

ORIGINAL



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June 14, 2005

The Secretary  
**Federal Energy Regulatory Commission**  
Mail Code: DHAC, PJ-12  
888 First Street, N.E.  
Washington, D.C. 20426

FILED  
OFFICE OF THE  
SECRETARY  
FEDERAL ENERGY  
REGULATORY COMMISSION  
2005 JUN 16 P 2:23

**RE: 2004 Water Quality Monitoring Data Final Report**  
Oconto Falls (Upper) Hydroelectric Project (FERC #2523) - 038

Dear Secretary:

Enclosed are the Final Report copies of the 2004 Water Quality Monitoring data compiled from impoundment and tailwater sampling performed during July 1 through September 30 of 2004 for the two Projects listed above. These reports were originally sent to the FERC Chicago Regional Office earlier this year in error.

Draft copies of these reports were sent to Mr. Larry Thompson - Staff Biologist, U.S. Fish and Wildlife Service and Mr. Jim Reybun - Water Quality Biologist, Wisconsin Department of Natural Resources on January 7, 2005 for solicited review per the approved Article 405 Water Quality Monitoring Plan for Oconto Falls (Upper) Hydroelectric Project (FERC #2523) and approved Article 404 Water Quality Monitoring Plan for Oconto Falls (Lower) Hydroelectric Project (FERC #2689).

We have incorporated Mr. Reybun's single comment request by adding into each report an aerial photo location map indicating the sampling locations of both studies.

No comments were received from Mr. Thompson for either of these report's draft copies.

If you have any questions regarding these reports, please feel free to contact me or Mr. Scott Klabunde at 920-293-4628.

Sincerely yours,  
**NORTH AMERICAN HYDRO, INC.**

A handwritten signature in black ink, appearing to read "Scott Klabunde".  
\_\_\_\_\_  
Charles Alsberg  
Executive Vice President

Enclosures: As indicated

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REGULATORY COMMISSION  
2005 JUN 16 P 2-24

## Final Report

### 2004 Water Quality Monitoring Data

for the

**Oconto Falls (Upper) Hydroelectric Project  
FERC Project #2523  
N.E.W. Hydro, Inc.**

**Oconto River, Oconto County, Wisconsin**

Respectfully Submitted by:

**North American Hydro Holdings, Inc.  
116 North State Street  
Neshkoro, Wisconsin 54960**

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## Summary

2004 marked the first session of water quality sampling under the FERC approved "Water Quality Monitoring Plan Per License Article 405 for the Oconto Falls (Upper) Hydroelectric Project – FERC Project # 2523 – N.E.W. Hydro, Inc."

FERC License Article 405 water quality sampling at the Oconto Falls (Upper) Hydroelectric Project is performed concurrently with nearly identical water quality sampling requirements at the Oconto Falls (Lower) Hydroelectric Project (FERC Project # 2689), which is located approximately 2000 feet downstream from the Oconto Falls (Upper) Hydroelectric Project. Sampling is performed once every 5 years for the duration of the FERC License.

Upstream (Impoundment) sampling consists of weekly vertical sampling of dissolved oxygen, temperature at 1-meter intervals and water clarity from a fixed location representative of the maximum depth in the impoundment. Downstream sampling consists of in-situ sampling for dissolved oxygen (D.O.), pH, specific conductivity and temperature, logged once every 15-minutes throughout the duration of the study at a fixed location in the Project's tailrace.

A preliminary reconnaissance was performed on June 30, 2004 to determine the most viable impoundment and tailrace sampling locations. A sonar grid search was preformed of the impoundment. Site selection was based on the following criteria: maximum depth vs safety, repeatability of relocating the site, and accessibility. The impoundment site selected is located immediately upstream of the eighth boat-barrier buoy from the powerhouse intake bays. This location is approximately 60 yards upstream and perpendicular to the center of the southernmost tainter gate. The maximum impoundment depth is located approximately 20 yards upstream from this tainter gate and is approximately 0.7 feet deeper than the selected site, however, the close proximity to functioning tainter gates and the mud bottom structure of the impoundment at this location prevents a safe sampling environment. Impoundment D.O., temperature and clarity sampling were performed following site selection. The tailrace site selected is located immediately upstream of the confluence of the turbine tailrace and the spillway tailrace approximately 4 feet from the south shoreline of the turbine tailrace. The location is on the ledge of a steep drop off. This location provides for evenly mixed water discharged from the turbines prior to downstream riffle effect aeration during low flow periods, easy access as well as relative isolation from public access. Following tailwater site selection, a Hydrolab Datasonde 3 sample logger was calibrated, activated and installed in a flow-through horizontal mount on the bottom of the tailrace at the site location.

Impoundment sampling conducted at roughly one week intervals resulted in 14 sampling events including the June 30 data. A calibrated YSI Model 51B portable D.O. meter and a 50 foot cabled 5739 probe with standard membrane was used for all D.O. sampling. A standard Secchi disk was used to determined water clarity. On July 29, 2004, D.O. was observed below the 5.0 mg/L Wisconsin minimum standard between 6.46 meters below the

surface and the bottom of the impoundment (7.78 meters). Additional D.O. and temperature samples were taken during this sampling event in order to better define the D.O. loss gradient. The Table 1 indicates the D.O./temperature/depth readings logged. This was the only instance in which D.O. was observed lower than the Wisconsin minimum standard during the 3-month sampling period.

**TABLE 1**  
**Oconto Falls (Upper) Hydroelectric Project**  
**July 29, 2004 Impoundment D.O. / Temperature Samples**

| Depth             | Dissolved Oxygen<br>(mg/L) | Temperature (°C) |
|-------------------|----------------------------|------------------|
| 100 mm            | 8.40                       | 24.3             |
| 1 meter           | 8.38                       | 24.3             |
| 2 meters          | 8.20                       | 24.1             |
| 3 meters          | 7.65                       | 23.4             |
| 4 meters          | 6.90                       | 22.5             |
| 5 meters          | 6.75                       | 22.3             |
| 6 meters          | 5.75                       | 21.9             |
| 6.46 meters       | 5.00                       | 21.5             |
| 6.54 meters       | 4.00                       | 21.3             |
| 6.69 meters       | 3.00                       | 21.3             |
| 6.87 meters       | 2.00                       | 21.1             |
| 7 meters          | 1.45                       | 20.8             |
| 7.10 meters       | 1.00                       | 20.5             |
| 100mm from bottom | 0.10                       | 20.0             |

During the course of the 3-month sampling period, sensors of the tailrace Datasonde 3 sample logger unit were cleaned and verified for calibration accuracy on a weekly basis during each day impoundment sampling was performed. Additionally, the YSI Model 51B

D.O. meter and 50 foot cabled 5739 probe with standard membrane used for impoundment sampling was used to cross-check D.O. calibration continuity with the Datasonde 3 D.O. sensor. The unit's internal batteries were replaced once in mid-August to ensure proper power supply levels through the conclusion of the sampling period. There were no logging interruptions. Logged data was downloaded weekly and monthly. No unusual readings were observed in collected data during the 3-month sampling session. Table 2 displays the minimum, maximum and average sensor readings for each of the three months' logged data. Precise dates and times are available in the accompanying appendices.

**TABLE 2**  
**Oconto Falls (Upper) Hydroelectric Project**  
**Tailwater Sampling Monthly Minimums, Maximums and Averages**

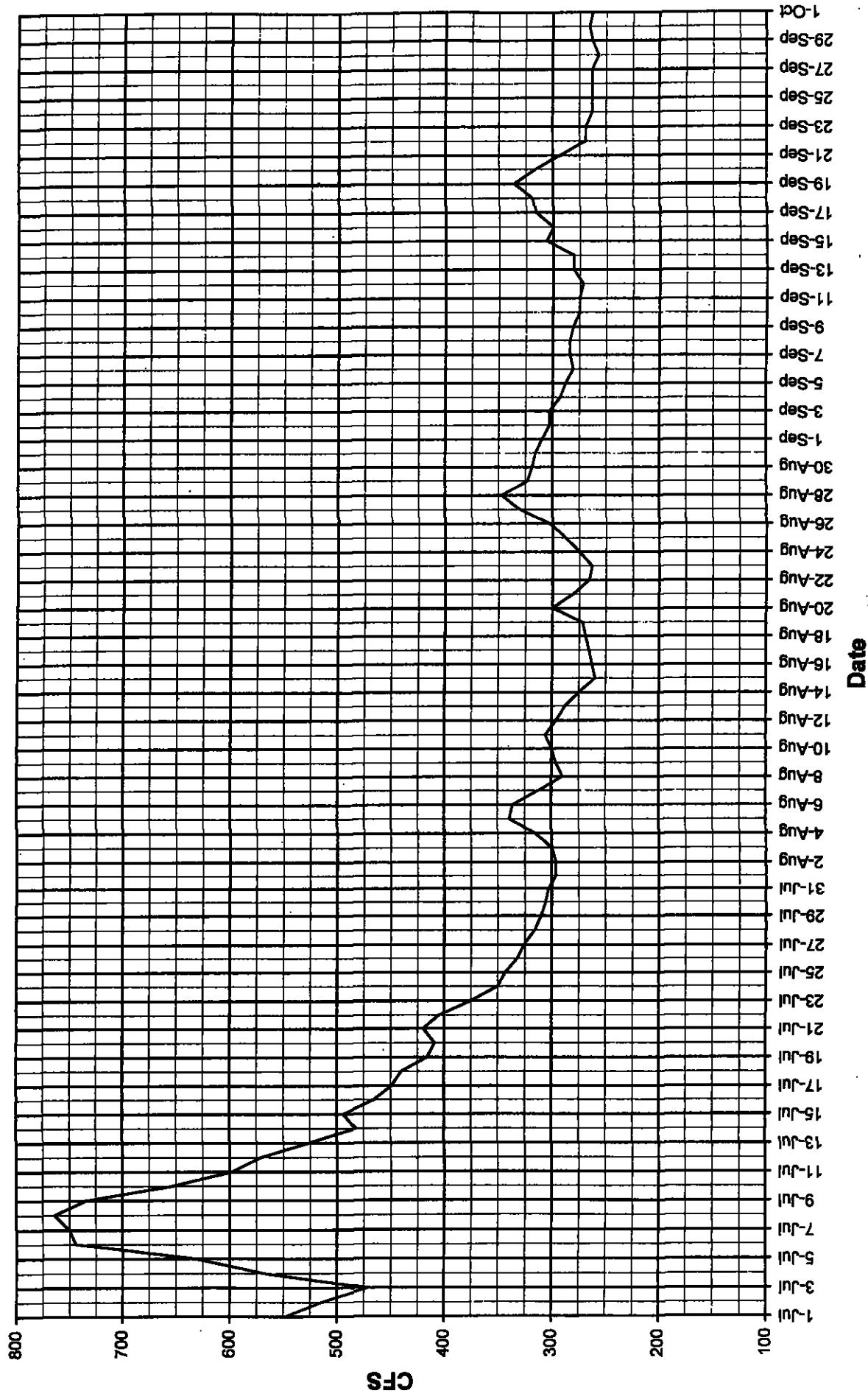
| <b>July 2004</b>      | <b>Temperature<br/>(°C)</b> | <b>pH</b> | <b>Specific Conductivity<br/>(mS/cm)</b> | <b>Dissolved Oxygen<br/>(mg/L)</b> |
|-----------------------|-----------------------------|-----------|--|------------------------------------|
| Minimum               | 16.5                        | 7.87      | 0.289                                    | 5.94                               |
| Maximum               | 24.8                        | 8.41      | 0.343                                    | 8.74                               |
| Average               | 21.3                        | 8.08      | 0.318                                    | 7.72                               |
|                       |                             |           |  |                                    |
| <b>August 2004</b>    | <b>Temperature<br/>(°C)</b> | <b>pH</b> | <b>Specific Conductivity<br/>(mS/cm)</b> | <b>Dissolved Oxygen<br/>(mg/L)</b> |
| Minimum               | 17.4                        | 7.88      | 0.339                                    | 5.87                               |
| Maximum               | 23.7                        | 8.50      | 0.354                                    | 9.28                               |
| Average               | 20.0                        | 8.22      | 0.347                                    | 7.66                               |
|                       |                             |           |  |                                    |
| <b>September 2004</b> | <b>Temperature<br/>(°C)</b> | <b>pH</b> | <b>Specific Conductivity<br/>(mS/cm)</b> | <b>Dissolved Oxygen<br/>(mg/L)</b> |
| Minimum               | 15.1                        | 8.03      | 0.341                                    | 6.65                               |
| Maximum               | 22.8                        | 8.65      | 0.356                                    | 9.38                               |
| Average               | 19.3                        | 8.31      | 0.350                                    | 7.94                               |

**Monthly Temperature and Precipitation  
for  
Green Bay, Wisconsin**

| Month<br>(water year) | Highest<br>Temperature<br>(°F) |      | Lowest<br>Temperature<br>(°F) |      | Average<br>Temperature<br>(°F) |      | Departure<br>From Normal<br>(°F) |      | Heating<br>Degree Days |      | Normal Degree<br>Days |      | Total<br>Precipitation<br>(Inches) |      | Total Snowfall<br>(Inches) |      | Normal<br>Precipitation<br>(Inches) |      | % of Normal<br>Precipitation |      |
|-----------------------|--------------------------------|------|-------------------------------|------|--------------------------------|------|----------------------------------|------|------------------------|------|-----------------------|------|------------------------------------|------|----------------------------|------|-------------------------------------|------|------------------------------|------|
|                       | 1999                           | 2004 | 1999                          | 2004 | 1999                           | 2004 | 1999                             | 2004 | 1999                   | 2004 | 1999                  | 2004 | 1999                               | 2004 | 1999                       | 2004 | 1999                                | 2004 | 1999                         | 2004 |
| October               | 75                             | 80   | 26                            | 24   | 50.9                           | 48.0 | 3.5                              | 0.6  | 431                    | 522  | 540                   | 540  | 1.56                               | 1.05 | 0.0                        | 0.0  | 2.17                                | 2.17 | 72                           | 48   |
| November              | 63                             | 62   | 18                            | 11   | 39.4                           | 36.0 | 5.4                              | 2.0  | 760                    | 862  | 925                   | 925  | 1.67                               | 3.85 | 0.3                        | 0.4  | 2.27                                | 2.27 | 74                           | 170  |
| December              | 62                             | 46   | -9                            | 3    | 27.4                           | 28.0 | 6.2                              | 6.8  | 1160                   | 1140 | 1350                  | 1350 | 0.30                               | 1.68 | 5.6                        | 2.5  | 1.41                                | 1.41 | 21                           | 119  |
| January               | 42                             | 39   | -19                           | -14  | 14.8                           | 12.2 | -0.8                             | -3.4 | 1547                   | 1631 | 1537                  | 1537 | 2.37                               | 1.24 | 20.3                       | 16.3 | 1.21                                | 1.21 | 196                          | 102  |
| February              | 58                             | 50   | 11                            | -13  | 28.3                           | 21.5 | 7.8                              | 0.9  | 1022                   | 1254 | 1262                  | 1302 | 1.08                               | 1.62 | 2.2                        | 16.6 | 1.01                                | 1.06 | 107                          | 153  |
| March                 | 73                             | 63   | 8                             | 12   | 34.0                           | 35.1 | 2.7                              | 3.8  | 954                    | 9.15 | 1060                  | 1060 | 0.15                               | 3.58 | 4.4                        | 8.4  | 2.06                                | 2.06 | 7                            | 174  |
| April                 | 77                             | 79   | 26                            | 24   | 45.8                           | 45.4 | 1.6                              | 1.2  | 569                    | 579  | 638                   | 638  | 2.11                               | 1.56 | 0.0                        | 0.7  | 2.56                                | 2.56 | 82                           | 61   |
| May                   | 86                             | 83   | 34                            | 27   | 58.0                           | 53.6 | 1.6                              | -2.8 | 223                    | 355  | 301                   | 301  | 3.77                               | 8.31 | 0.0                        | 0.0  | 2.75                                | 2.75 | 137                          | 302  |
| June                  | 88                             | 88   | 39                            | 42   | 65.4                           | 63.3 | 0.0                              | -2.1 | 101                    | 97   | 85                    | 85   | 3.98                               | 4.87 | 0.0                        | 0.0  | 3.43                                | 3.43 | 116                          | 142  |
| July                  | 96                             | 87   | 48                            | 45   | 72.2                           | 67.6 | 2.3                              | -2.3 | 5                      | 30   | 19                    | 19   | 5.73                               | 1.78 | 0.0                        | 0.0  | 3.44                                | 3.44 | 167                          | 52   |
| August                | 87                             | 85   | 44                            | 39   | 65.5                           | 64.3 | -2.1                             | -3.3 | 46                     | 89   | 38                    | 38   | 1.32                               | 2.00 | 0.0                        | 0.0  | 3.77                                | 3.77 | 35                           | 53   |
| September             | 90                             | 85   | 31                            | 31   | 58.6                           | 64.6 | -0.2                             | 5.8  | 226                    | 82   | 208                   | 208  | 1.24                               | 0.47 | 0.0                        | 0.0  | 3.11                                | 3.11 | 40                           | 15   |

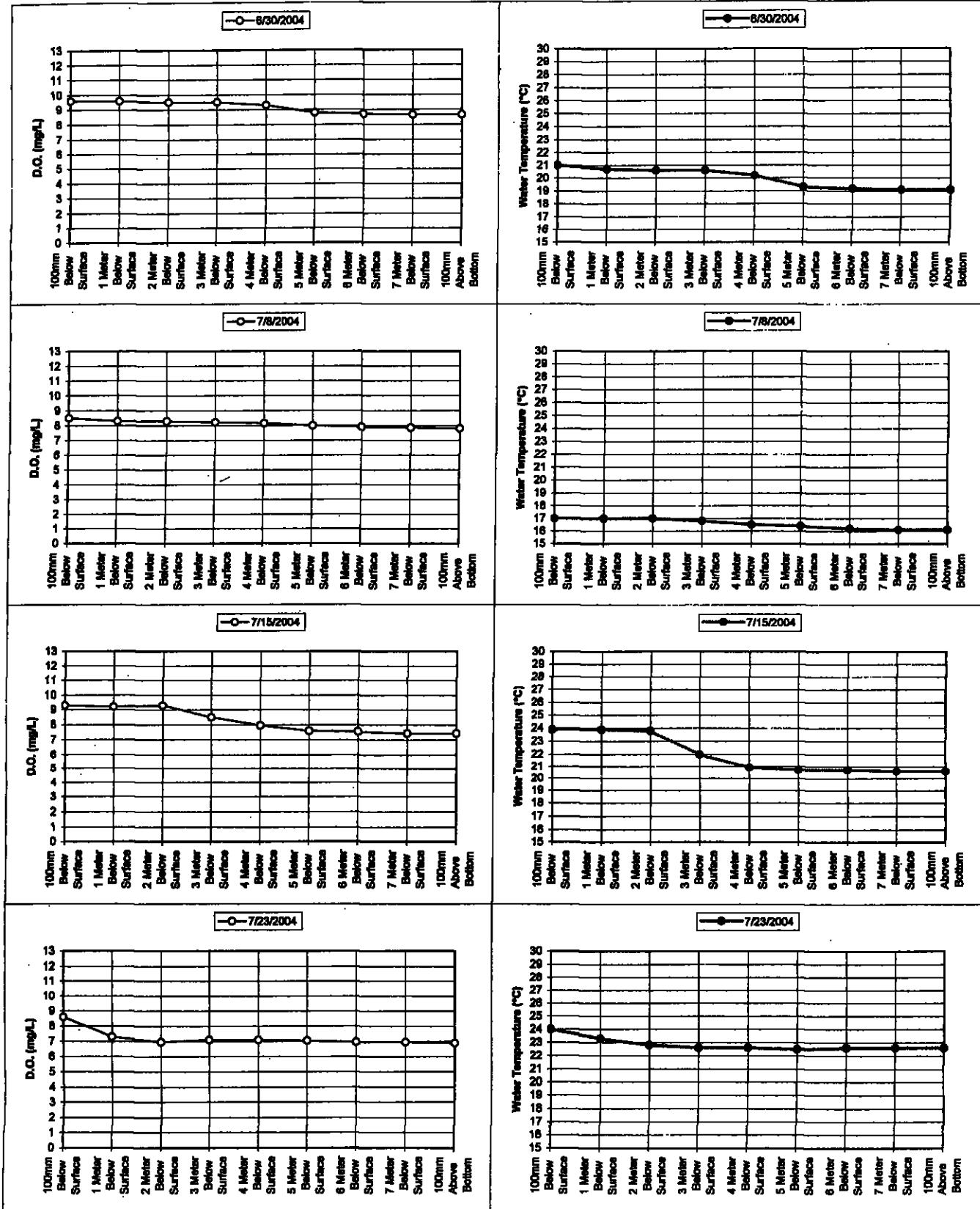
Source: NOAA

**2004 Water Quality Study  
Daily River Flow Through Project  
Oconto Falls (Upper) - FERC Project No. 2523**

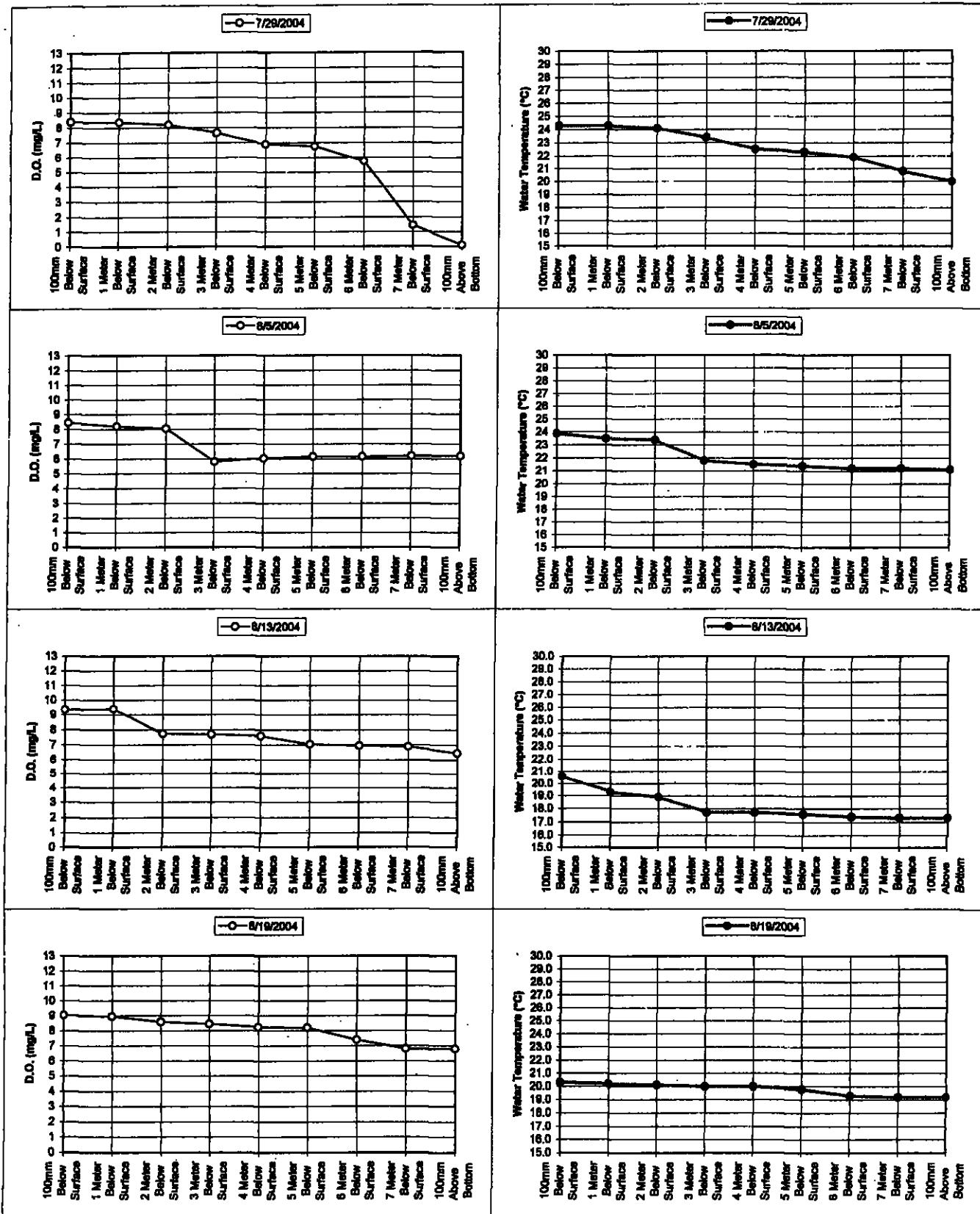


| 2004 Water Quality Study<br>Reservoir Sampling Data for 3-month Sampling Period<br>Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325 |             |                     |                       |                       |                       |                       |                       |                       |                       |                    |             |
|---|-------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------|-------------|
| Date  | Sample      | 100mm Below Surface | 1 Meter Below Surface | 2 Meter Below Surface | 3 Meter Below Surface | 4 Meter Below Surface | 5 Meter Below Surface | 6 Meter Below Surface | 7 Meter Below Surface | 100mm Above Bottom | Hach Sample |
| 6/30/2004   | D.O. (mg/l) | 9.60                | 9.60                  | 9.50                  | 9.50                  | 9.30                  | 8.80                  | 8.70                  | 8.65                  | 8.65               | 9 - 10      |
|   | Temp.       | 21.0                | 20.7                  | 20.6                  | 20.6                  | 20.2                  | 19.3                  | 19.2                  | 19.1                  | 19.1               | 21.5        |
| 7/8/2004  | D.O. (mg/l) | 8.50                | 8.30                  | 8.30                  | 8.21                  | 8.15                  | 8.00                  | 7.90                  | 7.85                  | 7.80               | 8 - 9       |
|   | Temp.       | 17.0                | 17.0                  | 17.0                  | 16.8                  | 16.5                  | 16.4                  | 16.2                  | 16.1                  | 16.1               | 17.3        |
| 7/15/2004   | D.O. (mg/l) | 9.30                | 9.20                  | 9.30                  | 8.50                  | 7.95                  | 7.60                  | 7.55                  | 7.45                  | 7.45               | 9 - 10      |
|   | Temp.       | 23.9                | 23.9                  | 23.8                  | 22.0                  | 20.9                  | 20.7                  | 20.7                  | 20.6                  | 20.6               | 24.0        |
| 7/23/2004   | D.O. (mg/l) | 8.60                | 7.30                  | 6.95                  | 7.10                  | 7.10                  | 7.05                  | 6.95                  | 6.95                  | 6.90               | 8 - 9       |
|   | Temp.       | 24.0                | 23.3                  | 22.8                  | 22.6                  | 22.6                  | 22.5                  | 22.6                  | 22.6                  | 22.6               | 24.0        |
| 7/29/2004   | D.O. (mg/l) | 8.40                | 8.38                  | 8.20                  | 7.65                  | 6.90                  | 6.75                  | 5.75                  | 1.45                  | 0.10               | 8 - 9       |
|   | Temp.       | 24.3                | 24.3                  | 24.1                  | 23.4                  | 22.5                  | 22.3                  | 21.9                  | 20.8                  | 20.0               | 24.4        |
| 8/5/2004  | D.O. (mg/l) | 8.45                | 8.20                  | 8.05                  | 5.80                  | 6.05                  | 6.15                  | 6.15                  | 6.20                  | 6.20               | 8 - 9       |
|   | Temp.       | 23.9                | 23.5                  | 23.4                  | 21.8                  | 21.5                  | 21.4                  | 21.2                  | 21.2                  | 21.1               | 24.0        |
| 8/13/2004   | D.O. (mg/l) | 9.35                | 9.40                  | 7.75                  | 7.70                  | 7.60                  | 7.05                  | 6.95                  | 6.90                  | 6.45               | 9 - 10      |
|   | Temp.       | 20.6                | 19.3                  | 18.9                  | 17.7                  | 17.7                  | 17.6                  | 17.4                  | 17.3                  | 17.3               | 20.5        |
| 8/19/2004   | D.O. (mg/l) | 9.05                | 8.95                  | 8.60                  | 8.45                  | 8.25                  | 8.20                  | 7.40                  | 6.80                  | 6.80               | 9           |
|   | Temp.       | 20.3                | 20.2                  | 20.1                  | 20.0                  | 20.0                  | 19.8                  | 19.3                  | 19.2                  | 19.2               | 20.3        |
| 8/28/2004   | D.O. (mg/l) | 10.40               | 9.50                  | 9.35                  | 9.20                  | 9.15                  | 8.75                  | 8.25                  | 7.45                  | 6.85               | 10 - 11     |
|   | Temp.       | 20.2                | 19.8                  | 19.7                  | 19.7                  | 19.6                  | 19.3                  | 19.2                  | 19.0                  | 19.0               | 21.0        |
| 9/1/2004  | D.O. (mg/l) | 11.50               | 10.10                 | 8.40                  | 8.05                  | 7.85                  | 7.45                  | 7.20                  | 6.70                  | 6.10               | 10 - 11     |
|   | Temp.       | 20.2                | 19.4                  | 18.7                  | 18.2                  | 18.0                  | 17.8                  | 17.7                  | 17.3                  | 17.2               | 20.5        |
| 9/10/2004   | D.O. (mg/l) | 7.75                | 7.35                  | 7.25                  | 6.85                  | 6.65                  | 6.35                  | 6.25                  | 6.30                  | 6.35               | 7 - 8       |
|   | Temp.       | 20.2                | 19.9                  | 19.6                  | 19.1                  | 19.0                  | 18.9                  | 18.8                  | 18.7                  | 18.5               | 21.0        |
| 9/16/2004   | D.O. (mg/l) | 8.00                | 7.90                  | 7.90                  | 7.85                  | 7.65                  | 7.35                  | 7.35                  | 7.20                  | 7.15               | 8           |
|   | Temp.       | 21.2                | 21.1                  | 21.0                  | 21.0                  | 20.9                  | 20.8                  | 20.8                  | 20.7                  | 20.5               | 21.3        |
| 9/21/2004   | D.O. (mg/l) | 11.90               | 12.50                 | 11.00                 | 7.85                  | 6.80                  | 7.05                  | 6.40                  | 6.50                  | 6.35               | 11 - 12     |
|   | Temp.       | 21.1                | 20.5                  | 19.6                  | 18.8                  | 18.0                  | 18.0                  | 17.9                  | 17.8                  | 17.8               | 21.3        |
| 9/27/2004   | D.O. (mg/l) | 9.95                | 9.90                  | 9.45                  | 8.95                  | 7.45                  | 6.95                  | 6.35                  | 6.25                  | 6.45               | 9 - 10      |
|   | Temp.       | 19.3                | 19.2                  | 18.9                  | 18.3                  | 17.7                  | 17.4                  | 17.2                  | 17.0                  | 17.0               | 19.5        |

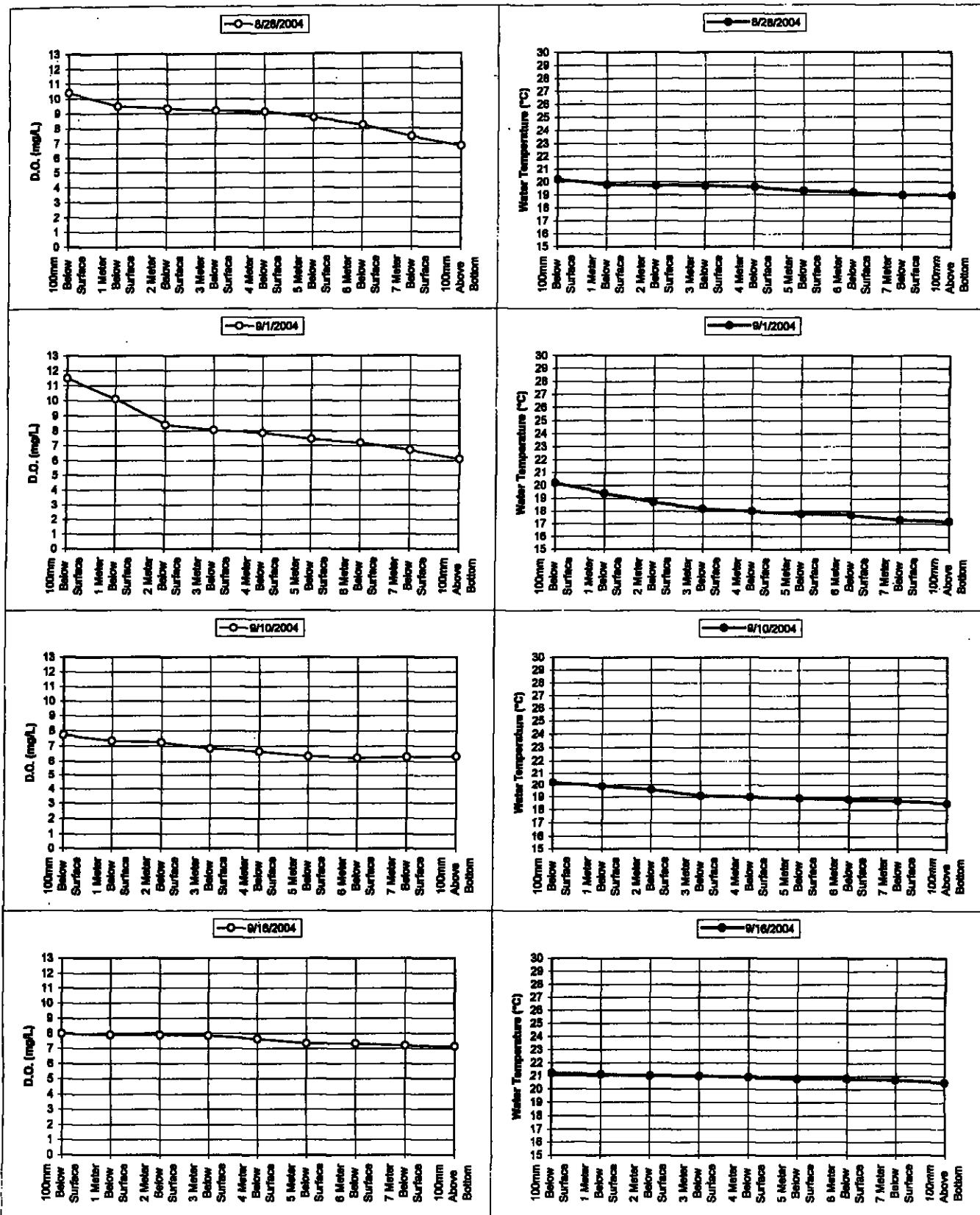
**2004 Water Quality Study**  
**Reservoir Sampling**  
**Oconto Falls (Upper) Hydroelectric Project - FERC # 2523**



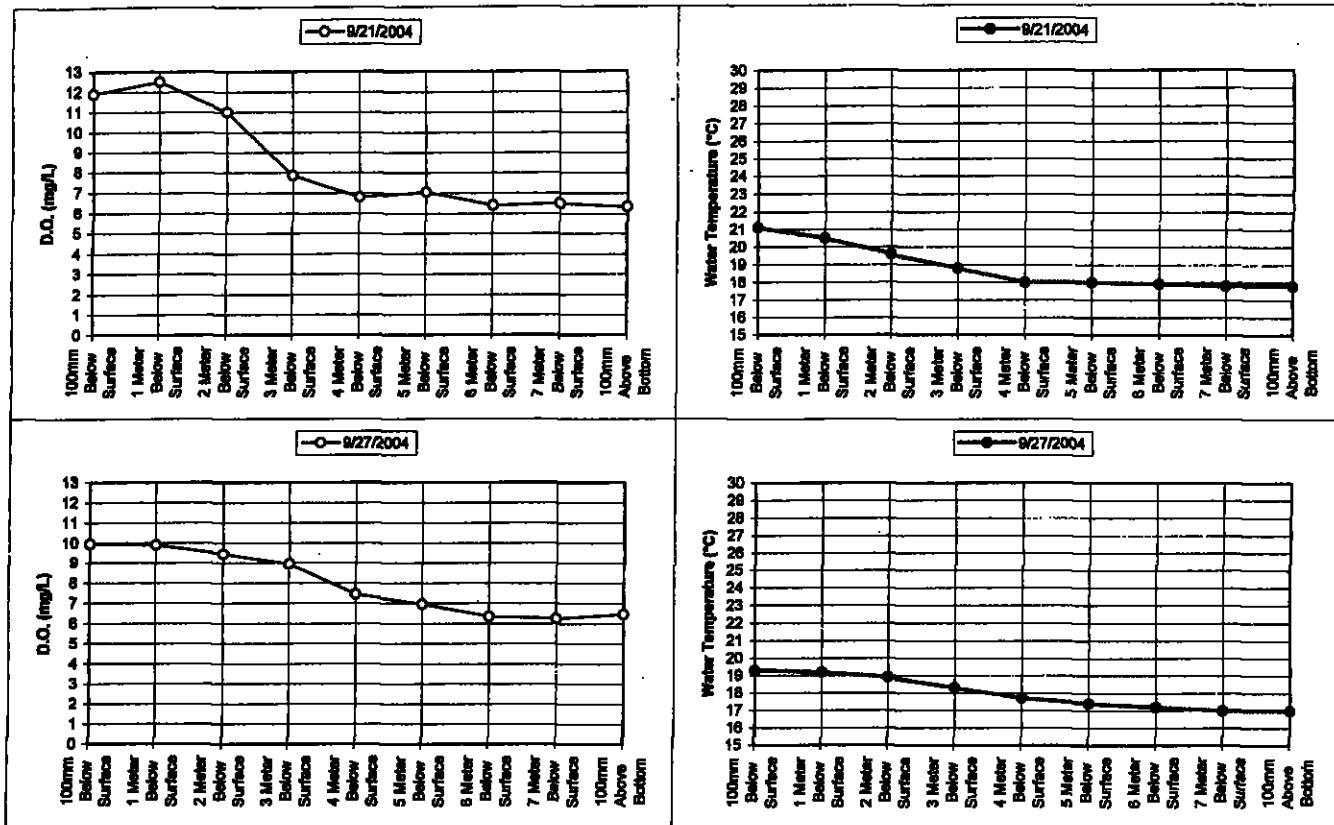
**2004 Water Quality Study  
Reservoir Sampling  
Oconto Falls (Upper) Hydroelectric Project - FERC # 2523**



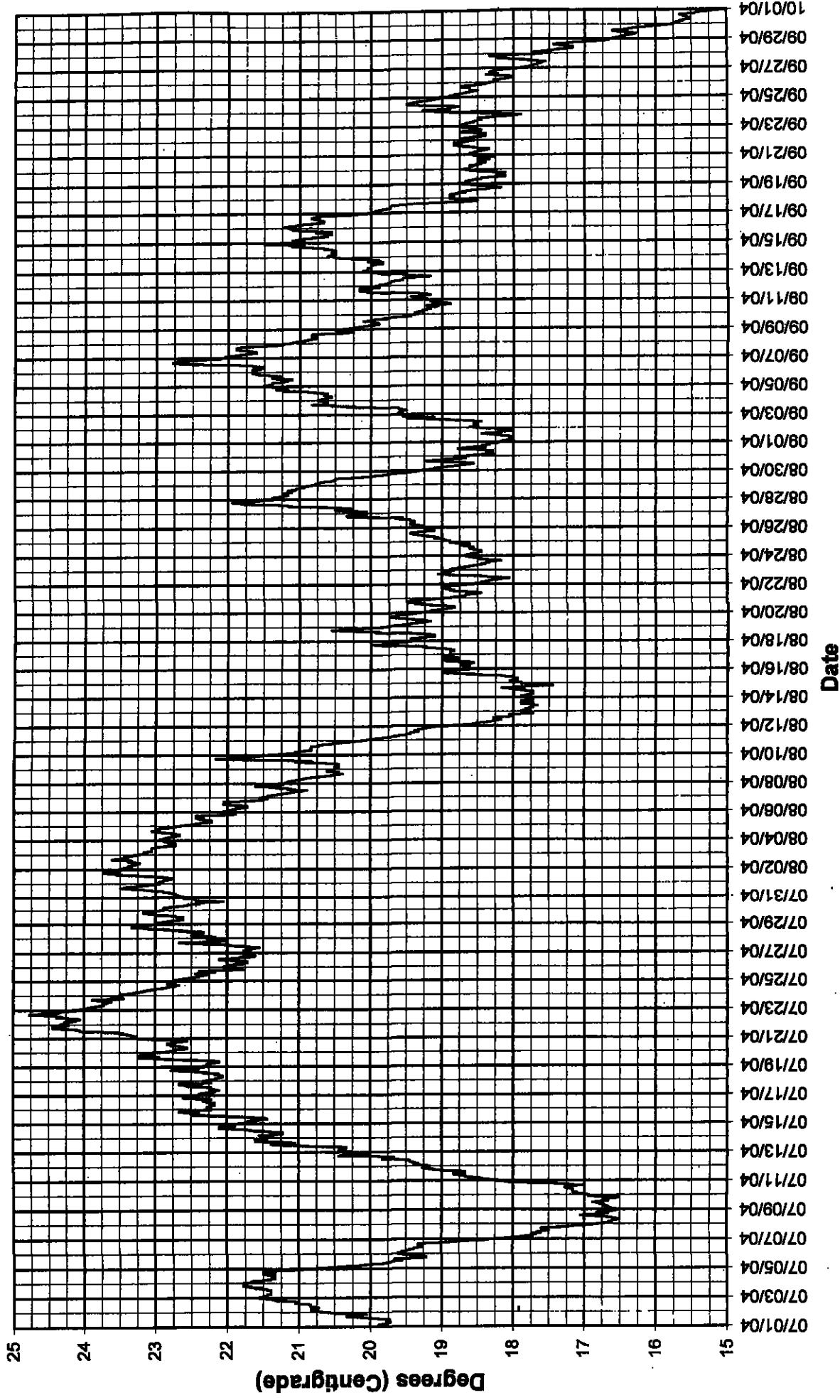
**2004 Water Quality Study**  
**Reservoir Sampling**  
**Oconto Falls (Upper) Hydroelectric Project - FERC # 2523**



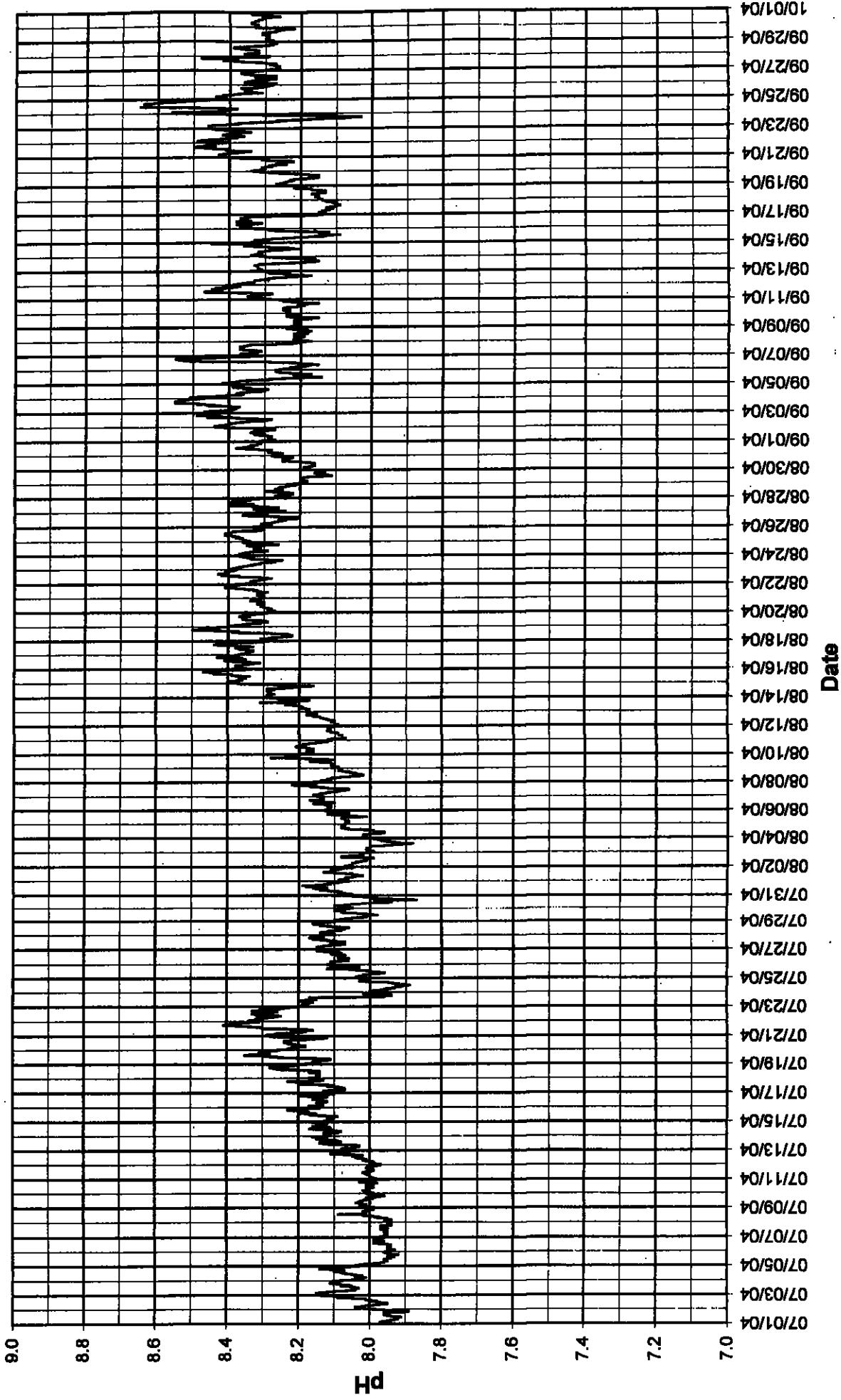
**2004 Water Quality Study**  
**Reservoir Sampling**  
**Oconto Falls (Upper) Hydroelectric Project - FERC # 2523**



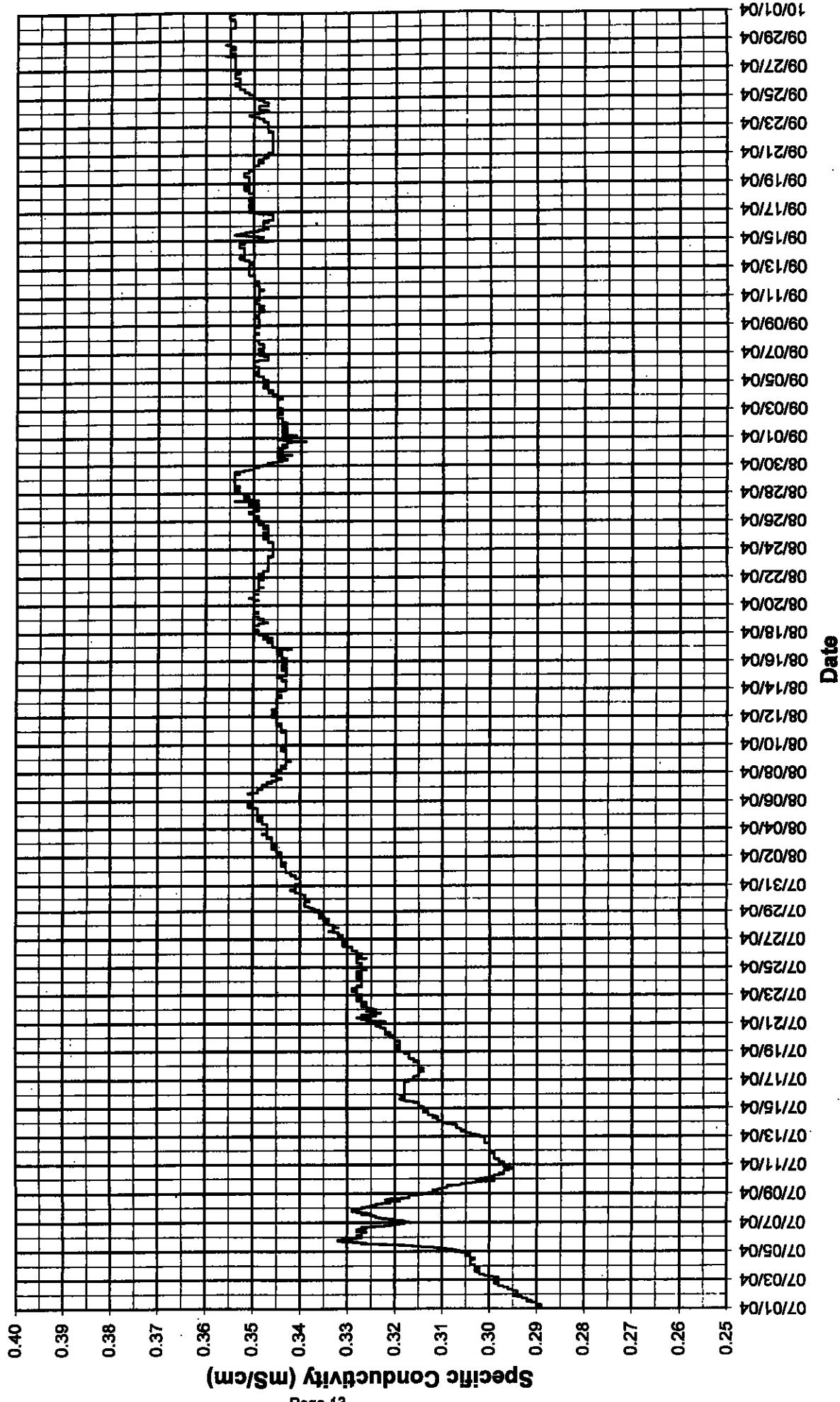
**2004 Water Quality Study  
Tailwater Temperature Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



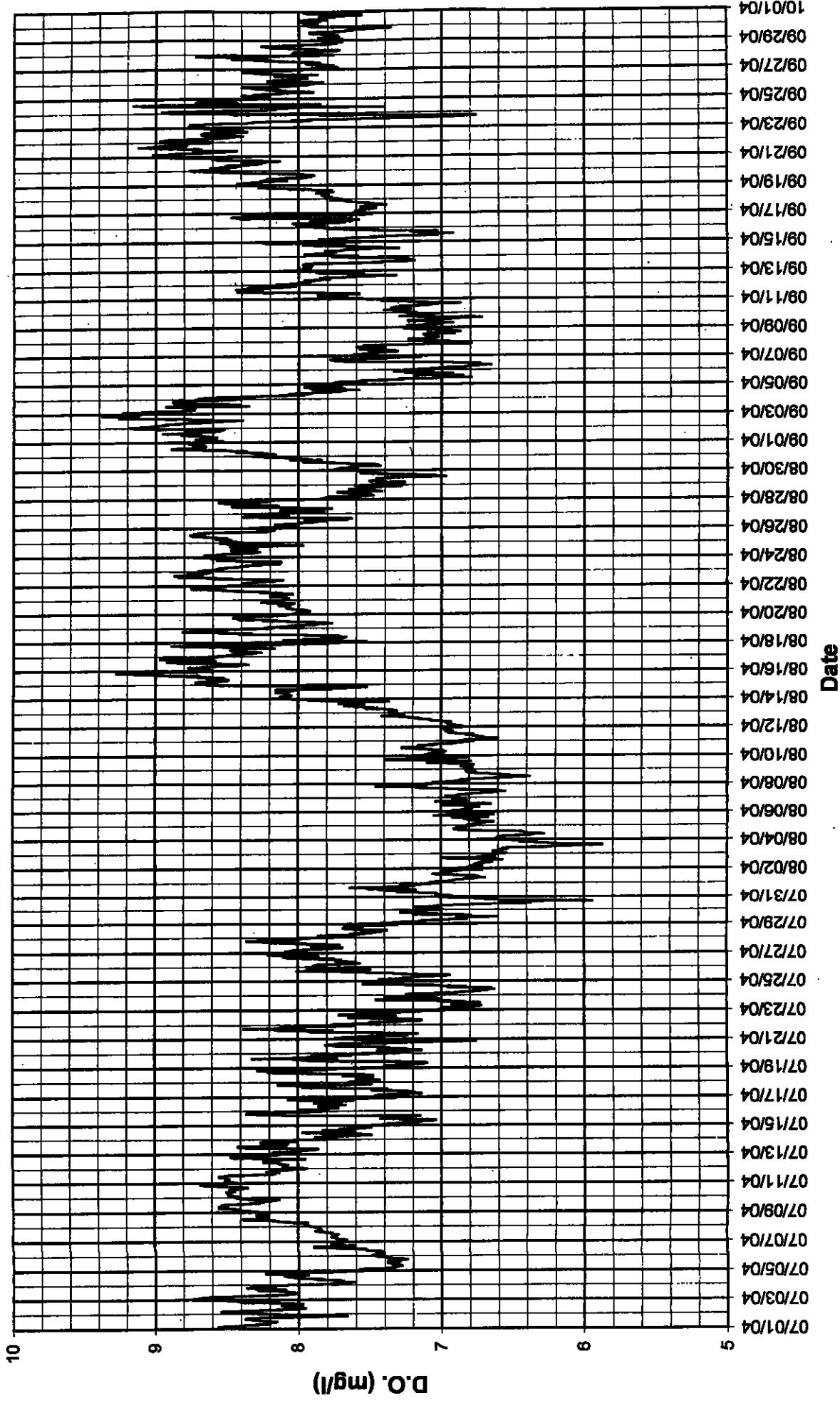
**2004 Water Quality Study  
Tailwater pH Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study  
Tailwater Specific Conductivity Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study  
Tailwater Dissolved Oxygen Sampling (mg/l)  
Oconto Falls (Upper) - FERC Project No. 2325**



**Water Quality Monitoring Plan  
Per License Article 405**

for the

**Oconto Falls (Upper) Hydroelectric Project  
FERC Project # 2523  
N.E.W. Hydro, Inc.**

**Oconto River, Oconto County, Wisconsin**

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**Requirements for Studies and History**

The Federal Energy Regulatory Commission (FERC), has stipulated as a requirement of the Oconto Falls (Upper) Hydroelectric Project License (Article 405), issued November 20, 1997, that a Water Quality Study shall be performed beginning five (5) years after license issuance and once every five (5) years thereafter for the term of the license. Article 405 also required that a monitoring plan should be filed with the Commission within one (1) year of license issuance.

On March 19, 1998 the Wisconsin Department of Natural Resources, in a letter to North American Hydro, Inc. commenting on the proposed Water Quality Monitoring Plan for the Oconto Falls (Lower) Hydroelectric Project (FERC Project No. 2689), recommended coordination for concurrent water quality studies with the Oconto Falls (Upper) Hydroelectric Project, located approximately 2000 feet upstream.

On May 18, 1998 the FERC granted a request by N.E.W. Hydro, Inc., submitted on March 25, 1998, for a one-year extension of all license article stipulated deadlines, extending the deadline for plan submission to November 19, 1999.

On November 19, 1998 the FERC approved the Water Quality Monitoring Plan for the Oconto Falls (Lower) Hydroelectric Project to commence in 1999 and once every five (5) years thereafter for the 30-year term of the license. The FERC additionally commented that the licensee may propose to begin water quality monitoring at the Oconto Falls (Upper) Hydroelectric Project in the year 2004 in order to run concurrently with the Oconto Falls (Lower) Hydroelectric Project water quality studies.

It is the intent of this plan to initiate water quality monitoring in the year 2004 and once every five (5) years thereafter for the term of the current license in order to execute water quality studies concurrently with the Oconto Falls (Lower) Hydroelectric Project Water Quality Monitoring Plan timeline.

### **Purpose of Studies**

Article 405 of the license states that "The purpose of this monitoring plan is to ensure that releases from the Oconto Falls Project maintain the following state standards, except when natural conditions prohibit attainment of the standards: (1.) the DO shall not be lowered to less than 5 milligrams per liter at any time; (2.) the temperature shall not exceed 89° Fahrenheit at any time; and (3.) the pH shall be within the range of 6.0 and 9.0".

### **Study Sampling Periods**

Study sampling will be conducted July 1, 2004 through September 30, 2004 and every 5th year interval thereafter for the term of the license. Study sampling will coincide with sampling at the Oconto Falls (Lower) Hydroelectric Project (FERC Project #2689). The July through September sampling period represents the typical annual period of minimum dissolved oxygen levels in the Oconto River resulting from a combination of high ambient temperature, low river flow, and aerobic oxygen consumptive processes.

## Study Design

### Sampling Protocol

Sampling protocol will be consistent with "Water Quality Monitoring Plan Per License Article 404 for the Oconto Falls (Lower) Hydroelectric Project - FERC Project # 2689 - N.E.W. Hydro, Inc." as approved by the FERC on November 19, 1998.

### Monitoring Parameters (Reservoir):

1. Dissolved Oxygen Concentration
2. Water Temperature
3. Stream Flow
4. Time of Day

### Monitoring Parameters (Tailwater):

1. Dissolved Oxygen Concentration
2. Water Temperature
3. pH
4. Stream Flow
5. Time of Day

### Reservoir Sampling:

One (1) reservoir sampling event per week will be conducted for dissolved oxygen concentration and water temperature in a surface to bottom profile at one (1) meter intervals at one (1) pre-determined location representing the maximum depth in the reservoir.

Sampling will be performed manually from a boat at a location determined using two (2) measured lines attached to the boat restraining barrier to provide location repeatability for each of the weekly samplings. Reservoir surface to bottom depth will be recorded during each sampling period at the pre-determined sampling location. Dissolved oxygen concentration and water temperature will be sampled with an approved and properly calibrated electronic sampling device at one (1) meter depth profile intervals including a reading at 100mm below the surface and 100mm above the bottom of the reservoir. Power production and operation log data for the sampling day will be obtained from the Oconto Falls (Upper) Hydroelectric Project (FERC Project # 2523) and Oconto Falls (Lower) Hydroelectric Project (FERC Project # 2689) in order to calculate river flow volume during the sample day. Sampling will also be conducted above the reservoir at or upstream of the State Highway 22 Bridge.

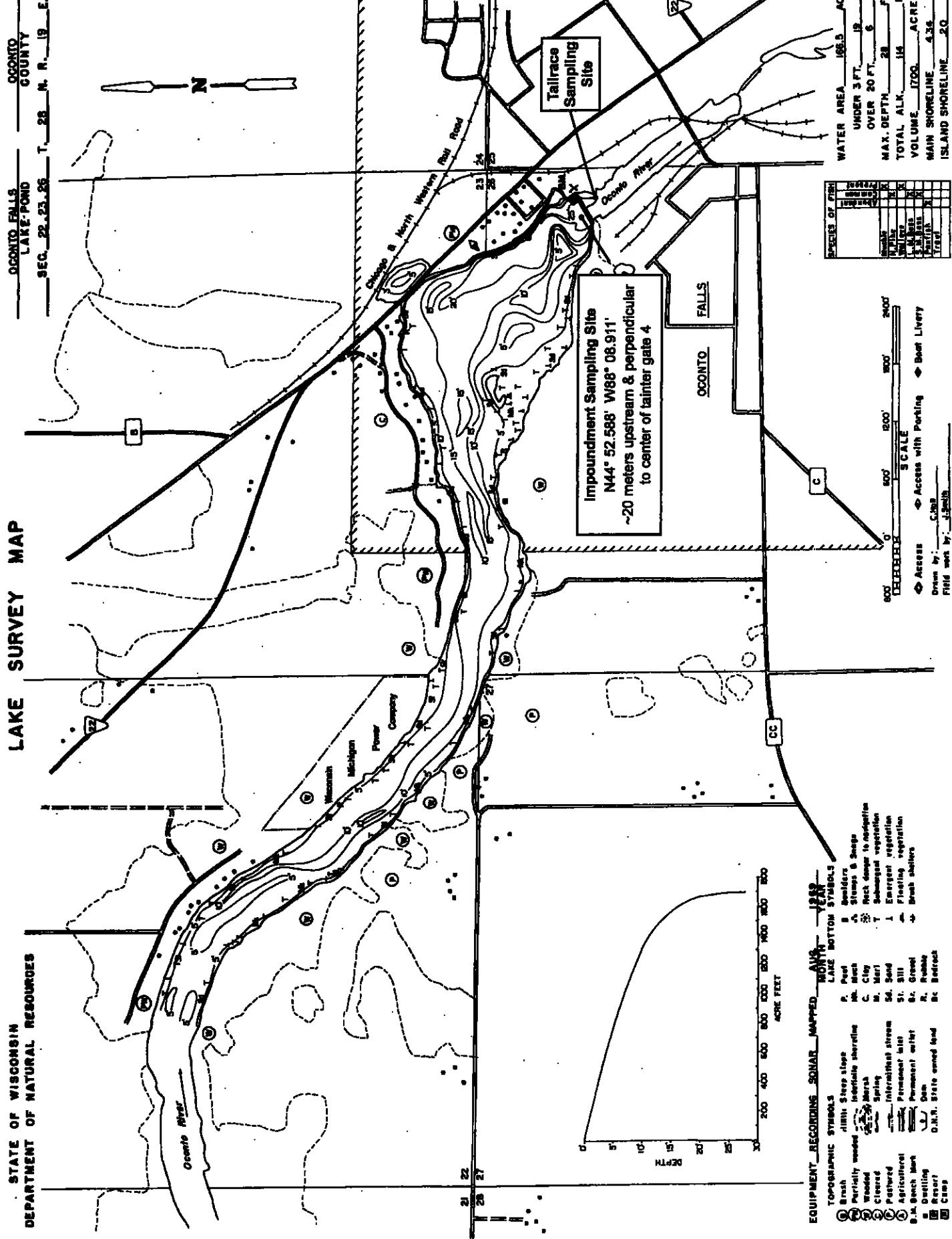
Tailwater Sampling:

Continuous thirty (30) minute interval sampling of dissolved oxygen concentration, pH, and water temperature will be taken in the river immediately below the project tailrace.

Sampling will be performed using an approved and properly calibrated self-contained submersible sampling and data-logging device placed in a location representative of the release of water in the tailrace. The monitoring device will be located approximately twenty-five (25) feet downstream from the land peninsula below the left concrete non-overflow section of the dam at a point approximately ten (10) feet from the north embankment of the Oconto River. The sampling/logging device will include a sensor array containing standard dissolved oxygen, pH, and water temperature sampling probes. The logging device will be programmed to record dissolved oxygen concentration, pH, and water temperature measurements at thirty (30) minute intervals for the continuous period from July 1 through September 30. A maintenance check will be performed on the sampling/logging device once per week. This check will include removal of any accumulated debris and aquaculture, verification of device placement, verification of operation and device calibration. Maintenance procedures are based on the use of presently available equipment. Future maintenance activities could differ due to changes in equipment development. Power production log data for the sampling period will be obtained from the Oconto Falls (Upper) Hydroelectric Project (FERC # 2523) and Oconto Falls (Lower) Hydroelectric Project (FERC # 2689) in order to calculate river flow volume during the sampling period. Accumulated sampling data will be downloaded from the sampling/logging device once per month (during the first week of the following month) for intermediate analysis.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

LAKE SURVEY MAP



# OCONTO FALLS WATER QUALITY MONITORING STUDIES

## Sampling Locations



## **APPENDIX A**

**July 2004 Sampling Data**

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: JUNE 30, 2004

Pre-Sampling Data:

Time: 4:15 pm Barometer: 29.97 Air Temp: 27.8 °C Wind Speed: Frm SW @ 15-17

Cloud Cover: Mostly Sunny - 10% Clouds

Precipitation within Last 24 Hours: None

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.36 volts

YSI Calibration Time: 4:17 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.87 METERS

**YSI 51b Sample Data**

| DEPTH                | TIME           | DO (mg/l)   | TURBIDITY (NTU) |
|----------------------|----------------|-------------|-----------------|
| 100 mm below surface | <u>4:20 pm</u> | <u>9.60</u> | <u>21.0</u>     |
| 1 meter              | <u>4:22 pm</u> | <u>9.60</u> | <u>20.7</u>     |
| 2 meters             | <u>4:24 pm</u> | <u>9.50</u> | <u>20.6</u>     |
| 3 meters             | <u>4:25 pm</u> | <u>9.50</u> | <u>20.6</u>     |
| 4 meters             | <u>4:26 pm</u> | <u>9.30</u> | <u>20.2</u>     |
| 5 meters             | <u>4:28 pm</u> | <u>8.80</u> | <u>19.3</u>     |
| 6 meters             | <u>4:31 pm</u> | <u>8.70</u> | <u>19.2</u>     |
| 7 meters             | <u>4:33 pm</u> | <u>8.65</u> | <u>19.1</u>     |
| 100 mm above bottom  | <u>4:35 pm</u> | <u>8.65</u> | <u>19.1</u>     |

**Hach D.O. Sample Data**

| DEPTH                | TIME           | DO (mg/l)   | TURBIDITY (NTU) |
|----------------------|----------------|-------------|-----------------|
| 100 mm below surface | <u>4:45 pm</u> | <u>9-10</u> | <u>21.5</u>     |

Comments: SAMPLING SITE IS LOCATED ~ 20 METERS UPSTREAM & PERPENDICULAR TO THE CENTER OF TAILWATER GATE 4 (SOUTHERNMOST) OR 8TH BOAT RESTRAIKING BARRIER BUOY FROM TURBINE INTAKE BAYS.

N44° 52.588' W88° 08.911'

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Stan R. Giffen

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: JULY 8, 2004

Pre-Sampling Data:

Time: 1:40 pm Barometer: 29.99 Air Temp: 17.8 °C Wind Speed: Frm NW @ 8-10

Cloud Cover: Mostly Cloudy

Precipitation within Last 24 Hours: None

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.36 volts

YSI Calibration Time: 1:45 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.85 METERS

**YSI 51b Sample Data**

| Depth                | Time           | D.O.        | Temp        |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>1:50pm</u>  | <u>8.50</u> | <u>17.0</u> |
| 1 meter              | <u>1:51 pm</u> | <u>8.30</u> | <u>17.0</u> |
| 2 meters             | <u>1:53pm</u>  | <u>8.30</u> | <u>17.0</u> |
| 3 meters             | <u>1:55pm</u>  | <u>8.21</u> | <u>16.8</u> |
| 4 meters             | <u>1:57pm</u>  | <u>8.15</u> | <u>16.5</u> |
| 5 meters             | <u>1:58pm</u>  | <u>8.00</u> | <u>16.4</u> |
| 6 meters             | <u>2:00pm</u>  | <u>7.90</u> | <u>16.2</u> |
| 7 meters             | <u>2:02pm</u>  | <u>7.85</u> | <u>16.1</u> |
| 100 mm above bottom  | <u>2:05 pm</u> | <u>7.80</u> | <u>16.1</u> |

**Hach D.O. Sample Data**

| Depth                | Time           | D.O.       | Temp        |
|----------------------|----------------|------------|-------------|
| 100 mm below surface | <u>2:10 pm</u> | <u>8-9</u> | <u>17.3</u> |

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Eric R. Jaffke

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: JULY 15, 2004

Pre-Sampling Data:

Time: 3:50 pm Barometer: 29.83 Air Temp: 29.4 °C Wind Speed: Fm NW @ 7-9

Cloud Cover: PARTLY CLOUDY

Precipitation within Last 24 Hours: None

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.35 volts

YSI Calibration Time: 4:00pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.83 METERS

**YSI 51b Sample Data**

| Depth                | Time    | D.O. | T    |
|----------------------|---------|------|------|
| 100 mm below surface | 4:05 pm | 9.30 | 23.9 |
| 1 meter              | 4:06 pm | 9.20 | 23.9 |
| 2 meters             | 4:08 pm | 9.30 | 23.8 |
| 3 meters             | 4:09 pm | 8.50 | 22.0 |
| 4 meters             | 4:11 pm | 7.95 | 20.9 |
| 5 meters             | 4:13 pm | 7.60 | 20.7 |
| 6 meters             | 4:14 pm | 7.55 | 20.7 |
| 7 meters             | 4:16 pm | 7.45 | 20.6 |
| 100 mm above bottom  | 4:18 pm | 7.45 | 20.6 |

**Hach D.O. Sample Data**

| Depth                | Time    | D.O. | T    |
|----------------------|---------|------|------|
| 100 mm below surface | 4:25 pm | 9-10 | 24.0 |

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Stan R. Chaffin

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: July 23, 2004

Pre-Sampling Data:

Time: 6:00 pm Barometer: 30.19 Air Temp: 22.2 °C Wind Speed: Frm WSW @ 5-7

Cloud Cover: 20% CLOUDS

Precipitation within Last 24 Hours: NONE

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.34 volts

YSI Calibration Time: 6:03 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.83 METERS

**YSI 51b Sample Data**

| Depth                | Time           | D.O.        | T           |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>6:05 pm</u> | <u>8.60</u> | <u>24.0</u> |
| 1 meter              | <u>6:06 pm</u> | <u>7.30</u> | <u>23.3</u> |
| 2 meters             | <u>6:08 pm</u> | <u>6.95</u> | <u>22.8</u> |
| 3 meters             | <u>6:10 pm</u> | <u>7.10</u> | <u>22.6</u> |
| 4 meters             | <u>6:12 pm</u> | <u>7.10</u> | <u>22.6</u> |
| 5 meters             | <u>6:13 pm</u> | <u>7.05</u> | <u>22.5</u> |
| 6 meters             | <u>6:15 pm</u> | <u>6.95</u> | <u>22.6</u> |
| 7 meters             | <u>6:16 pm</u> | <u>6.95</u> | <u>22.6</u> |
| 100 mm above bottom  | <u>6:18 pm</u> | <u>6.90</u> | <u>22.6</u> |

**Hach D.O. Sample Data**

| Depth                | Time           | D.O.       | T           |
|----------------------|----------------|------------|-------------|
| 100 mm below surface | <u>6:25 pm</u> | <u>8.9</u> | <u>24.0</u> |

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Stan R. Claff

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: July 29, 2004

Pre-Sampling Data:

Time: 7:15 pm Barometer: 29.88 Air Temp: 21.1 °C Wind Speed: FRM SE @ 3-7

Cloud Cover: 5-10% CLOUDS - OVERALL SLIGHT HAZE IN SKY

Precipitation within Last 24 Hours: None

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.34 volts

YSI Calibration Time: 7:30PM Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.78 METERS

**YSI 51b Sample Data**

| Depth                | Time    | D.O. | T    |
|----------------------|---------|------|------|
| 100 mm below surface | 7:36pm  | 8.40 | 24.3 |
| 1 meter              | 7:38 pm | 8.38 | 24.3 |
| 2 meters             | 7:40 pm | 8.20 | 24.1 |
| 3 meters             | 7:42 pm | 7.65 | 23.4 |
| 4 meters             | 7:43pm  | 6.90 | 22.5 |
| 5 meters             | 7:45pm  | 6.75 | 22.3 |
| 6 meters             | 7:47 pm | 5.75 | 21.9 |
| 7 meters             | 7:49 pm | 1.45 | 20.8 |
| 100 mm above bottom  | 7:56 pm | 0.10 | 20.0 |

**Hach D.O. Sample Data**

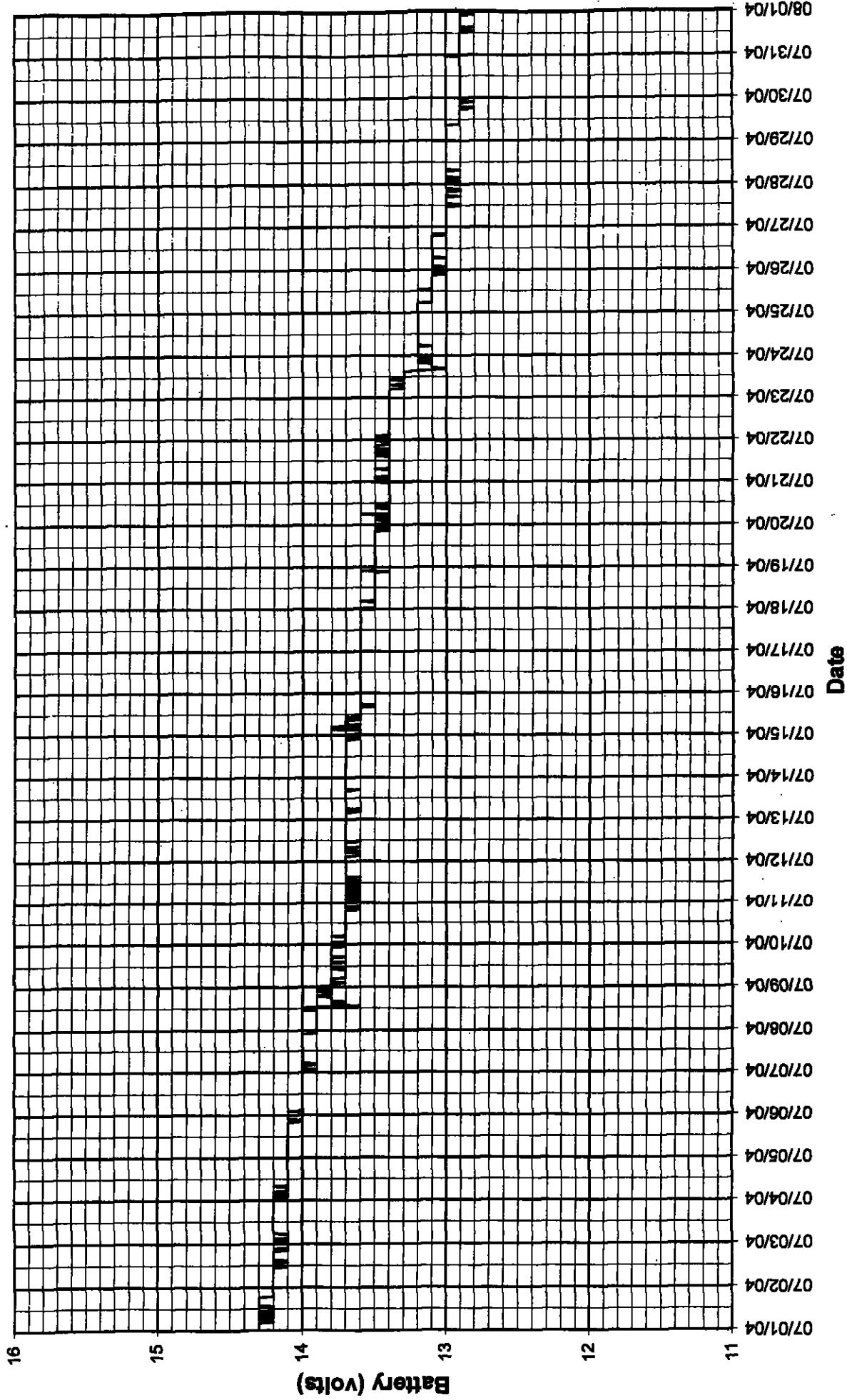
| Depth                | Time   | D.O. | T    |
|----------------------|--------|------|------|
| 100 mm below surface | 8:00pm | 8.9  | 24.4 |

Comments: DO: 5 mg/L @ 6.46 METERS @ 21.5°C, 4 mg/L @ 6.54 METERS @ 21.3°C, 3 mg/L @ 6.69 METERS @ 21.3°C, 2 mg/L @ 6.87 METERS @ 21.1°C, 1 mg/L @ 7.10 METERS @ 20.5°C

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Steve R. Cofflin

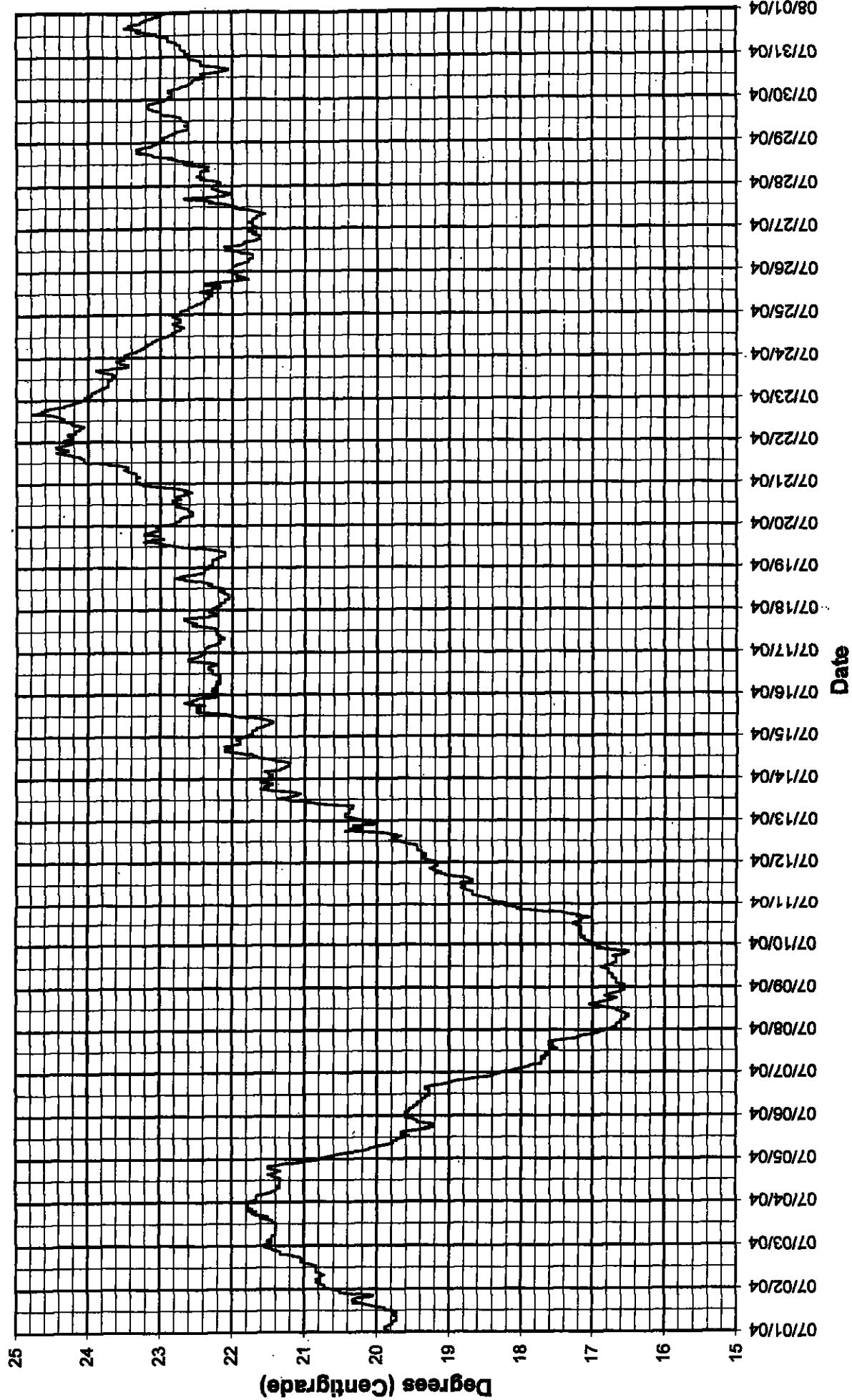
**2004 Water Quality Study  
Tailwater HydroLab Recorder Battery Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



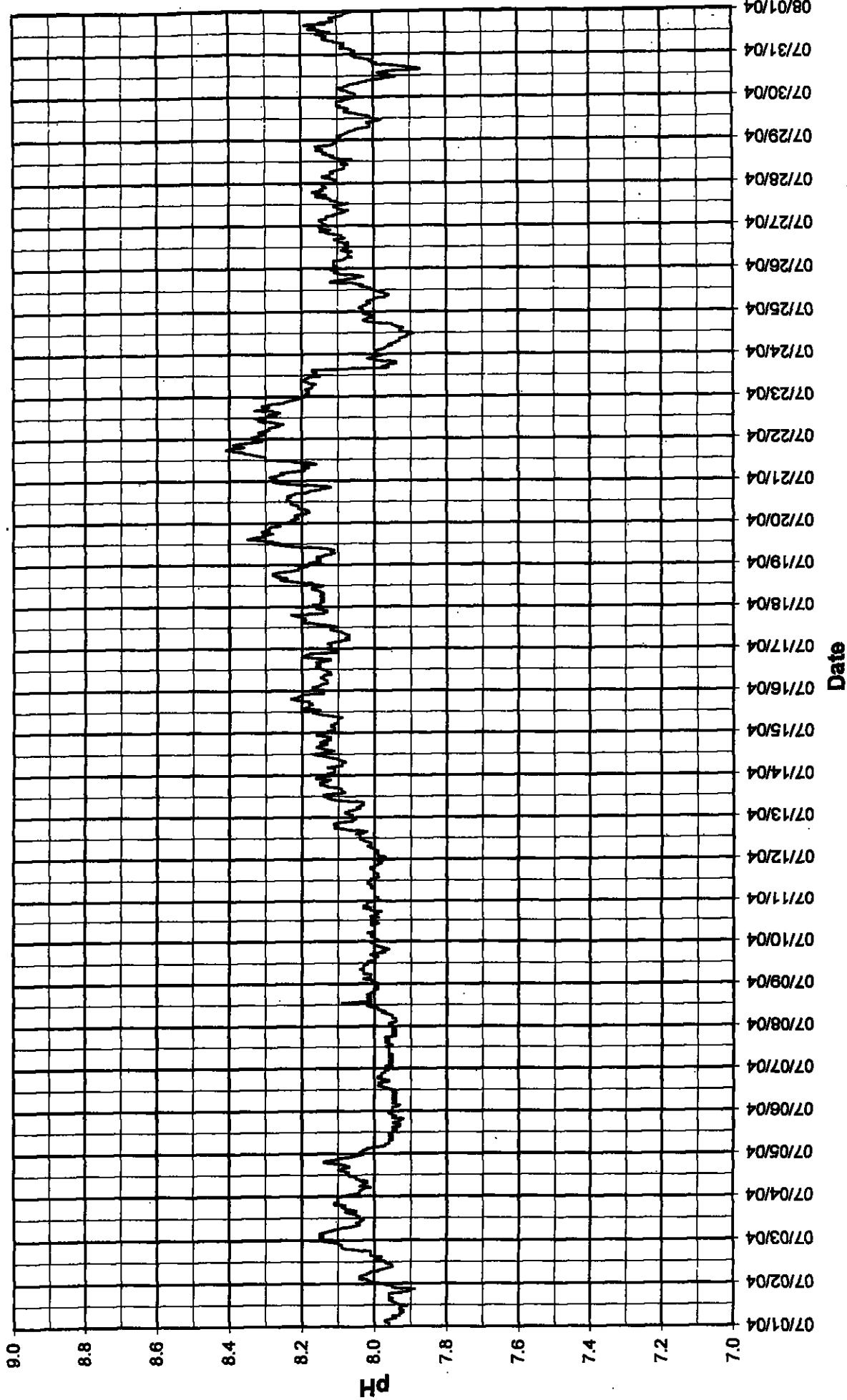
**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(°C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|--------------|---------------|--------------------|--------------|
| 7/1/2004 | 0:00  | 19.83        | 7.96          | 0.289              | 8.56         |
| 7/1/2004 | 0:30  | 19.83        | 7.96          | 0.289              | 8.53         |
| 7/1/2004 | 1:00  | 19.89        | 7.96          | 0.289              | 8.55         |
| 7/1/2004 | 1:30  | 19.89        | 7.96          | 0.290              | 8.53         |
| 7/1/2004 | 2:00  | 19.89        | 7.97          | 0.289              | 8.56         |
| 7/1/2004 | 2:30  | 19.89        | 7.97          | 0.289              | 8.54         |
| 7/1/2004 | 3:00  | 19.83        | 7.97          | 0.289              | 8.51         |
| 7/1/2004 | 3:30  | 19.83        | 7.96          | 0.289              | 8.45         |
| 7/1/2004 | 4:00  | 19.78        | 7.95          | 0.289              | 8.40         |
| 7/1/2004 | 4:30  | 19.78        | 7.94          | 0.289              | 8.40         |
| 7/1/2004 | 5:00  | 19.78        | 7.95          | 0.289              | 8.37         |
| 7/1/2004 | 5:30  | 19.78        | 7.95          | 0.289              | 8.37         |
| 7/1/2004 | 6:00  | 19.72        | 7.93          | 0.289              | 8.30         |
| 7/1/2004 | 6:30  | 19.72        | 7.93          | 0.289              | 8.27         |
| 7/1/2004 | 7:00  | 19.72        | 7.93          | 0.290              | 8.24         |
| 7/1/2004 | 7:30  | 19.72        | 7.92          | 0.290              | 8.20         |
| 7/1/2004 | 8:00  | 19.72        | 7.93          | 0.290              | 8.21         |
| 7/1/2004 | 8:30  | 19.72        | 7.92          | 0.290              | 8.22         |
| 7/1/2004 | 9:00  | 19.78        | 7.93          | 0.290              | 8.23         |
| 7/1/2004 | 9:30  | 19.78        | 7.93          | 0.290              | 8.24         |
| 7/1/2004 | 10:00 | 19.72        | 7.93          | 0.290              | 8.18         |
| 7/1/2004 | 10:30 | 19.72        | 7.93          | 0.291              | 8.16         |
| 7/1/2004 | 11:00 | 19.72        | 7.91          | 0.291              | 8.15         |
| 7/1/2004 | 11:30 | 19.78        | 7.92          | 0.291              | 8.18         |
| 7/1/2004 | 12:00 | 19.89        | 7.93          | 0.292              | 8.23         |
| 7/1/2004 | 12:30 | 19.89        | 7.94          | 0.291              | 8.26         |
| 7/1/2004 | 13:00 | 19.89        | 7.94          | 0.291              | 8.28         |
| 7/1/2004 | 13:30 | 20.00        | 7.95          | 0.292              | 8.32         |
| 7/1/2004 | 14:00 | 20.06        | 7.95          | 0.292              | 8.31         |
| 7/1/2004 | 14:30 | 20.11        | 7.96          | 0.292              | 8.33         |
| 7/1/2004 | 15:00 | 20.17        | 7.96          | 0.292              | 8.37         |
| 7/1/2004 | 15:30 | 20.22        | 7.95          | 0.292              | 8.29         |
| 7/1/2004 | 16:00 | 20.33        | 7.96          | 0.292              | 8.36         |
| 7/1/2004 | 16:30 | 20.28        | 7.96          | 0.292              | 8.34         |
| 7/1/2004 | 17:00 | 20.33        | 7.96          | 0.293              | 8.27         |
| 7/1/2004 | 17:30 | 20.33        | 7.96          | 0.293              | 8.27         |
| 7/1/2004 | 18:00 | 20.33        | 7.96          | 0.293              | 8.19         |
| 7/1/2004 | 18:30 | 20.28        | 7.94          | 0.293              | 8.04         |
| 7/1/2004 | 19:00 | 20.11        | 7.91          | 0.293              | 7.90         |
| 7/1/2004 | 19:30 | 20.06        | 7.90          | 0.294              | 7.77         |
| 7/1/2004 | 20:00 | 20.06        | 7.91          | 0.294              | 7.66         |
| 7/1/2004 | 20:30 | 20.11        | 7.89          | 0.294              | 7.66         |
| 7/1/2004 | 21:00 | 20.33        | 7.93          | 0.295              | 7.89         |
| 7/1/2004 | 21:30 | 20.50        | 7.95          | 0.295              | 8.00         |
| 7/1/2004 | 22:00 | 20.50        | 7.95          | 0.294              | 8.09         |
| 7/1/2004 | 22:30 | 20.50        | 7.95          | 0.294              | 8.06         |
| 7/1/2004 | 23:00 | 20.56        | 7.97          | 0.294              | 8.14         |
| 7/1/2004 | 23:30 | 20.61        | 7.98          | 0.294              | 8.21         |

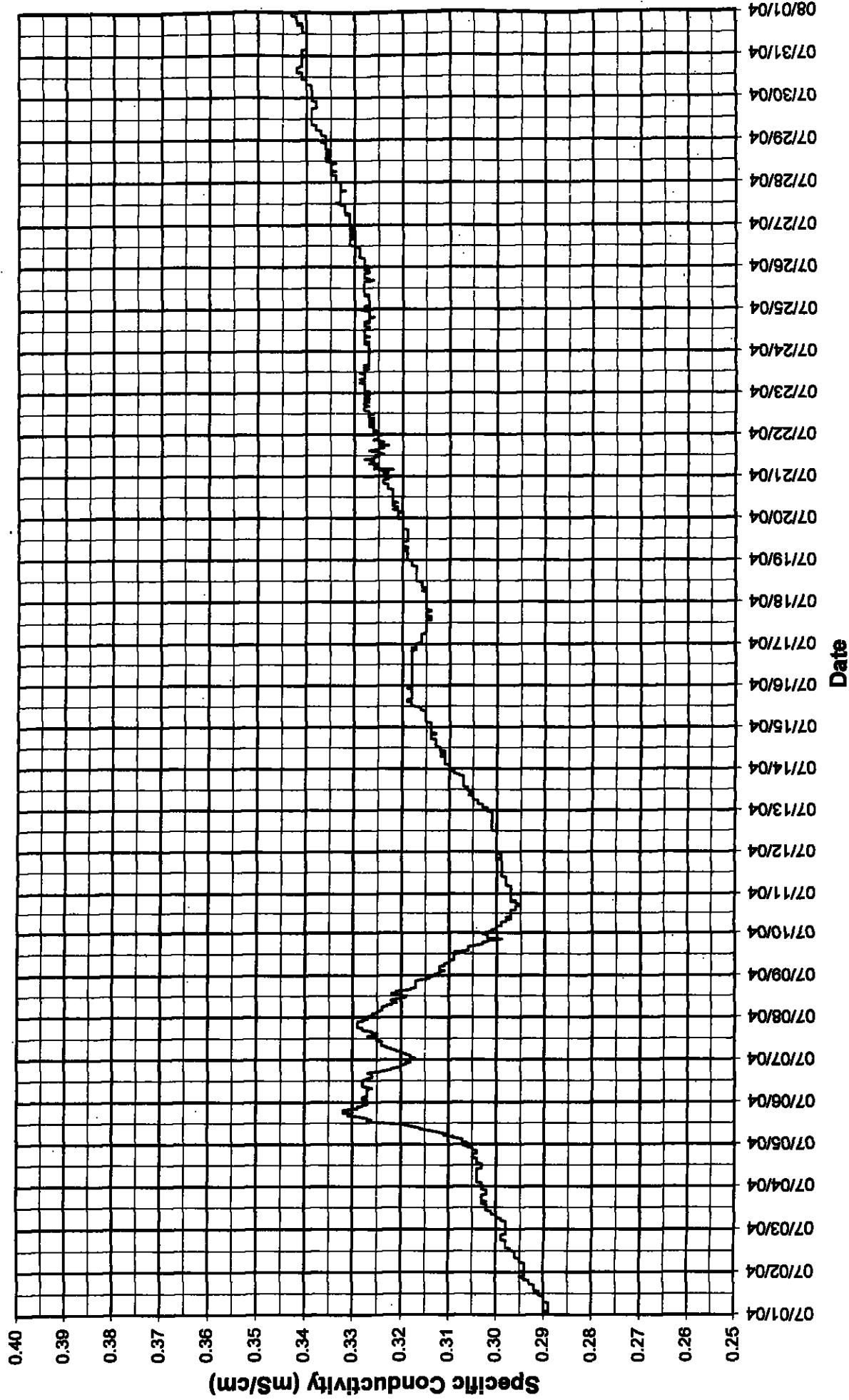
**2004 Water Quality Study  
Tailwater Temperature Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



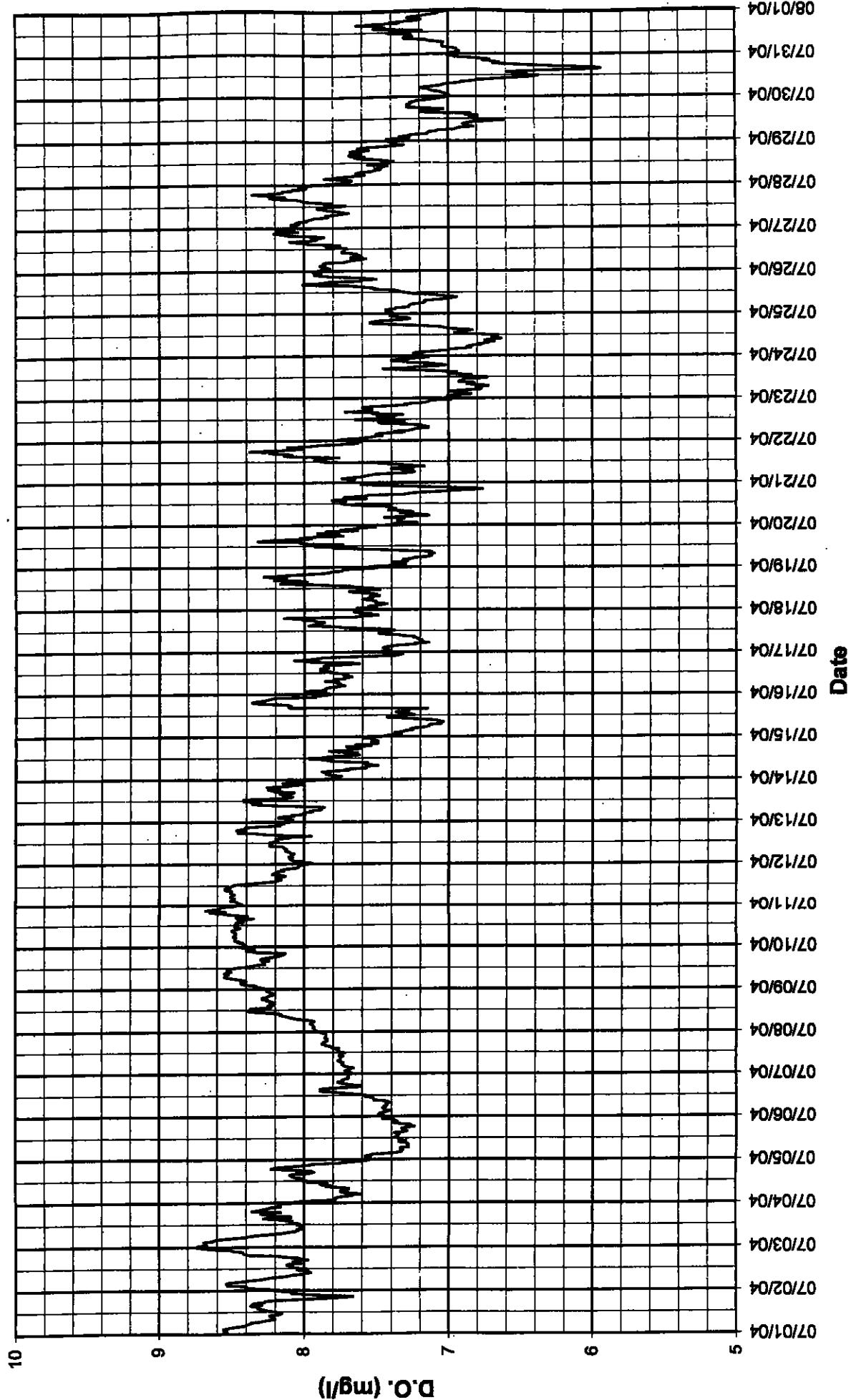
**2004 Water Quality Study  
Tailwater pH Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study  
Tailwater Specific Conductivity Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study  
Tailwater Dissolved Oxygen Sampling (mg/l)  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 7/2/2004 | 0:00  | 20.67         | 7.99          | 0.295              | 8.22         |
| 7/2/2004 | 0:30  | 20.72         | 8.01          | 0.294              | 8.33         |
| 7/2/2004 | 1:00  | 20.72         | 8.01          | 0.294              | 8.39         |
| 7/2/2004 | 1:30  | 20.72         | 8.02          | 0.294              | 8.41         |
| 7/2/2004 | 2:00  | 20.72         | 8.02          | 0.294              | 8.40         |
| 7/2/2004 | 2:30  | 20.78         | 8.04          | 0.294              | 8.53         |
| 7/2/2004 | 3:00  | 20.78         | 8.04          | 0.294              | 8.51         |
| 7/2/2004 | 3:30  | 20.83         | 8.04          | 0.294              | 8.54         |
| 7/2/2004 | 4:00  | 20.78         | 8.04          | 0.294              | 8.52         |
| 7/2/2004 | 4:30  | 20.78         | 8.02          | 0.294              | 8.43         |
| 7/2/2004 | 5:00  | 20.83         | 8.02          | 0.294              | 8.38         |
| 7/2/2004 | 5:30  | 20.78         | 8.01          | 0.295              | 8.30         |
| 7/2/2004 | 6:00  | 20.78         | 8.01          | 0.295              | 8.27         |
| 7/2/2004 | 6:30  | 20.78         | 7.99          | 0.295              | 8.24         |
| 7/2/2004 | 7:00  | 20.78         | 7.99          | 0.295              | 8.17         |
| 7/2/2004 | 7:30  | 20.72         | 7.98          | 0.295              | 8.11         |
| 7/2/2004 | 8:00  | 20.78         | 7.97          | 0.296              | 8.09         |
| 7/2/2004 | 8:30  | 20.78         | 7.96          | 0.296              | 8.02         |
| 7/2/2004 | 9:00  | 20.83         | 7.95          | 0.296              | 8.00         |
| 7/2/2004 | 9:30  | 20.83         | 7.95          | 0.296              | 7.95         |
| 7/2/2004 | 10:00 | 20.83         | 7.95          | 0.296              | 7.97         |
| 7/2/2004 | 10:30 | 20.83         | 7.96          | 0.296              | 7.99         |
| 7/2/2004 | 11:00 | 20.83         | 7.97          | 0.296              | 8.05         |
| 7/2/2004 | 11:30 | 20.83         | 7.97          | 0.296              | 7.97         |
| 7/2/2004 | 12:00 | 20.83         | 7.97          | 0.297              | 8.05         |
| 7/2/2004 | 12:30 | 20.83         | 7.98          | 0.297              | 8.10         |
| 7/2/2004 | 13:00 | 20.89         | 7.99          | 0.297              | 8.09         |
| 7/2/2004 | 13:30 | 20.94         | 8.00          | 0.298              | 8.12         |
| 7/2/2004 | 14:00 | 21.00         | 7.99          | 0.298              | 8.11         |
| 7/2/2004 | 14:30 | 21.00         | 7.98          | 0.298              | 8.02         |
| 7/2/2004 | 15:00 | 21.06         | 8.01          | 0.298              | 8.07         |
| 7/2/2004 | 15:30 | 21.00         | 8.01          | 0.298              | 8.08         |
| 7/2/2004 | 16:00 | 21.06         | 8.01          | 0.298              | 8.05         |
| 7/2/2004 | 16:30 | 21.00         | 8.01          | 0.298              | 7.97         |
| 7/2/2004 | 17:00 | 21.06         | 8.01          | 0.298              | 8.02         |
| 7/2/2004 | 17:30 | 21.06         | 8.01          | 0.298              | 8.04         |
| 7/2/2004 | 18:00 | 21.17         | 8.04          | 0.299              | 8.14         |
| 7/2/2004 | 18:30 | 21.17         | 8.05          | 0.299              | 8.18         |
| 7/2/2004 | 19:00 | 21.33         | 8.08          | 0.299              | 8.38         |
| 7/2/2004 | 19:30 | 21.33         | 8.09          | 0.299              | 8.40         |
| 7/2/2004 | 20:00 | 21.33         | 8.09          | 0.299              | 8.42         |
| 7/2/2004 | 20:30 | 21.33         | 8.09          | 0.299              | 8.42         |
| 7/2/2004 | 21:00 | 21.39         | 8.09          | 0.298              | 8.43         |
| 7/2/2004 | 21:30 | 21.44         | 8.10          | 0.298              | 8.49         |
| 7/2/2004 | 22:00 | 21.44         | 8.10          | 0.298              | 8.50         |
| 7/2/2004 | 22:30 | 21.50         | 8.12          | 0.298              | 8.61         |
| 7/2/2004 | 23:00 | 21.56         | 8.14          | 0.298              | 8.68         |
| 7/2/2004 | 23:30 | 21.56         | 8.15          | 0.298              | 8.73         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 7/3/2004 | 0:00  | 21.56         | 8.15          | 0.298              | 8.74         |
| 7/3/2004 | 0:30  | 21.50         | 8.15          | 0.298              | 8.73         |
| 7/3/2004 | 1:00  | 21.50         | 8.14          | 0.298              | 8.67         |
| 7/3/2004 | 1:30  | 21.44         | 8.15          | 0.298              | 8.68         |
| 7/3/2004 | 2:00  | 21.50         | 8.15          | 0.298              | 8.68         |
| 7/3/2004 | 2:30  | 21.50         | 8.14          | 0.298              | 8.69         |
| 7/3/2004 | 3:00  | 21.44         | 8.15          | 0.298              | 8.63         |
| 7/3/2004 | 3:30  | 21.44         | 8.14          | 0.298              | 8.62         |
| 7/3/2004 | 4:00  | 21.44         | 8.13          | 0.298              | 8.57         |
| 7/3/2004 | 4:30  | 21.44         | 8.12          | 0.299              | 8.49         |
| 7/3/2004 | 5:00  | 21.44         | 8.11          | 0.299              | 8.41         |
| 7/3/2004 | 5:30  | 21.39         | 8.10          | 0.299              | 8.38         |
| 7/3/2004 | 6:00  | 21.39         | 8.09          | 0.300              | 8.32         |
| 7/3/2004 | 6:30  | 21.39         | 8.07          | 0.300              | 8.23         |
| 7/3/2004 | 7:00  | 21.39         | 8.06          | 0.300              | 8.15         |
| 7/3/2004 | 7:30  | 21.39         | 8.05          | 0.300              | 8.11         |
| 7/3/2004 | 8:00  | 21.39         | 8.04          | 0.301              | 8.06         |
| 7/3/2004 | 8:30  | 21.39         | 8.04          | 0.301              | 8.04         |
| 7/3/2004 | 9:00  | 21.39         | 8.05          | 0.301              | 8.05         |
| 7/3/2004 | 9:30  | 21.39         | 8.04          | 0.301              | 8.00         |
| 7/3/2004 | 10:00 | 21.39         | 8.04          | 0.302              | 8.03         |
| 7/3/2004 | 10:30 | 21.39         | 8.03          | 0.302              | 8.01         |
| 7/3/2004 | 11:00 | 21.39         | 8.03          | 0.302              | 8.00         |
| 7/3/2004 | 11:30 | 21.39         | 8.04          | 0.302              | 8.05         |
| 7/3/2004 | 12:00 | 21.39         | 8.04          | 0.302              | 8.03         |
| 7/3/2004 | 12:30 | 21.44         | 8.04          | 0.302              | 8.08         |
| 7/3/2004 | 13:00 | 21.44         | 8.05          | 0.302              | 8.10         |
| 7/3/2004 | 13:30 | 21.44         | 8.05          | 0.302              | 8.08         |
| 7/3/2004 | 14:00 | 21.50         | 8.06          | 0.303              | 8.13         |
| 7/3/2004 | 14:30 | 21.56         | 8.07          | 0.303              | 8.18         |
| 7/3/2004 | 15:00 | 21.61         | 8.08          | 0.302              | 8.28         |
| 7/3/2004 | 15:30 | 21.50         | 8.05          | 0.303              | 8.09         |
| 7/3/2004 | 16:00 | 21.56         | 8.06          | 0.303              | 8.09         |
| 7/3/2004 | 16:30 | 21.67         | 8.08          | 0.303              | 8.25         |
| 7/3/2004 | 17:00 | 21.67         | 8.08          | 0.303              | 8.20         |
| 7/3/2004 | 17:30 | 21.72         | 8.09          | 0.303              | 8.30         |
| 7/3/2004 | 18:00 | 21.67         | 8.09          | 0.303              | 8.23         |
| 7/3/2004 | 18:30 | 21.67         | 8.08          | 0.303              | 8.16         |
| 7/3/2004 | 19:00 | 21.78         | 8.11          | 0.302              | 8.36         |
| 7/3/2004 | 19:30 | 21.78         | 8.11          | 0.302              | 8.31         |
| 7/3/2004 | 20:00 | 21.72         | 8.11          | 0.302              | 8.28         |
| 7/3/2004 | 20:30 | 21.78         | 8.10          | 0.302              | 8.25         |
| 7/3/2004 | 21:00 | 21.78         | 8.10          | 0.302              | 8.23         |
| 7/3/2004 | 21:30 | 21.78         | 8.10          | 0.302              | 8.16         |
| 7/3/2004 | 22:00 | 21.78         | 8.10          | 0.303              | 8.16         |
| 7/3/2004 | 22:30 | 21.78         | 8.10          | 0.303              | 8.17         |
| 7/3/2004 | 23:00 | 21.78         | 8.10          | 0.303              | 8.18         |
| 7/3/2004 | 23:30 | 21.78         | 8.09          | 0.303              | 8.08         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 7/4/2004 | 0:00  | 21.78         | 8.08          | 0.303              | 8.07         |
| 7/4/2004 | 0:30  | 21.72         | 8.07          | 0.303              | 7.98         |
| 7/4/2004 | 1:00  | 21.67         | 8.05          | 0.303              | 7.84         |
| 7/4/2004 | 1:30  | 21.67         | 8.04          | 0.303              | 7.78         |
| 7/4/2004 | 2:00  | 21.67         | 8.04          | 0.304              | 7.78         |
| 7/4/2004 | 2:30  | 21.67         | 8.04          | 0.304              | 7.78         |
| 7/4/2004 | 3:00  | 21.67         | 8.04          | 0.304              | 7.74         |
| 7/4/2004 | 3:30  | 21.61         | 8.03          | 0.304              | 7.67         |
| 7/4/2004 | 4:00  | 21.56         | 8.03          | 0.304              | 7.68         |
| 7/4/2004 | 4:30  | 21.50         | 8.01          | 0.304              | 7.61         |
| 7/4/2004 | 5:00  | 21.44         | 8.02          | 0.304              | 7.68         |
| 7/4/2004 | 5:30  | 21.44         | 8.04          | 0.304              | 7.74         |
| 7/4/2004 | 6:00  | 21.39         | 8.03          | 0.304              | 7.75         |
| 7/4/2004 | 6:30  | 21.39         | 8.03          | 0.304              | 7.74         |
| 7/4/2004 | 7:00  | 21.39         | 8.02          | 0.304              | 7.70         |
| 7/4/2004 | 7:30  | 21.33         | 8.02          | 0.304              | 7.69         |
| 7/4/2004 | 8:00  | 21.39         | 8.02          | 0.304              | 7.74         |
| 7/4/2004 | 8:30  | 21.39         | 8.04          | 0.304              | 7.85         |
| 7/4/2004 | 9:00  | 21.33         | 8.04          | 0.304              | 7.81         |
| 7/4/2004 | 9:30  | 21.33         | 8.05          | 0.304              | 7.88         |
| 7/4/2004 | 10:00 | 21.33         | 8.05          | 0.303              | 7.89         |
| 7/4/2004 | 10:30 | 21.33         | 8.05          | 0.303              | 7.84         |
| 7/4/2004 | 11:00 | 21.33         | 8.07          | 0.303              | 7.98         |
| 7/4/2004 | 11:30 | 21.33         | 8.07          | 0.303              | 7.96         |
| 7/4/2004 | 12:00 | 21.33         | 8.07          | 0.303              | 8.03         |
| 7/4/2004 | 12:30 | 21.33         | 8.08          | 0.303              | 8.01         |
| 7/4/2004 | 13:00 | 21.33         | 8.07          | 0.304              | 8.00         |
| 7/4/2004 | 13:30 | 21.39         | 8.08          | 0.304              | 8.06         |
| 7/4/2004 | 14:00 | 21.44         | 8.09          | 0.304              | 8.08         |
| 7/4/2004 | 14:30 | 21.44         | 8.10          | 0.304              | 8.09         |
| 7/4/2004 | 15:00 | 21.50         | 8.09          | 0.304              | 8.10         |
| 7/4/2004 | 15:30 | 21.44         | 8.09          | 0.304              | 8.06         |
| 7/4/2004 | 16:00 | 21.39         | 8.07          | 0.305              | 7.96         |
| 7/4/2004 | 16:30 | 21.39         | 8.07          | 0.305              | 7.93         |
| 7/4/2004 | 17:00 | 21.33         | 8.08          | 0.305              | 7.95         |
| 7/4/2004 | 17:30 | 21.39         | 8.09          | 0.305              | 8.02         |
| 7/4/2004 | 18:00 | 21.44         | 8.11          | 0.305              | 8.10         |
| 7/4/2004 | 18:30 | 21.50         | 8.14          | 0.304              | 8.23         |
| 7/4/2004 | 19:00 | 21.50         | 8.14          | 0.304              | 8.20         |
| 7/4/2004 | 19:30 | 21.50         | 8.13          | 0.304              | 8.13         |
| 7/4/2004 | 20:00 | 21.39         | 8.11          | 0.304              | 8.03         |
| 7/4/2004 | 20:30 | 21.33         | 8.10          | 0.305              | 7.96         |
| 7/4/2004 | 21:00 | 21.28         | 8.10          | 0.305              | 7.94         |
| 7/4/2004 | 21:30 | 21.11         | 8.07          | 0.305              | 7.77         |
| 7/4/2004 | 22:00 | 21.06         | 8.06          | 0.306              | 7.73         |
| 7/4/2004 | 22:30 | 20.94         | 8.05          | 0.306              | 7.65         |
| 7/4/2004 | 23:00 | 20.83         | 8.03          | 0.307              | 7.58         |
| 7/4/2004 | 23:30 | 20.78         | 8.04          | 0.307              | 7.55         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 7/5/2004 | 0:00  | 20.78         | 8.04          | 0.31               | 7.58         |
| 7/5/2004 | 0:30  | 20.72         | 8.04          | 0.31               | 7.58         |
| 7/5/2004 | 1:00  | 20.67         | 8.03          | 0.31               | 7.54         |
| 7/5/2004 | 1:30  | 20.61         | 8.03          | 0.31               | 7.58         |
| 7/5/2004 | 2:00  | 20.56         | 8.02          | 0.31               | 7.55         |
| 7/5/2004 | 2:30  | 20.50         | 8.02          | 0.31               | 7.53         |
| 7/5/2004 | 3:00  | 20.44         | 8.00          | 0.31               | 7.43         |
| 7/5/2004 | 3:30  | 20.33         | 7.99          | 0.31               | 7.36         |
| 7/5/2004 | 4:00  | 20.22         | 7.97          | 0.31               | 7.33         |
| 7/5/2004 | 4:30  | 20.17         | 7.97          | 0.31               | 7.34         |
| 7/5/2004 | 5:00  | 20.11         | 7.97          | 0.31               | 7.32         |
| 7/5/2004 | 5:30  | 20.11         | 7.96          | 0.31               | 7.32         |
| 7/5/2004 | 6:00  | 20.06         | 7.96          | 0.31               | 7.34         |
| 7/5/2004 | 6:30  | 20.00         | 7.96          | 0.31               | 7.28         |
| 7/5/2004 | 7:00  | 19.94         | 7.96          | 0.31               | 7.28         |
| 7/5/2004 | 7:30  | 19.89         | 7.95          | 0.31               | 7.29         |
| 7/5/2004 | 8:00  | 19.83         | 7.96          | 0.32               | 7.28         |
| 7/5/2004 | 8:30  | 19.78         | 7.95          | 0.32               | 7.29         |
| 7/5/2004 | 9:00  | 19.78         | 7.95          | 0.32               | 7.30         |
| 7/5/2004 | 9:30  | 19.78         | 7.96          | 0.32               | 7.35         |
| 7/5/2004 | 10:00 | 19.72         | 7.95          | 0.32               | 7.30         |
| 7/5/2004 | 10:30 | 19.72         | 7.96          | 0.32               | 7.35         |
| 7/5/2004 | 11:00 | 19.72         | 7.96          | 0.32               | 7.34         |
| 7/5/2004 | 11:30 | 19.61         | 7.95          | 0.32               | 7.36         |
| 7/5/2004 | 12:00 | 19.61         | 7.95          | 0.32               | 7.38         |
| 7/5/2004 | 12:30 | 19.56         | 7.94          | 0.33               | 7.35         |
| 7/5/2004 | 13:00 | 19.67         | 7.95          | 0.33               | 7.36         |
| 7/5/2004 | 13:30 | 19.67         | 7.94          | 0.33               | 7.36         |
| 7/5/2004 | 14:00 | 19.67         | 7.95          | 0.33               | 7.34         |
| 7/5/2004 | 14:30 | 19.67         | 7.95          | 0.33               | 7.38         |
| 7/5/2004 | 15:00 | 19.56         | 7.93          | 0.33               | 7.32         |
| 7/5/2004 | 15:30 | 19.44         | 7.93          | 0.33               | 7.29         |
| 7/5/2004 | 16:00 | 19.39         | 7.93          | 0.33               | 7.32         |
| 7/5/2004 | 16:30 | 19.28         | 7.94          | 0.33               | 7.32         |
| 7/5/2004 | 17:00 | 19.33         | 7.95          | 0.33               | 7.33         |
| 7/5/2004 | 17:30 | 19.22         | 7.94          | 0.33               | 7.30         |
| 7/5/2004 | 18:00 | 19.22         | 7.93          | 0.33               | 7.24         |
| 7/5/2004 | 18:30 | 19.22         | 7.93          | 0.33               | 7.26         |
| 7/5/2004 | 19:00 | 19.22         | 7.92          | 0.33               | 7.27         |
| 7/5/2004 | 19:30 | 19.33         | 7.94          | 0.33               | 7.33         |
| 7/5/2004 | 20:00 | 19.44         | 7.95          | 0.33               | 7.38         |
| 7/5/2004 | 20:30 | 19.44         | 7.94          | 0.33               | 7.36         |
| 7/5/2004 | 21:00 | 19.44         | 7.94          | 0.33               | 7.36         |
| 7/5/2004 | 21:30 | 19.50         | 7.95          | 0.33               | 7.39         |
| 7/5/2004 | 22:00 | 19.50         | 7.95          | 0.33               | 7.38         |
| 7/5/2004 | 22:30 | 19.61         | 7.96          | 0.33               | 7.46         |
| 7/5/2004 | 23:00 | 19.61         | 7.96          | 0.33               | 7.46         |
| 7/5/2004 | 23:30 | 19.61         | 7.96          | 0.33               | 7.46         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 7/6/2004 | 0:00  | 19.61         | 7.95          | 0.33               | 7.45         |
| 7/6/2004 | 0:30  | 19.61         | 7.95          | 0.33               | 7.49         |
| 7/6/2004 | 1:00  | 19.61         | 7.95          | 0.33               | 7.48         |
| 7/6/2004 | 1:30  | 19.61         | 7.95          | 0.33               | 7.48         |
| 7/6/2004 | 2:00  | 19.56         | 7.95          | 0.33               | 7.45         |
| 7/6/2004 | 2:30  | 19.56         | 7.94          | 0.33               | 7.43         |
| 7/6/2004 | 3:00  | 19.56         | 7.93          | 0.33               | 7.41         |
| 7/6/2004 | 3:30  | 19.56         | 7.94          | 0.33               | 7.45         |
| 7/6/2004 | 4:00  | 19.50         | 7.94          | 0.33               | 7.45         |
| 7/6/2004 | 4:30  | 19.50         | 7.95          | 0.33               | 7.46         |
| 7/6/2004 | 5:00  | 19.50         | 7.94          | 0.33               | 7.44         |
| 7/6/2004 | 5:30  | 19.44         | 7.94          | 0.33               | 7.45         |
| 7/6/2004 | 6:00  | 19.44         | 7.94          | 0.33               | 7.43         |
| 7/6/2004 | 6:30  | 19.44         | 7.95          | 0.33               | 7.43         |
| 7/6/2004 | 7:00  | 19.44         | 7.94          | 0.33               | 7.44         |
| 7/6/2004 | 7:30  | 19.39         | 7.95          | 0.33               | 7.41         |
| 7/6/2004 | 8:00  | 19.39         | 7.94          | 0.33               | 7.42         |
| 7/6/2004 | 8:30  | 19.39         | 7.94          | 0.33               | 7.44         |
| 7/6/2004 | 9:00  | 19.39         | 7.95          | 0.33               | 7.52         |
| 7/6/2004 | 9:30  | 19.33         | 7.94          | 0.33               | 7.52         |
| 7/6/2004 | 10:00 | 19.33         | 7.94          | 0.33               | 7.52         |
| 7/6/2004 | 10:30 | 19.33         | 7.95          | 0.33               | 7.54         |
| 7/6/2004 | 11:00 | 19.28         | 7.95          | 0.33               | 7.58         |
| 7/6/2004 | 11:30 | 19.28         | 7.94          | 0.33               | 7.53         |
| 7/6/2004 | 12:00 | 19.28         | 7.95          | 0.33               | 7.60         |
| 7/6/2004 | 12:30 | 19.28         | 7.96          | 0.33               | 7.68         |
| 7/6/2004 | 13:00 | 19.28         | 7.97          | 0.33               | 7.74         |
| 7/6/2004 | 13:30 | 19.28         | 7.98          | 0.33               | 7.81         |
| 7/6/2004 | 14:00 | 19.28         | 7.99          | 0.33               | 7.89         |
| 7/6/2004 | 14:30 | 19.33         | 7.99          | 0.33               | 7.87         |
| 7/6/2004 | 15:00 | 19.33         | 7.98          | 0.33               | 7.89         |
| 7/6/2004 | 15:30 | 19.33         | 7.99          | 0.33               | 7.85         |
| 7/6/2004 | 16:00 | 19.28         | 7.98          | 0.33               | 7.73         |
| 7/6/2004 | 16:30 | 19.22         | 7.96          | 0.33               | 7.60         |
| 7/6/2004 | 17:00 | 19.11         | 7.96          | 0.32               | 7.60         |
| 7/6/2004 | 17:30 | 19.06         | 7.97          | 0.32               | 7.68         |
| 7/6/2004 | 18:00 | 19.00         | 7.99          | 0.32               | 7.71         |
| 7/6/2004 | 18:30 | 18.94         | 7.99          | 0.32               | 7.75         |
| 7/6/2004 | 19:00 | 18.89         | 7.99          | 0.32               | 7.77         |
| 7/6/2004 | 19:30 | 18.78         | 7.98          | 0.32               | 7.73         |
| 7/6/2004 | 20:00 | 18.72         | 7.98          | 0.32               | 7.74         |
| 7/6/2004 | 20:30 | 18.67         | 7.98          | 0.32               | 7.73         |
| 7/6/2004 | 21:00 | 18.56         | 7.98          | 0.32               | 7.70         |
| 7/6/2004 | 21:30 | 18.44         | 7.97          | 0.32               | 7.69         |
| 7/6/2004 | 22:00 | 18.39         | 7.97          | 0.32               | 7.70         |
| 7/6/2004 | 22:30 | 18.39         | 7.97          | 0.32               | 7.69         |
| 7/6/2004 | 23:00 | 18.33         | 7.96          | 0.32               | 7.69         |
| 7/6/2004 | 23:30 | 18.28         | 7.97          | 0.32               | 7.70         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 7/7/2004 | 0:00  | 18.22         | 7.96          | 0.32               | 7.67         |
| 7/7/2004 | 0:30  | 18.11         | 7.95          | 0.32               | 7.68         |
| 7/7/2004 | 1:00  | 18.11         | 7.97          | 0.32               | 7.69         |
| 7/7/2004 | 1:30  | 18.06         | 7.95          | 0.32               | 7.72         |
| 7/7/2004 | 2:00  | 18.00         | 7.95          | 0.32               | 7.69         |
| 7/7/2004 | 2:30  | 17.94         | 7.96          | 0.32               | 7.69         |
| 7/7/2004 | 3:00  | 17.89         | 7.95          | 0.32               | 7.66         |
| 7/7/2004 | 3:30  | 17.89         | 7.95          | 0.32               | 7.70         |
| 7/7/2004 | 4:00  | 17.83         | 7.96          | 0.32               | 7.72         |
| 7/7/2004 | 4:30  | 17.72         | 7.95          | 0.32               | 7.73         |
| 7/7/2004 | 5:00  | 17.72         | 7.95          | 0.32               | 7.74         |
| 7/7/2004 | 5:30  | 17.72         | 7.95          | 0.32               | 7.74         |
| 7/7/2004 | 6:00  | 17.72         | 7.96          | 0.32               | 7.73         |
| 7/7/2004 | 6:30  | 17.72         | 7.95          | 0.32               | 7.75         |
| 7/7/2004 | 7:00  | 17.72         | 7.96          | 0.32               | 7.77         |
| 7/7/2004 | 7:30  | 17.67         | 7.95          | 0.32               | 7.75         |
| 7/7/2004 | 8:00  | 17.67         | 7.96          | 0.32               | 7.75         |
| 7/7/2004 | 8:30  | 17.72         | 7.96          | 0.32               | 7.75         |
| 7/7/2004 | 9:00  | 17.67         | 7.96          | 0.32               | 7.75         |
| 7/7/2004 | 9:30  | 17.61         | 7.96          | 0.32               | 7.73         |
| 7/7/2004 | 10:00 | 17.67         | 7.96          | 0.32               | 7.76         |
| 7/7/2004 | 10:30 | 17.67         | 7.96          | 0.33               | 7.75         |
| 7/7/2004 | 11:00 | 17.61         | 7.96          | 0.33               | 7.75         |
| 7/7/2004 | 11:30 | 17.61         | 7.96          | 0.33               | 7.72         |
| 7/7/2004 | 12:00 | 17.61         | 7.97          | 0.33               | 7.76         |
| 7/7/2004 | 12:30 | 17.61         | 7.96          | 0.33               | 7.76         |
| 7/7/2004 | 13:00 | 17.50         | 7.95          | 0.33               | 7.76         |
| 7/7/2004 | 13:30 | 17.61         | 7.96          | 0.33               | 7.78         |
| 7/7/2004 | 14:00 | 17.56         | 7.96          | 0.33               | 7.76         |
| 7/7/2004 | 14:30 | 17.61         | 7.97          | 0.33               | 7.81         |
| 7/7/2004 | 15:00 | 17.56         | 7.97          | 0.33               | 7.80         |
| 7/7/2004 | 15:30 | 17.61         | 7.96          | 0.33               | 7.85         |
| 7/7/2004 | 16:00 | 17.56         | 7.96          | 0.33               | 7.85         |
| 7/7/2004 | 16:30 | 17.56         | 7.97          | 0.33               | 7.88         |
| 7/7/2004 | 17:00 | 17.61         | 7.96          | 0.33               | 7.86         |
| 7/7/2004 | 17:30 | 17.50         | 7.97          | 0.33               | 7.87         |
| 7/7/2004 | 18:00 | 17.39         | 7.95          | 0.33               | 7.85         |
| 7/7/2004 | 18:30 | 17.33         | 7.94          | 0.33               | 7.84         |
| 7/7/2004 | 19:00 | 17.22         | 7.95          | 0.33               | 7.85         |
| 7/7/2004 | 19:30 | 17.22         | 7.94          | 0.33               | 7.84         |
| 7/7/2004 | 20:00 | 17.17         | 7.95          | 0.33               | 7.86         |
| 7/7/2004 | 20:30 | 17.17         | 7.95          | 0.33               | 7.85         |
| 7/7/2004 | 21:00 | 17.06         | 7.94          | 0.33               | 7.85         |
| 7/7/2004 | 21:30 | 17.00         | 7.95          | 0.33               | 7.85         |
| 7/7/2004 | 22:00 | 16.94         | 7.94          | 0.33               | 7.85         |
| 7/7/2004 | 22:30 | 16.89         | 7.95          | 0.33               | 7.85         |
| 7/7/2004 | 23:00 | 16.83         | 7.95          | 0.33               | 7.88         |
| 7/7/2004 | 23:30 | 16.83         | 7.95          | 0.33               | 7.89         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 7/8/2004 | 0:00  | 16.78         | 7.95          | 0.33               | 7.91         |
| 7/8/2004 | 0:30  | 16.72         | 7.95          | 0.33               | 7.92         |
| 7/8/2004 | 1:00  | 16.72         | 7.96          | 0.33               | 7.93         |
| 7/8/2004 | 1:30  | 16.67         | 7.96          | 0.33               | 7.93         |
| 7/8/2004 | 2:00  | 16.67         | 7.95          | 0.33               | 7.94         |
| 7/8/2004 | 2:30  | 16.67         | 7.94          | 0.33               | 7.93         |
| 7/8/2004 | 3:00  | 16.67         | 7.94          | 0.33               | 7.94         |
| 7/8/2004 | 3:30  | 16.61         | 7.94          | 0.32               | 7.94         |
| 7/8/2004 | 4:00  | 16.61         | 7.94          | 0.32               | 7.96         |
| 7/8/2004 | 4:30  | 16.61         | 7.95          | 0.32               | 7.95         |
| 7/8/2004 | 5:00  | 16.61         | 7.95          | 0.32               | 7.95         |
| 7/8/2004 | 5:30  | 16.56         | 7.95          | 0.32               | 7.93         |
| 7/8/2004 | 6:00  | 16.56         | 7.95          | 0.32               | 7.96         |
| 7/8/2004 | 6:30  | 16.56         | 7.96          | 0.32               | 8.04         |
| 7/8/2004 | 7:00  | 16.50         | 7.97          | 0.32               | 8.07         |
| 7/8/2004 | 7:30  | 16.50         | 7.98          | 0.32               | 8.10         |
| 7/8/2004 | 8:00  | 16.50         | 7.97          | 0.32               | 8.12         |
| 7/8/2004 | 8:30  | 16.56         | 7.98          | 0.32               | 8.15         |
| 7/8/2004 | 9:00  | 16.56         | 7.99          | 0.32               | 8.17         |
| 7/8/2004 | 9:30  | 16.61         | 7.99          | 0.32               | 8.16         |
| 7/8/2004 | 10:00 | 16.61         | 7.99          | 0.32               | 8.21         |
| 7/8/2004 | 10:30 | 16.67         | 8.01          | 0.32               | 8.32         |
| 7/8/2004 | 11:00 | 16.67         | 8.02          | 0.32               | 8.38         |
| 7/8/2004 | 11:30 | 16.72         | 8.02          | 0.32               | 8.39         |
| 7/8/2004 | 12:00 | 16.83         | 8.02          | 0.32               | 8.35         |
| 7/8/2004 | 12:30 | 16.89         | 8.01          | 0.32               | 8.37         |
| 7/8/2004 | 13:00 | 16.94         | 8.09          | 0.32               | 8.23         |
| 7/8/2004 | 13:30 | 17.00         | 8.01          | 0.32               | 8.24         |
| 7/8/2004 | 14:00 | 17.06         | 8.02          | 0.32               | 8.25         |
| 7/8/2004 | 14:30 | 17.00         | 8.01          | 0.32               | 8.21         |
| 7/8/2004 | 15:00 | 16.89         | 8.02          | 0.32               | 8.21         |
| 7/8/2004 | 15:30 | 16.83         | 8.02          | 0.32               | 8.24         |
| 7/8/2004 | 16:00 | 16.78         | 8.01          | 0.32               | 8.21         |
| 7/8/2004 | 16:30 | 16.72         | 8.01          | 0.32               | 8.23         |
| 7/8/2004 | 17:00 | 16.78         | 8.01          | 0.32               | 8.26         |
| 7/8/2004 | 17:30 | 16.67         | 8.02          | 0.32               | 8.25         |
| 7/8/2004 | 18:00 | 16.78         | 8.01          | 0.32               | 8.29         |
| 7/8/2004 | 18:30 | 16.83         | 8.01          | 0.32               | 8.29         |
| 7/8/2004 | 19:00 | 16.78         | 8.00          | 0.32               | 8.26         |
| 7/8/2004 | 19:30 | 16.78         | 8.00          | 0.32               | 8.25         |
| 7/8/2004 | 20:00 | 16.72         | 8.00          | 0.32               | 8.23         |
| 7/8/2004 | 20:30 | 16.67         | 7.99          | 0.32               | 8.20         |
| 7/8/2004 | 21:00 | 16.61         | 7.99          | 0.32               | 8.21         |
| 7/8/2004 | 21:30 | 16.61         | 8.00          | 0.32               | 8.23         |
| 7/8/2004 | 22:00 | 16.56         | 7.99          | 0.31               | 8.24         |
| 7/8/2004 | 22:30 | 16.56         | 8.00          | 0.31               | 8.26         |
| 7/8/2004 | 23:00 | 16.61         | 7.99          | 0.31               | 8.25         |
| 7/8/2004 | 23:30 | 16.56         | 8.00          | 0.31               | 8.27         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 7/9/2004 | 0:00  | 16.56         | 7.99          | 0.31               | 8.27         |
| 7/9/2004 | 0:30  | 16.56         | 8.00          | 0.31               | 8.30         |
| 7/9/2004 | 1:00  | 16.56         | 8.00          | 0.31               | 8.33         |
| 7/9/2004 | 1:30  | 16.61         | 8.00          | 0.31               | 8.33         |
| 7/9/2004 | 2:00  | 16.67         | 8.01          | 0.31               | 8.40         |
| 7/9/2004 | 2:30  | 16.67         | 8.03          | 0.31               | 8.43         |
| 7/9/2004 | 3:00  | 16.67         | 8.02          | 0.31               | 8.41         |
| 7/9/2004 | 3:30  | 16.67         | 8.01          | 0.31               | 8.44         |
| 7/9/2004 | 4:00  | 16.67         | 8.01          | 0.31               | 8.40         |
| 7/9/2004 | 4:30  | 16.67         | 8.01          | 0.31               | 8.41         |
| 7/9/2004 | 5:00  | 16.72         | 8.01          | 0.31               | 8.44         |
| 7/9/2004 | 5:30  | 16.72         | 8.03          | 0.31               | 8.48         |
| 7/9/2004 | 6:00  | 16.72         | 8.03          | 0.31               | 8.52         |
| 7/9/2004 | 6:30  | 16.72         | 8.03          | 0.31               | 8.55         |
| 7/9/2004 | 7:00  | 16.72         | 8.03          | 0.31               | 8.54         |
| 7/9/2004 | 7:30  | 16.78         | 8.03          | 0.31               | 8.54         |
| 7/9/2004 | 8:00  | 16.78         | 8.04          | 0.31               | 8.52         |
| 7/9/2004 | 8:30  | 16.78         | 8.03          | 0.31               | 8.55         |
| 7/9/2004 | 9:00  | 16.78         | 8.03          | 0.31               | 8.54         |
| 7/9/2004 | 9:30  | 16.78         | 8.03          | 0.31               | 8.50         |
| 7/9/2004 | 10:00 | 16.78         | 8.03          | 0.31               | 8.53         |
| 7/9/2004 | 10:30 | 16.83         | 8.03          | 0.31               | 8.52         |
| 7/9/2004 | 11:00 | 16.89         | 8.02          | 0.31               | 8.53         |
| 7/9/2004 | 11:30 | 16.83         | 8.02          | 0.31               | 8.49         |
| 7/9/2004 | 12:00 | 16.83         | 8.02          | 0.31               | 8.46         |
| 7/9/2004 | 12:30 | 16.78         | 8.02          | 0.31               | 8.40         |
| 7/9/2004 | 13:00 | 16.72         | 8.01          | 0.31               | 8.36         |
| 7/9/2004 | 13:30 | 16.72         | 8.00          | 0.31               | 8.33         |
| 7/9/2004 | 14:00 | 16.67         | 8.00          | 0.31               | 8.27         |
| 7/9/2004 | 14:30 | 16.67         | 8.00          | 0.31               | 8.27         |
| 7/9/2004 | 15:00 | 16.67         | 8.00          | 0.31               | 8.28         |
| 7/9/2004 | 15:30 | 16.67         | 7.99          | 0.31               | 8.29         |
| 7/9/2004 | 16:00 | 16.67         | 8.00          | 0.31               | 8.24         |
| 7/9/2004 | 16:30 | 16.67         | 8.01          | 0.30               | 8.30         |
| 7/9/2004 | 17:00 | 16.67         | 8.00          | 0.30               | 8.30         |
| 7/9/2004 | 17:30 | 16.72         | 7.99          | 0.30               | 8.27         |
| 7/9/2004 | 18:00 | 16.61         | 7.97          | 0.30               | 8.22         |
| 7/9/2004 | 18:30 | 16.56         | 7.98          | 0.30               | 8.18         |
| 7/9/2004 | 19:00 | 16.56         | 7.97          | 0.30               | 8.16         |
| 7/9/2004 | 19:30 | 16.50         | 7.96          | 0.30               | 8.14         |
| 7/9/2004 | 20:00 | 16.50         | 7.97          | 0.30               | 8.13         |
| 7/9/2004 | 20:30 | 16.72         | 7.98          | 0.30               | 8.32         |
| 7/9/2004 | 21:00 | 16.83         | 7.99          | 0.30               | 8.35         |
| 7/9/2004 | 21:30 | 16.94         | 8.00          | 0.30               | 8.40         |
| 7/9/2004 | 22:00 | 16.89         | 8.00          | 0.30               | 8.35         |
| 7/9/2004 | 22:30 | 16.94         | 8.00          | 0.30               | 8.34         |
| 7/9/2004 | 23:00 | 16.94         | 8.01          | 0.30               | 8.42         |
| 7/9/2004 | 23:30 | 17.00         | 8.00          | 0.30               | 8.44         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/10/2004 | 0:00  | 16.94         | 8.00          | 0.30               | 8.40         |
| 7/10/2004 | 0:30  | 17.00         | 7.99          | 0.30               | 8.41         |
| 7/10/2004 | 1:00  | 17.00         | 8.00          | 0.30               | 8.42         |
| 7/10/2004 | 1:30  | 17.06         | 8.00          | 0.30               | 8.42         |
| 7/10/2004 | 2:00  | 17.11         | 8.00          | 0.30               | 8.46         |
| 7/10/2004 | 2:30  | 17.11         | 8.01          | 0.30               | 8.45         |
| 7/10/2004 | 3:00  | 17.11         | 8.00          | 0.30               | 8.48         |
| 7/10/2004 | 3:30  | 17.17         | 8.01          | 0.30               | 8.48         |
| 7/10/2004 | 4:00  | 17.11         | 8.01          | 0.30               | 8.48         |
| 7/10/2004 | 4:30  | 17.17         | 8.02          | 0.30               | 8.47         |
| 7/10/2004 | 5:00  | 17.17         | 8.00          | 0.30               | 8.49         |
| 7/10/2004 | 5:30  | 17.17         | 8.00          | 0.30               | 8.48         |
| 7/10/2004 | 6:00  | 17.17         | 8.00          | 0.30               | 8.48         |
| 7/10/2004 | 6:30  | 17.17         | 8.00          | 0.30               | 8.47         |
| 7/10/2004 | 7:00  | 17.17         | 8.00          | 0.30               | 8.47         |
| 7/10/2004 | 7:30  | 17.17         | 8.00          | 0.30               | 8.48         |
| 7/10/2004 | 8:00  | 17.17         | 8.00          | 0.30               | 8.49         |
| 7/10/2004 | 8:30  | 17.17         | 8.00          | 0.30               | 8.50         |
| 7/10/2004 | 9:00  | 17.17         | 8.01          | 0.30               | 8.48         |
| 7/10/2004 | 9:30  | 17.17         | 8.00          | 0.30               | 8.46         |
| 7/10/2004 | 10:00 | 17.17         | 7.99          | 0.30               | 8.44         |
| 7/10/2004 | 10:30 | 17.22         | 8.01          | 0.30               | 8.47         |
| 7/10/2004 | 11:00 | 17.22         | 8.01          | 0.30               | 8.48         |
| 7/10/2004 | 11:30 | 17.28         | 8.01          | 0.30               | 8.48         |
| 7/10/2004 | 12:00 | 17.28         | 8.00          | 0.30               | 8.48         |
| 7/10/2004 | 12:30 | 17.22         | 8.00          | 0.30               | 8.47         |
| 7/10/2004 | 13:00 | 17.17         | 8.01          | 0.30               | 8.47         |
| 7/10/2004 | 13:30 | 17.17         | 7.99          | 0.30               | 8.42         |
| 7/10/2004 | 14:00 | 17.17         | 8.01          | 0.30               | 8.46         |
| 7/10/2004 | 14:30 | 17.17         | 8.00          | 0.30               | 8.45         |
| 7/10/2004 | 15:00 | 17.11         | 8.00          | 0.30               | 8.42         |
| 7/10/2004 | 15:30 | 17.00         | 7.99          | 0.30               | 8.35         |
| 7/10/2004 | 16:00 | 17.22         | 8.00          | 0.30               | 8.47         |
| 7/10/2004 | 16:30 | 17.17         | 8.00          | 0.30               | 8.42         |
| 7/10/2004 | 17:00 | 17.22         | 7.98          | 0.30               | 8.39         |
| 7/10/2004 | 17:30 | 17.33         | 8.00          | 0.30               | 8.46         |
| 7/10/2004 | 18:00 | 17.39         | 8.01          | 0.30               | 8.53         |
| 7/10/2004 | 18:30 | 17.44         | 8.01          | 0.30               | 8.57         |
| 7/10/2004 | 19:00 | 17.67         | 8.03          | 0.30               | 8.65         |
| 7/10/2004 | 19:30 | 17.78         | 8.01          | 0.30               | 8.54         |
| 7/10/2004 | 20:00 | 17.89         | 8.02          | 0.30               | 8.61         |
| 7/10/2004 | 20:30 | 18.06         | 8.03          | 0.30               | 8.68         |
| 7/10/2004 | 21:00 | 18.00         | 8.02          | 0.30               | 8.64         |
| 7/10/2004 | 21:30 | 18.06         | 8.02          | 0.30               | 8.59         |
| 7/10/2004 | 22:00 | 18.11         | 8.02          | 0.30               | 8.58         |
| 7/10/2004 | 22:30 | 18.22         | 8.02          | 0.30               | 8.57         |
| 7/10/2004 | 23:00 | 18.22         | 8.01          | 0.30               | 8.49         |
| 7/10/2004 | 23:30 | 18.28         | 8.00          | 0.30               | 8.47         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/11/2004 | 0:00  | 18.22         | 7.98          | 0.30               | 8.43         |
| 7/11/2004 | 0:30  | 18.22         | 7.99          | 0.30               | 8.43         |
| 7/11/2004 | 1:00  | 18.33         | 7.99          | 0.30               | 8.46         |
| 7/11/2004 | 1:30  | 18.33         | 7.99          | 0.30               | 8.46         |
| 7/11/2004 | 2:00  | 18.39         | 7.99          | 0.30               | 8.47         |
| 7/11/2004 | 2:30  | 18.44         | 8.00          | 0.30               | 8.51         |
| 7/11/2004 | 3:00  | 18.44         | 8.00          | 0.30               | 8.50         |
| 7/11/2004 | 3:30  | 18.44         | 8.00          | 0.30               | 8.49         |
| 7/11/2004 | 4:00  | 18.50         | 8.00          | 0.30               | 8.48         |
| 7/11/2004 | 4:30  | 18.56         | 8.00          | 0.30               | 8.50         |
| 7/11/2004 | 5:00  | 18.61         | 8.00          | 0.30               | 8.51         |
| 7/11/2004 | 5:30  | 18.67         | 8.00          | 0.30               | 8.50         |
| 7/11/2004 | 6:00  | 18.67         | 8.00          | 0.30               | 8.49         |
| 7/11/2004 | 6:30  | 18.67         | 8.00          | 0.30               | 8.48         |
| 7/11/2004 | 7:00  | 18.67         | 8.00          | 0.30               | 8.50         |
| 7/11/2004 | 7:30  | 18.67         | 8.01          | 0.30               | 8.51         |
| 7/11/2004 | 8:00  | 18.72         | 8.00          | 0.30               | 8.50         |
| 7/11/2004 | 8:30  | 18.78         | 8.01          | 0.30               | 8.50         |
| 7/11/2004 | 9:00  | 18.78         | 8.01          | 0.30               | 8.54         |
| 7/11/2004 | 9:30  | 18.83         | 8.01          | 0.30               | 8.55         |
| 7/11/2004 | 10:00 | 18.78         | 8.02          | 0.30               | 8.55         |
| 7/11/2004 | 10:30 | 18.78         | 8.02          | 0.30               | 8.51         |
| 7/11/2004 | 11:00 | 18.78         | 8.02          | 0.30               | 8.52         |
| 7/11/2004 | 11:30 | 18.83         | 8.01          | 0.30               | 8.50         |
| 7/11/2004 | 12:00 | 18.83         | 8.01          | 0.30               | 8.49         |
| 7/11/2004 | 12:30 | 18.83         | 8.01          | 0.30               | 8.44         |
| 7/11/2004 | 13:00 | 18.67         | 8.00          | 0.30               | 8.35         |
| 7/11/2004 | 13:30 | 18.67         | 7.99          | 0.30               | 8.27         |
| 7/11/2004 | 14:00 | 18.67         | 7.99          | 0.30               | 8.20         |
| 7/11/2004 | 14:30 | 18.72         | 7.99          | 0.30               | 8.18         |
| 7/11/2004 | 15:00 | 18.72         | 7.99          | 0.30               | 8.16         |
| 7/11/2004 | 15:30 | 18.78         | 7.99          | 0.30               | 8.16         |
| 7/11/2004 | 16:00 | 18.94         | 8.00          | 0.30               | 8.20         |
| 7/11/2004 | 16:30 | 19.00         | 8.00          | 0.30               | 8.17         |
| 7/11/2004 | 17:00 | 19.06         | 8.00          | 0.30               | 8.13         |
| 7/11/2004 | 17:30 | 19.06         | 8.00          | 0.30               | 8.15         |
| 7/11/2004 | 18:00 | 19.17         | 8.01          | 0.30               | 8.22         |
| 7/11/2004 | 18:30 | 19.11         | 8.00          | 0.30               | 8.21         |
| 7/11/2004 | 19:00 | 19.17         | 8.01          | 0.30               | 8.18         |
| 7/11/2004 | 19:30 | 19.22         | 8.00          | 0.30               | 8.19         |
| 7/11/2004 | 20:00 | 19.22         | 8.00          | 0.30               | 8.14         |
| 7/11/2004 | 20:30 | 19.28         | 7.99          | 0.30               | 8.16         |
| 7/11/2004 | 21:00 | 19.22         | 7.99          | 0.30               | 8.12         |
| 7/11/2004 | 21:30 | 19.22         | 7.98          | 0.30               | 8.06         |
| 7/11/2004 | 22:00 | 19.17         | 7.98          | 0.30               | 8.04         |
| 7/11/2004 | 22:30 | 19.17         | 7.99          | 0.30               | 8.04         |
| 7/11/2004 | 23:00 | 19.17         | 7.98          | 0.30               | 8.02         |
| 7/11/2004 | 23:30 | 19.17         | 7.97          | 0.30               | 7.99         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/12/2004 | 0:00  | 19.17         | 7.97          | 0.30               | 7.94         |
| 7/12/2004 | 0:30  | 19.22         | 7.97          | 0.30               | 7.99         |
| 7/12/2004 | 1:00  | 19.28         | 7.97          | 0.30               | 8.01         |
| 7/12/2004 | 1:30  | 19.33         | 7.99          | 0.30               | 8.08         |
| 7/12/2004 | 2:00  | 19.39         | 7.99          | 0.30               | 8.09         |
| 7/12/2004 | 2:30  | 19.39         | 7.99          | 0.30               | 8.10         |
| 7/12/2004 | 3:00  | 19.33         | 7.99          | 0.30               | 8.08         |
| 7/12/2004 | 3:30  | 19.39         | 8.00          | 0.30               | 8.11         |
| 7/12/2004 | 4:00  | 19.39         | 7.99          | 0.30               | 8.09         |
| 7/12/2004 | 4:30  | 19.33         | 7.99          | 0.30               | 8.08         |
| 7/12/2004 | 5:00  | 19.39         | 8.00          | 0.30               | 8.08         |
| 7/12/2004 | 5:30  | 19.39         | 8.00          | 0.30               | 8.07         |
| 7/12/2004 | 6:00  | 19.39         | 8.01          | 0.30               | 8.10         |
| 7/12/2004 | 6:30  | 19.44         | 8.01          | 0.30               | 8.10         |
| 7/12/2004 | 7:00  | 19.44         | 8.02          | 0.30               | 8.13         |
| 7/12/2004 | 7:30  | 19.44         | 8.01          | 0.30               | 8.13         |
| 7/12/2004 | 8:00  | 19.44         | 8.01          | 0.30               | 8.12         |
| 7/12/2004 | 8:30  | 19.44         | 8.01          | 0.30               | 8.14         |
| 7/12/2004 | 9:00  | 19.44         | 8.01          | 0.30               | 8.14         |
| 7/12/2004 | 9:30  | 19.44         | 8.02          | 0.30               | 8.15         |
| 7/12/2004 | 10:00 | 19.56         | 8.03          | 0.30               | 8.24         |
| 7/12/2004 | 10:30 | 19.61         | 8.03          | 0.30               | 8.24         |
| 7/12/2004 | 11:00 | 19.67         | 8.04          | 0.30               | 8.22         |
| 7/12/2004 | 11:30 | 19.67         | 8.04          | 0.30               | 8.24         |
| 7/12/2004 | 12:00 | 19.83         | 8.04          | 0.30               | 8.24         |
| 7/12/2004 | 12:30 | 19.72         | 8.04          | 0.30               | 8.18         |
| 7/12/2004 | 13:00 | 19.72         | 8.04          | 0.30               | 8.20         |
| 7/12/2004 | 13:30 | 19.72         | 8.04          | 0.30               | 8.19         |
| 7/12/2004 | 14:00 | 19.78         | 8.05          | 0.30               | 8.20         |
| 7/12/2004 | 14:30 | 19.67         | 8.03          | 0.30               | 8.12         |
| 7/12/2004 | 15:00 | 19.78         | 8.03          | 0.30               | 8.09         |
| 7/12/2004 | 15:30 | 19.72         | 8.02          | 0.30               | 7.95         |
| 7/12/2004 | 16:00 | 19.83         | 8.04          | 0.30               | 8.13         |
| 7/12/2004 | 16:30 | 19.89         | 8.07          | 0.30               | 8.26         |
| 7/12/2004 | 17:00 | 20.11         | 8.08          | 0.30               | 8.32         |
| 7/12/2004 | 17:30 | 20.44         | 8.11          | 0.30               | 8.46         |
| 7/12/2004 | 18:00 | 20.22         | 8.10          | 0.30               | 8.41         |
| 7/12/2004 | 18:30 | 20.39         | 8.10          | 0.30               | 8.41         |
| 7/12/2004 | 19:00 | 20.22         | 8.11          | 0.30               | 8.47         |
| 7/12/2004 | 19:30 | 20.33         | 8.11          | 0.30               | 8.44         |
| 7/12/2004 | 20:00 | 20.28         | 8.11          | 0.30               | 8.41         |
| 7/12/2004 | 20:30 | 20.33         | 8.10          | 0.30               | 8.41         |
| 7/12/2004 | 21:00 | 20.17         | 8.08          | 0.30               | 8.32         |
| 7/12/2004 | 21:30 | 20.00         | 8.06          | 0.30               | 8.17         |
| 7/12/2004 | 22:00 | 20.11         | 8.06          | 0.30               | 8.20         |
| 7/12/2004 | 22:30 | 20.11         | 8.05          | 0.30               | 8.14         |
| 7/12/2004 | 23:00 | 20.17         | 8.06          | 0.30               | 8.17         |
| 7/12/2004 | 23:30 | 20.11         | 8.05          | 0.30               | 8.11         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/13/2004 | 0:00  | 20.22         | 8.06          | 0.30               | 8.10         |
| 7/13/2004 | 0:30  | 20.28         | 8.06          | 0.30               | 8.12         |
| 7/13/2004 | 1:00  | 20.33         | 8.06          | 0.30               | 8.08         |
| 7/13/2004 | 1:30  | 20.39         | 8.07          | 0.30               | 8.13         |
| 7/13/2004 | 2:00  | 20.44         | 8.08          | 0.30               | 8.18         |
| 7/13/2004 | 2:30  | 20.44         | 8.08          | 0.30               | 8.17         |
| 7/13/2004 | 3:00  | 20.44         | 8.07          | 0.30               | 8.07         |
| 7/13/2004 | 3:30  | 20.44         | 8.07          | 0.30               | 8.09         |
| 7/13/2004 | 4:00  | 20.39         | 8.05          | 0.30               | 7.99         |
| 7/13/2004 | 4:30  | 20.39         | 8.04          | 0.30               | 8.01         |
| 7/13/2004 | 5:00  | 20.39         | 8.05          | 0.30               | 8.00         |
| 7/13/2004 | 5:30  | 20.39         | 8.04          | 0.30               | 7.94         |
| 7/13/2004 | 6:00  | 20.39         | 8.04          | 0.31               | 7.96         |
| 7/13/2004 | 6:30  | 20.33         | 8.03          | 0.31               | 7.89         |
| 7/13/2004 | 7:00  | 20.33         | 8.03          | 0.31               | 7.88         |
| 7/13/2004 | 7:30  | 20.33         | 8.03          | 0.31               | 7.89         |
| 7/13/2004 | 8:00  | 20.33         | 8.03          | 0.31               | 7.86         |
| 7/13/2004 | 8:30  | 20.44         | 8.05          | 0.31               | 7.98         |
| 7/13/2004 | 9:00  | 20.67         | 8.08          | 0.31               | 8.16         |
| 7/13/2004 | 9:30  | 20.83         | 8.11          | 0.31               | 8.30         |
| 7/13/2004 | 10:00 | 20.89         | 8.12          | 0.31               | 8.36         |
| 7/13/2004 | 10:30 | 21.00         | 8.13          | 0.31               | 8.30         |
| 7/13/2004 | 11:00 | 21.06         | 8.12          | 0.31               | 8.34         |
| 7/13/2004 | 11:30 | 21.22         | 8.14          | 0.31               | 8.42         |
| 7/13/2004 | 12:00 | 21.22         | 8.14          | 0.31               | 8.42         |
| 7/13/2004 | 12:30 | 21.39         | 8.14          | 0.31               | 8.42         |
| 7/13/2004 | 13:00 | 21.28         | 8.12          | 0.31               | 8.25         |
| 7/13/2004 | 13:30 | 21.22         | 8.09          | 0.31               | 8.11         |
| 7/13/2004 | 14:00 | 21.17         | 8.08          | 0.31               | 8.08         |
| 7/13/2004 | 14:30 | 21.11         | 8.09          | 0.31               | 8.13         |
| 7/13/2004 | 15:00 | 21.06         | 8.09          | 0.31               | 8.12         |
| 7/13/2004 | 15:30 | 21.11         | 8.09          | 0.31               | 8.17         |
| 7/13/2004 | 16:00 | 21.11         | 8.09          | 0.31               | 8.08         |
| 7/13/2004 | 16:30 | 21.22         | 8.10          | 0.31               | 8.07         |
| 7/13/2004 | 17:00 | 21.44         | 8.13          | 0.31               | 8.21         |
| 7/13/2004 | 17:30 | 21.50         | 8.13          | 0.31               | 8.20         |
| 7/13/2004 | 18:00 | 21.61         | 8.15          | 0.31               | 8.25         |
| 7/13/2004 | 18:30 | 21.50         | 8.14          | 0.31               | 8.17         |
| 7/13/2004 | 19:00 | 21.56         | 8.14          | 0.31               | 8.21         |
| 7/13/2004 | 19:30 | 21.56         | 8.15          | 0.31               | 8.26         |
| 7/13/2004 | 20:00 | 21.50         | 8.13          | 0.31               | 8.11         |
| 7/13/2004 | 20:30 | 21.44         | 8.13          | 0.31               | 8.08         |
| 7/13/2004 | 21:00 | 21.44         | 8.12          | 0.31               | 8.00         |
| 7/13/2004 | 21:30 | 21.56         | 8.16          | 0.31               | 8.15         |
| 7/13/2004 | 22:00 | 21.61         | 8.16          | 0.31               | 8.11         |
| 7/13/2004 | 22:30 | 21.56         | 8.16          | 0.31               | 8.06         |
| 7/13/2004 | 23:00 | 21.50         | 8.13          | 0.31               | 8.02         |
| 7/13/2004 | 23:30 | 21.44         | 8.12          | 0.31               | 7.89         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/14/2004 | 0:00  | 21.44         | 8.11          | 0.31               | 7.85         |
| 7/14/2004 | 0:30  | 21.50         | 8.13          | 0.31               | 7.80         |
| 7/14/2004 | 1:00  | 21.44         | 8.11          | 0.31               | 7.79         |
| 7/14/2004 | 1:30  | 21.44         | 8.11          | 0.31               | 7.74         |
| 7/14/2004 | 2:00  | 21.44         | 8.11          | 0.31               | 7.82         |
| 7/14/2004 | 2:30  | 21.50         | 8.11          | 0.31               | 7.85         |
| 7/14/2004 | 3:00  | 21.50         | 8.11          | 0.31               | 7.84         |
| 7/14/2004 | 3:30  | 21.50         | 8.11          | 0.31               | 7.82         |
| 7/14/2004 | 4:00  | 21.56         | 8.13          | 0.31               | 7.88         |
| 7/14/2004 | 4:30  | 21.39         | 8.11          | 0.31               | 7.79         |
| 7/14/2004 | 5:00  | 21.33         | 8.09          | 0.31               | 7.69         |
| 7/14/2004 | 5:30  | 21.33         | 8.09          | 0.31               | 7.71         |
| 7/14/2004 | 6:00  | 21.28         | 8.09          | 0.31               | 7.57         |
| 7/14/2004 | 6:30  | 21.28         | 8.09          | 0.31               | 7.58         |
| 7/14/2004 | 7:00  | 21.22         | 8.08          | 0.31               | 7.55         |
| 7/14/2004 | 7:30  | 21.22         | 8.08          | 0.31               | 7.49         |
| 7/14/2004 | 8:00  | 21.22         | 8.09          | 0.31               | 7.56         |
| 7/14/2004 | 8:30  | 21.22         | 8.10          | 0.31               | 7.59         |
| 7/14/2004 | 9:00  | 21.22         | 8.10          | 0.31               | 7.56         |
| 7/14/2004 | 9:30  | 21.28         | 8.12          | 0.31               | 7.72         |
| 7/14/2004 | 10:00 | 21.39         | 8.13          | 0.31               | 7.84         |
| 7/14/2004 | 10:30 | 21.44         | 8.14          | 0.31               | 7.80         |
| 7/14/2004 | 11:00 | 21.50         | 8.16          | 0.31               | 7.96         |
| 7/14/2004 | 11:30 | 21.61         | 8.17          | 0.31               | 7.97         |
| 7/14/2004 | 12:00 | 21.67         | 8.15          | 0.31               | 7.87         |
| 7/14/2004 | 12:30 | 21.67         | 8.14          | 0.31               | 7.81         |
| 7/14/2004 | 13:00 | 21.72         | 8.13          | 0.31               | 7.70         |
| 7/14/2004 | 13:30 | 21.72         | 8.11          | 0.31               | 7.62         |
| 7/14/2004 | 14:00 | 21.83         | 8.13          | 0.31               | 7.67         |
| 7/14/2004 | 14:30 | 21.89         | 8.14          | 0.31               | 7.63         |
| 7/14/2004 | 15:00 | 22.00         | 8.15          | 0.31               | 7.76         |
| 7/14/2004 | 15:30 | 22.11         | 8.16          | 0.31               | 7.83         |
| 7/14/2004 | 16:00 | 22.11         | 8.15          | 0.31               | 7.67         |
| 7/14/2004 | 16:30 | 22.11         | 8.15          | 0.31               | 7.69         |
| 7/14/2004 | 17:00 | 22.06         | 8.13          | 0.31               | 7.61         |
| 7/14/2004 | 17:30 | 22.00         | 8.13          | 0.31               | 7.62         |
| 7/14/2004 | 18:00 | 22.11         | 8.15          | 0.31               | 7.71         |
| 7/14/2004 | 18:30 | 22.00         | 8.14          | 0.31               | 7.54         |
| 7/14/2004 | 19:00 | 22.00         | 8.14          | 0.31               | 7.65         |
| 7/14/2004 | 19:30 | 21.89         | 8.12          | 0.31               | 7.50         |
| 7/14/2004 | 20:00 | 21.89         | 8.13          | 0.31               | 7.49         |
| 7/14/2004 | 20:30 | 21.89         | 8.13          | 0.31               | 7.54         |
| 7/14/2004 | 21:00 | 21.89         | 8.12          | 0.31               | 7.49         |
| 7/14/2004 | 21:30 | 21.89         | 8.14          | 0.31               | 7.50         |
| 7/14/2004 | 22:00 | 21.94         | 8.16          | 0.31               | 7.54         |
| 7/14/2004 | 22:30 | 21.89         | 8.14          | 0.31               | 7.53         |
| 7/14/2004 | 23:00 | 21.89         | 8.14          | 0.31               | 7.59         |
| 7/14/2004 | 23:30 | 21.83         | 8.13          | 0.31               | 7.48         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/15/2004 | 0:00  | 0.00          | 8.12          | 0.31               | 7.45         |
| 7/15/2004 | 0:30  | 21.78         | 8.13          | 0.31               | 7.42         |
| 7/15/2004 | 1:00  | 21.72         | 8.11          | 0.31               | 7.33         |
| 7/15/2004 | 1:30  | 21.72         | 8.11          | 0.31               | 7.36         |
| 7/15/2004 | 2:00  | 21.72         | 8.11          | 0.31               | 7.38         |
| 7/15/2004 | 2:30  | 21.72         | 8.11          | 0.32               | 7.32         |
| 7/15/2004 | 3:00  | 21.72         | 8.12          | 0.32               | 7.31         |
| 7/15/2004 | 3:30  | 21.67         | 8.12          | 0.32               | 7.25         |
| 7/15/2004 | 4:00  | 21.67         | 8.12          | 0.32               | 7.27         |
| 7/15/2004 | 4:30  | 21.67         | 8.11          | 0.32               | 7.23         |
| 7/15/2004 | 5:00  | 21.61         | 8.11          | 0.32               | 7.16         |
| 7/15/2004 | 5:30  | 21.56         | 8.10          | 0.32               | 7.14         |
| 7/15/2004 | 6:00  | 21.56         | 8.10          | 0.32               | 7.14         |
| 7/15/2004 | 6:30  | 21.50         | 8.10          | 0.32               | 7.13         |
| 7/15/2004 | 7:00  | 21.50         | 8.10          | 0.32               | 7.05         |
| 7/15/2004 | 7:30  | 21.44         | 8.10          | 0.32               | 7.08         |
| 7/15/2004 | 8:00  | 21.44         | 8.10          | 0.32               | 7.04         |
| 7/15/2004 | 8:30  | 21.44         | 8.09          | 0.32               | 7.07         |
| 7/15/2004 | 9:00  | 21.50         | 8.11          | 0.32               | 7.09         |
| 7/15/2004 | 9:30  | 21.56         | 8.13          | 0.32               | 7.22         |
| 7/15/2004 | 10:00 | 21.61         | 8.15          | 0.32               | 7.30         |
| 7/15/2004 | 10:30 | 21.72         | 8.16          | 0.32               | 7.43         |
| 7/15/2004 | 11:00 | 21.89         | 8.17          | 0.32               | 7.43         |
| 7/15/2004 | 11:30 | 21.94         | 8.16          | 0.32               | 7.34         |
| 7/15/2004 | 12:00 | 22.06         | 8.16          | 0.32               | 7.24         |
| 7/15/2004 | 12:30 | 22.06         | 8.15          | 0.32               | 7.27         |
| 7/15/2004 | 13:00 | 22.22         | 8.17          | 0.32               | 7.35         |
| 7/15/2004 | 13:30 | 22.44         | 8.20          | 0.32               | 7.37         |
| 7/15/2004 | 14:00 | 22.50         | 8.19          | 0.32               | 7.28         |
| 7/15/2004 | 14:30 | 22.44         | 8.18          | 0.32               | 7.29         |
| 7/15/2004 | 15:00 | 22.50         | 8.18          | 0.32               | 7.29         |
| 7/15/2004 | 15:30 | 22.44         | 8.17          | 0.32               | 7.15         |
| 7/15/2004 | 16:00 | 22.50         | 8.17          | 0.32               | 8.10         |
| 7/15/2004 | 16:30 | 22.50         | 8.18          | 0.32               | 8.11         |
| 7/15/2004 | 17:00 | 22.50         | 8.18          | 0.32               | 8.09         |
| 7/15/2004 | 17:30 | 22.39         | 8.18          | 0.32               | 8.11         |
| 7/15/2004 | 18:00 | 22.50         | 8.20          | 0.32               | 8.21         |
| 7/15/2004 | 18:30 | 22.61         | 8.22          | 0.32               | 8.35         |
| 7/15/2004 | 19:00 | 22.67         | 8.23          | 0.32               | 8.36         |
| 7/15/2004 | 19:30 | 22.61         | 8.22          | 0.32               | 8.33         |
| 7/15/2004 | 20:00 | 22.56         | 8.21          | 0.32               | 8.28         |
| 7/15/2004 | 20:30 | 22.56         | 8.21          | 0.32               | 8.26         |
| 7/15/2004 | 21:00 | 22.50         | 8.20          | 0.32               | 8.23         |
| 7/15/2004 | 21:30 | 22.50         | 8.20          | 0.32               | 8.21         |
| 7/15/2004 | 22:00 | 22.28         | 8.14          | 0.32               | 7.92         |
| 7/15/2004 | 22:30 | 22.22         | 8.14          | 0.32               | 7.94         |
| 7/15/2004 | 23:00 | 22.22         | 8.15          | 0.32               | 7.85         |
| 7/15/2004 | 23:30 | 22.28         | 8.14          | 0.32               | 7.82         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/16/2004 | 0:00  | 22.22         | 8.14          | 0.32               | 7.83         |
| 7/16/2004 | 0:30  | 22.22         | 8.16          | 0.32               | 7.95         |
| 7/16/2004 | 1:00  | 22.22         | 8.17          | 0.32               | 7.98         |
| 7/16/2004 | 1:30  | 22.28         | 8.17          | 0.32               | 7.99         |
| 7/16/2004 | 2:00  | 22.28         | 8.16          | 0.32               | 7.85         |
| 7/16/2004 | 2:30  | 22.22         | 8.15          | 0.32               | 7.86         |
| 7/16/2004 | 3:00  | 22.28         | 8.15          | 0.32               | 7.85         |
| 7/16/2004 | 3:30  | 22.22         | 8.14          | 0.32               | 7.82         |
| 7/16/2004 | 4:00  | 22.22         | 8.13          | 0.32               | 7.76         |
| 7/16/2004 | 4:30  | 22.22         | 8.13          | 0.32               | 7.72         |
| 7/16/2004 | 5:00  | 22.22         | 8.13          | 0.32               | 7.75         |
| 7/16/2004 | 5:30  | 22.22         | 8.13          | 0.32               | 7.75         |
| 7/16/2004 | 6:00  | 22.17         | 8.14          | 0.32               | 7.78         |
| 7/16/2004 | 6:30  | 22.17         | 8.14          | 0.32               | 7.76         |
| 7/16/2004 | 7:00  | 22.22         | 8.15          | 0.32               | 7.86         |
| 7/16/2004 | 7:30  | 22.17         | 8.14          | 0.32               | 7.77         |
| 7/16/2004 | 8:00  | 22.17         | 8.14          | 0.32               | 7.80         |
| 7/16/2004 | 8:30  | 22.17         | 8.14          | 0.32               | 7.72         |
| 7/16/2004 | 9:00  | 22.17         | 8.12          | 0.32               | 7.71         |
| 7/16/2004 | 9:30  | 22.17         | 8.12          | 0.32               | 7.67         |
| 7/16/2004 | 10:00 | 22.17         | 8.12          | 0.32               | 7.68         |
| 7/16/2004 | 10:30 | 22.17         | 8.13          | 0.32               | 7.73         |
| 7/16/2004 | 11:00 | 22.22         | 8.13          | 0.32               | 7.70         |
| 7/16/2004 | 11:30 | 22.28         | 8.14          | 0.32               | 7.76         |
| 7/16/2004 | 12:00 | 22.28         | 8.15          | 0.32               | 7.81         |
| 7/16/2004 | 12:30 | 22.28         | 8.15          | 0.32               | 7.82         |
| 7/16/2004 | 13:00 | 22.28         | 8.16          | 0.32               | 7.89         |
| 7/16/2004 | 13:30 | 22.28         | 8.15          | 0.32               | 7.86         |
| 7/16/2004 | 14:00 | 22.33         | 8.16          | 0.32               | 7.89         |
| 7/16/2004 | 14:30 | 22.33         | 8.15          | 0.32               | 7.83         |
| 7/16/2004 | 15:00 | 22.33         | 8.15          | 0.32               | 7.86         |
| 7/16/2004 | 15:30 | 22.33         | 8.16          | 0.32               | 7.87         |
| 7/16/2004 | 16:00 | 22.28         | 8.15          | 0.32               | 7.86         |
| 7/16/2004 | 16:30 | 22.22         | 8.13          | 0.32               | 7.70         |
| 7/16/2004 | 17:00 | 22.22         | 8.12          | 0.32               | 7.62         |
| 7/16/2004 | 17:30 | 22.28         | 8.12          | 0.32               | 7.68         |
| 7/16/2004 | 18:00 | 22.44         | 8.17          | 0.32               | 7.96         |
| 7/16/2004 | 18:30 | 22.50         | 8.18          | 0.32               | 8.00         |
| 7/16/2004 | 19:00 | 22.61         | 8.20          | 0.32               | 8.07         |
| 7/16/2004 | 19:30 | 22.61         | 8.19          | 0.32               | 7.95         |
| 7/16/2004 | 20:00 | 22.61         | 8.19          | 0.32               | 7.90         |
| 7/16/2004 | 20:30 | 22.56         | 8.18          | 0.32               | 7.87         |
| 7/16/2004 | 21:00 | 22.50         | 8.14          | 0.32               | 7.63         |
| 7/16/2004 | 21:30 | 22.44         | 8.10          | 0.32               | 7.38         |
| 7/16/2004 | 22:00 | 22.44         | 8.10          | 0.32               | 7.34         |
| 7/16/2004 | 22:30 | 22.39         | 8.10          | 0.32               | 7.32         |
| 7/16/2004 | 23:00 | 22.44         | 8.12          | 0.32               | 7.44         |
| 7/16/2004 | 23:30 | 22.44         | 8.13          | 0.32               | 7.49         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/17/2004 | 0:00  | 22.39         | 8.13          | 0.32               | 7.47         |
| 7/17/2004 | 0:30  | 22.39         | 8.12          | 0.32               | 7.41         |
| 7/17/2004 | 1:00  | 22.39         | 8.12          | 0.32               | 7.43         |
| 7/17/2004 | 1:30  | 22.39         | 8.12          | 0.32               | 7.42         |
| 7/17/2004 | 2:00  | 22.39         | 8.12          | 0.32               | 7.46         |
| 7/17/2004 | 2:30  | 22.33         | 8.13          | 0.32               | 7.44         |
| 7/17/2004 | 3:00  | 22.33         | 8.12          | 0.32               | 7.39         |
| 7/17/2004 | 3:30  | 22.28         | 8.11          | 0.32               | 7.34         |
| 7/17/2004 | 4:00  | 22.22         | 8.09          | 0.32               | 7.23         |
| 7/17/2004 | 4:30  | 22.22         | 8.09          | 0.32               | 7.24         |
| 7/17/2004 | 5:00  | 22.17         | 8.07          | 0.32               | 7.14         |
| 7/17/2004 | 5:30  | 22.17         | 8.08          | 0.32               | 7.20         |
| 7/17/2004 | 6:00  | 22.17         | 8.08          | 0.32               | 7.20         |
| 7/17/2004 | 6:30  | 22.17         | 8.07          | 0.32               | 7.19         |
| 7/17/2004 | 7:00  | 22.17         | 8.07          | 0.32               | 7.22         |
| 7/17/2004 | 7:30  | 22.11         | 8.07          | 0.32               | 7.21         |
| 7/17/2004 | 8:00  | 22.11         | 8.08          | 0.32               | 7.25         |
| 7/17/2004 | 8:30  | 22.17         | 8.08          | 0.32               | 7.24         |
| 7/17/2004 | 9:00  | 22.17         | 8.09          | 0.32               | 7.32         |
| 7/17/2004 | 9:30  | 22.17         | 8.09          | 0.32               | 7.35         |
| 7/17/2004 | 10:00 | 22.22         | 8.11          | 0.32               | 7.48         |
| 7/17/2004 | 10:30 | 22.22         | 8.12          | 0.32               | 7.49         |
| 7/17/2004 | 11:00 | 22.22         | 8.12          | 0.32               | 7.48         |
| 7/17/2004 | 11:30 | 22.22         | 8.12          | 0.32               | 7.44         |
| 7/17/2004 | 12:00 | 22.22         | 8.10          | 0.32               | 7.38         |
| 7/17/2004 | 12:30 | 22.22         | 8.11          | 0.32               | 7.44         |
| 7/17/2004 | 13:00 | 22.22         | 8.13          | 0.32               | 7.61         |
| 7/17/2004 | 13:30 | 22.28         | 8.16          | 0.31               | 7.73         |
| 7/17/2004 | 14:00 | 22.39         | 8.17          | 0.31               | 7.77         |
| 7/17/2004 | 14:30 | 22.50         | 8.20          | 0.31               | 7.97         |
| 7/17/2004 | 15:00 | 22.56         | 8.20          | 0.32               | 7.94         |
| 7/17/2004 | 15:30 | 22.50         | 8.19          | 0.31               | 7.89         |
| 7/17/2004 | 16:00 | 22.50         | 8.19          | 0.32               | 7.88         |
| 7/17/2004 | 16:30 | 22.56         | 8.19          | 0.32               | 7.86         |
| 7/17/2004 | 17:00 | 22.61         | 8.19          | 0.32               | 7.93         |
| 7/17/2004 | 17:30 | 22.61         | 8.20          | 0.32               | 7.93         |
| 7/17/2004 | 18:00 | 22.67         | 8.21          | 0.32               | 8.01         |
| 7/17/2004 | 18:30 | 22.61         | 8.22          | 0.31               | 8.03         |
| 7/17/2004 | 19:00 | 22.67         | 8.23          | 0.31               | 8.14         |
| 7/17/2004 | 19:30 | 22.33         | 8.14          | 0.32               | 7.65         |
| 7/17/2004 | 20:00 | 22.33         | 8.14          | 0.32               | 7.61         |
| 7/17/2004 | 20:30 | 22.22         | 8.13          | 0.32               | 7.49         |
| 7/17/2004 | 21:00 | 22.28         | 8.14          | 0.32               | 7.59         |
| 7/17/2004 | 21:30 | 22.22         | 8.13          | 0.32               | 7.54         |
| 7/17/2004 | 22:00 | 22.28         | 8.15          | 0.32               | 7.64         |
| 7/17/2004 | 22:30 | 22.33         | 8.16          | 0.32               | 7.66         |
| 7/17/2004 | 23:00 | 22.28         | 8.16          | 0.32               | 7.65         |
| 7/17/2004 | 23:30 | 22.33         | 8.16          | 0.32               | 7.64         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/18/2004 | 0:00  | 22.28         | 8.16          | 0.32               | 7.60         |
| 7/18/2004 | 0:30  | 22.28         | 8.17          | 0.32               | 7.64         |
| 7/18/2004 | 1:00  | 22.22         | 8.15          | 0.32               | 7.50         |
| 7/18/2004 | 1:30  | 22.22         | 8.15          | 0.32               | 7.56         |
| 7/18/2004 | 2:00  | 22.17         | 8.15          | 0.32               | 7.51         |
| 7/18/2004 | 2:30  | 22.17         | 8.14          | 0.32               | 7.46         |
| 7/18/2004 | 3:00  | 22.17         | 8.14          | 0.32               | 7.43         |
| 7/18/2004 | 3:30  | 22.17         | 8.15          | 0.32               | 7.51         |
| 7/18/2004 | 4:00  | 22.11         | 8.14          | 0.32               | 7.50         |
| 7/18/2004 | 4:30  | 22.11         | 8.14          | 0.32               | 7.51         |
| 7/18/2004 | 5:00  | 22.11         | 8.14          | 0.32               | 7.54         |
| 7/18/2004 | 5:30  | 22.11         | 8.15          | 0.32               | 7.60         |
| 7/18/2004 | 6:00  | 22.06         | 8.15          | 0.32               | 7.56         |
| 7/18/2004 | 6:30  | 22.06         | 8.14          | 0.32               | 7.53         |
| 7/18/2004 | 7:00  | 22.06         | 8.15          | 0.32               | 7.55         |
| 7/18/2004 | 7:30  | 22.06         | 8.14          | 0.32               | 7.48         |
| 7/18/2004 | 8:00  | 22.06         | 8.15          | 0.32               | 7.52         |
| 7/18/2004 | 8:30  | 22.06         | 8.15          | 0.32               | 7.50         |
| 7/18/2004 | 9:00  | 22.11         | 8.16          | 0.32               | 7.57         |
| 7/18/2004 | 9:30  | 22.11         | 8.17          | 0.32               | 7.65         |
| 7/18/2004 | 10:00 | 22.17         | 8.17          | 0.32               | 7.69         |
| 7/18/2004 | 10:30 | 22.17         | 8.17          | 0.32               | 7.62         |
| 7/18/2004 | 11:00 | 22.11         | 8.15          | 0.32               | 7.48         |
| 7/18/2004 | 11:30 | 22.11         | 8.14          | 0.32               | 7.50         |
| 7/18/2004 | 12:00 | 22.17         | 8.16          | 0.32               | 7.59         |
| 7/18/2004 | 12:30 | 22.28         | 8.17          | 0.32               | 7.65         |
| 7/18/2004 | 13:00 | 22.28         | 8.17          | 0.32               | 7.68         |
| 7/18/2004 | 13:30 | 22.33         | 8.20          | 0.32               | 7.83         |
| 7/18/2004 | 14:00 | 22.28         | 8.22          | 0.32               | 7.94         |
| 7/18/2004 | 14:30 | 22.33         | 8.25          | 0.32               | 8.17         |
| 7/18/2004 | 15:00 | 22.39         | 8.26          | 0.32               | 8.10         |
| 7/18/2004 | 15:30 | 22.44         | 8.24          | 0.32               | 7.98         |
| 7/18/2004 | 16:00 | 22.56         | 8.24          | 0.32               | 8.03         |
| 7/18/2004 | 16:30 | 22.67         | 8.27          | 0.32               | 8.21         |
| 7/18/2004 | 17:00 | 22.67         | 8.26          | 0.32               | 8.12         |
| 7/18/2004 | 17:30 | 22.78         | 8.28          | 0.32               | 8.12         |
| 7/18/2004 | 18:00 | 22.67         | 8.28          | 0.32               | 8.21         |
| 7/18/2004 | 18:30 | 22.72         | 8.28          | 0.32               | 8.28         |
| 7/18/2004 | 19:00 | 22.67         | 8.27          | 0.32               | 8.15         |
| 7/18/2004 | 19:30 | 22.56         | 8.25          | 0.32               | 8.05         |
| 7/18/2004 | 20:00 | 22.44         | 8.23          | 0.32               | 7.89         |
| 7/18/2004 | 20:30 | 22.39         | 8.22          | 0.32               | 7.83         |
| 7/18/2004 | 21:00 | 22.39         | 8.21          | 0.32               | 7.81         |
| 7/18/2004 | 21:30 | 22.39         | 8.21          | 0.32               | 7.74         |
| 7/18/2004 | 22:00 | 22.39         | 8.21          | 0.32               | 7.74         |
| 7/18/2004 | 22:30 | 22.39         | 8.20          | 0.32               | 7.69         |
| 7/18/2004 | 23:00 | 22.33         | 8.18          | 0.32               | 7.52         |
| 7/18/2004 | 23:30 | 22.33         | 8.18          | 0.32               | 7.49         |

| 2004 Water Quality Study   |       |                |               |                    |              |
|--|-------|----------------|---------------|--------------------|--------------|
| Tailwater Tabular Data for Month of July 2004                    |       |                |               |                    |              |
| Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325 |       |                |               |                    |              |
| Date   | Time  | Temp.<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
| 7/19/2004  | 0:00  | 22.33          | 8.18          | 0.32               | 7.55         |
| 7/19/2004  | 0:30  | 22.33          | 8.18          | 0.32               | 7.41         |
| 7/19/2004  | 1:00  | 22.28          | 8.16          | 0.32               | 7.38         |
| 7/19/2004  | 1:30  | 22.28          | 8.15          | 0.32               | 7.30         |
| 7/19/2004  | 2:00  | 22.28          | 8.15          | 0.32               | 7.31         |
| 7/19/2004  | 2:30  | 22.28          | 8.16          | 0.32               | 7.40         |
| 7/19/2004  | 3:00  | 22.28          | 8.16          | 0.32               | 7.29         |
| 7/19/2004  | 3:30  | 22.28          | 8.15          | 0.32               | 7.31         |
| 7/19/2004  | 4:00  | 22.28          | 8.16          | 0.32               | 7.32         |
| 7/19/2004  | 4:30  | 22.22          | 8.14          | 0.32               | 7.26         |
| 7/19/2004  | 5:00  | 22.22          | 8.14          | 0.32               | 7.24         |
| 7/19/2004  | 5:30  | 22.17          | 8.12          | 0.32               | 7.15         |
| 7/19/2004  | 6:00  | 22.17          | 8.12          | 0.32               | 7.12         |
| 7/19/2004  | 6:30  | 22.11          | 8.11          | 0.32               | 7.14         |
| 7/19/2004  | 7:00  | 22.11          | 8.12          | 0.32               | 7.14         |
| 7/19/2004  | 7:30  | 22.11          | 8.12          | 0.32               | 7.10         |
| 7/19/2004  | 8:00  | 22.11          | 8.11          | 0.32               | 7.13         |
| 7/19/2004  | 8:30  | 22.11          | 8.12          | 0.32               | 7.12         |
| 7/19/2004  | 9:00  | 22.17          | 8.14          | 0.32               | 7.29         |
| 7/19/2004  | 9:30  | 22.22          | 8.17          | 0.32               | 7.43         |
| 7/19/2004  | 10:00 | 22.33          | 8.21          | 0.32               | 7.62         |
| 7/19/2004  | 10:30 | 22.44          | 8.24          | 0.32               | 7.80         |
| 7/19/2004  | 11:00 | 22.61          | 8.26          | 0.32               | 7.81         |
| 7/19/2004  | 11:30 | 22.72          | 8.28          | 0.32               | 7.93         |
| 7/19/2004  | 12:00 | 22.78          | 8.26          | 0.32               | 7.81         |
| 7/19/2004  | 12:30 | 22.89          | 8.28          | 0.32               | 7.73         |
| 7/19/2004  | 13:00 | 22.94          | 8.28          | 0.32               | 7.98         |
| 7/19/2004  | 13:30 | 23.00          | 8.30          | 0.32               | 8.03         |
| 7/19/2004  | 14:00 | 23.06          | 8.31          | 0.32               | 8.02         |
| 7/19/2004  | 14:30 | 23.22          | 8.35          | 0.32               | 8.32         |
| 7/19/2004  | 15:00 | 23.11          | 8.34          | 0.32               | 8.26         |
| 7/19/2004  | 15:30 | 23.11          | 8.33          | 0.32               | 8.10         |
| 7/19/2004  | 16:00 | 22.94          | 8.30          | 0.32               | 7.95         |
| 7/19/2004  | 16:30 | 23.00          | 8.31          | 0.32               | 8.03         |
| 7/19/2004  | 17:00 | 23.00          | 8.30          | 0.32               | 7.93         |
| 7/19/2004  | 17:30 | 23.00          | 8.28          | 0.32               | 7.73         |
| 7/19/2004  | 18:00 | 23.11          | 8.30          | 0.32               | 7.82         |
| 7/19/2004  | 18:30 | 23.22          | 8.31          | 0.32               | 7.91         |
| 7/19/2004  | 19:00 | 23.22          | 8.31          | 0.32               | 7.91         |
| 7/19/2004  | 19:30 | 23.11          | 8.29          | 0.32               | 7.76         |
| 7/19/2004  | 20:00 | 23.11          | 8.30          | 0.32               | 7.85         |
| 7/19/2004  | 20:30 | 23.06          | 8.29          | 0.32               | 7.63         |
| 7/19/2004  | 21:00 | 23.00          | 8.29          | 0.32               | 7.75         |
| 7/19/2004  | 21:30 | 23.00          | 8.28          | 0.32               | 7.67         |
| 7/19/2004  | 22:00 | 23.00          | 8.26          | 0.32               | 7.63         |
| 7/19/2004  | 22:30 | 23.06          | 8.26          | 0.32               | 7.51         |
| 7/19/2004  | 23:00 | 23.06          | 8.27          | 0.32               | 7.62         |
| 7/19/2004  | 23:30 | 23.00          | 8.26          | 0.32               | 7.50         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/20/2004 | 0:00  | 22.89         | 8.24          | 0.32               | 7.31         |
| 7/20/2004 | 0:30  | 22.83         | 8.23          | 0.32               | 7.38         |
| 7/20/2004 | 1:00  | 22.78         | 8.22          | 0.32               | 7.22         |
| 7/20/2004 | 1:30  | 22.78         | 8.23          | 0.32               | 7.36         |
| 7/20/2004 | 2:00  | 22.78         | 8.22          | 0.32               | 7.33         |
| 7/20/2004 | 2:30  | 22.72         | 8.21          | 0.32               | 7.34         |
| 7/20/2004 | 3:00  | 22.72         | 8.22          | 0.32               | 7.36         |
| 7/20/2004 | 3:30  | 22.72         | 8.22          | 0.32               | 7.31         |
| 7/20/2004 | 4:00  | 22.72         | 8.22          | 0.32               | 7.45         |
| 7/20/2004 | 4:30  | 22.67         | 8.21          | 0.32               | 7.31         |
| 7/20/2004 | 5:00  | 22.61         | 8.19          | 0.32               | 7.14         |
| 7/20/2004 | 5:30  | 22.56         | 8.18          | 0.32               | 7.19         |
| 7/20/2004 | 6:00  | 22.56         | 8.18          | 0.32               | 7.28         |
| 7/20/2004 | 6:30  | 22.56         | 8.18          | 0.32               | 7.34         |
| 7/20/2004 | 7:00  | 22.56         | 8.19          | 0.32               | 7.25         |
| 7/20/2004 | 7:30  | 22.56         | 8.19          | 0.32               | 7.28         |
| 7/20/2004 | 8:00  | 22.61         | 8.21          | 0.32               | 7.42         |
| 7/20/2004 | 8:30  | 22.61         | 8.21          | 0.32               | 7.37         |
| 7/20/2004 | 9:00  | 22.61         | 8.21          | 0.32               | 7.37         |
| 7/20/2004 | 9:30  | 22.67         | 8.21          | 0.32               | 7.42         |
| 7/20/2004 | 10:00 | 22.72         | 8.22          | 0.32               | 7.40         |
| 7/20/2004 | 10:30 | 22.78         | 8.23          | 0.32               | 7.57         |
| 7/20/2004 | 11:00 | 22.78         | 8.23          | 0.32               | 7.65         |
| 7/20/2004 | 11:30 | 22.78         | 8.23          | 0.32               | 7.74         |
| 7/20/2004 | 12:00 | 22.72         | 8.23          | 0.32               | 7.72         |
| 7/20/2004 | 12:30 | 22.83         | 8.24          | 0.32               | 7.75         |
| 7/20/2004 | 13:00 | 22.78         | 8.24          | 0.32               | 7.71         |
| 7/20/2004 | 13:30 | 22.83         | 8.24          | 0.32               | 7.81         |
| 7/20/2004 | 14:00 | 22.83         | 8.24          | 0.32               | 7.79         |
| 7/20/2004 | 14:30 | 22.72         | 8.23          | 0.32               | 7.57         |
| 7/20/2004 | 15:00 | 22.78         | 8.24          | 0.32               | 7.73         |
| 7/20/2004 | 15:30 | 22.78         | 8.23          | 0.32               | 7.72         |
| 7/20/2004 | 16:00 | 22.78         | 8.22          | 0.32               | 7.58         |
| 7/20/2004 | 16:30 | 22.72         | 8.22          | 0.32               | 7.56         |
| 7/20/2004 | 17:00 | 22.67         | 8.18          | 0.32               | 7.31         |
| 7/20/2004 | 17:30 | 22.61         | 8.18          | 0.32               | 7.28         |
| 7/20/2004 | 18:00 | 22.61         | 8.17          | 0.32               | 7.20         |
| 7/20/2004 | 18:30 | 22.56         | 8.15          | 0.32               | 7.05         |
| 7/20/2004 | 19:00 | 22.67         | 8.15          | 0.32               | 6.97         |
| 7/20/2004 | 19:30 | 22.61         | 8.13          | 0.32               | 6.84         |
| 7/20/2004 | 20:00 | 22.67         | 8.12          | 0.32               | 6.76         |
| 7/20/2004 | 20:30 | 22.72         | 8.13          | 0.32               | 6.84         |
| 7/20/2004 | 21:00 | 22.83         | 8.18          | 0.32               | 7.06         |
| 7/20/2004 | 21:30 | 23.00         | 8.21          | 0.32               | 7.27         |
| 7/20/2004 | 22:00 | 23.11         | 8.24          | 0.32               | 7.44         |
| 7/20/2004 | 22:30 | 23.22         | 8.27          | 0.32               | 7.61         |
| 7/20/2004 | 23:00 | 23.22         | 8.28          | 0.32               | 7.56         |
| 7/20/2004 | 23:30 | 23.28         | 8.28          | 0.32               | 7.59         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/21/2004 | 0:00  | 23.28         | 8.28          | 0.32               | 7.68         |
| 7/21/2004 | 0:30  | 23.28         | 8.27          | 0.32               | 7.66         |
| 7/21/2004 | 1:00  | 23.33         | 8.28          | 0.32               | 7.70         |
| 7/21/2004 | 1:30  | 23.33         | 8.29          | 0.32               | 7.65         |
| 7/21/2004 | 2:00  | 23.33         | 8.28          | 0.32               | 7.74         |
| 7/21/2004 | 2:30  | 23.33         | 8.27          | 0.32               | 7.69         |
| 7/21/2004 | 3:00  | 23.33         | 8.26          | 0.33               | 7.61         |
| 7/21/2004 | 3:30  | 23.28         | 8.25          | 0.32               | 7.58         |
| 7/21/2004 | 4:00  | 23.33         | 8.26          | 0.33               | 7.54         |
| 7/21/2004 | 4:30  | 23.33         | 8.24          | 0.33               | 7.51         |
| 7/21/2004 | 5:00  | 23.33         | 8.22          | 0.33               | 7.39         |
| 7/21/2004 | 5:30  | 23.33         | 8.20          | 0.33               | 7.26         |
| 7/21/2004 | 6:00  | 23.39         | 8.19          | 0.33               | 7.24         |
| 7/21/2004 | 6:30  | 23.44         | 8.19          | 0.33               | 7.29         |
| 7/21/2004 | 7:00  | 23.44         | 8.18          | 0.33               | 7.25         |
| 7/21/2004 | 7:30  | 23.50         | 8.20          | 0.33               | 7.40         |
| 7/21/2004 | 8:00  | 23.44         | 8.20          | 0.33               | 7.40         |
| 7/21/2004 | 8:30  | 23.44         | 8.18          | 0.33               | 7.32         |
| 7/21/2004 | 9:00  | 23.44         | 8.16          | 0.33               | 7.17         |
| 7/21/2004 | 9:30  | 23.50         | 8.17          | 0.33               | 7.24         |
| 7/21/2004 | 10:00 | 23.56         | 8.18          | 0.33               | 7.32         |
| 7/21/2004 | 10:30 | 23.72         | 8.22          | 0.33               | 7.42         |
| 7/21/2004 | 11:00 | 23.72         | 8.23          | 0.33               | 7.50         |
| 7/21/2004 | 11:30 | 24.00         | 8.30          | 0.33               | 7.86         |
| 7/21/2004 | 12:00 | 24.06         | 8.30          | 0.33               | 7.89         |
| 7/21/2004 | 12:30 | 24.06         | 8.30          | 0.32               | 7.93         |
| 7/21/2004 | 13:00 | 24.06         | 8.30          | 0.33               | 7.85         |
| 7/21/2004 | 13:30 | 24.06         | 8.30          | 0.33               | 7.88         |
| 7/21/2004 | 14:00 | 24.06         | 8.32          | 0.33               | 7.76         |
| 7/21/2004 | 14:30 | 24.11         | 8.33          | 0.33               | 8.01         |
| 7/21/2004 | 15:00 | 24.11         | 8.34          | 0.33               | 8.14         |
| 7/21/2004 | 15:30 | 24.22         | 8.36          | 0.33               | 8.08         |
| 7/21/2004 | 16:00 | 24.22         | 8.36          | 0.32               | 8.11         |
| 7/21/2004 | 16:30 | 24.33         | 8.39          | 0.33               | 8.24         |
| 7/21/2004 | 17:00 | 24.39         | 8.39          | 0.32               | 8.20         |
| 7/21/2004 | 17:30 | 24.44         | 8.41          | 0.32               | 8.38         |
| 7/21/2004 | 18:00 | 24.33         | 8.40          | 0.33               | 8.25         |
| 7/21/2004 | 18:30 | 24.28         | 8.37          | 0.33               | 8.09         |
| 7/21/2004 | 19:00 | 24.28         | 8.36          | 0.33               | 8.02         |
| 7/21/2004 | 19:30 | 24.39         | 8.38          | 0.32               | 8.09         |
| 7/21/2004 | 20:00 | 24.44         | 8.39          | 0.33               | 8.12         |
| 7/21/2004 | 20:30 | 24.44         | 8.38          | 0.33               | 7.95         |
| 7/21/2004 | 21:00 | 24.39         | 8.36          | 0.33               | 7.89         |
| 7/21/2004 | 21:30 | 24.33         | 8.34          | 0.33               | 7.74         |
| 7/21/2004 | 22:00 | 24.28         | 8.32          | 0.33               | 7.63         |
| 7/21/2004 | 22:30 | 24.22         | 8.31          | 0.33               | 7.64         |
| 7/21/2004 | 23:00 | 24.28         | 8.32          | 0.33               | 7.61         |
| 7/21/2004 | 23:30 | 24.33         | 8.33          | 0.32               | 7.69         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/22/2004 | 0:00  | 24.33         | 8.34          | 0.33               | 7.77         |
| 7/22/2004 | 0:30  | 24.33         | 8.34          | 0.33               | 7.74         |
| 7/22/2004 | 1:00  | 24.28         | 8.33          | 0.33               | 7.62         |
| 7/22/2004 | 1:30  | 24.22         | 8.32          | 0.33               | 7.55         |
| 7/22/2004 | 2:00  | 24.22         | 8.31          | 0.33               | 7.52         |
| 7/22/2004 | 2:30  | 24.22         | 8.30          | 0.33               | 7.46         |
| 7/22/2004 | 3:00  | 24.28         | 8.32          | 0.33               | 7.51         |
| 7/22/2004 | 3:30  | 24.28         | 8.32          | 0.33               | 7.50         |
| 7/22/2004 | 4:00  | 24.28         | 8.31          | 0.33               | 7.43         |
| 7/22/2004 | 4:30  | 24.17         | 8.29          | 0.33               | 7.31         |
| 7/22/2004 | 5:00  | 24.17         | 8.29          | 0.33               | 7.38         |
| 7/22/2004 | 5:30  | 24.17         | 8.29          | 0.33               | 7.28         |
| 7/22/2004 | 6:00  | 24.17         | 8.28          | 0.33               | 7.25         |
| 7/22/2004 | 6:30  | 24.11         | 8.27          | 0.33               | 7.23         |
| 7/22/2004 | 7:00  | 24.11         | 8.26          | 0.33               | 7.14         |
| 7/22/2004 | 7:30  | 24.11         | 8.27          | 0.33               | 7.14         |
| 7/22/2004 | 8:00  | 24.06         | 8.25          | 0.33               | 7.19         |
| 7/22/2004 | 8:30  | 24.06         | 8.27          | 0.33               | 7.19         |
| 7/22/2004 | 9:00  | 24.11         | 8.28          | 0.33               | 7.29         |
| 7/22/2004 | 9:30  | 24.22         | 8.31          | 0.33               | 7.47         |
| 7/22/2004 | 10:00 | 24.22         | 8.32          | 0.33               | 7.49         |
| 7/22/2004 | 10:30 | 24.22         | 8.30          | 0.33               | 7.31         |
| 7/22/2004 | 11:00 | 24.28         | 8.30          | 0.33               | 7.47         |
| 7/22/2004 | 11:30 | 24.39         | 8.33          | 0.33               | 7.65         |
| 7/22/2004 | 12:00 | 24.33         | 8.31          | 0.33               | 7.52         |
| 7/22/2004 | 12:30 | 24.33         | 8.27          | 0.33               | 7.38         |
| 7/22/2004 | 13:00 | 24.33         | 8.28          | 0.33               | 7.40         |
| 7/22/2004 | 13:30 | 24.39         | 8.29          | 0.33               | 7.50         |
| 7/22/2004 | 14:00 | 24.39         | 8.27          | 0.33               | 7.39         |
| 7/22/2004 | 14:30 | 24.44         | 8.26          | 0.33               | 7.32         |
| 7/22/2004 | 15:00 | 24.50         | 8.28          | 0.33               | 7.53         |
| 7/22/2004 | 15:30 | 24.61         | 8.28          | 0.33               | 7.49         |
| 7/22/2004 | 16:00 | 24.78         | 8.33          | 0.33               | 7.72         |
| 7/22/2004 | 16:30 | 24.67         | 8.30          | 0.33               | 7.53         |
| 7/22/2004 | 17:00 | 24.67         | 8.30          | 0.33               | 7.55         |
| 7/22/2004 | 17:30 | 24.61         | 8.29          | 0.33               | 7.53         |
| 7/22/2004 | 18:00 | 24.56         | 8.31          | 0.33               | 7.58         |
| 7/22/2004 | 18:30 | 24.61         | 8.31          | 0.33               | 7.60         |
| 7/22/2004 | 19:00 | 24.50         | 8.29          | 0.33               | 7.53         |
| 7/22/2004 | 19:30 | 24.44         | 8.28          | 0.33               | 7.40         |
| 7/22/2004 | 20:00 | 24.33         | 8.25          | 0.33               | 7.29         |
| 7/22/2004 | 20:30 | 24.33         | 8.25          | 0.33               | 7.31         |
| 7/22/2004 | 21:00 | 24.28         | 8.24          | 0.33               | 7.19         |
| 7/22/2004 | 21:30 | 24.22         | 8.23          | 0.33               | 7.15         |
| 7/22/2004 | 22:00 | 24.22         | 8.22          | 0.33               | 7.14         |
| 7/22/2004 | 22:30 | 24.17         | 8.21          | 0.33               | 7.13         |
| 7/22/2004 | 23:00 | 24.11         | 8.20          | 0.33               | 6.98         |
| 7/22/2004 | 23:30 | 24.11         | 8.20          | 0.33               | 6.98         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/23/2004 | 0:00  | 24.06         | 8.20          | 0.33               | 7.02         |
| 7/23/2004 | 0:30  | 24.06         | 8.19          | 0.33               | 6.94         |
| 7/23/2004 | 1:00  | 24.06         | 8.19          | 0.33               | 7.01         |
| 7/23/2004 | 1:30  | 24.00         | 8.18          | 0.33               | 6.92         |
| 7/23/2004 | 2:00  | 23.94         | 8.18          | 0.33               | 6.84         |
| 7/23/2004 | 2:30  | 23.94         | 8.18          | 0.33               | 6.92         |
| 7/23/2004 | 3:00  | 23.94         | 8.19          | 0.33               | 6.95         |
| 7/23/2004 | 3:30  | 23.94         | 8.19          | 0.33               | 6.99         |
| 7/23/2004 | 4:00  | 23.89         | 8.18          | 0.33               | 6.92         |
| 7/23/2004 | 4:30  | 23.89         | 8.17          | 0.33               | 6.78         |
| 7/23/2004 | 5:00  | 23.83         | 8.17          | 0.33               | 6.77         |
| 7/23/2004 | 5:30  | 23.83         | 8.17          | 0.33               | 6.81         |
| 7/23/2004 | 6:00  | 23.78         | 8.17          | 0.33               | 6.77         |
| 7/23/2004 | 6:30  | 23.78         | 8.16          | 0.33               | 6.72         |
| 7/23/2004 | 7:00  | 23.72         | 8.18          | 0.33               | 6.78         |
| 7/23/2004 | 7:30  | 23.72         | 8.18          | 0.33               | 6.87         |
| 7/23/2004 | 8:00  | 23.72         | 8.19          | 0.33               | 6.86         |
| 7/23/2004 | 8:30  | 23.72         | 8.19          | 0.33               | 6.82         |
| 7/23/2004 | 9:00  | 23.72         | 8.20          | 0.33               | 6.93         |
| 7/23/2004 | 9:30  | 23.72         | 8.19          | 0.33               | 6.92         |
| 7/23/2004 | 10:00 | 23.72         | 8.18          | 0.33               | 6.90         |
| 7/23/2004 | 10:30 | 23.72         | 8.18          | 0.33               | 6.89         |
| 7/23/2004 | 11:00 | 23.67         | 8.15          | 0.33               | 6.74         |
| 7/23/2004 | 11:30 | 23.67         | 8.15          | 0.33               | 6.73         |
| 7/23/2004 | 12:00 | 23.67         | 8.16          | 0.33               | 6.83         |
| 7/23/2004 | 12:30 | 23.67         | 8.16          | 0.33               | 6.84         |
| 7/23/2004 | 13:00 | 23.61         | 8.16          | 0.33               | 6.84         |
| 7/23/2004 | 13:30 | 23.61         | 8.17          | 0.33               | 6.99         |
| 7/23/2004 | 14:00 | 23.67         | 8.17          | 0.33               | 7.01         |
| 7/23/2004 | 14:30 | 23.67         | 8.17          | 0.33               | 6.94         |
| 7/23/2004 | 15:00 | 23.78         | 8.12          | 0.33               | 7.05         |
| 7/23/2004 | 15:30 | 23.83         | 8.04          | 0.33               | 7.22         |
| 7/23/2004 | 16:00 | 23.89         | 7.96          | 0.33               | 7.44         |
| 7/23/2004 | 16:30 | 23.89         | 7.98          | 0.33               | 7.46         |
| 7/23/2004 | 17:00 | 23.72         | 7.97          | 0.33               | 7.28         |
| 7/23/2004 | 17:30 | 23.67         | 7.96          | 0.33               | 7.22         |
| 7/23/2004 | 18:00 | 23.50         | 7.94          | 0.33               | 7.08         |
| 7/23/2004 | 18:30 | 23.44         | 7.94          | 0.33               | 7.02         |
| 7/23/2004 | 19:00 | 23.44         | 7.94          | 0.33               | 7.07         |
| 7/23/2004 | 19:30 | 23.44         | 7.96          | 0.33               | 7.13         |
| 7/23/2004 | 20:00 | 23.56         | 7.99          | 0.33               | 7.29         |
| 7/23/2004 | 20:30 | 23.56         | 8.00          | 0.33               | 7.29         |
| 7/23/2004 | 21:00 | 23.56         | 8.02          | 0.33               | 7.40         |
| 7/23/2004 | 21:30 | 23.61         | 8.01          | 0.33               | 7.40         |
| 7/23/2004 | 22:00 | 23.56         | 8.00          | 0.33               | 7.32         |
| 7/23/2004 | 22:30 | 23.50         | 7.99          | 0.33               | 7.22         |
| 7/23/2004 | 23:00 | 23.50         | 7.98          | 0.33               | 7.14         |
| 7/23/2004 | 23:30 | 23.50         | 7.99          | 0.33               | 7.19         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/24/2004 | 0:00  | 23.50         | 7.99          | 0.33               | 7.18         |
| 7/24/2004 | 0:30  | 23.50         | 8.00          | 0.33               | 7.21         |
| 7/24/2004 | 1:00  | 23.50         | 8.00          | 0.33               | 7.25         |
| 7/24/2004 | 1:30  | 23.44         | 8.00          | 0.33               | 7.23         |
| 7/24/2004 | 2:00  | 23.44         | 7.99          | 0.33               | 7.16         |
| 7/24/2004 | 2:30  | 23.39         | 7.98          | 0.33               | 7.08         |
| 7/24/2004 | 3:00  | 23.33         | 7.97          | 0.33               | 7.01         |
| 7/24/2004 | 3:30  | 23.33         | 7.97          | 0.33               | 6.99         |
| 7/24/2004 | 4:00  | 23.28         | 7.96          | 0.33               | 6.89         |
| 7/24/2004 | 4:30  | 23.28         | 7.95          | 0.33               | 6.84         |
| 7/24/2004 | 5:00  | 23.22         | 7.96          | 0.33               | 6.87         |
| 7/24/2004 | 5:30  | 23.22         | 7.95          | 0.33               | 6.85         |
| 7/24/2004 | 6:00  | 23.17         | 7.94          | 0.33               | 6.77         |
| 7/24/2004 | 6:30  | 23.17         | 7.94          | 0.33               | 6.79         |
| 7/24/2004 | 7:00  | 23.17         | 7.93          | 0.33               | 6.73         |
| 7/24/2004 | 7:30  | 23.11         | 7.93          | 0.33               | 6.72         |
| 7/24/2004 | 8:00  | 23.11         | 7.93          | 0.33               | 6.68         |
| 7/24/2004 | 8:30  | 23.11         | 7.93          | 0.33               | 6.75         |
| 7/24/2004 | 9:00  | 23.06         | 7.92          | 0.33               | 6.71         |
| 7/24/2004 | 9:30  | 23.06         | 7.91          | 0.33               | 6.63         |
| 7/24/2004 | 10:00 | 23.00         | 7.91          | 0.33               | 6.66         |
| 7/24/2004 | 10:30 | 23.00         | 7.91          | 0.33               | 6.70         |
| 7/24/2004 | 11:00 | 22.94         | 7.90          | 0.33               | 6.66         |
| 7/24/2004 | 11:30 | 22.89         | 7.89          | 0.33               | 6.65         |
| 7/24/2004 | 12:00 | 22.89         | 7.90          | 0.33               | 6.77         |
| 7/24/2004 | 12:30 | 22.83         | 7.93          | 0.33               | 6.90         |
| 7/24/2004 | 13:00 | 22.83         | 7.93          | 0.33               | 6.96         |
| 7/24/2004 | 13:30 | 22.83         | 7.93          | 0.33               | 6.90         |
| 7/24/2004 | 14:00 | 22.78         | 7.93          | 0.33               | 6.87         |
| 7/24/2004 | 14:30 | 22.78         | 7.92          | 0.33               | 6.83         |
| 7/24/2004 | 15:00 | 22.72         | 7.94          | 0.33               | 6.93         |
| 7/24/2004 | 15:30 | 22.72         | 7.94          | 0.33               | 7.00         |
| 7/24/2004 | 16:00 | 22.72         | 7.95          | 0.33               | 7.03         |
| 7/24/2004 | 16:30 | 22.67         | 7.95          | 0.33               | 7.06         |
| 7/24/2004 | 17:00 | 22.72         | 7.97          | 0.33               | 7.18         |
| 7/24/2004 | 17:30 | 22.78         | 8.00          | 0.33               | 7.33         |
| 7/24/2004 | 18:00 | 22.78         | 8.02          | 0.33               | 7.50         |
| 7/24/2004 | 18:30 | 22.83         | 8.03          | 0.33               | 7.55         |
| 7/24/2004 | 19:00 | 22.78         | 8.03          | 0.33               | 7.53         |
| 7/24/2004 | 19:30 | 22.72         | 8.02          | 0.33               | 7.49         |
| 7/24/2004 | 20:00 | 22.72         | 8.02          | 0.33               | 7.41         |
| 7/24/2004 | 20:30 | 22.72         | 8.00          | 0.33               | 7.31         |
| 7/24/2004 | 21:00 | 22.72         | 8.00          | 0.33               | 7.27         |
| 7/24/2004 | 21:30 | 22.78         | 8.00          | 0.33               | 7.29         |
| 7/24/2004 | 22:00 | 22.78         | 8.02          | 0.33               | 7.37         |
| 7/24/2004 | 22:30 | 22.83         | 8.03          | 0.33               | 7.41         |
| 7/24/2004 | 23:00 | 22.78         | 8.03          | 0.33               | 7.39         |
| 7/24/2004 | 23:30 | 22.72         | 8.03          | 0.33               | 7.41         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/25/2004 | 0:00  | 22.72         | 8.03          | 0.33               | 7.42         |
| 7/25/2004 | 0:30  | 22.72         | 8.03          | 0.33               | 7.39         |
| 7/25/2004 | 1:00  | 22.72         | 8.03          | 0.33               | 7.42         |
| 7/25/2004 | 1:30  | 22.72         | 8.04          | 0.33               | 7.44         |
| 7/25/2004 | 2:00  | 22.67         | 8.04          | 0.33               | 7.44         |
| 7/25/2004 | 2:30  | 22.61         | 8.03          | 0.33               | 7.37         |
| 7/25/2004 | 3:00  | 22.61         | 8.03          | 0.33               | 7.37         |
| 7/25/2004 | 3:30  | 22.61         | 8.02          | 0.33               | 7.28         |
| 7/25/2004 | 4:00  | 22.56         | 8.02          | 0.33               | 7.28         |
| 7/25/2004 | 4:30  | 22.50         | 8.01          | 0.33               | 7.27         |
| 7/25/2004 | 5:00  | 22.50         | 8.02          | 0.33               | 7.26         |
| 7/25/2004 | 5:30  | 22.44         | 8.02          | 0.33               | 7.21         |
| 7/25/2004 | 6:00  | 22.44         | 8.01          | 0.33               | 7.17         |
| 7/25/2004 | 6:30  | 22.39         | 8.00          | 0.33               | 7.16         |
| 7/25/2004 | 7:00  | 22.39         | 8.00          | 0.33               | 7.17         |
| 7/25/2004 | 7:30  | 22.39         | 7.99          | 0.33               | 7.10         |
| 7/25/2004 | 8:00  | 22.39         | 7.97          | 0.33               | 7.01         |
| 7/25/2004 | 8:30  | 22.33         | 7.96          | 0.33               | 6.98         |
| 7/25/2004 | 9:00  | 22.33         | 7.96          | 0.33               | 6.94         |
| 7/25/2004 | 9:30  | 22.33         | 7.97          | 0.33               | 6.98         |
| 7/25/2004 | 10:00 | 22.28         | 7.97          | 0.33               | 7.06         |
| 7/25/2004 | 10:30 | 22.28         | 7.98          | 0.33               | 7.10         |
| 7/25/2004 | 11:00 | 22.28         | 7.99          | 0.33               | 7.25         |
| 7/25/2004 | 11:30 | 22.39         | 8.00          | 0.33               | 7.28         |
| 7/25/2004 | 12:00 | 22.44         | 8.00          | 0.33               | 7.33         |
| 7/25/2004 | 12:30 | 22.39         | 8.01          | 0.33               | 7.34         |
| 7/25/2004 | 13:00 | 22.28         | 8.01          | 0.33               | 7.38         |
| 7/25/2004 | 13:30 | 22.28         | 8.03          | 0.33               | 7.52         |
| 7/25/2004 | 14:00 | 22.28         | 8.04          | 0.33               | 7.51         |
| 7/25/2004 | 14:30 | 22.17         | 8.03          | 0.33               | 7.56         |
| 7/25/2004 | 15:00 | 22.22         | 8.05          | 0.33               | 7.62         |
| 7/25/2004 | 15:30 | 22.17         | 8.06          | 0.33               | 7.69         |
| 7/25/2004 | 16:00 | 22.39         | 8.12          | 0.33               | 8.01         |
| 7/25/2004 | 16:30 | 22.39         | 8.12          | 0.33               | 8.01         |
| 7/25/2004 | 17:00 | 22.28         | 8.10          | 0.33               | 7.88         |
| 7/25/2004 | 17:30 | 22.17         | 8.08          | 0.33               | 7.82         |
| 7/25/2004 | 18:00 | 22.00         | 8.05          | 0.33               | 7.61         |
| 7/25/2004 | 18:30 | 21.94         | 8.05          | 0.33               | 7.61         |
| 7/25/2004 | 19:00 | 21.78         | 8.03          | 0.33               | 7.50         |
| 7/25/2004 | 19:30 | 21.83         | 8.04          | 0.33               | 7.55         |
| 7/25/2004 | 20:00 | 21.83         | 8.06          | 0.33               | 7.67         |
| 7/25/2004 | 20:30 | 21.94         | 8.09          | 0.33               | 7.82         |
| 7/25/2004 | 21:00 | 21.89         | 8.10          | 0.33               | 7.88         |
| 7/25/2004 | 21:30 | 21.94         | 8.11          | 0.33               | 7.93         |
| 7/25/2004 | 22:00 | 21.94         | 8.10          | 0.33               | 7.88         |
| 7/25/2004 | 22:30 | 22.00         | 8.11          | 0.33               | 7.92         |
| 7/25/2004 | 23:00 | 22.00         | 8.12          | 0.33               | 7.94         |
| 7/25/2004 | 23:30 | 22.06         | 8.11          | 0.33               | 7.89         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/26/2004 | 0:00  | 22.06         | 8.11          | 0.33               | 7.90         |
| 7/26/2004 | 0:30  | 22.00         | 8.11          | 0.33               | 7.85         |
| 7/26/2004 | 1:00  | 22.00         | 8.10          | 0.33               | 7.82         |
| 7/26/2004 | 1:30  | 22.00         | 8.11          | 0.33               | 7.85         |
| 7/26/2004 | 2:00  | 22.00         | 8.11          | 0.33               | 7.88         |
| 7/26/2004 | 2:30  | 22.00         | 8.11          | 0.33               | 7.89         |
| 7/26/2004 | 3:00  | 21.94         | 8.11          | 0.33               | 7.85         |
| 7/26/2004 | 3:30  | 21.94         | 8.11          | 0.33               | 7.87         |
| 7/26/2004 | 4:00  | 21.89         | 8.11          | 0.33               | 7.86         |
| 7/26/2004 | 4:30  | 21.83         | 8.09          | 0.33               | 7.72         |
| 7/26/2004 | 5:00  | 21.78         | 8.08          | 0.33               | 7.70         |
| 7/26/2004 | 5:30  | 21.78         | 8.08          | 0.33               | 7.66         |
| 7/26/2004 | 6:00  | 21.78         | 8.06          | 0.33               | 7.61         |
| 7/26/2004 | 6:30  | 21.78         | 8.07          | 0.33               | 7.57         |
| 7/26/2004 | 7:00  | 21.72         | 8.07          | 0.33               | 7.68         |
| 7/26/2004 | 7:30  | 21.72         | 8.07          | 0.33               | 7.60         |
| 7/26/2004 | 8:00  | 21.72         | 8.07          | 0.33               | 7.61         |
| 7/26/2004 | 8:30  | 21.72         | 8.07          | 0.33               | 7.66         |
| 7/26/2004 | 9:00  | 21.72         | 8.06          | 0.33               | 7.63         |
| 7/26/2004 | 9:30  | 21.78         | 8.08          | 0.33               | 7.69         |
| 7/26/2004 | 10:00 | 21.89         | 8.09          | 0.33               | 7.74         |
| 7/26/2004 | 10:30 | 21.89         | 8.08          | 0.33               | 7.73         |
| 7/26/2004 | 11:00 | 21.94         | 8.07          | 0.33               | 7.72         |
| 7/26/2004 | 11:30 | 22.11         | 8.08          | 0.33               | 7.72         |
| 7/26/2004 | 12:00 | 22.06         | 8.07          | 0.33               | 7.70         |
| 7/26/2004 | 12:30 | 22.00         | 8.07          | 0.33               | 7.76         |
| 7/26/2004 | 13:00 | 22.00         | 8.08          | 0.33               | 7.85         |
| 7/26/2004 | 13:30 | 22.11         | 8.08          | 0.33               | 7.80         |
| 7/26/2004 | 14:00 | 22.00         | 8.07          | 0.33               | 7.75         |
| 7/26/2004 | 14:30 | 21.89         | 8.09          | 0.33               | 7.97         |
| 7/26/2004 | 15:00 | 21.83         | 8.10          | 0.33               | 7.97         |
| 7/26/2004 | 15:30 | 21.83         | 8.10          | 0.33               | 8.04         |
| 7/26/2004 | 16:00 | 21.83         | 8.11          | 0.33               | 8.10         |
| 7/26/2004 | 16:30 | 21.72         | 8.09          | 0.33               | 7.95         |
| 7/26/2004 | 17:00 | 21.67         | 8.08          | 0.33               | 7.91         |
| 7/26/2004 | 17:30 | 21.67         | 8.09          | 0.33               | 7.95         |
| 7/26/2004 | 18:00 | 21.61         | 8.09          | 0.33               | 7.89         |
| 7/26/2004 | 18:30 | 21.61         | 8.09          | 0.33               | 7.86         |
| 7/26/2004 | 19:00 | 21.61         | 8.11          | 0.33               | 7.96         |
| 7/26/2004 | 19:30 | 21.61         | 8.13          | 0.33               | 8.12         |
| 7/26/2004 | 20:00 | 21.67         | 8.13          | 0.33               | 8.14         |
| 7/26/2004 | 20:30 | 21.72         | 8.15          | 0.33               | 8.21         |
| 7/26/2004 | 21:00 | 21.72         | 8.14          | 0.33               | 8.17         |
| 7/26/2004 | 21:30 | 21.67         | 8.12          | 0.33               | 8.04         |
| 7/26/2004 | 22:00 | 21.78         | 8.15          | 0.33               | 8.19         |
| 7/26/2004 | 22:30 | 21.78         | 8.15          | 0.33               | 8.18         |
| 7/26/2004 | 23:00 | 21.72         | 8.14          | 0.33               | 8.13         |
| 7/26/2004 | 23:30 | 21.78         | 8.15          | 0.33               | 8.10         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/27/2004 | 0:00  | 21.67         | 8.13          | 0.33               | 8.07         |
| 7/27/2004 | 0:30  | 21.67         | 8.13          | 0.33               | 8.05         |
| 7/27/2004 | 1:00  | 21.72         | 8.14          | 0.33               | 8.07         |
| 7/27/2004 | 1:30  | 21.72         | 8.14          | 0.33               | 8.09         |
| 7/27/2004 | 2:00  | 21.72         | 8.14          | 0.33               | 8.03         |
| 7/27/2004 | 2:30  | 21.72         | 8.15          | 0.33               | 8.06         |
| 7/27/2004 | 3:00  | 21.78         | 8.15          | 0.33               | 8.04         |
| 7/27/2004 | 3:30  | 21.72         | 8.13          | 0.33               | 7.98         |
| 7/27/2004 | 4:00  | 21.72         | 8.13          | 0.33               | 7.98         |
| 7/27/2004 | 4:30  | 21.72         | 8.13          | 0.33               | 7.95         |
| 7/27/2004 | 5:00  | 21.72         | 8.13          | 0.33               | 7.93         |
| 7/27/2004 | 5:30  | 21.67         | 8.11          | 0.33               | 7.84         |
| 7/27/2004 | 6:00  | 21.67         | 8.11          | 0.33               | 7.83         |
| 7/27/2004 | 6:30  | 21.67         | 8.10          | 0.33               | 7.85         |
| 7/27/2004 | 7:00  | 21.61         | 8.09          | 0.33               | 7.77         |
| 7/27/2004 | 7:30  | 21.61         | 8.08          | 0.33               | 7.73         |
| 7/27/2004 | 8:00  | 21.56         | 8.07          | 0.33               | 7.69         |
| 7/27/2004 | 8:30  | 21.61         | 8.08          | 0.33               | 7.74         |
| 7/27/2004 | 9:00  | 21.67         | 8.09          | 0.33               | 7.77         |
| 7/27/2004 | 9:30  | 21.72         | 8.10          | 0.33               | 7.84         |
| 7/27/2004 | 10:00 | 21.78         | 8.10          | 0.33               | 7.86         |
| 7/27/2004 | 10:30 | 21.89         | 8.11          | 0.33               | 7.91         |
| 7/27/2004 | 11:00 | 21.94         | 8.11          | 0.33               | 7.87         |
| 7/27/2004 | 11:30 | 22.00         | 8.09          | 0.33               | 7.78         |
| 7/27/2004 | 12:00 | 21.94         | 8.07          | 0.33               | 7.71         |
| 7/27/2004 | 12:30 | 22.00         | 8.09          | 0.33               | 7.79         |
| 7/27/2004 | 13:00 | 22.06         | 8.10          | 0.33               | 7.86         |
| 7/27/2004 | 13:30 | 22.11         | 8.10          | 0.33               | 7.81         |
| 7/27/2004 | 14:00 | 22.33         | 8.12          | 0.33               | 7.94         |
| 7/27/2004 | 14:30 | 22.28         | 8.12          | 0.33               | 8.00         |
| 7/27/2004 | 15:00 | 22.33         | 8.12          | 0.33               | 8.02         |
| 7/27/2004 | 15:30 | 22.50         | 8.14          | 0.33               | 8.05         |
| 7/27/2004 | 16:00 | 22.67         | 8.16          | 0.33               | 8.19         |
| 7/27/2004 | 16:30 | 22.67         | 8.16          | 0.33               | 8.24         |
| 7/27/2004 | 17:00 | 22.39         | 8.13          | 0.33               | 8.13         |
| 7/27/2004 | 17:30 | 22.22         | 8.15          | 0.33               | 8.22         |
| 7/27/2004 | 18:00 | 22.11         | 8.16          | 0.33               | 8.26         |
| 7/27/2004 | 18:30 | 22.11         | 8.17          | 0.33               | 8.36         |
| 7/27/2004 | 19:00 | 22.00         | 8.16          | 0.33               | 8.21         |
| 7/27/2004 | 19:30 | 22.00         | 8.14          | 0.33               | 8.15         |
| 7/27/2004 | 20:00 | 22.11         | 8.15          | 0.33               | 8.15         |
| 7/27/2004 | 20:30 | 22.17         | 8.14          | 0.33               | 8.08         |
| 7/27/2004 | 21:00 | 22.22         | 8.14          | 0.33               | 8.08         |
| 7/27/2004 | 21:30 | 22.22         | 8.13          | 0.33               | 8.00         |
| 7/27/2004 | 22:00 | 22.28         | 8.14          | 0.33               | 7.98         |
| 7/27/2004 | 22:30 | 22.28         | 8.14          | 0.33               | 8.04         |
| 7/27/2004 | 23:00 | 22.28         | 8.14          | 0.33               | 7.98         |
| 7/27/2004 | 23:30 | 22.28         | 8.13          | 0.33               | 7.93         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/28/2004 | 0:00  | 22.22         | 8.11          | 0.33               | 7.83         |
| 7/28/2004 | 0:30  | 22.22         | 8.10          | 0.33               | 7.75         |
| 7/28/2004 | 1:00  | 22.17         | 8.10          | 0.33               | 7.69         |
| 7/28/2004 | 1:30  | 22.17         | 8.10          | 0.33               | 7.67         |
| 7/28/2004 | 2:00  | 22.22         | 8.11          | 0.33               | 7.67         |
| 7/28/2004 | 2:30  | 22.28         | 8.12          | 0.33               | 7.70         |
| 7/28/2004 | 3:00  | 22.44         | 8.14          | 0.33               | 7.86         |
| 7/28/2004 | 3:30  | 22.44         | 8.14          | 0.33               | 7.80         |
| 7/28/2004 | 4:00  | 22.39         | 8.12          | 0.34               | 7.73         |
| 7/28/2004 | 4:30  | 22.50         | 8.12          | 0.34               | 7.63         |
| 7/28/2004 | 5:00  | 22.44         | 8.12          | 0.34               | 7.58         |
| 7/28/2004 | 5:30  | 22.44         | 8.11          | 0.34               | 7.64         |
| 7/28/2004 | 6:00  | 22.44         | 8.12          | 0.33               | 7.64         |
| 7/28/2004 | 6:30  | 22.44         | 8.11          | 0.34               | 7.61         |
| 7/28/2004 | 7:00  | 22.44         | 8.10          | 0.34               | 7.53         |
| 7/28/2004 | 7:30  | 22.44         | 8.09          | 0.34               | 7.51         |
| 7/28/2004 | 8:00  | 22.33         | 8.08          | 0.34               | 7.47         |
| 7/28/2004 | 8:30  | 22.39         | 8.08          | 0.34               | 7.51         |
| 7/28/2004 | 9:00  | 22.39         | 8.08          | 0.34               | 7.46         |
| 7/28/2004 | 9:30  | 22.39         | 8.08          | 0.34               | 7.47         |
| 7/28/2004 | 10:00 | 22.33         | 8.07          | 0.34               | 7.42         |
| 7/28/2004 | 10:30 | 22.56         | 8.09          | 0.33               | 7.56         |
| 7/28/2004 | 11:00 | 22.56         | 8.08          | 0.34               | 7.50         |
| 7/28/2004 | 11:30 | 22.67         | 8.08          | 0.34               | 7.44         |
| 7/28/2004 | 12:00 | 22.61         | 8.07          | 0.34               | 7.40         |
| 7/28/2004 | 12:30 | 22.56         | 8.06          | 0.34               | 7.38         |
| 7/28/2004 | 13:00 | 22.67         | 8.08          | 0.34               | 7.44         |
| 7/28/2004 | 13:30 | 22.78         | 8.10          | 0.34               | 7.49         |
| 7/28/2004 | 14:00 | 22.78         | 8.11          | 0.34               | 7.61         |
| 7/28/2004 | 14:30 | 22.89         | 8.12          | 0.34               | 7.65         |
| 7/28/2004 | 15:00 | 22.83         | 8.11          | 0.34               | 7.58         |
| 7/28/2004 | 15:30 | 23.06         | 8.13          | 0.34               | 7.68         |
| 7/28/2004 | 16:00 | 23.11         | 8.14          | 0.34               | 7.69         |
| 7/28/2004 | 16:30 | 23.11         | 8.13          | 0.34               | 7.60         |
| 7/28/2004 | 17:00 | 23.17         | 8.14          | 0.34               | 7.68         |
| 7/28/2004 | 17:30 | 23.22         | 8.14          | 0.34               | 7.63         |
| 7/28/2004 | 18:00 | 23.33         | 8.16          | 0.34               | 7.68         |
| 7/28/2004 | 18:30 | 23.28         | 8.14          | 0.34               | 7.55         |
| 7/28/2004 | 19:00 | 23.33         | 8.15          | 0.34               | 7.61         |
| 7/28/2004 | 19:30 | 23.33         | 8.16          | 0.34               | 7.63         |
| 7/28/2004 | 20:00 | 23.33         | 8.16          | 0.34               | 7.60         |
| 7/28/2004 | 20:30 | 23.28         | 8.14          | 0.34               | 7.49         |
| 7/28/2004 | 21:00 | 23.17         | 8.12          | 0.34               | 7.38         |
| 7/28/2004 | 21:30 | 23.11         | 8.11          | 0.34               | 7.31         |
| 7/28/2004 | 22:00 | 23.11         | 8.11          | 0.34               | 7.40         |
| 7/28/2004 | 22:30 | 23.06         | 8.10          | 0.34               | 7.39         |
| 7/28/2004 | 23:00 | 23.06         | 8.10          | 0.34               | 7.36         |
| 7/28/2004 | 23:30 | 23.00         | 8.10          | 0.34               | 7.43         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/29/2004 | 0:00  | 23.00         | 8.10          | 0.34               | 7.34         |
| 7/29/2004 | 0:30  | 23.00         | 8.10          | 0.34               | 7.43         |
| 7/29/2004 | 1:00  | 22.94         | 8.10          | 0.34               | 7.36         |
| 7/29/2004 | 1:30  | 22.94         | 8.09          | 0.34               | 7.27         |
| 7/29/2004 | 2:00  | 23.00         | 8.10          | 0.34               | 7.34         |
| 7/29/2004 | 2:30  | 22.94         | 8.09          | 0.34               | 7.28         |
| 7/29/2004 | 3:00  | 22.89         | 8.08          | 0.34               | 7.26         |
| 7/29/2004 | 3:30  | 22.89         | 8.07          | 0.34               | 7.15         |
| 7/29/2004 | 4:00  | 22.83         | 8.07          | 0.34               | 7.14         |
| 7/29/2004 | 4:30  | 22.83         | 8.06          | 0.34               | 7.14         |
| 7/29/2004 | 5:00  | 22.78         | 8.05          | 0.34               | 7.08         |
| 7/29/2004 | 5:30  | 22.78         | 8.05          | 0.34               | 7.07         |
| 7/29/2004 | 6:00  | 22.72         | 8.04          | 0.34               | 6.96         |
| 7/29/2004 | 6:30  | 22.67         | 8.02          | 0.34               | 6.94         |
| 7/29/2004 | 7:00  | 22.61         | 8.01          | 0.34               | 6.92         |
| 7/29/2004 | 7:30  | 22.61         | 8.01          | 0.34               | 6.82         |
| 7/29/2004 | 8:00  | 22.61         | 8.01          | 0.34               | 6.87         |
| 7/29/2004 | 8:30  | 22.61         | 8.01          | 0.34               | 6.89         |
| 7/29/2004 | 9:00  | 22.67         | 8.02          | 0.34               | 6.90         |
| 7/29/2004 | 9:30  | 22.61         | 8.02          | 0.34               | 6.87         |
| 7/29/2004 | 10:00 | 22.61         | 8.00          | 0.34               | 6.82         |
| 7/29/2004 | 10:30 | 22.61         | 7.99          | 0.34               | 6.72         |
| 7/29/2004 | 11:00 | 22.61         | 7.98          | 0.34               | 6.61         |
| 7/29/2004 | 11:30 | 22.67         | 7.99          | 0.34               | 6.82         |
| 7/29/2004 | 12:00 | 22.72         | 8.01          | 0.34               | 6.79         |
| 7/29/2004 | 12:30 | 22.72         | 8.02          | 0.34               | 6.85         |
| 7/29/2004 | 13:00 | 22.72         | 8.01          | 0.34               | 6.79         |
| 7/29/2004 | 13:30 | 22.72         | 8.02          | 0.34               | 6.79         |
| 7/29/2004 | 14:00 | 22.78         | 8.04          | 0.34               | 6.88         |
| 7/29/2004 | 14:30 | 22.83         | 8.05          | 0.34               | 6.84         |
| 7/29/2004 | 15:00 | 22.94         | 8.07          | 0.34               | 7.12         |
| 7/29/2004 | 15:30 | 23.00         | 8.08          | 0.34               | 7.20         |
| 7/29/2004 | 16:00 | 23.00         | 8.08          | 0.34               | 7.19         |
| 7/29/2004 | 16:30 | 23.00         | 8.07          | 0.34               | 7.08         |
| 7/29/2004 | 17:00 | 23.00         | 8.07          | 0.34               | 7.03         |
| 7/29/2004 | 17:30 | 23.11         | 8.08          | 0.34               | 7.18         |
| 7/29/2004 | 18:00 | 23.11         | 8.08          | 0.34               | 7.29         |
| 7/29/2004 | 18:30 | 23.17         | 8.10          | 0.34               | 7.29         |
| 7/29/2004 | 19:00 | 23.17         | 8.09          | 0.34               | 7.27         |
| 7/29/2004 | 19:30 | 23.17         | 8.10          | 0.34               | 7.29         |
| 7/29/2004 | 20:00 | 23.17         | 8.10          | 0.34               | 7.26         |
| 7/29/2004 | 20:30 | 23.17         | 8.10          | 0.34               | 7.27         |
| 7/29/2004 | 21:00 | 23.17         | 8.10          | 0.34               | 7.24         |
| 7/29/2004 | 21:30 | 23.11         | 8.10          | 0.34               | 7.22         |
| 7/29/2004 | 22:00 | 23.06         | 8.08          | 0.34               | 7.15         |
| 7/29/2004 | 22:30 | 23.00         | 8.07          | 0.34               | 7.09         |
| 7/29/2004 | 23:00 | 22.94         | 8.06          | 0.34               | 7.05         |
| 7/29/2004 | 23:30 | 22.94         | 8.05          | 0.34               | 7.01         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/30/2004 | 0:00  | 22.89         | 8.05          | 0.34               | 7.02         |
| 7/30/2004 | 0:30  | 22.89         | 8.05          | 0.34               | 6.99         |
| 7/30/2004 | 1:00  | 22.89         | 8.05          | 0.34               | 7.01         |
| 7/30/2004 | 1:30  | 22.83         | 8.05          | 0.34               | 7.02         |
| 7/30/2004 | 2:00  | 22.83         | 8.06          | 0.34               | 7.04         |
| 7/30/2004 | 2:30  | 22.83         | 8.07          | 0.34               | 7.06         |
| 7/30/2004 | 3:00  | 22.83         | 8.07          | 0.34               | 7.11         |
| 7/30/2004 | 3:30  | 22.89         | 8.08          | 0.34               | 7.13         |
| 7/30/2004 | 4:00  | 22.89         | 8.09          | 0.34               | 7.14         |
| 7/30/2004 | 4:30  | 22.89         | 8.09          | 0.34               | 7.19         |
| 7/30/2004 | 5:00  | 22.83         | 8.10          | 0.34               | 7.19         |
| 7/30/2004 | 5:30  | 22.78         | 8.08          | 0.34               | 7.12         |
| 7/30/2004 | 6:00  | 22.72         | 8.07          | 0.34               | 7.05         |
| 7/30/2004 | 6:30  | 22.72         | 8.07          | 0.34               | 7.04         |
| 7/30/2004 | 7:00  | 22.67         | 8.06          | 0.34               | 7.01         |
| 7/30/2004 | 7:30  | 22.61         | 8.04          | 0.34               | 6.92         |
| 7/30/2004 | 8:00  | 22.61         | 8.04          | 0.34               | 6.91         |
| 7/30/2004 | 8:30  | 22.56         | 8.02          | 0.34               | 6.82         |
| 7/30/2004 | 9:00  | 22.56         | 8.02          | 0.34               | 6.80         |
| 7/30/2004 | 9:30  | 22.56         | 8.00          | 0.34               | 6.72         |
| 7/30/2004 | 10:00 | 22.56         | 7.99          | 0.34               | 6.64         |
| 7/30/2004 | 10:30 | 22.50         | 7.96          | 0.34               | 6.52         |
| 7/30/2004 | 11:00 | 22.39         | 7.94          | 0.34               | 6.41         |
| 7/30/2004 | 11:30 | 22.39         | 7.94          | 0.34               | 6.37         |
| 7/30/2004 | 12:00 | 22.44         | 7.97          | 0.34               | 6.53         |
| 7/30/2004 | 12:30 | 22.39         | 7.96          | 0.34               | 6.45         |
| 7/30/2004 | 13:00 | 22.39         | 7.98          | 0.34               | 6.54         |
| 7/30/2004 | 13:30 | 22.44         | 7.99          | 0.34               | 6.59         |
| 7/30/2004 | 14:00 | 22.33         | 7.97          | 0.34               | 6.51         |
| 7/30/2004 | 14:30 | 22.22         | 7.94          | 0.34               | 6.28         |
| 7/30/2004 | 15:00 | 22.17         | 7.88          | 0.34               | 5.98         |
| 7/30/2004 | 15:30 | 22.11         | 7.87          | 0.34               | 5.94         |
| 7/30/2004 | 16:00 | 22.06         | 7.88          | 0.34               | 5.98         |
| 7/30/2004 | 16:30 | 22.06         | 7.91          | 0.34               | 6.16         |
| 7/30/2004 | 17:00 | 22.17         | 7.93          | 0.34               | 6.34         |
| 7/30/2004 | 17:30 | 22.22         | 7.95          | 0.34               | 6.47         |
| 7/30/2004 | 18:00 | 22.39         | 7.98          | 0.34               | 6.61         |
| 7/30/2004 | 18:30 | 22.44         | 8.00          | 0.34               | 6.69         |
| 7/30/2004 | 19:00 | 22.44         | 7.99          | 0.34               | 6.64         |
| 7/30/2004 | 19:30 | 22.44         | 8.00          | 0.34               | 6.70         |
| 7/30/2004 | 20:00 | 22.44         | 8.01          | 0.34               | 6.76         |
| 7/30/2004 | 20:30 | 22.44         | 8.00          | 0.34               | 6.71         |
| 7/30/2004 | 21:00 | 22.50         | 8.02          | 0.34               | 6.77         |
| 7/30/2004 | 21:30 | 22.56         | 8.03          | 0.34               | 6.86         |
| 7/30/2004 | 22:00 | 22.61         | 8.05          | 0.34               | 6.95         |
| 7/30/2004 | 22:30 | 22.61         | 8.05          | 0.34               | 6.97         |
| 7/30/2004 | 23:00 | 22.61         | 8.06          | 0.34               | 7.01         |
| 7/30/2004 | 23:30 | 22.61         | 8.06          | 0.34               | 6.99         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of July 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 7/31/2004 | 0:00  | 22.61         | 8.06          | 0.34               | 7.00         |
| 7/31/2004 | 0:30  | 22.67         | 8.06          | 0.34               | 6.96         |
| 7/31/2004 | 1:00  | 22.61         | 8.05          | 0.34               | 6.92         |
| 7/31/2004 | 1:30  | 22.67         | 8.05          | 0.34               | 6.93         |
| 7/31/2004 | 2:00  | 22.67         | 8.06          | 0.34               | 6.94         |
| 7/31/2004 | 2:30  | 22.67         | 8.06          | 0.34               | 6.94         |
| 7/31/2004 | 3:00  | 22.67         | 8.07          | 0.34               | 6.97         |
| 7/31/2004 | 3:30  | 22.72         | 8.09          | 0.34               | 7.03         |
| 7/31/2004 | 4:00  | 22.72         | 8.08          | 0.34               | 7.04         |
| 7/31/2004 | 4:30  | 22.72         | 8.09          | 0.34               | 7.04         |
| 7/31/2004 | 5:00  | 22.72         | 8.09          | 0.34               | 7.04         |
| 7/31/2004 | 5:30  | 22.72         | 8.08          | 0.34               | 7.04         |
| 7/31/2004 | 6:00  | 22.72         | 8.08          | 0.34               | 7.03         |
| 7/31/2004 | 6:30  | 22.78         | 8.09          | 0.34               | 7.09         |
| 7/31/2004 | 7:00  | 22.78         | 8.11          | 0.34               | 7.14         |
| 7/31/2004 | 7:30  | 22.78         | 8.11          | 0.34               | 7.16         |
| 7/31/2004 | 8:00  | 22.83         | 8.13          | 0.34               | 7.26         |
| 7/31/2004 | 8:30  | 22.89         | 8.14          | 0.34               | 7.31         |
| 7/31/2004 | 9:00  | 22.89         | 8.14          | 0.34               | 7.31         |
| 7/31/2004 | 9:30  | 22.89         | 8.13          | 0.34               | 7.25         |
| 7/31/2004 | 10:00 | 22.89         | 8.14          | 0.34               | 7.27         |
| 7/31/2004 | 10:30 | 22.89         | 8.13          | 0.34               | 7.26         |
| 7/31/2004 | 11:00 | 23.00         | 8.15          | 0.34               | 7.36         |
| 7/31/2004 | 11:30 | 23.06         | 8.16          | 0.34               | 7.43         |
| 7/31/2004 | 12:00 | 23.06         | 8.15          | 0.34               | 7.34         |
| 7/31/2004 | 12:30 | 23.06         | 8.12          | 0.34               | 7.18         |
| 7/31/2004 | 13:00 | 23.17         | 8.14          | 0.34               | 7.25         |
| 7/31/2004 | 13:30 | 23.22         | 8.15          | 0.34               | 7.37         |
| 7/31/2004 | 14:00 | 23.33         | 8.18          | 0.34               | 7.52         |
| 7/31/2004 | 14:30 | 23.33         | 8.16          | 0.34               | 7.44         |
| 7/31/2004 | 15:00 | 23.28         | 8.16          | 0.34               | 7.46         |
| 7/31/2004 | 15:30 | 23.33         | 8.16          | 0.34               | 7.47         |
| 7/31/2004 | 16:00 | 23.50         | 8.19          | 0.34               | 7.64         |
| 7/31/2004 | 16:30 | 23.44         | 8.18          | 0.34               | 7.55         |
| 7/31/2004 | 17:00 | 23.39         | 8.13          | 0.34               | 7.34         |
| 7/31/2004 | 17:30 | 23.44         | 8.15          | 0.34               | 7.41         |
| 7/31/2004 | 18:00 | 23.39         | 8.13          | 0.34               | 7.33         |
| 7/31/2004 | 18:30 | 23.28         | 8.11          | 0.34               | 7.22         |
| 7/31/2004 | 19:00 | 23.28         | 8.11          | 0.34               | 7.19         |
| 7/31/2004 | 19:30 | 23.22         | 8.11          | 0.34               | 7.23         |
| 7/31/2004 | 20:00 | 23.22         | 8.12          | 0.34               | 7.29         |
| 7/31/2004 | 20:30 | 23.17         | 8.12          | 0.34               | 7.28         |
| 7/31/2004 | 21:00 | 23.11         | 8.10          | 0.34               | 7.19         |
| 7/31/2004 | 21:30 | 23.11         | 8.09          | 0.34               | 7.15         |
| 7/31/2004 | 22:00 | 23.00         | 8.08          | 0.34               | 7.09         |
| 7/31/2004 | 22:30 | 23.00         | 8.08          | 0.34               | 7.07         |
| 7/31/2004 | 23:00 | 23.00         | 8.07          | 0.34               | 7.07         |
| 7/31/2004 | 23:30 | 22.94         | 8.06          | 0.34               | 7.00         |

## **APPENDIX C**

**September 2004 Sampling Data**

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: AUGUST 5, 2004

Pre-Sampling Data:

Time: 4:45 pm Barometer: 30.20 Air Temp: 22.2 °C Wind Speed: Frm NW @ 7-12

Cloud Cover: 10% CLOUDS

Precipitation within Last 24 Hours: NONE

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.32 volts

YSI Calibration Time: 4:47 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.80 METERS

**YSI 51b Sample Data**

| Depth                | Time           | D.O.        | T           |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>4:50 pm</u> | <u>8.45</u> | <u>23.9</u> |
| 1 meter              | <u>4:52 pm</u> | <u>8.20</u> | <u>23.5</u> |
| 2 meters             | <u>4:54 pm</u> | <u>8.05</u> | <u>23.4</u> |
| 3 meters             | <u>4:56 pm</u> | <u>5.80</u> | <u>21.8</u> |
| 4 meters             | <u>4:58 pm</u> | <u>6.05</u> | <u>21.5</u> |
| 5 meters             | <u>5:00 pm</u> | <u>6.15</u> | <u>21.4</u> |
| 6 meters             | <u>5:02 pm</u> | <u>6.15</u> | <u>21.2</u> |
| 7 meters             | <u>5:03 pm</u> | <u>6.20</u> | <u>21.2</u> |
| 100 mm above bottom  | <u>5:05 pm</u> | <u>6.20</u> | <u>21.1</u> |

**Hach D.O. Sample Data**

|                      |                |            |             |
|----------------------|----------------|------------|-------------|
| 100 mm below surface | <u>5:10 pm</u> | <u>8.9</u> | <u>24.0</u> |
|----------------------|----------------|------------|-------------|

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Stan R. Chaffin

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: AUGUST 13, 2004

Pre-Sampling Data:

Time: 4:40 PM Barometer: 30.14 Air Temp: 18.9 °C Wind Speed: FRM E @ 5-7

Cloud Cover: Mostly Sunny

Precipitation within Last 24 Hours: None

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.30 volts

YSI Calibration Time: 4:50 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.87 METERS

**YSI 51b Sample Data**

| Depth                | Time           | D.O.        | T           |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>4:55pm</u>  | <u>9.35</u> | <u>20.6</u> |
| 1 meter              | <u>4:57pm</u>  | <u>9.40</u> | <u>19.3</u> |
| 2 meters             | <u>4:59pm</u>  | <u>7.75</u> | <u>18.9</u> |
| 3 meters             | <u>5:01 pm</u> | <u>7.70</u> | <u>17.7</u> |
| 4 meters             | <u>5:03 pm</u> | <u>7.60</u> | <u>17.7</u> |
| 5 meters             | <u>5:05 pm</u> | <u>7.05</u> | <u>17.6</u> |
| 6 meters             | <u>5:07 pm</u> | <u>6.95</u> | <u>17.4</u> |
| 7 meters             | <u>5:09 pm</u> | <u>6.90</u> | <u>17.3</u> |
| 100 mm above bottom  | <u>5:11 pm</u> | <u>6.45</u> | <u>17.3</u> |

**Hach D.O. Sample Data**

| Depth                | Time           | D.O.        | T           |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>5:15 pm</u> | <u>9-10</u> | <u>20.5</u> |

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Steve R. Chaffin

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: AUGUST 19, 2004

Pre-Sampling Data:

Time: 3:20 pm Barometer: 29.95 Air Temp: 20.0 °C Wind Speed: Frm S @ 5-15

Cloud Cover: CLEAR

Precipitation within Last 24 Hours: None

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.28 volts

YSI Calibration Time: 3:22 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.85 METERS

**YSI 51b Sample Data**

|                      |                |             |             |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>3:25 pm</u> | <u>9.05</u> | <u>20.3</u> |
| 1 meter              | <u>3:27 pm</u> | <u>8.95</u> | <u>20.2</u> |
| 2 meters             | <u>3:29 pm</u> | <u>8.60</u> | <u>20.1</u> |
| 3 meters             | <u>3:31 pm</u> | <u>8.45</u> | <u>20.0</u> |
| 4 meters             | <u>3:33 pm</u> | <u>8.25</u> | <u>20.0</u> |
| 5 meters             | <u>3:35 pm</u> | <u>8.20</u> | <u>19.8</u> |
| 6 meters             | <u>3:37 pm</u> | <u>7.40</u> | <u>19.3</u> |
| 7 meters             | <u>3:39 pm</u> | <u>6.80</u> | <u>19.2</u> |
| 100 mm above bottom  | <u>3:41 pm</u> | <u>6.80</u> | <u>19.2</u> |

**Hach D.O. Sample Data**

|                      |                |          |             |
|----------------------|----------------|----------|-------------|
| 100 mm below surface | <u>3:43 pm</u> | <u>9</u> | <u>20.3</u> |
|----------------------|----------------|----------|-------------|

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Stan R. Chaffin

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: AUGUST 28, 2004

Pre-Sampling Data:

Time: 2:20 pm Barometer: 30.09 Air Temp: 11.1 °C Wind Speed: FRM N @ 4-7

Cloud Cover: Mostly Cloudy

Precipitation within Last 24 Hours: NONE

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.28 volts

YSI Calibration Time: 2:25 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.84 METERS

**YSI 51b Sample Data**

| Depth                | Time           | D.O. (mg/l)  | T (°C)      |
|----------------------|----------------|--------------|-------------|
| 100 mm below surface | <u>2:27 pm</u> | <u>10.40</u> | <u>20.2</u> |
| 1 meter              | <u>2:29 pm</u> | <u>9.50</u>  | <u>19.8</u> |
| 2 meters             | <u>2:31 pm</u> | <u>9.35</u>  | <u>19.7</u> |
| 3 meters             | <u>2:33 pm</u> | <u>9.20</u>  | <u>19.7</u> |
| 4 meters             | <u>2:35 pm</u> | <u>9.15</u>  | <u>19.6</u> |
| 5 meters             | <u>2:37 pm</u> | <u>8.75</u>  | <u>19.3</u> |
| 6 meters             | <u>2:39 pm</u> | <u>8.25</u>  | <u>19.2</u> |
| 7 meters             | <u>2:42 pm</u> | <u>7.45</u>  | <u>19.0</u> |
| 100 mm above bottom  | <u>2:45 pm</u> | <u>6.85</u>  | <u>19.0</u> |

**Hach D.O. Sample Data**

| Depth                | Time           | D.O. (mg/l)  | T (°C)      |
|----------------------|----------------|--------------|-------------|
| 100 mm below surface | <u>2:49 pm</u> | <u>10-11</u> | <u>21.0</u> |

Comments: \_\_\_\_\_

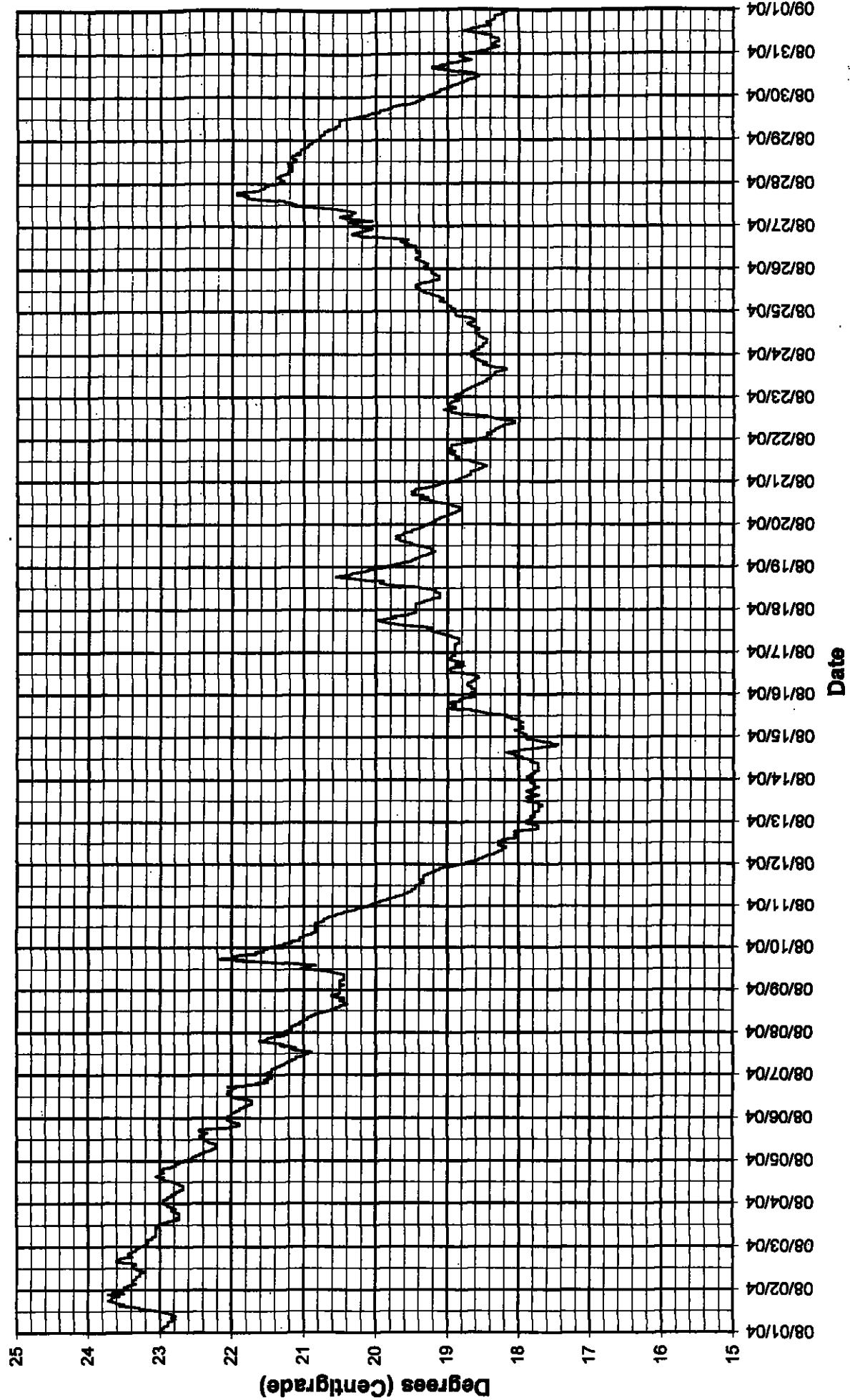
\_\_\_\_\_

\_\_\_\_\_

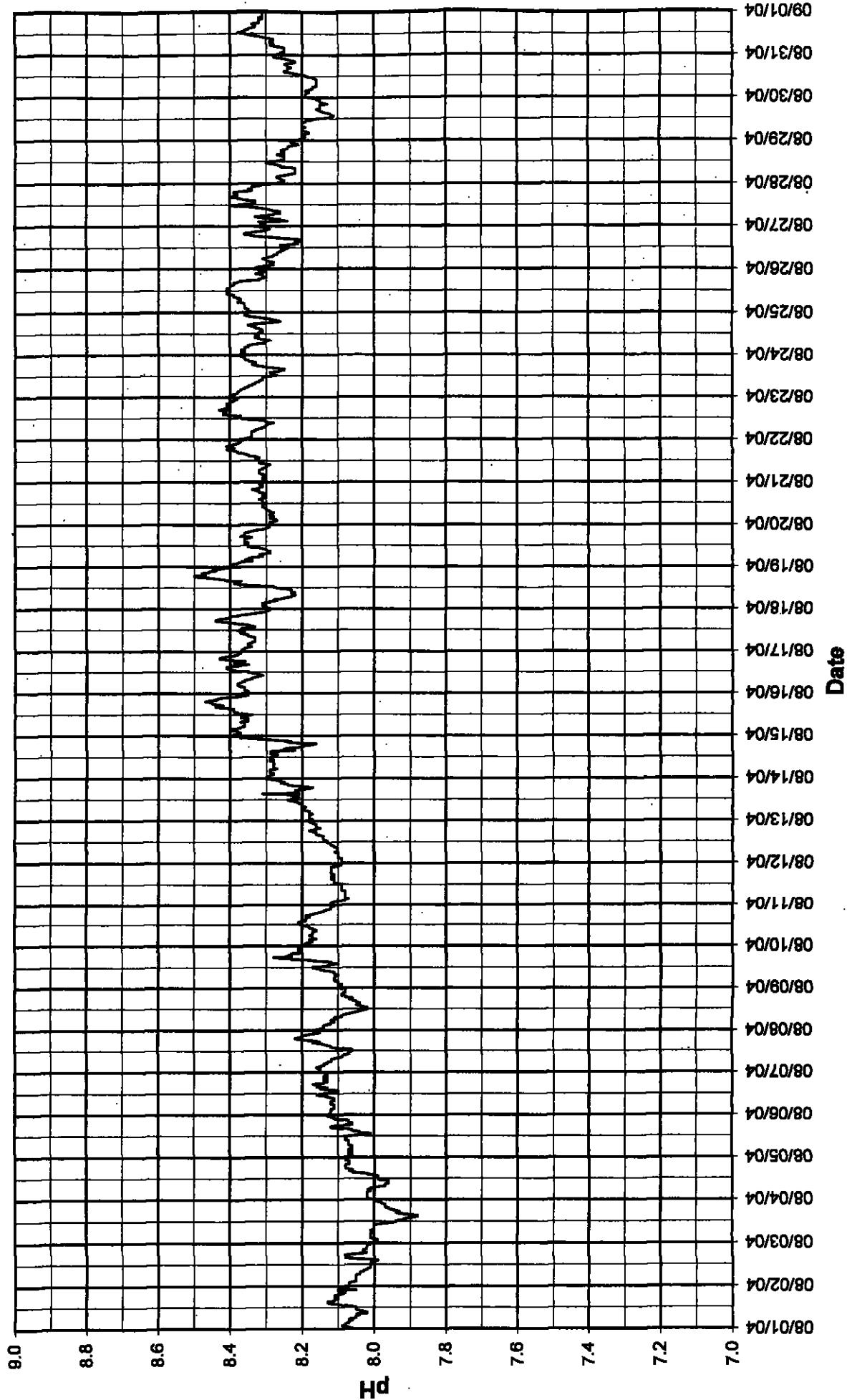
Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Stan R. Coffman

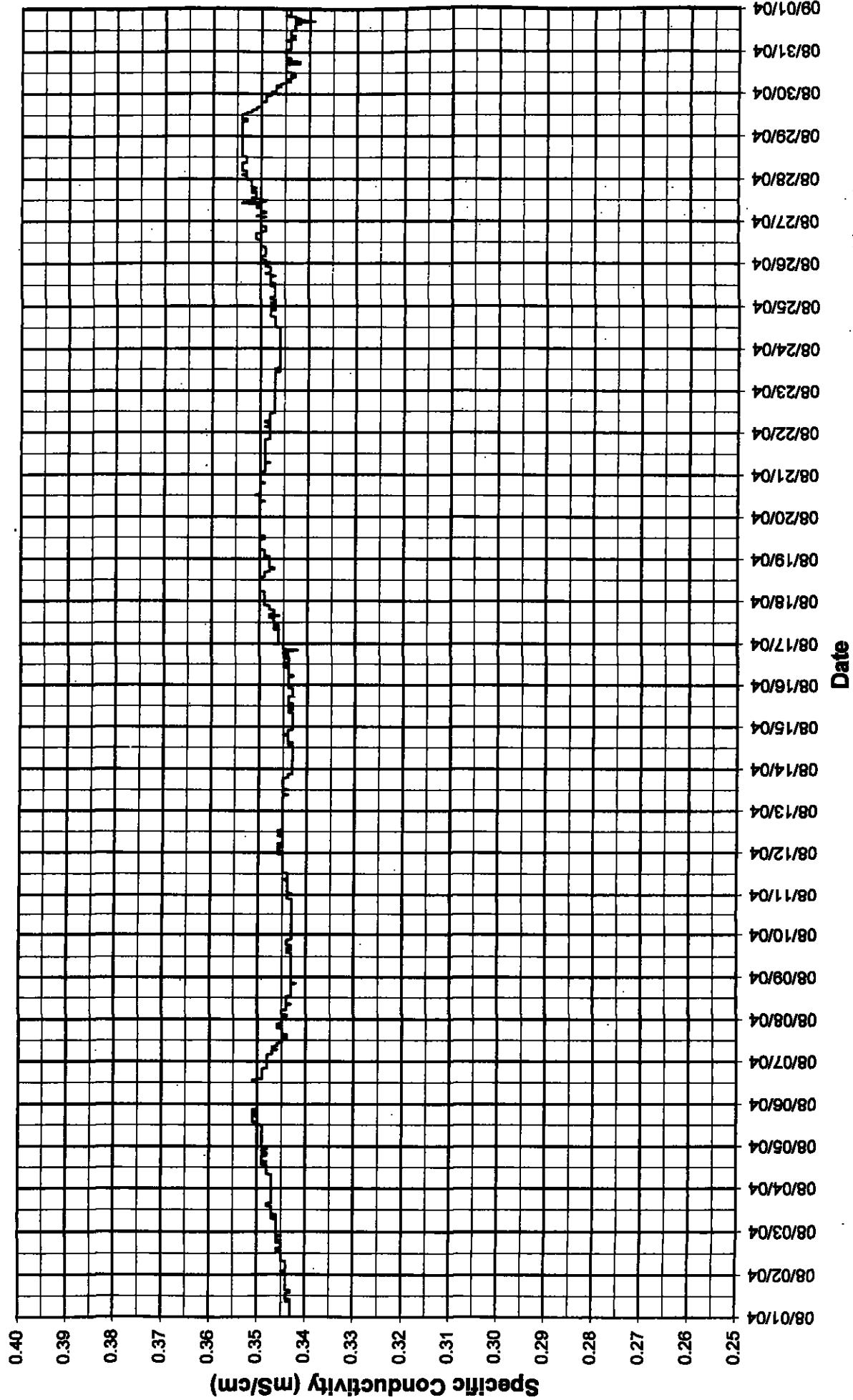
**2004 Water Quality Study  
Tailwater Temperature Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



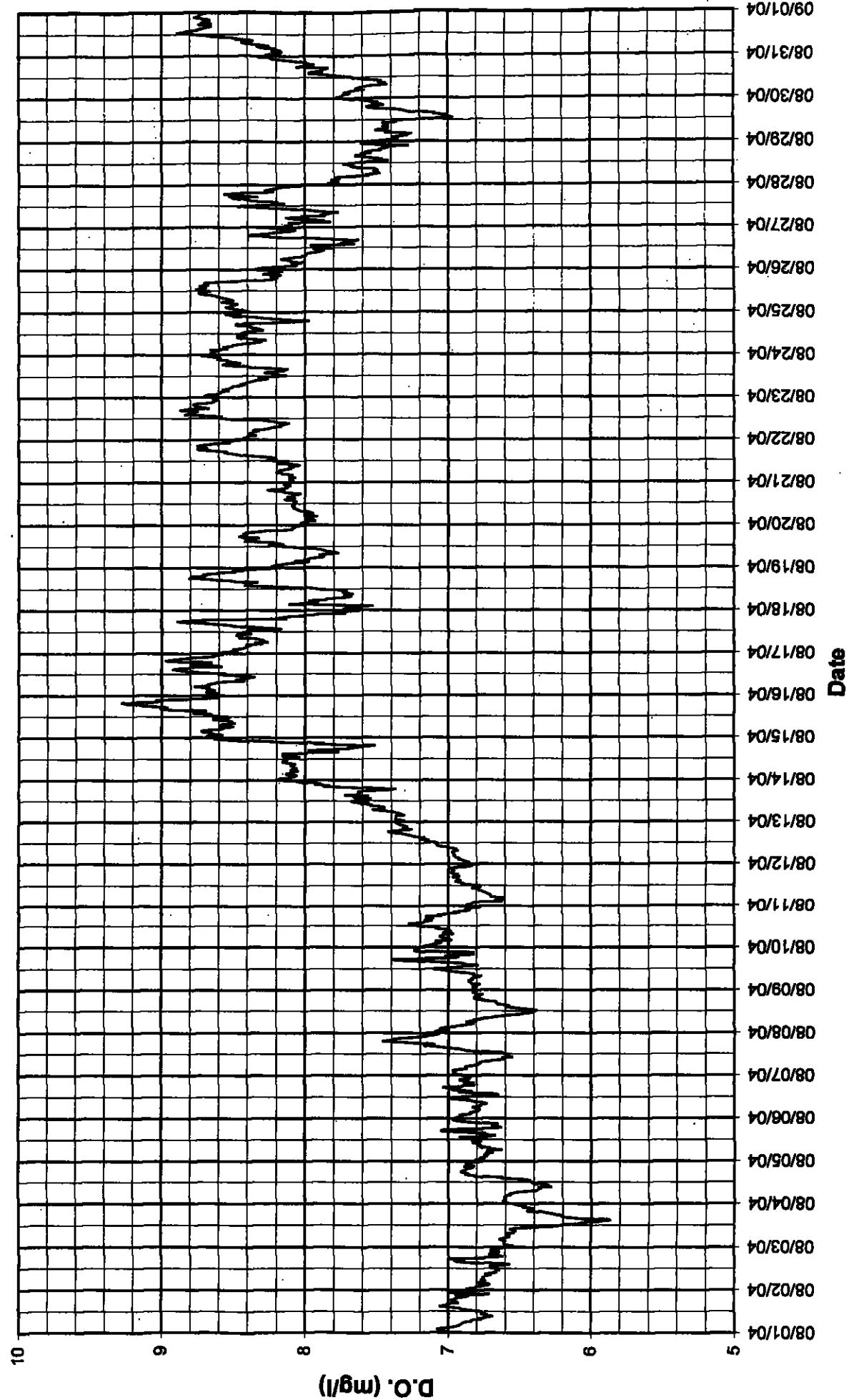
**2004 Water Quality Study  
Tailwater pH Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



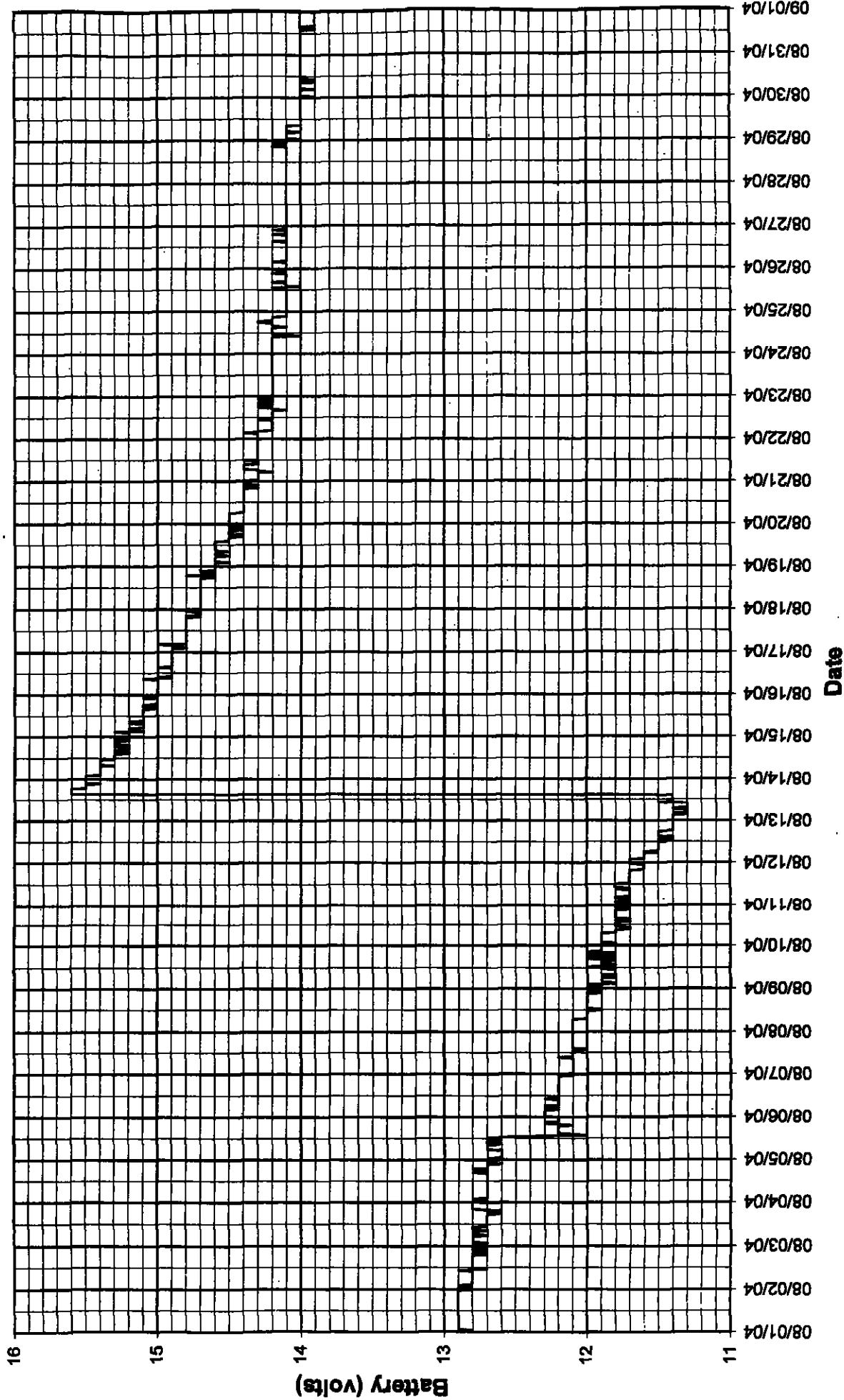
**2004 Water Quality Study  
Tailwater Specific Conductivity Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study  
Tailwater Dissolved Oxygen Sampling (mg/l)  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study  
Tailwater Hydrolab Recorder Battery Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 8/1/2004 | 0:00  | 22.94         | 8.06          | 0.34               | 7.01         |
| 8/1/2004 | 0:30  | 23.00         | 8.07          | 0.34               | 7.04         |
| 8/1/2004 | 1:00  | 23.00         | 8.08          | 0.34               | 7.07         |
| 8/1/2004 | 1:30  | 23.00         | 8.09          | 0.34               | 7.08         |
| 8/1/2004 | 2:00  | 22.94         | 8.08          | 0.34               | 7.03         |
| 8/1/2004 | 2:30  | 22.94         | 8.08          | 0.34               | 6.98         |
| 8/1/2004 | 3:00  | 22.94         | 8.07          | 0.34               | 6.95         |
| 8/1/2004 | 3:30  | 22.89         | 8.07          | 0.34               | 6.93         |
| 8/1/2004 | 4:00  | 22.89         | 8.07          | 0.34               | 6.92         |
| 8/1/2004 | 4:30  | 22.89         | 8.06          | 0.34               | 6.91         |
| 8/1/2004 | 5:00  | 22.89         | 8.07          | 0.34               | 6.90         |
| 8/1/2004 | 5:30  | 22.89         | 8.06          | 0.34               | 6.89         |
| 8/1/2004 | 6:00  | 22.83         | 8.05          | 0.34               | 6.84         |
| 8/1/2004 | 6:30  | 22.83         | 8.05          | 0.34               | 6.84         |
| 8/1/2004 | 7:00  | 22.83         | 8.05          | 0.34               | 6.83         |
| 8/1/2004 | 7:30  | 22.78         | 8.04          | 0.34               | 6.77         |
| 8/1/2004 | 8:00  | 22.83         | 8.05          | 0.34               | 6.79         |
| 8/1/2004 | 8:30  | 22.78         | 8.02          | 0.34               | 6.72         |
| 8/1/2004 | 9:00  | 22.78         | 8.02          | 0.34               | 6.69         |
| 8/1/2004 | 9:30  | 22.83         | 8.03          | 0.34               | 6.73         |
| 8/1/2004 | 10:00 | 22.83         | 8.04          | 0.34               | 6.73         |
| 8/1/2004 | 10:30 | 22.89         | 8.05          | 0.34               | 6.77         |
| 8/1/2004 | 11:00 | 22.94         | 8.05          | 0.34               | 6.75         |
| 8/1/2004 | 11:30 | 23.00         | 8.05          | 0.34               | 6.76         |
| 8/1/2004 | 12:00 | 23.06         | 8.05          | 0.34               | 6.76         |
| 8/1/2004 | 12:30 | 23.17         | 8.07          | 0.34               | 6.85         |
| 8/1/2004 | 13:00 | 23.28         | 8.09          | 0.34               | 6.91         |
| 8/1/2004 | 13:30 | 23.28         | 8.10          | 0.34               | 6.92         |
| 8/1/2004 | 14:00 | 23.39         | 8.12          | 0.34               | 7.01         |
| 8/1/2004 | 14:30 | 23.56         | 8.13          | 0.34               | 7.06         |
| 8/1/2004 | 15:00 | 23.56         | 8.13          | 0.34               | 7.01         |
| 8/1/2004 | 15:30 | 23.50         | 8.11          | 0.34               | 7.01         |
| 8/1/2004 | 16:00 | 23.61         | 8.11          | 0.34               | 7.00         |
| 8/1/2004 | 16:30 | 23.61         | 8.10          | 0.34               | 6.93         |
| 8/1/2004 | 17:00 | 23.67         | 8.10          | 0.34               | 6.94         |
| 8/1/2004 | 17:30 | 23.72         | 8.11          | 0.34               | 6.97         |
| 8/1/2004 | 18:00 | 23.67         | 8.10          | 0.34               | 6.98         |
| 8/1/2004 | 18:30 | 23.67         | 8.11          | 0.34               | 6.95         |
| 8/1/2004 | 19:00 | 23.67         | 8.10          | 0.34               | 6.95         |
| 8/1/2004 | 19:30 | 23.67         | 8.09          | 0.34               | 6.91         |
| 8/1/2004 | 20:00 | 23.56         | 8.08          | 0.34               | 6.87         |
| 8/1/2004 | 20:30 | 23.56         | 8.08          | 0.34               | 6.86         |
| 8/1/2004 | 21:00 | 23.72         | 8.10          | 0.34               | 6.95         |
| 8/1/2004 | 21:30 | 23.50         | 8.05          | 0.34               | 6.71         |
| 8/1/2004 | 22:00 | 23.67         | 8.10          | 0.34               | 7.00         |
| 8/1/2004 | 22:30 | 23.61         | 8.08          | 0.34               | 6.93         |
| 8/1/2004 | 23:00 | 23.56         | 8.08          | 0.34               | 6.90         |
| 8/1/2004 | 23:30 | 23.50         | 8.07          | 0.34               | 6.81         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 8/2/2004 | 0:00  | 23.50         | 8.07          | 0.34               | 6.85         |
| 8/2/2004 | 0:30  | 23.50         | 8.07          | 0.34               | 6.87         |
| 8/2/2004 | 1:00  | 23.50         | 8.07          | 0.34               | 6.81         |
| 8/2/2004 | 1:30  | 23.44         | 8.07          | 0.35               | 6.81         |
| 8/2/2004 | 2:00  | 23.44         | 8.06          | 0.34               | 6.79         |
| 8/2/2004 | 2:30  | 23.39         | 8.05          | 0.34               | 6.72         |
| 8/2/2004 | 3:00  | 23.33         | 8.05          | 0.34               | 6.71         |
| 8/2/2004 | 3:30  | 23.39         | 8.05          | 0.34               | 6.73         |
| 8/2/2004 | 4:00  | 23.39         | 8.05          | 0.34               | 6.79         |
| 8/2/2004 | 4:30  | 23.39         | 8.05          | 0.34               | 6.77         |
| 8/2/2004 | 5:00  | 23.39         | 8.05          | 0.34               | 6.74         |
| 8/2/2004 | 5:30  | 23.33         | 8.05          | 0.34               | 6.77         |
| 8/2/2004 | 6:00  | 23.33         | 8.05          | 0.34               | 6.75         |
| 8/2/2004 | 6:30  | 23.33         | 8.04          | 0.34               | 6.75         |
| 8/2/2004 | 7:00  | 23.33         | 8.04          | 0.34               | 6.76         |
| 8/2/2004 | 7:30  | 23.28         | 8.04          | 0.35               | 6.74         |
| 8/2/2004 | 8:00  | 23.28         | 8.03          | 0.35               | 6.70         |
| 8/2/2004 | 8:30  | 23.28         | 8.03          | 0.35               | 6.74         |
| 8/2/2004 | 9:00  | 23.28         | 8.02          | 0.35               | 6.71         |
| 8/2/2004 | 9:30  | 23.22         | 8.02          | 0.35               | 6.66         |
| 8/2/2004 | 10:00 | 23.22         | 8.01          | 0.35               | 6.66         |
| 8/2/2004 | 10:30 | 23.28         | 8.01          | 0.35               | 6.67         |
| 8/2/2004 | 11:00 | 23.33         | 8.01          | 0.35               | 6.64         |
| 8/2/2004 | 11:30 | 23.33         | 8.01          | 0.35               | 6.65         |
| 8/2/2004 | 12:00 | 23.39         | 8.01          | 0.35               | 6.70         |
| 8/2/2004 | 12:30 | 23.39         | 8.01          | 0.35               | 6.65         |
| 8/2/2004 | 13:00 | 23.39         | 8.01          | 0.35               | 6.71         |
| 8/2/2004 | 13:30 | 23.33         | 8.00          | 0.35               | 6.63         |
| 8/2/2004 | 14:00 | 23.33         | 7.99          | 0.35               | 6.57         |
| 8/2/2004 | 14:30 | 23.39         | 8.00          | 0.35               | 6.63         |
| 8/2/2004 | 15:00 | 23.56         | 8.05          | 0.35               | 6.84         |
| 8/2/2004 | 15:30 | 23.61         | 8.08          | 0.35               | 6.94         |
| 8/2/2004 | 16:00 | 23.61         | 8.08          | 0.35               | 6.96         |
| 8/2/2004 | 16:30 | 23.56         | 8.07          | 0.35               | 6.89         |
| 8/2/2004 | 17:00 | 23.56         | 8.08          | 0.35               | 7.00         |
| 8/2/2004 | 17:30 | 23.50         | 8.06          | 0.35               | 6.82         |
| 8/2/2004 | 18:00 | 23.39         | 8.03          | 0.35               | 6.67         |
| 8/2/2004 | 18:30 | 23.44         | 8.02          | 0.35               | 6.62         |
| 8/2/2004 | 19:00 | 23.44         | 8.03          | 0.35               | 6.64         |
| 8/2/2004 | 19:30 | 23.44         | 8.03          | 0.35               | 6.71         |
| 8/2/2004 | 20:00 | 23.44         | 8.03          | 0.35               | 6.70         |
| 8/2/2004 | 20:30 | 23.39         | 8.02          | 0.35               | 6.70         |
| 8/2/2004 | 21:00 | 23.39         | 8.02          | 0.35               | 6.64         |
| 8/2/2004 | 21:30 | 23.33         | 8.02          | 0.35               | 6.69         |
| 8/2/2004 | 22:00 | 23.33         | 8.02          | 0.35               | 6.70         |
| 8/2/2004 | 22:30 | 23.33         | 8.02          | 0.35               | 6.64         |
| 8/2/2004 | 23:00 | 23.28         | 8.01          | 0.35               | 6.65         |
| 8/2/2004 | 23:30 | 23.28         | 8.01          | 0.35               | 6.60         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 8/3/2004 | 0:00  | 23.22         | 8.00          | 0.35               | 6.60         |
| 8/3/2004 | 0:30  | 23.22         | 7.99          | 0.35               | 6.54         |
| 8/3/2004 | 1:00  | 23.17         | 7.99          | 0.35               | 6.59         |
| 8/3/2004 | 1:30  | 23.17         | 7.99          | 0.35               | 6.61         |
| 8/3/2004 | 2:00  | 23.17         | 8.00          | 0.35               | 6.61         |
| 8/3/2004 | 2:30  | 23.17         | 8.01          | 0.35               | 6.61         |
| 8/3/2004 | 3:00  | 23.17         | 8.01          | 0.35               | 6.60         |
| 8/3/2004 | 3:30  | 23.17         | 8.01          | 0.35               | 6.62         |
| 8/3/2004 | 4:00  | 23.11         | 8.01          | 0.35               | 6.64         |
| 8/3/2004 | 4:30  | 23.11         | 8.01          | 0.35               | 6.62         |
| 8/3/2004 | 5:00  | 23.11         | 8.01          | 0.35               | 6.59         |
| 8/3/2004 | 5:30  | 23.06         | 8.00          | 0.35               | 6.57         |
| 8/3/2004 | 6:00  | 23.06         | 8.00          | 0.35               | 6.57         |
| 8/3/2004 | 6:30  | 23.06         | 8.01          | 0.35               | 6.57         |
| 8/3/2004 | 7:00  | 23.06         | 8.00          | 0.35               | 6.60         |
| 8/3/2004 | 7:30  | 23.06         | 8.00          | 0.35               | 6.54         |
| 8/3/2004 | 8:00  | 23.06         | 8.00          | 0.35               | 6.55         |
| 8/3/2004 | 8:30  | 23.06         | 8.00          | 0.35               | 6.53         |
| 8/3/2004 | 9:00  | 23.06         | 8.00          | 0.35               | 6.53         |
| 8/3/2004 | 9:30  | 23.06         | 8.00          | 0.35               | 6.57         |
| 8/3/2004 | 10:00 | 23.06         | 7.99          | 0.35               | 6.51         |
| 8/3/2004 | 10:30 | 23.06         | 7.97          | 0.35               | 6.40         |
| 8/3/2004 | 11:00 | 23.00         | 7.95          | 0.35               | 6.26         |
| 8/3/2004 | 11:30 | 23.00         | 7.94          | 0.35               | 6.22         |
| 8/3/2004 | 12:00 | 23.00         | 7.94          | 0.35               | 6.18         |
| 8/3/2004 | 12:30 | 23.00         | 7.92          | 0.35               | 6.09         |
| 8/3/2004 | 13:00 | 22.89         | 7.92          | 0.35               | 6.07         |
| 8/3/2004 | 13:30 | 22.89         | 7.91          | 0.35               | 6.02         |
| 8/3/2004 | 14:00 | 22.83         | 7.89          | 0.35               | 5.93         |
| 8/3/2004 | 14:30 | 22.78         | 7.88          | 0.35               | 5.87         |
| 8/3/2004 | 15:00 | 22.72         | 7.88          | 0.35               | 5.88         |
| 8/3/2004 | 15:30 | 22.78         | 7.91          | 0.35               | 6.08         |
| 8/3/2004 | 16:00 | 22.72         | 7.93          | 0.35               | 6.17         |
| 8/3/2004 | 16:30 | 22.72         | 7.94          | 0.35               | 6.21         |
| 8/3/2004 | 17:00 | 22.72         | 7.93          | 0.35               | 6.20         |
| 8/3/2004 | 17:30 | 22.72         | 7.94          | 0.35               | 6.25         |
| 8/3/2004 | 18:00 | 22.72         | 7.95          | 0.35               | 6.28         |
| 8/3/2004 | 18:30 | 22.78         | 7.96          | 0.35               | 6.32         |
| 8/3/2004 | 19:00 | 22.78         | 7.96          | 0.35               | 6.35         |
| 8/3/2004 | 19:30 | 22.83         | 7.97          | 0.35               | 6.45         |
| 8/3/2004 | 20:00 | 22.83         | 7.97          | 0.35               | 6.44         |
| 8/3/2004 | 20:30 | 22.78         | 7.97          | 0.35               | 6.41         |
| 8/3/2004 | 21:00 | 22.83         | 7.97          | 0.35               | 6.41         |
| 8/3/2004 | 21:30 | 22.83         | 7.98          | 0.35               | 6.48         |
| 8/3/2004 | 22:00 | 22.89         | 7.98          | 0.35               | 6.46         |
| 8/3/2004 | 22:30 | 22.89         | 7.99          | 0.35               | 6.50         |
| 8/3/2004 | 23:00 | 22.89         | 8.00          | 0.35               | 6.53         |
| 8/3/2004 | 23:30 | 22.94         | 8.00          | 0.35               | 6.54         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 8/4/2004 | 0:00  | 22.94         | 8.01          | 0.35               | 6.60         |
| 8/4/2004 | 0:30  | 22.94         | 8.02          | 0.35               | 6.61         |
| 8/4/2004 | 1:00  | 22.94         | 8.02          | 0.35               | 6.62         |
| 8/4/2004 | 1:30  | 22.94         | 8.02          | 0.35               | 6.60         |
| 8/4/2004 | 2:00  | 22.89         | 8.02          | 0.35               | 6.61         |
| 8/4/2004 | 2:30  | 22.89         | 8.02          | 0.35               | 6.60         |
| 8/4/2004 | 3:00  | 22.89         | 8.02          | 0.35               | 6.61         |
| 8/4/2004 | 3:30  | 22.83         | 8.02          | 0.35               | 6.59         |
| 8/4/2004 | 4:00  | 22.83         | 8.02          | 0.35               | 6.60         |
| 8/4/2004 | 4:30  | 22.83         | 8.01          | 0.35               | 6.56         |
| 8/4/2004 | 5:00  | 22.78         | 8.02          | 0.35               | 6.57         |
| 8/4/2004 | 5:30  | 22.78         | 8.01          | 0.35               | 6.54         |
| 8/4/2004 | 6:00  | 22.78         | 8.01          | 0.35               | 6.52         |
| 8/4/2004 | 6:30  | 22.72         | 8.00          | 0.35               | 6.45         |
| 8/4/2004 | 7:00  | 22.72         | 7.98          | 0.35               | 6.38         |
| 8/4/2004 | 7:30  | 22.67         | 7.97          | 0.35               | 6.37         |
| 8/4/2004 | 8:00  | 22.67         | 7.97          | 0.35               | 6.35         |
| 8/4/2004 | 8:30  | 22.67         | 7.97          | 0.35               | 6.37         |
| 8/4/2004 | 9:00  | 22.67         | 7.96          | 0.35               | 6.28         |
| 8/4/2004 | 9:30  | 22.67         | 7.96          | 0.35               | 6.31         |
| 8/4/2004 | 10:00 | 22.72         | 7.96          | 0.35               | 6.30         |
| 8/4/2004 | 10:30 | 22.72         | 7.97          | 0.35               | 6.34         |
| 8/4/2004 | 11:00 | 22.78         | 7.99          | 0.35               | 6.40         |
| 8/4/2004 | 11:30 | 22.78         | 7.99          | 0.35               | 6.41         |
| 8/4/2004 | 12:00 | 22.83         | 7.99          | 0.35               | 6.42         |
| 8/4/2004 | 12:30 | 22.89         | 7.99          | 0.35               | 6.43         |
| 8/4/2004 | 13:00 | 22.94         | 7.99          | 0.35               | 6.43         |
| 8/4/2004 | 13:30 | 22.94         | 8.00          | 0.35               | 6.48         |
| 8/4/2004 | 14:00 | 23.00         | 8.02          | 0.35               | 6.63         |
| 8/4/2004 | 14:30 | 22.94         | 8.02          | 0.35               | 6.62         |
| 8/4/2004 | 15:00 | 23.06         | 8.06          | 0.35               | 6.81         |
| 8/4/2004 | 15:30 | 23.00         | 8.06          | 0.35               | 6.82         |
| 8/4/2004 | 16:00 | 23.00         | 8.07          | 0.35               | 6.88         |
| 8/4/2004 | 16:30 | 23.00         | 8.06          | 0.35               | 6.86         |
| 8/4/2004 | 17:00 | 22.94         | 8.07          | 0.35               | 6.88         |
| 8/4/2004 | 17:30 | 23.00         | 8.08          | 0.35               | 6.91         |
| 8/4/2004 | 18:00 | 23.00         | 8.08          | 0.35               | 6.91         |
| 8/4/2004 | 18:30 | 23.00         | 8.08          | 0.35               | 6.88         |
| 8/4/2004 | 19:00 | 22.94         | 8.08          | 0.35               | 6.88         |
| 8/4/2004 | 19:30 | 22.94         | 8.08          | 0.35               | 6.86         |
| 8/4/2004 | 20:00 | 22.83         | 8.07          | 0.35               | 6.83         |
| 8/4/2004 | 20:30 | 22.83         | 8.07          | 0.35               | 6.89         |
| 8/4/2004 | 21:00 | 22.78         | 8.07          | 0.35               | 6.82         |
| 8/4/2004 | 21:30 | 22.78         | 8.07          | 0.35               | 6.86         |
| 8/4/2004 | 22:00 | 22.78         | 8.08          | 0.35               | 6.88         |
| 8/4/2004 | 22:30 | 22.72         | 8.08          | 0.35               | 6.85         |
| 8/4/2004 | 23:00 | 22.72         | 8.08          | 0.35               | 6.83         |
| 8/4/2004 | 23:30 | 22.67         | 8.07          | 0.35               | 6.78         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 8/5/2004 | 0:00  | 22.67         | 8.07          | 0.35               | 6.76         |
| 8/5/2004 | 0:30  | 22.61         | 8.07          | 0.35               | 6.81         |
| 8/5/2004 | 1:00  | 22.56         | 8.06          | 0.35               | 6.75         |
| 8/5/2004 | 1:30  | 22.56         | 8.07          | 0.35               | 6.78         |
| 8/5/2004 | 2:00  | 22.50         | 8.07          | 0.35               | 6.75         |
| 8/5/2004 | 2:30  | 22.50         | 8.06          | 0.35               | 6.73         |
| 8/5/2004 | 3:00  | 22.44         | 8.07          | 0.35               | 6.75         |
| 8/5/2004 | 3:30  | 22.44         | 8.06          | 0.35               | 6.72         |
| 8/5/2004 | 4:00  | 22.39         | 8.07          | 0.35               | 6.74         |
| 8/5/2004 | 4:30  | 22.39         | 8.06          | 0.35               | 6.69         |
| 8/5/2004 | 5:00  | 22.33         | 8.06          | 0.35               | 6.71         |
| 8/5/2004 | 5:30  | 22.28         | 8.06          | 0.35               | 6.73         |
| 8/5/2004 | 6:00  | 22.28         | 8.06          | 0.35               | 6.63         |
| 8/5/2004 | 6:30  | 22.22         | 8.07          | 0.35               | 6.70         |
| 8/5/2004 | 7:00  | 22.22         | 8.07          | 0.35               | 6.71         |
| 8/5/2004 | 7:30  | 22.22         | 8.07          | 0.35               | 6.76         |
| 8/5/2004 | 8:00  | 22.22         | 8.07          | 0.35               | 6.78         |
| 8/5/2004 | 8:30  | 22.22         | 8.07          | 0.35               | 6.77         |
| 8/5/2004 | 9:00  | 22.22         | 8.07          | 0.35               | 6.79         |
| 8/5/2004 | 9:30  | 22.28         | 8.08          | 0.35               | 6.78         |
| 8/5/2004 | 10:00 | 22.33         | 8.08          | 0.35               | 6.83         |
| 8/5/2004 | 10:30 | 22.33         | 8.08          | 0.35               | 6.83         |
| 8/5/2004 | 11:00 | 22.39         | 8.08          | 0.35               | 6.77         |
| 8/5/2004 | 11:30 | 22.39         | 8.07          | 0.35               | 6.78         |
| 8/5/2004 | 12:00 | 22.39         | 8.05          | 0.35               | 6.73         |
| 8/5/2004 | 12:30 | 22.39         | 8.03          | 0.35               | 6.85         |
| 8/5/2004 | 13:00 | 22.44         | 8.01          | 0.35               | 6.92         |
| 8/5/2004 | 13:30 | 22.44         | 8.04          | 0.35               | 6.71         |
| 8/5/2004 | 14:00 | 22.39         | 8.04          | 0.35               | 6.67         |
| 8/5/2004 | 14:30 | 22.39         | 8.06          | 0.35               | 6.78         |
| 8/5/2004 | 15:00 | 22.33         | 8.06          | 0.35               | 6.74         |
| 8/5/2004 | 15:30 | 22.39         | 8.07          | 0.35               | 6.77         |
| 8/5/2004 | 16:00 | 22.44         | 8.10          | 0.35               | 6.93         |
| 8/5/2004 | 16:30 | 22.44         | 8.12          | 0.35               | 7.05         |
| 8/5/2004 | 17:00 | 22.44         | 8.12          | 0.35               | 7.04         |
| 8/5/2004 | 17:30 | 22.33         | 8.10          | 0.35               | 6.93         |
| 8/5/2004 | 18:00 | 22.06         | 8.06          | 0.35               | 6.68         |
| 8/5/2004 | 18:30 | 22.00         | 8.06          | 0.35               | 6.63         |
| 8/5/2004 | 19:00 | 21.94         | 8.06          | 0.35               | 6.65         |
| 8/5/2004 | 19:30 | 21.89         | 8.07          | 0.35               | 6.69         |
| 8/5/2004 | 20:00 | 21.89         | 8.07          | 0.35               | 6.69         |
| 8/5/2004 | 20:30 | 21.89         | 8.07          | 0.35               | 6.65         |
| 8/5/2004 | 21:00 | 21.94         | 8.09          | 0.35               | 6.75         |
| 8/5/2004 | 21:30 | 22.00         | 8.11          | 0.35               | 6.84         |
| 8/5/2004 | 22:00 | 22.00         | 8.11          | 0.35               | 6.91         |
| 8/5/2004 | 22:30 | 22.06         | 8.12          | 0.35               | 6.96         |
| 8/5/2004 | 23:00 | 22.06         | 8.13          | 0.35               | 6.97         |
| 8/5/2004 | 23:30 | 22.06         | 8.13          | 0.35               | 6.95         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(°C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|--------------|---------------|--------------------|--------------|
| 8/6/2004 | 0:00  | 22.06        | 8.13          | 0.35               | 6.95         |
| 8/6/2004 | 0:30  | 22.06        | 8.12          | 0.35               | 6.91         |
| 8/6/2004 | 1:00  | 22.00        | 8.12          | 0.35               | 6.90         |
| 8/6/2004 | 1:30  | 22.00        | 8.12          | 0.35               | 6.92         |
| 8/6/2004 | 2:00  | 22.00        | 8.12          | 0.35               | 6.87         |
| 8/6/2004 | 2:30  | 22.00        | 8.12          | 0.35               | 6.84         |
| 8/6/2004 | 3:00  | 21.94        | 8.12          | 0.35               | 6.85         |
| 8/6/2004 | 3:30  | 21.94        | 8.11          | 0.35               | 6.82         |
| 8/6/2004 | 4:00  | 21.89        | 8.11          | 0.35               | 6.79         |
| 8/6/2004 | 4:30  | 21.89        | 8.11          | 0.35               | 6.79         |
| 8/6/2004 | 5:00  | 21.89        | 8.11          | 0.35               | 6.78         |
| 8/6/2004 | 5:30  | 21.83        | 8.11          | 0.35               | 6.79         |
| 8/6/2004 | 6:00  | 21.83        | 8.12          | 0.35               | 6.83         |
| 8/6/2004 | 6:30  | 21.78        | 8.12          | 0.35               | 6.81         |
| 8/6/2004 | 7:00  | 21.78        | 8.12          | 0.35               | 6.78         |
| 8/6/2004 | 7:30  | 21.72        | 8.12          | 0.35               | 6.77         |
| 8/6/2004 | 8:00  | 21.72        | 8.11          | 0.35               | 6.73         |
| 8/6/2004 | 8:30  | 21.72        | 8.11          | 0.35               | 6.76         |
| 8/6/2004 | 9:00  | 21.72        | 8.11          | 0.35               | 6.77         |
| 8/6/2004 | 9:30  | 21.72        | 8.12          | 0.35               | 6.83         |
| 8/6/2004 | 10:00 | 21.78        | 8.13          | 0.35               | 6.85         |
| 8/6/2004 | 10:30 | 21.89        | 8.14          | 0.35               | 6.94         |
| 8/6/2004 | 11:00 | 21.94        | 8.16          | 0.35               | 6.99         |
| 8/6/2004 | 11:30 | 22.00        | 8.15          | 0.35               | 6.96         |
| 8/6/2004 | 12:00 | 22.00        | 8.13          | 0.35               | 6.86         |
| 8/6/2004 | 12:30 | 22.06        | 8.12          | 0.35               | 6.78         |
| 8/6/2004 | 13:00 | 22.06        | 8.10          | 0.35               | 6.65         |
| 8/6/2004 | 13:30 | 22.06        | 8.10          | 0.35               | 6.69         |
| 8/6/2004 | 14:00 | 22.00        | 8.13          | 0.35               | 6.83         |
| 8/6/2004 | 14:30 | 22.06        | 8.15          | 0.35               | 6.93         |
| 8/6/2004 | 15:00 | 22.00        | 8.13          | 0.35               | 6.84         |
| 8/6/2004 | 15:30 | 22.00        | 8.16          | 0.35               | 6.96         |
| 8/6/2004 | 16:00 | 22.00        | 8.15          | 0.35               | 6.98         |
| 8/6/2004 | 16:30 | 21.94        | 8.15          | 0.35               | 6.92         |
| 8/6/2004 | 17:00 | 22.06        | 8.17          | 0.35               | 7.04         |
| 8/6/2004 | 17:30 | 21.83        | 8.14          | 0.35               | 6.91         |
| 8/6/2004 | 18:00 | 21.78        | 8.14          | 0.35               | 6.90         |
| 8/6/2004 | 18:30 | 21.61        | 8.13          | 0.35               | 6.82         |
| 8/6/2004 | 19:00 | 21.67        | 8.14          | 0.35               | 6.87         |
| 8/6/2004 | 19:30 | 21.50        | 8.13          | 0.35               | 6.82         |
| 8/6/2004 | 20:00 | 21.56        | 8.14          | 0.35               | 6.89         |
| 8/6/2004 | 20:30 | 21.50        | 8.13          | 0.35               | 6.86         |
| 8/6/2004 | 21:00 | 21.56        | 8.14          | 0.35               | 6.92         |
| 8/6/2004 | 21:30 | 21.50        | 8.14          | 0.35               | 6.91         |
| 8/6/2004 | 22:00 | 21.44        | 8.13          | 0.35               | 6.85         |
| 8/6/2004 | 22:30 | 21.44        | 8.13          | 0.35               | 6.85         |
| 8/6/2004 | 23:00 | 21.50        | 8.13          | 0.35               | 6.84         |
| 8/6/2004 | 23:30 | 21.50        | 8.14          | 0.35               | 6.89         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 8/7/2004 | 0:00  | 21.56         | 8.15          | 0.35               | 6.91         |
| 8/7/2004 | 0:30  | 21.50         | 8.15          | 0.35               | 6.97         |
| 8/7/2004 | 1:00  | 21.50         | 8.15          | 0.35               | 6.95         |
| 8/7/2004 | 1:30  | 21.44         | 8.15          | 0.35               | 6.96         |
| 8/7/2004 | 2:00  | 21.44         | 8.16          | 0.35               | 6.95         |
| 8/7/2004 | 2:30  | 21.44         | 8.16          | 0.35               | 6.97         |
| 8/7/2004 | 3:00  | 21.44         | 8.15          | 0.35               | 6.91         |
| 8/7/2004 | 3:30  | 21.39         | 8.14          | 0.35               | 6.87         |
| 8/7/2004 | 4:00  | 21.39         | 8.14          | 0.35               | 6.87         |
| 8/7/2004 | 4:30  | 21.33         | 8.14          | 0.35               | 6.88         |
| 8/7/2004 | 5:00  | 21.33         | 8.13          | 0.35               | 6.84         |
| 8/7/2004 | 5:30  | 21.28         | 8.13          | 0.35               | 6.81         |
| 8/7/2004 | 6:00  | 21.28         | 8.12          | 0.35               | 6.79         |
| 8/7/2004 | 6:30  | 21.22         | 8.12          | 0.35               | 6.78         |
| 8/7/2004 | 7:00  | 21.22         | 8.12          | 0.35               | 6.78         |
| 8/7/2004 | 7:30  | 21.17         | 8.11          | 0.35               | 6.71         |
| 8/7/2004 | 8:00  | 21.17         | 8.10          | 0.35               | 6.69         |
| 8/7/2004 | 8:30  | 21.11         | 8.09          | 0.35               | 6.61         |
| 8/7/2004 | 9:00  | 21.11         | 8.09          | 0.35               | 6.61         |
| 8/7/2004 | 9:30  | 21.11         | 8.08          | 0.35               | 6.62         |
| 8/7/2004 | 10:00 | 21.06         | 8.07          | 0.35               | 6.55         |
| 8/7/2004 | 10:30 | 21.00         | 8.07          | 0.35               | 6.59         |
| 8/7/2004 | 11:00 | 21.00         | 8.07          | 0.35               | 6.58         |
| 8/7/2004 | 11:30 | 20.94         | 8.06          | 0.35               | 6.58         |
| 8/7/2004 | 12:00 | 20.94         | 8.07          | 0.35               | 6.62         |
| 8/7/2004 | 12:30 | 20.89         | 8.06          | 0.35               | 6.62         |
| 8/7/2004 | 13:00 | 21.00         | 8.09          | 0.34               | 6.78         |
| 8/7/2004 | 13:30 | 21.11         | 8.11          | 0.34               | 6.87         |
| 8/7/2004 | 14:00 | 21.17         | 8.12          | 0.35               | 6.90         |
| 8/7/2004 | 14:30 | 21.11         | 8.12          | 0.34               | 6.92         |
| 8/7/2004 | 15:00 | 21.11         | 8.13          | 0.34               | 7.00         |
| 8/7/2004 | 15:30 | 21.17         | 8.14          | 0.35               | 7.05         |
| 8/7/2004 | 16:00 | 21.28         | 8.15          | 0.35               | 7.12         |
| 8/7/2004 | 16:30 | 21.33         | 8.17          | 0.35               | 7.17         |
| 8/7/2004 | 17:00 | 21.28         | 8.15          | 0.35               | 7.10         |
| 8/7/2004 | 17:30 | 21.33         | 8.16          | 0.35               | 7.15         |
| 8/7/2004 | 18:00 | 21.44         | 8.19          | 0.35               | 7.26         |
| 8/7/2004 | 18:30 | 21.56         | 8.21          | 0.35               | 7.39         |
| 8/7/2004 | 19:00 | 21.61         | 8.22          | 0.35               | 7.46         |
| 8/7/2004 | 19:30 | 21.50         | 8.21          | 0.35               | 7.39         |
| 8/7/2004 | 20:00 | 21.50         | 8.20          | 0.35               | 7.39         |
| 8/7/2004 | 20:30 | 21.50         | 8.20          | 0.35               | 7.35         |
| 8/7/2004 | 21:00 | 21.44         | 8.19          | 0.35               | 7.26         |
| 8/7/2004 | 21:30 | 21.39         | 8.18          | 0.35               | 7.21         |
| 8/7/2004 | 22:00 | 21.28         | 8.16          | 0.35               | 7.13         |
| 8/7/2004 | 22:30 | 21.22         | 8.15          | 0.35               | 7.09         |
| 8/7/2004 | 23:00 | 21.28         | 8.15          | 0.35               | 7.07         |
| 8/7/2004 | 23:30 | 21.28         | 8.15          | 0.35               | 7.10         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 8/8/2004 | 0:00  | 21.28         | 8.16          | 0.35               | 7.10         |
| 8/8/2004 | 0:30  | 21.22         | 8.15          | 0.35               | 7.09         |
| 8/8/2004 | 1:00  | 21.17         | 8.14          | 0.35               | 7.05         |
| 8/8/2004 | 1:30  | 21.17         | 8.14          | 0.34               | 7.01         |
| 8/8/2004 | 2:00  | 21.17         | 8.14          | 0.34               | 7.06         |
| 8/8/2004 | 2:30  | 21.17         | 8.14          | 0.35               | 7.03         |
| 8/8/2004 | 3:00  | 21.17         | 8.13          | 0.35               | 6.96         |
| 8/8/2004 | 3:30  | 21.11         | 8.12          | 0.35               | 6.94         |
| 8/8/2004 | 4:00  | 21.11         | 8.12          | 0.35               | 6.88         |
| 8/8/2004 | 4:30  | 21.06         | 8.11          | 0.35               | 6.87         |
| 8/8/2004 | 5:00  | 21.06         | 8.11          | 0.34               | 6.82         |
| 8/8/2004 | 5:30  | 21.06         | 8.12          | 0.34               | 6.86         |
| 8/8/2004 | 6:00  | 21.00         | 8.11          | 0.34               | 6.87         |
| 8/8/2004 | 6:30  | 21.00         | 8.10          | 0.34               | 6.80         |
| 8/8/2004 | 7:00  | 20.94         | 8.11          | 0.34               | 6.82         |
| 8/8/2004 | 7:30  | 20.94         | 8.09          | 0.34               | 6.76         |
| 8/8/2004 | 8:00  | 20.94         | 8.09          | 0.34               | 6.70         |
| 8/8/2004 | 8:30  | 20.89         | 8.08          | 0.34               | 6.67         |
| 8/8/2004 | 9:00  | 20.89         | 8.07          | 0.34               | 6.62         |
| 8/8/2004 | 9:30  | 20.83         | 8.06          | 0.34               | 6.58         |
| 8/8/2004 | 10:00 | 20.83         | 8.05          | 0.34               | 6.50         |
| 8/8/2004 | 10:30 | 20.78         | 8.04          | 0.34               | 6.47         |
| 8/8/2004 | 11:00 | 20.72         | 8.03          | 0.34               | 6.41         |
| 8/8/2004 | 11:30 | 20.67         | 8.02          | 0.34               | 6.40         |
| 8/8/2004 | 12:00 | 20.61         | 8.02          | 0.34               | 6.38         |
| 8/8/2004 | 12:30 | 20.61         | 8.02          | 0.34               | 6.40         |
| 8/8/2004 | 13:00 | 20.56         | 8.03          | 0.34               | 6.47         |
| 8/8/2004 | 13:30 | 20.56         | 8.04          | 0.34               | 6.52         |
| 8/8/2004 | 14:00 | 20.50         | 8.05          | 0.34               | 6.59         |
| 8/8/2004 | 14:30 | 20.50         | 8.04          | 0.34               | 6.57         |
| 8/8/2004 | 15:00 | 20.44         | 8.04          | 0.34               | 6.58         |
| 8/8/2004 | 15:30 | 20.39         | 8.05          | 0.34               | 6.65         |
| 8/8/2004 | 16:00 | 20.44         | 8.05          | 0.34               | 6.66         |
| 8/8/2004 | 16:30 | 20.44         | 8.06          | 0.34               | 6.66         |
| 8/8/2004 | 17:00 | 20.44         | 8.06          | 0.34               | 6.67         |
| 8/8/2004 | 17:30 | 20.50         | 8.07          | 0.34               | 6.76         |
| 8/8/2004 | 18:00 | 20.44         | 8.06          | 0.34               | 6.75         |
| 8/8/2004 | 18:30 | 20.50         | 8.08          | 0.34               | 6.79         |
| 8/8/2004 | 19:00 | 20.44         | 8.08          | 0.34               | 6.82         |
| 8/8/2004 | 19:30 | 20.56         | 8.09          | 0.34               | 6.82         |
| 8/8/2004 | 20:00 | 20.61         | 8.09          | 0.34               | 6.81         |
| 8/8/2004 | 20:30 | 20.61         | 8.09          | 0.34               | 6.77         |
| 8/8/2004 | 21:00 | 20.56         | 8.08          | 0.34               | 6.76         |
| 8/8/2004 | 21:30 | 20.50         | 8.08          | 0.34               | 6.81         |
| 8/8/2004 | 22:00 | 20.50         | 8.08          | 0.34               | 6.81         |
| 8/8/2004 | 22:30 | 20.50         | 8.08          | 0.34               | 6.83         |
| 8/8/2004 | 23:00 | 20.50         | 8.08          | 0.34               | 6.80         |
| 8/8/2004 | 23:30 | 20.50         | 8.09          | 0.34               | 6.83         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 8/9/2004 | 0:00  | 20.50         | 8.09          | 0.34               | 6.81         |
| 8/9/2004 | 0:30  | 20.50         | 8.09          | 0.34               | 6.83         |
| 8/9/2004 | 1:00  | 20.50         | 8.09          | 0.34               | 6.82         |
| 8/9/2004 | 1:30  | 20.50         | 8.10          | 0.34               | 6.83         |
| 8/9/2004 | 2:00  | 20.50         | 8.09          | 0.34               | 6.80         |
| 8/9/2004 | 2:30  | 20.44         | 8.10          | 0.34               | 6.83         |
| 8/9/2004 | 3:00  | 20.50         | 8.10          | 0.34               | 6.78         |
| 8/9/2004 | 3:30  | 20.50         | 8.10          | 0.34               | 6.84         |
| 8/9/2004 | 4:00  | 20.50         | 8.11          | 0.34               | 6.84         |
| 8/9/2004 | 4:30  | 20.50         | 8.11          | 0.34               | 6.86         |
| 8/9/2004 | 5:00  | 20.50         | 8.11          | 0.34               | 6.86         |
| 8/9/2004 | 5:30  | 20.44         | 8.11          | 0.34               | 6.83         |
| 8/9/2004 | 6:00  | 20.44         | 8.11          | 0.34               | 6.84         |
| 8/9/2004 | 6:30  | 20.44         | 8.11          | 0.34               | 6.83         |
| 8/9/2004 | 7:00  | 20.44         | 8.10          | 0.34               | 6.79         |
| 8/9/2004 | 7:30  | 20.44         | 8.10          | 0.34               | 6.77         |
| 8/9/2004 | 8:00  | 20.44         | 8.11          | 0.34               | 6.81         |
| 8/9/2004 | 8:30  | 20.44         | 8.11          | 0.34               | 6.83         |
| 8/9/2004 | 9:00  | 20.50         | 8.11          | 0.34               | 6.82         |
| 8/9/2004 | 9:30  | 20.56         | 8.12          | 0.34               | 6.87         |
| 8/9/2004 | 10:00 | 20.61         | 8.14          | 0.34               | 6.95         |
| 8/9/2004 | 10:30 | 20.67         | 8.15          | 0.34               | 6.99         |
| 8/9/2004 | 11:00 | 20.78         | 8.15          | 0.34               | 7.04         |
| 8/9/2004 | 11:30 | 20.89         | 8.17          | 0.34               | 7.10         |
| 8/9/2004 | 12:00 | 21.06         | 8.17          | 0.34               | 7.09         |
| 8/9/2004 | 12:30 | 20.94         | 8.13          | 0.34               | 6.96         |
| 8/9/2004 | 13:00 | 21.00         | 8.13          | 0.34               | 6.91         |
| 8/9/2004 | 13:30 | 21.00         | 8.12          | 0.34               | 6.89         |
| 8/9/2004 | 14:00 | 20.83         | 8.10          | 0.34               | 6.79         |
| 8/9/2004 | 14:30 | 21.00         | 8.12          | 0.34               | 6.90         |
| 8/9/2004 | 15:00 | 21.17         | 8.12          | 0.34               | 6.89         |
| 8/9/2004 | 15:30 | 21.39         | 8.16          | 0.34               | 7.07         |
| 8/9/2004 | 16:00 | 21.61         | 8.18          | 0.34               | 7.18         |
| 8/9/2004 | 16:30 | 21.94         | 8.23          | 0.34               | 7.35         |
| 8/9/2004 | 17:00 | 21.83         | 8.23          | 0.34               | 7.39         |
| 8/9/2004 | 17:30 | 22.17         | 8.28          | 0.34               | 7.22         |
| 8/9/2004 | 18:00 | 21.94         | 8.23          | 0.34               | 6.96         |
| 8/9/2004 | 18:30 | 22.00         | 8.24          | 0.34               | 6.93         |
| 8/9/2004 | 19:00 | 21.94         | 8.23          | 0.34               | 7.02         |
| 8/9/2004 | 19:30 | 21.89         | 8.23          | 0.34               | 6.94         |
| 8/9/2004 | 20:00 | 21.67         | 8.20          | 0.34               | 6.82         |
| 8/9/2004 | 20:30 | 21.67         | 8.21          | 0.34               | 6.83         |
| 8/9/2004 | 21:00 | 21.67         | 8.21          | 0.34               | 6.82         |
| 8/9/2004 | 21:30 | 21.56         | 8.20          | 0.34               | 7.21         |
| 8/9/2004 | 22:00 | 21.56         | 8.21          | 0.34               | 7.24         |
| 8/9/2004 | 22:30 | 21.56         | 8.21          | 0.34               | 7.23         |
| 8/9/2004 | 23:00 | 21.50         | 8.21          | 0.34               | 7.21         |
| 8/9/2004 | 23:30 | 21.50         | 8.20          | 0.34               | 7.22         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/10/2004 | 0:00  | 21.44         | 8.20          | 0.34               | 7.19         |
| 8/10/2004 | 0:30  | 21.39         | 8.19          | 0.34               | 7.13         |
| 8/10/2004 | 1:00  | 21.28         | 8.19          | 0.34               | 7.11         |
| 8/10/2004 | 1:30  | 21.28         | 8.18          | 0.34               | 7.09         |
| 8/10/2004 | 2:00  | 21.17         | 8.17          | 0.34               | 7.05         |
| 8/10/2004 | 2:30  | 21.17         | 8.17          | 0.34               | 7.06         |
| 8/10/2004 | 3:00  | 21.17         | 8.18          | 0.34               | 7.09         |
| 8/10/2004 | 3:30  | 21.06         | 8.16          | 0.34               | 6.98         |
| 8/10/2004 | 4:00  | 21.06         | 8.17          | 0.34               | 7.00         |
| 8/10/2004 | 4:30  | 21.06         | 8.17          | 0.34               | 7.01         |
| 8/10/2004 | 5:00  | 21.06         | 8.17          | 0.34               | 7.05         |
| 8/10/2004 | 5:30  | 21.00         | 8.18          | 0.34               | 7.06         |
| 8/10/2004 | 6:00  | 21.00         | 8.17          | 0.34               | 7.04         |
| 8/10/2004 | 6:30  | 20.94         | 8.17          | 0.34               | 7.04         |
| 8/10/2004 | 7:00  | 20.89         | 8.17          | 0.34               | 6.97         |
| 8/10/2004 | 7:30  | 20.89         | 8.17          | 0.34               | 7.04         |
| 8/10/2004 | 8:00  | 20.83         | 8.16          | 0.34               | 6.98         |
| 8/10/2004 | 8:30  | 20.83         | 8.16          | 0.34               | 7.02         |
| 8/10/2004 | 9:00  | 20.83         | 8.17          | 0.34               | 6.99         |
| 8/10/2004 | 9:30  | 20.83         | 8.17          | 0.34               | 7.01         |
| 8/10/2004 | 10:00 | 20.83         | 8.18          | 0.34               | 7.09         |
| 8/10/2004 | 10:30 | 20.83         | 8.18          | 0.34               | 7.07         |
| 8/10/2004 | 11:00 | 20.83         | 8.19          | 0.34               | 7.15         |
| 8/10/2004 | 11:30 | 20.83         | 8.20          | 0.34               | 7.20         |
| 8/10/2004 | 12:00 | 20.83         | 8.21          | 0.34               | 7.23         |
| 8/10/2004 | 12:30 | 20.83         | 8.21          | 0.34               | 7.25         |
| 8/10/2004 | 13:00 | 20.83         | 8.21          | 0.34               | 7.28         |
| 8/10/2004 | 13:30 | 20.83         | 8.20          | 0.34               | 7.19         |
| 8/10/2004 | 14:00 | 20.78         | 8.19          | 0.34               | 7.16         |
| 8/10/2004 | 14:30 | 20.72         | 8.19          | 0.34               | 7.12         |
| 8/10/2004 | 15:00 | 20.72         | 8.19          | 0.34               | 7.17         |
| 8/10/2004 | 15:30 | 20.72         | 8.19          | 0.34               | 7.13         |
| 8/10/2004 | 16:00 | 20.72         | 8.18          | 0.34               | 7.11         |
| 8/10/2004 | 16:30 | 20.67         | 8.18          | 0.34               | 7.12         |
| 8/10/2004 | 17:00 | 20.67         | 8.19          | 0.34               | 7.16         |
| 8/10/2004 | 17:30 | 20.61         | 8.17          | 0.34               | 7.05         |
| 8/10/2004 | 18:00 | 20.56         | 8.17          | 0.34               | 7.08         |
| 8/10/2004 | 18:30 | 20.56         | 8.16          | 0.34               | 7.02         |
| 8/10/2004 | 19:00 | 20.50         | 8.15          | 0.34               | 7.00         |
| 8/10/2004 | 19:30 | 20.44         | 8.14          | 0.34               | 6.92         |
| 8/10/2004 | 20:00 | 20.44         | 8.14          | 0.34               | 6.96         |
| 8/10/2004 | 20:30 | 20.39         | 8.13          | 0.34               | 6.90         |
| 8/10/2004 | 21:00 | 20.33         | 8.12          | 0.34               | 6.85         |
| 8/10/2004 | 21:30 | 20.28         | 8.12          | 0.34               | 6.88         |
| 8/10/2004 | 22:00 | 20.28         | 8.12          | 0.34               | 6.87         |
| 8/10/2004 | 22:30 | 20.22         | 8.12          | 0.34               | 6.84         |
| 8/10/2004 | 23:00 | 20.17         | 8.11          | 0.34               | 6.77         |
| 8/10/2004 | 23:30 | 20.11         | 8.12          | 0.34               | 6.86         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(°C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|--------------|---------------|--------------------|--------------|
| 8/11/2004 | 0:00  | 20.11        | 8.12          | 0.34               | 6.85         |
| 8/11/2004 | 0:30  | 20.06        | 8.12          | 0.34               | 6.87         |
| 8/11/2004 | 1:00  | 20.06        | 8.12          | 0.34               | 6.83         |
| 8/11/2004 | 1:30  | 20.00        | 8.11          | 0.34               | 6.83         |
| 8/11/2004 | 2:00  | 19.94        | 8.11          | 0.34               | 6.82         |
| 8/11/2004 | 2:30  | 19.94        | 8.08          | 0.34               | 6.62         |
| 8/11/2004 | 3:00  | 19.89        | 8.08          | 0.34               | 6.67         |
| 8/11/2004 | 3:30  | 19.83        | 8.07          | 0.34               | 6.61         |
| 8/11/2004 | 4:00  | 19.83        | 8.08          | 0.34               | 6.63         |
| 8/11/2004 | 4:30  | 19.78        | 8.08          | 0.34               | 6.60         |
| 8/11/2004 | 5:00  | 19.72        | 8.08          | 0.34               | 6.69         |
| 8/11/2004 | 5:30  | 19.72        | 8.08          | 0.34               | 6.70         |
| 8/11/2004 | 6:00  | 19.67        | 8.08          | 0.34               | 6.70         |
| 8/11/2004 | 6:30  | 19.61        | 8.08          | 0.34               | 6.70         |
| 8/11/2004 | 7:00  | 19.61        | 8.08          | 0.34               | 6.72         |
| 8/11/2004 | 7:30  | 19.56        | 8.08          | 0.34               | 6.73         |
| 8/11/2004 | 8:00  | 19.56        | 8.08          | 0.34               | 6.75         |
| 8/11/2004 | 8:30  | 19.50        | 8.09          | 0.35               | 6.76         |
| 8/11/2004 | 9:00  | 19.50        | 8.09          | 0.34               | 6.78         |
| 8/11/2004 | 9:30  | 19.50        | 8.09          | 0.34               | 6.78         |
| 8/11/2004 | 10:00 | 19.44        | 8.09          | 0.34               | 6.78         |
| 8/11/2004 | 10:30 | 19.44        | 8.09          | 0.34               | 6.83         |
| 8/11/2004 | 11:00 | 19.44        | 8.09          | 0.34               | 6.77         |
| 8/11/2004 | 11:30 | 19.44        | 8.09          | 0.34               | 6.77         |
| 8/11/2004 | 12:00 | 19.44        | 8.09          | 0.34               | 6.79         |
| 8/11/2004 | 12:30 | 19.39        | 8.10          | 0.35               | 6.89         |
| 8/11/2004 | 13:00 | 19.39        | 8.11          | 0.35               | 6.89         |
| 8/11/2004 | 13:30 | 19.33        | 8.11          | 0.35               | 6.92         |
| 8/11/2004 | 14:00 | 19.39        | 8.11          | 0.35               | 6.95         |
| 8/11/2004 | 14:30 | 19.39        | 8.11          | 0.35               | 6.91         |
| 8/11/2004 | 15:00 | 19.39        | 8.12          | 0.35               | 6.94         |
| 8/11/2004 | 15:30 | 19.33        | 8.12          | 0.35               | 6.93         |
| 8/11/2004 | 16:00 | 19.33        | 8.11          | 0.35               | 6.93         |
| 8/11/2004 | 16:30 | 19.33        | 8.12          | 0.35               | 6.97         |
| 8/11/2004 | 17:00 | 19.33        | 8.11          | 0.35               | 6.92         |
| 8/11/2004 | 17:30 | 19.33        | 8.11          | 0.35               | 6.96         |
| 8/11/2004 | 18:00 | 19.28        | 8.12          | 0.35               | 6.93         |
| 8/11/2004 | 18:30 | 19.28        | 8.12          | 0.35               | 6.97         |
| 8/11/2004 | 19:00 | 19.22        | 8.12          | 0.35               | 6.98         |
| 8/11/2004 | 19:30 | 19.22        | 8.12          | 0.35               | 6.97         |
| 8/11/2004 | 20:00 | 19.17        | 8.12          | 0.35               | 6.96         |
| 8/11/2004 | 20:30 | 19.17        | 8.12          | 0.35               | 6.96         |
| 8/11/2004 | 21:00 | 19.11        | 8.12          | 0.35               | 6.97         |
| 8/11/2004 | 21:30 | 19.11        | 8.12          | 0.35               | 7.00         |
| 8/11/2004 | 22:00 | 19.06        | 8.10          | 0.35               | 6.92         |
| 8/11/2004 | 22:30 | 18.94        | 8.10          | 0.35               | 6.86         |
| 8/11/2004 | 23:00 | 18.89        | 8.09          | 0.35               | 6.83         |
| 8/11/2004 | 23:30 | 18.83        | 8.09          | 0.35               | 6.86         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/12/2004 | 0:00  | 18.78         | 8.09          | 0.35               | 6.85         |
| 8/12/2004 | 0:30  | 18.72         | 8.09          | 0.35               | 6.85         |
| 8/12/2004 | 1:00  | 18.67         | 8.09          | 0.35               | 6.86         |
| 8/12/2004 | 1:30  | 18.61         | 8.09          | 0.35               | 6.89         |
| 8/12/2004 | 2:00  | 18.56         | 8.09          | 0.35               | 6.90         |
| 8/12/2004 | 2:30  | 18.56         | 8.09          | 0.35               | 6.93         |
| 8/12/2004 | 3:00  | 18.50         | 8.10          | 0.35               | 6.92         |
| 8/12/2004 | 3:30  | 18.50         | 8.10          | 0.35               | 6.95         |
| 8/12/2004 | 4:00  | 18.44         | 8.10          | 0.35               | 6.95         |
| 8/12/2004 | 4:30  | 18.44         | 8.10          | 0.35               | 6.96         |
| 8/12/2004 | 5:00  | 18.39         | 8.10          | 0.35               | 6.95         |
| 8/12/2004 | 5:30  | 18.33         | 8.10          | 0.35               | 6.96         |
| 8/12/2004 | 6:00  | 18.33         | 8.11          | 0.35               | 6.96         |
| 8/12/2004 | 6:30  | 18.28         | 8.10          | 0.35               | 6.97         |
| 8/12/2004 | 7:00  | 18.28         | 8.10          | 0.35               | 6.96         |
| 8/12/2004 | 7:30  | 18.22         | 8.10          | 0.35               | 6.93         |
| 8/12/2004 | 8:00  | 18.22         | 8.10          | 0.35               | 6.95         |
| 8/12/2004 | 8:30  | 18.22         | 8.10          | 0.35               | 6.94         |
| 8/12/2004 | 9:00  | 18.17         | 8.11          | 0.35               | 6.99         |
| 8/12/2004 | 9:30  | 18.17         | 8.11          | 0.35               | 7.00         |
| 8/12/2004 | 10:00 | 18.22         | 8.12          | 0.35               | 7.06         |
| 8/12/2004 | 10:30 | 18.28         | 8.12          | 0.35               | 7.08         |
| 8/12/2004 | 11:00 | 18.28         | 8.12          | 0.35               | 7.07         |
| 8/12/2004 | 11:30 | 18.28         | 8.13          | 0.35               | 7.09         |
| 8/12/2004 | 12:00 | 18.17         | 8.13          | 0.35               | 7.08         |
| 8/12/2004 | 12:30 | 18.28         | 8.13          | 0.35               | 7.13         |
| 8/12/2004 | 13:00 | 18.22         | 8.14          | 0.35               | 7.16         |
| 8/12/2004 | 13:30 | 18.22         | 8.14          | 0.35               | 7.14         |
| 8/12/2004 | 14:00 | 18.17         | 8.14          | 0.35               | 7.19         |
| 8/12/2004 | 14:30 | 18.06         | 8.14          | 0.35               | 7.18         |
| 8/12/2004 | 15:00 | 18.00         | 8.14          | 0.35               | 7.17         |
| 8/12/2004 | 15:30 | 18.00         | 8.15          | 0.35               | 7.24         |
| 8/12/2004 | 16:00 | 18.06         | 8.16          | 0.35               | 7.26         |
| 8/12/2004 | 16:30 | 18.06         | 8.16          | 0.35               | 7.29         |
| 8/12/2004 | 17:00 | 18.00         | 8.16          | 0.35               | 7.32         |
| 8/12/2004 | 17:30 | 18.00         | 8.17          | 0.35               | 7.39         |
| 8/12/2004 | 18:00 | 18.06         | 8.18          | 0.35               | 7.42         |
| 8/12/2004 | 18:30 | 18.06         | 8.17          | 0.35               | 7.40         |
| 8/12/2004 | 19:00 | 17.89         | 8.16          | 0.35               | 7.33         |
| 8/12/2004 | 19:30 | 17.78         | 8.15          | 0.35               | 7.26         |
| 8/12/2004 | 20:00 | 17.72         | 8.16          | 0.35               | 7.32         |
| 8/12/2004 | 20:30 | 17.72         | 8.16          | 0.35               | 7.31         |
| 8/12/2004 | 21:00 | 17.72         | 8.16          | 0.35               | 7.29         |
| 8/12/2004 | 21:30 | 17.72         | 8.16          | 0.35               | 7.31         |
| 8/12/2004 | 22:00 | 17.78         | 8.17          | 0.35               | 7.34         |
| 8/12/2004 | 22:30 | 17.83         | 8.17          | 0.35               | 7.35         |
| 8/12/2004 | 23:00 | 17.89         | 8.18          | 0.35               | 7.36         |
| 8/12/2004 | 23:30 | 17.83         | 8.18          | 0.35               | 7.37         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/13/2004 | 0:00  | 17.83         | 8.17          | 0.35               | 7.31         |
| 8/13/2004 | 0:30  | 17.89         | 8.17          | 0.35               | 7.31         |
| 8/13/2004 | 1:00  | 17.83         | 8.18          | 0.35               | 7.37         |
| 8/13/2004 | 1:30  | 17.83         | 8.18          | 0.35               | 7.37         |
| 8/13/2004 | 2:00  | 17.83         | 8.18          | 0.35               | 7.37         |
| 8/13/2004 | 2:30  | 17.78         | 8.18          | 0.35               | 7.37         |
| 8/13/2004 | 3:00  | 17.83         | 8.18          | 0.35               | 7.37         |
| 8/13/2004 | 3:30  | 17.78         | 8.17          | 0.35               | 7.31         |
| 8/13/2004 | 4:00  | 17.78         | 8.18          | 0.35               | 7.33         |
| 8/13/2004 | 4:30  | 17.78         | 8.18          | 0.35               | 7.34         |
| 8/13/2004 | 5:00  | 17.78         | 8.18          | 0.35               | 7.37         |
| 8/13/2004 | 5:30  | 17.78         | 8.19          | 0.35               | 7.39         |
| 8/13/2004 | 6:00  | 17.72         | 8.20          | 0.35               | 7.47         |
| 8/13/2004 | 6:30  | 17.72         | 8.20          | 0.35               | 7.53         |
| 8/13/2004 | 7:00  | 17.72         | 8.20          | 0.35               | 7.46         |
| 8/13/2004 | 7:30  | 17.72         | 8.19          | 0.35               | 7.45         |
| 8/13/2004 | 8:00  | 17.72         | 8.20          | 0.35               | 7.45         |
| 8/13/2004 | 8:30  | 17.72         | 8.20          | 0.35               | 7.48         |
| 8/13/2004 | 9:00  | 17.67         | 8.20          | 0.34               | 7.55         |
| 8/13/2004 | 9:30  | 17.67         | 8.21          | 0.35               | 7.54         |
| 8/13/2004 | 10:00 | 17.72         | 8.21          | 0.35               | 7.61         |
| 8/13/2004 | 10:30 | 17.72         | 8.22          | 0.35               | 7.56         |
| 8/13/2004 | 11:00 | 17.78         | 8.23          | 0.35               | 7.66         |
| 8/13/2004 | 11:30 | 17.89         | 8.24          | 0.35               | 7.68         |
| 8/13/2004 | 12:00 | 17.83         | 8.23          | 0.34               | 7.65         |
| 8/13/2004 | 12:30 | 17.83         | 8.22          | 0.35               | 7.57         |
| 8/13/2004 | 13:00 | 17.83         | 8.21          | 0.35               | 7.54         |
| 8/13/2004 | 13:30 | 17.89         | 8.22          | 0.35               | 7.61         |
| 8/13/2004 | 14:00 | 17.89         | 8.23          | 0.35               | 7.66         |
| 8/13/2004 | 14:30 | 17.78         | 8.21          | 0.35               | 7.56         |
| 8/13/2004 | 15:00 | 17.72         | 8.31          | 0.35               | 7.72         |
| 8/13/2004 | 15:30 | 17.78         | 8.21          | 0.35               | 7.62         |
| 8/13/2004 | 16:00 | 17.83         | 8.22          | 0.35               | 7.62         |
| 8/13/2004 | 16:30 | 17.83         | 8.22          | 0.35               | 7.62         |
| 8/13/2004 | 17:00 | 17.89         | 8.22          | 0.35               | 7.63         |
| 8/13/2004 | 17:30 | 17.89         | 8.20          | 0.35               | 7.54         |
| 8/13/2004 | 18:00 | 17.83         | 8.18          | 0.35               | 7.42         |
| 8/13/2004 | 18:30 | 17.78         | 8.17          | 0.35               | 7.37         |
| 8/13/2004 | 19:00 | 17.78         | 8.19          | 0.34               | 7.53         |
| 8/13/2004 | 19:30 | 17.72         | 8.22          | 0.34               | 7.72         |
| 8/13/2004 | 20:00 | 17.78         | 8.24          | 0.34               | 7.87         |
| 8/13/2004 | 20:30 | 17.78         | 8.24          | 0.34               | 7.83         |
| 8/13/2004 | 21:00 | 17.78         | 8.26          | 0.34               | 7.93         |
| 8/13/2004 | 21:30 | 17.78         | 8.25          | 0.34               | 7.89         |
| 8/13/2004 | 22:00 | 17.83         | 8.26          | 0.34               | 7.93         |
| 8/13/2004 | 22:30 | 17.83         | 8.27          | 0.34               | 8.04         |
| 8/13/2004 | 23:00 | 17.78         | 8.28          | 0.34               | 8.03         |
| 8/13/2004 | 23:30 | 17.83         | 8.30          | 0.34               | 8.15         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/14/2004 | 0:00  | 17.83         | 8.30          | 0.34               | 8.17         |
| 8/14/2004 | 0:30  | 17.89         | 8.30          | 0.34               | 8.18         |
| 8/14/2004 | 1:00  | 17.83         | 8.29          | 0.34               | 8.11         |
| 8/14/2004 | 1:30  | 17.89         | 8.29          | 0.34               | 8.09         |
| 8/14/2004 | 2:00  | 17.83         | 8.28          | 0.34               | 8.07         |
| 8/14/2004 | 2:30  | 17.83         | 8.28          | 0.34               | 8.06         |
| 8/14/2004 | 3:00  | 17.83         | 8.29          | 0.34               | 8.13         |
| 8/14/2004 | 3:30  | 17.78         | 8.29          | 0.34               | 8.13         |
| 8/14/2004 | 4:00  | 17.78         | 8.29          | 0.34               | 8.08         |
| 8/14/2004 | 4:30  | 17.78         | 8.29          | 0.34               | 8.09         |
| 8/14/2004 | 5:00  | 17.72         | 8.27          | 0.34               | 8.05         |
| 8/14/2004 | 5:30  | 17.72         | 8.28          | 0.34               | 8.10         |
| 8/14/2004 | 6:00  | 17.72         | 8.28          | 0.34               | 8.08         |
| 8/14/2004 | 6:30  | 17.72         | 8.28          | 0.34               | 8.06         |
| 8/14/2004 | 7:00  | 17.72         | 8.28          | 0.34               | 8.08         |
| 8/14/2004 | 7:30  | 17.72         | 8.28          | 0.34               | 8.08         |
| 8/14/2004 | 8:00  | 17.72         | 8.28          | 0.34               | 8.10         |
| 8/14/2004 | 8:30  | 17.72         | 8.28          | 0.34               | 8.09         |
| 8/14/2004 | 9:00  | 17.72         | 8.28          | 0.34               | 8.07         |
| 8/14/2004 | 9:30  | 17.78         | 8.29          | 0.34               | 8.12         |
| 8/14/2004 | 10:00 | 17.83         | 8.28          | 0.34               | 8.16         |
| 8/14/2004 | 10:30 | 17.83         | 8.29          | 0.34               | 8.13         |
| 8/14/2004 | 11:00 | 17.83         | 8.29          | 0.34               | 8.15         |
| 8/14/2004 | 11:30 | 17.89         | 8.29          | 0.34               | 8.15         |
| 8/14/2004 | 12:00 | 18.00         | 8.28          | 0.34               | 8.12         |
| 8/14/2004 | 12:30 | 17.94         | 8.27          | 0.34               | 8.05         |
| 8/14/2004 | 13:00 | 18.00         | 8.27          | 0.34               | 8.04         |
| 8/14/2004 | 13:30 | 18.06         | 8.29          | 0.34               | 8.16         |
| 8/14/2004 | 14:00 | 18.06         | 8.28          | 0.34               | 8.12         |
| 8/14/2004 | 14:30 | 18.11         | 8.29          | 0.34               | 8.16         |
| 8/14/2004 | 15:00 | 18.17         | 8.26          | 0.34               | 8.00         |
| 8/14/2004 | 15:30 | 18.00         | 8.22          | 0.34               | 7.77         |
| 8/14/2004 | 16:00 | 18.00         | 8.25          | 0.34               | 7.98         |
| 8/14/2004 | 16:30 | 17.94         | 8.24          | 0.34               | 7.91         |
| 8/14/2004 | 17:00 | 17.83         | 8.21          | 0.34               | 7.79         |
| 8/14/2004 | 17:30 | 17.72         | 8.20          | 0.34               | 7.67         |
| 8/14/2004 | 18:00 | 17.67         | 8.19          | 0.34               | 7.68         |
| 8/14/2004 | 18:30 | 17.50         | 8.17          | 0.34               | 7.57         |
| 8/14/2004 | 19:00 | 17.44         | 8.16          | 0.35               | 7.52         |
| 8/14/2004 | 19:30 | 17.50         | 8.21          | 0.34               | 7.77         |
| 8/14/2004 | 20:00 | 17.56         | 8.24          | 0.34               | 7.94         |
| 8/14/2004 | 20:30 | 17.56         | 8.23          | 0.34               | 7.87         |
| 8/14/2004 | 21:00 | 17.67         | 8.27          | 0.34               | 8.14         |
| 8/14/2004 | 21:30 | 17.72         | 8.30          | 0.34               | 8.25         |
| 8/14/2004 | 22:00 | 17.78         | 8.34          | 0.34               | 8.45         |
| 8/14/2004 | 22:30 | 17.89         | 8.37          | 0.34               | 8.56         |
| 8/14/2004 | 23:00 | 17.89         | 8.37          | 0.34               | 8.63         |
| 8/14/2004 | 23:30 | 17.89         | 8.37          | 0.34               | 8.58         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/15/2004 | 0:00  | 17.89         | 8.38          | 0.34               | 8.65         |
| 8/15/2004 | 0:30  | 17.89         | 8.39          | 0.34               | 8.68         |
| 8/15/2004 | 1:00  | 17.89         | 8.37          | 0.34               | 8.57         |
| 8/15/2004 | 1:30  | 17.94         | 8.37          | 0.34               | 8.59         |
| 8/15/2004 | 2:00  | 17.94         | 8.38          | 0.34               | 8.66         |
| 8/15/2004 | 2:30  | 18.00         | 8.38          | 0.34               | 8.65         |
| 8/15/2004 | 3:00  | 18.00         | 8.40          | 0.34               | 8.71         |
| 8/15/2004 | 3:30  | 18.06         | 8.40          | 0.34               | 8.72         |
| 8/15/2004 | 4:00  | 18.00         | 8.38          | 0.34               | 8.69         |
| 8/15/2004 | 4:30  | 17.94         | 8.37          | 0.34               | 8.59         |
| 8/15/2004 | 5:00  | 18.00         | 8.36          | 0.34               | 8.57         |
| 8/15/2004 | 5:30  | 17.94         | 8.36          | 0.34               | 8.56         |
| 8/15/2004 | 6:00  | 18.00         | 8.36          | 0.34               | 8.50         |
| 8/15/2004 | 6:30  | 18.00         | 8.36          | 0.34               | 8.59         |
| 8/15/2004 | 7:00  | 18.00         | 8.36          | 0.34               | 8.58         |
| 8/15/2004 | 7:30  | 18.00         | 8.37          | 0.34               | 8.57         |
| 8/15/2004 | 8:00  | 17.94         | 8.35          | 0.34               | 8.49         |
| 8/15/2004 | 8:30  | 18.00         | 8.36          | 0.34               | 8.53         |
| 8/15/2004 | 9:00  | 18.00         | 8.35          | 0.34               | 8.51         |
| 8/15/2004 | 9:30  | 18.00         | 8.35          | 0.34               | 8.55         |
| 8/15/2004 | 10:00 | 18.11         | 8.37          | 0.34               | 8.64         |
| 8/15/2004 | 10:30 | 18.11         | 8.37          | 0.34               | 8.64         |
| 8/15/2004 | 11:00 | 18.17         | 8.36          | 0.34               | 8.54         |
| 8/15/2004 | 11:30 | 18.17         | 8.34          | 0.34               | 8.52         |
| 8/15/2004 | 12:00 | 18.17         | 8.36          | 0.34               | 8.60         |
| 8/15/2004 | 12:30 | 18.33         | 8.38          | 0.34               | 8.70         |
| 8/15/2004 | 13:00 | 18.44         | 8.38          | 0.34               | 8.65         |
| 8/15/2004 | 13:30 | 18.50         | 8.39          | 0.34               | 8.78         |
| 8/15/2004 | 14:00 | 18.56         | 8.39          | 0.34               | 8.70         |
| 8/15/2004 | 14:30 | 18.67         | 8.39          | 0.34               | 8.73         |
| 8/15/2004 | 15:00 | 18.67         | 8.39          | 0.34               | 8.69         |
| 8/15/2004 | 15:30 | 18.83         | 8.42          | 0.34               | 8.91         |
| 8/15/2004 | 16:00 | 19.00         | 8.44          | 0.34               | 8.99         |
| 8/15/2004 | 16:30 | 18.89         | 8.43          | 0.34               | 9.01         |
| 8/15/2004 | 17:00 | 18.89         | 8.42          | 0.34               | 8.96         |
| 8/15/2004 | 17:30 | 18.94         | 8.44          | 0.34               | 9.04         |
| 8/15/2004 | 18:00 | 18.89         | 8.45          | 0.34               | 9.15         |
| 8/15/2004 | 18:30 | 18.89         | 8.45          | 0.34               | 9.15         |
| 8/15/2004 | 19:00 | 19.00         | 8.47          | 0.34               | 9.25         |
| 8/15/2004 | 19:30 | 18.94         | 8.46          | 0.34               | 9.28         |
| 8/15/2004 | 20:00 | 18.83         | 8.44          | 0.34               | 9.06         |
| 8/15/2004 | 20:30 | 18.83         | 8.44          | 0.34               | 9.02         |
| 8/15/2004 | 21:00 | 18.83         | 8.43          | 0.34               | 9.04         |
| 8/15/2004 | 21:30 | 18.78         | 8.41          | 0.34               | 8.94         |
| 8/15/2004 | 22:00 | 18.67         | 8.38          | 0.34               | 8.71         |
| 8/15/2004 | 22:30 | 18.61         | 8.35          | 0.34               | 8.60         |
| 8/15/2004 | 23:00 | 18.61         | 8.35          | 0.34               | 8.63         |
| 8/15/2004 | 23:30 | 18.67         | 8.35          | 0.34               | 8.65         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/16/2004 | 0:00  | 18.67         | 8.36          | 0.34               | 8.63         |
| 8/16/2004 | 0:30  | 18.67         | 8.35          | 0.34               | 8.65         |
| 8/16/2004 | 1:00  | 18.61         | 8.35          | 0.34               | 8.61         |
| 8/16/2004 | 1:30  | 18.61         | 8.36          | 0.34               | 8.69         |
| 8/16/2004 | 2:00  | 18.61         | 8.36          | 0.34               | 8.68         |
| 8/16/2004 | 2:30  | 18.61         | 8.36          | 0.34               | 8.63         |
| 8/16/2004 | 3:00  | 18.67         | 8.36          | 0.34               | 8.66         |
| 8/16/2004 | 3:30  | 18.67         | 8.37          | 0.34               | 8.69         |
| 8/16/2004 | 4:00  | 18.67         | 8.37          | 0.34               | 8.67         |
| 8/16/2004 | 4:30  | 18.72         | 8.38          | 0.34               | 8.77         |
| 8/16/2004 | 5:00  | 18.72         | 8.38          | 0.34               | 8.67         |
| 8/16/2004 | 5:30  | 18.72         | 8.38          | 0.34               | 8.68         |
| 8/16/2004 | 6:00  | 18.72         | 8.37          | 0.34               | 8.67         |
| 8/16/2004 | 6:30  | 18.67         | 8.36          | 0.34               | 8.63         |
| 8/16/2004 | 7:00  | 18.67         | 8.36          | 0.34               | 8.61         |
| 8/16/2004 | 7:30  | 18.61         | 8.35          | 0.34               | 8.54         |
| 8/16/2004 | 8:00  | 18.61         | 8.34          | 0.34               | 8.42         |
| 8/16/2004 | 8:30  | 18.61         | 8.34          | 0.34               | 8.48         |
| 8/16/2004 | 9:00  | 18.56         | 8.33          | 0.34               | 8.44         |
| 8/16/2004 | 9:30  | 18.56         | 8.32          | 0.34               | 8.38         |
| 8/16/2004 | 10:00 | 18.56         | 8.31          | 0.35               | 8.35         |
| 8/16/2004 | 10:30 | 18.61         | 8.32          | 0.34               | 8.39         |
| 8/16/2004 | 11:00 | 18.67         | 8.33          | 0.35               | 8.48         |
| 8/16/2004 | 11:30 | 18.78         | 8.35          | 0.34               | 8.60         |
| 8/16/2004 | 12:00 | 18.78         | 8.35          | 0.35               | 8.55         |
| 8/16/2004 | 12:30 | 18.94         | 8.38          | 0.35               | 8.73         |
| 8/16/2004 | 13:00 | 18.94         | 8.39          | 0.34               | 8.78         |
| 8/16/2004 | 13:30 | 18.94         | 8.40          | 0.34               | 8.84         |
| 8/16/2004 | 14:00 | 19.00         | 8.41          | 0.34               | 8.88         |
| 8/16/2004 | 14:30 | 18.94         | 8.41          | 0.34               | 8.92         |
| 8/16/2004 | 15:00 | 18.94         | 8.41          | 0.34               | 8.88         |
| 8/16/2004 | 15:30 | 18.83         | 8.38          | 0.35               | 8.80         |
| 8/16/2004 | 16:00 | 18.78         | 8.35          | 0.35               | 8.58         |
| 8/16/2004 | 16:30 | 18.78         | 8.37          | 0.34               | 8.62         |
| 8/16/2004 | 17:00 | 18.89         | 8.39          | 0.34               | 8.80         |
| 8/16/2004 | 17:30 | 18.83         | 8.38          | 0.34               | 8.65         |
| 8/16/2004 | 18:00 | 18.78         | 8.36          | 0.35               | 8.65         |
| 8/16/2004 | 18:30 | 18.83         | 8.38          | 0.35               | 8.65         |
| 8/16/2004 | 19:00 | 18.89         | 8.41          | 0.34               | 8.86         |
| 8/16/2004 | 19:30 | 18.94         | 8.43          | 0.34               | 8.97         |
| 8/16/2004 | 20:00 | 19.00         | 8.43          | 0.34               | 8.93         |
| 8/16/2004 | 20:30 | 18.94         | 8.42          | 0.35               | 8.88         |
| 8/16/2004 | 21:00 | 18.94         | 8.41          | 0.35               | 8.81         |
| 8/16/2004 | 21:30 | 18.94         | 8.39          | 0.35               | 8.68         |
| 8/16/2004 | 22:00 | 18.89         | 8.38          | 0.35               | 8.63         |
| 8/16/2004 | 22:30 | 18.89         | 8.38          | 0.35               | 8.62         |
| 8/16/2004 | 23:00 | 18.89         | 8.37          | 0.35               | 8.57         |
| 8/16/2004 | 23:30 | 18.89         | 8.38          | 0.35               | 8.63         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/17/2004 | 0:00  | 18.89         | 8.37          | 0.35               | 8.60         |
| 8/17/2004 | 0:30  | 18.89         | 8.37          | 0.35               | 8.56         |
| 8/17/2004 | 1:00  | 18.89         | 8.36          | 0.35               | 8.48         |
| 8/17/2004 | 1:30  | 18.89         | 8.36          | 0.35               | 8.47         |
| 8/17/2004 | 2:00  | 18.89         | 8.35          | 0.35               | 8.50         |
| 8/17/2004 | 2:30  | 18.89         | 8.34          | 0.35               | 8.44         |
| 8/17/2004 | 3:00  | 18.89         | 8.35          | 0.35               | 8.42         |
| 8/17/2004 | 3:30  | 18.89         | 8.35          | 0.35               | 8.40         |
| 8/17/2004 | 4:00  | 18.89         | 8.35          | 0.35               | 8.38         |
| 8/17/2004 | 4:30  | 18.89         | 8.34          | 0.35               | 8.41         |
| 8/17/2004 | 5:00  | 18.83         | 8.34          | 0.35               | 8.30         |
| 8/17/2004 | 5:30  | 18.83         | 8.33          | 0.35               | 8.35         |
| 8/17/2004 | 6:00  | 18.83         | 8.33          | 0.35               | 8.26         |
| 8/17/2004 | 6:30  | 18.83         | 8.33          | 0.35               | 8.30         |
| 8/17/2004 | 7:00  | 18.83         | 8.33          | 0.35               | 8.29         |
| 8/17/2004 | 7:30  | 18.83         | 8.33          | 0.35               | 8.32         |
| 8/17/2004 | 8:00  | 18.89         | 8.34          | 0.35               | 8.36         |
| 8/17/2004 | 8:30  | 18.94         | 8.35          | 0.35               | 8.46         |
| 8/17/2004 | 9:00  | 18.94         | 8.35          | 0.35               | 8.44         |
| 8/17/2004 | 9:30  | 19.00         | 8.36          | 0.35               | 8.46         |
| 8/17/2004 | 10:00 | 19.06         | 8.37          | 0.35               | 8.48         |
| 8/17/2004 | 10:30 | 19.11         | 8.36          | 0.35               | 8.38         |
| 8/17/2004 | 11:00 | 19.17         | 8.36          | 0.35               | 8.47         |
| 8/17/2004 | 11:30 | 19.22         | 8.38          | 0.35               | 8.44         |
| 8/17/2004 | 12:00 | 19.22         | 8.37          | 0.35               | 8.40         |
| 8/17/2004 | 12:30 | 19.28         | 8.37          | 0.35               | 8.38         |
| 8/17/2004 | 13:00 | 19.28         | 8.35          | 0.35               | 8.40         |
| 8/17/2004 | 13:30 | 19.22         | 8.33          | 0.35               | 8.17         |
| 8/17/2004 | 14:00 | 19.33         | 8.34          | 0.35               | 8.28         |
| 8/17/2004 | 14:30 | 19.50         | 8.35          | 0.35               | 8.39         |
| 8/17/2004 | 15:00 | 19.67         | 8.37          | 0.35               | 8.49         |
| 8/17/2004 | 15:30 | 19.72         | 8.38          | 0.35               | 8.52         |
| 8/17/2004 | 16:00 | 19.83         | 8.40          | 0.35               | 8.63         |
| 8/17/2004 | 16:30 | 19.89         | 8.42          | 0.35               | 8.71         |
| 8/17/2004 | 17:00 | 19.94         | 8.44          | 0.35               | 8.82         |
| 8/17/2004 | 17:30 | 20.00         | 8.44          | 0.35               | 8.89         |
| 8/17/2004 | 18:00 | 19.89         | 8.43          | 0.35               | 8.80         |
| 8/17/2004 | 18:30 | 19.83         | 8.41          | 0.35               | 8.66         |
| 8/17/2004 | 19:00 | 19.72         | 8.40          | 0.35               | 8.13         |
| 8/17/2004 | 19:30 | 19.78         | 8.40          | 0.35               | 8.18         |
| 8/17/2004 | 20:00 | 19.72         | 8.38          | 0.35               | 8.14         |
| 8/17/2004 | 20:30 | 19.56         | 8.35          | 0.35               | 8.08         |
| 8/17/2004 | 21:00 | 19.56         | 8.34          | 0.35               | 7.94         |
| 8/17/2004 | 21:30 | 19.50         | 8.32          | 0.35               | 7.91         |
| 8/17/2004 | 22:00 | 19.44         | 8.30          | 0.35               | 7.72         |
| 8/17/2004 | 22:30 | 19.44         | 8.30          | 0.35               | 7.73         |
| 8/17/2004 | 23:00 | 19.44         | 8.29          | 0.35               | 7.73         |
| 8/17/2004 | 23:30 | 19.44         | 8.29          | 0.35               | 7.63         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/18/2004 | 0:00  | 19.44         | 8.29          | 0.35               | 7.61         |
| 8/18/2004 | 0:30  | 19.44         | 8.30          | 0.35               | 7.73         |
| 8/18/2004 | 1:00  | 19.44         | 8.30          | 0.35               | 7.61         |
| 8/18/2004 | 1:30  | 19.44         | 8.31          | 0.35               | 7.66         |
| 8/18/2004 | 2:00  | 19.44         | 8.31          | 0.35               | 7.53         |
| 8/18/2004 | 2:30  | 19.44         | 8.31          | 0.35               | 7.78         |
| 8/18/2004 | 3:00  | 19.44         | 8.31          | 0.35               | 8.11         |
| 8/18/2004 | 3:30  | 19.39         | 8.29          | 0.35               | 8.04         |
| 8/18/2004 | 4:00  | 19.33         | 8.29          | 0.35               | 7.97         |
| 8/18/2004 | 4:30  | 19.33         | 8.27          | 0.35               | 7.91         |
| 8/18/2004 | 5:00  | 19.28         | 8.28          | 0.35               | 7.97         |
| 8/18/2004 | 5:30  | 19.22         | 8.26          | 0.35               | 7.86         |
| 8/18/2004 | 6:00  | 19.22         | 8.25          | 0.35               | 7.85         |
| 8/18/2004 | 6:30  | 19.11         | 8.23          | 0.35               | 7.78         |
| 8/18/2004 | 7:00  | 19.11         | 8.23          | 0.35               | 7.70         |
| 8/18/2004 | 7:30  | 19.11         | 8.22          | 0.35               | 7.68         |
| 8/18/2004 | 8:00  | 19.11         | 8.22          | 0.35               | 7.68         |
| 8/18/2004 | 8:30  | 19.11         | 8.23          | 0.35               | 7.73         |
| 8/18/2004 | 9:00  | 19.11         | 8.22          | 0.35               | 7.67         |
| 8/18/2004 | 9:30  | 19.17         | 8.23          | 0.35               | 7.72         |
| 8/18/2004 | 10:00 | 19.17         | 8.23          | 0.35               | 7.74         |
| 8/18/2004 | 10:30 | 19.17         | 8.23          | 0.35               | 7.71         |
| 8/18/2004 | 11:00 | 19.22         | 8.24          | 0.35               | 7.73         |
| 8/18/2004 | 11:30 | 19.33         | 8.27          | 0.35               | 7.90         |
| 8/18/2004 | 12:00 | 19.39         | 8.28          | 0.35               | 7.94         |
| 8/18/2004 | 12:30 | 19.44         | 8.28          | 0.35               | 7.97         |
| 8/18/2004 | 13:00 | 19.67         | 8.34          | 0.35               | 8.17         |
| 8/18/2004 | 13:30 | 19.83         | 8.37          | 0.35               | 8.38         |
| 8/18/2004 | 14:00 | 19.89         | 8.38          | 0.35               | 8.42         |
| 8/18/2004 | 14:30 | 19.94         | 8.39          | 0.35               | 8.41         |
| 8/18/2004 | 15:00 | 19.89         | 8.38          | 0.35               | 8.38         |
| 8/18/2004 | 15:30 | 19.89         | 8.37          | 0.35               | 8.33         |
| 8/18/2004 | 16:00 | 20.11         | 8.41          | 0.35               | 8.48         |
| 8/18/2004 | 16:30 | 20.22         | 8.42          | 0.35               | 8.52         |
| 8/18/2004 | 17:00 | 20.28         | 8.44          | 0.35               | 8.62         |
| 8/18/2004 | 17:30 | 20.39         | 8.46          | 0.35               | 8.70         |
| 8/18/2004 | 18:00 | 20.56         | 8.50          | 0.35               | 8.81         |
| 8/18/2004 | 18:30 | 20.50         | 8.50          | 0.35               | 8.80         |
| 8/18/2004 | 19:00 | 20.39         | 8.47          | 0.35               | 8.71         |
| 8/18/2004 | 19:30 | 20.33         | 8.47          | 0.35               | 8.69         |
| 8/18/2004 | 20:00 | 20.33         | 8.48          | 0.35               | 8.71         |
| 8/18/2004 | 20:30 | 20.22         | 8.46          | 0.35               | 8.62         |
| 8/18/2004 | 21:00 | 20.17         | 8.46          | 0.35               | 8.59         |
| 8/18/2004 | 21:30 | 20.11         | 8.44          | 0.35               | 8.49         |
| 8/18/2004 | 22:00 | 20.11         | 8.45          | 0.35               | 8.50         |
| 8/18/2004 | 22:30 | 20.00         | 8.43          | 0.35               | 8.42         |
| 8/18/2004 | 23:00 | 19.89         | 8.42          | 0.35               | 8.30         |
| 8/18/2004 | 23:30 | 19.83         | 8.40          | 0.35               | 8.20         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/19/2004 | 0:00  | 19.83         | 8.40          | 0.35               | 8.18         |
| 8/19/2004 | 0:30  | 19.78         | 8.40          | 0.35               | 8.23         |
| 8/19/2004 | 1:00  | 19.72         | 8.40          | 0.35               | 8.21         |
| 8/19/2004 | 1:30  | 19.67         | 8.39          | 0.35               | 8.16         |
| 8/19/2004 | 2:00  | 19.61         | 8.38          | 0.35               | 8.12         |
| 8/19/2004 | 2:30  | 19.56         | 8.37          | 0.35               | 8.08         |
| 8/19/2004 | 3:00  | 19.50         | 8.34          | 0.35               | 7.97         |
| 8/19/2004 | 3:30  | 19.50         | 8.36          | 0.35               | 8.07         |
| 8/19/2004 | 4:00  | 19.44         | 8.34          | 0.35               | 7.98         |
| 8/19/2004 | 4:30  | 19.44         | 8.35          | 0.35               | 7.98         |
| 8/19/2004 | 5:00  | 19.39         | 8.33          | 0.35               | 7.95         |
| 8/19/2004 | 5:30  | 19.39         | 8.31          | 0.35               | 7.88         |
| 8/19/2004 | 6:00  | 19.33         | 8.31          | 0.35               | 7.87         |
| 8/19/2004 | 6:30  | 19.28         | 8.32          | 0.35               | 7.89         |
| 8/19/2004 | 7:00  | 19.28         | 8.31          | 0.35               | 7.90         |
| 8/19/2004 | 7:30  | 19.22         | 8.29          | 0.35               | 7.81         |
| 8/19/2004 | 8:00  | 19.22         | 8.29          | 0.35               | 7.77         |
| 8/19/2004 | 8:30  | 19.17         | 8.29          | 0.35               | 7.79         |
| 8/19/2004 | 9:00  | 19.22         | 8.30          | 0.35               | 7.85         |
| 8/19/2004 | 9:30  | 19.22         | 8.30          | 0.35               | 7.87         |
| 8/19/2004 | 10:00 | 19.22         | 8.31          | 0.35               | 7.89         |
| 8/19/2004 | 10:30 | 19.28         | 8.32          | 0.35               | 7.96         |
| 8/19/2004 | 11:00 | 19.33         | 8.35          | 0.35               | 8.05         |
| 8/19/2004 | 11:30 | 19.39         | 8.35          | 0.35               | 8.08         |
| 8/19/2004 | 12:00 | 19.44         | 8.35          | 0.35               | 8.19         |
| 8/19/2004 | 12:30 | 19.50         | 8.36          | 0.35               | 8.25         |
| 8/19/2004 | 13:00 | 19.50         | 8.35          | 0.35               | 8.15         |
| 8/19/2004 | 13:30 | 19.56         | 8.35          | 0.35               | 8.19         |
| 8/19/2004 | 14:00 | 19.61         | 8.36          | 0.35               | 8.22         |
| 8/19/2004 | 14:30 | 19.67         | 8.36          | 0.35               | 8.42         |
| 8/19/2004 | 15:00 | 19.67         | 8.36          | 0.35               | 8.41         |
| 8/19/2004 | 15:30 | 19.72         | 8.36          | 0.35               | 8.41         |
| 8/19/2004 | 16:00 | 19.67         | 8.35          | 0.35               | 8.36         |
| 8/19/2004 | 16:30 | 19.67         | 8.34          | 0.35               | 8.32         |
| 8/19/2004 | 17:00 | 19.72         | 8.37          | 0.35               | 8.43         |
| 8/19/2004 | 17:30 | 19.67         | 8.36          | 0.35               | 8.46         |
| 8/19/2004 | 18:00 | 19.61         | 8.36          | 0.35               | 8.41         |
| 8/19/2004 | 18:30 | 19.61         | 8.36          | 0.35               | 8.42         |
| 8/19/2004 | 19:00 | 19.61         | 8.36          | 0.35               | 8.43         |
| 8/19/2004 | 19:30 | 19.50         | 8.35          | 0.35               | 8.38         |
| 8/19/2004 | 20:00 | 19.50         | 8.34          | 0.35               | 8.31         |
| 8/19/2004 | 20:30 | 19.50         | 8.33          | 0.35               | 8.28         |
| 8/19/2004 | 21:00 | 19.44         | 8.31          | 0.35               | 8.14         |
| 8/19/2004 | 21:30 | 19.39         | 8.30          | 0.35               | 8.09         |
| 8/19/2004 | 22:00 | 19.39         | 8.30          | 0.35               | 8.09         |
| 8/19/2004 | 22:30 | 19.33         | 8.29          | 0.35               | 8.07         |
| 8/19/2004 | 23:00 | 19.33         | 8.29          | 0.35               | 8.09         |
| 8/19/2004 | 23:30 | 19.28         | 8.29          | 0.35               | 8.03         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/20/2004 | 0:00  | 19.28         | 8.29          | 0.35               | 8.04         |
| 8/20/2004 | 0:30  | 19.22         | 8.29          | 0.35               | 8.02         |
| 8/20/2004 | 1:00  | 19.22         | 8.29          | 0.35               | 8.03         |
| 8/20/2004 | 1:30  | 19.17         | 8.28          | 0.35               | 8.01         |
| 8/20/2004 | 2:00  | 19.17         | 8.27          | 0.35               | 7.93         |
| 8/20/2004 | 2:30  | 19.17         | 8.27          | 0.35               | 7.94         |
| 8/20/2004 | 3:00  | 19.11         | 8.28          | 0.35               | 7.98         |
| 8/20/2004 | 3:30  | 19.11         | 8.29          | 0.35               | 8.00         |
| 8/20/2004 | 4:00  | 19.06         | 8.28          | 0.35               | 7.97         |
| 8/20/2004 | 4:30  | 19.00         | 8.28          | 0.35               | 7.92         |
| 8/20/2004 | 5:00  | 19.00         | 8.29          | 0.35               | 8.01         |
| 8/20/2004 | 5:30  | 18.94         | 8.29          | 0.35               | 7.97         |
| 8/20/2004 | 6:00  | 18.94         | 8.28          | 0.35               | 7.94         |
| 8/20/2004 | 6:30  | 18.89         | 8.28          | 0.35               | 7.95         |
| 8/20/2004 | 7:00  | 18.89         | 8.29          | 0.35               | 7.97         |
| 8/20/2004 | 7:30  | 18.83         | 8.29          | 0.35               | 8.02         |
| 8/20/2004 | 8:00  | 18.83         | 8.30          | 0.35               | 8.04         |
| 8/20/2004 | 8:30  | 18.83         | 8.30          | 0.35               | 8.05         |
| 8/20/2004 | 9:00  | 18.83         | 8.30          | 0.35               | 8.07         |
| 8/20/2004 | 9:30  | 18.83         | 8.31          | 0.35               | 8.08         |
| 8/20/2004 | 10:00 | 18.89         | 8.31          | 0.35               | 8.07         |
| 8/20/2004 | 10:30 | 18.94         | 8.31          | 0.35               | 8.09         |
| 8/20/2004 | 11:00 | 18.94         | 8.31          | 0.35               | 8.08         |
| 8/20/2004 | 11:30 | 19.00         | 8.30          | 0.35               | 8.07         |
| 8/20/2004 | 12:00 | 19.11         | 8.31          | 0.35               | 8.08         |
| 8/20/2004 | 12:30 | 19.22         | 8.31          | 0.35               | 8.08         |
| 8/20/2004 | 13:00 | 19.22         | 8.31          | 0.35               | 8.06         |
| 8/20/2004 | 13:30 | 19.28         | 8.31          | 0.35               | 8.08         |
| 8/20/2004 | 14:00 | 19.39         | 8.32          | 0.35               | 8.14         |
| 8/20/2004 | 14:30 | 19.33         | 8.31          | 0.35               | 8.09         |
| 8/20/2004 | 15:00 | 19.28         | 8.30          | 0.35               | 8.07         |
| 8/20/2004 | 15:30 | 19.39         | 8.31          | 0.35               | 8.12         |
| 8/20/2004 | 16:00 | 19.33         | 8.31          | 0.35               | 8.08         |
| 8/20/2004 | 16:30 | 19.50         | 8.31          | 0.35               | 8.09         |
| 8/20/2004 | 17:00 | 19.44         | 8.30          | 0.35               | 8.05         |
| 8/20/2004 | 17:30 | 19.44         | 8.31          | 0.35               | 8.03         |
| 8/20/2004 | 18:00 | 19.50         | 8.32          | 0.35               | 8.14         |
| 8/20/2004 | 18:30 | 19.44         | 8.32          | 0.35               | 8.14         |
| 8/20/2004 | 19:00 | 19.44         | 8.33          | 0.35               | 8.23         |
| 8/20/2004 | 19:30 | 19.44         | 8.34          | 0.35               | 8.26         |
| 8/20/2004 | 20:00 | 19.33         | 8.32          | 0.35               | 8.17         |
| 8/20/2004 | 20:30 | 19.28         | 8.32          | 0.35               | 8.14         |
| 8/20/2004 | 21:00 | 19.22         | 8.31          | 0.35               | 8.12         |
| 8/20/2004 | 21:30 | 19.17         | 8.31          | 0.35               | 8.12         |
| 8/20/2004 | 22:00 | 19.11         | 8.31          | 0.35               | 8.10         |
| 8/20/2004 | 22:30 | 19.11         | 8.32          | 0.35               | 8.15         |
| 8/20/2004 | 23:00 | 19.06         | 8.31          | 0.35               | 8.12         |
| 8/20/2004 | 23:30 | 18.94         | 8.31          | 0.35               | 8.11         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/21/2004 | 0:00  | 18.89         | 8.31          | 0.35               | 8.10         |
| 8/21/2004 | 0:30  | 18.89         | 8.30          | 0.35               | 8.08         |
| 8/21/2004 | 1:00  | 18.83         | 8.31          | 0.35               | 8.11         |
| 8/21/2004 | 1:30  | 18.83         | 8.31          | 0.35               | 8.10         |
| 8/21/2004 | 2:00  | 18.78         | 8.31          | 0.35               | 8.11         |
| 8/21/2004 | 2:30  | 18.72         | 8.30          | 0.35               | 8.07         |
| 8/21/2004 | 3:00  | 18.72         | 8.31          | 0.35               | 8.11         |
| 8/21/2004 | 3:30  | 18.67         | 8.30          | 0.35               | 8.09         |
| 8/21/2004 | 4:00  | 18.67         | 8.31          | 0.35               | 8.09         |
| 8/21/2004 | 4:30  | 18.67         | 8.32          | 0.35               | 8.16         |
| 8/21/2004 | 5:00  | 18.67         | 8.32          | 0.35               | 8.16         |
| 8/21/2004 | 5:30  | 18.67         | 8.32          | 0.35               | 8.20         |
| 8/21/2004 | 6:00  | 18.61         | 8.32          | 0.35               | 8.18         |
| 8/21/2004 | 6:30  | 18.56         | 8.32          | 0.35               | 8.18         |
| 8/21/2004 | 7:00  | 18.56         | 8.31          | 0.35               | 8.14         |
| 8/21/2004 | 7:30  | 18.50         | 8.31          | 0.35               | 8.10         |
| 8/21/2004 | 8:00  | 18.50         | 8.30          | 0.35               | 8.10         |
| 8/21/2004 | 8:30  | 18.44         | 8.30          | 0.35               | 8.08         |
| 8/21/2004 | 9:00  | 18.50         | 8.30          | 0.35               | 8.11         |
| 8/21/2004 | 9:30  | 18.50         | 8.29          | 0.35               | 8.04         |
| 8/21/2004 | 10:00 | 18.56         | 8.30          | 0.35               | 8.09         |
| 8/21/2004 | 10:30 | 18.61         | 8.32          | 0.35               | 8.20         |
| 8/21/2004 | 11:00 | 18.67         | 8.31          | 0.35               | 8.13         |
| 8/21/2004 | 11:30 | 18.67         | 8.31          | 0.35               | 8.12         |
| 8/21/2004 | 12:00 | 18.83         | 8.33          | 0.35               | 8.27         |
| 8/21/2004 | 12:30 | 18.83         | 8.33          | 0.35               | 8.25         |
| 8/21/2004 | 13:00 | 18.89         | 8.33          | 0.35               | 8.24         |
| 8/21/2004 | 13:30 | 18.89         | 8.32          | 0.35               | 8.21         |
| 8/21/2004 | 14:00 | 18.83         | 8.33          | 0.35               | 8.27         |
| 8/21/2004 | 14:30 | 18.89         | 8.35          | 0.35               | 8.38         |
| 8/21/2004 | 15:00 | 18.89         | 8.35          | 0.35               | 8.44         |
| 8/21/2004 | 15:30 | 18.94         | 8.36          | 0.35               | 8.47         |
| 8/21/2004 | 16:00 | 18.94         | 8.37          | 0.35               | 8.51         |
| 8/21/2004 | 16:30 | 19.00         | 8.38          | 0.35               | 8.56         |
| 8/21/2004 | 17:00 | 18.89         | 8.38          | 0.35               | 8.54         |
| 8/21/2004 | 17:30 | 18.94         | 8.39          | 0.35               | 8.63         |
| 8/21/2004 | 18:00 | 19.00         | 8.41          | 0.35               | 8.74         |
| 8/21/2004 | 18:30 | 19.00         | 8.41          | 0.35               | 8.75         |
| 8/21/2004 | 19:00 | 18.94         | 8.39          | 0.35               | 8.68         |
| 8/21/2004 | 19:30 | 18.94         | 8.40          | 0.35               | 8.70         |
| 8/21/2004 | 20:00 | 18.94         | 8.41          | 0.35               | 8.75         |
| 8/21/2004 | 20:30 | 18.94         | 8.40          | 0.35               | 8.73         |
| 8/21/2004 | 21:00 | 18.83         | 8.39          | 0.35               | 8.67         |
| 8/21/2004 | 21:30 | 18.78         | 8.38          | 0.35               | 8.63         |
| 8/21/2004 | 22:00 | 18.67         | 8.37          | 0.35               | 8.52         |
| 8/21/2004 | 22:30 | 18.67         | 8.37          | 0.35               | 8.57         |
| 8/21/2004 | 23:00 | 18.61         | 8.37          | 0.35               | 8.53         |
| 8/21/2004 | 23:30 | 18.56         | 8.36          | 0.35               | 8.48         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/22/2004 | 0:00  | 18.56         | 8.36          | 0.35               | 8.49         |
| 8/22/2004 | 0:30  | 18.50         | 8.35          | 0.35               | 8.41         |
| 8/22/2004 | 1:00  | 18.44         | 8.34          | 0.35               | 8.40         |
| 8/22/2004 | 1:30  | 18.44         | 8.34          | 0.35               | 8.40         |
| 8/22/2004 | 2:00  | 18.44         | 8.34          | 0.35               | 8.34         |
| 8/22/2004 | 2:30  | 18.39         | 8.34          | 0.35               | 8.37         |
| 8/22/2004 | 3:00  | 18.44         | 8.34          | 0.35               | 8.39         |
| 8/22/2004 | 3:30  | 18.39         | 8.34          | 0.35               | 8.36         |
| 8/22/2004 | 4:00  | 18.39         | 8.34          | 0.35               | 8.36         |
| 8/22/2004 | 4:30  | 18.33         | 8.33          | 0.35               | 8.32         |
| 8/22/2004 | 5:00  | 18.33         | 8.33          | 0.35               | 8.36         |
| 8/22/2004 | 5:30  | 18.33         | 8.32          | 0.35               | 8.28         |
| 8/22/2004 | 6:00  | 18.28         | 8.31          | 0.35               | 8.25         |
| 8/22/2004 | 6:30  | 18.28         | 8.31          | 0.35               | 8.23         |
| 8/22/2004 | 7:00  | 18.22         | 8.30          | 0.35               | 8.17         |
| 8/22/2004 | 7:30  | 18.22         | 8.30          | 0.35               | 8.18         |
| 8/22/2004 | 8:00  | 18.17         | 8.30          | 0.35               | 8.15         |
| 8/22/2004 | 8:30  | 18.11         | 8.29          | 0.35               | 8.14         |
| 8/22/2004 | 9:00  | 18.06         | 8.28          | 0.35               | 8.11         |
| 8/22/2004 | 9:30  | 18.06         | 8.30          | 0.35               | 8.20         |
| 8/22/2004 | 10:00 | 18.06         | 8.30          | 0.35               | 8.22         |
| 8/22/2004 | 10:30 | 18.17         | 8.31          | 0.35               | 8.29         |
| 8/22/2004 | 11:00 | 18.28         | 8.35          | 0.35               | 8.47         |
| 8/22/2004 | 11:30 | 18.33         | 8.37          | 0.35               | 8.55         |
| 8/22/2004 | 12:00 | 18.39         | 8.37          | 0.35               | 8.59         |
| 8/22/2004 | 12:30 | 18.44         | 8.38          | 0.35               | 8.64         |
| 8/22/2004 | 13:00 | 18.44         | 8.37          | 0.35               | 8.58         |
| 8/22/2004 | 13:30 | 18.67         | 8.40          | 0.35               | 8.74         |
| 8/22/2004 | 14:00 | 18.83         | 8.42          | 0.35               | 8.84         |
| 8/22/2004 | 14:30 | 18.83         | 8.42          | 0.35               | 8.82         |
| 8/22/2004 | 15:00 | 18.94         | 8.41          | 0.35               | 8.79         |
| 8/22/2004 | 15:30 | 18.94         | 8.41          | 0.35               | 8.75         |
| 8/22/2004 | 16:00 | 18.94         | 8.41          | 0.35               | 8.77         |
| 8/22/2004 | 16:30 | 19.06         | 8.43          | 0.35               | 8.87         |
| 8/22/2004 | 17:00 | 19.00         | 8.42          | 0.35               | 8.81         |
| 8/22/2004 | 17:30 | 18.89         | 8.40          | 0.35               | 8.67         |
| 8/22/2004 | 18:00 | 18.89         | 8.40          | 0.35               | 8.71         |
| 8/22/2004 | 18:30 | 18.94         | 8.41          | 0.35               | 8.76         |
| 8/22/2004 | 19:00 | 19.00         | 8.41          | 0.35               | 8.77         |
| 8/22/2004 | 19:30 | 19.00         | 8.41          | 0.35               | 8.78         |
| 8/22/2004 | 20:00 | 19.00         | 8.41          | 0.35               | 8.76         |
| 8/22/2004 | 20:30 | 18.94         | 8.40          | 0.35               | 8.68         |
| 8/22/2004 | 21:00 | 18.94         | 8.40          | 0.35               | 8.64         |
| 8/22/2004 | 21:30 | 18.89         | 8.39          | 0.35               | 8.64         |
| 8/22/2004 | 22:00 | 18.83         | 8.39          | 0.35               | 8.62         |
| 8/22/2004 | 22:30 | 18.83         | 8.38          | 0.35               | 8.61         |
| 8/22/2004 | 23:00 | 18.89         | 8.39          | 0.35               | 8.64         |
| 8/22/2004 | 23:30 | 18.89         | 8.39          | 0.35               | 8.64         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/23/2004 | 0:00  | 18.83         | 8.39          | 0.35               | 8.64         |
| 8/23/2004 | 0:30  | 18.89         | 8.40          | 0.35               | 8.70         |
| 8/23/2004 | 1:00  | 18.89         | 8.40          | 0.35               | 8.68         |
| 8/23/2004 | 1:30  | 18.83         | 8.39          | 0.35               | 8.61         |
| 8/23/2004 | 2:00  | 18.78         | 8.38          | 0.35               | 8.59         |
| 8/23/2004 | 2:30  | 18.78         | 8.38          | 0.35               | 8.58         |
| 8/23/2004 | 3:00  | 18.78         | 8.38          | 0.35               | 8.58         |
| 8/23/2004 | 3:30  | 18.72         | 8.37          | 0.35               | 8.53         |
| 8/23/2004 | 4:00  | 18.72         | 8.37          | 0.35               | 8.57         |
| 8/23/2004 | 4:30  | 18.67         | 8.36          | 0.35               | 8.53         |
| 8/23/2004 | 5:00  | 18.67         | 8.36          | 0.35               | 8.52         |
| 8/23/2004 | 5:30  | 18.61         | 8.35          | 0.35               | 8.50         |
| 8/23/2004 | 6:00  | 18.61         | 8.35          | 0.35               | 8.50         |
| 8/23/2004 | 6:30  | 18.56         | 8.34          | 0.35               | 8.42         |
| 8/23/2004 | 7:00  | 18.56         | 8.34          | 0.35               | 8.45         |
| 8/23/2004 | 7:30  | 18.50         | 8.33          | 0.35               | 8.41         |
| 8/23/2004 | 8:00  | 18.50         | 8.33          | 0.35               | 8.40         |
| 8/23/2004 | 8:30  | 18.44         | 8.32          | 0.35               | 8.37         |
| 8/23/2004 | 9:00  | 18.44         | 8.32          | 0.35               | 8.35         |
| 8/23/2004 | 9:30  | 18.44         | 8.31          | 0.35               | 8.32         |
| 8/23/2004 | 10:00 | 18.39         | 8.31          | 0.35               | 8.26         |
| 8/23/2004 | 10:30 | 18.39         | 8.31          | 0.35               | 8.32         |
| 8/23/2004 | 11:00 | 18.39         | 8.31          | 0.35               | 8.32         |
| 8/23/2004 | 11:30 | 18.39         | 8.29          | 0.35               | 8.19         |
| 8/23/2004 | 12:00 | 18.33         | 8.27          | 0.35               | 8.13         |
| 8/23/2004 | 12:30 | 18.33         | 8.28          | 0.35               | 8.20         |
| 8/23/2004 | 13:00 | 18.33         | 8.28          | 0.35               | 8.21         |
| 8/23/2004 | 13:30 | 18.33         | 8.29          | 0.35               | 8.28         |
| 8/23/2004 | 14:00 | 18.28         | 8.27          | 0.35               | 8.24         |
| 8/23/2004 | 14:30 | 18.22         | 8.26          | 0.35               | 8.15         |
| 8/23/2004 | 15:00 | 18.17         | 8.25          | 0.35               | 8.14         |
| 8/23/2004 | 15:30 | 18.17         | 8.25          | 0.35               | 8.12         |
| 8/23/2004 | 16:00 | 18.22         | 8.27          | 0.35               | 8.22         |
| 8/23/2004 | 16:30 | 18.33         | 8.30          | 0.35               | 8.39         |
| 8/23/2004 | 17:00 | 18.39         | 8.31          | 0.35               | 8.40         |
| 8/23/2004 | 17:30 | 18.44         | 8.33          | 0.35               | 8.49         |
| 8/23/2004 | 18:00 | 18.50         | 8.34          | 0.35               | 8.57         |
| 8/23/2004 | 18:30 | 18.50         | 8.34          | 0.35               | 8.56         |
| 8/23/2004 | 19:00 | 18.44         | 8.33          | 0.35               | 8.45         |
| 8/23/2004 | 19:30 | 18.50         | 8.33          | 0.35               | 8.50         |
| 8/23/2004 | 20:00 | 18.56         | 8.35          | 0.35               | 8.54         |
| 8/23/2004 | 20:30 | 18.56         | 8.35          | 0.35               | 8.54         |
| 8/23/2004 | 21:00 | 18.61         | 8.36          | 0.35               | 8.61         |
| 8/23/2004 | 21:30 | 18.61         | 8.36          | 0.35               | 8.60         |
| 8/23/2004 | 22:00 | 18.61         | 8.36          | 0.35               | 8.59         |
| 8/23/2004 | 22:30 | 18.67         | 8.37          | 0.35               | 8.65         |
| 8/23/2004 | 23:00 | 18.61         | 8.37          | 0.35               | 8.72         |
| 8/23/2004 | 23:30 | 18.67         | 8.38          | 0.35               | 8.71         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/24/2004 | 0:00  | 18.67         | 8.37          | 0.35               | 8.63         |
| 8/24/2004 | 0:30  | 18.61         | 8.37          | 0.35               | 8.66         |
| 8/24/2004 | 1:00  | 18.67         | 8.37          | 0.35               | 8.64         |
| 8/24/2004 | 1:30  | 18.61         | 8.36          | 0.35               | 8.63         |
| 8/24/2004 | 2:00  | 18.61         | 8.37          | 0.35               | 8.60         |
| 8/24/2004 | 2:30  | 18.56         | 8.37          | 0.35               | 8.66         |
| 8/24/2004 | 3:00  | 18.56         | 8.36          | 0.35               | 8.54         |
| 8/24/2004 | 3:30  | 18.56         | 8.36          | 0.35               | 8.55         |
| 8/24/2004 | 4:00  | 18.50         | 8.36          | 0.35               | 8.57         |
| 8/24/2004 | 4:30  | 18.50         | 8.35          | 0.35               | 8.51         |
| 8/24/2004 | 5:00  | 18.50         | 8.35          | 0.35               | 8.51         |
| 8/24/2004 | 5:30  | 18.50         | 8.34          | 0.35               | 8.47         |
| 8/24/2004 | 6:00  | 18.44         | 8.32          | 0.35               | 8.38         |
| 8/24/2004 | 6:30  | 18.44         | 8.30          | 0.35               | 8.34         |
| 8/24/2004 | 7:00  | 18.44         | 8.30          | 0.35               | 8.30         |
| 8/24/2004 | 7:30  | 18.44         | 8.30          | 0.35               | 8.33         |
| 8/24/2004 | 8:00  | 18.44         | 8.29          | 0.35               | 8.27         |
| 8/24/2004 | 8:30  | 18.50         | 8.31          | 0.35               | 8.36         |
| 8/24/2004 | 9:00  | 18.50         | 8.32          | 0.35               | 8.44         |
| 8/24/2004 | 9:30  | 18.56         | 8.33          | 0.35               | 8.47         |
| 8/24/2004 | 10:00 | 18.56         | 8.33          | 0.35               | 8.47         |
| 8/24/2004 | 10:30 | 18.56         | 8.32          | 0.35               | 8.42         |
| 8/24/2004 | 11:00 | 18.56         | 8.32          | 0.35               | 8.41         |
| 8/24/2004 | 11:30 | 18.61         | 8.33          | 0.35               | 8.47         |
| 8/24/2004 | 12:00 | 18.61         | 8.32          | 0.35               | 8.43         |
| 8/24/2004 | 12:30 | 18.61         | 8.32          | 0.35               | 8.40         |
| 8/24/2004 | 13:00 | 18.61         | 8.31          | 0.35               | 8.36         |
| 8/24/2004 | 13:30 | 18.56         | 8.31          | 0.35               | 8.29         |
| 8/24/2004 | 14:00 | 18.56         | 8.31          | 0.35               | 8.31         |
| 8/24/2004 | 14:30 | 18.61         | 8.32          | 0.35               | 8.34         |
| 8/24/2004 | 15:00 | 18.61         | 8.33          | 0.35               | 8.38         |
| 8/24/2004 | 15:30 | 18.67         | 8.33          | 0.35               | 8.38         |
| 8/24/2004 | 16:00 | 18.67         | 8.34          | 0.35               | 8.42         |
| 8/24/2004 | 16:30 | 18.72         | 8.35          | 0.35               | 8.48         |
| 8/24/2004 | 17:00 | 18.72         | 8.34          | 0.35               | 8.48         |
| 8/24/2004 | 17:30 | 18.67         | 8.31          | 0.35               | 8.24         |
| 8/24/2004 | 18:00 | 18.61         | 8.28          | 0.35               | 8.15         |
| 8/24/2004 | 18:30 | 18.61         | 8.26          | 0.35               | 7.97         |
| 8/24/2004 | 19:00 | 18.61         | 8.27          | 0.35               | 8.03         |
| 8/24/2004 | 19:30 | 18.67         | 8.28          | 0.35               | 8.15         |
| 8/24/2004 | 20:00 | 18.67         | 8.29          | 0.35               | 8.21         |
| 8/24/2004 | 20:30 | 18.78         | 8.31          | 0.35               | 8.30         |
| 8/24/2004 | 21:00 | 18.83         | 8.33          | 0.35               | 8.37         |
| 8/24/2004 | 21:30 | 18.89         | 8.35          | 0.35               | 8.50         |
| 8/24/2004 | 22:00 | 18.89         | 8.36          | 0.35               | 8.50         |
| 8/24/2004 | 22:30 | 18.89         | 8.36          | 0.35               | 8.55         |
| 8/24/2004 | 23:00 | 18.89         | 8.35          | 0.35               | 8.45         |
| 8/24/2004 | 23:30 | 18.89         | 8.35          | 0.35               | 8.45         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/25/2004 | 0:00  | 18.89         | 8.34          | 0.35               | 8.39         |
| 8/25/2004 | 0:30  | 18.89         | 8.35          | 0.35               | 8.43         |
| 8/25/2004 | 1:00  | 18.89         | 8.35          | 0.35               | 8.43         |
| 8/25/2004 | 1:30  | 18.94         | 8.35          | 0.35               | 8.47         |
| 8/25/2004 | 2:00  | 18.94         | 8.36          | 0.35               | 8.52         |
| 8/25/2004 | 2:30  | 18.94         | 8.36          | 0.35               | 8.55         |
| 8/25/2004 | 3:00  | 19.00         | 8.36          | 0.35               | 8.52         |
| 8/25/2004 | 3:30  | 19.00         | 8.36          | 0.35               | 8.51         |
| 8/25/2004 | 4:00  | 19.00         | 8.36          | 0.35               | 8.49         |
| 8/25/2004 | 4:30  | 19.00         | 8.36          | 0.35               | 8.47         |
| 8/25/2004 | 5:00  | 19.06         | 8.37          | 0.35               | 8.51         |
| 8/25/2004 | 5:30  | 19.11         | 8.38          | 0.35               | 8.58         |
| 8/25/2004 | 6:00  | 19.06         | 8.37          | 0.35               | 8.53         |
| 8/25/2004 | 6:30  | 19.06         | 8.37          | 0.35               | 8.50         |
| 8/25/2004 | 7:00  | 19.06         | 8.37          | 0.35               | 8.52         |
| 8/25/2004 | 7:30  | 19.11         | 8.38          | 0.35               | 8.55         |
| 8/25/2004 | 8:00  | 19.11         | 8.38          | 0.35               | 8.58         |
| 8/25/2004 | 8:30  | 19.17         | 8.39          | 0.35               | 8.61         |
| 8/25/2004 | 9:00  | 19.22         | 8.39          | 0.35               | 8.63         |
| 8/25/2004 | 9:30  | 19.22         | 8.39          | 0.35               | 8.67         |
| 8/25/2004 | 10:00 | 19.28         | 8.41          | 0.35               | 8.73         |
| 8/25/2004 | 10:30 | 19.33         | 8.41          | 0.35               | 8.74         |
| 8/25/2004 | 11:00 | 19.33         | 8.40          | 0.35               | 8.72         |
| 8/25/2004 | 11:30 | 19.39         | 8.40          | 0.35               | 8.66         |
| 8/25/2004 | 12:00 | 19.39         | 8.41          | 0.35               | 8.75         |
| 8/25/2004 | 12:30 | 19.39         | 8.41          | 0.35               | 8.76         |
| 8/25/2004 | 13:00 | 19.44         | 8.41          | 0.35               | 8.72         |
| 8/25/2004 | 13:30 | 19.44         | 8.40          | 0.35               | 8.69         |
| 8/25/2004 | 14:00 | 19.44         | 8.40          | 0.35               | 8.73         |
| 8/25/2004 | 14:30 | 19.44         | 8.40          | 0.35               | 8.73         |
| 8/25/2004 | 15:00 | 19.39         | 8.39          | 0.35               | 8.67         |
| 8/25/2004 | 15:30 | 19.39         | 8.39          | 0.35               | 8.70         |
| 8/25/2004 | 16:00 | 19.28         | 8.39          | 0.35               | 8.70         |
| 8/25/2004 | 16:30 | 19.22         | 8.38          | 0.35               | 8.62         |
| 8/25/2004 | 17:00 | 19.22         | 8.36          | 0.35               | 8.51         |
| 8/25/2004 | 17:30 | 19.11         | 8.32          | 0.35               | 8.29         |
| 8/25/2004 | 18:00 | 19.11         | 8.32          | 0.35               | 8.22         |
| 8/25/2004 | 18:30 | 19.11         | 8.31          | 0.35               | 8.21         |
| 8/25/2004 | 19:00 | 19.11         | 8.30          | 0.35               | 8.19         |
| 8/25/2004 | 19:30 | 19.11         | 8.31          | 0.35               | 8.24         |
| 8/25/2004 | 20:00 | 19.17         | 8.31          | 0.35               | 8.19         |
| 8/25/2004 | 20:30 | 19.17         | 8.31          | 0.35               | 8.17         |
| 8/25/2004 | 21:00 | 19.22         | 8.33          | 0.35               | 8.29         |
| 8/25/2004 | 21:30 | 19.22         | 8.32          | 0.35               | 8.25         |
| 8/25/2004 | 22:00 | 19.22         | 8.31          | 0.35               | 8.22         |
| 8/25/2004 | 22:30 | 19.22         | 8.30          | 0.35               | 8.16         |
| 8/25/2004 | 23:00 | 19.22         | 8.31          | 0.35               | 8.17         |
| 8/25/2004 | 23:30 | 19.28         | 8.33          | 0.35               | 8.33         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/26/2004 | 0:00  | 19.28         | 8.33          | 0.35               | 8.34         |
| 8/26/2004 | 0:30  | 19.28         | 8.33          | 0.35               | 8.31         |
| 8/26/2004 | 1:00  | 19.33         | 8.32          | 0.35               | 8.25         |
| 8/26/2004 | 1:30  | 19.28         | 8.30          | 0.35               | 8.14         |
| 8/26/2004 | 2:00  | 19.28         | 8.28          | 0.35               | 8.06         |
| 8/26/2004 | 2:30  | 19.28         | 8.29          | 0.35               | 8.09         |
| 8/26/2004 | 3:00  | 19.33         | 8.28          | 0.35               | 8.06         |
| 8/26/2004 | 3:30  | 19.33         | 8.28          | 0.35               | 8.01         |
| 8/26/2004 | 4:00  | 19.39         | 8.29          | 0.35               | 8.10         |
| 8/26/2004 | 4:30  | 19.39         | 8.30          | 0.35               | 8.09         |
| 8/26/2004 | 5:00  | 19.44         | 8.30          | 0.35               | 8.11         |
| 8/26/2004 | 5:30  | 19.44         | 8.31          | 0.35               | 8.17         |
| 8/26/2004 | 6:00  | 19.44         | 8.30          | 0.35               | 8.12         |
| 8/26/2004 | 6:30  | 19.39         | 8.29          | 0.35               | 8.08         |
| 8/26/2004 | 7:00  | 19.39         | 8.28          | 0.35               | 8.01         |
| 8/26/2004 | 7:30  | 19.39         | 8.28          | 0.35               | 7.99         |
| 8/26/2004 | 8:00  | 19.39         | 8.27          | 0.35               | 8.00         |
| 8/26/2004 | 8:30  | 19.39         | 8.27          | 0.35               | 7.98         |
| 8/26/2004 | 9:00  | 19.44         | 8.27          | 0.35               | 7.96         |
| 8/26/2004 | 9:30  | 19.39         | 8.26          | 0.35               | 7.90         |
| 8/26/2004 | 10:00 | 19.44         | 8.26          | 0.35               | 7.89         |
| 8/26/2004 | 10:30 | 19.44         | 8.25          | 0.35               | 7.87         |
| 8/26/2004 | 11:00 | 19.44         | 8.26          | 0.35               | 7.94         |
| 8/26/2004 | 11:30 | 19.44         | 8.24          | 0.35               | 7.81         |
| 8/26/2004 | 12:00 | 19.44         | 8.25          | 0.35               | 7.87         |
| 8/26/2004 | 12:30 | 19.44         | 8.24          | 0.35               | 7.84         |
| 8/26/2004 | 13:00 | 19.56         | 8.26          | 0.35               | 7.96         |
| 8/26/2004 | 13:30 | 19.61         | 8.23          | 0.35               | 7.79         |
| 8/26/2004 | 14:00 | 19.56         | 8.21          | 0.35               | 7.66         |
| 8/26/2004 | 14:30 | 19.61         | 8.22          | 0.35               | 7.75         |
| 8/26/2004 | 15:00 | 19.67         | 8.21          | 0.35               | 7.72         |
| 8/26/2004 | 15:30 | 19.61         | 8.20          | 0.35               | 7.69         |
| 8/26/2004 | 16:00 | 19.56         | 8.20          | 0.35               | 7.63         |
| 8/26/2004 | 16:30 | 19.67         | 8.22          | 0.35               | 7.74         |
| 8/26/2004 | 17:00 | 19.89         | 8.26          | 0.35               | 7.90         |
| 8/26/2004 | 17:30 | 20.06         | 8.29          | 0.35               | 8.04         |
| 8/26/2004 | 18:00 | 20.22         | 8.33          | 0.35               | 8.23         |
| 8/26/2004 | 18:30 | 20.22         | 8.34          | 0.35               | 8.27         |
| 8/26/2004 | 19:00 | 20.33         | 8.36          | 0.35               | 8.39         |
| 8/26/2004 | 19:30 | 20.33         | 8.36          | 0.35               | 8.37         |
| 8/26/2004 | 20:00 | 20.28         | 8.34          | 0.35               | 8.27         |
| 8/26/2004 | 20:30 | 20.22         | 8.33          | 0.35               | 8.23         |
| 8/26/2004 | 21:00 | 20.17         | 8.31          | 0.35               | 8.17         |
| 8/26/2004 | 21:30 | 20.11         | 8.30          | 0.35               | 8.10         |
| 8/26/2004 | 22:00 | 20.06         | 8.29          | 0.35               | 8.07         |
| 8/26/2004 | 22:30 | 20.11         | 8.30          | 0.35               | 8.15         |
| 8/26/2004 | 23:00 | 20.17         | 8.31          | 0.35               | 8.20         |
| 8/26/2004 | 23:30 | 20.22         | 8.33          | 0.35               | 8.26         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/27/2004 | 0:00  | 20.22         | 8.31          | 0.35               | 8.12         |
| 8/27/2004 | 0:30  | 20.28         | 8.30          | 0.35               | 8.14         |
| 8/27/2004 | 1:00  | 20.28         | 8.30          | 0.35               | 8.09         |
| 8/27/2004 | 1:30  | 20.33         | 8.31          | 0.35               | 8.11         |
| 8/27/2004 | 2:00  | 20.39         | 8.32          | 0.35               | 8.11         |
| 8/27/2004 | 2:30  | 20.06         | 8.24          | 0.35               | 7.82         |
| 8/27/2004 | 3:00  | 20.17         | 8.27          | 0.35               | 7.90         |
| 8/27/2004 | 3:30  | 20.22         | 8.26          | 0.35               | 7.87         |
| 8/27/2004 | 4:00  | 20.39         | 8.30          | 0.35               | 8.01         |
| 8/27/2004 | 4:30  | 20.44         | 8.32          | 0.35               | 8.08         |
| 8/27/2004 | 5:00  | 20.50         | 8.33          | 0.35               | 8.13         |
| 8/27/2004 | 5:30  | 20.44         | 8.31          | 0.35               | 8.02         |
| 8/27/2004 | 6:00  | 20.33         | 8.28          | 0.35               | 7.86         |
| 8/27/2004 | 6:30  | 20.33         | 8.28          | 0.35               | 7.89         |
| 8/27/2004 | 7:00  | 20.33         | 8.26          | 0.35               | 7.84         |
| 8/27/2004 | 7:30  | 20.28         | 8.26          | 0.35               | 7.82         |
| 8/27/2004 | 8:00  | 20.33         | 8.26          | 0.35               | 7.77         |
| 8/27/2004 | 8:30  | 20.39         | 8.28          | 0.35               | 7.90         |
| 8/27/2004 | 9:00  | 20.50         | 8.29          | 0.35               | 7.96         |
| 8/27/2004 | 9:30  | 20.56         | 8.30          | 0.35               | 8.02         |
| 8/27/2004 | 10:00 | 20.72         | 8.32          | 0.35               | 8.13         |
| 8/27/2004 | 10:30 | 20.89         | 8.34          | 0.35               | 8.26         |
| 8/27/2004 | 11:00 | 21.11         | 8.38          | 0.35               | 8.40         |
| 8/27/2004 | 11:30 | 21.17         | 8.40          | 0.35               | 8.47         |
| 8/27/2004 | 12:00 | 21.11         | 8.35          | 0.35               | 8.29         |
| 8/27/2004 | 12:30 | 21.17         | 8.34          | 0.35               | 8.16         |
| 8/27/2004 | 13:00 | 21.17         | 8.33          | 0.35               | 8.14         |
| 8/27/2004 | 13:30 | 21.28         | 8.33          | 0.35               | 8.23         |
| 8/27/2004 | 14:00 | 21.28         | 8.33          | 0.35               | 8.19         |
| 8/27/2004 | 14:30 | 21.50         | 8.36          | 0.35               | 8.36         |
| 8/27/2004 | 15:00 | 21.67         | 8.37          | 0.35               | 8.40         |
| 8/27/2004 | 15:30 | 21.78         | 8.38          | 0.35               | 8.41         |
| 8/27/2004 | 16:00 | 21.78         | 8.38          | 0.35               | 8.48         |
| 8/27/2004 | 16:30 | 21.83         | 8.40          | 0.35               | 8.51         |
| 8/27/2004 | 17:00 | 21.78         | 8.38          | 0.35               | 8.33         |
| 8/27/2004 | 17:30 | 21.94         | 8.38          | 0.35               | 8.53         |
| 8/27/2004 | 18:00 | 21.83         | 8.38          | 0.35               | 8.43         |
| 8/27/2004 | 18:30 | 21.94         | 8.39          | 0.35               | 8.56         |
| 8/27/2004 | 19:00 | 21.83         | 8.39          | 0.35               | 8.50         |
| 8/27/2004 | 19:30 | 21.67         | 8.35          | 0.35               | 8.27         |
| 8/27/2004 | 20:00 | 21.61         | 8.34          | 0.35               | 8.22         |
| 8/27/2004 | 20:30 | 21.61         | 8.35          | 0.35               | 8.28         |
| 8/27/2004 | 21:00 | 21.56         | 8.34          | 0.35               | 8.25         |
| 8/27/2004 | 21:30 | 21.56         | 8.34          | 0.35               | 8.22         |
| 8/27/2004 | 22:00 | 21.56         | 8.34          | 0.35               | 8.19         |
| 8/27/2004 | 22:30 | 21.50         | 8.32          | 0.35               | 8.16         |
| 8/27/2004 | 23:00 | 21.50         | 8.31          | 0.35               | 8.09         |
| 8/27/2004 | 23:30 | 21.39         | 8.28          | 0.35               | 7.96         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/28/2004 | 0:00  | 21.33         | 8.27          | 0.35               | 7.82         |
| 8/28/2004 | 0:30  | 21.33         | 8.26          | 0.35               | 7.84         |
| 8/28/2004 | 1:00  | 21.28         | 8.25          | 0.35               | 7.77         |
| 8/28/2004 | 1:30  | 21.33         | 8.25          | 0.35               | 7.79         |
| 8/28/2004 | 2:00  | 21.33         | 8.26          | 0.35               | 7.82         |
| 8/28/2004 | 2:30  | 21.33         | 8.26          | 0.35               | 7.81         |
| 8/28/2004 | 3:00  | 21.39         | 8.27          | 0.35               | 7.76         |
| 8/28/2004 | 3:30  | 21.33         | 8.27          | 0.35               | 7.79         |
| 8/28/2004 | 4:00  | 21.33         | 8.26          | 0.35               | 7.77         |
| 8/28/2004 | 4:30  | 21.28         | 8.24          | 0.35               | 7.56         |
| 8/28/2004 | 5:00  | 21.22         | 8.23          | 0.35               | 7.58         |
| 8/28/2004 | 5:30  | 21.22         | 8.22          | 0.35               | 7.52         |
| 8/28/2004 | 6:00  | 21.22         | 8.22          | 0.35               | 7.48         |
| 8/28/2004 | 6:30  | 21.17         | 8.22          | 0.35               | 7.50         |
| 8/28/2004 | 7:00  | 21.22         | 8.22          | 0.35               | 7.52         |
| 8/28/2004 | 7:30  | 21.17         | 8.22          | 0.35               | 7.49         |
| 8/28/2004 | 8:00  | 21.17         | 8.22          | 0.35               | 7.50         |
| 8/28/2004 | 8:30  | 21.17         | 8.23          | 0.35               | 7.51         |
| 8/28/2004 | 9:00  | 21.22         | 8.26          | 0.35               | 7.64         |
| 8/28/2004 | 9:30  | 21.17         | 8.26          | 0.35               | 7.65         |
| 8/28/2004 | 10:00 | 21.22         | 8.27          | 0.35               | 7.68         |
| 8/28/2004 | 10:30 | 21.22         | 8.29          | 0.35               | 7.67         |
| 8/28/2004 | 11:00 | 21.22         | 8.30          | 0.35               | 7.73         |
| 8/28/2004 | 11:30 | 21.17         | 8.30          | 0.35               | 7.73         |
| 8/28/2004 | 12:00 | 21.11         | 8.27          | 0.35               | 7.58         |
| 8/28/2004 | 12:30 | 21.11         | 8.26          | 0.35               | 7.56         |
| 8/28/2004 | 13:00 | 21.11         | 8.25          | 0.35               | 7.42         |
| 8/28/2004 | 13:30 | 21.17         | 8.25          | 0.35               | 7.52         |
| 8/28/2004 | 14:00 | 21.17         | 8.25          | 0.35               | 7.46         |
| 8/28/2004 | 14:30 | 21.17         | 8.25          | 0.35               | 7.52         |
| 8/28/2004 | 15:00 | 21.17         | 8.26          | 0.35               | 7.59         |
| 8/28/2004 | 15:30 | 21.11         | 8.27          | 0.35               | 7.64         |
| 8/28/2004 | 16:00 | 21.06         | 8.25          | 0.35               | 7.65         |
| 8/28/2004 | 16:30 | 21.11         | 8.26          | 0.35               | 7.58         |
| 8/28/2004 | 17:00 | 21.06         | 8.26          | 0.35               | 7.61         |
| 8/28/2004 | 17:30 | 21.06         | 8.25          | 0.35               | 7.54         |
| 8/28/2004 | 18:00 | 21.06         | 8.26          | 0.35               | 7.58         |
| 8/28/2004 | 18:30 | 21.06         | 8.25          | 0.35               | 7.54         |
| 8/28/2004 | 19:00 | 21.00         | 8.24          | 0.35               | 7.47         |
| 8/28/2004 | 19:30 | 21.00         | 8.24          | 0.35               | 7.48         |
| 8/28/2004 | 20:00 | 20.94         | 8.24          | 0.35               | 7.44         |
| 8/28/2004 | 20:30 | 20.94         | 8.23          | 0.35               | 7.42         |
| 8/28/2004 | 21:00 | 20.94         | 8.22          | 0.35               | 7.46         |
| 8/28/2004 | 21:30 | 20.94         | 8.21          | 0.35               | 7.28         |
| 8/28/2004 | 22:00 | 20.89         | 8.22          | 0.35               | 7.50         |
| 8/28/2004 | 22:30 | 20.89         | 8.23          | 0.35               | 7.61         |
| 8/28/2004 | 23:00 | 20.89         | 8.23          | 0.35               | 7.57         |
| 8/28/2004 | 23:30 | 20.83         | 8.22          | 0.35               | 7.53         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/29/2004 | 0:00  | 20.83         | 8.21          | 0.35               | 7.48         |
| 8/29/2004 | 0:30  | 20.78         | 8.20          | 0.35               | 7.40         |
| 8/29/2004 | 1:00  | 20.78         | 8.20          | 0.35               | 7.39         |
| 8/29/2004 | 1:30  | 20.78         | 8.19          | 0.35               | 7.35         |
| 8/29/2004 | 2:00  | 20.78         | 8.20          | 0.35               | 7.39         |
| 8/29/2004 | 2:30  | 20.78         | 8.20          | 0.35               | 7.34         |
| 8/29/2004 | 3:00  | 20.72         | 8.19          | 0.35               | 7.29         |
| 8/29/2004 | 3:30  | 20.72         | 8.18          | 0.35               | 7.29         |
| 8/29/2004 | 4:00  | 20.72         | 8.18          | 0.35               | 7.26         |
| 8/29/2004 | 4:30  | 20.72         | 8.19          | 0.35               | 7.44         |
| 8/29/2004 | 5:00  | 20.67         | 8.20          | 0.35               | 7.41         |
| 8/29/2004 | 5:30  | 20.67         | 8.20          | 0.35               | 7.44         |
| 8/29/2004 | 6:00  | 20.61         | 8.20          | 0.35               | 7.51         |
| 8/29/2004 | 6:30  | 20.56         | 8.20          | 0.35               | 7.47         |
| 8/29/2004 | 7:00  | 20.56         | 8.19          | 0.35               | 7.42         |
| 8/29/2004 | 7:30  | 20.56         | 8.20          | 0.35               | 7.45         |
| 8/29/2004 | 8:00  | 20.50         | 8.20          | 0.35               | 7.46         |
| 8/29/2004 | 8:30  | 20.50         | 8.20          | 0.35               | 7.42         |
| 8/29/2004 | 9:00  | 20.50         | 8.20          | 0.35               | 7.43         |
| 8/29/2004 | 9:30  | 20.50         | 8.20          | 0.35               | 7.45         |
| 8/29/2004 | 10:00 | 20.50         | 8.19          | 0.35               | 7.46         |
| 8/29/2004 | 10:30 | 20.50         | 8.19          | 0.35               | 7.37         |
| 8/29/2004 | 11:00 | 20.50         | 8.17          | 0.35               | 7.36         |
| 8/29/2004 | 11:30 | 20.44         | 8.17          | 0.35               | 7.39         |
| 8/29/2004 | 12:00 | 20.33         | 8.14          | 0.35               | 7.10         |
| 8/29/2004 | 12:30 | 20.28         | 8.12          | 0.35               | 7.08         |
| 8/29/2004 | 13:00 | 20.22         | 8.12          | 0.35               | 6.97         |
| 8/29/2004 | 13:30 | 20.11         | 8.11          | 0.35               | 7.00         |
| 8/29/2004 | 14:00 | 20.11         | 8.12          | 0.35               | 7.00         |
| 8/29/2004 | 14:30 | 20.00         | 8.12          | 0.35               | 7.05         |
| 8/29/2004 | 15:00 | 19.94         | 8.13          | 0.35               | 7.10         |
| 8/29/2004 | 15:30 | 19.94         | 8.14          | 0.35               | 7.09         |
| 8/29/2004 | 16:00 | 19.94         | 8.15          | 0.35               | 7.27         |
| 8/29/2004 | 16:30 | 19.83         | 8.15          | 0.35               | 7.30         |
| 8/29/2004 | 17:00 | 19.83         | 8.16          | 0.35               | 7.32         |
| 8/29/2004 | 17:30 | 19.78         | 8.15          | 0.35               | 7.37         |
| 8/29/2004 | 18:00 | 19.78         | 8.15          | 0.35               | 7.51         |
| 8/29/2004 | 18:30 | 19.72         | 8.15          | 0.35               | 7.56         |
| 8/29/2004 | 19:00 | 19.67         | 8.15          | 0.35               | 7.57         |
| 8/29/2004 | 19:30 | 19.56         | 8.15          | 0.35               | 7.54         |
| 8/29/2004 | 20:00 | 19.50         | 8.13          | 0.35               | 7.45         |
| 8/29/2004 | 20:30 | 19.44         | 8.14          | 0.35               | 7.48         |
| 8/29/2004 | 21:00 | 19.44         | 8.15          | 0.35               | 7.53         |
| 8/29/2004 | 21:30 | 19.39         | 8.15          | 0.35               | 7.49         |
| 8/29/2004 | 22:00 | 19.39         | 8.15          | 0.35               | 7.55         |
| 8/29/2004 | 22:30 | 19.33         | 8.16          | 0.35               | 7.59         |
| 8/29/2004 | 23:00 | 19.33         | 8.16          | 0.35               | 7.64         |
| 8/29/2004 | 23:30 | 19.33         | 8.18          | 0.35               | 7.73         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/30/2004 | 0:00  | 19.28         | 8.19          | 0.35               | 7.77         |
| 8/30/2004 | 0:30  | 19.28         | 8.19          | 0.35               | 7.78         |
| 8/30/2004 | 1:00  | 19.22         | 8.19          | 0.35               | 7.74         |
| 8/30/2004 | 1:30  | 19.17         | 8.19          | 0.35               | 7.74         |
| 8/30/2004 | 2:00  | 19.17         | 8.19          | 0.35               | 7.73         |
| 8/30/2004 | 2:30  | 19.11         | 8.18          | 0.35               | 7.69         |
| 8/30/2004 | 3:00  | 19.11         | 8.19          | 0.35               | 7.73         |
| 8/30/2004 | 3:30  | 19.11         | 8.19          | 0.35               | 7.69         |
| 8/30/2004 | 4:00  | 19.06         | 8.18          | 0.35               | 7.68         |
| 8/30/2004 | 4:30  | 19.00         | 8.17          | 0.35               | 7.59         |
| 8/30/2004 | 5:00  | 19.00         | 8.17          | 0.35               | 7.65         |
| 8/30/2004 | 5:30  | 18.94         | 8.17          | 0.35               | 7.64         |
| 8/30/2004 | 6:00  | 18.94         | 8.16          | 0.35               | 7.61         |
| 8/30/2004 | 6:30  | 18.89         | 8.16          | 0.35               | 7.59         |
| 8/30/2004 | 7:00  | 18.83         | 8.16          | 0.34               | 7.54         |
| 8/30/2004 | 7:30  | 18.78         | 8.16          | 0.35               | 7.43         |
| 8/30/2004 | 8:00  | 18.78         | 8.16          | 0.35               | 7.48         |
| 8/30/2004 | 8:30  | 18.72         | 8.16          | 0.34               | 7.44         |
| 8/30/2004 | 9:00  | 18.72         | 8.16          | 0.34               | 7.49         |
| 8/30/2004 | 9:30  | 18.67         | 8.16          | 0.34               | 7.48         |
| 8/30/2004 | 10:00 | 18.61         | 8.16          | 0.34               | 7.47         |
| 8/30/2004 | 10:30 | 18.61         | 8.17          | 0.34               | 7.58         |
| 8/30/2004 | 11:00 | 18.56         | 8.17          | 0.34               | 7.63         |
| 8/30/2004 | 11:30 | 18.56         | 8.19          | 0.34               | 7.67         |
| 8/30/2004 | 12:00 | 18.61         | 8.19          | 0.34               | 7.67         |
| 8/30/2004 | 12:30 | 18.61         | 8.20          | 0.35               | 7.75         |
| 8/30/2004 | 13:00 | 18.72         | 8.22          | 0.35               | 7.82         |
| 8/30/2004 | 13:30 | 18.83         | 8.23          | 0.35               | 7.88         |
| 8/30/2004 | 14:00 | 18.94         | 8.25          | 0.35               | 7.97         |
| 8/30/2004 | 14:30 | 19.00         | 8.25          | 0.35               | 7.97         |
| 8/30/2004 | 15:00 | 19.11         | 8.24          | 0.35               | 7.93         |
| 8/30/2004 | 15:30 | 19.22         | 8.24          | 0.35               | 7.88         |
| 8/30/2004 | 16:00 | 19.22         | 8.24          | 0.35               | 7.89         |
| 8/30/2004 | 16:30 | 19.06         | 8.23          | 0.35               | 7.86         |
| 8/30/2004 | 17:00 | 19.11         | 8.24          | 0.34               | 7.84         |
| 8/30/2004 | 17:30 | 19.00         | 8.24          | 0.34               | 8.06         |
| 8/30/2004 | 18:00 | 19.00         | 8.24          | 0.34               | 7.98         |
| 8/30/2004 | 18:30 | 18.94         | 8.25          | 0.35               | 7.94         |
| 8/30/2004 | 19:00 | 18.83         | 8.23          | 0.34               | 7.94         |
| 8/30/2004 | 19:30 | 18.72         | 8.22          | 0.34               | 8.01         |
| 8/30/2004 | 20:00 | 18.67         | 8.22          | 0.34               | 7.99         |
| 8/30/2004 | 20:30 | 18.72         | 8.23          | 0.35               | 8.04         |
| 8/30/2004 | 21:00 | 18.78         | 8.24          | 0.35               | 8.10         |
| 8/30/2004 | 21:30 | 18.78         | 8.25          | 0.35               | 8.17         |
| 8/30/2004 | 22:00 | 18.83         | 8.27          | 0.35               | 8.24         |
| 8/30/2004 | 22:30 | 18.83         | 8.28          | 0.35               | 8.22         |
| 8/30/2004 | 23:00 | 18.78         | 8.28          | 0.35               | 8.32         |
| 8/30/2004 | 23:30 | 18.78         | 8.28          | 0.35               | 8.29         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of August 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 8/31/2004 | 0:00  | 18.67         | 8.27          | 0.35               | 8.26         |
| 8/31/2004 | 0:30  | 18.56         | 8.26          | 0.35               | 8.27         |
| 8/31/2004 | 1:00  | 18.56         | 8.26          | 0.35               | 8.17         |
| 8/31/2004 | 1:30  | 18.44         | 8.25          | 0.34               | 8.22         |
| 8/31/2004 | 2:00  | 18.44         | 8.25          | 0.34               | 8.16         |
| 8/31/2004 | 2:30  | 18.39         | 8.25          | 0.34               | 8.23         |
| 8/31/2004 | 3:00  | 18.33         | 8.25          | 0.34               | 8.17         |
| 8/31/2004 | 3:30  | 18.28         | 8.25          | 0.34               | 8.22         |
| 8/31/2004 | 4:00  | 18.33         | 8.26          | 0.34               | 8.21         |
| 8/31/2004 | 4:30  | 18.39         | 8.28          | 0.34               | 8.31         |
| 8/31/2004 | 5:00  | 18.39         | 8.29          | 0.34               | 8.33         |
| 8/31/2004 | 5:30  | 18.33         | 8.28          | 0.34               | 8.25         |
| 8/31/2004 | 6:00  | 18.33         | 8.28          | 0.35               | 8.32         |
| 8/31/2004 | 6:30  | 18.28         | 8.29          | 0.34               | 8.41         |
| 8/31/2004 | 7:00  | 18.28         | 8.29          | 0.34               | 8.44         |
| 8/31/2004 | 7:30  | 18.28         | 8.28          | 0.34               | 8.41         |
| 8/31/2004 | 8:00  | 18.28         | 8.28          | 0.34               | 8.36         |
| 8/31/2004 | 8:30  | 18.33         | 8.28          | 0.34               | 8.37         |
| 8/31/2004 | 9:00  | 18.39         | 8.30          | 0.34               | 8.48         |
| 8/31/2004 | 9:30  | 18.39         | 8.31          | 0.34               | 8.47         |
| 8/31/2004 | 10:00 | 18.39         | 8.32          | 0.34               | 8.51         |
| 8/31/2004 | 10:30 | 18.50         | 8.34          | 0.34               | 8.65         |
| 8/31/2004 | 11:00 | 18.56         | 8.35          | 0.34               | 8.68         |
| 8/31/2004 | 11:30 | 18.67         | 8.36          | 0.34               | 8.76         |
| 8/31/2004 | 12:00 | 18.78         | 8.38          | 0.34               | 8.83         |
| 8/31/2004 | 12:30 | 18.72         | 8.37          | 0.34               | 8.89         |
| 8/31/2004 | 13:00 | 18.67         | 8.36          | 0.34               | 8.85         |
| 8/31/2004 | 13:30 | 18.67         | 8.36          | 0.34               | 8.80         |
| 8/31/2004 | 14:00 | 18.56         | 8.35          | 0.34               | 8.75         |
| 8/31/2004 | 14:30 | 18.56         | 8.35          | 0.34               | 8.74         |
| 8/31/2004 | 15:00 | 18.44         | 8.34          | 0.34               | 8.71         |
| 8/31/2004 | 15:30 | 18.39         | 8.33          | 0.34               | 8.68         |
| 8/31/2004 | 16:00 | 18.39         | 8.33          | 0.34               | 8.65         |
| 8/31/2004 | 16:30 | 18.44         | 8.33          | 0.34               | 8.70         |
| 8/31/2004 | 17:00 | 18.44         | 8.34          | 0.34               | 8.74         |
| 8/31/2004 | 17:30 | 18.39         | 8.32          | 0.34               | 8.65         |
| 8/31/2004 | 18:00 | 18.39         | 8.32          | 0.34               | 8.72         |
| 8/31/2004 | 18:30 | 18.33         | 8.32          | 0.34               | 8.66         |
| 8/31/2004 | 19:00 | 18.33         | 8.32          | 0.34               | 8.71         |
| 8/31/2004 | 19:30 | 18.33         | 8.32          | 0.34               | 8.66         |
| 8/31/2004 | 20:00 | 18.33         | 8.31          | 0.35               | 8.67         |
| 8/31/2004 | 20:30 | 18.33         | 8.32          | 0.34               | 8.72         |
| 8/31/2004 | 21:00 | 18.28         | 8.31          | 0.34               | 8.77         |
| 8/31/2004 | 21:30 | 18.22         | 8.31          | 0.34               | 8.73         |
| 8/31/2004 | 22:00 | 18.22         | 8.31          | 0.34               | 8.73         |
| 8/31/2004 | 22:30 | 18.22         | 8.31          | 0.34               | 8.74         |
| 8/31/2004 | 23:00 | 18.17         | 8.31          | 0.34               | 8.73         |
| 8/31/2004 | 23:30 | 18.22         | 8.31          | 0.34               | 8.69         |

## **APPENDIX D**

### **Agency Correspondence**

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: SEPTEMBER 1, 2004

Pre-Sampling Data:

Time: 5:00 pm Barometer: 30.14 Air Temp: 17.8 °C Wind Speed: FRM NW @ 5-7

Cloud Cover: Mostly Cloudy

Precipitation within Last 24 Hours: NONE

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.27 volts

YSI Calibration Time: 5:05 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.89 METERS

**YSI 51b Sample Data**

| Depth                | Time           | pH           | D.O.        |
|----------------------|----------------|--------------|-------------|
| 100 mm below surface | <u>5:07 pm</u> | <u>11.15</u> | <u>20.2</u> |
| 1 meter              | <u>5:09 pm</u> | <u>10.10</u> | <u>19.4</u> |
| 2 meters             | <u>5:11 pm</u> | <u>8.40</u>  | <u>18.7</u> |
| 3 meters             | <u>5:13 pm</u> | <u>8.05</u>  | <u>18.2</u> |
| 4 meters             | <u>5:15 pm</u> | <u>7.85</u>  | <u>18.0</u> |
| 5 meters             | <u>5:17 pm</u> | <u>7.45</u>  | <u>17.8</u> |
| 6 meters             | <u>5:19 pm</u> | <u>7.20</u>  | <u>17.7</u> |
| 7 meters             | <u>5:21 pm</u> | <u>6.70</u>  | <u>17.3</u> |
| 100 mm above bottom  | <u>5:23 pm</u> | <u>6.10</u>  | <u>17.2</u> |

**Hach D.O. Sample Data**

| Depth                | Time           | pH           | D.O.        |
|----------------------|----------------|--------------|-------------|
| 100 mm below surface | <u>5:27 pm</u> | <u>10-11</u> | <u>20.5</u> |

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Steve R. Offill

# RESERVOIR SAMPLING LOG

**2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325**

Date: SEPTEMBER 10, 2004

**Pre-Sampling Data:**

Time: 2:30pm Barometer: 30.19 Air Temp: 22.8 °C Wind Speed: FRM SE @ 8-15

Cloud Cover: CLEAR

Precipitation within Last 24 Hours: NONE

**Equipment Calibration:**

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.27 volts

YSI Calibration Time: 2:45pm Method: AIR (Air, Winkler Titration, Saturated Water)

**Sampling Depth Profile:**

Location #: 1 Measured Depth to Bottom: 7.71 METERS

**YSI 51b Sample Data**

| Depth                | Time           | D.O. (mg/l) | Temp (°C)   |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>2:50 pm</u> | <u>7.75</u> | <u>20.2</u> |
| 1 meter              | <u>2:52 pm</u> | <u>7.35</u> | <u>19.9</u> |
| 2 meters             | <u>2:54 pm</u> | <u>7.25</u> | <u>19.6</u> |
| 3 meters             | <u>2:56 pm</u> | <u>6.85</u> | <u>19.1</u> |
| 4 meters             | <u>2:58 pm</u> | <u>6.45</u> | <u>19.0</u> |
| 5 meters             | <u>3:00 pm</u> | <u>6.35</u> | <u>18.9</u> |
| 6 meters             | <u>3:02 pm</u> | <u>6.25</u> | <u>18.8</u> |
| 7 meters             | <u>3:04 pm</u> | <u>6.30</u> | <u>18.7</u> |
| 100 mm above bottom  | <u>3:06 pm</u> | <u>6.35</u> | <u>18.5</u> |

**Hach D.O. Sample Data**

| Depth                | Time           | D.O. (mg/l) | Temp (°C)   |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>3:10 pm</u> | <u>7-8</u>  | <u>21.0</u> |

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Steve R. Duff

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: SEPTEMBER 16, 2004

Pre-Sampling Data:

Time: 2:20 pm Barometer: 30.02 Air Temp: 20.3 °C Wind Speed: Frm SW @ 12-15

Cloud Cover: 20% Clouds

Precipitation within Last 24 Hours: NONE

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.25 volts

YSI Calibration Time: 4:00 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.74 METERS

**YSI 51b Sample Data**

|                      |                |             |             |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>4:05 pm</u> | <u>8.00</u> | <u>21.2</u> |
| 1 meter              | <u>4:07 pm</u> | <u>7.90</u> | <u>21.1</u> |
| 2 meters             | <u>4:09 pm</u> | <u>7.90</u> | <u>21.0</u> |
| 3 meters             | <u>4:11 pm</u> | <u>7.85</u> | <u>21.0</u> |
| 4 meters             | <u>4:13 pm</u> | <u>7.65</u> | <u>20.9</u> |
| 5 meters             | <u>4:15 pm</u> | <u>7.35</u> | <u>20.8</u> |
| 6 meters             | <u>4:17 pm</u> | <u>7.35</u> | <u>20.8</u> |
| 7 meters             | <u>4:19 pm</u> | <u>7.20</u> | <u>20.7</u> |
| 100 mm above bottom  | <u>4:21 pm</u> | <u>7.15</u> | <u>20.5</u> |

**Hach D.O. Sample Data**

|                      |                |          |             |
|----------------------|----------------|----------|-------------|
| 100 mm below surface | <u>4:26 pm</u> | <u>8</u> | <u>21.3</u> |
|----------------------|----------------|----------|-------------|

Comments: \_\_\_\_\_

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Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Stan R. Daffin

# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: SEPTEMBER 21, 2004

Pre-Sampling Data:

Time: 4:00pm Barometer: 30.12 Air Temp: 28.3 °C Wind Speed: Frm S @ 8-10

Cloud Cover: CLEAR

Precipitation within Last 24 Hours: NONE

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.25 volts

YSI Calibration Time: 4:15 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.78 METERS

**YSI 51b Sample Data**

| Depth                | Time    | D.O. (mg/l) | T (°C) |
|----------------------|---------|-------------|--------|
| 100 mm below surface | 4:21 pm | 11.90       | 21.1   |
| 1 meter              | 4:23 pm | 12.50       | 20.5   |
| 2 meters             | 4:25 pm | 11.00       | 19.4   |
| 3 meters             | 4:27 pm | 7.85        | 18.8   |
| 4 meters             | 4:29 pm | 6.80        | 18.0   |
| 5 meters             | 4:31 pm | 7.05        | 18.0   |
| 6 meters             | 4:33 pm | 6.40        | 17.9   |
| 7 meters             | 4:35 pm | 6.50        | 17.8   |
| 100 mm above bottom  | 4:37 pm | 6.35        | 17.8   |

**Hach D.O. Sample Data**

| Depth                | Time   | D.O. (mg/l) | T (°C) |
|----------------------|--------|-------------|--------|
| 100 mm below surface | 4:43pm | 11-12       | 21.3   |

Comments: \_\_\_\_\_

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# RESERVOIR SAMPLING LOG

2004 Water Quality Study - Oconto Falls (Upper) Hydroelectric Project - FERC #2325

Date: SEPTEMBER 27, 2004

Pre-Sampling Data:

Time: 2:30 pm Barometer: 30.04 Air Temp: 23.8 °C Wind Speed: From SE @ 5-10

Cloud Cover: Mostly Cloudy

Precipitation within Last 24 Hours: NONE

Equipment Calibration:

YSI D.O. Membrane Changed in Last 24 Hours?  Yes  No If Yes, Time Changed: \_\_\_\_\_

YSI Battery Status: 6.25 volts

YSI Calibration Time: 2:35 pm Method: AIR (Air, Winkler Titration, Saturated Water)

Sampling Depth Profile:

Location #: 1 Measured Depth to Bottom: 7.81 METERS

**YSI 51b Sample Data**

| Depth                | Time           | D.O.        | T           |
|----------------------|----------------|-------------|-------------|
| 100 mm below surface | <u>2:40 pm</u> | <u>9.95</u> | <u>19.3</u> |
| 1 meter              | <u>2:42 pm</u> | <u>9.90</u> | <u>19.2</u> |
| 2 meters             | <u>2:44 pm</u> | <u>9.45</u> | <u>18.9</u> |
| 3 meters             | <u>2:46 pm</u> | <u>8.95</u> | <u>18.3</u> |
| 4 meters             | <u>2:48 pm</u> | <u>7.45</u> | <u>17.7</u> |
| 5 meters             | <u>2:50 pm</u> | <u>6.95</u> | <u>17.4</u> |
| 6 meters             | <u>2:52 pm</u> | <u>6.35</u> | <u>17.2</u> |
| 7 meters             | <u>2:54 pm</u> | <u>6.25</u> | <u>17.0</u> |
| 100 mm above bottom  | <u>2:56 pm</u> | <u>6.45</u> | <u>17.0</u> |

**Hach D.O. Sample Data**

| Depth                | Time          | D.O.        | T           |
|----------------------|---------------|-------------|-------------|
| 100 mm below surface | <u>3:00pm</u> | <u>9-10</u> | <u>19.5</u> |

Comments: \_\_\_\_\_

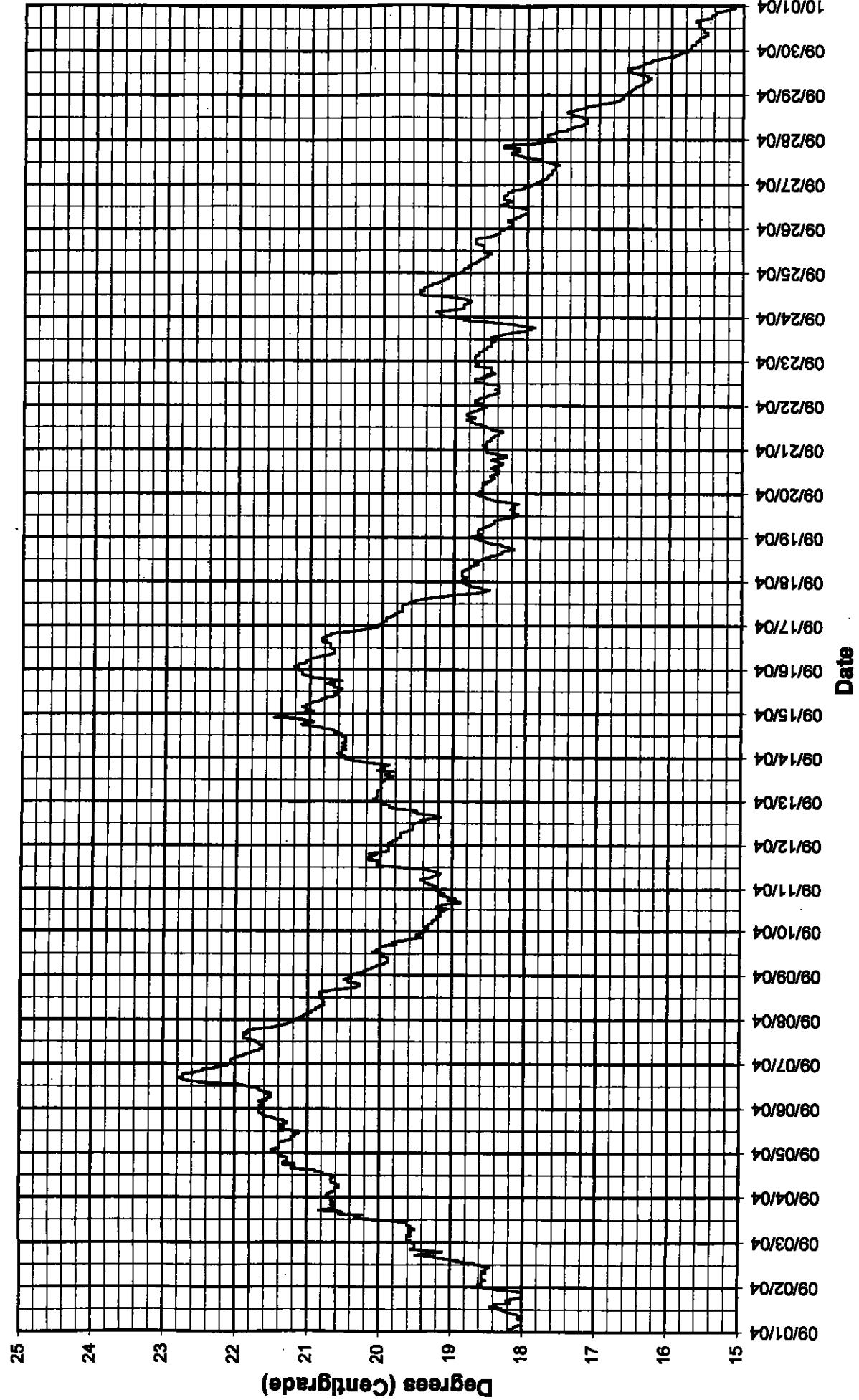
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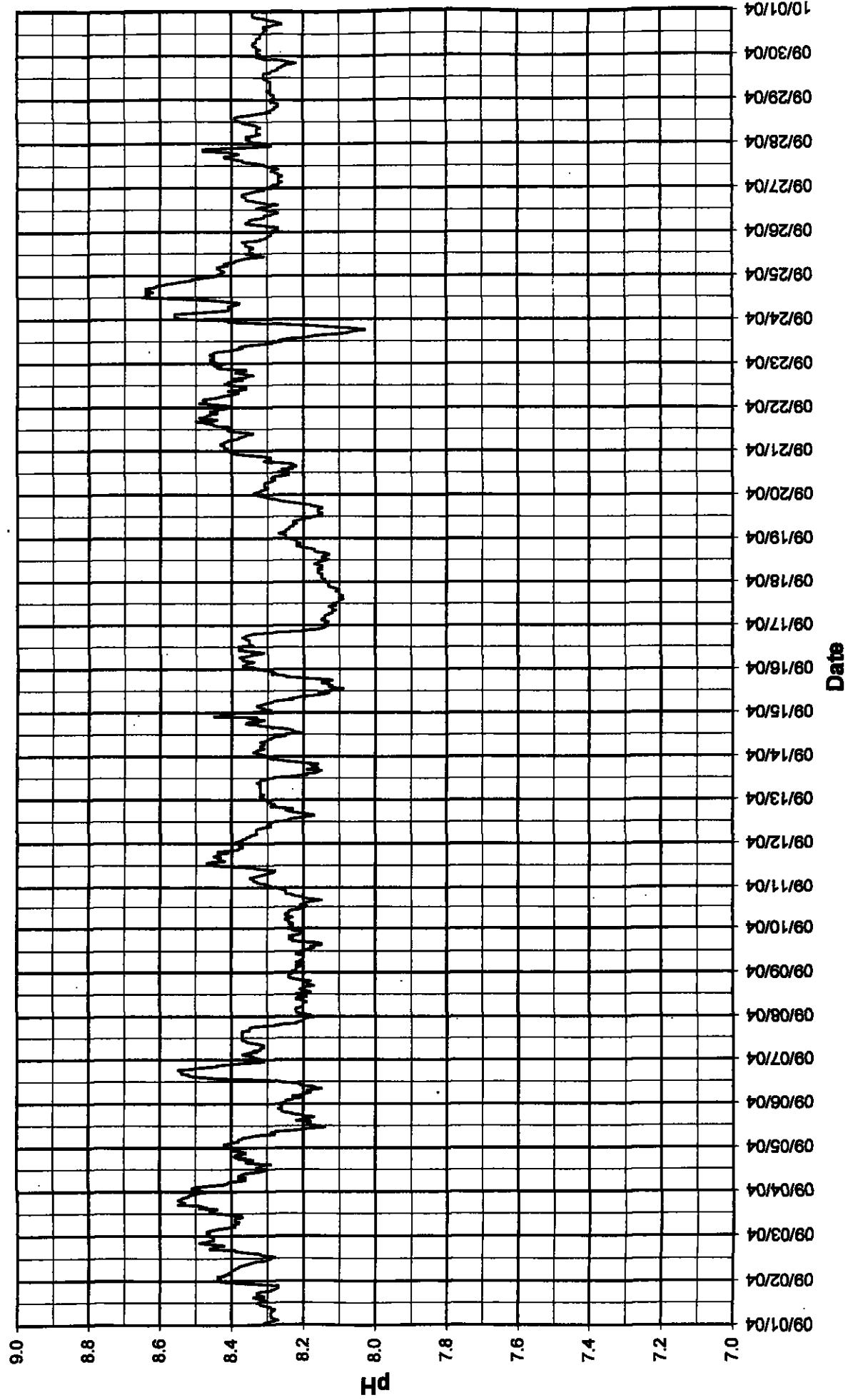
Power Production Records for Previous 24 Hours Recovered:  Upper Dam  Lower Dam

Performed By: Stan R. Daff

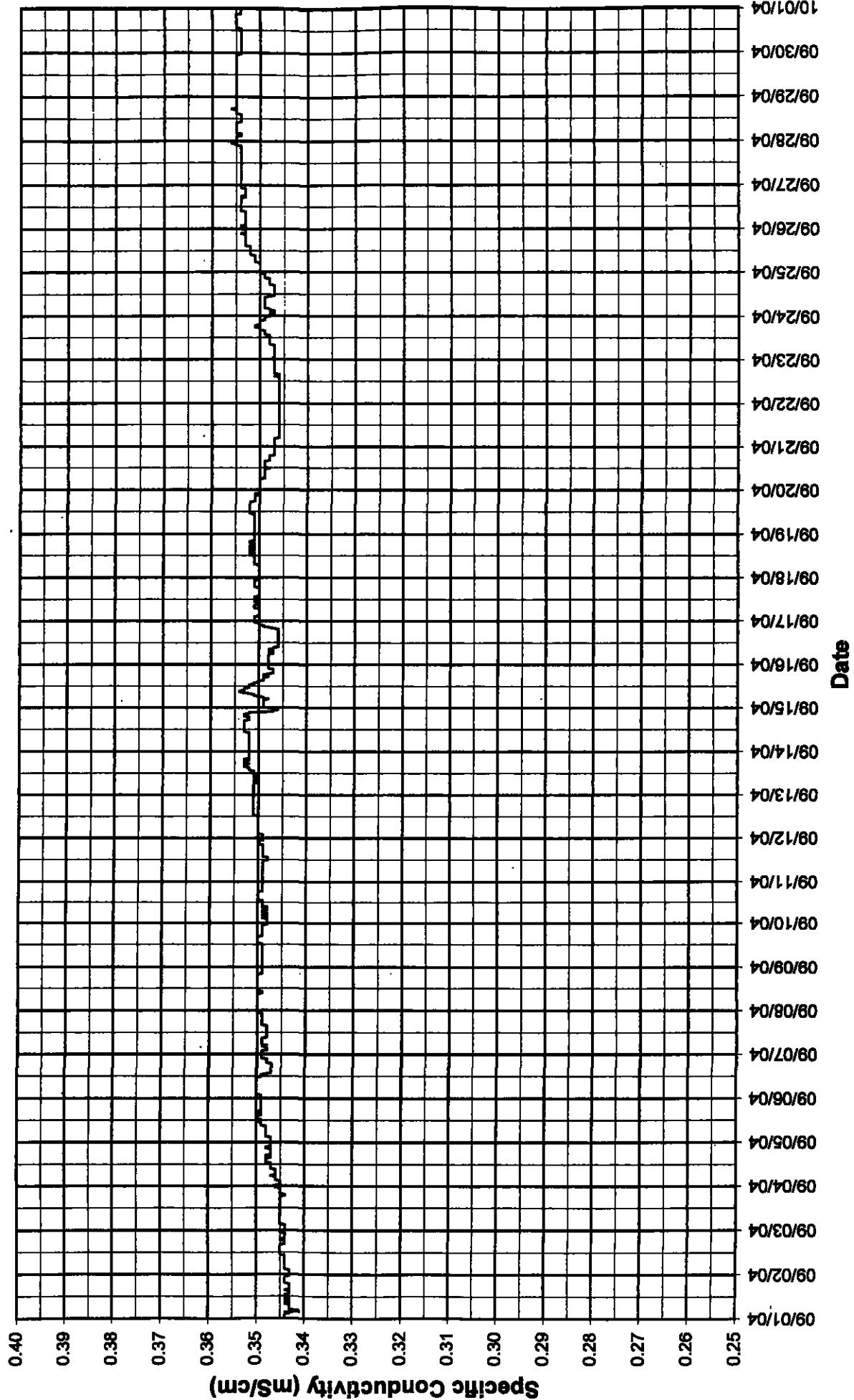
**2004 Water Quality Study  
Tailwater Temperature Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



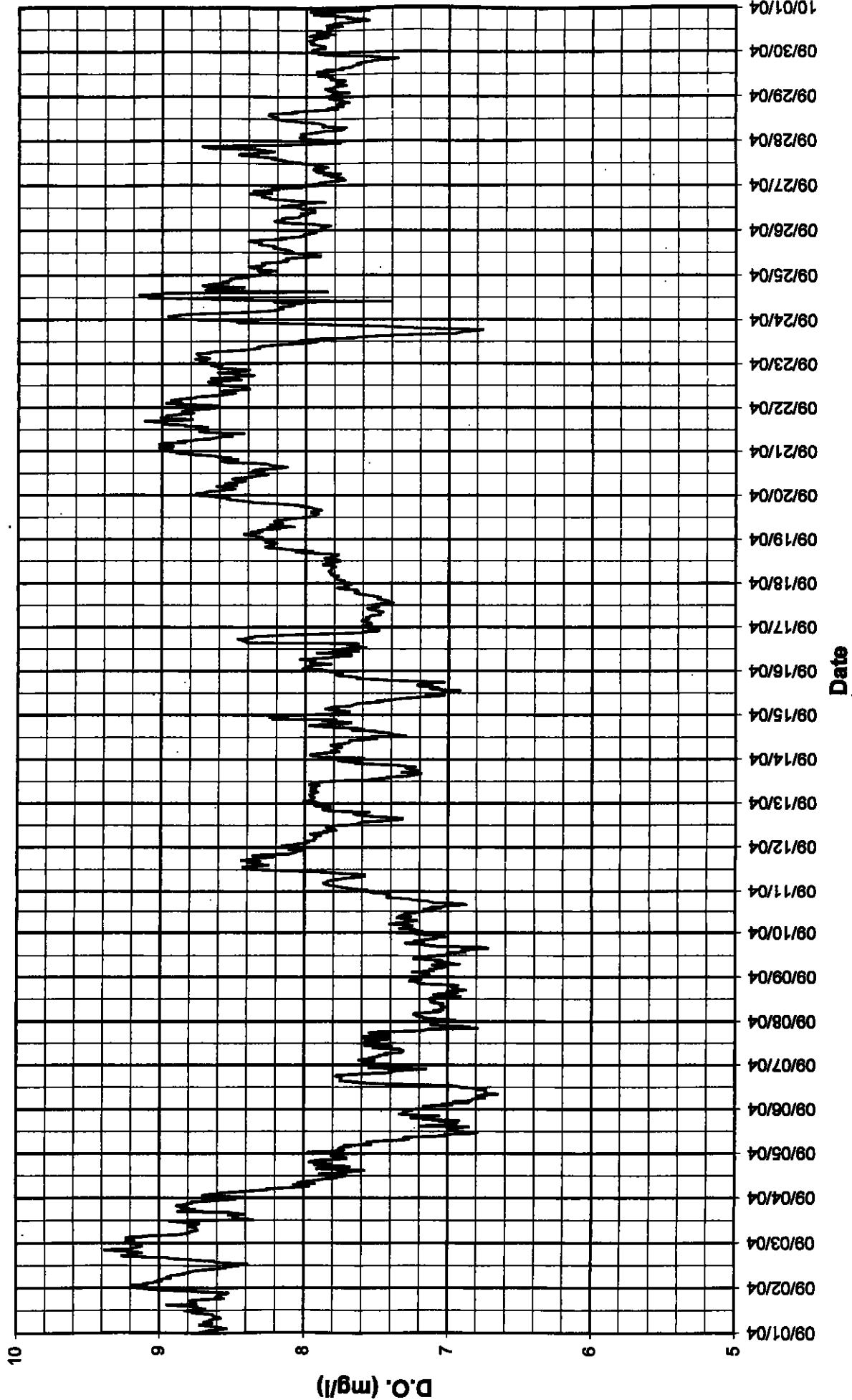
**2004 Water Quality Study  
Tailwater pH Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



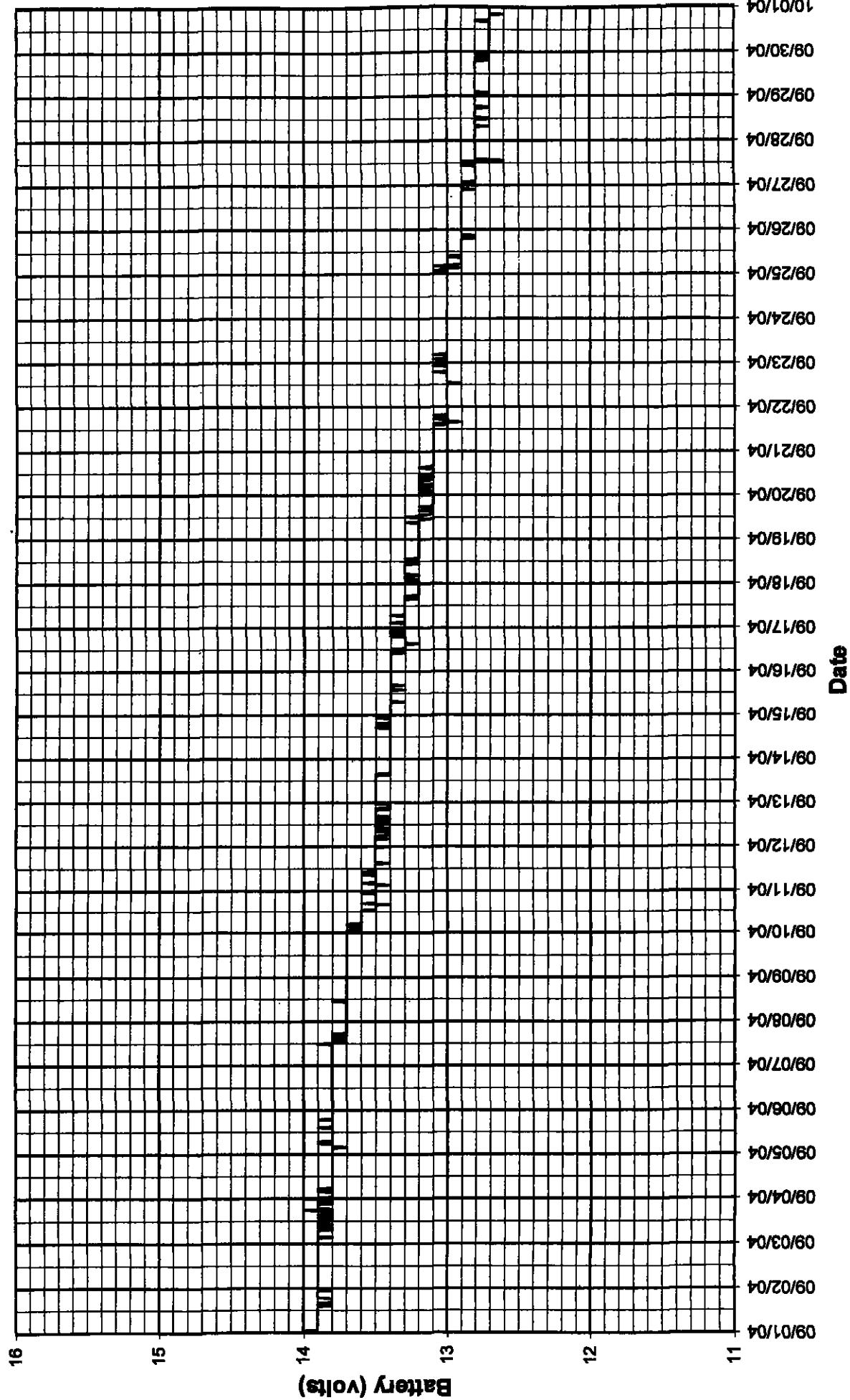
**2004 Water Quality Study  
Tailwater Specific Conductivity Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study  
Tailwater Dissolved Oxygen Sampling (mg/l)  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study  
Tailwater Hydrolab Recorder Battery Sampling  
Oconto Falls (Upper) - FERC Project No. 2325**



**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 9/1/2004 | 0:00  | 18.17         | 8.31          | 0.34               | 8.72         |
| 9/1/2004 | 0:30  | 18.17         | 8.31          | 0.34               | 8.68         |
| 9/1/2004 | 1:00  | 18.17         | 8.30          | 0.34               | 8.65         |
| 9/1/2004 | 1:30  | 18.11         | 8.29          | 0.34               | 8.57         |
| 9/1/2004 | 2:00  | 18.11         | 8.27          | 0.34               | 8.53         |
| 9/1/2004 | 2:30  | 18.06         | 8.28          | 0.34               | 8.57         |
| 9/1/2004 | 3:00  | 18.06         | 8.28          | 0.34               | 8.62         |
| 9/1/2004 | 3:30  | 18.00         | 8.29          | 0.34               | 8.65         |
| 9/1/2004 | 4:00  | 18.00         | 8.29          | 0.34               | 8.72         |
| 9/1/2004 | 4:30  | 18.00         | 8.29          | 0.34               | 8.65         |
| 9/1/2004 | 5:00  | 18.00         | 8.29          | 0.34               | 8.63         |
| 9/1/2004 | 5:30  | 18.00         | 8.29          | 0.34               | 8.69         |
| 9/1/2004 | 6:00  | 18.00         | 8.29          | 0.34               | 8.65         |
| 9/1/2004 | 6:30  | 18.06         | 8.29          | 0.34               | 8.65         |
| 9/1/2004 | 7:00  | 18.06         | 8.29          | 0.34               | 8.62         |
| 9/1/2004 | 7:30  | 18.06         | 8.28          | 0.34               | 8.57         |
| 9/1/2004 | 8:00  | 18.00         | 8.28          | 0.34               | 8.58         |
| 9/1/2004 | 8:30  | 18.06         | 8.29          | 0.34               | 8.62         |
| 9/1/2004 | 9:00  | 18.06         | 8.29          | 0.34               | 8.62         |
| 9/1/2004 | 9:30  | 18.11         | 8.30          | 0.34               | 8.63         |
| 9/1/2004 | 10:00 | 18.17         | 8.31          | 0.34               | 8.68         |
| 9/1/2004 | 10:30 | 18.22         | 8.32          | 0.34               | 8.77         |
| 9/1/2004 | 11:00 | 18.22         | 8.32          | 0.34               | 8.70         |
| 9/1/2004 | 11:30 | 18.28         | 8.33          | 0.34               | 8.82         |
| 9/1/2004 | 12:00 | 18.33         | 8.32          | 0.34               | 8.74         |
| 9/1/2004 | 12:30 | 18.28         | 8.30          | 0.34               | 8.68         |
| 9/1/2004 | 13:00 | 18.44         | 8.32          | 0.34               | 8.76         |
| 9/1/2004 | 13:30 | 18.39         | 8.31          | 0.34               | 8.73         |
| 9/1/2004 | 14:00 | 18.39         | 8.33          | 0.34               | 8.81         |
| 9/1/2004 | 14:30 | 18.39         | 8.34          | 0.34               | 8.95         |
| 9/1/2004 | 15:00 | 18.17         | 8.31          | 0.34               | 8.74         |
| 9/1/2004 | 15:30 | 18.17         | 8.32          | 0.34               | 8.75         |
| 9/1/2004 | 16:00 | 18.22         | 8.33          | 0.34               | 8.78         |
| 9/1/2004 | 16:30 | 18.22         | 8.33          | 0.34               | 8.77         |
| 9/1/2004 | 17:00 | 18.17         | 8.33          | 0.34               | 8.79         |
| 9/1/2004 | 17:30 | 18.11         | 8.32          | 0.34               | 8.69         |
| 9/1/2004 | 18:00 | 18.00         | 8.29          | 0.34               | 8.55         |
| 9/1/2004 | 18:30 | 18.00         | 8.29          | 0.34               | 8.61         |
| 9/1/2004 | 19:00 | 18.00         | 8.28          | 0.34               | 8.60         |
| 9/1/2004 | 19:30 | 18.00         | 8.27          | 0.34               | 8.58         |
| 9/1/2004 | 20:00 | 18.00         | 8.27          | 0.34               | 8.57         |
| 9/1/2004 | 20:30 | 18.00         | 8.27          | 0.34               | 8.53         |
| 9/1/2004 | 21:00 | 18.00         | 8.27          | 0.34               | 8.52         |
| 9/1/2004 | 21:30 | 18.11         | 8.31          | 0.34               | 8.68         |
| 9/1/2004 | 22:00 | 18.22         | 8.34          | 0.34               | 8.78         |
| 9/1/2004 | 22:30 | 18.39         | 8.38          | 0.34               | 8.99         |
| 9/1/2004 | 23:00 | 18.44         | 8.41          | 0.34               | 9.08         |
| 9/1/2004 | 23:30 | 18.56         | 8.43          | 0.34               | 9.15         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 9/2/2004 | 0:00  | 18.56         | 8.44          | 0.34               | 9.17         |
| 9/2/2004 | 0:30  | 18.56         | 8.43          | 0.34               | 9.11         |
| 9/2/2004 | 1:00  | 18.61         | 8.44          | 0.34               | 9.19         |
| 9/2/2004 | 1:30  | 18.56         | 8.43          | 0.34               | 9.08         |
| 9/2/2004 | 2:00  | 18.56         | 8.44          | 0.34               | 9.11         |
| 9/2/2004 | 2:30  | 18.56         | 8.42          | 0.34               | 9.04         |
| 9/2/2004 | 3:00  | 18.56         | 8.42          | 0.34               | 9.03         |
| 9/2/2004 | 3:30  | 18.50         | 8.40          | 0.34               | 8.98         |
| 9/2/2004 | 4:00  | 18.56         | 8.41          | 0.34               | 9.01         |
| 9/2/2004 | 4:30  | 18.56         | 8.40          | 0.34               | 8.97         |
| 9/2/2004 | 5:00  | 18.56         | 8.40          | 0.34               | 8.92         |
| 9/2/2004 | 5:30  | 18.56         | 8.40          | 0.34               | 8.95         |
| 9/2/2004 | 6:00  | 18.56         | 8.39          | 0.34               | 8.92         |
| 9/2/2004 | 6:30  | 18.56         | 8.39          | 0.34               | 8.92         |
| 9/2/2004 | 7:00  | 18.56         | 8.38          | 0.34               | 8.83         |
| 9/2/2004 | 7:30  | 18.50         | 8.38          | 0.34               | 8.84         |
| 9/2/2004 | 8:00  | 18.56         | 8.37          | 0.34               | 8.80         |
| 9/2/2004 | 8:30  | 18.56         | 8.36          | 0.34               | 8.78         |
| 9/2/2004 | 9:00  | 18.50         | 8.35          | 0.34               | 8.75         |
| 9/2/2004 | 9:30  | 18.50         | 8.34          | 0.34               | 8.68         |
| 9/2/2004 | 10:00 | 18.50         | 8.33          | 0.34               | 8.61         |
| 9/2/2004 | 10:30 | 18.44         | 8.30          | 0.35               | 8.54         |
| 9/2/2004 | 11:00 | 18.56         | 8.30          | 0.35               | 8.55         |
| 9/2/2004 | 11:30 | 18.56         | 8.29          | 0.35               | 8.45         |
| 9/2/2004 | 12:00 | 18.67         | 8.30          | 0.35               | 8.49         |
| 9/2/2004 | 12:30 | 18.67         | 8.28          | 0.35               | 8.39         |
| 9/2/2004 | 13:00 | 18.83         | 8.31          | 0.35               | 8.55         |
| 9/2/2004 | 13:30 | 18.94         | 8.32          | 0.35               | 8.61         |
| 9/2/2004 | 14:00 | 18.89         | 8.32          | 0.35               | 8.62         |
| 9/2/2004 | 14:30 | 19.06         | 8.35          | 0.35               | 8.73         |
| 9/2/2004 | 15:00 | 19.17         | 8.37          | 0.35               | 8.80         |
| 9/2/2004 | 15:30 | 19.22         | 8.39          | 0.35               | 8.93         |
| 9/2/2004 | 16:00 | 19.22         | 8.39          | 0.35               | 8.94         |
| 9/2/2004 | 16:30 | 19.50         | 8.46          | 0.34               | 9.25         |
| 9/2/2004 | 17:00 | 19.44         | 8.46          | 0.34               | 9.26         |
| 9/2/2004 | 17:30 | 19.33         | 8.44          | 0.34               | 9.18         |
| 9/2/2004 | 18:00 | 19.22         | 8.44          | 0.34               | 9.16         |
| 9/2/2004 | 18:30 | 19.11         | 8.42          | 0.35               | 9.12         |
| 9/2/2004 | 19:00 | 19.28         | 8.44          | 0.35               | 9.16         |
| 9/2/2004 | 19:30 | 19.39         | 8.47          | 0.34               | 9.29         |
| 9/2/2004 | 20:00 | 19.56         | 8.49          | 0.34               | 9.38         |
| 9/2/2004 | 20:30 | 19.50         | 8.47          | 0.34               | 9.21         |
| 9/2/2004 | 21:00 | 19.50         | 8.46          | 0.34               | 9.18         |
| 9/2/2004 | 21:30 | 19.50         | 8.45          | 0.34               | 9.15         |
| 9/2/2004 | 22:00 | 19.50         | 8.45          | 0.34               | 9.12         |
| 9/2/2004 | 22:30 | 19.50         | 8.45          | 0.35               | 9.13         |
| 9/2/2004 | 23:00 | 19.50         | 8.45          | 0.35               | 9.17         |
| 9/2/2004 | 23:30 | 19.56         | 8.46          | 0.34               | 9.21         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 9/3/2004 | 0:00  | 19.56         | 8.47          | 0.34               | 9.24         |
| 9/3/2004 | 0:30  | 19.56         | 8.46          | 0.34               | 9.21         |
| 9/3/2004 | 1:00  | 19.61         | 8.46          | 0.34               | 9.17         |
| 9/3/2004 | 1:30  | 19.61         | 8.47          | 0.34               | 9.23         |
| 9/3/2004 | 2:00  | 19.61         | 8.47          | 0.34               | 9.21         |
| 9/3/2004 | 2:30  | 19.61         | 8.46          | 0.34               | 9.23         |
| 9/3/2004 | 3:00  | 19.56         | 8.45          | 0.35               | 9.12         |
| 9/3/2004 | 3:30  | 19.61         | 8.43          | 0.35               | 9.07         |
| 9/3/2004 | 4:00  | 19.56         | 8.41          | 0.35               | 8.89         |
| 9/3/2004 | 4:30  | 19.56         | 8.39          | 0.35               | 8.83         |
| 9/3/2004 | 5:00  | 19.56         | 8.39          | 0.35               | 8.79         |
| 9/3/2004 | 5:30  | 19.56         | 8.40          | 0.35               | 8.80         |
| 9/3/2004 | 6:00  | 19.56         | 8.39          | 0.35               | 8.76         |
| 9/3/2004 | 6:30  | 19.50         | 8.38          | 0.35               | 8.73         |
| 9/3/2004 | 7:00  | 19.56         | 8.38          | 0.35               | 8.75         |
| 9/3/2004 | 7:30  | 19.56         | 8.39          | 0.35               | 8.74         |
| 9/3/2004 | 8:00  | 19.56         | 8.39          | 0.35               | 8.75         |
| 9/3/2004 | 8:30  | 19.61         | 8.39          | 0.35               | 8.80         |
| 9/3/2004 | 9:00  | 19.61         | 8.39          | 0.35               | 8.80         |
| 9/3/2004 | 9:30  | 19.61         | 8.37          | 0.35               | 8.74         |
| 9/3/2004 | 10:00 | 19.61         | 8.37          | 0.35               | 8.72         |
| 9/3/2004 | 10:30 | 19.72         | 8.39          | 0.35               | 8.80         |
| 9/3/2004 | 11:00 | 19.83         | 8.40          | 0.35               | 8.86         |
| 9/3/2004 | 11:30 | 20.00         | 8.42          | 0.35               | 8.93         |
| 9/3/2004 | 12:00 | 20.22         | 8.45          | 0.35               | 8.35         |
| 9/3/2004 | 12:30 | 20.33         | 8.46          | 0.35               | 8.44         |
| 9/3/2004 | 13:00 | 20.28         | 8.46          | 0.35               | 8.49         |
| 9/3/2004 | 13:30 | 20.33         | 8.46          | 0.35               | 8.47         |
| 9/3/2004 | 14:00 | 20.22         | 8.44          | 0.35               | 8.45         |
| 9/3/2004 | 14:30 | 20.56         | 8.49          | 0.35               | 8.52         |
| 9/3/2004 | 15:00 | 20.50         | 8.47          | 0.35               | 8.41         |
| 9/3/2004 | 15:30 | 20.50         | 8.48          | 0.35               | 8.49         |
| 9/3/2004 | 16:00 | 20.56         | 8.49          | 0.35               | 8.52         |
| 9/3/2004 | 16:30 | 20.83         | 8.55          | 0.35               | 8.87         |
| 9/3/2004 | 17:00 | 20.72         | 8.54          | 0.35               | 8.79         |
| 9/3/2004 | 17:30 | 20.67         | 8.53          | 0.35               | 8.75         |
| 9/3/2004 | 18:00 | 20.61         | 8.54          | 0.35               | 8.83         |
| 9/3/2004 | 18:30 | 20.61         | 8.54          | 0.34               | 8.85         |
| 9/3/2004 | 19:00 | 20.61         | 8.55          | 0.34               | 8.81         |
| 9/3/2004 | 19:30 | 20.67         | 8.54          | 0.35               | 8.88         |
| 9/3/2004 | 20:00 | 20.67         | 8.54          | 0.35               | 8.84         |
| 9/3/2004 | 20:30 | 20.61         | 8.53          | 0.35               | 8.80         |
| 9/3/2004 | 21:00 | 20.61         | 8.52          | 0.35               | 8.77         |
| 9/3/2004 | 21:30 | 20.67         | 8.52          | 0.35               | 8.78         |
| 9/3/2004 | 22:00 | 20.67         | 8.51          | 0.35               | 8.67         |
| 9/3/2004 | 22:30 | 20.67         | 8.50          | 0.35               | 8.57         |
| 9/3/2004 | 23:00 | 20.67         | 8.49          | 0.35               | 8.47         |
| 9/3/2004 | 23:30 | 20.61         | 8.47          | 0.35               | 8.49         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(°C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|--------------|---------------|--------------------|--------------|
| 9/4/2004 | 0:00  | 20.72        | 8.48          | 0.35               | 8.40         |
| 9/4/2004 | 0:30  | 20.72        | 8.49          | 0.35               | 8.54         |
| 9/4/2004 | 1:00  | 20.72        | 8.51          | 0.35               | 8.70         |
| 9/4/2004 | 1:30  | 20.72        | 8.51          | 0.35               | 8.67         |
| 9/4/2004 | 2:00  | 20.67        | 8.50          | 0.35               | 8.58         |
| 9/4/2004 | 2:30  | 20.67        | 8.48          | 0.35               | 8.57         |
| 9/4/2004 | 3:00  | 20.61        | 8.45          | 0.35               | 8.45         |
| 9/4/2004 | 3:30  | 20.61        | 8.42          | 0.35               | 8.35         |
| 9/4/2004 | 4:00  | 20.61        | 8.41          | 0.35               | 8.25         |
| 9/4/2004 | 4:30  | 20.61        | 8.41          | 0.35               | 8.26         |
| 9/4/2004 | 5:00  | 20.56        | 8.40          | 0.35               | 8.14         |
| 9/4/2004 | 5:30  | 20.56        | 8.37          | 0.35               | 8.03         |
| 9/4/2004 | 6:00  | 20.56        | 8.36          | 0.35               | 7.96         |
| 9/4/2004 | 6:30  | 20.56        | 8.37          | 0.35               | 8.05         |
| 9/4/2004 | 7:00  | 20.61        | 8.38          | 0.35               | 8.07         |
| 9/4/2004 | 7:30  | 20.61        | 8.36          | 0.35               | 7.92         |
| 9/4/2004 | 8:00  | 20.67        | 8.38          | 0.35               | 8.04         |
| 9/4/2004 | 8:30  | 20.67        | 8.37          | 0.35               | 8.00         |
| 9/4/2004 | 9:00  | 20.67        | 8.37          | 0.35               | 7.93         |
| 9/4/2004 | 9:30  | 20.67        | 8.36          | 0.35               | 7.89         |
| 9/4/2004 | 10:00 | 20.67        | 8.34          | 0.35               | 7.85         |
| 9/4/2004 | 10:30 | 20.61        | 8.32          | 0.35               | 7.77         |
| 9/4/2004 | 11:00 | 20.61        | 8.31          | 0.35               | 7.84         |
| 9/4/2004 | 11:30 | 20.61        | 8.30          | 0.35               | 7.72         |
| 9/4/2004 | 12:00 | 20.72        | 8.31          | 0.35               | 7.70         |
| 9/4/2004 | 12:30 | 20.78        | 8.33          | 0.35               | 7.89         |
| 9/4/2004 | 13:00 | 20.78        | 8.32          | 0.35               | 7.76         |
| 9/4/2004 | 13:30 | 20.83        | 8.32          | 0.35               | 7.71         |
| 9/4/2004 | 14:00 | 20.89        | 8.32          | 0.35               | 7.66         |
| 9/4/2004 | 14:30 | 20.89        | 8.29          | 0.35               | 7.58         |
| 9/4/2004 | 15:00 | 21.06        | 8.33          | 0.35               | 7.75         |
| 9/4/2004 | 15:30 | 21.22        | 8.36          | 0.35               | 7.91         |
| 9/4/2004 | 16:00 | 21.17        | 8.35          | 0.35               | 7.86         |
| 9/4/2004 | 16:30 | 21.17        | 8.34          | 0.35               | 7.68         |
| 9/4/2004 | 17:00 | 21.17        | 8.34          | 0.35               | 7.76         |
| 9/4/2004 | 17:30 | 21.33        | 8.38          | 0.35               | 7.92         |
| 9/4/2004 | 18:00 | 21.17        | 8.36          | 0.35               | 7.81         |
| 9/4/2004 | 18:30 | 21.33        | 8.39          | 0.35               | 7.89         |
| 9/4/2004 | 19:00 | 21.33        | 8.39          | 0.35               | 7.96         |
| 9/4/2004 | 19:30 | 21.28        | 8.39          | 0.35               | 7.95         |
| 9/4/2004 | 20:00 | 21.28        | 8.38          | 0.35               | 7.89         |
| 9/4/2004 | 20:30 | 21.28        | 8.36          | 0.35               | 7.77         |
| 9/4/2004 | 21:00 | 21.28        | 8.36          | 0.35               | 7.70         |
| 9/4/2004 | 21:30 | 21.28        | 8.37          | 0.35               | 7.71         |
| 9/4/2004 | 22:00 | 21.39        | 8.39          | 0.35               | 7.75         |
| 9/4/2004 | 22:30 | 21.39        | 8.40          | 0.35               | 7.81         |
| 9/4/2004 | 23:00 | 21.39        | 8.39          | 0.35               | 7.78         |
| 9/4/2004 | 23:30 | 21.39        | 8.40          | 0.35               | 7.70         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 9/5/2004 | 0:00  | 21.44         | 8.42          | 0.35               | 7.86         |
| 9/5/2004 | 0:30  | 21.44         | 8.42          | 0.35               | 7.97         |
| 9/5/2004 | 1:00  | 21.44         | 8.41          | 0.35               | 7.77         |
| 9/5/2004 | 1:30  | 21.50         | 8.42          | 0.35               | 7.72         |
| 9/5/2004 | 2:00  | 21.44         | 8.40          | 0.35               | 7.76         |
| 9/5/2004 | 2:30  | 21.39         | 8.40          | 0.35               | 7.75         |
| 9/5/2004 | 3:00  | 21.39         | 8.38          | 0.35               | 7.74         |
| 9/5/2004 | 3:30  | 21.39         | 8.38          | 0.35               | 7.67         |
| 9/5/2004 | 4:00  | 21.39         | 8.38          | 0.35               | 7.72         |
| 9/5/2004 | 4:30  | 21.39         | 8.37          | 0.35               | 7.53         |
| 9/5/2004 | 5:00  | 21.39         | 8.37          | 0.35               | 7.58         |
| 9/5/2004 | 5:30  | 21.39         | 8.35          | 0.35               | 7.53         |
| 9/5/2004 | 6:00  | 21.33         | 8.34          | 0.35               | 7.56         |
| 9/5/2004 | 6:30  | 21.28         | 8.32          | 0.35               | 7.45         |
| 9/5/2004 | 7:00  | 21.22         | 8.28          | 0.35               | 7.31         |
| 9/5/2004 | 7:30  | 21.22         | 8.29          | 0.35               | 7.27         |
| 9/5/2004 | 8:00  | 21.22         | 8.29          | 0.35               | 7.31         |
| 9/5/2004 | 8:30  | 21.22         | 8.28          | 0.35               | 7.30         |
| 9/5/2004 | 9:00  | 21.17         | 8.24          | 0.35               | 7.08         |
| 9/5/2004 | 9:30  | 21.17         | 8.21          | 0.35               | 7.00         |
| 9/5/2004 | 10:00 | 21.17         | 8.20          | 0.35               | 7.02         |
| 9/5/2004 | 10:30 | 21.11         | 8.17          | 0.35               | 6.85         |
| 9/5/2004 | 11:00 | 21.11         | 8.14          | 0.35               | 6.79         |
| 9/5/2004 | 11:30 | 21.11         | 8.15          | 0.35               | 6.89         |
| 9/5/2004 | 12:00 | 21.22         | 8.18          | 0.35               | 6.96         |
| 9/5/2004 | 12:30 | 21.33         | 8.19          | 0.35               | 7.00         |
| 9/5/2004 | 13:00 | 21.39         | 8.18          | 0.35               | 6.93         |
| 9/5/2004 | 13:30 | 21.33         | 8.18          | 0.35               | 6.96         |
| 9/5/2004 | 14:00 | 21.33         | 8.18          | 0.35               | 6.85         |
| 9/5/2004 | 14:30 | 21.39         | 8.22          | 0.35               | 7.19         |
| 9/5/2004 | 15:00 | 21.39         | 8.20          | 0.35               | 7.02         |
| 9/5/2004 | 15:30 | 21.33         | 8.19          | 0.35               | 6.94         |
| 9/5/2004 | 16:00 | 21.28         | 8.18          | 0.35               | 6.94         |
| 9/5/2004 | 16:30 | 21.28         | 8.17          | 0.35               | 6.93         |
| 9/5/2004 | 17:00 | 21.33         | 8.20          | 0.35               | 7.06         |
| 9/5/2004 | 17:30 | 21.33         | 8.20          | 0.35               | 6.92         |
| 9/5/2004 | 18:00 | 21.44         | 8.23          | 0.35               | 7.17         |
| 9/5/2004 | 18:30 | 21.44         | 8.23          | 0.35               | 7.10         |
| 9/5/2004 | 19:00 | 21.50         | 8.25          | 0.35               | 7.26         |
| 9/5/2004 | 19:30 | 21.56         | 8.26          | 0.35               | 7.13         |
| 9/5/2004 | 20:00 | 21.61         | 8.26          | 0.35               | 7.06         |
| 9/5/2004 | 20:30 | 21.61         | 8.26          | 0.35               | 7.25         |
| 9/5/2004 | 21:00 | 21.61         | 8.27          | 0.35               | 7.34         |
| 9/5/2004 | 21:30 | 21.67         | 8.26          | 0.35               | 7.29         |
| 9/5/2004 | 22:00 | 21.67         | 8.26          | 0.35               | 7.31         |
| 9/5/2004 | 22:30 | 21.67         | 8.26          | 0.35               | 7.30         |
| 9/5/2004 | 23:00 | 21.67         | 8.26          | 0.35               | 7.25         |
| 9/5/2004 | 23:30 | 21.67         | 8.27          | 0.35               | 7.27         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 9/6/2004 | 0:00  | 21.67         | 8.26          | 0.35               | 7.19         |
| 9/6/2004 | 0:30  | 21.67         | 8.25          | 0.35               | 7.16         |
| 9/6/2004 | 1:00  | 21.61         | 8.25          | 0.35               | 7.11         |
| 9/6/2004 | 1:30  | 21.67         | 8.25          | 0.35               | 7.17         |
| 9/6/2004 | 2:00  | 21.61         | 8.23          | 0.35               | 6.97         |
| 9/6/2004 | 2:30  | 21.61         | 8.23          | 0.35               | 7.04         |
| 9/6/2004 | 3:00  | 21.61         | 8.21          | 0.35               | 6.99         |
| 9/6/2004 | 3:30  | 21.67         | 8.23          | 0.35               | 6.85         |
| 9/6/2004 | 4:00  | 21.67         | 8.23          | 0.35               | 6.96         |
| 9/6/2004 | 4:30  | 21.56         | 8.20          | 0.35               | 6.83         |
| 9/6/2004 | 5:00  | 21.56         | 8.20          | 0.35               | 6.83         |
| 9/6/2004 | 5:30  | 21.56         | 8.19          | 0.35               | 6.82         |
| 9/6/2004 | 6:00  | 21.50         | 8.18          | 0.35               | 6.74         |
| 9/6/2004 | 6:30  | 21.50         | 8.18          | 0.35               | 6.78         |
| 9/6/2004 | 7:00  | 21.50         | 8.19          | 0.35               | 6.79         |
| 9/6/2004 | 7:30  | 21.56         | 8.17          | 0.35               | 6.75         |
| 9/6/2004 | 8:00  | 21.50         | 8.15          | 0.35               | 6.65         |
| 9/6/2004 | 8:30  | 21.56         | 8.17          | 0.35               | 6.74         |
| 9/6/2004 | 9:00  | 21.61         | 8.17          | 0.35               | 6.73         |
| 9/6/2004 | 9:30  | 21.67         | 8.20          | 0.35               | 6.74         |
| 9/6/2004 | 10:00 | 21.67         | 8.21          | 0.35               | 6.73         |
| 9/6/2004 | 10:30 | 21.67         | 8.21          | 0.35               | 6.79         |
| 9/6/2004 | 11:00 | 21.72         | 8.22          | 0.35               | 6.73         |
| 9/6/2004 | 11:30 | 21.83         | 8.26          | 0.35               | 6.90         |
| 9/6/2004 | 12:00 | 21.89         | 8.27          | 0.35               | 6.93         |
| 9/6/2004 | 12:30 | 22.00         | 8.30          | 0.35               | 6.98         |
| 9/6/2004 | 13:00 | 22.22         | 8.38          | 0.35               | 7.26         |
| 9/6/2004 | 13:30 | 22.50         | 8.45          | 0.35               | 7.50         |
| 9/6/2004 | 14:00 | 22.56         | 8.48          | 0.35               | 7.60         |
| 9/6/2004 | 14:30 | 22.67         | 8.51          | 0.35               | 7.67         |
| 9/6/2004 | 15:00 | 22.72         | 8.52          | 0.35               | 7.75         |
| 9/6/2004 | 15:30 | 22.72         | 8.52          | 0.35               | 7.74         |
| 9/6/2004 | 16:00 | 22.78         | 8.54          | 0.35               | 7.75         |
| 9/6/2004 | 16:30 | 22.72         | 8.54          | 0.35               | 7.74         |
| 9/6/2004 | 17:00 | 22.72         | 8.54          | 0.35               | 7.74         |
| 9/6/2004 | 17:30 | 22.72         | 8.54          | 0.35               | 7.78         |
| 9/6/2004 | 18:00 | 22.72         | 8.55          | 0.35               | 7.77         |
| 9/6/2004 | 18:30 | 22.61         | 8.51          | 0.35               | 7.65         |
| 9/6/2004 | 19:00 | 22.56         | 8.50          | 0.35               | 7.53         |
| 9/6/2004 | 19:30 | 22.50         | 8.47          | 0.35               | 7.39         |
| 9/6/2004 | 20:00 | 22.44         | 8.44          | 0.35               | 7.41         |
| 9/6/2004 | 20:30 | 22.44         | 8.44          | 0.35               | 7.35         |
| 9/6/2004 | 21:00 | 22.33         | 8.41          | 0.35               | 7.27         |
| 9/6/2004 | 21:30 | 22.28         | 8.38          | 0.35               | 7.15         |
| 9/6/2004 | 22:00 | 22.22         | 8.35          | 0.35               | 7.55         |
| 9/6/2004 | 22:30 | 22.11         | 8.31          | 0.35               | 7.48         |
| 9/6/2004 | 23:00 | 22.11         | 8.32          | 0.35               | 7.43         |
| 9/6/2004 | 23:30 | 22.11         | 8.32          | 0.35               | 7.41         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 9/7/2004 | 0:00  | 22.06         | 8.32          | 0.35               | 7.40         |
| 9/7/2004 | 0:30  | 22.06         | 8.33          | 0.35               | 7.60         |
| 9/7/2004 | 1:00  | 22.06         | 8.34          | 0.35               | 7.55         |
| 9/7/2004 | 1:30  | 22.06         | 8.34          | 0.35               | 7.56         |
| 9/7/2004 | 2:00  | 22.06         | 8.36          | 0.35               | 7.51         |
| 9/7/2004 | 2:30  | 22.00         | 8.37          | 0.35               | 7.62         |
| 9/7/2004 | 3:00  | 22.00         | 8.36          | 0.35               | 7.54         |
| 9/7/2004 | 3:30  | 21.94         | 8.35          | 0.35               | 7.55         |
| 9/7/2004 | 4:00  | 21.89         | 8.33          | 0.35               | 7.51         |
| 9/7/2004 | 4:30  | 21.89         | 8.34          | 0.35               | 7.47         |
| 9/7/2004 | 5:00  | 21.83         | 8.32          | 0.35               | 7.48         |
| 9/7/2004 | 5:30  | 21.78         | 8.32          | 0.35               | 7.42         |
| 9/7/2004 | 6:00  | 21.78         | 8.32          | 0.35               | 7.44         |
| 9/7/2004 | 6:30  | 21.72         | 8.31          | 0.35               | 7.33         |
| 9/7/2004 | 7:00  | 21.67         | 8.31          | 0.35               | 7.32         |
| 9/7/2004 | 7:30  | 21.67         | 8.31          | 0.35               | 7.31         |
| 9/7/2004 | 8:00  | 21.61         | 8.32          | 0.35               | 7.32         |
| 9/7/2004 | 8:30  | 21.61         | 8.33          | 0.35               | 7.34         |
| 9/7/2004 | 9:00  | 21.61         | 8.35          | 0.35               | 7.52         |
| 9/7/2004 | 9:30  | 21.61         | 8.36          | 0.35               | 7.52         |
| 9/7/2004 | 10:00 | 21.67         | 8.36          | 0.35               | 7.39         |
| 9/7/2004 | 10:30 | 21.67         | 8.37          | 0.35               | 7.58         |
| 9/7/2004 | 11:00 | 21.67         | 8.37          | 0.35               | 7.48         |
| 9/7/2004 | 11:30 | 21.72         | 8.37          | 0.35               | 7.57         |
| 9/7/2004 | 12:00 | 21.72         | 8.37          | 0.35               | 7.48         |
| 9/7/2004 | 12:30 | 21.78         | 8.37          | 0.35               | 7.58         |
| 9/7/2004 | 13:00 | 21.83         | 8.37          | 0.35               | 7.56         |
| 9/7/2004 | 13:30 | 21.89         | 8.37          | 0.35               | 7.47         |
| 9/7/2004 | 14:00 | 21.89         | 8.37          | 0.35               | 7.40         |
| 9/7/2004 | 14:30 | 21.89         | 8.37          | 0.35               | 7.60         |
| 9/7/2004 | 15:00 | 21.89         | 8.37          | 0.35               | 7.54         |
| 9/7/2004 | 15:30 | 21.89         | 8.37          | 0.35               | 7.59         |
| 9/7/2004 | 16:00 | 21.83         | 8.35          | 0.35               | 7.40         |
| 9/7/2004 | 16:30 | 21.89         | 8.35          | 0.35               | 7.40         |
| 9/7/2004 | 17:00 | 21.83         | 8.35          | 0.35               | 7.47         |
| 9/7/2004 | 17:30 | 21.83         | 8.35          | 0.35               | 7.55         |
| 9/7/2004 | 18:00 | 21.83         | 8.34          | 0.35               | 7.48         |
| 9/7/2004 | 18:30 | 21.72         | 8.31          | 0.35               | 7.24         |
| 9/7/2004 | 19:00 | 21.61         | 8.27          | 0.35               | 7.16         |
| 9/7/2004 | 19:30 | 21.50         | 8.26          | 0.35               | 7.14         |
| 9/7/2004 | 20:00 | 21.44         | 8.22          | 0.35               | 6.79         |
| 9/7/2004 | 20:30 | 21.39         | 8.22          | 0.35               | 6.91         |
| 9/7/2004 | 21:00 | 21.33         | 8.21          | 0.35               | 6.85         |
| 9/7/2004 | 21:30 | 21.28         | 8.20          | 0.35               | 7.05         |
| 9/7/2004 | 22:00 | 21.28         | 8.20          | 0.35               | 7.12         |
| 9/7/2004 | 22:30 | 21.22         | 8.20          | 0.35               | 7.12         |
| 9/7/2004 | 23:00 | 21.22         | 8.19          | 0.35               | 7.07         |
| 9/7/2004 | 23:30 | 21.17         | 8.17          | 0.35               | 7.07         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 9/8/2004 | 0:00  | 21.17         | 8.19          | 0.35               | 7.04         |
| 9/8/2004 | 0:30  | 21.11         | 8.18          | 0.35               | 6.95         |
| 9/8/2004 | 1:00  | 21.11         | 8.20          | 0.35               | 7.09         |
| 9/8/2004 | 1:30  | 21.06         | 8.21          | 0.35               | 7.17         |
| 9/8/2004 | 2:00  | 21.06         | 8.22          | 0.35               | 7.17         |
| 9/8/2004 | 2:30  | 21.06         | 8.22          | 0.35               | 7.22         |
| 9/8/2004 | 3:00  | 21.00         | 8.22          | 0.35               | 7.21         |
| 9/8/2004 | 3:30  | 21.00         | 8.22          | 0.35               | 7.24         |
| 9/8/2004 | 4:00  | 20.94         | 8.22          | 0.35               | 7.23         |
| 9/8/2004 | 4:30  | 20.94         | 8.21          | 0.35               | 7.12         |
| 9/8/2004 | 5:00  | 20.89         | 8.20          | 0.35               | 7.05         |
| 9/8/2004 | 5:30  | 20.89         | 8.20          | 0.35               | 7.10         |
| 9/8/2004 | 6:00  | 20.89         | 8.20          | 0.35               | 7.03         |
| 9/8/2004 | 6:30  | 20.83         | 8.20          | 0.35               | 7.05         |
| 9/8/2004 | 7:00  | 20.83         | 8.20          | 0.35               | 7.03         |
| 9/8/2004 | 7:30  | 20.78         | 8.19          | 0.35               | 7.02         |
| 9/8/2004 | 8:00  | 20.78         | 8.20          | 0.35               | 7.05         |
| 9/8/2004 | 8:30  | 20.78         | 8.20          | 0.35               | 7.04         |
| 9/8/2004 | 9:00  | 20.78         | 8.22          | 0.35               | 7.03         |
| 9/8/2004 | 9:30  | 20.78         | 8.22          | 0.35               | 7.09         |
| 9/8/2004 | 10:00 | 20.78         | 8.21          | 0.35               | 7.12         |
| 9/8/2004 | 10:30 | 20.78         | 8.19          | 0.35               | 7.09         |
| 9/8/2004 | 11:00 | 20.78         | 8.19          | 0.35               | 7.11         |
| 9/8/2004 | 11:30 | 20.83         | 8.21          | 0.35               | 7.13         |
| 9/8/2004 | 12:00 | 20.83         | 8.22          | 0.35               | 7.12         |
| 9/8/2004 | 12:30 | 20.83         | 8.20          | 0.35               | 7.03         |
| 9/8/2004 | 13:00 | 20.83         | 8.18          | 0.35               | 6.91         |
| 9/8/2004 | 13:30 | 20.83         | 8.19          | 0.35               | 7.06         |
| 9/8/2004 | 14:00 | 20.83         | 8.20          | 0.35               | 7.10         |
| 9/8/2004 | 14:30 | 20.83         | 8.21          | 0.35               | 7.03         |
| 9/8/2004 | 15:00 | 20.72         | 8.20          | 0.35               | 6.93         |
| 9/8/2004 | 15:30 | 20.67         | 8.20          | 0.35               | 7.01         |
| 9/8/2004 | 16:00 | 20.61         | 8.19          | 0.35               | 6.95         |
| 9/8/2004 | 16:30 | 20.44         | 8.17          | 0.35               | 6.87         |
| 9/8/2004 | 17:00 | 20.33         | 8.18          | 0.35               | 6.94         |
| 9/8/2004 | 17:30 | 20.33         | 8.19          | 0.35               | 6.97         |
| 9/8/2004 | 18:00 | 20.28         | 8.19          | 0.35               | 6.94         |
| 9/8/2004 | 18:30 | 20.28         | 8.19          | 0.35               | 6.98         |
| 9/8/2004 | 19:00 | 20.28         | 8.18          | 0.35               | 6.93         |
| 9/8/2004 | 19:30 | 20.33         | 8.20          | 0.35               | 7.04         |
| 9/8/2004 | 20:00 | 20.44         | 8.22          | 0.35               | 7.20         |
| 9/8/2004 | 20:30 | 20.44         | 8.23          | 0.35               | 7.21         |
| 9/8/2004 | 21:00 | 20.44         | 8.24          | 0.35               | 7.20         |
| 9/8/2004 | 21:30 | 20.50         | 8.24          | 0.35               | 7.27         |
| 9/8/2004 | 22:00 | 20.44         | 8.24          | 0.35               | 7.19         |
| 9/8/2004 | 22:30 | 20.39         | 8.24          | 0.35               | 7.19         |
| 9/8/2004 | 23:00 | 20.39         | 8.23          | 0.35               | 7.26         |
| 9/8/2004 | 23:30 | 20.39         | 8.23          | 0.35               | 7.25         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date     | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|----------|-------|---------------|---------------|--------------------|--------------|
| 9/9/2004 | 0:00  | 20.39         | 8.23          | 0.35               | 7.18         |
| 9/9/2004 | 0:30  | 20.33         | 8.23          | 0.35               | 7.17         |
| 9/9/2004 | 1:00  | 20.28         | 8.22          | 0.35               | 7.13         |
| 9/9/2004 | 1:30  | 20.22         | 8.22          | 0.35               | 7.15         |
| 9/9/2004 | 2:00  | 20.22         | 8.22          | 0.35               | 7.18         |
| 9/9/2004 | 2:30  | 20.17         | 8.22          | 0.35               | 7.25         |
| 9/9/2004 | 3:00  | 20.17         | 8.21          | 0.35               | 7.10         |
| 9/9/2004 | 3:30  | 20.11         | 8.22          | 0.35               | 7.11         |
| 9/9/2004 | 4:00  | 20.11         | 8.22          | 0.35               | 7.13         |
| 9/9/2004 | 4:30  | 20.06         | 8.20          | 0.35               | 7.08         |
| 9/9/2004 | 5:00  | 20.06         | 8.21          | 0.35               | 7.03         |
| 9/9/2004 | 5:30  | 20.00         | 8.22          | 0.35               | 7.02         |
| 9/9/2004 | 6:00  | 19.94         | 8.21          | 0.35               | 7.01         |
| 9/9/2004 | 6:30  | 19.94         | 8.21          | 0.35               | 7.11         |
| 9/9/2004 | 7:00  | 19.89         | 8.20          | 0.35               | 6.92         |
| 9/9/2004 | 7:30  | 19.89         | 8.20          | 0.35               | 7.01         |
| 9/9/2004 | 8:00  | 19.89         | 8.20          | 0.35               | 6.99         |
| 9/9/2004 | 8:30  | 19.89         | 8.20          | 0.35               | 7.09         |
| 9/9/2004 | 9:00  | 19.89         | 8.20          | 0.35               | 7.04         |
| 9/9/2004 | 9:30  | 19.89         | 8.20          | 0.35               | 7.12         |
| 9/9/2004 | 10:00 | 19.94         | 8.22          | 0.35               | 7.24         |
| 9/9/2004 | 10:30 | 20.00         | 8.22          | 0.35               | 7.24         |
| 9/9/2004 | 11:00 | 19.94         | 8.22          | 0.35               | 7.12         |
| 9/9/2004 | 11:30 | 19.94         | 8.21          | 0.35               | 7.12         |
| 9/9/2004 | 12:00 | 20.00         | 8.20          | 0.35               | 7.00         |
| 9/9/2004 | 12:30 | 20.11         | 8.19          | 0.35               | 7.01         |
| 9/9/2004 | 13:00 | 20.06         | 8.18          | 0.35               | 7.00         |
| 9/9/2004 | 13:30 | 20.06         | 8.17          | 0.35               | 6.88         |
| 9/9/2004 | 14:00 | 20.00         | 8.18          | 0.35               | 6.91         |
| 9/9/2004 | 14:30 | 20.00         | 8.17          | 0.35               | 6.89         |
| 9/9/2004 | 15:00 | 20.00         | 8.15          | 0.35               | 6.82         |
| 9/9/2004 | 15:30 | 19.94         | 8.15          | 0.35               | 6.72         |
| 9/9/2004 | 16:00 | 19.89         | 8.16          | 0.35               | 6.77         |
| 9/9/2004 | 16:30 | 19.78         | 8.20          | 0.35               | 7.08         |
| 9/9/2004 | 17:00 | 19.83         | 8.23          | 0.35               | 7.15         |
| 9/9/2004 | 17:30 | 19.83         | 8.23          | 0.35               | 7.18         |
| 9/9/2004 | 18:00 | 19.78         | 8.24          | 0.35               | 7.30         |
| 9/9/2004 | 18:30 | 19.67         | 8.23          | 0.35               | 7.17         |
| 9/9/2004 | 19:00 | 19.61         | 8.23          | 0.35               | 7.24         |
| 9/9/2004 | 19:30 | 19.56         | 8.24          | 0.35               | 7.19         |
| 9/9/2004 | 20:00 | 19.44         | 8.22          | 0.35               | 7.14         |
| 9/9/2004 | 20:30 | 19.50         | 8.21          | 0.35               | 7.08         |
| 9/9/2004 | 21:00 | 19.50         | 8.21          | 0.35               | 7.10         |
| 9/9/2004 | 21:30 | 19.50         | 8.20          | 0.35               | 7.02         |
| 9/9/2004 | 22:00 | 19.44         | 8.21          | 0.35               | 7.03         |
| 9/9/2004 | 22:30 | 19.44         | 8.23          | 0.35               | 7.16         |
| 9/9/2004 | 23:00 | 19.39         | 8.23          | 0.35               | 7.22         |
| 9/9/2004 | 23:30 | 19.39         | 8.24          | 0.35               | 7.24         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/10/2004 | 0:00  | 19.33         | 8.24          | 0.35               | 7.26         |
| 9/10/2004 | 0:30  | 19.39         | 8.23          | 0.35               | 7.18         |
| 9/10/2004 | 1:00  | 19.39         | 8.23          | 0.35               | 7.23         |
| 9/10/2004 | 1:30  | 19.33         | 8.23          | 0.35               | 7.23         |
| 9/10/2004 | 2:00  | 19.39         | 8.24          | 0.35               | 7.34         |
| 9/10/2004 | 2:30  | 19.33         | 8.23          | 0.35               | 7.27         |
| 9/10/2004 | 3:00  | 19.33         | 8.24          | 0.35               | 7.31         |
| 9/10/2004 | 3:30  | 19.33         | 8.24          | 0.35               | 7.25         |
| 9/10/2004 | 4:00  | 19.28         | 8.24          | 0.35               | 7.27         |
| 9/10/2004 | 4:30  | 19.28         | 8.25          | 0.35               | 7.41         |
| 9/10/2004 | 5:00  | 19.28         | 8.25          | 0.35               | 7.37         |
| 9/10/2004 | 5:30  | 19.28         | 8.24          | 0.35               | 7.30         |
| 9/10/2004 | 6:00  | 19.22         | 8.23          | 0.35               | 7.27         |
| 9/10/2004 | 6:30  | 19.22         | 8.24          | 0.35               | 7.22         |
| 9/10/2004 | 7:00  | 19.22         | 8.25          | 0.35               | 7.29         |
| 9/10/2004 | 7:30  | 19.22         | 8.25          | 0.35               | 7.31         |
| 9/10/2004 | 8:00  | 19.17         | 8.25          | 0.35               | 7.36         |
| 9/10/2004 | 8:30  | 19.17         | 8.24          | 0.35               | 7.26         |
| 9/10/2004 | 9:00  | 19.17         | 8.24          | 0.35               | 7.34         |
| 9/10/2004 | 9:30  | 19.17         | 8.24          | 0.35               | 7.32         |
| 9/10/2004 | 10:00 | 19.17         | 8.23          | 0.35               | 7.27         |
| 9/10/2004 | 10:30 | 19.17         | 8.21          | 0.35               | 7.30         |
| 9/10/2004 | 11:00 | 19.11         | 8.21          | 0.35               | 7.21         |
| 9/10/2004 | 11:30 | 19.11         | 8.21          | 0.35               | 7.19         |
| 9/10/2004 | 12:00 | 19.06         | 8.19          | 0.35               | 7.11         |
| 9/10/2004 | 12:30 | 19.17         | 8.19          | 0.35               | 7.09         |
| 9/10/2004 | 13:00 | 19.22         | 8.21          | 0.35               | 7.17         |
| 9/10/2004 | 13:30 | 19.17         | 8.20          | 0.35               | 7.05         |
| 9/10/2004 | 14:00 | 19.17         | 8.20          | 0.35               | 7.12         |
| 9/10/2004 | 14:30 | 19.11         | 8.19          | 0.35               | 7.03         |
| 9/10/2004 | 15:00 | 19.00         | 8.18          | 0.35               | 7.02         |
| 9/10/2004 | 15:30 | 18.89         | 8.16          | 0.35               | 6.87         |
| 9/10/2004 | 16:00 | 18.89         | 8.15          | 0.35               | 6.88         |
| 9/10/2004 | 16:30 | 18.94         | 8.17          | 0.35               | 6.92         |
| 9/10/2004 | 17:00 | 19.06         | 8.19          | 0.35               | 7.10         |
| 9/10/2004 | 17:30 | 19.00         | 8.20          | 0.35               | 7.13         |
| 9/10/2004 | 18:00 | 18.94         | 8.20          | 0.35               | 7.14         |
| 9/10/2004 | 18:30 | 19.06         | 8.22          | 0.35               | 7.24         |
| 9/10/2004 | 19:00 | 19.06         | 8.23          | 0.35               | 7.26         |
| 9/10/2004 | 19:30 | 19.11         | 8.23          | 0.35               | 7.30         |
| 9/10/2004 | 20:00 | 19.17         | 8.25          | 0.35               | 7.42         |
| 9/10/2004 | 20:30 | 19.11         | 8.25          | 0.35               | 7.43         |
| 9/10/2004 | 21:00 | 19.11         | 8.25          | 0.35               | 7.40         |
| 9/10/2004 | 21:30 | 19.17         | 8.25          | 0.35               | 7.42         |
| 9/10/2004 | 22:00 | 19.17         | 8.25          | 0.35               | 7.41         |
| 9/10/2004 | 22:30 | 19.17         | 8.26          | 0.35               | 7.45         |
| 9/10/2004 | 23:00 | 19.22         | 8.27          | 0.35               | 7.53         |
| 9/10/2004 | 23:30 | 19.22         | 8.28          | 0.35               | 7.55         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/11/2004 | 0:00  | 19.28         | 8.29          | 0.35               | 7.59         |
| 9/11/2004 | 0:30  | 19.28         | 8.29          | 0.35               | 7.56         |
| 9/11/2004 | 1:00  | 19.22         | 8.30          | 0.35               | 7.66         |
| 9/11/2004 | 1:30  | 19.22         | 8.30          | 0.35               | 7.68         |
| 9/11/2004 | 2:00  | 19.28         | 8.32          | 0.35               | 7.73         |
| 9/11/2004 | 2:30  | 19.33         | 8.33          | 0.35               | 7.77         |
| 9/11/2004 | 3:00  | 19.33         | 8.33          | 0.35               | 7.81         |
| 9/11/2004 | 3:30  | 19.39         | 8.34          | 0.35               | 7.84         |
| 9/11/2004 | 4:00  | 19.39         | 8.34          | 0.35               | 7.86         |
| 9/11/2004 | 4:30  | 19.39         | 8.34          | 0.35               | 7.87         |
| 9/11/2004 | 5:00  | 19.44         | 8.35          | 0.35               | 7.84         |
| 9/11/2004 | 5:30  | 19.39         | 8.34          | 0.35               | 7.84         |
| 9/11/2004 | 6:00  | 19.33         | 8.33          | 0.35               | 7.81         |
| 9/11/2004 | 6:30  | 19.28         | 8.32          | 0.35               | 7.75         |
| 9/11/2004 | 7:00  | 19.28         | 8.31          | 0.35               | 7.73         |
| 9/11/2004 | 7:30  | 19.22         | 8.30          | 0.35               | 7.66         |
| 9/11/2004 | 8:00  | 19.17         | 8.29          | 0.35               | 7.58         |
| 9/11/2004 | 8:30  | 19.17         | 8.28          | 0.35               | 7.58         |
| 9/11/2004 | 9:00  | 19.22         | 8.28          | 0.35               | 7.58         |
| 9/11/2004 | 9:30  | 19.22         | 8.30          | 0.35               | 7.69         |
| 9/11/2004 | 10:00 | 19.33         | 8.33          | 0.35               | 7.79         |
| 9/11/2004 | 10:30 | 19.33         | 8.34          | 0.35               | 7.88         |
| 9/11/2004 | 11:00 | 19.50         | 8.38          | 0.35               | 8.08         |
| 9/11/2004 | 11:30 | 19.67         | 8.43          | 0.35               | 8.25         |
| 9/11/2004 | 12:00 | 19.83         | 8.46          | 0.35               | 8.41         |
| 9/11/2004 | 12:30 | 20.00         | 8.47          | 0.35               | 8.42         |
| 9/11/2004 | 13:00 | 20.06         | 8.47          | 0.35               | 8.43         |
| 9/11/2004 | 13:30 | 20.06         | 8.45          | 0.35               | 8.32         |
| 9/11/2004 | 14:00 | 20.06         | 8.42          | 0.35               | 8.25         |
| 9/11/2004 | 14:30 | 20.00         | 8.43          | 0.35               | 8.33         |
| 9/11/2004 | 15:00 | 20.00         | 8.43          | 0.35               | 8.35         |
| 9/11/2004 | 15:30 | 20.17         | 8.44          | 0.35               | 8.40         |
| 9/11/2004 | 16:00 | 20.11         | 8.43          | 0.35               | 8.31         |
| 9/11/2004 | 16:30 | 20.17         | 8.45          | 0.35               | 8.44         |
| 9/11/2004 | 17:00 | 20.17         | 8.44          | 0.35               | 8.38         |
| 9/11/2004 | 17:30 | 20.17         | 8.44          | 0.35               | 8.34         |
| 9/11/2004 | 18:00 | 20.11         | 8.43          | 0.35               | 8.29         |
| 9/11/2004 | 18:30 | 20.06         | 8.41          | 0.35               | 8.21         |
| 9/11/2004 | 19:00 | 20.17         | 8.44          | 0.35               | 8.36         |
| 9/11/2004 | 19:30 | 20.06         | 8.42          | 0.35               | 8.30         |
| 9/11/2004 | 20:00 | 19.94         | 8.39          | 0.35               | 8.10         |
| 9/11/2004 | 20:30 | 19.89         | 8.38          | 0.35               | 8.09         |
| 9/11/2004 | 21:00 | 19.89         | 8.38          | 0.35               | 8.06         |
| 9/11/2004 | 21:30 | 19.89         | 8.37          | 0.35               | 8.05         |
| 9/11/2004 | 22:00 | 19.89         | 8.37          | 0.35               | 8.02         |
| 9/11/2004 | 22:30 | 19.89         | 8.38          | 0.35               | 8.11         |
| 9/11/2004 | 23:00 | 19.89         | 8.38          | 0.35               | 8.08         |
| 9/11/2004 | 23:30 | 19.94         | 8.38          | 0.35               | 8.10         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/12/2004 | 0:00  | 19.89         | 8.39          | 0.35               | 8.10         |
| 9/12/2004 | 0:30  | 19.89         | 8.39          | 0.35               | 8.16         |
| 9/12/2004 | 1:00  | 19.89         | 8.38          | 0.35               | 8.09         |
| 9/12/2004 | 1:30  | 19.83         | 8.37          | 0.35               | 8.05         |
| 9/12/2004 | 2:00  | 19.83         | 8.37          | 0.35               | 7.99         |
| 9/12/2004 | 2:30  | 19.78         | 8.36          | 0.35               | 7.97         |
| 9/12/2004 | 3:00  | 19.78         | 8.36          | 0.35               | 7.99         |
| 9/12/2004 | 3:30  | 19.78         | 8.35          | 0.35               | 7.93         |
| 9/12/2004 | 4:00  | 19.72         | 8.35          | 0.35               | 7.94         |
| 9/12/2004 | 4:30  | 19.72         | 8.34          | 0.35               | 7.92         |
| 9/12/2004 | 5:00  | 19.72         | 8.33          | 0.35               | 7.93         |
| 9/12/2004 | 5:30  | 19.72         | 8.33          | 0.35               | 7.93         |
| 9/12/2004 | 6:00  | 19.72         | 8.33          | 0.35               | 7.89         |
| 9/12/2004 | 6:30  | 19.72         | 8.33          | 0.35               | 7.94         |
| 9/12/2004 | 7:00  | 19.67         | 8.33          | 0.35               | 7.96         |
| 9/12/2004 | 7:30  | 19.61         | 8.33          | 0.35               | 7.90         |
| 9/12/2004 | 8:00  | 19.61         | 8.32          | 0.35               | 7.84         |
| 9/12/2004 | 8:30  | 19.56         | 8.31          | 0.35               | 7.87         |
| 9/12/2004 | 9:00  | 19.56         | 8.29          | 0.35               | 7.78         |
| 9/12/2004 | 9:30  | 19.56         | 8.29          | 0.35               | 7.79         |
| 9/12/2004 | 10:00 | 19.56         | 8.30          | 0.35               | 7.82         |
| 9/12/2004 | 10:30 | 19.56         | 8.29          | 0.35               | 7.85         |
| 9/12/2004 | 11:00 | 19.56         | 8.29          | 0.35               | 7.82         |
| 9/12/2004 | 11:30 | 19.56         | 8.29          | 0.35               | 7.80         |
| 9/12/2004 | 12:00 | 19.50         | 8.26          | 0.35               | 7.67         |
| 9/12/2004 | 12:30 | 19.39         | 8.24          | 0.35               | 7.62         |
| 9/12/2004 | 13:00 | 19.44         | 8.24          | 0.35               | 7.62         |
| 9/12/2004 | 13:30 | 19.44         | 8.23          | 0.35               | 7.59         |
| 9/12/2004 | 14:00 | 19.33         | 8.21          | 0.35               | 7.46         |
| 9/12/2004 | 14:30 | 19.22         | 8.19          | 0.35               | 7.38         |
| 9/12/2004 | 15:00 | 19.17         | 8.17          | 0.35               | 7.32         |
| 9/12/2004 | 15:30 | 19.22         | 8.17          | 0.35               | 7.32         |
| 9/12/2004 | 16:00 | 19.28         | 8.19          | 0.35               | 7.40         |
| 9/12/2004 | 16:30 | 19.39         | 8.21          | 0.35               | 7.52         |
| 9/12/2004 | 17:00 | 19.50         | 8.23          | 0.35               | 7.60         |
| 9/12/2004 | 17:30 | 19.50         | 8.24          | 0.35               | 7.64         |
| 9/12/2004 | 18:00 | 19.56         | 8.25          | 0.35               | 7.66         |
| 9/12/2004 | 18:30 | 19.50         | 8.23          | 0.35               | 7.58         |
| 9/12/2004 | 19:00 | 19.56         | 8.23          | 0.35               | 7.55         |
| 9/12/2004 | 19:30 | 19.78         | 8.27          | 0.35               | 7.80         |
| 9/12/2004 | 20:00 | 19.83         | 8.29          | 0.35               | 7.86         |
| 9/12/2004 | 20:30 | 19.89         | 8.29          | 0.35               | 7.88         |
| 9/12/2004 | 21:00 | 19.89         | 8.28          | 0.35               | 7.84         |
| 9/12/2004 | 21:30 | 19.89         | 8.29          | 0.35               | 7.82         |
| 9/12/2004 | 22:00 | 19.94         | 8.29          | 0.35               | 7.87         |
| 9/12/2004 | 22:30 | 20.00         | 8.30          | 0.35               | 7.93         |
| 9/12/2004 | 23:00 | 19.94         | 8.30          | 0.35               | 7.82         |
| 9/12/2004 | 23:30 | 20.00         | 8.30          | 0.35               | 7.90         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/13/2004 | 0:00  | 20.06         | 8.31          | 0.35               | 7.91         |
| 9/13/2004 | 0:30  | 20.06         | 8.31          | 0.35               | 7.92         |
| 9/13/2004 | 1:00  | 20.11         | 8.32          | 0.35               | 8.01         |
| 9/13/2004 | 1:30  | 20.06         | 8.32          | 0.35               | 7.94         |
| 9/13/2004 | 2:00  | 20.06         | 8.32          | 0.35               | 7.94         |
| 9/13/2004 | 2:30  | 20.06         | 8.31          | 0.35               | 7.95         |
| 9/13/2004 | 3:00  | 20.06         | 8.32          | 0.35               | 7.93         |
| 9/13/2004 | 3:30  | 20.06         | 8.32          | 0.35               | 7.96         |
| 9/13/2004 | 4:00  | 20.06         | 8.32          | 0.35               | 7.94         |
| 9/13/2004 | 4:30  | 20.06         | 8.32          | 0.35               | 7.97         |
| 9/13/2004 | 5:00  | 20.06         | 8.32          | 0.35               | 7.95         |
| 9/13/2004 | 5:30  | 20.06         | 8.32          | 0.35               | 7.93         |
| 9/13/2004 | 6:00  | 20.00         | 8.32          | 0.35               | 7.91         |
| 9/13/2004 | 6:30  | 20.00         | 8.32          | 0.35               | 7.96         |
| 9/13/2004 | 7:00  | 20.00         | 8.32          | 0.35               | 7.94         |
| 9/13/2004 | 7:30  | 20.00         | 8.32          | 0.35               | 7.92         |
| 9/13/2004 | 8:00  | 20.00         | 8.32          | 0.35               | 7.96         |
| 9/13/2004 | 8:30  | 20.00         | 8.32          | 0.35               | 7.92         |
| 9/13/2004 | 9:00  | 20.00         | 8.33          | 0.35               | 7.94         |
| 9/13/2004 | 9:30  | 20.00         | 8.32          | 0.35               | 7.90         |
| 9/13/2004 | 10:00 | 20.00         | 8.32          | 0.35               | 7.97         |
| 9/13/2004 | 10:30 | 20.00         | 8.32          | 0.35               | 7.95         |
| 9/13/2004 | 11:00 | 19.94         | 8.30          | 0.35               | 7.91         |
| 9/13/2004 | 11:30 | 19.94         | 8.30          | 0.35               | 7.90         |
| 9/13/2004 | 12:00 | 19.94         | 8.28          | 0.35               | 7.76         |
| 9/13/2004 | 12:30 | 19.83         | 8.24          | 0.35               | 7.55         |
| 9/13/2004 | 13:00 | 19.89         | 8.22          | 0.35               | 7.52         |
| 9/13/2004 | 13:30 | 19.83         | 8.19          | 0.35               | 7.41         |
| 9/13/2004 | 14:00 | 19.94         | 8.20          | 0.35               | 7.43         |
| 9/13/2004 | 14:30 | 19.89         | 8.17          | 0.35               | 7.29         |
| 9/13/2004 | 15:00 | 19.89         | 8.16          | 0.35               | 7.25         |
| 9/13/2004 | 15:30 | 19.89         | 8.16          | 0.35               | 7.22         |
| 9/13/2004 | 16:00 | 19.83         | 8.15          | 0.35               | 7.19         |
| 9/13/2004 | 16:30 | 20.06         | 8.19          | 0.35               | 7.33         |
| 9/13/2004 | 17:00 | 19.94         | 8.17          | 0.35               | 7.23         |
| 9/13/2004 | 17:30 | 19.94         | 8.16          | 0.35               | 7.21         |
| 9/13/2004 | 18:00 | 19.94         | 8.17          | 0.35               | 7.27         |
| 9/13/2004 | 18:30 | 19.94         | 8.17          | 0.35               | 7.25         |
| 9/13/2004 | 19:00 | 20.00         | 8.18          | 0.35               | 7.30         |
| 9/13/2004 | 19:30 | 19.89         | 8.16          | 0.35               | 7.23         |
| 9/13/2004 | 20:00 | 20.00         | 8.19          | 0.35               | 7.30         |
| 9/13/2004 | 20:30 | 20.11         | 8.21          | 0.35               | 7.36         |
| 9/13/2004 | 21:00 | 20.22         | 8.24          | 0.35               | 7.50         |
| 9/13/2004 | 21:30 | 20.28         | 8.26          | 0.35               | 7.65         |
| 9/13/2004 | 22:00 | 20.39         | 8.28          | 0.35               | 7.60         |
| 9/13/2004 | 22:30 | 20.44         | 8.29          | 0.35               | 7.71         |
| 9/13/2004 | 23:00 | 20.50         | 8.30          | 0.35               | 7.77         |
| 9/13/2004 | 23:30 | 20.50         | 8.30          | 0.35               | 7.74         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/14/2004 | 0:00  | 20.50         | 8.30          | 0.35               | 7.77         |
| 9/14/2004 | 0:30  | 20.50         | 8.31          | 0.35               | 7.59         |
| 9/14/2004 | 1:00  | 20.56         | 8.32          | 0.35               | 7.88         |
| 9/14/2004 | 1:30  | 20.56         | 8.33          | 0.35               | 7.91         |
| 9/14/2004 | 2:00  | 20.61         | 8.34          | 0.35               | 7.96         |
| 9/14/2004 | 2:30  | 20.56         | 8.33          | 0.35               | 7.96         |
| 9/14/2004 | 3:00  | 20.56         | 8.33          | 0.35               | 7.90         |
| 9/14/2004 | 3:30  | 20.56         | 8.32          | 0.35               | 7.80         |
| 9/14/2004 | 4:00  | 20.50         | 8.31          | 0.35               | 7.76         |
| 9/14/2004 | 4:30  | 20.50         | 8.32          | 0.35               | 7.82         |
| 9/14/2004 | 5:00  | 20.56         | 8.32          | 0.35               | 7.78         |
| 9/14/2004 | 5:30  | 20.56         | 8.32          | 0.35               | 7.79         |
| 9/14/2004 | 6:00  | 20.50         | 8.31          | 0.35               | 7.77         |
| 9/14/2004 | 6:30  | 20.50         | 8.31          | 0.35               | 7.74         |
| 9/14/2004 | 7:00  | 20.50         | 8.31          | 0.35               | 7.80         |
| 9/14/2004 | 7:30  | 20.56         | 8.32          | 0.35               | 7.82         |
| 9/14/2004 | 8:00  | 20.50         | 8.31          | 0.35               | 7.77         |
| 9/14/2004 | 8:30  | 20.50         | 8.30          | 0.35               | 7.72         |
| 9/14/2004 | 9:00  | 20.50         | 8.30          | 0.35               | 7.69         |
| 9/14/2004 | 9:30  | 20.50         | 8.29          | 0.35               | 7.69         |
| 9/14/2004 | 10:00 | 20.50         | 8.29          | 0.35               | 7.69         |
| 9/14/2004 | 10:30 | 20.50         | 8.27          | 0.35               | 7.59         |
| 9/14/2004 | 11:00 | 20.50         | 8.25          | 0.35               | 7.50         |
| 9/14/2004 | 11:30 | 20.56         | 8.25          | 0.35               | 7.54         |
| 9/14/2004 | 12:00 | 20.56         | 8.25          | 0.35               | 7.54         |
| 9/14/2004 | 12:30 | 20.56         | 8.20          | 0.35               | 7.30         |
| 9/14/2004 | 13:00 | 20.67         | 8.22          | 0.35               | 7.39         |
| 9/14/2004 | 13:30 | 20.61         | 8.23          | 0.35               | 7.39         |
| 9/14/2004 | 14:00 | 20.67         | 8.23          | 0.35               | 7.42         |
| 9/14/2004 | 14:30 | 20.67         | 8.24          | 0.35               | 7.51         |
| 9/14/2004 | 15:00 | 20.72         | 8.26          | 0.35               | 7.50         |
| 9/14/2004 | 15:30 | 20.83         | 8.29          | 0.35               | 7.67         |
| 9/14/2004 | 16:00 | 20.83         | 8.29          | 0.35               | 7.59         |
| 9/14/2004 | 16:30 | 20.94         | 8.32          | 0.35               | 7.64         |
| 9/14/2004 | 17:00 | 21.00         | 8.33          | 0.35               | 7.80         |
| 9/14/2004 | 17:30 | 21.11         | 8.36          | 0.35               | 7.90         |
| 9/14/2004 | 18:00 | 21.11         | 8.36          | 0.35               | 7.97         |
| 9/14/2004 | 18:30 | 21.06         | 8.35          | 0.35               | 7.87         |
| 9/14/2004 | 19:00 | 20.94         | 8.32          | 0.35               | 7.72         |
| 9/14/2004 | 19:30 | 20.94         | 8.31          | 0.35               | 7.68         |
| 9/14/2004 | 20:00 | 21.06         | 8.33          | 0.35               | 7.77         |
| 9/14/2004 | 20:30 | 21.17         | 8.35          | 0.35               | 7.88         |
| 9/14/2004 | 21:00 | 21.11         | 8.33          | 0.35               | 7.78         |
| 9/14/2004 | 21:30 | 21.50         | 8.45          | 0.35               | 8.23         |
| 9/14/2004 | 22:00 | 21.39         | 8.42          | 0.35               | 8.21         |
| 9/14/2004 | 22:30 | 21.44         | 8.43          | 0.35               | 8.25         |
| 9/14/2004 | 23:00 | 21.33         | 8.40          | 0.35               | 8.17         |
| 9/14/2004 | 23:30 | 21.28         | 8.39          | 0.35               | 8.10         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/15/2004 | 0:00  | 21.11         | 8.34          | 0.35               | 7.88         |
| 9/15/2004 | 0:30  | 21.06         | 8.32          | 0.35               | 7.75         |
| 9/15/2004 | 1:00  | 20.94         | 8.29          | 0.35               | 7.70         |
| 9/15/2004 | 1:30  | 21.00         | 8.31          | 0.35               | 7.69         |
| 9/15/2004 | 2:00  | 21.06         | 8.31          | 0.35               | 7.74         |
| 9/15/2004 | 2:30  | 21.06         | 8.32          | 0.35               | 7.82         |
| 9/15/2004 | 3:00  | 21.06         | 8.33          | 0.35               | 7.86         |
| 9/15/2004 | 3:30  | 21.11         | 8.33          | 0.35               | 7.83         |
| 9/15/2004 | 4:00  | 21.06         | 8.32          | 0.35               | 7.80         |
| 9/15/2004 | 4:30  | 21.06         | 8.31          | 0.35               | 7.69         |
| 9/15/2004 | 5:00  | 21.00         | 8.30          | 0.35               | 7.67         |
| 9/15/2004 | 5:30  | 21.00         | 8.29          | 0.35               | 7.65         |
| 9/15/2004 | 6:00  | 20.94         | 8.28          | 0.35               | 7.64         |
| 9/15/2004 | 6:30  | 20.89         | 8.26          | 0.35               | 7.53         |
| 9/15/2004 | 7:00  | 20.83         | 8.23          | 0.35               | 7.46         |
| 9/15/2004 | 7:30  | 20.83         | 8.24          | 0.35               | 7.50         |
| 9/15/2004 | 8:00  | 20.78         | 8.22          | 0.35               | 7.39         |
| 9/15/2004 | 8:30  | 20.78         | 8.21          | 0.35               | 7.36         |
| 9/15/2004 | 9:00  | 20.67         | 8.18          | 0.35               | 7.27         |
| 9/15/2004 | 9:30  | 20.67         | 8.16          | 0.35               | 7.20         |
| 9/15/2004 | 10:00 | 20.61         | 8.14          | 0.35               | 7.09         |
| 9/15/2004 | 10:30 | 20.61         | 8.13          | 0.35               | 7.03         |
| 9/15/2004 | 11:00 | 20.67         | 8.16          | 0.35               | 7.16         |
| 9/15/2004 | 11:30 | 20.67         | 8.14          | 0.35               | 7.05         |
| 9/15/2004 | 12:00 | 20.61         | 8.12          | 0.35               | 7.04         |
| 9/15/2004 | 12:30 | 20.61         | 8.11          | 0.35               | 6.98         |
| 9/15/2004 | 13:00 | 20.56         | 8.09          | 0.35               | 6.92         |
| 9/15/2004 | 13:30 | 20.61         | 8.12          | 0.35               | 7.05         |
| 9/15/2004 | 14:00 | 20.67         | 8.13          | 0.35               | 7.13         |
| 9/15/2004 | 14:30 | 20.67         | 8.12          | 0.35               | 7.07         |
| 9/15/2004 | 15:00 | 20.67         | 8.13          | 0.35               | 7.11         |
| 9/15/2004 | 15:30 | 20.72         | 8.13          | 0.35               | 7.20         |
| 9/15/2004 | 16:00 | 20.78         | 8.15          | 0.35               | 7.22         |
| 9/15/2004 | 16:30 | 20.67         | 8.13          | 0.35               | 7.12         |
| 9/15/2004 | 17:00 | 20.67         | 8.15          | 0.35               | 7.19         |
| 9/15/2004 | 17:30 | 20.56         | 8.12          | 0.35               | 7.03         |
| 9/15/2004 | 18:00 | 20.67         | 8.13          | 0.35               | 7.20         |
| 9/15/2004 | 18:30 | 20.78         | 8.18          | 0.35               | 7.38         |
| 9/15/2004 | 19:00 | 20.89         | 8.21          | 0.35               | 7.49         |
| 9/15/2004 | 19:30 | 21.00         | 8.25          | 0.35               | 7.64         |
| 9/15/2004 | 20:00 | 21.00         | 8.25          | 0.35               | 7.62         |
| 9/15/2004 | 20:30 | 21.06         | 8.27          | 0.35               | 7.67         |
| 9/15/2004 | 21:00 | 21.11         | 8.29          | 0.35               | 7.76         |
| 9/15/2004 | 21:30 | 21.11         | 8.28          | 0.35               | 7.79         |
| 9/15/2004 | 22:00 | 21.11         | 8.29          | 0.35               | 7.77         |
| 9/15/2004 | 22:30 | 21.11         | 8.29          | 0.35               | 7.74         |
| 9/15/2004 | 23:00 | 21.11         | 8.30          | 0.35               | 7.79         |
| 9/15/2004 | 23:30 | 21.17         | 8.32          | 0.35               | 7.86         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/16/2004 | 0:00  | 21.17         | 8.33          | 0.35               | 7.85         |
| 9/16/2004 | 0:30  | 21.17         | 8.34          | 0.35               | 7.89         |
| 9/16/2004 | 1:00  | 21.22         | 8.37          | 0.35               | 8.02         |
| 9/16/2004 | 1:30  | 21.22         | 8.37          | 0.35               | 8.00         |
| 9/16/2004 | 2:00  | 21.17         | 8.36          | 0.35               | 7.99         |
| 9/16/2004 | 2:30  | 21.17         | 8.36          | 0.35               | 7.97         |
| 9/16/2004 | 3:00  | 21.11         | 8.35          | 0.35               | 7.92         |
| 9/16/2004 | 3:30  | 21.06         | 8.34          | 0.35               | 7.82         |
| 9/16/2004 | 4:00  | 21.06         | 8.36          | 0.35               | 7.96         |
| 9/16/2004 | 4:30  | 21.06         | 8.37          | 0.35               | 7.97         |
| 9/16/2004 | 5:00  | 21.00         | 8.37          | 0.35               | 7.93         |
| 9/16/2004 | 5:30  | 21.00         | 8.37          | 0.35               | 7.97         |
| 9/16/2004 | 6:00  | 20.94         | 8.38          | 0.35               | 8.04         |
| 9/16/2004 | 6:30  | 20.89         | 8.36          | 0.35               | 7.93         |
| 9/16/2004 | 7:00  | 20.83         | 8.35          | 0.35               | 7.83         |
| 9/16/2004 | 7:30  | 20.78         | 8.34          | 0.35               | 7.80         |
| 9/16/2004 | 8:00  | 20.72         | 8.32          | 0.35               | 7.68         |
| 9/16/2004 | 8:30  | 20.67         | 8.31          | 0.35               | 7.68         |
| 9/16/2004 | 9:00  | 20.67         | 8.33          | 0.35               | 7.75         |
| 9/16/2004 | 9:30  | 20.67         | 8.36          | 0.35               | 7.92         |
| 9/16/2004 | 10:00 | 20.67         | 8.38          | 0.35               | 7.75         |
| 9/16/2004 | 10:30 | 20.67         | 8.37          | 0.35               | 7.63         |
| 9/16/2004 | 11:00 | 20.67         | 8.38          | 0.35               | 7.81         |
| 9/16/2004 | 11:30 | 20.72         | 8.38          | 0.35               | 7.76         |
| 9/16/2004 | 12:00 | 20.72         | 8.38          | 0.35               | 7.72         |
| 9/16/2004 | 12:30 | 20.72         | 8.34          | 0.35               | 7.58         |
| 9/16/2004 | 13:00 | 20.72         | 8.35          | 0.35               | 7.67         |
| 9/16/2004 | 13:30 | 20.72         | 8.35          | 0.35               | 7.63         |
| 9/16/2004 | 14:00 | 20.72         | 8.35          | 0.35               | 7.71         |
| 9/16/2004 | 14:30 | 20.78         | 8.35          | 0.35               | 7.63         |
| 9/16/2004 | 15:00 | 20.83         | 8.35          | 0.35               | 8.41         |
| 9/16/2004 | 15:30 | 20.78         | 8.35          | 0.35               | 8.41         |
| 9/16/2004 | 16:00 | 20.83         | 8.36          | 0.35               | 8.43         |
| 9/16/2004 | 16:30 | 20.83         | 8.36          | 0.35               | 8.44         |
| 9/16/2004 | 17:00 | 20.83         | 8.37          | 0.35               | 8.47         |
| 9/16/2004 | 17:30 | 20.78         | 8.36          | 0.35               | 8.37         |
| 9/16/2004 | 18:00 | 20.78         | 8.36          | 0.35               | 8.40         |
| 9/16/2004 | 18:30 | 20.72         | 8.35          | 0.35               | 8.35         |
| 9/16/2004 | 19:00 | 20.72         | 8.34          | 0.35               | 8.23         |
| 9/16/2004 | 19:30 | 20.67         | 8.31          | 0.35               | 8.07         |
| 9/16/2004 | 20:00 | 20.56         | 8.26          | 0.35               | 7.84         |
| 9/16/2004 | 20:30 | 20.39         | 8.21          | 0.35               | 7.61         |
| 9/16/2004 | 21:00 | 20.33         | 8.19          | 0.35               | 7.60         |
| 9/16/2004 | 21:30 | 20.28         | 8.16          | 0.35               | 7.49         |
| 9/16/2004 | 22:00 | 20.17         | 8.15          | 0.35               | 7.49         |
| 9/16/2004 | 22:30 | 20.11         | 8.14          | 0.35               | 7.56         |
| 9/16/2004 | 23:00 | 20.06         | 8.14          | 0.35               | 7.56         |
| 9/16/2004 | 23:30 | 20.06         | 8.13          | 0.35               | 7.58         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/17/2004 | 0:00  | 20.06         | 8.14          | 0.35               | 7.61         |
| 9/17/2004 | 0:30  | 20.00         | 8.14          | 0.35               | 7.60         |
| 9/17/2004 | 1:00  | 20.00         | 8.14          | 0.35               | 7.56         |
| 9/17/2004 | 1:30  | 20.00         | 8.13          | 0.35               | 7.54         |
| 9/17/2004 | 2:00  | 19.94         | 8.14          | 0.35               | 7.55         |
| 9/17/2004 | 2:30  | 19.94         | 8.15          | 0.35               | 7.59         |
| 9/17/2004 | 3:00  | 19.94         | 8.15          | 0.35               | 7.61         |
| 9/17/2004 | 3:30  | 19.94         | 8.14          | 0.35               | 7.59         |
| 9/17/2004 | 4:00  | 19.89         | 8.14          | 0.35               | 7.56         |
| 9/17/2004 | 4:30  | 19.89         | 8.14          | 0.35               | 7.58         |
| 9/17/2004 | 5:00  | 19.83         | 8.14          | 0.35               | 7.58         |
| 9/17/2004 | 5:30  | 19.83         | 8.13          | 0.35               | 7.55         |
| 9/17/2004 | 6:00  | 19.83         | 8.13          | 0.35               | 7.55         |
| 9/17/2004 | 6:30  | 19.78         | 8.12          | 0.35               | 7.48         |
| 9/17/2004 | 7:00  | 19.78         | 8.12          | 0.35               | 7.49         |
| 9/17/2004 | 7:30  | 19.72         | 8.12          | 0.35               | 7.48         |
| 9/17/2004 | 8:00  | 19.72         | 8.11          | 0.35               | 7.46         |
| 9/17/2004 | 8:30  | 19.72         | 8.12          | 0.35               | 7.50         |
| 9/17/2004 | 9:00  | 19.72         | 8.12          | 0.35               | 7.53         |
| 9/17/2004 | 9:30  | 19.72         | 8.12          | 0.35               | 7.56         |
| 9/17/2004 | 10:00 | 19.72         | 8.13          | 0.35               | 7.57         |
| 9/17/2004 | 10:30 | 19.72         | 8.11          | 0.35               | 7.50         |
| 9/17/2004 | 11:00 | 19.72         | 8.11          | 0.35               | 7.49         |
| 9/17/2004 | 11:30 | 19.67         | 8.12          | 0.35               | 7.54         |
| 9/17/2004 | 12:00 | 19.61         | 8.11          | 0.35               | 7.53         |
| 9/17/2004 | 12:30 | 19.61         | 8.10          | 0.35               | 7.46         |
| 9/17/2004 | 13:00 | 19.56         | 8.10          | 0.35               | 7.39         |
| 9/17/2004 | 13:30 | 19.50         | 8.10          | 0.35               | 7.45         |
| 9/17/2004 | 14:00 | 19.44         | 8.09          | 0.35               | 7.42         |
| 9/17/2004 | 14:30 | 19.33         | 8.10          | 0.35               | 7.45         |
| 9/17/2004 | 15:00 | 19.28         | 8.10          | 0.35               | 7.50         |
| 9/17/2004 | 15:30 | 19.11         | 8.09          | 0.35               | 7.48         |
| 9/17/2004 | 16:00 | 19.06         | 8.09          | 0.35               | 7.48         |
| 9/17/2004 | 16:30 | 18.94         | 8.10          | 0.35               | 7.51         |
| 9/17/2004 | 17:00 | 18.78         | 8.10          | 0.35               | 7.56         |
| 9/17/2004 | 17:30 | 18.61         | 8.10          | 0.35               | 7.59         |
| 9/17/2004 | 18:00 | 18.61         | 8.10          | 0.35               | 7.64         |
| 9/17/2004 | 18:30 | 18.56         | 8.11          | 0.35               | 7.66         |
| 9/17/2004 | 19:00 | 18.50         | 8.10          | 0.35               | 7.63         |
| 9/17/2004 | 19:30 | 18.61         | 8.10          | 0.35               | 7.64         |
| 9/17/2004 | 20:00 | 18.61         | 8.11          | 0.35               | 7.64         |
| 9/17/2004 | 20:30 | 18.67         | 8.12          | 0.35               | 7.73         |
| 9/17/2004 | 21:00 | 18.78         | 8.13          | 0.35               | 7.78         |
| 9/17/2004 | 21:30 | 18.78         | 8.13          | 0.35               | 7.70         |
| 9/17/2004 | 22:00 | 18.83         | 8.13          | 0.35               | 7.72         |
| 9/17/2004 | 22:30 | 18.83         | 8.13          | 0.35               | 7.73         |
| 9/17/2004 | 23:00 | 18.89         | 8.13          | 0.35               | 7.68         |
| 9/17/2004 | 23:30 | 18.89         | 8.14          | 0.35               | 7.73         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/18/2004 | 0:00  | 18.89         | 8.14          | 0.35               | 7.70         |
| 9/18/2004 | 0:30  | 18.89         | 8.14          | 0.35               | 7.75         |
| 9/18/2004 | 1:00  | 18.83         | 8.14          | 0.35               | 7.73         |
| 9/18/2004 | 1:30  | 18.83         | 8.15          | 0.35               | 7.77         |
| 9/18/2004 | 2:00  | 18.83         | 8.15          | 0.35               | 7.79         |
| 9/18/2004 | 2:30  | 18.89         | 8.15          | 0.35               | 7.79         |
| 9/18/2004 | 3:00  | 18.89         | 8.15          | 0.35               | 7.80         |
| 9/18/2004 | 3:30  | 18.89         | 8.15          | 0.35               | 7.77         |
| 9/18/2004 | 4:00  | 18.89         | 8.15          | 0.35               | 7.82         |
| 9/18/2004 | 4:30  | 18.89         | 8.16          | 0.35               | 7.80         |
| 9/18/2004 | 5:00  | 18.89         | 8.16          | 0.35               | 7.83         |
| 9/18/2004 | 5:30  | 18.89         | 8.16          | 0.35               | 7.83         |
| 9/18/2004 | 6:00  | 18.83         | 8.16          | 0.35               | 7.84         |
| 9/18/2004 | 6:30  | 18.83         | 8.15          | 0.35               | 7.82         |
| 9/18/2004 | 7:00  | 18.78         | 8.16          | 0.35               | 7.82         |
| 9/18/2004 | 7:30  | 18.78         | 8.15          | 0.35               | 7.82         |
| 9/18/2004 | 8:00  | 18.78         | 8.15          | 0.35               | 7.81         |
| 9/18/2004 | 8:30  | 18.72         | 8.15          | 0.35               | 7.79         |
| 9/18/2004 | 9:00  | 18.67         | 8.16          | 0.35               | 7.82         |
| 9/18/2004 | 9:30  | 18.72         | 8.17          | 0.35               | 7.88         |
| 9/18/2004 | 10:00 | 18.72         | 8.16          | 0.35               | 7.88         |
| 9/18/2004 | 10:30 | 18.67         | 8.16          | 0.35               | 7.81         |
| 9/18/2004 | 11:00 | 18.67         | 8.15          | 0.35               | 7.83         |
| 9/18/2004 | 11:30 | 18.61         | 8.14          | 0.35               | 7.76         |
| 9/18/2004 | 12:00 | 18.61         | 8.13          | 0.35               | 7.76         |
| 9/18/2004 | 12:30 | 18.56         | 8.15          | 0.35               | 7.79         |
| 9/18/2004 | 13:00 | 18.50         | 8.15          | 0.35               | 7.87         |
| 9/18/2004 | 13:30 | 18.50         | 8.15          | 0.35               | 7.82         |
| 9/18/2004 | 14:00 | 18.39         | 8.14          | 0.35               | 7.80         |
| 9/18/2004 | 14:30 | 18.39         | 8.13          | 0.35               | 7.78         |
| 9/18/2004 | 15:00 | 18.33         | 8.13          | 0.35               | 7.77         |
| 9/18/2004 | 15:30 | 18.33         | 8.14          | 0.35               | 7.83         |
| 9/18/2004 | 16:00 | 18.33         | 8.16          | 0.35               | 7.98         |
| 9/18/2004 | 16:30 | 18.28         | 8.17          | 0.35               | 8.07         |
| 9/18/2004 | 17:00 | 18.17         | 8.17          | 0.35               | 7.95         |
| 9/18/2004 | 17:30 | 18.17         | 8.17          | 0.35               | 8.06         |
| 9/18/2004 | 18:00 | 18.22         | 8.18          | 0.35               | 8.13         |
| 9/18/2004 | 18:30 | 18.28         | 8.20          | 0.35               | 8.17         |
| 9/18/2004 | 19:00 | 18.33         | 8.21          | 0.35               | 8.27         |
| 9/18/2004 | 19:30 | 18.33         | 8.22          | 0.35               | 8.28         |
| 9/18/2004 | 20:00 | 18.39         | 8.21          | 0.35               | 8.22         |
| 9/18/2004 | 20:30 | 18.50         | 8.22          | 0.35               | 8.25         |
| 9/18/2004 | 21:00 | 18.56         | 8.21          | 0.35               | 8.22         |
| 9/18/2004 | 21:30 | 18.56         | 8.22          | 0.35               | 8.20         |
| 9/18/2004 | 22:00 | 18.61         | 8.22          | 0.35               | 8.28         |
| 9/18/2004 | 22:30 | 18.67         | 8.22          | 0.35               | 8.27         |
| 9/18/2004 | 23:00 | 18.67         | 8.23          | 0.35               | 8.22         |
| 9/18/2004 | 23:30 | 18.72         | 8.24          | 0.35               | 8.30         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/19/2004 | 0:00  | 18.78         | 8.25          | 0.35               | 8.34         |
| 9/19/2004 | 0:30  | 18.72         | 8.25          | 0.35               | 8.30         |
| 9/19/2004 | 1:00  | 18.67         | 8.25          | 0.35               | 8.33         |
| 9/19/2004 | 1:30  | 18.61         | 8.25          | 0.35               | 8.35         |
| 9/19/2004 | 2:00  | 18.67         | 8.26          | 0.35               | 8.42         |
| 9/19/2004 | 2:30  | 18.67         | 8.27          | 0.35               | 8.43         |
| 9/19/2004 | 3:00  | 18.67         | 8.26          | 0.35               | 8.32         |
| 9/19/2004 | 3:30  | 18.67         | 8.25          | 0.35               | 8.38         |
| 9/19/2004 | 4:00  | 18.67         | 8.25          | 0.35               | 8.30         |
| 9/19/2004 | 4:30  | 18.61         | 8.25          | 0.35               | 8.33         |
| 9/19/2004 | 5:00  | 18.61         | 8.24          | 0.35               | 8.26         |
| 9/19/2004 | 5:30  | 18.56         | 8.24          | 0.35               | 8.18         |
| 9/19/2004 | 6:00  | 18.56         | 8.24          | 0.35               | 8.27         |
| 9/19/2004 | 6:30  | 18.50         | 8.23          | 0.35               | 8.08         |
| 9/19/2004 | 7:00  | 18.50         | 8.23          | 0.35               | 8.19         |
| 9/19/2004 | 7:30  | 18.44         | 8.23          | 0.35               | 8.25         |
| 9/19/2004 | 8:00  | 18.44         | 8.22          | 0.35               | 8.18         |
| 9/19/2004 | 8:30  | 18.44         | 8.23          | 0.35               | 8.16         |
| 9/19/2004 | 9:00  | 18.44         | 8.23          | 0.35               | 8.19         |
| 9/19/2004 | 9:30  | 18.39         | 8.22          | 0.35               | 8.22         |
| 9/19/2004 | 10:00 | 18.33         | 8.21          | 0.35               | 8.20         |
| 9/19/2004 | 10:30 | 18.28         | 8.20          | 0.35               | 8.13         |
| 9/19/2004 | 11:00 | 18.17         | 8.18          | 0.35               | 8.10         |
| 9/19/2004 | 11:30 | 18.17         | 8.18          | 0.35               | 8.03         |
| 9/19/2004 | 12:00 | 18.11         | 8.16          | 0.35               | 7.96         |
| 9/19/2004 | 12:30 | 18.11         | 8.16          | 0.35               | 7.94         |
| 9/19/2004 | 13:00 | 18.17         | 8.15          | 0.35               | 7.93         |
| 9/19/2004 | 13:30 | 18.17         | 8.15          | 0.35               | 7.91         |
| 9/19/2004 | 14:00 | 18.17         | 8.16          | 0.35               | 7.96         |
| 9/19/2004 | 14:30 | 18.17         | 8.16          | 0.35               | 7.96         |
| 9/19/2004 | 15:00 | 18.22         | 8.16          | 0.35               | 7.91         |
| 9/19/2004 | 15:30 | 18.17         | 8.16          | 0.35               | 7.89         |
| 9/19/2004 | 16:00 | 18.17         | 8.15          | 0.35               | 7.93         |
| 9/19/2004 | 16:30 | 18.17         | 8.15          | 0.35               | 7.95         |
| 9/19/2004 | 17:00 | 18.17         | 8.16          | 0.35               | 7.98         |
| 9/19/2004 | 17:30 | 18.17         | 8.18          | 0.35               | 8.04         |
| 9/19/2004 | 18:00 | 18.11         | 8.18          | 0.35               | 8.02         |
| 9/19/2004 | 18:30 | 18.17         | 8.20          | 0.35               | 8.13         |
| 9/19/2004 | 19:00 | 18.28         | 8.22          | 0.35               | 8.21         |
| 9/19/2004 | 19:30 | 18.39         | 8.24          | 0.35               | 8.36         |
| 9/19/2004 | 20:00 | 18.44         | 8.26          | 0.35               | 8.38         |
| 9/19/2004 | 20:30 | 18.50         | 8.27          | 0.35               | 8.44         |
| 9/19/2004 | 21:00 | 18.56         | 8.28          | 0.35               | 8.50         |
| 9/19/2004 | 21:30 | 18.56         | 8.29          | 0.35               | 8.55         |
| 9/19/2004 | 22:00 | 18.61         | 8.30          | 0.35               | 8.53         |
| 9/19/2004 | 22:30 | 18.67         | 8.31          | 0.35               | 8.60         |
| 9/19/2004 | 23:00 | 18.67         | 8.32          | 0.35               | 8.65         |
| 9/19/2004 | 23:30 | 18.72         | 8.33          | 0.35               | 8.74         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/20/2004 | 0:00  | 18.67         | 8.33          | 0.35               | 8.70         |
| 9/20/2004 | 0:30  | 18.67         | 8.34          | 0.35               | 8.76         |
| 9/20/2004 | 1:00  | 18.61         | 8.33          | 0.35               | 8.69         |
| 9/20/2004 | 1:30  | 18.61         | 8.32          | 0.35               | 8.69         |
| 9/20/2004 | 2:00  | 18.61         | 8.32          | 0.35               | 8.60         |
| 9/20/2004 | 2:30  | 18.61         | 8.31          | 0.35               | 8.58         |
| 9/20/2004 | 3:00  | 18.61         | 8.30          | 0.35               | 8.49         |
| 9/20/2004 | 3:30  | 18.61         | 8.30          | 0.35               | 8.51         |
| 9/20/2004 | 4:00  | 18.61         | 8.31          | 0.35               | 8.56         |
| 9/20/2004 | 4:30  | 18.61         | 8.31          | 0.35               | 8.62         |
| 9/20/2004 | 5:00  | 18.56         | 8.31          | 0.35               | 8.48         |
| 9/20/2004 | 5:30  | 18.61         | 8.31          | 0.35               | 8.48         |
| 9/20/2004 | 6:00  | 18.56         | 8.31          | 0.35               | 8.56         |
| 9/20/2004 | 6:30  | 18.50         | 8.30          | 0.35               | 8.51         |
| 9/20/2004 | 7:00  | 18.50         | 8.29          | 0.35               | 8.44         |
| 9/20/2004 | 7:30  | 18.50         | 8.28          | 0.35               | 8.42         |
| 9/20/2004 | 8:00  | 18.44         | 8.28          | 0.35               | 8.42         |
| 9/20/2004 | 8:30  | 18.50         | 8.29          | 0.35               | 8.51         |
| 9/20/2004 | 9:00  | 18.50         | 8.29          | 0.35               | 8.49         |
| 9/20/2004 | 9:30  | 18.50         | 8.28          | 0.35               | 8.40         |
| 9/20/2004 | 10:00 | 18.44         | 8.26          | 0.35               | 8.35         |
| 9/20/2004 | 10:30 | 18.39         | 8.24          | 0.35               | 8.33         |
| 9/20/2004 | 11:00 | 18.39         | 8.24          | 0.35               | 8.26         |
| 9/20/2004 | 11:30 | 18.39         | 8.25          | 0.35               | 8.29         |
| 9/20/2004 | 12:00 | 18.44         | 8.27          | 0.35               | 8.40         |
| 9/20/2004 | 12:30 | 18.39         | 8.24          | 0.35               | 8.29         |
| 9/20/2004 | 13:00 | 18.44         | 8.25          | 0.35               | 8.37         |
| 9/20/2004 | 13:30 | 18.50         | 8.26          | 0.35               | 8.35         |
| 9/20/2004 | 14:00 | 18.39         | 8.23          | 0.35               | 8.23         |
| 9/20/2004 | 14:30 | 18.44         | 8.24          | 0.35               | 8.17         |
| 9/20/2004 | 15:00 | 18.39         | 8.22          | 0.35               | 8.13         |
| 9/20/2004 | 15:30 | 18.33         | 8.22          | 0.35               | 8.20         |
| 9/20/2004 | 16:00 | 18.39         | 8.23          | 0.35               | 8.25         |
| 9/20/2004 | 16:30 | 18.33         | 8.23          | 0.35               | 8.26         |
| 9/20/2004 | 17:00 | 18.39         | 8.26          | 0.35               | 8.34         |
| 9/20/2004 | 17:30 | 18.44         | 8.30          | 0.35               | 8.54         |
| 9/20/2004 | 18:00 | 18.50         | 8.31          | 0.35               | 8.57         |
| 9/20/2004 | 18:30 | 18.44         | 8.30          | 0.35               | 8.60         |
| 9/20/2004 | 19:00 | 18.33         | 8.29          | 0.35               | 8.47         |
| 9/20/2004 | 19:30 | 18.28         | 8.30          | 0.35               | 8.57         |
| 9/20/2004 | 20:00 | 18.28         | 8.29          | 0.35               | 8.52         |
| 9/20/2004 | 20:30 | 18.28         | 8.31          | 0.35               | 8.61         |
| 9/20/2004 | 21:00 | 18.39         | 8.34          | 0.35               | 8.64         |
| 9/20/2004 | 21:30 | 18.44         | 8.37          | 0.35               | 8.73         |
| 9/20/2004 | 22:00 | 18.56         | 8.39          | 0.35               | 8.82         |
| 9/20/2004 | 22:30 | 18.56         | 8.40          | 0.35               | 8.90         |
| 9/20/2004 | 23:00 | 18.56         | 8.40          | 0.35               | 8.82         |
| 9/20/2004 | 23:30 | 18.56         | 8.41          | 0.35               | 8.97         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/21/2004 | 0:00  | 18.61         | 8.42          | 0.35               | 8.97         |
| 9/21/2004 | 0:30  | 18.56         | 8.41          | 0.35               | 8.93         |
| 9/21/2004 | 1:00  | 18.56         | 8.41          | 0.35               | 8.97         |
| 9/21/2004 | 1:30  | 18.56         | 8.42          | 0.35               | 9.02         |
| 9/21/2004 | 2:00  | 18.61         | 8.42          | 0.35               | 8.93         |
| 9/21/2004 | 2:30  | 18.56         | 8.42          | 0.35               | 8.92         |
| 9/21/2004 | 3:00  | 18.56         | 8.43          | 0.35               | 9.01         |
| 9/21/2004 | 3:30  | 18.56         | 8.43          | 0.35               | 9.02         |
| 9/21/2004 | 4:00  | 18.56         | 8.42          | 0.35               | 8.99         |
| 9/21/2004 | 4:30  | 18.50         | 8.42          | 0.35               | 8.84         |
| 9/21/2004 | 5:00  | 18.50         | 8.41          | 0.35               | 8.89         |
| 9/21/2004 | 5:30  | 18.50         | 8.41          | 0.35               | 8.79         |
| 9/21/2004 | 6:00  | 18.50         | 8.39          | 0.35               | 8.77         |
| 9/21/2004 | 6:30  | 18.44         | 8.38          | 0.35               | 8.66         |
| 9/21/2004 | 7:00  | 18.44         | 8.38          | 0.35               | 8.63         |
| 9/21/2004 | 7:30  | 18.39         | 8.37          | 0.35               | 8.61         |
| 9/21/2004 | 8:00  | 18.39         | 8.36          | 0.35               | 8.51         |
| 9/21/2004 | 8:30  | 18.39         | 8.36          | 0.35               | 8.58         |
| 9/21/2004 | 9:00  | 18.33         | 8.34          | 0.35               | 8.54         |
| 9/21/2004 | 9:30  | 18.33         | 8.34          | 0.35               | 8.43         |
| 9/21/2004 | 10:00 | 18.44         | 8.37          | 0.35               | 8.65         |
| 9/21/2004 | 10:30 | 18.50         | 8.40          | 0.35               | 8.74         |
| 9/21/2004 | 11:00 | 18.50         | 8.41          | 0.35               | 8.74         |
| 9/21/2004 | 11:30 | 18.56         | 8.41          | 0.35               | 8.69         |
| 9/21/2004 | 12:00 | 18.56         | 8.40          | 0.35               | 8.72         |
| 9/21/2004 | 12:30 | 18.61         | 8.41          | 0.35               | 8.72         |
| 9/21/2004 | 13:00 | 18.61         | 8.40          | 0.35               | 8.68         |
| 9/21/2004 | 13:30 | 18.72         | 8.44          | 0.35               | 8.84         |
| 9/21/2004 | 14:00 | 18.72         | 8.45          | 0.35               | 8.84         |
| 9/21/2004 | 14:30 | 18.78         | 8.45          | 0.35               | 8.98         |
| 9/21/2004 | 15:00 | 18.78         | 8.47          | 0.35               | 9.00         |
| 9/21/2004 | 15:30 | 18.83         | 8.47          | 0.35               | 8.98         |
| 9/21/2004 | 16:00 | 18.83         | 8.50          | 0.35               | 9.12         |
| 9/21/2004 | 16:30 | 18.72         | 8.45          | 0.35               | 8.88         |
| 9/21/2004 | 17:00 | 18.72         | 8.44          | 0.35               | 8.79         |
| 9/21/2004 | 17:30 | 18.78         | 8.47          | 0.35               | 8.96         |
| 9/21/2004 | 18:00 | 18.83         | 8.49          | 0.35               | 9.01         |
| 9/21/2004 | 18:30 | 18.83         | 8.47          | 0.35               | 8.96         |
| 9/21/2004 | 19:00 | 18.83         | 8.47          | 0.35               | 8.97         |
| 9/21/2004 | 19:30 | 18.78         | 8.46          | 0.35               | 8.91         |
| 9/21/2004 | 20:00 | 18.78         | 8.46          | 0.35               | 8.87         |
| 9/21/2004 | 20:30 | 18.72         | 8.44          | 0.35               | 8.78         |
| 9/21/2004 | 21:00 | 18.67         | 8.45          | 0.35               | 8.80         |
| 9/21/2004 | 21:30 | 18.67         | 8.46          | 0.35               | 8.86         |
| 9/21/2004 | 22:00 | 18.61         | 8.44          | 0.35               | 8.82         |
| 9/21/2004 | 22:30 | 18.61         | 8.44          | 0.35               | 8.77         |
| 9/21/2004 | 23:00 | 18.56         | 8.42          | 0.35               | 8.67         |
| 9/21/2004 | 23:30 | 18.61         | 8.41          | 0.35               | 8.62         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/22/2004 | 0:00  | 18.61         | 8.42          | 0.35               | 8.66         |
| 9/22/2004 | 0:30  | 18.61         | 8.40          | 0.35               | 8.60         |
| 9/22/2004 | 1:00  | 18.67         | 8.43          | 0.35               | 8.70         |
| 9/22/2004 | 1:30  | 18.72         | 8.46          | 0.35               | 8.84         |
| 9/22/2004 | 2:00  | 18.72         | 8.49          | 0.35               | 8.97         |
| 9/22/2004 | 2:30  | 18.72         | 8.47          | 0.35               | 8.91         |
| 9/22/2004 | 3:00  | 18.67         | 8.47          | 0.35               | 8.87         |
| 9/22/2004 | 3:30  | 18.67         | 8.48          | 0.35               | 8.94         |
| 9/22/2004 | 4:00  | 18.61         | 8.48          | 0.35               | 8.91         |
| 9/22/2004 | 4:30  | 18.56         | 8.46          | 0.35               | 8.85         |
| 9/22/2004 | 5:00  | 18.56         | 8.44          | 0.35               | 8.77         |
| 9/22/2004 | 5:30  | 18.50         | 8.43          | 0.35               | 8.76         |
| 9/22/2004 | 6:00  | 18.44         | 8.42          | 0.35               | 8.65         |
| 9/22/2004 | 6:30  | 18.39         | 8.40          | 0.35               | 8.59         |
| 9/22/2004 | 7:00  | 18.39         | 8.39          | 0.35               | 8.53         |
| 9/22/2004 | 7:30  | 18.39         | 8.38          | 0.35               | 8.49         |
| 9/22/2004 | 8:00  | 18.39         | 8.39          | 0.35               | 8.53         |
| 9/22/2004 | 8:30  | 18.44         | 8.41          | 0.35               | 8.59         |
| 9/22/2004 | 9:00  | 18.39         | 8.39          | 0.35               | 8.50         |
| 9/22/2004 | 9:30  | 18.39         | 8.36          | 0.35               | 8.39         |
| 9/22/2004 | 10:00 | 18.39         | 8.36          | 0.35               | 8.40         |
| 9/22/2004 | 10:30 | 18.39         | 8.36          | 0.35               | 8.40         |
| 9/22/2004 | 11:00 | 18.44         | 8.37          | 0.35               | 8.45         |
| 9/22/2004 | 11:30 | 18.56         | 8.39          | 0.35               | 8.55         |
| 9/22/2004 | 12:00 | 18.61         | 8.41          | 0.35               | 8.67         |
| 9/22/2004 | 12:30 | 18.72         | 8.42          | 0.35               | 8.65         |
| 9/22/2004 | 13:00 | 18.72         | 8.40          | 0.35               | 8.59         |
| 9/22/2004 | 13:30 | 18.72         | 8.41          | 0.35               | 8.68         |
| 9/22/2004 | 14:00 | 18.72         | 8.40          | 0.35               | 8.61         |
| 9/22/2004 | 14:30 | 18.61         | 8.37          | 0.35               | 8.45         |
| 9/22/2004 | 15:00 | 18.56         | 8.39          | 0.35               | 8.65         |
| 9/22/2004 | 15:30 | 18.61         | 8.40          | 0.35               | 8.66         |
| 9/22/2004 | 16:00 | 18.50         | 8.36          | 0.35               | 8.47         |
| 9/22/2004 | 16:30 | 18.56         | 8.36          | 0.35               | 8.49         |
| 9/22/2004 | 17:00 | 18.44         | 8.34          | 0.35               | 8.36         |
| 9/22/2004 | 17:30 | 18.50         | 8.36          | 0.35               | 8.47         |
| 9/22/2004 | 18:00 | 18.50         | 8.37          | 0.35               | 8.50         |
| 9/22/2004 | 18:30 | 18.50         | 8.39          | 0.35               | 8.61         |
| 9/22/2004 | 19:00 | 18.50         | 8.37          | 0.35               | 8.48         |
| 9/22/2004 | 19:30 | 18.50         | 8.36          | 0.35               | 8.42         |
| 9/22/2004 | 20:00 | 18.50         | 8.36          | 0.35               | 8.39         |
| 9/22/2004 | 20:30 | 18.67         | 8.41          | 0.35               | 8.48         |
| 9/22/2004 | 21:00 | 18.72         | 8.44          | 0.35               | 8.61         |
| 9/22/2004 | 21:30 | 18.67         | 8.43          | 0.35               | 8.59         |
| 9/22/2004 | 22:00 | 18.67         | 8.43          | 0.35               | 8.62         |
| 9/22/2004 | 22:30 | 18.72         | 8.45          | 0.35               | 8.66         |
| 9/22/2004 | 23:00 | 18.72         | 8.43          | 0.35               | 8.58         |
| 9/22/2004 | 23:30 | 18.67         | 8.42          | 0.35               | 8.59         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/23/2004 | 0:00  | 18.72         | 8.44          | 0.35               | 8.68         |
| 9/23/2004 | 0:30  | 18.72         | 8.45          | 0.35               | 8.74         |
| 9/23/2004 | 1:00  | 18.72         | 8.46          | 0.35               | 8.73         |
| 9/23/2004 | 1:30  | 18.72         | 8.45          | 0.35               | 8.69         |
| 9/23/2004 | 2:00  | 18.72         | 8.46          | 0.35               | 8.77         |
| 9/23/2004 | 2:30  | 18.72         | 8.45          | 0.35               | 8.67         |
| 9/23/2004 | 3:00  | 18.67         | 8.45          | 0.35               | 8.71         |
| 9/23/2004 | 3:30  | 18.67         | 8.45          | 0.35               | 8.73         |
| 9/23/2004 | 4:00  | 18.67         | 8.46          | 0.35               | 8.75         |
| 9/23/2004 | 4:30  | 18.67         | 8.46          | 0.35               | 8.75         |
| 9/23/2004 | 5:00  | 18.61         | 8.45          | 0.35               | 8.76         |
| 9/23/2004 | 5:30  | 18.61         | 8.45          | 0.35               | 8.66         |
| 9/23/2004 | 6:00  | 18.61         | 8.44          | 0.35               | 8.66         |
| 9/23/2004 | 6:30  | 18.56         | 8.41          | 0.35               | 8.54         |
| 9/23/2004 | 7:00  | 18.56         | 8.40          | 0.35               | 8.42         |
| 9/23/2004 | 7:30  | 18.56         | 8.38          | 0.35               | 8.37         |
| 9/23/2004 | 8:00  | 18.50         | 8.37          | 0.35               | 8.32         |
| 9/23/2004 | 8:30  | 18.50         | 8.38          | 0.35               | 8.34         |
| 9/23/2004 | 9:00  | 18.50         | 8.37          | 0.35               | 8.32         |
| 9/23/2004 | 9:30  | 18.50         | 8.35          | 0.35               | 8.23         |
| 9/23/2004 | 10:00 | 18.50         | 8.32          | 0.35               | 8.16         |
| 9/23/2004 | 10:30 | 18.44         | 8.29          | 0.35               | 8.04         |
| 9/23/2004 | 11:00 | 18.50         | 8.28          | 0.35               | 7.97         |
| 9/23/2004 | 11:30 | 18.44         | 8.26          | 0.35               | 7.92         |
| 9/23/2004 | 12:00 | 18.50         | 8.27          | 0.35               | 8.05         |
| 9/23/2004 | 12:30 | 18.50         | 8.26          | 0.35               | 7.95         |
| 9/23/2004 | 13:00 | 18.44         | 8.24          | 0.35               | 7.90         |
| 9/23/2004 | 13:30 | 18.39         | 8.20          | 0.35               | 7.66         |
| 9/23/2004 | 14:00 | 18.33         | 8.18          | 0.35               | 7.63         |
| 9/23/2004 | 14:30 | 18.28         | 8.17          | 0.35               | 7.51         |
| 9/23/2004 | 15:00 | 18.22         | 8.14          | 0.35               | 7.36         |
| 9/23/2004 | 15:30 | 18.11         | 8.10          | 0.35               | 7.21         |
| 9/23/2004 | 16:00 | 18.00         | 8.08          | 0.35               | 6.95         |
| 9/23/2004 | 16:30 | 18.00         | 8.07          | 0.35               | 6.93         |
| 9/23/2004 | 17:00 | 17.94         | 8.06          | 0.35               | 6.90         |
| 9/23/2004 | 17:30 | 17.94         | 8.03          | 0.35               | 6.79         |
| 9/23/2004 | 18:00 | 17.89         | 8.03          | 0.35               | 6.76         |
| 9/23/2004 | 18:30 | 18.00         | 8.06          | 0.35               | 6.96         |
| 9/23/2004 | 19:00 | 18.11         | 8.10          | 0.35               | 7.22         |
| 9/23/2004 | 19:30 | 18.17         | 8.14          | 0.35               | 7.37         |
| 9/23/2004 | 20:00 | 18.28         | 8.17          | 0.35               | 7.48         |
| 9/23/2004 | 20:30 | 18.44         | 8.23          | 0.35               | 7.78         |
| 9/23/2004 | 21:00 | 18.56         | 8.27          | 0.35               | 7.94         |
| 9/23/2004 | 21:30 | 18.78         | 8.34          | 0.35               | 8.18         |
| 9/23/2004 | 22:00 | 18.89         | 8.41          | 0.35               | 8.48         |
| 9/23/2004 | 22:30 | 18.83         | 8.40          | 0.35               | 8.41         |
| 9/23/2004 | 23:00 | 18.89         | 8.42          | 0.35               | 8.45         |
| 9/23/2004 | 23:30 | 19.06         | 8.50          | 0.35               | 8.75         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/24/2004 | 0:00  | 19.17         | 8.55          | 0.35               | 8.89         |
| 9/24/2004 | 0:30  | 19.17         | 8.55          | 0.35               | 8.90         |
| 9/24/2004 | 1:00  | 19.22         | 8.56          | 0.35               | 8.92         |
| 9/24/2004 | 1:30  | 19.22         | 8.56          | 0.35               | 8.96         |
| 9/24/2004 | 2:00  | 19.22         | 8.56          | 0.35               | 8.91         |
| 9/24/2004 | 2:30  | 19.28         | 8.56          | 0.35               | 8.84         |
| 9/24/2004 | 3:00  | 19.17         | 8.52          | 0.35               | 8.70         |
| 9/24/2004 | 3:30  | 19.06         | 8.48          | 0.35               | 8.48         |
| 9/24/2004 | 4:00  | 18.94         | 8.44          | 0.35               | 8.34         |
| 9/24/2004 | 4:30  | 18.89         | 8.41          | 0.35               | 8.23         |
| 9/24/2004 | 5:00  | 18.89         | 8.41          | 0.35               | 8.20         |
| 9/24/2004 | 5:30  | 18.89         | 8.40          | 0.35               | 8.16         |
| 9/24/2004 | 6:00  | 18.89         | 8.41          | 0.35               | 8.19         |
| 9/24/2004 | 6:30  | 18.89         | 8.41          | 0.35               | 8.17         |
| 9/24/2004 | 7:00  | 18.83         | 8.40          | 0.35               | 8.11         |
| 9/24/2004 | 7:30  | 18.83         | 8.39          | 0.35               | 8.08         |
| 9/24/2004 | 8:00  | 18.78         | 8.38          | 0.35               | 8.12         |
| 9/24/2004 | 8:30  | 18.78         | 8.38          | 0.35               | 8.03         |
| 9/24/2004 | 9:00  | 18.83         | 8.41          | 0.35               | 8.22         |
| 9/24/2004 | 9:30  | 18.89         | 8.43          | 0.35               | 7.41         |
| 9/24/2004 | 10:00 | 18.94         | 8.46          | 0.35               | 8.27         |
| 9/24/2004 | 10:30 | 19.06         | 8.51          | 0.35               | 8.59         |
| 9/24/2004 | 11:00 | 19.22         | 8.57          | 0.35               | 8.72         |
| 9/24/2004 | 11:30 | 19.44         | 8.65          | 0.35               | 9.10         |
| 9/24/2004 | 12:00 | 19.50         | 8.64          | 0.35               | 9.03         |
| 9/24/2004 | 12:30 | 19.50         | 8.63          | 0.35               | 9.01         |
| 9/24/2004 | 13:00 | 19.50         | 8.64          | 0.35               | 9.16         |
| 9/24/2004 | 13:30 | 19.44         | 8.63          | 0.35               | 9.02         |
| 9/24/2004 | 14:00 | 19.50         | 8.64          | 0.35               | 8.98         |
| 9/24/2004 | 14:30 | 19.44         | 8.62          | 0.35               | 7.85         |
| 9/24/2004 | 15:00 | 19.44         | 8.63          | 0.35               | 8.47         |
| 9/24/2004 | 15:30 | 19.44         | 8.64          | 0.35               | 8.70         |
| 9/24/2004 | 16:00 | 19.39         | 8.63          | 0.35               | 8.68         |
| 9/24/2004 | 16:30 | 19.39         | 8.64          | 0.35               | 8.62         |
| 9/24/2004 | 17:00 | 19.33         | 8.62          | 0.35               | 8.43         |
| 9/24/2004 | 17:30 | 19.33         | 8.61          | 0.35               | 8.70         |
| 9/24/2004 | 18:00 | 19.28         | 8.61          | 0.35               | 8.72         |
| 9/24/2004 | 18:30 | 19.22         | 8.59          | 0.35               | 8.67         |
| 9/24/2004 | 19:00 | 19.22         | 8.58          | 0.35               | 8.61         |
| 9/24/2004 | 19:30 | 19.17         | 8.56          | 0.35               | 8.54         |
| 9/24/2004 | 20:00 | 19.17         | 8.55          | 0.35               | 8.58         |
| 9/24/2004 | 20:30 | 19.11         | 8.53          | 0.35               | 8.54         |
| 9/24/2004 | 21:00 | 19.11         | 8.51          | 0.35               | 8.52         |
| 9/24/2004 | 21:30 | 19.11         | 8.51          | 0.35               | 8.53         |
| 9/24/2004 | 22:00 | 19.06         | 8.49          | 0.35               | 8.49         |
| 9/24/2004 | 22:30 | 19.00         | 8.47          | 0.35               | 8.40         |
| 9/24/2004 | 23:00 | 19.00         | 8.45          | 0.35               | 8.39         |
| 9/24/2004 | 23:30 | 18.94         | 8.44          | 0.35               | 8.33         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/25/2004 | 0:00  | 18.94         | 8.44          | 0.35               | 8.30         |
| 9/25/2004 | 0:30  | 18.89         | 8.43          | 0.35               | 8.30         |
| 9/25/2004 | 1:00  | 18.89         | 8.43          | 0.35               | 8.25         |
| 9/25/2004 | 1:30  | 18.89         | 8.42          | 0.35               | 8.33         |
| 9/25/2004 | 2:00  | 18.89         | 8.42          | 0.35               | 8.21         |
| 9/25/2004 | 2:30  | 18.83         | 8.43          | 0.35               | 8.34         |
| 9/25/2004 | 3:00  | 18.83         | 8.43          | 0.35               | 8.31         |
| 9/25/2004 | 3:30  | 18.83         | 8.44          | 0.35               | 8.38         |
| 9/25/2004 | 4:00  | 18.78         | 8.44          | 0.35               | 8.40         |
| 9/25/2004 | 4:30  | 18.78         | 8.43          | 0.35               | 8.32         |
| 9/25/2004 | 5:00  | 18.72         | 8.41          | 0.35               | 8.29         |
| 9/25/2004 | 5:30  | 18.72         | 8.42          | 0.35               | 8.29         |
| 9/25/2004 | 6:00  | 18.67         | 8.42          | 0.35               | 8.31         |
| 9/25/2004 | 6:30  | 18.67         | 8.41          | 0.35               | 8.20         |
| 9/25/2004 | 7:00  | 18.67         | 8.39          | 0.35               | 8.13         |
| 9/25/2004 | 7:30  | 18.61         | 8.39          | 0.35               | 8.16         |
| 9/25/2004 | 8:00  | 18.61         | 8.38          | 0.35               | 8.12         |
| 9/25/2004 | 8:30  | 18.56         | 8.37          | 0.35               | 8.14         |
| 9/25/2004 | 9:00  | 18.56         | 8.36          | 0.35               | 8.06         |
| 9/25/2004 | 9:30  | 18.56         | 8.34          | 0.35               | 7.90         |
| 9/25/2004 | 10:00 | 18.50         | 8.31          | 0.35               | 7.90         |
| 9/25/2004 | 10:30 | 18.56         | 8.32          | 0.35               | 7.96         |
| 9/25/2004 | 11:00 | 18.61         | 8.34          | 0.35               | 8.02         |
| 9/25/2004 | 11:30 | 18.61         | 8.36          | 0.35               | 8.16         |
| 9/25/2004 | 12:00 | 18.61         | 8.34          | 0.35               | 8.09         |
| 9/25/2004 | 12:30 | 18.61         | 8.35          | 0.35               | 8.11         |
| 9/25/2004 | 13:00 | 18.61         | 8.35          | 0.35               | 8.13         |
| 9/25/2004 | 13:30 | 18.61         | 8.35          | 0.35               | 8.18         |
| 9/25/2004 | 14:00 | 18.61         | 8.35          | 0.35               | 8.23         |
| 9/25/2004 | 14:30 | 18.61         | 8.34          | 0.35               | 8.21         |
| 9/25/2004 | 15:00 | 18.67         | 8.34          | 0.35               | 8.22         |
| 9/25/2004 | 15:30 | 18.72         | 8.35          | 0.35               | 8.28         |
| 9/25/2004 | 16:00 | 18.72         | 8.36          | 0.35               | 8.33         |
| 9/25/2004 | 16:30 | 18.72         | 8.36          | 0.35               | 8.31         |
| 9/25/2004 | 17:00 | 18.72         | 8.36          | 0.35               | 8.32         |
| 9/25/2004 | 17:30 | 18.72         | 8.36          | 0.35               | 8.40         |
| 9/25/2004 | 18:00 | 18.72         | 8.37          | 0.35               | 8.39         |
| 9/25/2004 | 18:30 | 18.67         | 8.35          | 0.35               | 8.28         |
| 9/25/2004 | 19:00 | 18.56         | 8.32          | 0.35               | 8.14         |
| 9/25/2004 | 19:30 | 18.50         | 8.32          | 0.35               | 8.18         |
| 9/25/2004 | 20:00 | 18.44         | 8.31          | 0.35               | 8.09         |
| 9/25/2004 | 20:30 | 18.44         | 8.30          | 0.35               | 8.02         |
| 9/25/2004 | 21:00 | 18.39         | 8.30          | 0.35               | 8.02         |
| 9/25/2004 | 21:30 | 18.39         | 8.30          | 0.35               | 8.02         |
| 9/25/2004 | 22:00 | 18.39         | 8.29          | 0.35               | 7.95         |
| 9/25/2004 | 22:30 | 18.39         | 8.29          | 0.35               | 7.93         |
| 9/25/2004 | 23:00 | 18.33         | 8.29          | 0.35               | 7.97         |
| 9/25/2004 | 23:30 | 18.33         | 8.28          | 0.35               | 7.90         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/26/2004 | 0:00  | 18.28         | 8.29          | 0.35               | 7.91         |
| 9/26/2004 | 0:30  | 18.28         | 8.28          | 0.35               | 7.89         |
| 9/26/2004 | 1:00  | 18.22         | 8.27          | 0.35               | 7.90         |
| 9/26/2004 | 1:30  | 18.22         | 8.27          | 0.35               | 7.86         |
| 9/26/2004 | 2:00  | 18.22         | 8.27          | 0.35               | 7.83         |
| 9/26/2004 | 2:30  | 18.22         | 8.29          | 0.35               | 7.91         |
| 9/26/2004 | 3:00  | 18.22         | 8.30          | 0.35               | 7.95         |
| 9/26/2004 | 3:30  | 18.28         | 8.33          | 0.35               | 8.10         |
| 9/26/2004 | 4:00  | 18.28         | 8.36          | 0.35               | 8.20         |
| 9/26/2004 | 4:30  | 18.22         | 8.36          | 0.35               | 8.22         |
| 9/26/2004 | 5:00  | 18.17         | 8.35          | 0.35               | 8.18         |
| 9/26/2004 | 5:30  | 18.17         | 8.35          | 0.35               | 8.15         |
| 9/26/2004 | 6:00  | 18.11         | 8.35          | 0.35               | 8.17         |
| 9/26/2004 | 6:30  | 18.11         | 8.34          | 0.35               | 8.05         |
| 9/26/2004 | 7:00  | 18.06         | 8.32          | 0.35               | 8.05         |
| 9/26/2004 | 7:30  | 18.06         | 8.31          | 0.35               | 8.03         |
| 9/26/2004 | 8:00  | 18.00         | 8.31          | 0.35               | 7.99         |
| 9/26/2004 | 8:30  | 18.00         | 8.31          | 0.35               | 8.04         |
| 9/26/2004 | 9:00  | 18.00         | 8.29          | 0.35               | 7.94         |
| 9/26/2004 | 9:30  | 18.00         | 8.28          | 0.35               | 7.94         |
| 9/26/2004 | 10:00 | 18.00         | 8.27          | 0.35               | 7.96         |
| 9/26/2004 | 10:30 | 18.06         | 8.28          | 0.35               | 7.94         |
| 9/26/2004 | 11:00 | 18.11         | 8.28          | 0.35               | 8.03         |
| 9/26/2004 | 11:30 | 18.22         | 8.30          | 0.35               | 8.04         |
| 9/26/2004 | 12:00 | 18.28         | 8.31          | 0.35               | 8.07         |
| 9/26/2004 | 12:30 | 18.39         | 8.33          | 0.35               | 8.17         |
| 9/26/2004 | 13:00 | 18.33         | 8.32          | 0.35               | 8.07         |
| 9/26/2004 | 13:30 | 18.28         | 8.30          | 0.35               | 8.00         |
| 9/26/2004 | 14:00 | 18.28         | 8.29          | 0.35               | 8.01         |
| 9/26/2004 | 14:30 | 18.22         | 8.27          | 0.35               | 7.87         |
| 9/26/2004 | 15:00 | 18.28         | 8.30          | 0.35               | 8.01         |
| 9/26/2004 | 15:30 | 18.33         | 8.31          | 0.35               | 8.11         |
| 9/26/2004 | 16:00 | 18.33         | 8.33          | 0.35               | 8.18         |
| 9/26/2004 | 16:30 | 18.33         | 8.34          | 0.35               | 8.26         |
| 9/26/2004 | 17:00 | 18.33         | 8.36          | 0.35               | 8.25         |
| 9/26/2004 | 17:30 | 18.33         | 8.36          | 0.35               | 8.31         |
| 9/26/2004 | 18:00 | 18.28         | 8.36          | 0.35               | 8.29         |
| 9/26/2004 | 18:30 | 18.28         | 8.36          | 0.35               | 8.29         |
| 9/26/2004 | 19:00 | 18.28         | 8.37          | 0.35               | 8.39         |
| 9/26/2004 | 19:30 | 18.28         | 8.37          | 0.35               | 8.24         |
| 9/26/2004 | 20:00 | 18.22         | 8.37          | 0.35               | 8.35         |
| 9/26/2004 | 20:30 | 18.22         | 8.36          | 0.35               | 8.37         |
| 9/26/2004 | 21:00 | 18.11         | 8.35          | 0.35               | 8.27         |
| 9/26/2004 | 21:30 | 18.06         | 8.34          | 0.35               | 8.19         |
| 9/26/2004 | 22:00 | 18.06         | 8.33          | 0.35               | 8.24         |
| 9/26/2004 | 22:30 | 18.00         | 8.31          | 0.35               | 8.03         |
| 9/26/2004 | 23:00 | 17.94         | 8.31          | 0.35               | 8.04         |
| 9/26/2004 | 23:30 | 17.94         | 8.31          | 0.35               | 7.98         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/27/2004 | 0:00  | 17.89         | 8.30          | 0.35               | 8.01         |
| 9/27/2004 | 0:30  | 17.89         | 8.29          | 0.35               | 7.92         |
| 9/27/2004 | 1:00  | 17.83         | 8.29          | 0.35               | 7.91         |
| 9/27/2004 | 1:30  | 17.83         | 8.27          | 0.35               | 7.86         |
| 9/27/2004 | 2:00  | 17.78         | 8.27          | 0.35               | 7.79         |
| 9/27/2004 | 2:30  | 17.78         | 8.27          | 0.35               | 7.73         |
| 9/27/2004 | 3:00  | 17.72         | 8.26          | 0.35               | 7.79         |
| 9/27/2004 | 3:30  | 17.72         | 8.27          | 0.35               | 7.74         |
| 9/27/2004 | 4:00  | 17.72         | 8.27          | 0.35               | 7.77         |
| 9/27/2004 | 4:30  | 17.72         | 8.27          | 0.35               | 7.83         |
| 9/27/2004 | 5:00  | 17.67         | 8.27          | 0.35               | 7.82         |
| 9/27/2004 | 5:30  | 17.67         | 8.27          | 0.35               | 7.88         |
| 9/27/2004 | 6:00  | 17.67         | 8.26          | 0.35               | 7.76         |
| 9/27/2004 | 6:30  | 17.67         | 8.26          | 0.35               | 7.88         |
| 9/27/2004 | 7:00  | 17.67         | 8.27          | 0.35               | 7.93         |
| 9/27/2004 | 7:30  | 17.61         | 8.27          | 0.35               | 7.88         |
| 9/27/2004 | 8:00  | 17.61         | 8.28          | 0.35               | 7.94         |
| 9/27/2004 | 8:30  | 17.61         | 8.28          | 0.35               | 7.95         |
| 9/27/2004 | 9:00  | 17.61         | 8.29          | 0.35               | 7.94         |
| 9/27/2004 | 9:30  | 17.61         | 8.28          | 0.35               | 7.85         |
| 9/27/2004 | 10:00 | 17.56         | 8.27          | 0.35               | 7.87         |
| 9/27/2004 | 10:30 | 17.61         | 8.28          | 0.35               | 7.94         |
| 9/27/2004 | 11:00 | 17.67         | 8.29          | 0.35               | 7.90         |
| 9/27/2004 | 11:30 | 17.72         | 8.30          | 0.35               | 8.03         |
| 9/27/2004 | 12:00 | 17.78         | 8.31          | 0.35               | 8.03         |
| 9/27/2004 | 12:30 | 17.83         | 8.31          | 0.35               | 8.11         |
| 9/27/2004 | 13:00 | 17.83         | 8.33          | 0.35               | 8.15         |
| 9/27/2004 | 13:30 | 17.94         | 8.36          | 0.35               | 8.18         |
| 9/27/2004 | 14:00 | 18.06         | 8.37          | 0.35               | 8.24         |
| 9/27/2004 | 14:30 | 18.06         | 8.37          | 0.35               | 8.21         |
| 9/27/2004 | 15:00 | 18.11         | 8.39          | 0.35               | 8.31         |
| 9/27/2004 | 15:30 | 18.17         | 8.40          | 0.35               | 8.37         |
| 9/27/2004 | 16:00 | 18.22         | 8.42          | 0.35               | 8.47         |
| 9/27/2004 | 16:30 | 18.22         | 8.42          | 0.35               | 8.46         |
| 9/27/2004 | 17:00 | 18.17         | 8.40          | 0.35               | 8.34         |
| 9/27/2004 | 17:30 | 18.11         | 8.39          | 0.35               | 8.27         |
| 9/27/2004 | 18:00 | 18.11         | 8.38          | 0.35               | 8.22         |
| 9/27/2004 | 18:30 | 18.17         | 8.40          | 0.35               | 8.30         |
| 9/27/2004 | 19:00 | 18.11         | 8.41          | 0.35               | 8.35         |
| 9/27/2004 | 19:30 | 18.33         | 8.48          | 0.35               | 8.66         |
| 9/27/2004 | 20:00 | 18.33         | 8.48          | 0.35               | 8.71         |
| 9/27/2004 | 20:30 | 18.33         | 8.48          | 0.35               | 8.72         |
| 9/27/2004 | 21:00 | 18.17         | 8.43          | 0.35               | 8.43         |
| 9/27/2004 | 21:30 | 17.94         | 8.37          | 0.36               | 8.15         |
| 9/27/2004 | 22:00 | 17.83         | 8.33          | 0.36               | 7.96         |
| 9/27/2004 | 22:30 | 17.72         | 8.29          | 0.36               | 7.76         |
| 9/27/2004 | 23:00 | 17.61         | 8.29          | 0.36               | 7.79         |
| 9/27/2004 | 23:30 | 17.67         | 8.29          | 0.36               | 7.77         |

**2004 Water Quality Study**  
**Tailwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/28/2004 | 0:00  | 17.67         | 8.31          | 0.36               | 7.87         |
| 9/28/2004 | 0:30  | 17.72         | 8.34          | 0.36               | 7.98         |
| 9/28/2004 | 1:00  | 17.72         | 8.35          | 0.36               | 8.01         |
| 9/28/2004 | 1:30  | 17.72         | 8.35          | 0.36               | 8.05         |
| 9/28/2004 | 2:00  | 17.72         | 8.36          | 0.36               | 8.03         |
| 9/28/2004 | 2:30  | 17.67         | 8.35          | 0.35               | 8.01         |
| 9/28/2004 | 3:00  | 17.61         | 8.36          | 0.35               | 8.03         |
| 9/28/2004 | 3:30  | 17.61         | 8.36          | 0.35               | 8.04         |
| 9/28/2004 | 4:00  | 17.56         | 8.34          | 0.36               | 7.96         |
| 9/28/2004 | 4:30  | 17.44         | 8.33          | 0.36               | 7.91         |
| 9/28/2004 | 5:00  | 17.44         | 8.32          | 0.36               | 7.88         |
| 9/28/2004 | 5:30  | 17.39         | 8.33          | 0.36               | 7.76         |
| 9/28/2004 | 6:00  | 17.39         | 8.33          | 0.36               | 7.74         |
| 9/28/2004 | 6:30  | 17.33         | 8.33          | 0.36               | 7.74         |
| 9/28/2004 | 7:00  | 17.28         | 8.33          | 0.36               | 7.72         |
| 9/28/2004 | 7:30  | 17.22         | 8.33          | 0.36               | 7.89         |
| 9/28/2004 | 8:00  | 17.22         | 8.33          | 0.36               | 7.87         |
| 9/28/2004 | 8:30  | 17.17         | 8.32          | 0.36               | 7.88         |
| 9/28/2004 | 9:00  | 17.17         | 8.33          | 0.36               | 7.90         |
| 9/28/2004 | 9:30  | 17.17         | 8.33          | 0.36               | 7.92         |
| 9/28/2004 | 10:00 | 17.17         | 8.34          | 0.35               | 8.03         |
| 9/28/2004 | 10:30 | 17.17         | 8.36          | 0.35               | 8.08         |
| 9/28/2004 | 11:00 | 17.22         | 8.37          | 0.35               | 8.16         |
| 9/28/2004 | 11:30 | 17.22         | 8.37          | 0.35               | 8.19         |
| 9/28/2004 | 12:00 | 17.28         | 8.38          | 0.35               | 8.22         |
| 9/28/2004 | 12:30 | 17.33         | 8.39          | 0.35               | 8.20         |
| 9/28/2004 | 13:00 | 17.39         | 8.39          | 0.35               | 8.24         |
| 9/28/2004 | 13:30 | 17.39         | 8.39          | 0.35               | 8.26         |
| 9/28/2004 | 14:00 | 17.44         | 8.39          | 0.35               | 8.26         |
| 9/28/2004 | 14:30 | 17.44         | 8.38          | 0.36               | 8.25         |
| 9/28/2004 | 15:00 | 17.39         | 8.36          | 0.36               | 8.07         |
| 9/28/2004 | 15:30 | 17.33         | 8.34          | 0.36               | 8.10         |
| 9/28/2004 | 16:00 | 17.28         | 8.33          | 0.36               | 7.99         |
| 9/28/2004 | 16:30 | 17.22         | 8.31          | 0.36               | 7.89         |
| 9/28/2004 | 17:00 | 17.17         | 8.29          | 0.36               | 7.78         |
| 9/28/2004 | 17:30 | 17.17         | 8.30          | 0.36               | 7.85         |
| 9/28/2004 | 18:00 | 17.06         | 8.29          | 0.36               | 7.79         |
| 9/28/2004 | 18:30 | 17.00         | 8.28          | 0.36               | 7.74         |
| 9/28/2004 | 19:00 | 16.94         | 8.28          | 0.36               | 7.79         |
| 9/28/2004 | 19:30 | 16.83         | 8.28          | 0.36               | 7.78         |
| 9/28/2004 | 20:00 | 16.78         | 8.27          | 0.36               | 7.78         |
| 9/28/2004 | 20:30 | 16.72         | 8.27          | 0.36               | 7.70         |
| 9/28/2004 | 21:00 | 16.72         | 8.27          | 0.36               | 7.73         |
| 9/28/2004 | 21:30 | 16.67         | 8.27          | 0.36               | 7.77         |
| 9/28/2004 | 22:00 | 16.67         | 8.28          | 0.36               | 7.75         |
| 9/28/2004 | 22:30 | 16.67         | 8.29          | 0.36               | 7.84         |
| 9/28/2004 | 23:00 | 16.67         | 8.29          | 0.36               | 7.82         |
| 9/28/2004 | 23:30 | 16.67         | 8.29          | 0.36               | 7.82         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/29/2004 | 0:00  | 16.61         | 8.29          | 0.36               | 7.86         |
| 9/29/2004 | 0:30  | 16.61         | 8.28          | 0.36               | 7.76         |
| 9/29/2004 | 1:00  | 16.61         | 8.28          | 0.36               | 7.82         |
| 9/29/2004 | 1:30  | 16.56         | 8.28          | 0.36               | 7.77         |
| 9/29/2004 | 2:00  | 16.56         | 8.28          | 0.36               | 7.70         |
| 9/29/2004 | 2:30  | 16.56         | 8.29          | 0.36               | 7.81         |
| 9/29/2004 | 3:00  | 16.50         | 8.29          | 0.36               | 7.85         |
| 9/29/2004 | 3:30  | 16.50         | 8.29          | 0.36               | 7.83         |
| 9/29/2004 | 4:00  | 16.50         | 8.30          | 0.36               | 7.87         |
| 9/29/2004 | 4:30  | 16.44         | 8.30          | 0.36               | 7.81         |
| 9/29/2004 | 5:00  | 16.44         | 8.29          | 0.36               | 7.81         |
| 9/29/2004 | 5:30  | 16.39         | 8.29          | 0.36               | 7.78         |
| 9/29/2004 | 6:00  | 16.39         | 8.29          | 0.36               | 7.72         |
| 9/29/2004 | 6:30  | 16.39         | 8.29          | 0.36               | 7.79         |
| 9/29/2004 | 7:00  | 16.33         | 8.29          | 0.36               | 7.79         |
| 9/29/2004 | 7:30  | 16.33         | 8.29          | 0.36               | 7.76         |
| 9/29/2004 | 8:00  | 16.33         | 8.29          | 0.36               | 7.74         |
| 9/29/2004 | 8:30  | 16.28         | 8.29          | 0.36               | 7.73         |
| 9/29/2004 | 9:00  | 16.28         | 8.29          | 0.36               | 7.83         |
| 9/29/2004 | 9:30  | 16.33         | 8.29          | 0.36               | 7.81         |
| 9/29/2004 | 10:00 | 16.33         | 8.30          | 0.36               | 7.84         |
| 9/29/2004 | 10:30 | 16.39         | 8.30          | 0.36               | 7.82         |
| 9/29/2004 | 11:00 | 16.44         | 8.31          | 0.36               | 7.92         |
| 9/29/2004 | 11:30 | 16.50         | 8.31          | 0.36               | 7.88         |
| 9/29/2004 | 12:00 | 16.56         | 8.31          | 0.36               | 7.85         |
| 9/29/2004 | 12:30 | 16.61         | 8.31          | 0.36               | 7.92         |
| 9/29/2004 | 13:00 | 16.61         | 8.31          | 0.36               | 7.93         |
| 9/29/2004 | 13:30 | 16.56         | 8.31          | 0.36               | 7.81         |
| 9/29/2004 | 14:00 | 16.61         | 8.31          | 0.36               | 7.88         |
| 9/29/2004 | 14:30 | 16.50         | 8.29          | 0.36               | 7.74         |
| 9/29/2004 | 15:00 | 16.44         | 8.29          | 0.36               | 7.76         |
| 9/29/2004 | 15:30 | 16.44         | 8.28          | 0.36               | 7.68         |
| 9/29/2004 | 16:00 | 16.39         | 8.27          | 0.36               | 7.68         |
| 9/29/2004 | 16:30 | 16.39         | 8.27          | 0.36               | 7.66         |
| 9/29/2004 | 17:00 | 16.33         | 8.27          | 0.36               | 7.62         |
| 9/29/2004 | 17:30 | 16.28         | 8.26          | 0.36               | 7.65         |
| 9/29/2004 | 18:00 | 16.28         | 8.26          | 0.36               | 7.62         |
| 9/29/2004 | 18:30 | 16.22         | 8.25          | 0.36               | 7.54         |
| 9/29/2004 | 19:00 | 16.17         | 8.25          | 0.36               | 7.54         |
| 9/29/2004 | 19:30 | 16.11         | 8.23          | 0.36               | 7.40         |
| 9/29/2004 | 20:00 | 16.06         | 8.22          | 0.36               | 7.36         |
| 9/29/2004 | 20:30 | 15.94         | 8.24          | 0.36               | 7.48         |
| 9/29/2004 | 21:00 | 15.94         | 8.25          | 0.36               | 7.52         |
| 9/29/2004 | 21:30 | 15.89         | 8.27          | 0.36               | 7.61         |
| 9/29/2004 | 22:00 | 15.89         | 8.31          | 0.36               | 7.77         |
| 9/29/2004 | 22:30 | 15.83         | 8.32          | 0.36               | 7.87         |
| 9/29/2004 | 23:00 | 15.78         | 8.33          | 0.35               | 7.92         |
| 9/29/2004 | 23:30 | 15.78         | 8.32          | 0.35               | 7.85         |

**2004 Water Quality Study**  
**Tallwater Tabular Data for Month of September 2004**  
**Oconto Falls (Upper) Hydroelectric Project - FERC Project # 2325**

| Date      | Time  | Temp<br>(° C) | pH<br>(units) | Sp. Cond.<br>mS/cm | DO<br>(mg/l) |
|-----------|-------|---------------|---------------|--------------------|--------------|
| 9/30/2004 | 0:00  | 15.78         | 8.33          | 0.35               | 7.94         |
| 9/30/2004 | 0:30  | 15.72         | 8.32          | 0.35               | 7.93         |
| 9/30/2004 | 1:00  | 15.72         | 8.33          | 0.35               | 7.96         |
| 9/30/2004 | 1:30  | 15.72         | 8.33          | 0.35               | 7.93         |
| 9/30/2004 | 2:00  | 15.72         | 8.33          | 0.35               | 7.87         |
| 9/30/2004 | 2:30  | 15.72         | 8.33          | 0.35               | 7.90         |
| 9/30/2004 | 3:00  | 15.67         | 8.32          | 0.35               | 7.87         |
| 9/30/2004 | 3:30  | 15.67         | 8.33          | 0.35               | 7.91         |
| 9/30/2004 | 4:00  | 15.67         | 8.33          | 0.35               | 7.93         |
| 9/30/2004 | 4:30  | 15.67         | 8.33          | 0.35               | 7.97         |
| 9/30/2004 | 5:00  | 15.61         | 8.34          | 0.35               | 7.95         |
| 9/30/2004 | 5:30  | 15.61         | 8.34          | 0.35               | 7.97         |
| 9/30/2004 | 6:00  | 15.61         | 8.34          | 0.35               | 7.98         |
| 9/30/2004 | 6:30  | 15.61         | 8.34          | 0.35               | 7.95         |
| 9/30/2004 | 7:00  | 15.56         | 8.33          | 0.35               | 7.94         |
| 9/30/2004 | 7:30  | 15.56         | 8.33          | 0.35               | 7.91         |
| 9/30/2004 | 8:00  | 15.50         | 8.33          | 0.35               | 7.85         |
| 9/30/2004 | 8:30  | 15.50         | 8.33          | 0.35               | 7.98         |
| 9/30/2004 | 9:00  | 15.50         | 8.33          | 0.35               | 7.96         |
| 9/30/2004 | 9:30  | 15.50         | 8.32          | 0.35               | 7.80         |
| 9/30/2004 | 10:00 | 15.56         | 8.32          | 0.35               | 7.89         |
| 9/30/2004 | 10:30 | 15.56         | 8.32          | 0.35               | 7.93         |
| 9/30/2004 | 11:00 | 15.56         | 8.32          | 0.35               | 7.89         |
| 9/30/2004 | 11:30 | 15.56         | 8.32          | 0.35               | 7.83         |
| 9/30/2004 | 12:00 | 15.61         | 8.31          | 0.36               | 7.83         |
| 9/30/2004 | 12:30 | 15.61         | 8.31          | 0.35               | 7.86         |
| 9/30/2004 | 13:00 | 15.61         | 8.31          | 0.36               | 7.82         |
| 9/30/2004 | 13:30 | 15.61         | 8.31          | 0.36               | 7.86         |
| 9/30/2004 | 14:00 | 15.61         | 8.30          | 0.36               | 7.75         |
| 9/30/2004 | 14:30 | 15.61         | 8.31          | 0.36               | 7.86         |
| 9/30/2004 | 15:00 | 15.67         | 8.31          | 0.36               | 7.82         |
| 9/30/2004 | 15:30 | 15.67         | 8.31          | 0.36               | 7.81         |
| 9/30/2004 | 16:00 | 15.61         | 8.29          | 0.36               | 7.72         |
| 9/30/2004 | 16:30 | 15.56         | 8.28          | 0.36               | 7.67         |
| 9/30/2004 | 17:00 | 15.44         | 8.26          | 0.36               | 7.56         |
| 9/30/2004 | 17:30 | 15.44         | 8.26          | 0.36               | 7.57         |
| 9/30/2004 | 18:00 | 15.44         | 8.27          | 0.36               | 7.60         |
| 9/30/2004 | 18:30 | 15.44         | 8.28          | 0.36               | 7.72         |
| 9/30/2004 | 19:00 | 15.39         | 8.29          | 0.36               | 7.69         |
| 9/30/2004 | 19:30 | 15.39         | 8.30          | 0.36               | 7.75         |
| 9/30/2004 | 20:00 | 15.39         | 8.31          | 0.36               | 7.85         |
| 9/30/2004 | 20:30 | 15.33         | 8.33          | 0.36               | 7.95         |
| 9/30/2004 | 21:00 | 15.28         | 8.34          | 0.35               | 7.80         |
| 9/30/2004 | 21:30 | 15.22         | 8.34          | 0.35               | 7.88         |
| 9/30/2004 | 22:00 | 15.17         | 8.34          | 0.35               | 7.97         |
| 9/30/2004 | 22:30 | 15.11         | 8.34          | 0.35               | 7.56         |
| 9/30/2004 | 23:00 | 15.11         | 8.34          | 0.35               | 7.69         |
| 9/30/2004 | 23:30 | 15.11         | 8.34          | 0.35               | 7.54         |

## **APPENDIX D**

### **Agency Correspondence**



**North American Hydro Holdings, Inc. — Plant Operations:**  
118 State Street, P.O. Box 167, Neenah, WI 54960 USA  
Tel 920-293-4628 Fax 920-293-8087 Email nah@nahydro.com Web www.nahydro.com

**Engineering & Manufacturing:**  
1323 B Everest Avenue, Schofield, WI 54478 USA  
Tel 715-359-0209 Fax 715-359-1049 Email schofield@nahydro.com Web www.nahydro.com

January 7, 2005

Mr. Jim Reyburn  
Water Quality Biologist  
Wisconsin Department of Natural Resources  
P.O. Box 10448  
Green Bay, Wisconsin 54307

**RE: 2004 Water Quality Monitoring Data**  
Oconto Falls (Upper) Hydroelectric Project (FERC #2523)  
Oconto Falls (Lower) Hydroelectric Project (FERC #2689)

Mr. Reyburn,

Enclosed are the draft copies of the 2004 Water Quality Monitoring data compiled from impoundment and tailwater sampling performed during July 1 through September 30 of 2004 for the two Projects listed above. This is the first-session data collected for Oconto Falls (Upper) Hydroelectric Project (FERC #2523) and second-session data collected for Oconto Falls (Lower) Hydroelectric Project (FERC #2689) under their respective FERC approved Water Quality Monitoring Plans.

Per Plan design, sample collections were coordinated between these projects to establish a long-term database for water quality analysis and trending of the Oconto River at these established sampling locations.

I would appreciate it if you would look through the data and provide any feedback within the next 30 days. If you have any questions, please feel free to contact me at 920-293-4628 ext #15, via mail, or via e-mail @ loeffler@vbe.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve R. Loeffler".

Steve Loeffler  
Environmental Studies Manager  
North American Hydro Holdings, Inc.



**North American Hydro Holdings, Inc. — Plant Operations:**  
116 State Street, P.O. Box 157, Nashboro, WI 54960 USA  
Tel 920-293-4628 Fax 920-293-8087 Email nah@nahydro.com Web www.nahydro.com

**Engineering & Manufacturing:**  
1323 B Everett Avenue, Schofield, WI 54476 USA  
Tel 715-359-0209 Fax 715-359-1048 Email schofield@nahydro.com Web www.nahydro.com

January 7, 2005

Mr. Larry Thompson  
Staff Biologist  
U.S. Fish and Wildlife Service  
2661 Scott Tower Drive  
New Franken, Wisconsin 54229

**RE: 2004 Water Quality Monitoring Data**  
Oconto Falls (Upper) Hydroelectric Project (FERC #2523)  
Oconto Falls (Lower) Hydroelectric Project (FERC #2689)

Mr. Thompson,

Enclosed are the draft copies of the 2004 Water Quality Monitoring data compiled from impoundment and tailwater sampling performed during July 1 through September 30 of 2004 for the two Projects listed above. This is the first-session data collected for Oconto Falls (Upper) Hydroelectric Project (FERC #2523) and second-session data collected for Oconto Falls (Lower) Hydroelectric Project (FERC #2689) under their respective FERC approved Water Quality Monitoring Plans.

Per Plan design, sample collections were coordinated between these projects to establish a long-term database for water quality analysis and trending of the Oconto River at these established sampling locations.

I would appreciate it if you would look through the data and provide any feedback within the next 30 days. If you have any questions, please feel free to contact me at 920-293-4628 ext #15, via mail, or via e-mail @ loeffler@vbe.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve R. Loeffler". It is written in cursive and includes a horizontal line underneath the name.

Steve Loeffler  
Environmental Studies Manager  
North American Hydro Holdings, Inc.

**Subject:** 2004 Oconto Falls Water Quality Draft Report?

**From:** Steve Loeffler <loeffler@vbe.com>

**Date:** Wed, 09 Mar 2005 15:51:08 -0600

**To:** reybj@dnr.state.wi.us

**Re:** 2004 Water Quality Monitoring Data

Oconto Falls (Upper) Hydroelectric Project - FERC #2523

Oconto Falls (Lower) Hydroelectric Project - FERC #2689

Jim,

I need to wrap up these reports and submit them to the FERC (draft submitted for your review January 7, 2005). I would appreciate it if you could e-mail any comments to me by the end of this week.

Thanks,

Steve Loeffler  
Environmental Studies Manager  
North American Hydro Holdings, Inc.

**Subject:** Attn: Larry Thompson  
**From:** Steve Loeffler <loeffler@vbe.com>  
**Date:** Wed, 09 Mar 2005 16:04:17 -0600  
**To:** GreenBayFisheries@fws.gov

**Re:** 2004 Water Quality Monitoring Data  
Oconto Falls (Upper) Hydroelectric Project - FERC #2523  
Oconto Falls (Lower) Hydroelectric Project - FERC #2689

Larry,

I need to wrap up these reports and submit them to the FERC (draft submitted for your review January 7, 2005). I would appreciate it if you could e-mail any comments to me by the end of this week.

Thanks,

Steve Loeffler  
Environmental Studies Manager  
North American Hydro Holdings, Inc.

**Subject:** Re: 2004 Oconto Falls Water Quality Draft Report?  
**From:** Steve Loeffler <loeffler@vbe.com>  
**Date:** Thu, 10 Mar 2005 11:17:27 -0600  
**To:** "Reyburn, James R." <James.Reyburn@dnr.state.wi.us>

Thank you, Jim, for the quick response.

I have passed along your request to our Oconto Falls dam operators and our regional operations manager to monitor for zebra mussels. I asked them to monthly or bi-monthly check underwater equipment and submerged structures for any evidence of the mussels, as well as keep an ear tuned for any shoreline property owners who may have seen mussels on their boat transoms, motor lower units, pier pilings or washed up on their shorelines. If the operators identify anything immediately below, between, or above the dams, they will let me know and I will immediately pass on the information to you. If you have any other suggestions, let me know and I will pass it along.

Thanks again,

Steve

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Reyburn, James R. wrote:

Steve - I looked at the draft reports today and they look good. The continuous monitoring data from the lower and the upper tailwater sampling are very consistent. The only recommendation I have is to include a map in each report showing the sample locations above and below both dams on the same map. As an aside, I think you spoke to Charmaine Robaidek from DNR about zebra mussels. The Oconto River at the Oconto Falls pond are on the watch list for zebra mussels. Veligers have been found in the Oconto Falls Pond but no adults have been found. Could you and the dam operators keep a look out for adults as a part of routine operation and notify me if any are found? Thanks  
James Reyburn -Department of Natural Resources  
Water Quality Biologist - Lower Fox Basin  
P.O. Box 10448 Green Bay, WI. 54307-0448  
(920) 448-5135  
email james.reyburn@dnr.state.wi.us



**North American Hydro Holdings, Inc. — Plant Operations:**  
116 State Street, P.O. Box 187, Neenah, WI 54956 USA  
Tel 920-293-4628 Fax 920-293-8087 Email nah@nahydro.com Web www.nahydro.com

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1323 B Everest Avenue, Schofield, WI 54476 USA  
Tel 715-359-0209 Fax 715-359-1048 Email schofield@nahydro.com Web www.nahydro.com

April 22, 2005

Ms. Peggy Harding - Regional Director  
Federal Energy Regulatory Commission -CRO  
230 South Dearborn St.  
Room 3130  
Chicago, IL 60604

**RE: 2004 Water Quality Monitoring Data Final Report**  
Oconto Falls (Upper) Hydroelectric Project (FERC #2523)  
Oconto Falls (Lower) Hydroelectric Project (FERC #2689)

Ms. Harding,

Enclosed are the Final Report copies of the 2004 Water Quality Monitoring data compiled from impoundment and tailwater sampling performed during July 1 through September 30 of 2004 for the two Projects listed above.

Draft copies of these reports were sent to Mr. Larry Thompson - Staff Biologist, U.S. Fish and Wildlife Service and Mr. Jim Reyburn - Water Quality Biologist, Wisconsin Department of Natural Resources on January 7, 2005 for solicited review per the approved Article 405 Water Quality Monitoring Plan for Oconto Falls (Upper) Hydroelectric Project (FERC #2523) and approved Article 404 Water Quality Monitoring Plan for Oconto Falls (Lower) Hydroelectric Project (FERC #2689).

I have incorporated Mr. Reyburn's single comment request by adding into each report an aerial photo location map indicating the sampling locations of both studies.

I did not receive any comments from Mr. Thompson for either of these report's draft copies.

If you have any questions regarding these reports, please feel free to contact me at 920-293-4628 ext #15, via mail, or via e-mail @ loeffler@vbe.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven R. Loeffler".

Steven R. Loeffler  
Environmental Studies Manager  
North American Hydro Holdings, Inc.

Enclosures: As Indicated  
Cc: Mr. Larry Thompson - USFWS  
Mr. Jim Reyburn - WDNR



**North American Hydro Holdings, Inc. — Plant Operations:**  
116 State Street, P.O. Box 187, Neshkoro, WI 54960 USA  
Tel 920-283-4628 Fax 920-283-8087 Email nah@nahydro.com Web www.nahydro.com

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1323 B Everest Avenue, Schofield, WI 54476 USA  
Tel 715-359-0209 Fax 715-359-1049 Email schofield@nahydro.com Web www.nahydro.com

April 22, 2005

Mr. Jim Reyburn  
Water Quality Biologist  
Wisconsin Department of Natural Resources  
P.O. Box 10448  
Green Bay, Wisconsin 54307

**RE: 2004 Water Quality Monitoring Data Final Report**  
Oconto Falls (Upper) Hydroelectric Project (FERC #2523)  
Oconto Falls (Lower) Hydroelectric Project (FERC #2689)

Mr. Reyburn,

Enclosed are the Final Report copies of the 2004 Water Quality Monitoring data compiled from impoundment and tailwater sampling performed during July 1 through September 30 of 2004 for the two Projects listed above.

I thank you for your time in reviewing and commenting on the draft copies of these reports sent to you on January 7, 2005. I have incorporated your single comment request by adding into each report an aerial photo location map indicating the sampling locations of both studies.

I did not receive any comments from Mr. Larry Thompson - Staff Biologist, U.S. Fish and Wildlife Service in New Franken, Wisconsin for either of these report's draft copies.

Once again, thank you for your review and comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven R. Loeffler".

Steven R. Loeffler  
Environmental Studies Manager  
North American Hydro Holdings, Inc.



**North American Hydro Holdings, Inc. — Plant Operations:**  
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Tel 715-359-0209 Fax 715-359-1049 Email schofield@nahydro.com Web www.nahydro.com

April 22, 2005

Mr. Larry Thompson  
Staff Biologist  
U.S. Fish and Wildlife Service  
2661 Scott Tower Drive  
New Franken, Wisconsin 54229

**RE: 2004 Water Quality Monitoring Data Final Report**  
Oconto Falls (Upper) Hydroelectric Project (FERC #2523)  
Oconto Falls (Lower) Hydroelectric Project (FERC #2689)

Mr. Thompson,

Enclosed are the draft copies of the 2004 Water Quality Monitoring data compiled from impoundment and tailwater sampling performed during July 1 through September 30 of 2004 for the two Projects listed above.

As I did not receive any solicited comments from you since the January 7, 2005 submission of the draft reports, I must assume that you have no comments.

I have incorporated Mr. Jim Reyburn's (Water Quality Biologist, Wisconsin Department of Natural Resources) single comment request by adding into each report an aerial photo location map indicating the sampling locations of both studies.

Thank you for the opportunity to solicit your comments for these reports.

Sincerely,

A handwritten signature in black ink that reads "Steven R. Loeffler". The signature is fluid and cursive, with a long horizontal line extending from the end of the last name.

Steven R. Loeffler  
Environmental Studies Manager  
North American Hydro Holdings, Inc.