.0-0.4	1997	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	2.50
DV/0.0-0.4	1998	4	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	2.00	1.20
DV/0.4-0.6	1996	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.25	0.00
DV/0.4-0.6	1996	3	0.00	0.00	0.56	0.13	0.00	0.00	0.00	3.38	0.00	1.88	0.00
DV/0.4-0.6	1997	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.00
DV/0.4-0.6	1997	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.50
DV/0.4-0.6	1998	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.50
DV/0.6-0.7	2007	1	0.00	0.00	0.68	0.00	0.11	0.00	3.34	0.00	0.00	0.09	2.77
DV/0.6-0.7	2007	2	0.00	0.00	0.15	0.03	0.15	0.00	1.55	0.23	0.00	0.18	9.13
DV/0.6-0.7	2007	3	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00	1.83
ECH/0.1	1996	2	0.00	0.00	0.31	0.19	0.69	0.00	0.00	0.00	0.00	0.13	0.13
ECH/0.1	1996	3	0.00	0.00	0.50	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00
ECH/0.50-0.52	2000	4	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.25	0.00	0.00	0.00
ECH/0.50-0.52	2001	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ECH/0.50-0.52	2001	3	0.00	0.00	0.18	0.88	0.41	0.00	0.00	0.06	0.00	0.35	0.24
ECH/0.50-0.52	2001	4	0.00	0.00	0.45	0.30	0.75	0.00	0.00	0.00	0.00	0.00	0.30
ECH/0.50-0.52	2004	3	0.00	0.00	0.13	0.38	1.63	0.00	0.00	0.75	0.00	0.25	10.63
ECH/0.65-0.74	1998	3	0.00	0.00	0.25	0.85	0.60	0.00	0.00	0.00	0.00	0.05	0.40
ECH/0.65-0.74	1998	4	0.00	0.00	0.77	0.83	0.97	0.00	0.00	0.00	0.00	0.00	0.00
ECH/0.65-0.74	1999	2	0.00	0.00	0.00	1.11	0.11	0.00	0.00	0.00	0.00	0.11	0.11
ECH/0.65-0.74	1999	3	0.00	0.00	0.24	0.64	0.31	0.00	0.00	0.00	0.00	0.05	0.10
ECH/0.65-0.74	1999	4	0.00	0.00	0.09	0.09	0.04	0.00	0.00	0.04	0.00	0.00	0.22
ECH/0.65-0.74	2000	1	0.00	0.00	0.11	0.11	0.04	0.00	0.00	0.00	0.00	0.00	0.25
ECH/0.65-0.74	2000	2	0.00	0.00	0.13	0.34	0.09	0.00	0.00	0.11	0.00	0.09	0.64

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
ECH/0.65-0.74	2000	3	0.00	0.00	0.04	0.24	0.00	0.00	0.00	0.08	0.00	0.04	0.84
ECH/0.65-0.74	2001	2	0.00	0.00	0.00	0.38	0.50	0.00	0.00	0.00	0.00	0.50	1.75
ECH/0.65-0.74	2001	3	0.00	0.00	0.36	0.84	0.28	0.00	0.00	0.00	0.00	0.52	1.60
ECH/0.65-0.74	2003	2	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.00	0.00	0.33	1.17
ECH/0.65-0.74	2003	3	0.00	0.00	0.00	1.17	1.83	0.00	0.00	0.00	0.00	0.33	0.33
ECH/0.65-0.74	2003	4	0.00	0.00	0.22	0.26	0.19	0.00	0.00	0.00	0.00	0.19	0.22
ECH/0.65-0.74	2005	2	0.00	0.00	0.00	0.13	0.38	0.00	0.00	0.00	0.00	0.00	13.25
ECH/0.65-0.74	2005	3	0.00	0.00	0.40	0.00	0.80	0.00	0.00	0.00	0.00	0.00	4.20
ECH/0.9-1.0	1998	3	0.00	0.00	0.11	0.67	0.50	0.06	0.00	0.17	0.00	0.00	0.83
ECH/0.9-1.0	2002	3	0.00	0.00	0.07	1.30	0.56	0.04	0.00	0.04	0.00	0.15	1.85
ECH/0.9-1.0	2002	4	0.00	0.00	0.00	0.47	0.13	0.00	0.00	0.60	0.00	0.00	0.20
ECH/0.9-1.0	2003	2	0.00	0.00	0.00	2.63	0.50	0.00	0.00	0.06	0.00	0.38	0.81
ECH/0.9-1.0	2003	3	0.00	0.00	0.50	2.50	1.42	0.00	0.00	0.00	0.00	0.50	0.17
ECH/0.9-1.0	2003	4	0.00	0.00	0.35	0.15	0.23	0.00	0.00	0.00	0.00	0.04	0.88
ECH/0.9-1.0	2005	2	0.00	0.00	0.00	0.57	1.14	0.00	0.00	0.00	0.00	0.00	7.29
ECH/0.9-1.0	2005	3	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	2.60
ECH/0.9-1.0	2006	3	0.00	0.00	0.17	0.83	0.00	0.03	0.00	0.07	0.00	0.14	3.24
ECH/0.9-1.0	1998	3	0.00	0.00	0.06	1.94	1.39	0.00	0.00	0.06	0.00	0.00	4.56
ECH/0.9-1.0	1999	2	0.00	0.00	0.00	0.17	0.33	0.00	0.00	0.00	0.00	0.00	0.33
ECH/0.9-1.0	1999	3	0.00	0.00	0.03	1.30	0.43	0.00	0.00	0.00	0.00	0.00	0.47
ECH/0.9-1.0	1999	4	0.00	0.00	0.02	0.21	0.17	0.00	0.00	0.02	0.00	0.00	0.02
ECH/0.9-1.0	2000	1	0.00	0.00	0.06	0.11	0.03	0.00	0.00	0.00	0.00	0.00	0.06
ECH/0.9-1.0	2000	2	0.00	0.00	0.05	0.51	0.51	0.00	0.00	0.02	0.00	0.05	1.53
ECH/0.9-1.0	2000	3	0.00	0.00	0.00	0.50	0.38	0.00	0.00	0.00	0.03	0.10	2.90
ECH/0.9-1.0	2000	4	0.00	0.00	0.14	0.14	0.66	0.00	0.00	0.04	0.00	0.04	0.90
ECH/0.9-1.0	2001	1	0.00	0.00	0.03	0.00	0.31	0.00	0.00	0.00	0.00	0.08	0.72
ECH/0.9-1.0	2001	2	0.00	0.00	0.08	0.26	0.31	0.00	0.00	0.00	0.00	0.13	2.87
ECH/0.9-1.0	2001	3	0.00	0.00	0.38	2.00	0.54	0.00	0.00	0.00	0.00	0.41	11.92
ECH/0.9-1.0	2001	4	0.00	0.00	0.06	0.33	0.42	0.00	0.00	0.00	0.00	0.06	2.15
ECH/0.9-1.0	2002	1	0.00	0.00	0.03	0.15	0.23	0.00	0.00	0.00	0.00	0.00	0.59
ECH/0.9-1.0	2002	2	0.00	0.00	0.05	0.52	0.43	0.00	0.00	0.00	0.00	0.24	1.90
ECH/0.9-1.0	2002	3	0.00	0.00	0.06	1.03	0.25	0.00	0.00	0.00	0.00	0.61	4.47
ECH/0.9-1.0	2002	4	0.00	0.00	0.17	2.13	0.50	0.03	0.00	0.00	0.00	0.33	1.07
ECH/0.9-1.0	2003	1	0.00	0.00	0.07	0.41	0.11	0.00	0.00	0.00	0.00	0.07	0.59
ECH/0.9-1.0	2003	3	0.00	0.00	0.00	1.12	0.32	0.00	0.00	0.00	0.00	0.12	9.64
ECH/0.9-1.0	2005	1	0.00	0.00	0.61	0.14	0.08	0.00	0.03	0.00	0.00	0.03	7.47
ECH/0.9-1.0	2005	2	0.00	0.00	0.20	0.23	0.00	0.00	0.00	0.00	0.00	0.05	19.23
ECH/0.9-1.0	2005	3	0.00	0.00	0.28	0.40	0.38	0.00	0.00	0.00	0.00	0.08	20.15
ECH/0.9-1.0	2005	4	0.00	0.00	0.34	0.37	0.23	0.03	0.00	0.00	0.00	0.00	6.06
ECH/0.9-1.0	2006	1	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	10.00
ECH/0.9-1.0	2006	2	0.00	0.00	0.15	0.63	0.10	0.00	0.00	0.00	0.00	0.03	16.60

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
ECH/0.9-1.0	2006	3	0.00	0.00	0.71	0.85	0.32	0.03	0.00	0.03	0.00	0.12	12.38
ECH/0.9-1.0	2008	2	0.00	0.00	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.20	5.00
ECH/0.9-1.0	2009	1	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.00
ECH/1.24-1.33	1998	3	0.00	0.00	0.15	2.15	2.10	0.00	0.00	0.00	0.00	0.20	3.05
ECH/1.24-1.33	1999	2	0.00	0.00	0.25	0.75	0.75	0.00	0.00	0.00	0.00	0.00	1.25
ECH/1.24-1.33	1999	3	0.00	0.00	0.00	0.56	0.33	0.07	0.00	0.00	0.00	0.04	0.22
ECH/1.24-1.33	2001	2	0.00	0.00	1.00	0.50	2.00	0.00	0.00	0.00	0.00	0.10	2.20
ECH/1.24-1.33	2001	3	0.00	0.00	0.27	0.95	1.64	0.00	0.00	0.00	0.00	0.05	0.59
ECH/1.24-1.33	2003	3	0.00	0.00	0.04	1.85	0.78	0.00	0.00	0.00	0.00	0.59	1.74
ECH/1.24-1.33	2004	2	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.00
ECH/1.24-1.33	2004	3	0.00	0.00	0.40	0.40	0.10	0.00	0.00	0.00	0.00	0.10	8.20
ECH/1.24-1.33	2005	2	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.13	13.75
ECH/1.24-1.33	2005	3	0.00	0.00	0.83	1.33	0.00	0.00	0.00	0.00	0.00	0.00	5.00
ECH/1.3	2004	3	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
ECH/1.7	2004	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ECH/1.77-1.86	1998	3	0.00	0.00	0.00	3.80	0.25	0.00	0.00	0.00	0.00	0.00	15.60
ECH/1.77-1.86	1999	2	0.00	0.00	0.00	0.17	0.67	0.00	0.00	0.00	0.00	0.00	15.67
ECH/1.77-1.86	1999	3	0.00	0.00	0.08	0.88	0.50	0.04	0.00	0.00	0.00	0.00	8.08
ECH/1.77-1.86	2001	2	0.00	0.00	0.20	0.70	2.50	0.00	0.00	0.00	0.00	0.20	25.80
ECH/1.77-1.86	2001	3	0.00	0.00	0.14	0.55	1.00	0.00	0.00	0.00	0.00	0.05	4.95
ECH/1.77-1.86	2003	3	0.00	0.00	0.00	1.15	0.22	0.00	0.00	0.00	0.00	0.15	9.44
ECH/1.77-1.86	2004	2	0.00	0.00	1.00	0.50	0.00	0.50	0.00	0.00	0.00	0.00	0.50
ECH/1.77-1.86	2004	3	0.00	0.00	0.60	0.10	0.80	0.00	0.00	0.00	0.00	0.00	7.20
ECH/1.77-1.86	2005	2	0.00	0.00	0.33	0.11	0.11	0.00	0.00	0.00	0.00	0.00	39.44
ECH/1.77-1.86	2005	3	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.80
ECH/1.86-2.16	2003	3	0.00	0.00	0.08	0.42	0.08	0.00	0.00	0.00	0.00	0.00	8.25
ECH/1.86-2.16	2005	2	0.50	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00	1.25	20.75
ECH/1.86-2.16	2005	3	0.00	0.00	0.33	0.00	0.67	0.00	0.00	0.17	0.00	0.00	10.33
ECH/2.19-2.21	1999	2	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.67
ECH/2.19-2.21	1999	3	0.00	0.00	0.08	0.88	1.28	0.04	0.00	0.12	0.00	0.00	0.32
ECH/2.19-2.21	2001	2	0.00	0.00	0.10	0.10	3.20	0.00	0.00	0.00	0.00	0.00	22.70
ECH/2.19-2.21	2001	3	0.00	0.00	0.23	0.95	1.77	0.00	0.00	0.00	0.00	0.09	0.91
ECH/2.78-2.80	1999	2	0.00	0.00	0.00	0.33	0.67	0.00	0.00	0.00	0.00	0.00	6.67
ECH/2.78-2.80	1999	3	0.00	0.00	0.11	0.26	0.41	0.11	0.04	0.00	0.00	0.00	0.81
ECH/2.78-2.80	2001	2	0.00	0.00	0.00	0.40	0.50	0.00	0.00	0.00	0.00	0.00	6.10
ECH/2.78-2.80	2001	3	0.00	0.00	0.05	0.95	0.45	0.00	0.00	0.00	0.00	0.10	1.35
ECH/2.78-2.80	2003	3	0.00	0.00	1.25	0.75	1.71	0.04	0.00	0.00	0.00	0.17	14.13
ECH/2.78-2.80	2004	2	0.00	0.00	0.50	0.00	0.50	0.00	0.00	0.00	0.00	0.00	29.50
ECH/2.78-2.80	2004	3	0.00	0.00	0.30	0.60	0.60	0.00	0.00	0.00	0.00	0.00	10.00
ECH/2.78-2.80	2005	2	0.00	0.00	1.14	0.14	0.14	0.00	0.00	0.00	0.00	0.00	12.29
ECH/2.78-2.80	2005	3	0.00	0.00	2.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	6.80

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
ECH/2.8	2004	3	0.00	0.00	1.00	0.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00
ECH/3.1-3.3	2003	4	0.00	0.00	0.86	0.00	0.46	0.00	0.00	0.00	0.00	0.00	2.54
ECH/3.1-3.3	2004	1	0.00	0.00	1.63	0.00	0.33	0.00	0.04	0.08	0.00	0.00	4.04
ECH/3.1-3.3	2007	3	0.00	0.00	0.44	0.33	3.11	0.00	0.00	0.56	0.00	0.11	29.11
ECH/3.43-3.49	2005	3	0.00	0.00	0.94	0.72	0.11	0.00	0.00	0.00	0.00	0.00	0.83
ECH/4.3-4.49	1998	2	0.00	0.00	0.08	0.33	0.17	0.08	0.00	0.17	0.00	0.00	2.33
ECH/4.3-4.49	1998	3	0.00	0.00	0.00	1.00	0.17	0.00	0.00	0.33	0.00	0.00	2.17
ECH/5.1-5.3	2001	3	0.00	0.00	1.33	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
ECH/5.1-5.3	2001	4	0.00	0.00	0.33	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
ECH/5.1-5.3	2002	3	0.00	0.00	4.14	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00
ECH/5.3-5.6	2001	3	0.00	0.00	0.29	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00
FO/0.0-0.8	2007	4	0.00	0.00	0.00	0.00	3.40	0.00	0.00	0.00	0.00	0.00	0.00
FO/0.0-0.8	2008	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FO/0.0-0.8	2008	2	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00
FO/0.0-0.8	2008	3	0.00	0.00	4.50	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00
FO/0.0-0.8	2008	4	0.00	0.00	4.57	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00
FO/0.0-0.8	2009	1	0.00	0.00	1.38	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
IN/0.00-0.15	2001	1	0.00	0.00	0.11	0.00	0.11	0.00	0.00	0.00	0.00	0.67	14.78
IN/0.00-0.15	2001	2	0.00	0.00	1.78	0.00	0.97	0.00	0.00	0.00	0.00	4.42	17.19
IN/0.00-0.15	2001	3	0.00	0.00	3.08	1.00	0.79	0.00	0.00	0.00	0.00	4.42	20.71
IN/0.15-0.20	2001	1	0.00	0.00	1.39	0.00	1.06	0.00	0.00	0.00	0.00	0.17	0.00
IN/0.15-0.20	2001	2	0.00	0.00	2.17	0.00	1.38	0.00	0.00	0.00	0.00	0.21	0.00
IN/0.15-0.20	2001	3	0.00	0.00	4.50	0.31	1.25	0.00	0.00	0.00	0.00	0.88	0.00
JK/0.0-0.1	1996	2	0.00	0.17	1.50	0.00	0.67	0.00	0.00	2.17	0.00	0.00	0.00
JK/0.0-0.1	1996	3	0.00	0.00	0.75	0.00	0.00	0.00	0.00	4.75	0.00	1.38	0.00
JK/0.0-0.1	1996	4	0.00	0.00	0.00	0.25	0.00	0.00	0.00	4.25	0.00	1.25	0.00
JK/0.0-0.1	1997	1	0.00	0.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.83
JK/0.0-0.1	1997	2	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JK/0.0-0.1	1998	4	0.00	0.00	2.08	0.00	0.08	0.00	0.00	0.00	0.00	0.08	2.67
JK/0.1-0.4	1996	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	0.50	0.00
JK/0.1-0.4	1996	3	0.00	0.00	0.58	0.17	0.00	0.00	0.00	2.58	0.00	1.58	0.00
JK/0.1-0.4	1997	1	0.00	0.00	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00
JK/0.1-0.4	1997	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JK/0.1-0.4	1998	4	0.00	0.00	2.25	0.00	0.50	0.00	0.00	0.00	0.00	0.38	14.13
JK/0.25P	1996	3	0.00	0.00	0.25	1.13	0.00	0.00	0.00	6.25	0.00	1.88	0.00
JK/0.25P	1997	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
JK/0.25P	1997	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
LD/0.0-0.2	1996	2	0.06	0.00	0.22	0.00	0.28	0.00	0.00	0.00	0.00	3.50	0.00
LD/0.0-0.2	1996	3	0.00	0.00	0.14	0.14	0.00	0.00	0.00	0.00	0.00	8.00	0.00
LD/0.0-0.2	2002	2	0.00	0.00	0.00	0.50	2.00	0.00	0.00	0.00	0.00	1.00	0.00
LD/0.0-0.2	2002	3	0.00	0.00	0.67	0.33	0.50	0.00	0.00	0.00	0.00	0.83	0.00

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
LD/0.2-0.5	1996	2	0.11	0.00	0.00	0.00	1.67	0.00	0.00	0.03	0.00	0.00	0.03
LD/0.2-0.5	1996	3	0.00	0.00	0.00	0.56	1.50	0.00	0.00	0.00	0.00	0.00	0.00
LD/0.2-0.5	2000	2	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LD/0.2-0.5	2000	3	0.14	0.00	0.00	1.14	1.38	0.00	0.00	0.00	0.00	0.00	0.00
LD/0.5-1.0	1996	3	0.40	0.00	0.00	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00
LD/0.5-1.0	2002	2	0.00	0.00	0.00	0.50	2.00	0.00	0.00	1.00	0.00	0.00	0.00
LD/0.5-1.0	2002	3	0.00	0.00	0.00	0.33	1.67	0.00	0.00	0.00	0.00	0.00	0.00
LD/1.1 P	1998	2	0.00	0.00	0.00	0.00	0.00	0.00	80.00	0.00	0.00	0.00	0.00
LD/1.1-1.2	1998	2	0.00	0.00	0.00	0.00	4.60	0.00	0.00	0.00	0.00	0.00	0.00
LD/1.1-1.2	1998	3	0.00	0.00	0.00	0.00	3.78	0.00	0.11	0.00	0.00	0.00	0.00
LD/1.2-1.3	2002	2	0.00	0.00	0.00	0.00	3.50	0.00	0.00	0.00	0.00	0.00	0.00
LD/1.2-1.3	2002	3	0.00	0.00	0.00	0.00	3.67	0.00	0.00	0.00	0.00	0.00	0.00
NA/0.0-0.2	1996	3	0.00	0.00	5.00	0.75	3.50	0.25	0.00	0.00	0.00	0.00	21.50
NA/0.0-0.2	1997	1	0.00	0.00	0.40	0.00	0.40	0.00	0.00	0.10	0.00	0.00	11.30
NA/0.0-0.2	1997	2	0.00	0.00	0.56	1.59	0.24	0.00	0.00	0.00	0.00	0.03	26.47
NA/0.0-0.2	1997	3	0.00	0.00	0.78	2.61	0.72	0.00	0.00	0.44	0.00	0.00	28.39
NA/0.0-0.2	1997	4	0.00	0.00	0.47	0.33	0.73	0.00	0.00	0.00	0.00	0.00	5.87
NA/0.0-0.2	2009	1	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NA/0.5-0.7	1997	1	0.00	0.00	0.00	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00
NA/0.5-0.7	1997	2	0.00	0.00	0.50	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00
NA/0.5-0.7	1997	4	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NA/0.5P	1997	1	0.00	0.00	0.67	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00
NA/0.5P	1997	2	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
NA/0.5P	1997	4	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PE/0.28-0.	2006	2	0.00	0.00	9.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PE/0.28-0.	2006	3	0.00	0.00	5.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.0-0.1	1996	4	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.67
PU/0.0-0.1	1997	1	0.00	0.00	0.52	0.19	0.33	0.04	0.00	0.07	0.00	0.00	5.96
PU/0.0-0.1	1997	2	0.00	0.00	0.10	0.40	0.55	0.00	0.00	0.00	0.00	0.05	14.85
PU/0.0-0.1	1997	3	0.00	0.00	0.00	0.78	0.11	0.00	0.00	0.00	0.00	0.00	15.56
PU/0.0-0.1	1997	4	0.00	0.00	2.00	0.00	0.33	0.00	0.00	0.33	0.00	0.00	5.67
PU/0.0-0.1	1998	1	0.00	0.00	0.25	1.00	0.67	0.00	0.00	0.00	0.00	0.00	13.83
PU/0.0-0.1	1998	2	0.00	0.00	0.67	1.56	2.33	0.00	0.00	0.00	0.00	0.00	17.00
PU/0.0-0.3	1997	2	0.00	0.00	0.04	0.74	0.41	0.00	0.00	0.00	0.00	0.30	15.11
PU/0.0-0.3	1998	3	0.00	0.00	0.65	3.65	0.52	0.00	0.00	0.00	0.00	0.09	10.09
PU/0.0-0.3	1998	4	0.00	0.00	2.70	2.45	0.55	0.00	0.00	0.05	0.00	0.05	7.30
PU/0.0-0.3	1999	1	0.00	0.00	0.80	0.20	0.40	0.00	0.00	0.00	0.00	0.00	3.80
PU/0.0-0.3	1999	2	0.00	0.00	0.40	0.70	1.35	0.05	0.00	0.00	0.00	0.55	10.65
PU/0.0-0.3	1999	3	0.00	0.00	1.27	3.80	0.47	0.20	0.00	0.00	0.00	0.00	4.00
PU/0.0-0.3	1999	4	0.00	0.00	1.33	2.47	1.27	0.07	0.00	0.00	0.00	0.00	2.47
PU/0.0-0.3	2000	1	0.00	0.00	2.35	0.15	1.20	0.00	0.00	0.00	0.00	0.00	3.40

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
PU/0.0-0.3	2000	2	0.00	0.00	1.13	2.07	0.93	0.07	0.00	0.00	0.00	0.00	7.53
PU/0.0-0.3	2000	3	0.00	0.00	0.00	2.80	1.50	0.20	0.00	0.00	0.00	0.00	2.00
PU/0.0-0.3	2000	4	0.00	0.00	1.24	1.00	1.08	0.04	0.00	0.00	0.00	0.04	1.84
PU/0.0-0.3	2001	1	0.00	0.00	0.47	0.80	1.60	0.00	0.00	0.00	0.00	0.00	4.67
PU/0.0-0.3	2001	2	0.00	0.00	2.50	4.30	0.60	0.00	0.00	0.00	0.00	0.00	4.60
PU/0.0-0.3	2001	3	0.00	0.00	1.40	4.70	0.90	0.10	0.00	0.00	0.00	0.00	1.90
PU/0.0-0.3	2001	4	0.00	0.00	0.00	0.40	0.60	0.20	0.00	0.00	0.00	0.00	8.00
PU/0.0-0.3	2002	1	0.00	0.00	0.25	0.50	0.50	0.25	0.00	0.25	0.00	0.00	2.00
PU/0.0-0.3	2002	2	0.00	0.00	2.25	1.50	0.50	0.00	0.00	0.00	0.00	0.00	0.75
PU/0.0-0.3	2002	3	0.00	0.00	3.50	2.17	1.17	0.00	0.00	0.00	0.00	0.00	2.17
PU/0.0-0.3	2002	4	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	1.50
PU/0.0-0.3	2003	1	0.00	0.00	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.0-0.3	2003	2	0.00	0.00	0.17	0.33	0.17	0.17	0.00	0.00	0.00	0.00	3.00
PU/0.0-0.3	2003	3	0.00	0.00	2.25	2.50	0.13	0.00	0.00	0.00	0.00	0.13	6.00
PU/0.0-0.3	2003	4	0.00	0.00	1.25	1.00	0.31	0.00	0.00	0.00	0.00	0.00	1.56
PU/0.0-0.3	2004	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.50
PU/0.0-0.3	2004	2	0.00	0.00	0.00	1.00	1.50	2.00	0.00	0.00	0.00	0.00	4.00
PU/0.1-0.3	1997	2	0.00	0.00	0.00	0.55	0.55	0.00	0.00	0.00	0.00	0.00	7.91
PU/0.1-0.3	1997	3	0.00	0.00	0.00	0.33	0.50	0.00	0.00	0.17	0.00	0.00	7.00
PU/0.1-0.3	1997	4	0.00	0.00	0.50	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.1-0.3	1998	1	0.00	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	1.50
PU/0.1-0.3	1998	2	0.00	0.00	0.17	0.33	0.67	0.00	0.00	0.00	0.00	0.00	5.17
PU/0.38-0.40	1997	1	0.00	0.00	0.50	0.36	2.14	0.00	0.00	0.00	0.00	0.00	0.14
PU/0.38-0.40	1997	2	0.00	0.00	0.32	1.18	1.86	0.05	0.00	0.09	0.00	0.00	3.09
PU/0.38-0.40	1997	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
PU/0.38-0.40	1998	2	0.00	0.00	1.32	2.00	1.73	0.00	0.00	0.00	0.00	0.00	13.41
PU/0.38-0.40	1998	3	0.00	0.00	1.25	3.25	0.69	0.00	0.00	0.13	0.00	0.00	18.75
PU/0.38-0.40	1998	4	0.00	0.00	0.67	1.72	0.83	0.00	0.00	0.00	0.00	0.00	12.83
PU/0.38-0.40	1999	1	0.00	0.00	0.22	0.06	0.78	0.00	0.00	0.00	0.00	0.00	1.06
PU/0.38-0.40	1999	2	0.00	0.00	0.39	0.06	1.00	0.00	0.00	0.00	0.00	0.00	0.44
PU/0.38-0.40	1999	3	0.00	0.00	0.54	1.13	0.79	0.00	0.00	0.00	0.00	0.00	5.42
PU/0.38-0.40	1999	4	0.00	0.00	0.96	1.46	0.85	0.00	0.00	0.04	0.00	0.00	4.85
PU/0.38-0.40	2000	1	0.00	0.00	0.50	0.17	1.42	0.00	0.00	0.00	0.00	0.00	0.50
PU/0.38-0.40	2000	2	0.00	0.00	0.23	0.58	1.31	0.00	0.00	0.00	0.00	0.00	2.77
PU/0.38-0.40	2000	3	0.00	0.00	0.35	1.75	1.05	0.00	0.00	0.00	0.00	0.00	7.70
PU/0.38-0.40	2000	4	0.00	0.00	0.13	0.92	0.25	0.00	0.00	0.00	0.00	0.00	3.54
PU/0.38-0.40	2001	1	0.00	0.00	0.10	0.10	0.60	0.00	0.00	0.00	0.00	0.00	2.40
PU/0.38-0.40	2001	2	0.00	0.00	0.18	0.86	0.32	0.00	0.00	0.00	0.00	0.59	8.64
PU/0.38-0.40	2001	3	0.00	0.00	0.31	1.63	0.38	0.00	0.00	0.00	0.00	0.00	3.88
PU/0.38-0.40	2001	4	0.00	0.00	0.00	2.00	0.14	0.00	0.00	0.00	0.00	0.00	3.93
PU/0.38-0.40	2002	1	0.00	0.00	0.07	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.93

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
PU/0.38-0.40	2002	2	0.00	0.00	0.82	1.14	0.32	0.00	0.00	0.00	0.00	0.00	1.77
PU/0.38-0.40	2002	3	0.00	0.00	0.69	2.75	0.31	0.00	0.00	0.00	0.00	0.00	9.63
PU/0.40-0.50	1997	1	0.00	0.00	0.29	0.14	1.43	0.00	0.00	0.07	0.00	0.00	0.00
PU/0.40-0.50	1997	2	0.00	0.00	0.00	0.09	3.18	0.00	0.00	0.23	0.00	0.00	0.00
PU/0.40-0.50	1997	3	0.00	0.00	0.00	1.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	1998	2	0.00	0.00	0.41	0.27	2.91	0.00	0.00	0.00	0.00	0.00	0.36
PU/0.40-0.50	1998	3	0.00	0.00	0.38	0.38	1.13	0.06	0.00	0.00	0.00	0.00	1.19
PU/0.40-0.50	1998	4	0.00	0.00	0.39	0.39	1.39	0.00	0.00	0.00	0.00	0.00	0.28
PU/0.40-0.50	1999	1	0.00	0.00	0.39	0.11	0.89	0.00	0.00	0.00	0.00	0.00	0.22
PU/0.40-0.50	1999	2	0.00	0.00	0.94	0.06	1.22	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	1999	3	0.00	0.00	2.17	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	1999	4	0.00	0.00	1.65	0.15	0.42	0.00	0.00	0.00	0.00	0.00	0.69
PU/0.40-0.50	2000	1	0.00	0.00	1.50	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.08
PU/0.40-0.50	2000	2	0.00	0.00	0.80	0.12	1.40	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	2000	3	0.00	0.00	1.65	0.50	1.95	0.00	0.00	0.00	0.00	0.00	0.15
PU/0.40-0.50	2000	4	0.00	0.00	0.54	0.21	1.38	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	2001	1	0.00	0.00	0.20	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	2001	2	0.00	0.00	0.00	0.05	0.73	0.05	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	2001	3	0.00	0.00	0.00	0.06	0.75	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	2001	4	0.00	0.00	0.00	0.64	1.07	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	2002	1	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	2002	2	0.00	0.00	1.40	0.04	0.28	0.36	0.00	0.00	0.00	0.00	0.00
PU/0.40-0.50	2002	3	0.00	0.00	3.31	0.25	1.56	0.06	0.00	0.00	0.00	0.00	0.00
PU/0.40P	1997	1	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.57
PU/0.40P	1997	2	0.00	0.00	0.00	0.10	0.48	0.00	0.00	0.14	0.00	0.00	0.67
PU/0.40P	1997	3	0.00	0.00	0.00	2.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00
PU/0.40P	1998	2	0.00	0.00	0.09	0.45	1.82	0.00	0.00	0.00	0.00	0.00	4.86
PU/0.40P	1998	3	0.00	0.00	0.00	0.56	0.13	0.00	0.00	0.00	0.00	0.00	3.00
PU/0.40P	1998	4	0.00	0.00	0.11	0.22	1.22	0.00	0.00	0.00	0.00	0.00	3.00
PU/0.40P	1999	1	0.00	0.00	0.39	0.28	0.17	0.00	0.00	0.00	0.00	0.00	0.28
PU/0.40P	1999	2	0.00	0.00	0.06	0.00	0.53	0.00	0.00	0.00	0.00	0.00	3.53
PU/0.40P	1999	3	0.00	0.00	0.04	0.26	0.35	0.00	0.00	0.00	0.00	0.00	2.65
PU/0.40P	1999	4	0.00	0.00	0.80	0.12	0.44	0.00	0.00	0.00	0.00	0.00	3.08
PU/0.40P	2000	1	0.00	0.00	1.42	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.17
PU/0.40P	2000	2	0.00	0.00	0.27	0.15	0.88	0.00	0.04	0.00	0.00	0.00	1.65
PU/0.40P	2000	3	0.00	0.00	0.05	0.45	0.15	0.00	0.00	0.00	0.00	0.00	8.80
PU/0.40P	2000	4	0.00	0.00	0.00	0.21	0.50	0.00	0.00	0.00	0.00	0.00	2.42
PU/0.40P	2001	1	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.90
PU/0.40P	2001	2	0.00	0.00	0.00	0.09	0.32	0.00	0.00	0.00	0.00	0.00	12.09
PU/0.40P	2001	3	0.00	0.00	0.00	0.50	0.19	0.00	0.00	0.00	0.00	0.00	7.44
PU/0.40P	2001	4	0.00	0.00	0.00	0.50	0.21	0.00	0.00	0.00	0.00	0.00	1.29

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
PU/0.40P	2002	1	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	2.42
PU/0.40P	2002	2	0.00	0.00	0.09	0.27	0.32	0.00	0.00	0.00	0.00	0.00	7.82
PU/0.40P	2002	3	0.00	0.00	0.06	0.44	0.19	0.00	0.00	0.00	0.00	0.06	10.00
RA/0.00-0.01	1996	2	0.00	0.00	5.20	1.00	1.40	0.00	4.40	0.00	6.00	0.00	0.00
RA/0.00-0.01	1996	4	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
RA/0.00-0.01	1997	1	0.00	0.00	2.67	0.00	0.67	0.00	2.00	0.00	14.00	0.00	0.00
RA/0.00-0.01	1997	2	0.00	0.00	3.00	0.00	0.00	0.00	3.00	0.00	27.00	0.00	0.00
RA/0.00-0.01	1997	3	0.00	0.00	4.33	0.00	3.33	0.00	0.00	0.67	3.00	0.33	0.00
RA/0.00-0.01	1997	4	0.00	1.00	2.00	0.00	3.00	0.00	0.00	1.50	9.50	0.00	0.00
RA/0.01-0.02	1996	2	0.00	0.00	0.00	0.60	0.00	0.00	7.20	0.00	24.80	0.00	0.00
RA/0.02-0.10	1996	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RA/0.02-0.10	1996	4	0.00	0.00	0.00	0.20	0.00	0.00	0.60	0.00	0.40	0.00	0.00
RA/0.02-0.10	1997	1	0.00	0.00	0.00	0.33	0.67	0.00	1.00	0.00	2.33	0.00	0.00
RA/0.02-0.10	1997	2	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00
RA/0.02-0.10	1997	3	0.00	0.00	1.67	0.00	2.67	0.00	0.00	0.00	4.67	0.00	0.00
RA/0.02-0.10	1997	4	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	15.50	0.00	0.00
SA/0.1-0.5	2004	2	0.00	0.04	0.50	0.17	0.25	0.00	0.00	0.04	0.00	0.13	14.08
SA/0.1-0.5	2004	3	0.00	0.00	0.44	1.04	0.00	0.00	0.00	0.04	0.00	0.41	20.37
SA/0.1-0.5	2004	4	0.00	0.00	0.11	0.37	0.00	0.00	0.00	0.00	0.00	0.04	18.70
SA/0.1-0.5	2005	1	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.04	0.00	0.43	2.14
SA/0.1-0.5	2005	2	0.00	0.00	0.84	0.12	0.04	0.00	0.00	0.00	0.00	0.33	9.65
SA/0.1-0.5	2005	3	0.00	0.00	2.38	0.19	0.00	0.00	0.00	0.04	0.00	0.42	10.08
SA/0.1-0.5	2005	4	0.00	0.00	1.74	0.26	0.00	0.00	0.00	0.00	0.00	0.15	2.30
SA/0.1-0.5	2006	1	0.00	0.00	0.15	0.08	0.04	0.00	0.00	0.00	0.00	0.15	1.00
SA/0.1-0.5	2006	2	0.00	0.00	0.15	0.07	0.00	0.00	0.00	0.04	0.00	0.30	4.74
SA/0.1-0.5	2006	3	0.00	0.00	1.81	0.15	0.00	0.00	0.00	0.00	0.00	0.33	8.26
SA/0.1-0.5	2006	4	0.00	0.00	0.96	0.29	0.00	0.00	0.00	0.00	0.00	0.13	2.83
SA/0.1-0.5	2007	1	0.00	0.00	0.44	0.04	0.04	0.00	0.00	0.07	0.00	0.30	0.52
SA/0.1-0.5	2007	2	0.00	0.00	0.85	0.52	0.04	0.00	0.00	0.00	0.00	0.30	0.30
SA/0.1-0.5	2007	3	0.00	0.00	2.00	0.56	0.15	0.00	0.00	0.00	0.00	0.78	5.22
SA/0.1-0.5	2007	4	0.00	0.00	2.96	0.07	0.00	0.00	0.00	0.00	0.00	0.33	5.04
SA/0.1-0.5	2008	1	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.12	0.00	0.16	0.76
SA/0.1-0.5	2008	2	0.00	0.00	0.72	0.14	0.03	0.00	0.00	0.00	0.00	0.41	6.34
SA/0.1-0.5	2008	3	0.00	0.00	0.67	2.81	0.14	0.00	0.00	0.00	0.00	2.06	0.19
SA/0.1-0.5	2008	4	0.00	0.00	1.59	0.33	0.00	0.00	0.00	0.00	0.00	0.22	3.26
SA/0.1-0.5	2009	1	0.00	0.00	0.69	0.05	0.00	0.00	0.00	0.00	0.00	0.19	1.69
SA/0.5-0.6	2004	2	0.00	0.00	1.40	0.31	0.17	0.00	0.00	0.09	0.00	0.63	1.89
SA/0.5-0.6	2004	3	0.00	0.00	0.69	1.39	0.19	0.00	0.00	0.36	0.00	0.67	5.08
SA/0.5-0.6	2004	4	0.00	0.00	0.63	0.09	0.03	0.00	0.00	0.06	0.00	0.41	3.56
SA/0.5-0.6	2005	1	0.00	0.00	0.10	0.03	0.03	0.00	0.00	0.03	0.00	0.13	0.57
SA/0.5-0.6	2005	2	0.00	0.00	0.23	0.14	0.14	0.00	0.00	0.02	0.00	0.16	0.09

Table D-1. Average number of fish caught per trap setting at stations in eastern Jefferson County streams by station, year, and quarter.

Station	Year	Quarter	Brook Trout	Chum	Coho	Cray Fish	Cutthroat Trout	Lamprey	Newt	Rainbow Trout	Redside Shiner	Sculpin	Stickleback
SA/0.5-0.6	2005	3	0.00	0.00	1.00	0.88	0.08	0.00	0.00	0.00	0.00	0.42	0.85
SA/0.5-0.6	2005	4	0.00	0.00	2.26	0.30	0.00	0.00	0.00	0.07	0.00	0.26	0.15
SA/0.5-0.6	2006	1	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
SA/0.5-0.6	2006	2	0.00	0.00	0.00	0.23	0.35	0.00	0.00	0.00	0.00	0.31	0.04
SA/0.5-0.6	2006	3	0.00	0.00	0.63	3.48	0.04	0.00	0.00	0.00	0.00	1.26	0.15
SA/0.5-0.6	2006	4	0.00	0.00	1.43	0.52	0.05	0.00	0.00	0.00	0.00	0.52	0.14
SA/0.5-0.6	2007	1	0.00	0.00	0.59	0.04	0.00	0.00	0.00	0.00	0.00	0.26	0.19
SA/0.5-0.6	2007	2	0.00	0.00	0.74	0.07	0.04	0.00	0.00	0.00	0.00	0.22	3.70
SA/0.5-0.6	2007	3	0.00	0.00	2.00	1.19	0.00	0.00	0.00	0.00	0.00	0.52	1.26
SA/0.5-0.6	2007	4	0.00	0.00	2.85	0.48	0.04	0.00	0.00	0.00	0.00	0.52	0.04
SA/0.5-0.6	2008	1	0.00	0.05	0.48	0.10	0.00	0.00	0.00	0.05	0.00	0.38	0.00
SA/0.5-0.6	2008	2	0.00	0.00	0.33	0.50	0.07	0.00	0.00	0.00	0.00	0.13	0.27
SA/0.5-0.6	2008	3	0.00	0.00	1.83	0.56	0.06	0.00	0.00	0.00	0.00	0.69	1.72
SA/0.5-0.6	2008	4	0.00	0.00	2.19	0.42	0.00	0.00	0.00	0.00	0.00	0.42	0.08
SA/0.5-0.6	2009	1	0.00	0.00	1.14	0.05	0.00	0.00	0.00	0.00	0.00	0.07	0.00
SA/B-hditch	2005	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SN/0.1	1996	3	0.00	0.00	0.00	1.00	0.00	0.00	0.00	3.20	0.00	0.20	0.00
SN/6.3-6.5	2005	2	0.00	0.00	0.00	0.00	1.33	0.00	0.00	0.00	0.00	0.00	0.00
SW/0.39-0.52	1997	4	0.00	0.00	1.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
TB/2.90-3.05	1996	2	0.00	0.00	1.00	0.20	2.60	0.00	0.00	0.00	0.00	0.00	0.00
TB/2.90-3.05	1996	3	0.00	0.00	0.50	0.67	1.67	0.00	0.33	0.00	0.00	0.00	0.00
TB/2.90-3.05	1996	4	0.00	0.00	1.25	1.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00
TB/2.90-3.05	1997	1	0.00	0.00	3.00	0.33	3.00	0.00	0.67	0.00	0.67	0.00	0.00
TB/2.90-3.05	1997	2	0.00	0.00	7.00	0.00	2.00	0.00	0.00	0.00	4.00	0.00	0.00
TB/2.90-3.05	1996	2	0.00	0.00	0.40	0.20	1.80	0.00	0.00	0.00	0.00	0.00	0.00
TB/3.05-3.20	1996	3	0.00	0.00	1.00	2.17	2.17	0.00	0.00	0.00	0.00	0.17	0.00
TB/3.05-3.20	1996	4	0.00	0.00	0.50	0.75	0.50	0.00	0.00	0.00	0.00	0.00	0.00
TB/3.05-3.20	1997	3	0.00	0.00	1.67	0.00	2.00	0.00	0.00	0.33	2.33	0.00	0.00
TB/3.05-3.20	1997	4	0.00	0.00	2.50	0.00	3.00	0.00	0.00	0.50	0.00	0.00	0.00
TB/4.2-4.3	1999	2	0.00	0.00	0.17	0.00	0.05	0.00	0.00	0.02	0.00	0.00	0.00
UVD/0.0-0.1	2005	2	0.00	0.00	2.41	0.29	0.00	0.00	0.47	0.00	0.00	0.00	31.29
UVD/0.0-0.1	2005	3	0.00	0.00	6.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	21.67
YA/0.0-0.2	2001	1	0.00	0.00	0.08	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00
YA/0.0-0.2	2001	2	0.00	0.00	6.11	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00
YA/0.0-0.2	2001	3	0.00	0.00	34.44	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00

Table . Coordinates for the water quality (WQ) and temperature (T) data logger stations.

Station	Northing	Easting	Latitude	Longitude	Type
AND/0.0	351247.193	1137329.179	47.944530431	-122.886311932	T
AND/1.0	346095.990	1138315.681	47.930485889	-122.881728797	T
AND/1.6	345083.152	1137254.354	47.927632740	-122.885946376	T
AND/2.0	342476.332	1136829.575	47.920457815	-122.887394623	T
AND/2.2	341855.637	1135868.094	47.918686423	-122.891246793	T
BH/0.0	348539.293	1157976.277	47.938589235	-122.801804441	T
BH/1.0	344615.998	1157064.265	47.927772334	-122.805121122	T
CH/0.1	388829.859	1162590.522	48.049329534	-122.787156012	T
CH/1.1	386116.094	1163728.989	48.041969299	-122.782231313	T
CH/2.0	382379.459	1164728.432	48.031800197	-122.777756890	T
CH/2.8	378543.470	1166290.279	48.021395657	-122.770975709	T
CH/2.9	378371.990	1166276.791	48.020927546	-122.771013752	T
CH/3.9	372682.645	1165341.709	48.005266544	-122.774247445	T
CH/4.1	372057.892	1164909.763	48.003526646	-122.775945137	T
CH/4.5	370386.334	1165097.853	47.998958705	-122.775005568	T
CH/5.3	365879.191	1165143.732	47.986611012	-122.774359005	T
CH/6.1	361422.720	1164234.446	47.974331710	-122.777615612	T
CH/6.5	359984.173	1163829.973	47.970361301	-122.779117905	T
CH/6.7	358192.872	1164037.977	47.965466594	-122.778084268	T
CH/7.0	357413.636	1163413.129	47.963287757	-122.780553549	T
CH/7.8	354407.555	1160494.051	47.954848541	-122.792142895	T
CH/8.4	351564.303	1158460.032	47.946914318	-122.800144639	T
CH/9.0	348610.348	1158008.235	47.938785185	-122.801688680	T
CH/9.0	348629.360	1157841.176	47.938824967	-122.802361006	T
CH/9.4	348642.512	1155486.749	47.938696085	-122.811975797	T
CH/9.4	348649.515	1155370.098	47.938707057	-122.812452285	T
DV/0.4	309612.114	1142258.313	47.830785800	-122.861720240	T
DV/1.9	317393.334	1143212.407	47.852182254	-122.858680269	T
ECH/0.1	377926.547	1166547.686	48.019724424	-122.769856423	T
ECH/0.5	376078.921	1167383.010	48.014712630	-122.766257490	T
ECH/1.0	373793.632	1168239.344	48.008510883	-122.762536321	T
ECH/1.1	373665.098	1168229.350	48.008157944	-122.762563976	T
ECH/1.2	372930.703	1168530.261	48.006165981	-122.761259905	T
ECH/1.2	372913.945	1168496.692	48.006120092	-122.761386048	T
ECH/2.0	369942.940	1169301.553	47.998033006	-122.757795407	T
ECH/2.8	364223.287	1171865.463	47.982531069	-122.746755093	T
ECH/3.3	362123.502	1172377.993	47.976811393	-122.744450049	T
ECH/4.3	356789.761	1172965.538	47.962235500	-122.741503091	T
ECH/5.4	352366.978	1171736.833	47.950029335	-122.746077006	T
JK/0.1	309147.285	1143185.317	47.829582008	-122.857907092	T
JK/0.4	310769.221	1144156.087	47.834096869	-122.854129628	T
NA/0.2	365934.587	1163809.457	47.986667165	-122.779815974	T
NA/0.7	364071.614	1161821.143	47.981423511	-122.787739600	T
PU/0.0	372139.824	1164548.447	48.003723974	-122.777439281	T
PU/0.0	372147.597	1164835.515	48.003775695	-122.776255183	T
PU/0.4	372327.312	1162926.623	48.004125289	-122.784081592	T
PU/0.5	372214.665	1162626.687	48.003795731	-122.785294757	T
SA/0.1	366626.110	1136814.184	47.986637639	-122.890089351	T

Table . Coordinates for the water quality (WQ) and temperature (T) data logger stations.

Station	Northing	Easting	Latitude	Longitude	Type
SA/0.15	366648.772	1136653.106	47.986685442	-122.890738289	T
SA/0.5	365239.508	1136213.679	47.982795916	-122.892380001	T
SA/0.7	364390.348	1135129.379	47.980387081	-122.896722138	T
SN/0.2	366937.315	1137910.489	47.987570700	-122.885647986	T
SN/1.6	360091.393	1137970.039	47.968814269	-122.884659786	T
SN/4.4	349149.608	1136262.664	47.938704055	-122.890433271	T
TB/0.9	323432.642	1153354.286	47.869457361	-122.818020701	T
TB/2.6	333312.832	1152130.789	47.896447625	-122.824045170	T
TB/4.0	339872.344	1151865.270	47.914405213	-122.825819423	T
AND/0.0	351247.193	1137329.179	47.944530431	-122.886311932	WQ
AND/1.6	345083.152	1137254.354	47.927632740	-122.885946376	WQ
AND/1.71	344380.975	1137125.056	47.925699006	-122.886397184	WQ
AND/2.2	341855.637	1135868.094	47.918686423	-122.891246793	WQ
AND/3.8	341310.373	1128448.417	47.916644310	-122.921434324	WQ
BH/0.0	348601.428	1158028.721	47.938763449	-122.801596801	WQ
BH/1.0	344615.998	1157064.265	47.927772334	-122.805121122	WQ
BQ/0.64	305316.731	1139789.894	47.818838717	-122.871312739	WQ
BQ/2.8	302626.931	1130004.850	47.810750194	-122.910831291	WQ
CH/0.1	388978.197	1162860.782	48.049754717	-122.786075091	WQ
CH/1.1	386116.094	1163728.989	48.041969299	-122.782231313	WQ
CH/11.8	354879.051	1147826.291	47.955243060	-122.843882836	WQ
CH/12.5	357965.236	1147369.491	47.963667946	-122.846075818	WQ
CH/12.9	360241.968	1147207.163	47.969895629	-122.846981308	WQ
CH/2.0	381988.162	1165021.815	48.030746286	-122.776521937	WQ
CH/2.3	380682.115	1165345.986	48.027189475	-122.775062783	WQ
CH/3.0	377151.087	1165530.883	48.017525414	-122.773943534	WQ
CH/3.4	375056.123	1165283.293	48.011769914	-122.774730587	WQ
CH/3.9	372838.800	1165506.735	48.005705825	-122.773597973	WQ
CH/3.9	372839.355	1165499.327	48.005709971	-122.773610076	WQ
CH/4.1	372057.892	1164909.763	48.003526646	-122.775945137	WQ
CH/5.3	366110.610	1165167.543	47.987243587	-122.774290016	WQ
CH/5.3	366110.399	1165140.614	47.987249843	-122.774401692	WQ
CH/6.0	362360.905	1164970.221	47.976953754	-122.774709305	WQ
CH/6.2	360901.774	1164054.432	47.972891572	-122.778296555	WQ
CH/6.5	359984.173	1163829.973	47.970361301	-122.779117905	WQ
CH/6.7	358389.291	1163902.439	47.965995495	-122.778657613	WQ
CH/7.8	354485.937	1160556.818	47.955065625	-122.791904358	WQ
CH/8.4	351917.072	1158506.125	47.947886005	-122.799993464	WQ
CH/8.8	349241.850	1157979.645	47.940513827	-122.801871177	WQ
CH/9.0	348610.348	1158008.235	47.938785185	-122.801688680	WQ
CH/9.0	348628.168	1158024.730	47.938837853	-122.801611538	WQ
CH/9.3	348668.902	1155681.252	47.938782115	-122.811185296	WQ
DV/0.1	308660.893	1142952.719	47.828232272	-122.858801603	WQ
DV/0.4	310002.076	1142173.871	47.831851548	-122.862115187	WQ
DV/1.9	317393.334	1143212.407	47.852182254	-122.858680269	WQ
ECH/0.2	377958.686	1166556.232	48.019809456	-122.769838295	WQ
ECH/0.4	376859.732	1167057.512	48.016832304	-122.767677751	WQ
ECH/0.4	376907.696	1167035.532	48.016962796	-122.767760913	WQ

Table . Coordinates for the water quality (WQ) and temperature (T) data logger stations.

Station	Northing	Easting	Latitude	Longitude	Type
ECH/1.0	374094.601	1168089.444	48.009325397	-122.763179346	WQ
ECH/1.0	373793.632	1168239.344	48.008510883	-122.762536321	WQ
ECH/1.3	372775.376	1168564.604	48.005742659	-122.761103759	WQ
ECH/1.3	372786.508	1168552.306	48.005774526	-122.761145651	WQ
ECH/1.7	370217.534	1169013.743	47.998763619	-122.759008125	WQ
ECH/1.7	370217.071	1169014.994	47.998764584	-122.758995968	WQ
ECH/1.8	369849.468	1169101.984	47.997760971	-122.758610207	WQ
ECH/2.2	367499.735	1170483.754	47.991416032	-122.752728842	WQ
ECH/2.2	367323.676	1170575.089	47.990941952	-122.752328540	WQ
ECH/2.8	364223.287	1171865.463	47.982531069	-122.746755093	WQ
ECH/2.8	364289.814	1171866.728	47.982715634	-122.746747190	WQ
ECH/3.3	362123.502	1172377.993	47.976811393	-122.744450049	WQ
ECH/4.8	354209.319	1172980.008	47.955162992	-122.741191926	WQ
ECH/5.3	352358.096	1172043.517	47.950025881	-122.744825010	WQ
EG/0.0	351935.509	1158478.469	47.947934596	-122.800108201	WQ
EHO/0.0	363229.038	1133662.884	47.977096673	-122.902580307	WQ
EHO/0.2	362710.061	1133786.557	47.975683575	-122.902018602	WQ
HO/0.0	363848.258	1133857.385	47.978807928	-122.901854426	WQ
HO/0.02	363642.650	1133855.186	47.978244313	-122.901840839	WQ
HO/0.1	363180.455	1133558.754	47.976955860	-122.902999961	WQ
IN/0.2	301028.103	1139839.560	47.807089362	-122.870648580	WQ
JK/0.0	308836.866	1142881.202	47.828709367	-122.859111511	WQ
JK/0.1	309107.734	1143146.947	47.829470851	-122.858059013	WQ
JK/0.2	309779.072	1143467.600	47.831333772	-122.856825882	WQ
JK/0.24	309972.325	1143477.531	47.831864099	-122.856806147	WQ
JK/0.26	310036.637	1143508.525	47.832042581	-122.856686889	WQ
JK/0.3	310404.097	1143823.544	47.833072303	-122.855444070	WQ
JK/0.4	310769.221	1144156.087	47.834096869	-122.854129628	WQ
LA/0.3	366629.226	1135719.188	47.986565873	-122.894559582	WQ
LQ/0.8	309464.247	1138866.903	47.830137870	-122.875516256	WQ
NA/0.1	366100.408	1164630.927	47.987178507	-122.776479602	WQ
NA/0.7	364071.614	1161821.143	47.981423511	-122.787739600	WQ
NA/1.3	365258.088	1159319.722	47.984502633	-122.798064260	WQ
PU/0.0	372139.824	1164548.447	48.003723974	-122.777439281	WQ
PU/0.0	372147.597	1164835.515	48.003775695	-122.776255183	WQ
PU/0.4	372327.312	1162926.623	48.004125289	-122.784081592	WQ
SA/0.0	367464.939	1137028.203	47.988952062	-122.889307202	WQ
SA/0.1	366588.715	1136826.480	47.986536061	-122.890035074	WQ
SA/0.15	366648.772	1136653.106	47.986685442	-122.890738289	WQ
SA/0.4	365371.311	1136796.246	46.808329055	-122.390649536	WQ
SA/0.5	365239.508	1136213.679	47.982795916	-122.892380001	WQ
SA/0.7	364373.754	1135166.251	47.980344316	-122.896569824	WQ
SA/1.0	363959.082	1133833.125	47.979109845	-122.901965606	WQ
SN/0.2	367057.427	1137911.014	47.987899898	-122.885658924	WQ
SN/0.8	364676.884	1137647.703	47.981338965	-122.886372330	WQ
SN/1.6	360097.924	1137975.159	47.968832540	-122.884639605	WQ
SN/2.3	356917.999	1138196.448	47.960115543	-122.883348799	WQ
SN/3.5	351198.487	1137435.616	47.944404738	-122.885872495	WQ

Table . Coordinates for the water quality (WQ) and temperature (T) data logger stations.

Station	Northing	Easting	Latitude	Longitude	Type
SN/3.9	349942.900	1137262.343	47.940902498	-122.886497874	WQ
SN/4.4	349108.147	1136233.495	47.938588296	-122.890547712	WQ
SN/7.0	348818.432	1122206.424	47.936752240	-122.947720999	WQ
SW/0.0	352043.872	1173867.464	47.949291351	-122.737346707	WQ
TB/0.9	323432.642	1153354.286	47.869457361	-122.818020701	WQ
TB/2.4	332441.790	1152497.170	47.894086487	-122.822460365	WQ
TB/4.0	339872.344	1151865.270	47.914405213	-122.825819423	WQ
TUD/0.0	366654.889	1136649.602	47.986685442	-122.890738289	WQ
TUD/0.4	365834.564	1135676.101	47.984385192	-122.894651119	WQ
TUD/0.5	366093.029	1135354.240	47.985042614	-122.895968627	WQ
UVD/0.0	365375.525	1136809.081	47.983160458	-122.889928808	WQ
WV/0.1	352592.136	1158542.750	47.949781675	-122.800015416	WQ