ORIGINAL

**Wisconsin Public Service Corporation**
*(a subsidiary of WPS Resources Corporation)*
600 North Adams Street
P.O. Box 19002
Green Bay, WI 54307-9002

December 13, 2005

FERC Project No. 2595



Ms. Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
Mail Code: DTCA, HL 21.3
888 First Street, N.E.
Washington, DC 20426

Dear Secretary Salas:

High Falls Hydroelectric Project Water Quality Monitoring Data

Per the Order Amending Water Quality Monitoring Plan for the High Falls Hydroelectric Facility, dated April 30, 2002, Wisconsin Public Service Corporation (WPSC) is pleased to submit water quality monitoring data for the 2005 monitoring year.

Per the Water Quality Monitoring Plan, dissolved oxygen (D.O.), temperature, and pH were monitored hourly from June 1st to September 30th, 2005, below the dam. The data collected is enclosed for your review. Please note that the dissolved oxygen data has been corrected for calibration drift when the equipment drifted more than +/- 0.20 mg/l between maintenance events.

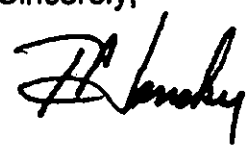
Please note that there are hourly readings below the dissolved oxygen standard of 5.0 mg/l. All of the low D.O. readings occurred in the month of September during a drawdown of the High Falls Reservoir for improvements to the dam and an adjacent earthen berm. To control flow during the drawdown, all water was being released through the powerhouse. At the time the low readings were observed the water level in the reservoir was below the bottom of tainter gates, thus not allowing for D.O. corrective action of releasing additional aeration flow.

WPSC consulted with the Wisconsin Department of Natural Resources (WDNR) and United States Fish and Wildlife Service (FWS) regarding the low D.O. readings. An exact cause of the low readings is unknown. The low readings may have been attributed to high-suspended solids, biological oxygen demand, biofouling of the equipment, or possibly the release of low D.O. water from a stratified area of the reservoir.

There are no other deviations from water quality standards to note. Copies of the corrected D.O., temperature, and pH data are included in Appendix A. Copies of pre- and post-deployment calibration data are included in Appendix B. WPSC has consulted with the WDNR and the FWS about the water quality monitoring data. The WDNR and FWS did not respond with comments on the data. Documentation of Agency Consultation is included in Appendix C.

If you have any questions, please do not hesitate to call Mr. Mark Metcalf at (920) 433-1833.

Sincerely,



Terry P. Jensky
Assistant Vice President - Energy Supply Operations
Telephone: (715) 355-2047

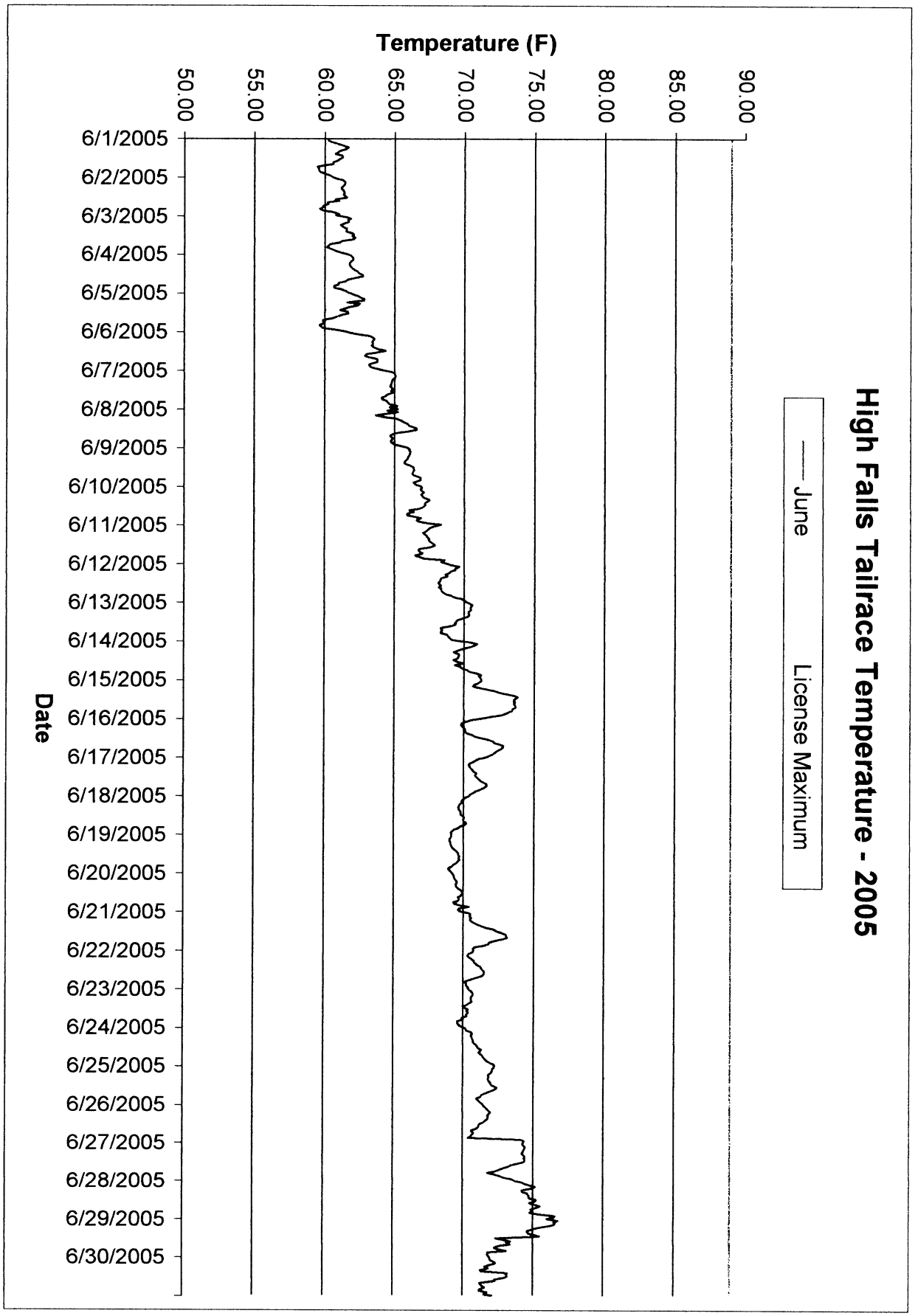
syx

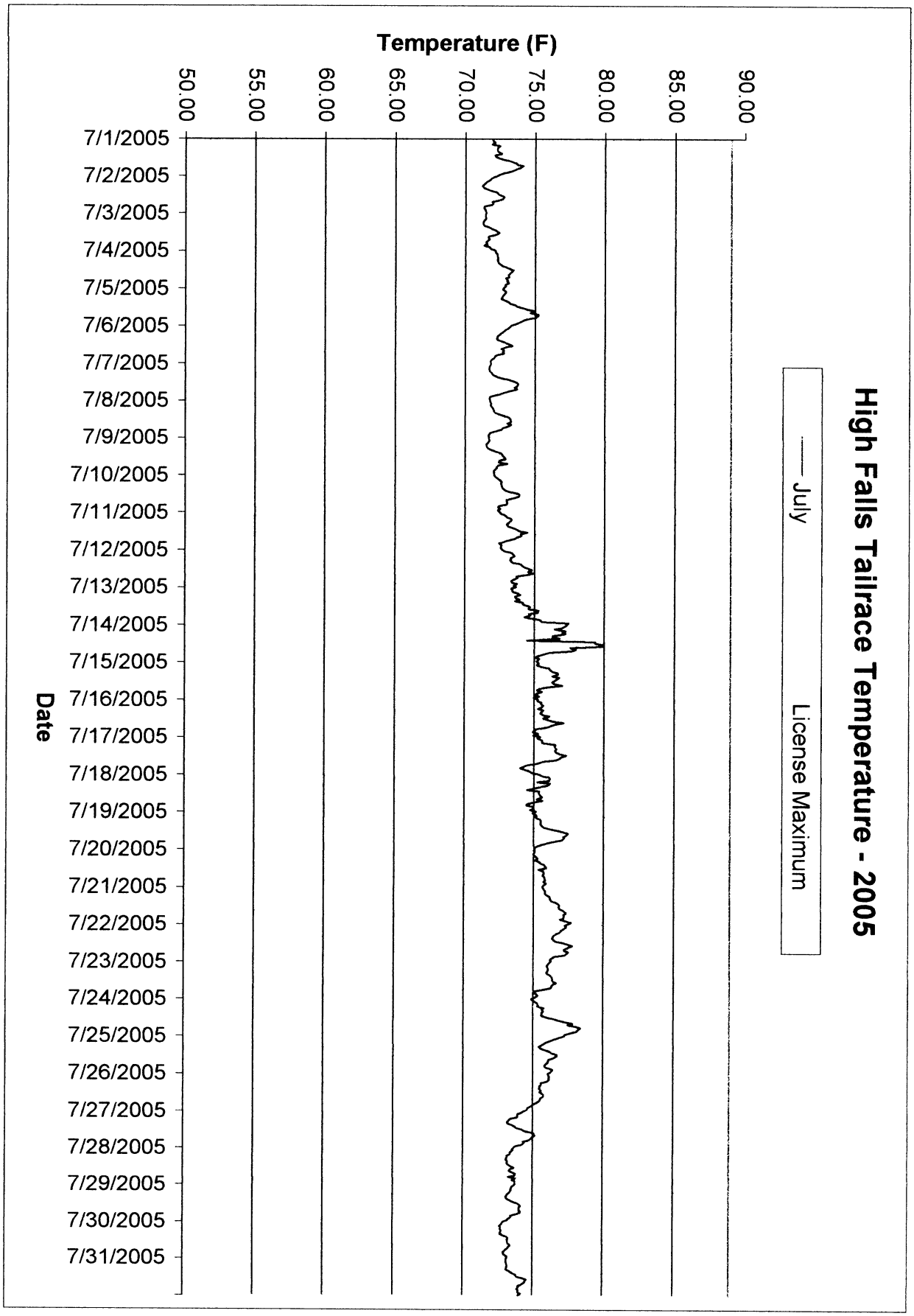
Enc.

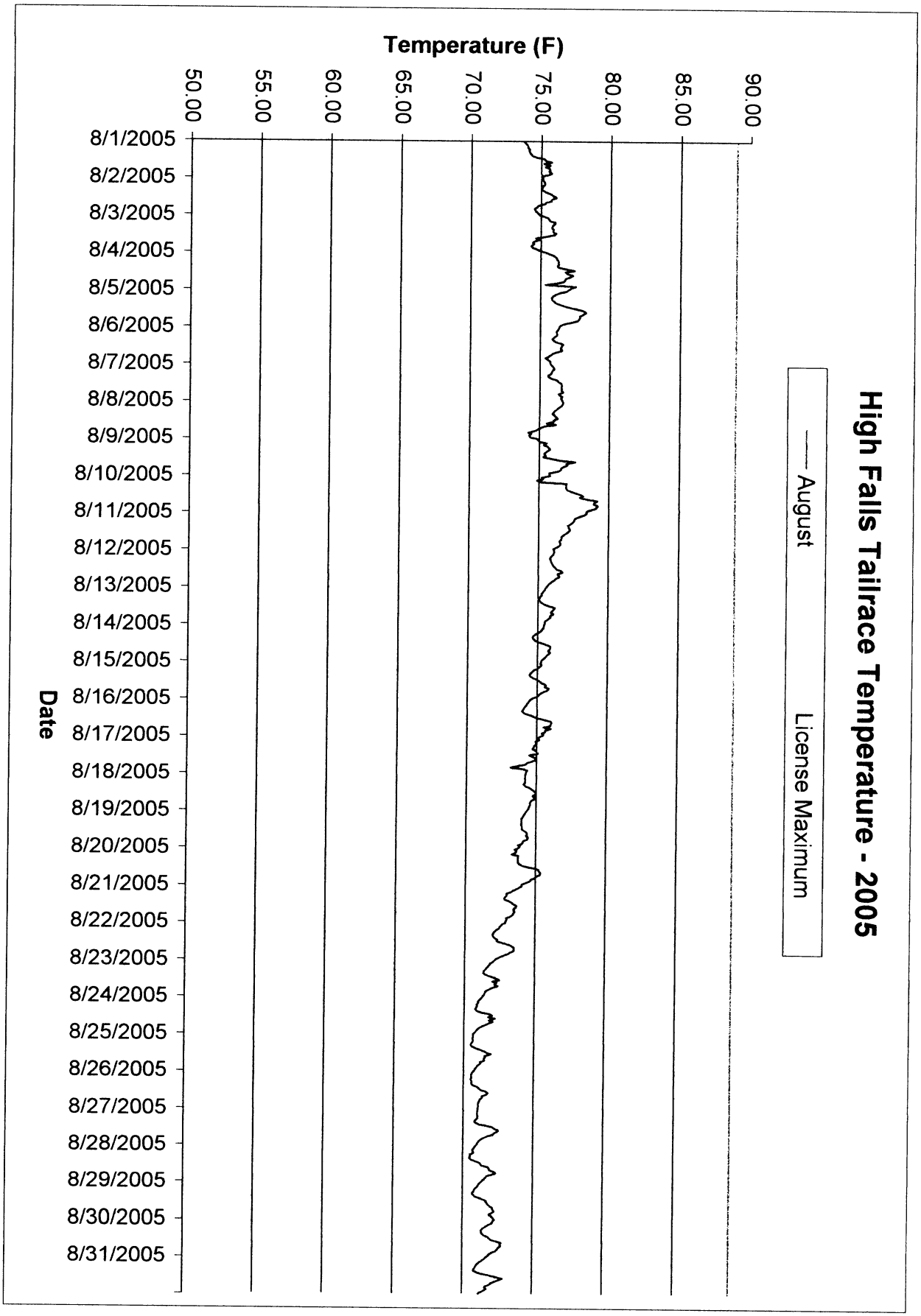
cc: Ms. Janet Smith, FWS
Ms. Peggy Harding, FERC - Chicago
Mr. Robert Martini, WDNR
Mr. Mike Donofrio, WDNR
Mr. Gil Snyder, WPSC - D2
Mr. Shawn Puzen, WPSC - D2
Ms. Joan Johanek, WPSC - D2 (file)
Mr. Bruce Crocker, WPSC - D2 (cover only)
Mr. Bill Bloczynski, WPSC - MERH (cover only)

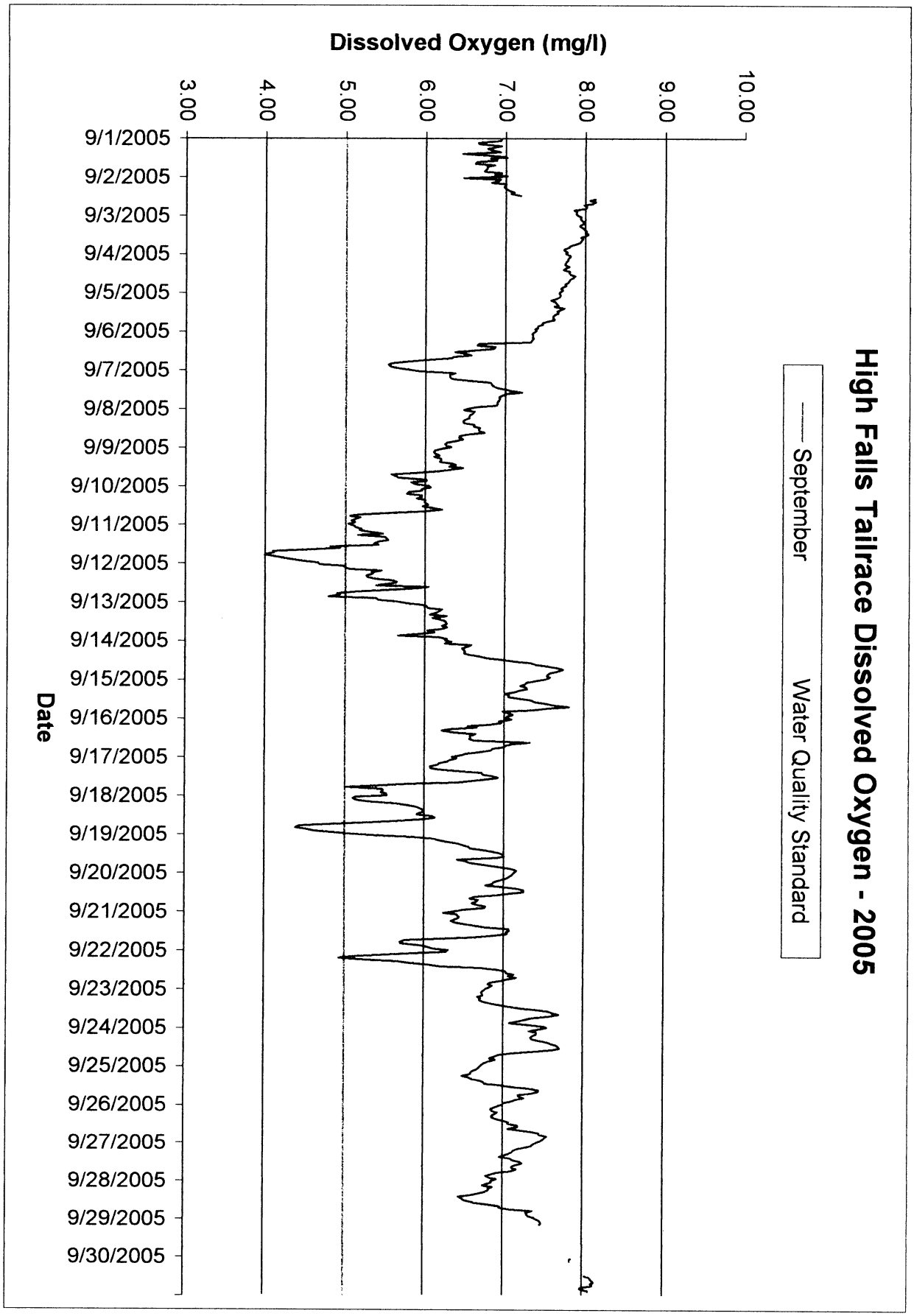
# Appendix A

# Water Quality Monitoring Data









# High Falls Tailrace Dissolved Oxygen Summary - June 2005

| Time HHMMSS | 06/01/05 | 06/02/05 | 06/03/05 | 06/04/05 | 06/05/05 | 06/06/05 | 06/07/05 | 06/08/05 | 06/09/05 | 06/10/05 | 06/11/05 | 06/12/05 | 06/13/05 | 06/14/05 | 06/15/05 | 06/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7.26 | 7.13 | 6.84 | 6.81 | 6.62 | 6.36 | 6.47 | 6.60 | 6.74 | 6.39 | 6.46 | 6.48 | 6.19 | 5.86 | 5.86 | 6.30 |
| 10000 | 7.24 | 7.18 | 6.93 | 6.87 | 6.71 | 6.45 | 6.54 | 6.78 | 6.66 | 6.33 | 6.51 | 6.49 | 6.22 | 5.92 | 5.85 | 6.27 |
| 20000 | 7.22 | 7.23 | 6.97 | 6.86 | 6.72 | 6.54 | 6.51 | 6.67 | 6.68 | 6.42 | 6.48 | 6.41 | 6.18 | 5.86 | 5.86 | 6.21 |
| 30000 | 7.28 | 7.19 | 6.92 | 6.85 | 6.85 | 6.63 | 6.54 | 6.48 | 6.67 | 6.47 | 6.43 | 6.45 | 6.19 | 5.90 | 5.85 | 6.17 |
| 40000 | 7.34 | 7.14 | 6.96 | 6.82 | 6.80 | 6.60 | 6.51 | 6.56 | 6.66 | 6.40 | 6.38 | 6.40 | 6.30 | 5.85 | 6.01 | 6.15 |
| 50000 | 7.34 | 7.14 | 6.87 | 6.78 | 6.65 | 6.59 | 6.47 | 6.74 | 6.57 | 6.37 | 6.46 | 6.34 | 6.22 | 5.76 | 6.06 | 6.15 |
| 60000 | 7.38 | 7.13 | 6.82 | 6.73 | 6.70 | 6.58 | 6.47 | 6.80 | 6.54 | 6.33 | 6.47 | 6.27 | 6.24 | 5.71 | 6.20 | 6.21 |
| 70000 | 7.41 | 7.14 | 6.90 | 6.76 | 6.72 | 6.57 | 6.48 | 6.79 | 6.55 | 6.46 | 6.51 | 6.31 | 6.24 | 5.77 | 6.41 | 6.26 |
| 80000 | 7.41 | 7.21 | 6.94 | 6.76 | 6.63 | 6.56 | 6.54 | 6.86 | 6.54 | 6.46 | 6.48 | 6.28 | 6.26 | 5.75 | 6.65 | 6.26 |
| 90000 | 7.40 | 7.19 | 6.98 | 6.85 | 6.54 | 6.64 | 6.62 | 6.80 | 6.54 | 6.41 | 6.40 | 6.20 | 6.26 | 5.77 | 6.90 | 6.36 |
| 100000 | 7.27 | 7.12 | 6.91 | 6.91 | 6.53 | 6.71 | 6.62 | 6.84 | 6.60 | 6.35 | 6.44 | 6.22 | 6.17 | 5.77 | 6.93 | 6.46 |
| 110000 | 7.27 | 7.08 | 6.95 | 6.93 | 6.59 | 6.61 | 6.55 | 6.85 | 6.63 | 6.37 | 6.43 | 6.16 | 6.06 | 5.67 | 6.90 | 6.59 |
| 120000 | 7.28 | 7.08 | 6.92 | 6.99 | 6.62 | 6.71 | 6.56 | 6.87 | 6.62 | 6.33 | 6.45 | 6.14 | 6.05 | 5.76 | 6.91 | 6.74 |
| 130000 | 7.31 | 7.06 | 7.30 | 7.00 | 6.49 | 6.59 | 6.58 | 6.71 | 6.66 | 6.66 | 6.43 | 6.12 | 6.06 | 5.78 | 6.96 | 6.82 |
| 140000 | 7.23 | 6.93 | 7.15 | 6.87 | 6.53 | 6.52 | 6.54 | 6.66 | 6.65 | 6.53 | 6.32 | 6.06 | 5.95 | 5.65 | 6.97 | 6.86 |
| 150000 | 7.21 | 6.93 | 7.00 | 6.71 | 6.41 | 6.59 | 6.56 | 6.61 | 6.57 | 6.62 | 6.31 | 6.11 | 5.93 | 5.76 | 7.00 | 6.97 |
| 160000 | 7.18 | 6.91 | 6.97 | 6.69 | 6.23 | 6.66 | 6.49 | 6.57 | 6.52 | 6.52 | 6.26 | 6.08 | 5.94 | 5.80 | 6.97 | 7.07 |
| 170000 | 7.06 | 6.83 | 6.83 | 6.61 | 6.20 | 6.66 | 6.49 | 6.59 | 6.62 | 6.33 | 6.22 | 6.10 | 5.89 | 5.81 | 6.96 | 7.04 |
| 180000 | 7.07 | 6.81 | 6.86 | 6.66 | 6.21 | 6.62 | 6.59 | 6.58 | 6.59 | 6.41 | 6.09 | 6.07 | 5.77 | 5.84 | 6.95 | 7.07 |
| 190000 | 7.02 | 6.75 | 6.80 | 6.53 | 6.13 | 6.51 | 6.52 | 6.52 | 6.53 | 6.59 | 6.06 | 6.12 | 5.79 | 5.87 | 6.92 | 6.99 |
| 200000 | 6.99 | 6.71 | 6.80 | 6.48 | 6.17 | 6.36 | 6.46 | 6.48 | 6.44 | 6.46 | 6.09 | 6.11 | 5.80 | 5.97 | 6.83 | 6.92 |
| 210000 | 7.03 | 6.84 | 6.72 | 6.56 | 6.12 | 6.32 | 6.56 | 6.53 | 6.37 | 6.30 | 6.46 | 6.20 | 5.76 | 5.88 | 6.74 | 6.87 |
| 220000 | 7.07 | 6.78 | 6.74 | 6.57 | 6.24 | 6.37 | 6.40 | 6.60 | 6.41 | 6.43 | 6.41 | 6.19 | 5.74 | 5.85 | 6.62 | 6.81 |
| 230000 | 7.09 | 6.85 | 6.77 | 6.57 | 6.35 | 6.43 | 6.58 | 6.70 | 6.46 | 6.57 | 6.28 | 6.13 | 5.83 | 5.87 | 6.45 | 6.73 |
| Daily Max | 7.41 | 7.23 | 7.30 | 7.00 | 6.85 | 6.81 | 6.62 | 6.87 | 6.74 | 6.66 | 6.51 | 6.49 | 6.30 | 5.97 | 7.00 | 7.07 |
| Daily Min | 6.99 | 6.71 | 6.72 | 6.48 | 6.12 | 6.32 | 6.40 | 6.48 | 6.37 | 6.30 | 6.06 | 6.06 | 5.74 | 5.65 | 5.85 | 6.15 |
| Average | 7.22 | 7.02 | 6.91 | 6.76 | 6.49 | 6.56 | 6.53 | 6.67 | 6.58 | 6.44 | 6.37 | 6.23 | 6.04 | 5.81 | 6.57 | 6.60 |

Licensee Minimum DO: 5.0 mg/l

# High Falls Tailrace Dissolved Oxygen Summary - June 2005

| Time HHMMSS | 06/17/05 | 06/18/05 | 06/19/05 | 06/20/05 | 06/21/05 | 06/22/05 | 06/23/05 | 06/24/05 | 06/25/05 | 06/26/05 | 06/27/05 | 06/28/05 | 06/29/05 | 06/30/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 6.58 | 6.62 | 6.27 | 6.26 | 6.28 | 6.06 | 6.05 | 5.72 | 6.09 | 5.81 | 7.46 | 7.52 | 7.16 | 5.88 |
| 10000 | 6.49 | 6.56 | 6.29 | 6.32 | 6.27 | 6.00 | 6.11 | 5.72 | 6.02 | 5.84 | 7.43 | 7.55 | 7.15 | 5.83 |
| 20000 | 6.46 | 6.58 | 6.24 | 6.41 | 6.28 | 5.97 | 6.09 | 5.81 | 6.00 | 5.84 | 7.51 | 7.47 | 7.11 | 5.84 |
| 30000 | 6.44 | 6.60 | 6.27 | 6.45 | 6.30 | 5.96 | 6.13 | 5.87 | 5.99 | 5.89 | 7.45 | 7.42 | 7.26 | 5.95 |
| 40000 | 6.44 | 6.55 | 6.33 | 6.41 | 6.24 | 6.07 | 6.10 | 5.80 | 5.96 | 5.93 | 7.50 | 7.33 | 7.17 | 5.93 |
| 50000 | 6.47 | 6.56 | 6.36 | 6.44 | 6.28 | 6.08 | 6.10 | 5.82 | 5.93 | 5.87 | 7.51 | 7.37 | 7.03 | 5.85 |
| 60000 | 6.49 | 6.56 | 6.42 | 6.42 | 6.32 | 6.13 | 6.05 | 5.85 | 5.94 | 5.90 | 7.52 | 7.36 | 7.06 | 5.89 |
| 70000 | 6.55 | 6.55 | 6.46 | 6.38 | 6.42 | 6.15 | 6.09 | 5.85 | 5.97 | 5.96 | 7.58 | 7.31 | 6.80 | 5.8 |
| 80000 | 6.63 | 6.61 | 6.55 | 6.38 | 6.55 | 6.21 | 6.08 | 5.88 | 6.01 | 5.95 | 7.49 | 7.42 | 7.05 | 5.86 |
| 90000 | 6.77 | 6.68 | 6.51 | 6.37 | 6.64 | 6.30 | 5.98 | 5.93 | 6.11 | 5.96 | 7.67 | 7.39 | 7.38 | 7.62 |
| 100000 | 6.72 | 6.69 | 6.41 | 6.36 | 6.75 | 6.26 | 5.80 | 5.96 | 6.12 | 5.93 | 7.56 | 7.36 | 7.46 | 7.64 |
| 110000 | 6.87 | 6.67 | 6.49 | 6.36 | 6.73 | 6.32 | 5.97 | 5.93 | 6.19 | 5.76 | 7.73 | 7.38 | 6.02 | 7.95 |
| 120000 | 6.88 | 6.74 | 6.45 | 6.31 | 6.77 | 6.35 | 5.99 | 5.99 | 6.16 | 5.72 | 7.67 | 7.43 | 6.26 | 7.25 |
| 130000 | 6.94 | 6.75 | 6.54 | 6.21 | 6.78 | 6.37 | 5.96 | 6.06 | 6.16 | 5.76 | 7.77 | 7.45 | 6.32 | 7.06 |
| 140000 | 7.03 | 6.67 | 6.48 | 6.14 | 6.70 | 6.28 | 5.92 | 5.96 | 6.05 | 5.66 | 7.71 | 7.42 | 6.47 | 6.19 |
| 150000 | 7.01 | 6.68 | 6.45 | 6.10 | 6.73 | 6.26 | 5.79 | 6.01 | 5.96 | 5.52 | 7.71 | 7.44 | 6.24 | 6.05 |
| 160000 | 7.05 | 6.67 | 6.41 | 6.10 | 6.67 | 6.18 | 5.81 | 5.97 | 5.90 | 5.60 | 7.84 | 7.48 | 6.11 | 6.11 |
| 170000 | 7.00 | 6.62 | 6.37 | 5.96 | 6.52 | 6.12 | 5.70 | 5.96 | 5.86 | 5.61 | 7.77 | 7.19 | 6.04 | 5.97 |
| 180000 | 6.91 | 6.59 | 6.32 | 5.97 | 6.36 | 5.93 | 5.73 | 5.96 | 5.82 | 5.54 | 7.81 | 7.19 | 6.09 | 5.83 |
| 190000 | 6.85 | 6.53 | 6.24 | 6.04 | 6.32 | 5.92 | 5.63 | 5.92 | 5.78 | 5.47 | 7.70 | 7.17 | 5.83 | 5.93 |
| 200000 | 6.76 | 6.34 | 6.10 | 6.17 | 6.22 | 5.94 | 5.57 | 5.86 | 5.69 | 5.37 | 7.74 | 7.18 | 5.73 | 6.11 |
| 210000 | 6.73 | 6.28 | 6.09 | 5.96 | 6.10 | 5.92 | 5.55 | 5.97 | 5.75 | 7.51 | 7.84 | 7.07 | 5.87 | 5.76 |
| 220000 | 6.63 | 6.24 | 6.15 | 5.96 | 6.04 | 6.00 | 5.62 | 6.02 | 5.81 | 7.49 | 7.61 | 6.92 | 5.71 | 5.76 |
| 230000 | 6.65 | 6.25 | 6.20 | 6.06 | 6.05 | 5.98 | 5.67 | 6.05 | 5.84 | 7.47 | 7.48 | 7.12 | 5.83 | 6.01 |
| Daily Max | 7.05 | 6.75 | 6.55 | 6.45 | 6.78 | 6.37 | 6.13 | 6.06 | 6.19 | 7.51 | 7.84 | 7.55 | 7.46 | 7.95 |
| Daily Min | 6.44 | 6.24 | 6.09 | 5.95 | 6.04 | 5.92 | 5.55 | 5.72 | 5.69 | 5.37 | 7.43 | 6.92 | 5.83 | 5.85 |
| Average | 6.72 | 6.57 | 6.35 | 6.23 | 6.43 | 6.12 | 5.90 | 5.92 | 5.96 | 5.98 | 7.62 | 7.33 | 6.54 | 6.23 |

# High Falls Tailrace Dissolved Oxygen Summary - July 2005

| Time HHMMSS | 07/01/05 | 07/02/05 | 07/03/05 | 07/04/05 | 07/05/05 | 07/06/05 | 07/07/05 | 07/08/05 | 07/09/05 | 07/10/05 | 07/11/05 | 07/12/05 | 07/13/05 | 07/14/05 | 07/15/05 | 07/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 5.99 | 6.42 | 6.29 | 6.30 | 6.26 | 6.52 | 5.96 | 5.84 | 6.06 | 6.06 | 5.85 | 5.87 | 5.86 | 6.42 | 6.78 | 7.04 |
| 10000 | 5.93 | 6.51 | 6.13 | 6.55 | 6.29 | 6.57 | 5.75 | 5.86 | 5.99 | 6.01 | 5.99 | 5.92 | 6.03 | 6.46 | 6.40 | 6.84 |
| 20000 | 5.80 | 6.46 | 6.23 | 6.59 | 6.29 | 6.61 | 5.89 | 5.90 | 6.03 | 5.92 | 6.10 | 6.01 | 5.88 | 6.42 | 6.43 | 6.74 |
| 30000 | 5.96 | 6.25 | 6.34 | 6.48 | 6.32 | 6.49 | 5.84 | 5.89 | 5.88 | 6.24 | 6.16 | 6.13 | 5.90 | 6.68 | 6.54 | 6.93 |
| 40000 | 6.71 | 6.20 | 6.56 | 6.23 | 6.40 | 6.27 | 5.87 | 5.96 | 6.19 | 6.07 | 6.01 | 6.13 | 5.84 | 6.61 | 6.44 | 6.85 |
| 50000 | 6.74 | 6.48 | 6.83 | 6.25 | 6.45 | 6.26 | 5.91 | 5.89 | 6.38 | 5.95 | 6.05 | 6.15 | 5.72 | 6.53 | 6.46 | 6.83 |
| 60000 | 6.73 | 6.14 | 6.84 | 6.49 | 6.39 | 6.28 | 5.99 | 5.93 | 6.23 | 6.06 | 6.06 | 6.14 | 5.79 | 6.60 | 6.63 | 6.81 |
| 70000 | 6.94 | 6.22 | 6.91 | 6.47 | 6.69 | 6.34 | 6.12 | 5.94 | 6.14 | 6.15 | 5.87 | 6.01 | 5.84 | 6.48 | 6.54 | 6.75 |
| 80000 | 7.06 | 6.36 | 6.99 | 6.60 | 6.65 | 6.28 | 6.33 | 6.05 | 6.28 | 6.00 | 5.94 | 6.11 | 5.96 | 6.55 | 6.47 | 6.76 |
| 90000 | 7.35 | 6.18 | 6.62 | 6.55 | 6.67 | 6.41 | 6.45 | 6.15 | 6.27 | 6.16 | 6.14 | 6.15 | 6.02 | 5.39 | 6.59 | 6.77 |
| 100000 | 6.74 | 6.31 | 6.77 | 6.69 | 6.78 | 6.35 | 6.64 | 6.34 | 6.45 | 6.04 | 6.13 | 6.22 | 5.95 | 6.98 | 6.53 | 6.77 |
| 110000 | 6.79 | 6.32 | 6.85 | 6.72 | 6.73 | 6.11 | 6.56 | 6.23 | 6.18 | 6.16 | 6.13 | 6.15 | 6.11 | 7.65 | 6.69 | 6.75 |
| 120000 | 7.04 | 6.26 | 6.70 | 6.61 | 6.67 | 6.24 | 6.31 | 6.22 | 6.29 | 6.25 | 6.20 | 6.10 | 6.05 | 7.52 | 6.56 | 6.77 |
| 130000 | 6.96 | 6.25 | 6.92 | 6.56 | 6.89 | 6.26 | 6.49 | 6.21 | 6.24 | 6.23 | 6.07 | 6.07 | 5.92 | 7.54 | 6.46 | 7.03 |
| 140000 | 7.07 | 6.46 | 6.29 | 6.42 | 6.83 | 6.12 | 6.45 | 6.44 | 6.03 | 6.10 | 6.16 | 6.06 | 6.30 | 6.63 | 6.67 | 7.06 |
| 150000 | 6.97 | 6.38 | 6.52 | 6.61 | 6.77 | 6.17 | 6.44 | 6.45 | 6.11 | 5.84 | 6.00 | 6.24 | 6.36 | 6.61 | 6.81 | 6.92 |
| 160000 | 7.12 | 6.33 | 6.14 | 6.66 | 6.63 | 6.18 | 6.52 | 6.30 | 6.39 | 6.35 | 5.96 | 5.95 | 6.18 | 6.60 | 6.89 | 6.96 |
| 170000 | 6.90 | 6.28 | 6.20 | 6.41 | 6.66 | 5.90 | 6.38 | 6.22 | 5.82 | 5.96 | 5.95 | 5.93 | 5.94 | 6.72 | 6.88 | 6.90 |
| 180000 | 6.87 | 6.31 | 6.23 | 6.49 | 6.67 | 5.77 | 6.31 | 6.34 | 6.01 | 6.12 | 5.99 | 5.90 | 6.03 | 6.55 | 6.93 | 6.89 |
| 190000 | 6.94 | 6.05 | 6.27 | 6.32 | 6.57 | 5.89 | 6.21 | 6.27 | 6.10 | 5.76 | 5.88 | 5.91 | 5.89 | 6.38 | 6.94 | 6.97 |
| 200000 | 6.73 | 5.96 | 6.10 | 6.31 | 6.60 | 5.79 | 6.06 | 5.86 | 6.01 | 5.65 | 5.92 | 5.96 | 5.85 | 6.41 | 6.87 | 6.76 |
| 210000 | 6.77 | 6.15 | 6.31 | 6.19 | 6.42 | 5.97 | 5.91 | 5.93 | 5.82 | 5.70 | 5.71 | 5.91 | 5.79 | 6.20 | 6.72 | 6.86 |
| 220000 | 6.42 | 6.02 | 6.32 | 6.31 | 6.45 | 5.77 | 5.92 | 5.91 | 5.79 | 5.89 | 5.96 | 5.77 | 6.58 | 6.41 | 6.85 | 6.63 |
| 230000 | 6.64 | 6.25 | 6.28 | 6.30 | 6.48 | 5.75 | 5.88 | 6.01 | 5.89 | 5.74 | 5.96 | 5.96 | 6.55 | 6.80 | 6.99 | 6.77 |
| Daily Max | 7.35 | 6.51 | 6.99 | 6.72 | 6.89 | 6.61 | 6.64 | 6.45 | 6.45 | 6.35 | 6.20 | 6.24 | 6.58 | 7.65 | 6.99 | 7.06 |
| Daily Min | 5.80 | 5.96 | 6.10 | 6.19 | 6.26 | 5.75 | 5.75 | 5.84 | 5.79 | 5.65 | 5.71 | 5.77 | 5.72 | 5.39 | 6.40 | 6.63 |
| Average | 6.72 | 6.27 | 6.49 | 6.46 | 6.58 | 6.18 | 6.17 | 6.09 | 6.11 | 6.02 | 6.01 | 6.03 | 6.02 | 6.63 | 6.66 | 6.84 |

License Minimum Dissolved Oxygen: 5.0 mg/l

# High Falls Tailrace Dissolved Oxygen Summary - July 2005

| Time HHMMSS | 07/17/05 | 07/18/05 | 07/19/05 | 07/20/05 | 07/21/05 | 07/22/05 | 07/23/05 | 07/24/05 | 07/25/05 | 07/26/05 | 07/27/05 | 07/28/05 | 07/29/05 | 07/30/05 | 07/31/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 6.73 | 7.51 | 6.91 | 7.38 | 7.36 | 7.52 | 7.68 | 7.82 | 7.86 | 7.82 | 7.75 | 7.63 | 6.54 | 7.45 | 7.42 |
| 10000 | 6.43 | 7.46 | 7.00 | 7.37 | 7.34 | 7.46 | 7.72 | 7.80 | 7.76 | 7.84 | 7.42 | 7.57 | 6.49 | 7.60 | 7.48 |
| 20000 | 6.62 | 7.38 | 6.89 | 7.41 | 7.37 | 7.48 | 7.70 | 7.79 | 7.75 | 7.88 | 7.61 | 7.39 | 6.37 | 7.15 | 7.41 |
| 30000 | 6.61 | 7.39 | 7.00 | 7.45 | 7.39 | 7.49 | 7.69 | 7.69 | 7.81 | 7.85 | 7.82 | 7.52 | 6.53 | 7.48 | 7.61 |
| 40000 | 7.09 | 7.68 | 7.27 | 7.36 | 7.49 | 7.49 | 7.60 | 7.61 | 8.00 | 7.75 | 7.55 | 7.47 | 7.11 | 7.02 | 7.53 |
| 50000 | 7.19 | 7.49 | 7.23 | 7.37 | 7.49 | 7.51 | 7.69 | 7.74 | 8.07 | 7.35 | 7.19 | 7.32 | 7.30 | 7.37 | 7.39 |
| 60000 | 7.17 | 7.53 | 7.27 | 7.43 | 7.53 | 7.51 | 7.60 | 7.60 | 8.12 | 7.45 | 7.10 | 7.37 | 6.99 | 7.21 | 7.41 |
| 70000 | 7.08 | 7.58 | 7.37 | 7.39 | 7.57 | 7.46 | 7.64 | 7.75 | 8.09 | 8.02 | 7.00 | 7.42 | 7.10 | 7.17 | 7.58 |
| 80000 | 7.18 | 7.78 | 7.31 | 7.45 | 7.58 | 7.70 | 7.78 | 7.85 | 8.12 | 7.81 | 7.25 | 7.67 | 7.20 | 7.56 | 7.39 |
| 90000 | 7.15 | 7.44 | 7.33 | 7.48 | 7.52 | 7.67 | 7.69 | 7.87 | 8.10 | 7.99 | 7.24 | 7.46 | 7.33 | 7.42 | 7.59 |
| 100000 | 7.27 | 7.90 | 7.36 | 7.47 | 7.62 | 7.72 | 7.74 | 7.76 | 8.05 | 8.11 | 7.58 | 7.46 | 7.38 | 7.58 | 7.53 |
| 110000 | 7.31 | 7.89 | 7.31 | 7.44 | 7.59 | 7.66 | 7.68 | 7.83 | 7.92 | 7.85 | 7.51 | 7.24 | 7.47 | 7.49 | 7.43 |
| 120000 | 7.35 | 7.99 | 7.31 | 7.41 | 7.60 | 7.65 | 7.64 | 7.72 | 7.96 | 7.86 | 7.31 | 7.61 | 7.34 | 7.71 | 7.56 |
| 130000 | 7.33 | 7.43 | 7.29 | 7.43 | 7.53 | 7.66 | 7.73 | 7.74 | 7.99 | 8.03 | 7.51 | 7.45 | 7.42 | 7.47 | 7.47 |
| 140000 | 7.37 | 7.39 | 7.31 | 7.45 | 7.62 | 7.65 | 7.74 | 7.65 | 7.98 | 7.92 | 8.64 | 7.27 | 7.21 | 7.51 | 7.51 |
| 150000 | 7.59 | 7.34 | 7.31 | 7.47 | 7.54 | 7.68 | 7.66 | 7.60 | 7.95 | 7.97 | 8.45 | 7.40 | 7.54 | 7.59 | 7.61 |
| 160000 | 7.72 | 7.29 | 7.31 | 7.50 | 7.50 | 7.70 | 7.62 | 7.70 | 8.02 | 8.03 | 8.53 | 7.85 | 7.23 | 7.58 | 7.58 |
| 170000 | 7.79 | 7.29 | 7.32 | 7.50 | 7.55 | 7.62 | 7.74 | 7.60 | 7.93 | 7.85 | 8.43 | 8.14 | 7.15 | 7.42 | 7.34 |
| 180000 | 7.79 | 7.28 | 7.32 | 7.44 | 7.49 | 7.56 | 7.75 | 7.44 | 7.89 | 7.97 | 8.50 | 8.02 | 7.28 | 7.43 | 7.33 |
| 190000 | 7.72 | 7.22 | 7.34 | 7.40 | 7.49 | 7.55 | 7.78 | 7.57 | 7.91 | 7.81 | 7.34 | 7.95 | 7.18 | 7.54 | 7.47 |
| 200000 | 7.61 | 7.07 | 7.38 | 7.41 | 7.42 | 7.61 | 7.79 | 7.54 | 7.93 | 7.90 | 7.63 | 7.43 | 7.43 | 7.41 | 7.56 |
| 210000 | 7.46 | 7.01 | 7.39 | 7.38 | 7.43 | 7.67 | 7.70 | 7.58 | 7.85 | 7.81 | 7.83 | 6.47 | 7.43 | 7.22 | 7.41 |
| 220000 | 7.48 | 6.99 | 7.38 | 7.36 | 7.43 | 7.66 | 7.83 | 7.62 | 7.92 | 7.85 | 7.76 | 6.87 | 7.44 | 7.39 | 7.52 |
| 230000 | 7.55 | 6.93 | 7.40 | 7.37 | 7.50 | 7.68 | 7.77 | 7.69 | 7.86 | 7.77 | 7.77 | 6.55 | 7.35 | 7.42 | 7.56 |
| Daily Max | 7.79 | 7.99 | 7.40 | 7.50 | 7.62 | 7.72 | 7.83 | 7.87 | 8.12 | 8.11 | 8.64 | 8.14 | 7.54 | 7.71 | 7.61 |
| Daily Min | 6.43 | 6.93 | 6.89 | 7.36 | 7.34 | 7.46 | 7.60 | 7.44 | 7.66 | 7.35 | 7.00 | 6.47 | 6.37 | 7.02 | 7.33 |
| Average | 7.27 | 7.43 | 7.26 | 7.42 | 7.50 | 7.60 | 7.71 | 7.69 | 7.94 | 7.85 | 7.70 | 7.44 | 7.16 | 7.42 | 7.49 |

# High Falls Tailrace Dissolved Oxygen Summary - August 2005

| Time HHMMSS | 08/01/05 | 08/02/05 | 08/03/05 | 08/04/05 | 08/05/05 | 08/06/05 | 08/07/05 | 08/08/05 | 08/09/05 | 08/10/05 | 08/11/05 | 08/12/05 | 08/13/05 | 08/14/05 | 08/15/05 | 08/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7.46 | 7.65 | 7.81 | 7.87 | 8.03 | 7.41 | 7.39 | 7.32 | 5.78 | 5.33 | 7.23 | 6.93 | 7.21 | 7.45 | 7.49 | 7.77 |
| 10000 | 7.59 | 7.71 | 7.71 | 7.88 | 8.10 | 7.42 | 7.38 | 7.34 | 5.73 | 5.39 | 7.18 | 7.04 | 7.21 | 7.50 | 7.43 | 7.81 |
| 20000 | 7.70 | 7.67 | 7.65 | 7.84 | 8.10 | 7.40 | 7.37 | 7.33 | 6.00 | 5.30 | 7.17 | 7.04 | 7.20 | 7.49 | 7.45 | 7.83 |
| 30000 | 7.59 | 7.65 | 7.75 | 7.89 | 8.13 | 7.44 | 7.41 | 7.33 | 6.14 | 5.49 | 7.18 | 6.95 | 7.21 | 7.53 | 7.43 | 7.80 |
| 40000 | 7.54 | 7.67 | 7.80 | 7.87 | 8.14 | 7.44 | 7.39 | 7.36 | 6.06 | 7.34 | 7.13 | 7.05 | 7.22 | 7.49 | 7.47 | 7.70 |
| 50000 | 7.72 | 7.73 | 7.80 | 7.89 | 8.22 | 7.45 | 7.43 | 7.34 | 6.18 | 7.32 | 7.11 | 7.04 | 7.31 | 7.55 | 7.53 | 7.79 |
| 60000 | 7.54 | 7.70 | 7.79 | 7.89 | 8.16 | 7.51 | 7.43 | 7.36 | 6.06 | 7.35 | 7.13 | 7.00 | 7.31 | 7.58 | 7.47 | 7.73 |
| 70000 | 7.57 | 7.59 | 7.83 | 7.89 | 8.22 | 7.48 | 7.45 | 7.40 | 6.01 | 7.36 | 7.15 | 7.01 | 7.39 | 7.60 | 7.54 | 7.77 |
| 80000 | 7.72 | 7.65 | 7.86 | 7.91 | 8.21 | 7.49 | 7.46 | 7.41 | 5.56 | 7.39 | 7.13 | 7.11 | 7.38 | 7.56 | 7.50 | 7.81 |
| 90000 | 7.68 | 7.64 | 7.93 | 7.95 | 8.21 | 7.54 | 7.46 | 7.49 | 5.68 | 7.34 | 7.13 | 7.12 | 7.47 | 7.60 | 7.53 | 7.85 |
| 100000 | 7.61 | 7.79 | 7.98 | 7.98 | 8.25 | 7.58 | 7.56 | 7.47 | 5.89 | 7.46 | 7.20 | 7.19 | 7.44 | 7.59 | 7.50 | 7.94 |
| 110000 | 7.75 | 7.77 | 7.94 | 7.97 | 8.25 | 7.61 | 7.57 | 6.23 | 5.39 | 7.53 | 7.21 | 7.11 | 7.42 | 7.70 | 7.61 | 7.92 |
| 120000 | 7.66 | 7.74 | 7.92 | 6.91 | 8.24 | 7.64 | 7.57 | 6.44 | 5.86 | 7.46 | 7.21 | 7.19 | 7.43 | 7.66 | 7.54 | 7.95 |
| 130000 | 7.73 | 7.86 | 7.83 | 6.86 | 8.23 | 7.69 | 7.58 | 6.10 | 5.92 | 7.47 | 7.15 | 7.24 | 7.49 | 7.65 | 7.67 | 7.84 |
| 140000 | 7.43 | 7.85 | 7.64 | 6.93 | 7.96 | 7.65 | 7.59 | 6.46 | 6.09 | 7.44 | 7.00 | 7.18 | 7.52 | 7.63 | 7.60 | 7.69 |
| 150000 | 7.62 | 7.82 | 8.09 | 6.83 | 7.51 | 7.62 | 7.59 | 6.21 | 6.14 | 7.42 | 7.14 | 7.17 | 7.46 | 7.58 | 7.66 | 7.76 |
| 160000 | 7.42 | 7.81 | 8.05 | 6.59 | 7.48 | 7.65 | 7.54 | 6.37 | 5.86 | 7.37 | 7.12 | 7.25 | 7.51 | 7.54 | 7.78 | 7.72 |
| 170000 | 7.56 | 7.61 | 8.01 | 6.71 | 7.38 | 7.61 | 7.51 | 6.32 | 5.84 | 7.33 | 7.07 | 7.22 | 7.47 | 7.52 | 7.79 | 7.67 |
| 180000 | 7.62 | 7.87 | 8.01 | 6.66 | 7.39 | 7.57 | 7.46 | 6.54 | 5.83 | 7.31 | 7.05 | 7.19 | 7.50 | 7.49 | 7.80 | 7.53 |
| 190000 | 7.73 | 7.77 | 8.05 | 6.34 | 7.40 | 7.51 | 7.46 | 6.19 | 6.05 | 7.24 | 7.09 | 7.20 | 7.55 | 7.44 | 7.77 | 7.42 |
| 200000 | 7.60 | 7.66 | 7.97 | 5.92 | 7.34 | 7.47 | 7.38 | 6.05 | 5.85 | 7.21 | 6.97 | 7.16 | 7.51 | 7.42 | 7.78 | 7.25 |
| 210000 | 7.64 | 7.77 | 7.96 | 7.82 | 7.34 | 7.43 | 7.34 | 6.14 | 5.82 | 7.15 | 6.95 | 7.11 | 7.51 | 7.45 | 7.73 | 6.89 |
| 220000 | 7.61 | 7.70 | 7.93 | 7.84 | 7.35 | 7.43 | 7.28 | 5.90 | 5.71 | 7.22 | 7.11 | 7.15 | 7.49 | 7.55 | 7.72 | 7.09 |
| 230000 | 7.64 | 7.76 | 7.94 | 7.88 | 7.43 | 7.42 | 7.33 | 6.12 | 5.78 | 7.18 | 6.99 | 7.24 | 7.51 | 7.51 | 7.77 | 7.16 |
| Daily Max | 7.75 | 7.87 | 8.09 | 7.98 | 8.25 | 7.69 | 7.59 | 7.49 | 6.18 | 7.53 | 7.23 | 7.25 | 7.55 | 7.70 | 7.86 | 7.95 |
| Daily Min | 7.42 | 7.59 | 7.83 | 5.92 | 7.34 | 7.40 | 7.28 | 5.90 | 5.39 | 5.30 | 6.95 | 6.93 | 7.20 | 7.42 | 7.43 | 6.89 |
| Average | 7.61 | 7.73 | 7.88 | 7.42 | 7.88 | 7.52 | 7.45 | 6.76 | 5.88 | 7.02 | 7.12 | 7.12 | 7.40 | 7.54 | 7.62 | 7.65 |

License Minimum Dissolved Oxygen: 5.0 mg/l

# High Falls Tailrace Dissolved Oxygen Summary - September 2005

| Time HHMMSS | 09/01/05 | 09/02/05 | 09/03/05 | 09/04/05 | 09/05/05 | 09/06/05 | 09/07/05 | 09/08/05 | 09/09/05 | 09/10/05 | 09/11/05 | 09/12/05 | 09/13/05 | 09/14/05 | 09/15/05 | 09/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 6.94 | 6.46 | 7.94 | 7.78 | 7.67 | 7.35 | 5.93 | 6.47 | 6.19 | 6.06 | 5.11 | 4.67 | 5.77 | 6.33 | 7.40 | 7.09 |
| 10000 | 6.93 | 6.93 | 7.93 | 7.81 | 7.69 | 7.32 | 6.37 | 6.61 | 6.12 | 5.95 | 5.12 | 4.96 | 5.95 | 6.24 | 7.28 | 6.93 |
| 20000 | 6.85 | 6.89 | 7.93 | 7.78 | 7.67 | 7.34 | 6.29 | 6.59 | 6.09 | 5.96 | 5.21 | 5.00 | 6.01 | 6.58 | 7.26 | 6.96 |
| 30000 | 6.85 | 6.81 | 7.96 | 7.78 | 7.62 | 7.33 | 6.30 | 6.56 | 6.11 | 5.79 | 5.17 | 5.06 | 6.03 | 6.52 | 7.19 | 6.82 |
| 40000 | 6.94 | 7.00 | 7.96 | 7.76 | 7.56 | 7.35 | 6.30 | 6.55 | 6.17 | 5.77 | 5.33 | 5.46 | 6.21 | 6.46 | 7.27 | 6.54 |
| 50000 | 6.86 | 6.96 | 7.94 | 7.74 | 7.62 | 7.32 | 6.35 | 6.54 | 6.10 | 5.95 | 5.47 | 5.32 | 6.18 | 6.48 | 7.28 | 6.65 |
| 60000 | 6.76 | 6.97 | 7.92 | 7.73 | 7.63 | 7.31 | 6.61 | 6.48 | 6.19 | 5.95 | 5.15 | 5.34 | 6.14 | 6.50 | 7.18 | 6.30 |
| 70000 | 6.84 | 7.00 | 7.95 | 7.79 | 7.65 | 6.66 | 6.81 | 6.47 | 6.20 | 5.89 | 5.49 | 5.26 | 6.05 | 6.48 | 7.11 | 6.21 |
| 80000 | 6.93 | 7.03 | 7.97 | 7.75 | 7.60 | 6.64 | 6.82 | 6.48 | 6.17 | 6.00 | 5.50 | 5.27 | 6.28 | 6.56 | 7.00 | 6.37 |
| 90000 | 6.45 | 7.10 | 8.01 | 7.72 | 7.73 | 6.67 | 6.83 | 6.61 | 6.32 | 5.99 | 5.53 | 5.38 | 6.09 | 6.70 | 7.05 | 6.64 |
| 100000 | 6.75 | 7.06 | 8.01 | 7.79 | 7.68 | 6.84 | 6.66 | 6.59 | 6.38 | 6.00 | 5.41 | 5.59 | 6.17 | 6.77 | 7.05 | 6.56 |
| 110000 | 7.01 | 7.18 | 8.03 | 7.79 | 7.64 | 6.64 | 6.96 | 6.68 | 6.29 | 6.03 | 5.36 | 5.64 | 6.26 | 6.94 | 7.17 | 6.57 |
| 120000 | 6.80 |  | 7.99 | 7.80 | 7.66 | 6.36 | 7.06 | 6.67 | 6.47 | 5.96 | 5.42 | 5.56 | 6.26 | 7.12 | 7.33 | 6.56 |
| 130000 | 6.88 | 8.12 | 7.93 | 7.87 | 7.61 | 6.49 | 7.20 | 6.67 | 6.30 | 6.10 | 4.80 | 5.38 | 6.27 | 7.33 | 7.36 | 6.62 |
| 140000 | 6.83 | 8.05 | 7.96 | 7.84 | 7.58 | 6.57 | 7.01 | 6.74 | 6.16 | 6.21 | 4.93 | 6.04 | 6.21 | 7.39 | 7.52 | 7.32 |
| 150000 | 6.81 | 8.12 | 7.94 | 7.80 | 7.59 | 6.36 | 6.96 | 6.52 | 5.85 | 5.97 | 4.46 | 5.89 | 6.28 | 7.53 | 7.59 | 7.10 |
| 160000 | 6.86 | 8.06 | 7.93 | 7.79 | 7.61 | 6.32 | 6.92 | 6.42 | 5.57 | 5.59 | 4.09 | 5.50 | 6.20 | 7.67 | 7.61 | 7.03 |
| 170000 | 6.76 | 7.97 | 7.89 | 7.78 | 7.53 | 6.00 | 6.93 | 6.41 | 5.63 | 5.16 | 4.11 | 5.15 | 6.03 | 7.73 | 7.54 | 6.99 |
| 180000 | 6.76 | 8.01 | 7.80 | 7.73 | 7.45 | 5.80 | 6.91 | 6.47 | 5.66 | 5.05 | 3.99 | 4.90 | 6.12 | 7.66 | 7.36 | 6.86 |
| 190000 | 6.75 | 8.00 | 7.79 | 7.75 | 7.46 | 5.57 | 6.89 | 6.36 | 5.99 | 5.19 | 4.06 | 4.93 | 5.94 | 7.58 | 6.97 | 6.83 |
| 200000 | 6.72 | 7.85 | 7.73 | 7.70 | 7.40 | 5.53 | 6.90 | 6.28 | 6.01 | 5.12 | 4.21 | 4.78 | 5.86 | 7.54 | 7.04 | 6.71 |
| 210000 | 6.94 | 7.88 | 7.72 | 7.68 | 7.40 | 5.55 | 6.88 | 6.23 | 5.82 | 5.06 | 4.32 | 5.36 | 6.16 | 7.52 | 7.11 | 6.52 |
| 220000 | 6.85 | 7.88 | 7.77 | 7.71 | 7.36 | 5.63 | 6.65 | 6.25 | 5.87 | 5.11 | 4.48 | 5.41 | 6.27 | 7.57 | 7.04 | 6.46 |
| 230000 | 7.01 | 7.88 | 7.74 | 7.67 | 7.39 | 5.80 | 6.52 | 6.32 | 6.03 | 5.03 | 4.66 | 5.63 | 6.25 | 7.50 | 7.01 | 6.34 |
| Daily Max | 7.01 | 8.12 | 8.03 | 7.87 | 7.73 | 7.35 | 7.20 | 6.74 | 6.47 | 6.21 | 5.53 | 6.04 | 6.28 | 7.73 | 7.61 | 7.32 |
| Daily Min | 6.45 | 6.46 | 7.72 | 7.67 | 7.36 | 5.53 | 5.93 | 6.23 | 5.57 | 5.03 | 3.99 | 4.67 | 5.66 | 6.24 | 6.97 | 6.21 |
| Average | 6.80 | 7.45 | 7.91 | 7.76 | 7.57 | 6.54 | 6.72 | 6.50 | 6.07 | 5.70 | 4.89 | 5.31 | 6.12 | 7.03 | 7.25 | 6.71 |

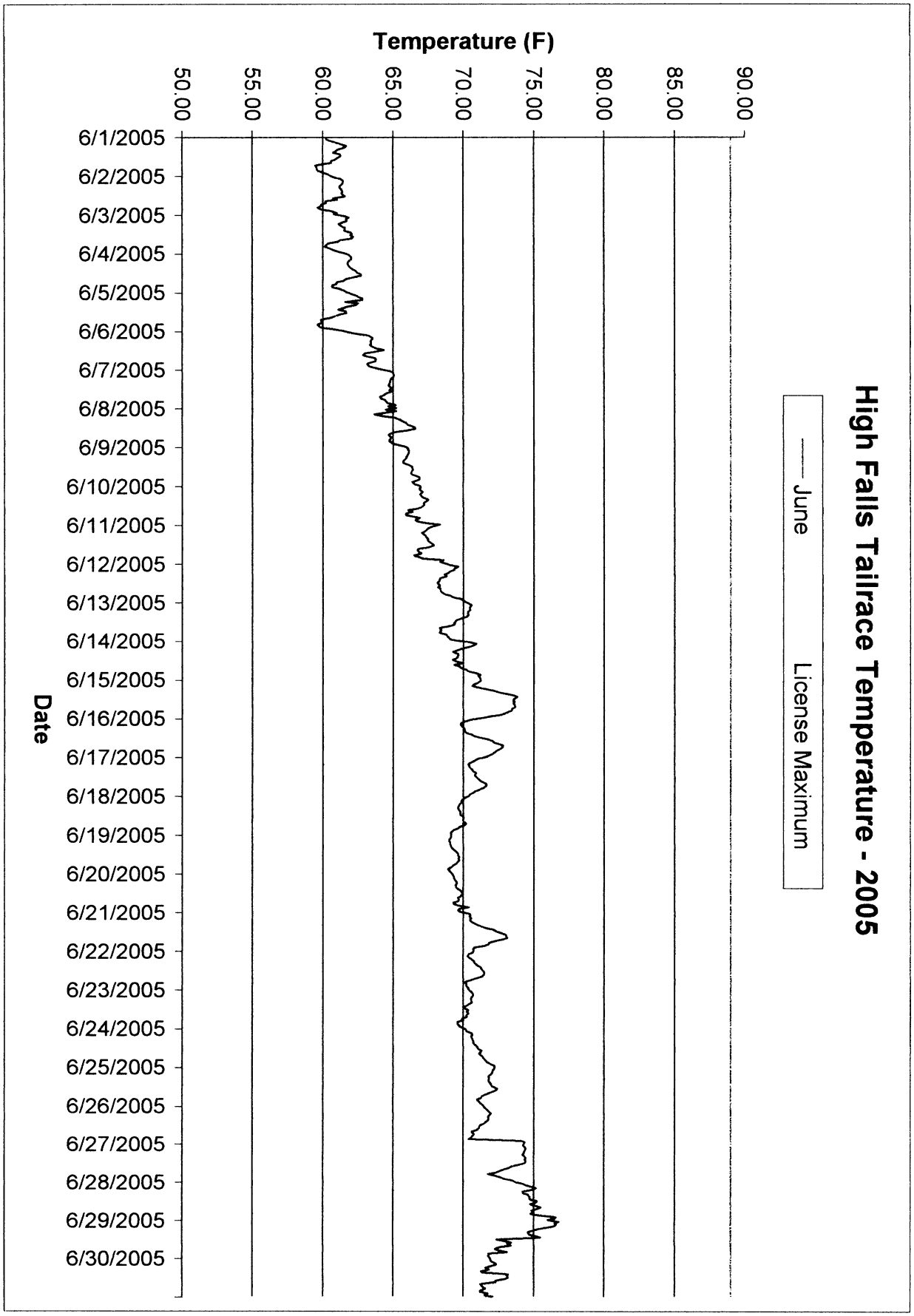
License Minimum Dissolved Oxygen: 5.0 mg/l

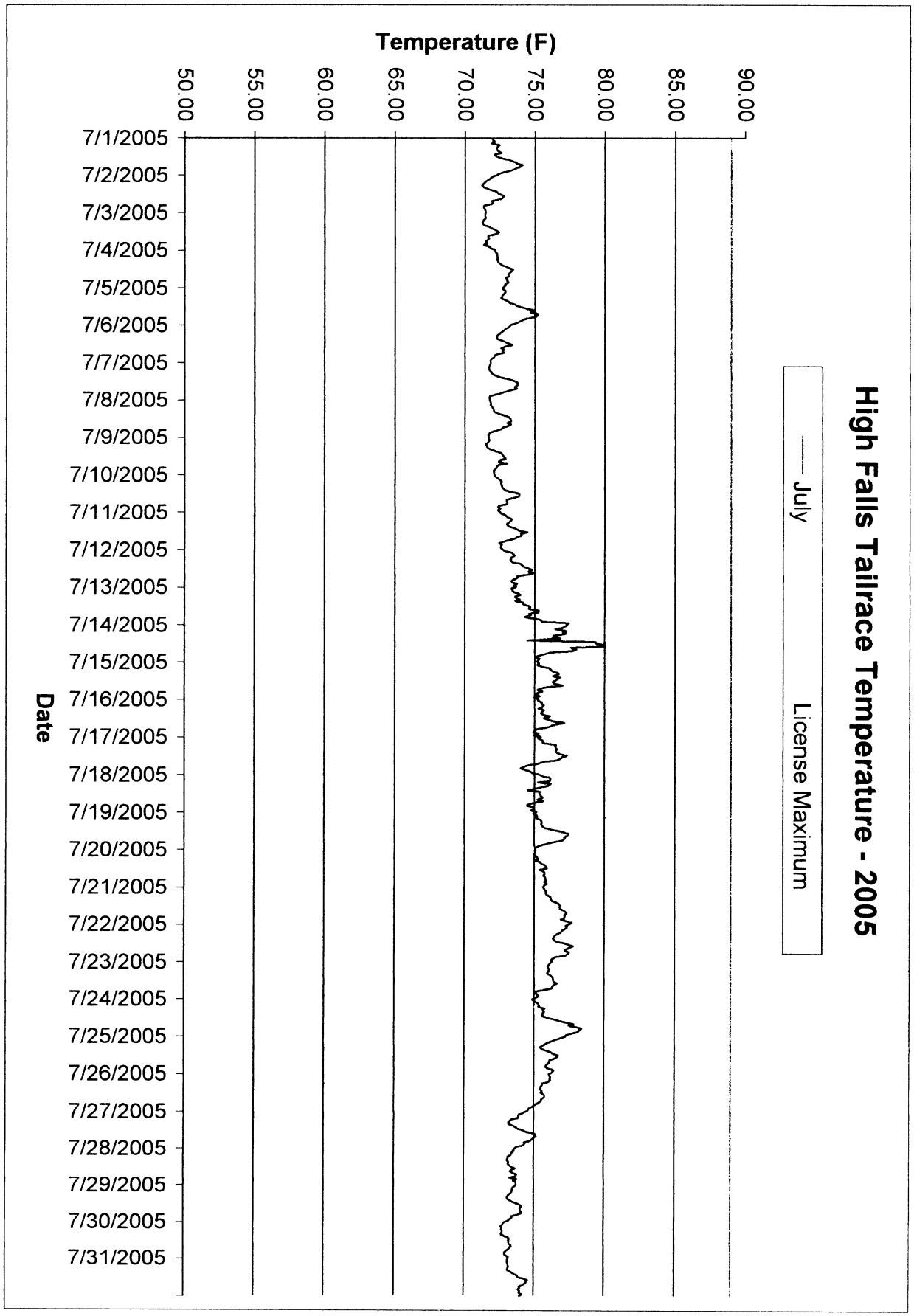
Hourly reading missed on 9/02/05 while calibrating equipment.
** A drawdown of the High Falls Reservoir was initiated on September 6th.

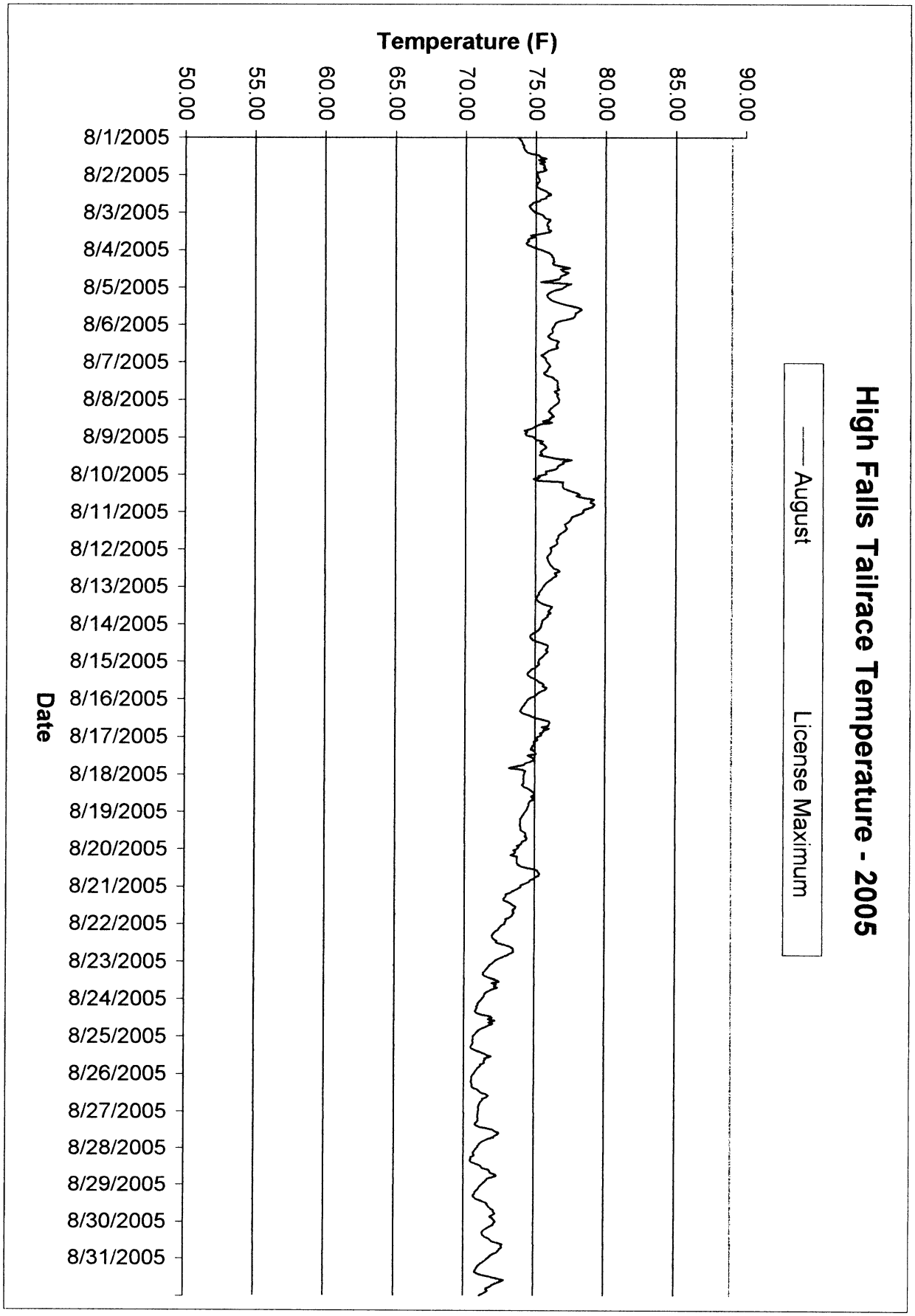
# High Falls Tailrace Dissolved Oxygen Summary - September 2005

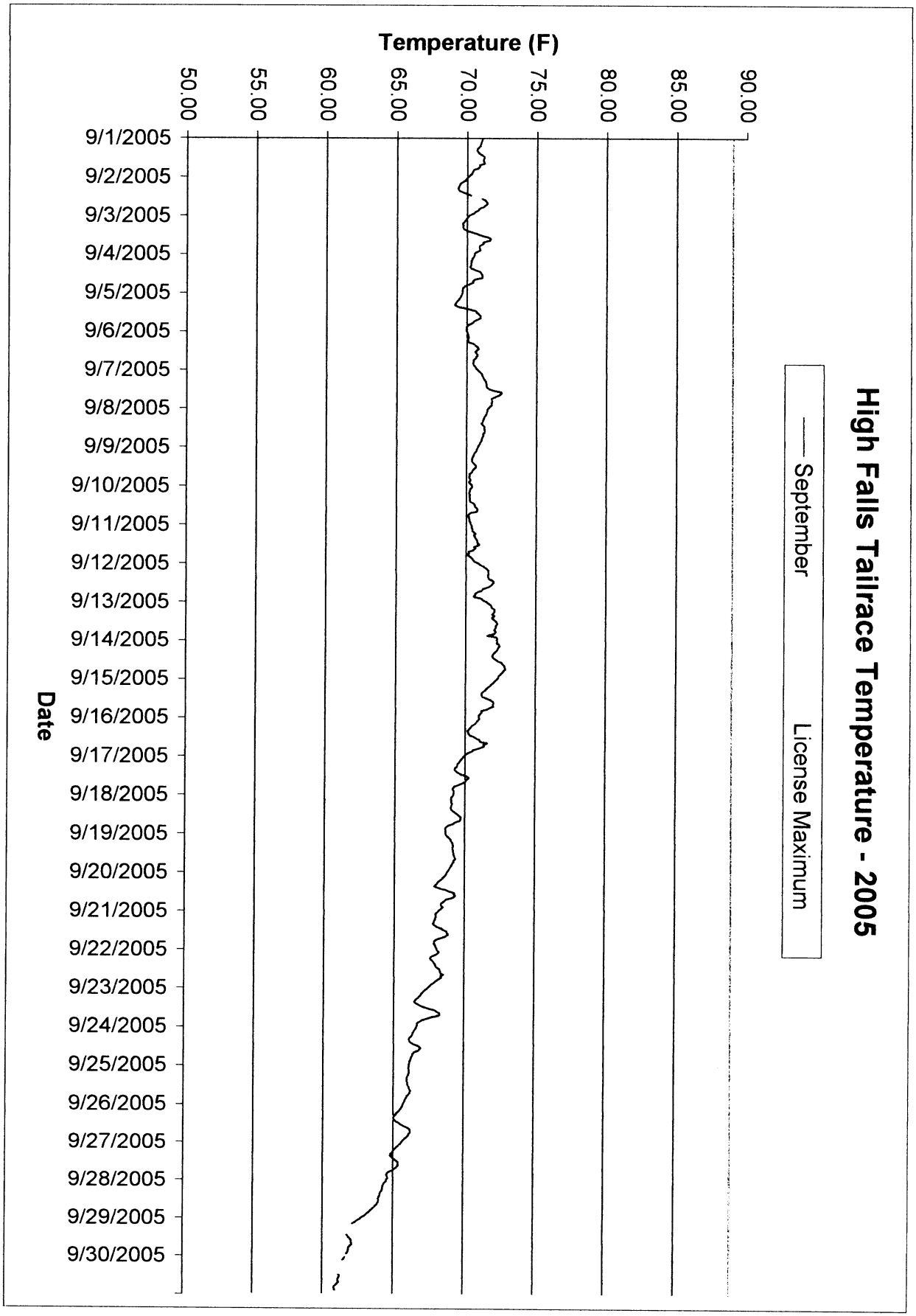
| Time HHMMSS | 09/17/05 | 09/18/05 | 09/19/05 | 09/20/05 | 09/21/05 | 09/22/05 | 09/23/05 | 09/24/05 | 09/25/05 | 09/26/05 | 09/27/05 | 09/28/05 | 09/29/05 | 09/30/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 6.40 | 5.14 | 5.41 | 7.11 | 6.24 | 6.27 | 6.75 | 7.45 | 6.70 | 6.93 | 7.38 | 6.86 | 7.45 | 7.85 |
| 10000 | 6.31 | 5.10 | 5.84 | 7.09 | 6.41 | 5.87 | 6.72 | 7.32 | 6.67 | 6.87 | 7.36 | 6.80 | 7.47 | 7.84 |
| 20000 | 6.29 | 5.15 | 6.12 | 7.05 | 6.42 | 5.41 | 6.73 | 7.41 | 6.62 | 6.84 | 7.28 | 6.74 | 7.48 | 7.84 |
| 30000 | 6.19 | 5.28 | 6.18 | 7.01 | 6.44 | 5.09 | 6.74 | 7.41 | 6.59 | 6.87 | 7.19 | 6.87 | 7.46 | |
| 40000 | 6.16 | 5.63 | 6.30 | 6.92 | 6.38 | 4.93 | 6.67 | 7.37 | 6.59 | 6.93 | 7.13 | 6.81 | | |
| 50000 | 6.07 | 5.75 | 6.41 | 6.87 | 6.33 | 5.27 | 6.71 | 7.34 | 6.48 | 6.89 | 7.12 | 6.82 | | |
| 60000 | 6.07 | 5.89 | 6.48 | 6.85 | 6.37 | 5.66 | 6.69 | 7.35 | 6.55 | 6.86 | 7.07 | 6.77 | | |
| 70000 | 6.17 | 5.93 | 6.55 | 6.76 | 6.51 | 5.83 | 6.75 | 7.44 | 6.60 | 6.85 | 7.02 | 6.70 | | |
| 80000 | 6.47 | 5.99 | 6.57 | 6.97 | 6.62 | 6.05 | 6.83 | 7.54 | 6.70 | 6.91 | 6.95 | 6.59 | | |
| 90000 | 6.71 | 5.99 | 6.72 | 7.17 | 6.77 | 6.21 | 6.96 | 7.60 | 6.74 | 6.96 | 7.06 | 6.44 | | |
| 100000 | 6.73 | 5.93 | 6.82 | 7.24 | 7.06 | 6.71 | 7.07 | 7.66 | 6.76 | 7.07 | 7.12 | 6.48 | | |
| 110000 | 6.86 | 5.90 | 6.94 | 7.25 | 7.07 | 6.93 | 7.23 | 7.67 | 6.96 | 7.05 | 7.20 | 6.50 | | 8.02 |
| 120000 | 6.92 | 6.09 | 6.96 | 7.08 | 7.02 | 7.02 | 7.43 | 7.70 | 7.11 | 7.18 | 7.24 | 6.56 | | 8.06 |
| 130000 | 6.78 | 6.13 | 7.00 | 6.90 | 7.04 | 7.03 | 7.56 | 7.60 | 7.31 | 7.18 | 7.17 | 6.65 | | 8.10 |
| 140000 | 6.62 | 5.99 | 6.91 | 6.64 | 6.88 | 7.13 | 7.62 | 7.35 | 7.44 | 7.06 | 7.12 | 6.80 | | 8.11 |
| 150000 | 6.41 | 5.62 | 6.41 | 6.57 | 6.62 | 7.05 | 7.69 | 7.10 | 7.44 | 7.19 | 7.11 | 6.96 | | 8.14 |
| 160000 | 5.80 | 5.30 | 6.51 | 6.68 | 6.20 | 7.16 | 7.56 | 6.93 | 7.35 | 7.33 | 7.17 | 6.95 | | 8.10 |
| 170000 | 5.38 | 4.78 | 6.57 | 6.65 | 5.75 | 7.05 | 7.36 | 6.89 | 7.18 | 7.45 | 7.10 | 7.10 | | 8.12 |
| 180000 | 5.01 | 4.43 | 6.69 | 6.60 | 5.70 | 6.96 | 7.26 | 6.82 | 7.20 | 7.46 | 6.92 | 7.37 | | 7.99 |
| 190000 | 5.46 | 4.38 | 6.86 | 6.65 | 5.70 | 6.84 | 7.18 | 6.90 | 7.26 | 7.55 | 6.84 | 7.28 | | 7.96 |
| 200000 | 5.48 | 4.50 | 6.99 | 6.77 | 5.95 | 6.80 | 7.07 | 6.81 | 7.16 | 7.52 | 6.76 | 7.30 | | 8.05 |
| 210000 | 5.45 | 4.62 | 7.10 | 6.76 | 6.03 | 6.86 | 7.26 | 6.77 | 7.10 | 7.50 | 6.83 | 7.31 | | 8.07 |
| 220000 | 5.52 | 4.84 | 7.16 | 6.49 | 6.11 | 6.81 | 7.50 | 6.74 | 7.01 | 7.47 | 6.92 | 7.38 | | |
| 230000 | 5.53 | 5.02 | 7.13 | 6.40 | 6.30 | 6.77 | 7.54 | 6.71 | 6.96 | 7.41 | 6.85 | 7.40 | | 7.99 |
| Daily Max | 6.92 | 6.13 | 7.16 | 7.25 | 7.07 | 7.16 | 7.69 | 7.70 | 7.44 | 7.55 | 7.36 | 7.40 | 7.48 | 8.14 |
| Daily Min | 5.01 | 4.36 | 5.41 | 6.40 | 5.70 | 4.93 | 6.67 | 6.71 | 6.48 | 6.84 | 6.76 | 6.44 | 7.45 | 7.84 |
| Average | 6.12 | 5.39 | 6.61 | 6.85 | 6.41 | 6.40 | 7.12 | 7.25 | 6.94 | 7.14 | 7.06 | 6.89 | 7.47 | 8.02 |

Data Loss on 9/29 and 9/30 due to equipment power failure.









# High Falls Tailrace Temperature Summary - June 2005

| Time HHMMSS | 06/01/05 | 06/02/05 | 06/03/05 | 06/04/05 | 06/05/05 | 06/06/05 | 06/07/05 | 06/08/05 | 06/09/05 | 06/10/05 | 06/11/05 | 06/12/05 | 06/13/05 | 06/14/05 | 06/15/05 | 06/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 60.22 | 60.76 | 61.56 | 61.79 | 61.93 | 61.74 | 64.69 | 64.42 | 66.04 | 66.94 | 67.77 | 69.08 | 70.36 | 70.38 | 71.19 | 70.48 |
| 10000 | 60.26 | 61.14 | 61.83 | 61.88 | 62.26 | 62.51 | 64.96 | 65.19 | 66.02 | 66.83 | 67.51 | 69.62 | 70.56 | 70.88 | 70.99 | 70.03 |
| 20000 | 60.67 | 61.39 | 61.61 | 62.02 | 62.47 | 63.18 | 65.01 | 64.35 | 66.09 | 66.90 | 67.39 | 69.35 | 70.47 | 70.72 | 70.75 | 69.80 |
| 30000 | 61.02 | 61.41 | 61.70 | 62.01 | 62.82 | 63.41 | 65.03 | 63.63 | 66.07 | 67.10 | 67.24 | 69.33 | 70.43 | 70.29 | 70.59 | 69.78 |
| 40000 | 61.45 | 61.39 | 61.43 | 61.84 | 62.82 | 63.50 | 65.01 | 64.24 | 66.00 | 66.88 | 66.97 | 69.03 | 70.47 | 69.89 | 70.97 | 69.80 |
| 50000 | 61.66 | 61.29 | 61.09 | 61.72 | 61.57 | 63.43 | 64.81 | 65.05 | 65.95 | 66.92 | 67.12 | 68.86 | 70.29 | 69.49 | 71.62 | 69.93 |
| 60000 | 61.48 | 61.14 | 61.18 | 61.75 | 62.49 | 63.39 | 64.76 | 65.39 | 65.88 | 67.06 | 67.24 | 68.61 | 70.29 | 69.22 | 72.12 | 70.05 |
| 70000 | 61.02 | 61.18 | 61.47 | 61.83 | 62.31 | 63.43 | 64.76 | 65.57 | 65.77 | 67.35 | 67.33 | 68.76 | 70.30 | 69.53 | 72.50 | 70.03 |
| 80000 | 60.91 | 61.30 | 61.56 | 61.90 | 61.77 | 63.32 | 64.74 | 65.89 | 65.66 | 67.50 | 67.46 | 68.41 | 70.27 | 69.62 | 73.02 | 70.12 |
| 90000 | 60.73 | 61.38 | 61.50 | 62.11 | 61.47 | 63.48 | 64.63 | 65.93 | 65.71 | 67.24 | 67.41 | 68.27 | 69.80 | 69.58 | 73.53 | 70.47 |
| 100000 | 61.23 | 61.30 | 61.88 | 62.26 | 61.05 | 63.81 | 64.74 | 66.24 | 65.98 | 67.14 | 67.57 | 68.25 | 69.56 | 69.44 | 73.78 | 70.70 |
| 110000 | 61.27 | 61.39 | 62.08 | 62.37 | 61.59 | 64.31 | 64.83 | 66.54 | 66.25 | 67.17 | 67.75 | 68.09 | 69.37 | 69.17 | 73.62 | 71.06 |
| 120000 | 61.07 | 61.56 | 61.93 | 62.65 | 61.85 | 63.68 | 64.71 | 66.56 | 66.34 | 67.01 | 67.87 | 68.16 | 69.31 | 69.51 | 73.49 | 71.69 |
| 130000 | 60.84 | 60.71 | 62.15 | 62.69 | 61.20 | 63.01 | 64.83 | 65.82 | 66.36 | 66.70 | 67.44 | 68.31 | 69.33 | 69.91 | 73.62 | 71.96 |
| 140000 | 60.58 | 60.98 | 61.99 | 62.10 | 60.82 | 62.85 | 64.53 | 65.05 | 66.33 | 66.00 | 66.74 | 68.14 | 68.95 | 69.28 | 73.49 | 72.12 |
| 150000 | 60.57 | 60.17 | 61.27 | 61.65 | 60.55 | 63.10 | 64.31 | 64.71 | 66.24 | 66.34 | 66.69 | 68.34 | 68.29 | 69.66 | 73.62 | 72.50 |
| 160000 | 59.94 | 60.22 | 61.03 | 61.47 | 59.83 | 63.66 | 64.06 | 64.67 | 66.29 | 65.91 | 66.79 | 68.32 | 68.32 | 69.82 | 73.65 | 72.79 |
| 170000 | 59.43 | 59.90 | 60.37 | 60.96 | 59.83 | 63.73 | 64.06 | 64.81 | 66.63 | 65.86 | 66.97 | 68.40 | 68.41 | 70.14 | 73.45 | 72.75 |
| 180000 | 59.52 | 59.81 | 60.22 | 60.94 | 59.96 | 63.73 | 64.40 | 64.78 | 66.86 | 66.42 | 66.45 | 68.61 | 68.27 | 70.30 | 73.42 | 72.61 |
| 190000 | 59.56 | 59.59 | 60.10 | 60.66 | 59.66 | 63.25 | 64.47 | 64.69 | 66.87 | 66.88 | 66.70 | 68.97 | 68.67 | 70.79 | 73.17 | 72.30 |
| 200000 | 59.61 | 59.63 | 60.44 | 60.66 | 59.63 | 63.10 | 64.54 | 64.72 | 66.56 | 66.56 | 67.15 | 69.21 | 68.81 | 71.20 | 72.96 | 72.25 |
| 210000 | 59.88 | 60.55 | 60.66 | 61.14 | 59.85 | 63.25 | 65.17 | 64.96 | 66.33 | 66.61 | 68.58 | 69.76 | 68.88 | 71.01 | 72.61 | 72.03 |
| 220000 | 60.26 | 60.96 | 61.05 | 61.38 | 60.60 | 63.63 | 64.58 | 65.39 | 66.49 | 67.33 | 68.31 | 69.93 | 69.01 | 71.11 | 71.87 | 71.82 |
| 230000 | 60.46 | 60.75 | 61.45 | 61.63 | 61.43 | 64.15 | 65.19 | 65.80 | 66.87 | 68.29 | 68.63 | 70.09 | 69.57 | 71.20 | 71.17 | 71.51 |
| Daily Max | 61.66 | 61.56 | 62.15 | 62.69 | 62.82 | 64.31 | 65.19 | 66.56 | 66.87 | 68.29 | 68.63 | 70.09 | 70.56 | 71.20 | 73.78 | 72.79 |
| Daily Min | 59.43 | 59.59 | 60.10 | 60.66 | 59.63 | 61.74 | 64.06 | 63.63 | 65.66 | 65.86 | 66.45 | 68.09 | 68.27 | 69.17 | 70.59 | 69.78 |
| Average | 60.57 | 60.84 | 61.31 | 61.73 | 61.23 | 63.36 | 64.70 | 65.18 | 66.23 | 66.87 | 67.38 | 68.83 | 69.50 | 70.09 | 72.55 | 71.19 |

Monthly Average: 68.40

License Maximum Water Temperature: 89 F

# High Falls Tailrace Temperature Summary - June 2005

| Time HHMMSS | 06/17/05 | 06/18/05 | 06/19/05 | 06/20/05 | 06/21/05 | 06/22/05 | 06/23/05 | 06/24/05 | 06/25/05 | 06/26/05 | 06/27/05 | 06/28/05 | 06/29/05 | 06/30/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 71.04 | 70.11 | 69.10 | 69.21 | 70.36 | 70.66 | 70.47 | 70.16 | 72.18 | 71.44 | 74.21 | 74.12 | 76.77 | 71.888 |
| 10000 | 70.79 | 70.00 | 69.06 | 69.28 | 70.45 | 70.36 | 70.59 | 70.21 | 72.07 | 71.56 | 74.28 | 74.34 | 76.44 | 71.924 |
| 20000 | 70.57 | 69.84 | 68.97 | 69.30 | 70.39 | 70.29 | 70.65 | 70.52 | 72.03 | 71.65 | 74.41 | 74.80 | 76.57 | 72.23 |
| 30000 | 70.38 | 69.80 | 68.97 | 69.33 | 70.54 | 70.29 | 70.65 | 70.63 | 72.01 | 71.82 | 74.35 | 75.15 | 76.36 | 72.32 |
| 40000 | 70.29 | 69.76 | 69.04 | 69.46 | 70.43 | 70.47 | 70.56 | 70.52 | 71.87 | 71.94 | 74.30 | 74.79 | 75.54 | 71.796 |
| 50000 | 70.38 | 69.66 | 69.04 | 69.51 | 70.50 | 70.63 | 70.52 | 70.57 | 71.74 | 71.80 | 74.25 | 74.19 | 75.11 | 71.546 |
| 60000 | 70.47 | 69.57 | 69.06 | 69.40 | 70.65 | 70.72 | 70.54 | 70.63 | 71.80 | 71.71 | 74.16 | 74.21 | 74.68 | 71.616 |
| 70000 | 70.57 | 69.60 | 69.12 | 69.44 | 70.93 | 70.79 | 70.57 | 70.70 | 71.78 | 71.78 | 74.25 | 74.55 | 74.56 | 71.222 |
| 80000 | 70.65 | 69.66 | 69.22 | 69.44 | 71.22 | 70.88 | 70.43 | 70.70 | 71.78 | 71.74 | 74.41 | 74.64 | 74.68 | 71.276 |
| 90000 | 70.86 | 69.75 | 69.33 | 69.60 | 71.58 | 71.11 | 70.18 | 70.77 | 71.83 | 71.60 | 74.34 | 74.70 | 75.18 | 73.148 |
| 100000 | 70.79 | 69.75 | 69.46 | 69.78 | 72.09 | 71.22 | 69.91 | 70.90 | 71.92 | 71.44 | 74.41 | 74.70 | 75.45 | 73.076 |
| 110000 | 70.79 | 69.76 | 69.57 | 69.87 | 72.28 | 71.29 | 70.12 | 70.95 | 71.96 | 71.24 | 74.37 | 75.22 | 72.30 | 73.148 |
| 120000 | 70.92 | 69.94 | 69.58 | 69.93 | 72.63 | 71.44 | 70.30 | 71.04 | 72.27 | 71.10 | 73.89 | 75.15 | 72.77 | 72.95 |
| 130000 | 71.04 | 70.00 | 69.67 | 69.78 | 72.93 | 71.47 | 70.18 | 71.26 | 72.37 | 71.10 | 73.45 | 74.70 | 73.40 | 72.284 |
| 140000 | 71.13 | 69.96 | 69.60 | 69.58 | 73.02 | 71.40 | 70.32 | 71.17 | 72.10 | 70.93 | 73.29 | 75.04 | 73.09 | 72.284 |
| 150000 | 71.38 | 69.94 | 69.69 | 69.64 | 73.09 | 71.33 | 70.18 | 71.06 | 71.83 | 70.57 | 72.84 | 75.49 | 73.36 | 71.168 |
| 160000 | 71.60 | 70.14 | 69.57 | 69.64 | 72.75 | 70.90 | 70.23 | 71.22 | 71.49 | 70.56 | 72.59 | 75.22 | 72.50 | 71.24 |
| 170000 | 71.60 | 70.07 | 69.44 | 69.28 | 72.28 | 70.59 | 69.84 | 71.35 | 71.29 | 70.74 | 72.27 | 74.79 | 72.21 | 71.33 |
| 180000 | 71.42 | 69.75 | 69.28 | 69.28 | 71.82 | 70.18 | 69.96 | 71.42 | 71.22 | 70.59 | 71.69 | 74.98 | 72.43 | 71.528 |
| 190000 | 71.13 | 69.62 | 69.12 | 69.57 | 71.76 | 70.03 | 69.57 | 71.49 | 70.96 | 70.54 | 72.25 | 74.75 | 73.09 | 71.258 |
| 200000 | 70.88 | 69.30 | 68.92 | 70.34 | 71.38 | 70.18 | 69.58 | 71.62 | 70.97 | 70.32 | 72.57 | 75.36 | 71.78 | 71.132 |
| 210000 | 70.66 | 69.15 | 68.88 | 69.69 | 70.77 | 70.16 | 69.58 | 71.85 | 71.10 | 74.10 | 72.91 | 76.55 | 71.76 | 71.69 |
| 220000 | 70.47 | 69.06 | 68.99 | 69.57 | 70.65 | 70.32 | 69.76 | 72.09 | 71.24 | 74.34 | 73.40 | 76.50 | 71.73 | 71.474 |
| 230000 | 70.34 | 69.10 | 69.10 | 69.71 | 70.70 | 70.29 | 70.00 | 72.19 | 71.40 | 74.30 | 73.67 | 75.94 | 71.87 | 72.032 |
| Daily Max | 71.60 | 70.14 | 69.69 | 70.34 | 73.09 | 71.47 | 70.65 | 72.19 | 72.37 | 74.34 | 74.41 | 76.55 | 76.77 | 73.15 |
| Daily Min | 70.29 | 69.06 | 68.88 | 69.21 | 70.36 | 70.03 | 69.57 | 70.16 | 70.95 | 70.32 | 71.69 | 74.12 | 71.73 | 71.13 |
| Average | 70.84 | 69.72 | 69.24 | 69.57 | 71.47 | 70.71 | 70.20 | 71.04 | 71.72 | 71.62 | 73.61 | 74.99 | 73.90 | 71.91 |

# High Falls Tailrace Temperature Summary - July 2005

| Time HHMMSS | 07/01/05 | 07/02/05 | 07/03/05 | 07/04/05 | 07/05/05 | 07/06/05 | 07/07/05 | 07/08/05 | 07/09/05 | 07/10/05 | 07/11/05 | 07/12/05 | 07/13/05 | 07/14/05 | 07/15/05 | 07/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 71.92 | 72.03 | 71.42 | 72.12 | 72.64 | 73.15 | 71.83 | 71.76 | 71.69 | 72.10 | 72.55 | 72.81 | 73.27 | 77.14 | 75.29 | 75.20 |
| 10000 | 71.92 | 71.87 | 71.40 | 72.16 | 72.77 | 73.04 | 71.74 | 71.82 | 71.71 | 72.23 | 72.81 | 73.35 | 73.38 | 76.96 | 75.11 | 75.49 |
| 20000 | 72.09 | 71.67 | 71.40 | 72.27 | 72.88 | 72.84 | 71.73 | 71.82 | 71.64 | 72.32 | 72.93 | 73.42 | 73.36 | 76.42 | 75.49 | 75.47 |
| 30000 | 71.87 | 71.47 | 71.44 | 72.25 | 72.75 | 72.70 | 71.67 | 71.80 | 71.51 | 72.52 | 73.22 | 73.53 | 73.71 | 77.22 | 76.03 | 75.63 |
| 40000 | 72.45 | 71.37 | 71.33 | 72.30 | 72.68 | 72.55 | 71.73 | 71.91 | 71.49 | 72.59 | 73.31 | 73.27 | 73.96 | 76.96 | 76.06 | 75.52 |
| 50000 | 72.30 | 71.28 | 71.26 | 72.21 | 72.64 | 72.39 | 71.80 | 71.96 | 71.53 | 72.57 | 73.22 | 73.27 | 73.56 | 77.18 | 76.24 | 75.22 |
| 60000 | 72.25 | 71.13 | 71.24 | 72.28 | 72.54 | 72.27 | 71.89 | 72.01 | 71.60 | 72.59 | 73.08 | 73.22 | 73.56 | 76.32 | 76.66 | 75.63 |
| 70000 | 72.25 | 71.24 | 71.29 | 72.32 | 72.77 | 72.27 | 71.91 | 72.10 | 71.80 | 72.63 | 72.93 | 73.35 | 73.67 | 76.28 | 76.69 | 75.51 |
| 80000 | 72.30 | 71.60 | 71.56 | 72.41 | 72.99 | 72.21 | 72.18 | 72.36 | 72.09 | 72.66 | 73.02 | 73.94 | 73.53 | 76.77 | 76.23 | 75.38 |
| 90000 | 72.55 | 71.87 | 71.76 | 72.57 | 73.15 | 72.54 | 72.57 | 72.64 | 72.45 | 72.84 | 73.38 | 74.01 | 74.14 | 74.43 | 76.78 | 75.56 |
| 100000 | 72.09 | 72.23 | 72.10 | 72.95 | 73.53 | 72.81 | 73.04 | 73.11 | 72.64 | 73.13 | 73.60 | 74.23 | 74.12 | 79.30 | 76.60 | 76.08 |
| 110000 | 72.10 | 72.30 | 72.18 | 73.17 | 73.60 | 73.11 | 73.45 | 73.13 | 72.64 | 73.72 | 73.85 | 74.53 | 74.44 | 79.27 | 76.41 | 75.61 |
| 120000 | 72.41 | 72.52 | 72.39 | 73.42 | 74.12 | 73.35 | 73.65 | 73.24 | 72.75 | 73.89 | 74.46 | 74.80 | 74.66 | 79.93 | 76.24 | 75.88 |
| 130000 | 72.77 | 72.72 | 72.14 | 73.24 | 74.46 | 72.86 | 73.74 | 73.26 | 72.88 | 73.83 | 73.98 | 74.48 | 74.52 | 79.79 | 76.35 | 76.35 |
| 140000 | 73.22 | 72.64 | 71.65 | 73.13 | 74.88 | 72.52 | 73.72 | 72.97 | 72.43 | 73.35 | 74.01 | 74.86 | 75.27 | 77.52 | 76.96 | 77.09 |
| 150000 | 73.54 | 72.36 | 71.60 | 73.02 | 74.62 | 72.73 | 73.49 | 73.27 | 72.36 | 72.97 | 73.76 | 74.52 | 75.22 | 77.92 | 75.92 | 76.48 |
| 160000 | 73.63 | 71.85 | 71.69 | 73.11 | 75.15 | 72.63 | 73.67 | 73.00 | 72.99 | 72.97 | 73.58 | 73.65 | 74.55 | 77.59 | 75.40 | 76.12 |
| 170000 | 74.10 | 71.96 | 71.56 | 72.82 | 75.18 | 72.72 | 73.24 | 72.68 | 72.36 | 73.00 | 73.04 | 73.76 | 74.70 | 76.06 | 75.15 | 75.85 |
| 180000 | 73.89 | 71.82 | 71.40 | 72.99 | 74.98 | 72.23 | 72.82 | 72.59 | 72.23 | 72.97 | 72.72 | 73.51 | 74.23 | 75.61 | 75.54 | 75.16 |
| 190000 | 73.60 | 71.31 | 71.53 | 72.95 | 74.43 | 72.10 | 72.50 | 72.14 | 72.21 | 72.41 | 72.41 | 73.31 | 74.77 | 75.27 | 75.18 | 75.04 |
| 200000 | 73.29 | 71.29 | 71.29 | 73.06 | 74.12 | 72.01 | 72.05 | 71.78 | 72.09 | 72.32 | 72.61 | 73.29 | 75.36 | 75.02 | 75.06 | 74.86 |
| 210000 | 72.97 | 71.35 | 71.67 | 72.79 | 73.85 | 71.87 | 71.76 | 71.73 | 71.96 | 72.50 | 72.55 | 73.72 | 75.47 | 75.34 | 75.34 | 75.25 |
| 220000 | 72.52 | 71.42 | 71.74 | 72.88 | 73.65 | 71.80 | 71.69 | 71.82 | 72.05 | 72.28 | 72.48 | 73.44 | 77.41 | 75.22 | 74.93 | 74.89 |
| 230000 | 72.25 | 71.44 | 72.07 | 72.72 | 73.31 | 71.83 | 71.76 | 71.67 | 72.07 | 72.43 | 72.63 | 73.65 | 77.31 | 75.11 | 75.27 | 75.42 |
| Daily Max | 74.10 | 72.72 | 72.39 | 73.42 | 75.18 | 73.35 | 73.74 | 73.27 | 72.99 | 73.89 | 74.46 | 74.86 | 77.41 | 79.93 | 76.96 | 77.09 |
| Daily Min | 71.87 | 71.13 | 71.24 | 72.12 | 72.54 | 71.80 | 71.67 | 71.82 | 71.49 | 72.10 | 72.41 | 72.81 | 73.27 | 74.43 | 74.93 | 74.86 |
| Average | 72.66 | 71.78 | 71.63 | 72.71 | 73.65 | 72.52 | 72.49 | 72.35 | 72.13 | 72.78 | 73.17 | 73.75 | 74.52 | 76.86 | 75.87 | 75.61 |

Monthly Average: 74.26

License Maximum Water Temperature: 89 F

# High Falls Tailrace Temperature Summary - July 2005

| Time HHMMSS | 07/17/05 | 07/18/05 | 07/19/05 | 07/20/05 | 07/21/05 | 07/22/05 | 07/23/05 | 07/24/05 | 07/25/05 | 07/26/05 | 07/27/05 | 07/28/05 | 07/29/05 | 07/30/05 | 07/31/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 75.18 | 75.54 | 74.86 | 75.06 | 75.63 | 77.18 | 76.08 | 74.88 | 76.87 | 76.08 | 74.19 | 73.51 | 73.58 | 72.81 | 73.09 |
| 10000 | 75.51 | 76.06 | 75.06 | 75.02 | 75.74 | 77.31 | 76.01 | 75.06 | 76.55 | 76.15 | 73.92 | 73.54 | 73.47 | 72.73 | 73.09 |
| 20000 | 75.58 | 76.10 | 75.15 | 74.97 | 75.81 | 77.16 | 75.92 | 75.27 | 76.19 | 76.12 | 73.87 | 73.38 | 73.44 | 72.61 | 73.11 |
| 30000 | 75.54 | 76.08 | 75.13 | 74.97 | 75.79 | 76.95 | 76.01 | 75.34 | 75.96 | 76.14 | 73.87 | 73.36 | 73.40 | 72.70 | 73.15 |
| 40000 | 76.51 | 75.18 | 75.42 | 75.11 | 75.85 | 76.89 | 76.03 | 75.25 | 75.79 | 75.96 | 73.45 | 73.17 | 73.38 | 72.68 | 73.17 |
| 50000 | 76.44 | 76.14 | 75.47 | 75.27 | 76.05 | 76.88 | 75.99 | 75.72 | 75.58 | 75.56 | 73.27 | 73.13 | 73.24 | 72.72 | 73.15 |
| 60000 | 76.46 | 75.96 | 75.49 | 75.06 | 76.14 | 76.51 | 75.94 | 75.56 | 75.36 | 75.56 | 73.18 | 73.09 | 73.13 | 72.70 | 73.08 |
| 70000 | 76.57 | 75.49 | 75.43 | 75.31 | 76.17 | 76.39 | 75.94 | 75.70 | 75.47 | 75.45 | 73.15 | 73.02 | 73.08 | 72.64 | 73.22 |
| 80000 | 76.46 | 75.06 | 75.49 | 75.47 | 76.21 | 76.32 | 76.14 | 75.61 | 75.81 | 75.45 | 73.40 | 73.17 | 73.06 | 72.84 | 73.36 |
| 90000 | 76.50 | 74.46 | 75.67 | 75.74 | 76.51 | 76.33 | 76.30 | 75.60 | 76.12 | 75.36 | 73.65 | 73.15 | 73.24 | 73.09 | 73.60 |
| 100000 | 76.80 | 75.36 | 76.03 | 75.76 | 76.73 | 76.51 | 76.32 | 75.54 | 76.32 | 75.56 | 73.76 | 73.18 | 73.44 | 73.24 | 73.80 |
| 110000 | 77.29 | 75.34 | 76.68 | 75.88 | 76.80 | 77.04 | 76.33 | 75.94 | 76.69 | 75.42 | 74.16 | 73.42 | 73.80 | 73.18 | 73.81 |
| 120000 | 76.96 | 75.36 | 77.07 | 75.31 | 76.77 | 77.47 | 76.39 | 76.42 | 76.69 | 75.63 | 74.34 | 73.63 | 73.96 | 73.20 | 74.30 |
| 130000 | 76.77 | 75.42 | 77.43 | 75.60 | 76.80 | 77.76 | 76.62 | 76.75 | 76.44 | 75.72 | 74.69 | 73.38 | 74.10 | 73.20 | 74.55 |
| 140000 | 76.53 | 75.56 | 77.32 | 75.70 | 77.00 | 77.47 | 76.39 | 77.27 | 76.10 | 75.70 | 75.06 | 73.27 | 74.01 | 73.26 | 74.46 |
| 150000 | 75.60 | 75.16 | 77.07 | 75.69 | 77.16 | 77.18 | 76.26 | 77.79 | 76.06 | 75.54 | 75.13 | 73.51 | 74.03 | 73.36 | 74.39 |
| 160000 | 75.24 | 75.60 | 77.16 | 75.60 | 77.29 | 77.16 | 76.26 | 77.43 | 76.05 | 75.49 | 74.97 | 73.74 | 73.96 | 73.24 | 74.21 |
| 170000 | 74.57 | 75.02 | 77.02 | 75.72 | 77.09 | 77.45 | 75.86 | 76.06 | 75.87 | 75.40 | 74.84 | 73.71 | 74.10 | 73.18 | 73.96 |
| 180000 | 74.25 | 74.50 | 76.44 | 75.78 | 77.16 | 77.34 | 75.11 | 76.35 | 75.81 | 75.24 | 74.70 | 73.20 | 73.87 | 73.00 | 73.99 |
| 190000 | 73.96 | 74.43 | 76.01 | 75.81 | 77.11 | 77.14 | 74.95 | 76.21 | 75.83 | 75.00 | 74.25 | 73.74 | 73.42 | 72.90 | 73.63 |
| 200000 | 74.26 | 74.95 | 75.51 | 75.67 | 76.86 | 76.44 | 75.13 | 76.08 | 76.24 | 74.86 | 74.35 | 73.47 | 73.44 | 72.90 | 73.99 |
| 210000 | 74.59 | 74.91 | 75.24 | 75.87 | 77.22 | 76.26 | 75.29 | 77.67 | 76.39 | 74.62 | 74.17 | 73.72 | 73.29 | 72.95 | 73.92 |
| 220000 | 74.80 | 74.68 | 75.04 | 75.65 | 77.67 | 76.15 | 75.16 | 77.31 | 76.24 | 74.59 | 73.76 | 73.72 | 73.18 | 73.18 | 74.16 |
| 230000 | 75.25 | 75.11 | 75.02 | 75.61 | 77.43 | 76.23 | 74.82 | 77.20 | 76.03 | 74.39 | 73.62 | 73.71 | 72.86 | 73.15 | 73.94 |
| Daily Max | 77.29 | 76.14 | 77.43 | 75.88 | 77.67 | 77.76 | 76.62 | 78.35 | 76.87 | 76.15 | 75.13 | 73.74 | 74.10 | 73.36 | 74.55 |
| Daily Min | 73.96 | 74.43 | 74.86 | 74.97 | 75.63 | 76.15 | 74.82 | 74.88 | 75.36 | 74.39 | 73.15 | 73.02 | 72.86 | 72.61 | 73.08 |
| Average | 75.73 | 75.31 | 75.92 | 75.48 | 76.62 | 76.89 | 75.89 | 76.50 | 76.10 | 75.46 | 74.08 | 73.41 | 73.52 | 72.96 | 73.72 |

# High Falls Tailrace Temperature Summary - August 2005

| Time HHMMSS | 08/01/05 | 08/02/05 | 08/03/05 | 08/04/05 | 08/05/05 | 08/06/05 | 08/07/05 | 08/08/05 | 08/09/05 | 08/10/05 | 08/11/05 | 08/12/05 | 08/13/05 | 08/14/05 | 08/15/05 | 08/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 73.72 | 75.09 | 75.16 | 75.51 | 76.84 | 76.26 | 75.81 | 76.64 | 74.84 | 75.11 | 78.26 | 76.10 | 75.45 | 75.40 | 75.15 | 74.41 |
| 10000 | 73.81 | 75.09 | 75.42 | 75.79 | 76.39 | 76.21 | 75.94 | 76.57 | 74.95 | 75.25 | 77.92 | 76.08 | 75.40 | 75.36 | 75.25 | 74.35 |
| 20000 | 73.94 | 75.18 | 75.54 | 75.97 | 76.14 | 76.14 | 75.99 | 76.51 | 75.51 | 74.80 | 77.63 | 75.99 | 75.31 | 75.29 | 75.13 | 74.26 |
| 30000 | 74.01 | 75.24 | 75.61 | 76.10 | 75.90 | 76.15 | 75.87 | 76.35 | 75.27 | 75.11 | 77.52 | 75.88 | 75.24 | 75.20 | 74.98 | 74.21 |
| 40000 | 73.99 | 75.11 | 75.99 | 76.14 | 75.78 | 76.17 | 75.83 | 76.21 | 75.52 | 76.96 | 77.50 | 75.79 | 75.24 | 75.02 | 74.77 | 74.08 |
| 50000 | 74.12 | 75.07 | 75.94 | 76.23 | 75.76 | 76.03 | 75.76 | 76.05 | 75.80 | 76.93 | 77.36 | 75.83 | 75.13 | 74.84 | 74.62 | 74.03 |
| 60000 | 74.08 | 74.97 | 75.79 | 76.19 | 75.85 | 75.90 | 75.56 | 75.97 | 75.74 | 76.93 | 77.25 | 75.88 | 75.07 | 74.66 | 74.48 | 73.94 |
| 70000 | 74.14 | 75.00 | 75.78 | 76.28 | 75.92 | 75.81 | 75.52 | 75.88 | 75.58 | 76.91 | 77.04 | 75.94 | 75.04 | 74.61 | 74.41 | 73.89 |
| 80000 | 74.19 | 75.22 | 75.78 | 76.14 | 76.12 | 75.96 | 75.74 | 76.03 | 75.40 | 76.96 | 77.13 | 75.96 | 75.09 | 74.61 | 74.44 | 74.05 |
| 90000 | 74.34 | 75.47 | 75.87 | 76.21 | 76.50 | 76.23 | 76.10 | 76.12 | 75.29 | 77.25 | 77.11 | 76.03 | 75.24 | 74.77 | 74.62 | 74.37 |
| 100000 | 74.64 | 75.67 | 75.85 | 76.89 | 76.84 | 76.60 | 76.19 | 76.28 | 75.42 | 77.56 | 77.22 | 76.14 | 75.45 | 74.97 | 74.86 | 74.64 |
| 110000 | 75.15 | 75.87 | 76.08 | 77.36 | 77.25 | 76.51 | 76.41 | 75.97 | 75.22 | 77.88 | 77.07 | 76.24 | 75.79 | 75.34 | 75.09 | 74.95 |
| 120000 | 75.27 | 76.03 | 75.90 | 76.71 | 77.85 | 76.46 | 76.51 | 75.99 | 75.97 | 78.12 | 76.96 | 76.51 | 76.17 | 75.65 | 75.18 | 75.40 |
| 130000 | 75.70 | 75.74 | 75.22 | 76.87 | 78.10 | 76.41 | 76.56 | 75.47 | 76.44 | 77.85 | 76.77 | 76.71 | 76.06 | 75.87 | 75.42 | 75.92 |
| 140000 | 75.11 | 75.69 | 74.59 | 77.27 | 78.22 | 76.53 | 76.51 | 76.15 | 77.56 | 78.49 | 76.82 | 76.37 | 75.99 | 75.88 | 75.61 | 75.99 |
| 150000 | 75.60 | 75.29 | 74.84 | 77.11 | 78.01 | 76.19 | 76.53 | 75.34 | 76.87 | 79.12 | 76.60 | 76.33 | 75.87 | 75.79 | 75.49 | 75.96 |
| 160000 | 75.22 | 75.22 | 74.52 | 76.73 | 77.79 | 75.87 | 76.50 | 75.04 | 76.98 | 78.94 | 76.59 | 76.48 | 76.06 | 75.70 | 75.79 | 75.92 |
| 170000 | 75.52 | 74.73 | 74.35 | 76.73 | 77.79 | 75.74 | 76.66 | 74.84 | 76.73 | 78.87 | 76.46 | 76.23 | 75.85 | 75.86 | 75.69 | 75.42 |
| 180000 | 75.61 | 74.70 | 74.44 | 76.57 | 77.72 | 75.56 | 76.32 | 74.66 | 76.56 | 79.16 | 76.48 | 76.17 | 75.87 | 75.69 | 75.42 | 75.97 |
| 190000 | 76.49 | 74.48 | 74.25 | 76.06 | 77.61 | 75.33 | 76.39 | 74.14 | 76.53 | 79.14 | 76.56 | 75.97 | 75.74 | 75.61 | 75.24 | 75.56 |
| 200000 | 75.69 | 74.55 | 74.32 | 75.31 | 77.22 | 75.49 | 76.57 | 74.37 | 76.39 | 78.96 | 76.44 | 75.87 | 75.61 | 75.54 | 75.13 | 75.58 |
| 210000 | 75.47 | 74.57 | 74.57 | 77.50 | 76.64 | 75.67 | 76.48 | 74.25 | 75.70 | 78.58 | 76.23 | 75.69 | 75.47 | 75.36 | 75.00 | 75.31 |
| 220000 | 74.96 | 74.71 | 74.89 | 77.14 | 76.42 | 75.70 | 76.53 | 74.26 | 75.69 | 78.37 | 76.03 | 75.60 | 75.45 | 75.25 | 74.71 | 75.42 |
| 230000 | 75.00 | 74.82 | 75.22 | 77.04 | 76.33 | 75.72 | 76.60 | 74.77 | 75.72 | 78.39 | 76.06 | 75.54 | 75.43 | 75.22 | 74.53 | 75.20 |
| Daily Max | 75.70 | 76.03 | 76.06 | 77.50 | 78.22 | 76.60 | 76.66 | 76.64 | 77.56 | 79.16 | 78.26 | 76.71 | 76.17 | 75.88 | 75.79 | 75.99 |
| Daily Min | 73.72 | 74.48 | 74.25 | 75.31 | 75.76 | 75.33 | 75.52 | 74.14 | 74.84 | 74.80 | 76.03 | 75.54 | 75.04 | 74.61 | 74.41 | 73.89 |
| Average | 74.78 | 75.15 | 75.25 | 76.50 | 76.87 | 76.03 | 76.20 | 75.58 | 75.89 | 77.57 | 76.95 | 76.06 | 75.64 | 75.31 | 75.04 | 74.95 |

Monthly Average: 74.18
License Maximum Water Temperature: 89 F

# High Falls Tailrace Temperature Summary - August 2005

| Time HHMMSS | 08/17/05 | 08/18/05 | 08/19/05 | 08/20/05 | 08/21/05 | 08/22/05 | 08/23/05 | 08/24/05 | 08/25/05 | 08/26/05 | 08/27/05 | 08/28/05 | 08/29/05 | 08/30/05 | 08/31/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 75.09 | 74.19 | 74.21 | 73.44 | 73.89 | 72.64 | 72.03 | 71.19 | 70.63 | 70.61 | 71.02 | 70.83 | 71.13 | 72.16 | 71.62 |
| 10000 | 75.15 | 74.17 | 74.14 | 73.60 | 73.62 | 72.54 | 71.82 | 71.08 | 70.63 | 70.56 | 70.97 | 70.77 | 71.08 | 72.14 | 71.44 |
| 20000 | 74.89 | 74.16 | 74.08 | 73.51 | 73.40 | 72.43 | 71.78 | 70.95 | 70.61 | 70.56 | 70.97 | 70.68 | 71.02 | 71.89 | 71.31 |
| 30000 | 74.91 | 74.19 | 74.01 | 73.24 | 73.27 | 72.39 | 71.64 | 70.99 | 70.63 | 70.56 | 70.99 | 70.66 | 70.92 | 71.74 | 71.15 |
| 40000 | 74.91 | 74.17 | 73.96 | 73.76 | 72.91 | 72.16 | 71.60 | 70.88 | 70.61 | 70.50 | 71.01 | 70.74 | 70.83 | 71.53 | 71.04 |
| 50000 | 74.80 | 74.19 | 73.96 | 73.72 | 72.97 | 72.09 | 71.49 | 70.90 | 70.52 | 70.52 | 71.02 | 70.50 | 70.77 | 71.37 | 70.93 |
| 60000 | 74.80 | 74.05 | 73.94 | 73.71 | 72.86 | 71.96 | 71.38 | 70.83 | 70.43 | 70.57 | 70.92 | 70.52 | 70.66 | 71.33 | 70.86 |
| 70000 | 74.64 | 74.16 | 73.96 | 73.71 | 72.77 | 71.96 | 71.29 | 70.74 | 70.50 | 70.54 | 70.83 | 70.45 | 70.68 | 71.35 | 70.81 |
| 80000 | 74.84 | 74.41 | 73.92 | 73.72 | 72.77 | 71.96 | 71.35 | 70.88 | 70.83 | 70.61 | 70.79 | 70.52 | 70.81 | 71.38 | 70.79 |
| 90000 | 74.95 | 74.62 | 73.96 | 73.76 | 73.06 | 72.07 | 71.65 | 71.17 | 71.06 | 70.90 | 71.06 | 70.79 | 71.08 | 71.51 | 71.04 |
| 100000 | 75.07 | 74.77 | 73.99 | 73.92 | 73.26 | 72.28 | 71.91 | 71.71 | 71.42 | 71.06 | 71.80 | 71.04 | 71.35 | 71.82 | 71.42 |
| 110000 | 74.41 | 74.89 | 73.96 | 74.35 | 73.42 | 72.23 | 72.18 | 72.00 | 71.60 | 71.19 | 72.01 | 71.24 | 71.65 | 71.89 | 71.89 |
| 120000 | 74.82 | 74.95 | 74.14 | 74.91 | 73.63 | 72.72 | 72.46 | 71.69 | 71.92 | 71.53 | 72.19 | 71.29 | 71.62 | 72.01 | 72.39 |
| 130000 | 74.88 | 74.77 | 74.32 | 75.18 | 73.80 | 73.06 | 71.92 | 72.18 | 71.46 | 71.71 | 72.48 | 71.69 | 71.71 | 72.52 | 72.86 |
| 140000 | 74.95 | 74.71 | 74.35 | 75.20 | 73.44 | 73.26 | 72.27 | 71.73 | 71.51 | 71.65 | 72.43 | 71.87 | 71.83 | 72.77 | 72.64 |
| 150000 | 74.84 | 74.97 | 74.25 | 75.33 | 73.42 | 73.49 | 72.10 | 72.07 | 71.42 | 71.33 | 72.16 | 71.85 | 71.96 | 72.66 | 72.25 |
| 160000 | 74.28 | 74.66 | 74.43 | 75.29 | 73.51 | 73.47 | 72.37 | 71.74 | 71.44 | 71.31 | 72.14 | 72.12 | 72.14 | 72.72 | 72.05 |
| 170000 | 74.23 | 74.57 | 74.37 | 75.04 | 73.40 | 73.47 | 72.00 | 71.47 | 71.13 | 71.17 | 71.73 | 72.32 | 72.14 | 72.57 | 71.94 |
| 180000 | 73.87 | 74.53 | 74.16 | 74.93 | 73.38 | 73.20 | 71.73 | 71.24 | 71.19 | 71.13 | 71.46 | 72.07 | 72.21 | 72.48 | 71.62 |
| 190000 | 73.09 | 74.56 | 74.05 | 74.64 | 73.17 | 73.06 | 71.53 | 71.04 | 71.02 | 71.10 | 71.26 | 71.69 | 71.96 | 72.39 | 71.60 |
| 200000 | 73.96 | 74.48 | 74.01 | 74.59 | 72.91 | 72.75 | 71.44 | 70.95 | 70.92 | 71.04 | 71.17 | 71.62 | 71.85 | 72.16 | 71.71 |
| 210000 | 74.32 | 74.44 | 73.87 | 74.32 | 72.95 | 72.46 | 71.42 | 70.84 | 70.84 | 71.04 | 71.06 | 71.53 | 72.10 | 72.00 | 71.49 |
| 220000 | 74.25 | 74.39 | 73.85 | 74.03 | 72.88 | 72.25 | 71.35 | 70.77 | 70.74 | 71.04 | 70.99 | 71.40 | 72.14 | 71.85 | 71.28 |
| 230000 | 74.21 | 74.32 | 73.87 | 74.03 | 72.88 | 72.16 | 71.26 | 70.65 | 70.68 | 71.04 | 70.93 | 71.28 | 72.25 | 71.73 | 71.11 |
| Daily Max | 75.15 | 74.97 | 74.43 | 75.33 | 73.89 | 73.49 | 72.46 | 72.18 | 71.92 | 71.71 | 72.48 | 72.32 | 72.25 | 72.77 | 72.86 |
| Daily Min | 73.09 | 74.05 | 73.87 | 73.24 | 72.77 | 71.96 | 71.26 | 70.65 | 70.43 | 70.50 | 70.79 | 70.45 | 70.66 | 71.33 | 70.79 |
| Average | 74.57 | 74.47 | 74.06 | 74.25 | 73.22 | 72.59 | 71.75 | 71.24 | 70.99 | 70.97 | 71.38 | 71.23 | 71.50 | 72.00 | 71.55 |

# High Falls Tailrace Temperature Summary - September 2005

| Time HHMMSS | 09/01/05 | 09/02/05 | 09/03/05 | 09/04/05 | 09/05/05 | 09/06/05 | 09/07/05 | 09/08/05 | 09/09/05 | 09/10/05 | 09/11/05 | 09/12/05 | 09/13/05 | 09/14/05 | 09/15/05 | 09/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 71.06 | 69.98 | 70.03 | 70.50 | 69.62 | 70.00 | 70.83 | 71.46 | 70.75 | 70.39 | 70.36 | 70.95 | 71.53 | 72.21 | 72.14 | 70.97 |
| 10000 | 71.01 | 69.91 | 69.96 | 70.43 | 69.57 | 70.07 | 70.97 | 71.44 | 70.72 | 70.29 | 70.38 | 71.19 | 71.69 | 72.16 | 72.01 | 70.86 |
| 20000 | 70.99 | 69.76 | 69.89 | 70.36 | 69.51 | 70.05 | 71.04 | 71.42 | 70.63 | 70.25 | 70.41 | 71.35 | 71.80 | 72.37 | 71.89 | 70.79 |
| 30000 | 70.93 | 69.60 | 69.78 | 70.30 | 69.44 | 70.09 | 71.08 | 71.37 | 70.56 | 70.20 | 70.41 | 71.46 | 71.83 | 72.39 | 71.78 | 70.66 |
| 40000 | 70.92 | 69.46 | 69.69 | 70.29 | 69.33 | 70.02 | 71.13 | 71.29 | 70.52 | 70.18 | 70.52 | 71.58 | 72.03 | 72.28 | 71.65 | 70.48 |
| 50000 | 70.83 | 69.40 | 69.67 | 70.27 | 69.22 | 70.07 | 71.19 | 71.24 | 70.45 | 70.25 | 70.63 | 71.58 | 72.03 | 72.23 | 71.53 | 70.41 |
| 60000 | 70.72 | 69.37 | 69.71 | 70.27 | 69.15 | 70.07 | 71.29 | 71.17 | 70.36 | 70.21 | 70.52 | 71.58 | 71.96 | 72.16 | 71.40 | 70.30 |
| 70000 | 70.68 | 69.31 | 69.69 | 70.20 | 69.10 | 70.45 | 71.35 | 71.13 | 70.36 | 70.25 | 70.61 | 71.55 | 71.83 | 72.00 | 71.26 | 70.20 |
| 80000 | 70.70 | 69.37 | 69.75 | 70.21 | 69.30 | 70.54 | 71.38 | 71.10 | 70.38 | 70.23 | 70.63 | 71.56 | 72.01 | 71.91 | 71.13 | 70.11 |
| 90000 | 70.81 | 69.66 | 70.02 | 70.52 | 69.80 | 70.72 | 71.37 | 71.02 | 70.39 | 70.25 | 70.74 | 71.62 | 71.82 | 71.89 | 71.13 | 70.21 |
| 100000 | 70.97 | 69.94 | 70.39 | 70.79 | 70.34 | 70.81 | 71.37 | 71.13 | 70.56 | 70.45 | 70.77 | 71.85 | 71.89 | 71.92 | 71.15 | 70.29 |
| 110000 | 71.17 | 70.25 | 70.77 | 70.93 | 70.63 | 70.70 | 71.51 | 71.26 | 70.63 | 70.61 | 70.81 | 71.96 | 72.09 | 72.07 | 71.38 | 70.52 |
| 120000 | 71.17 | | 71.06 | 71.02 | 70.66 | 70.56 | 71.67 | 71.24 | 70.63 | 70.57 | 70.90 | 71.89 | 72.16 | 72.27 | 71.71 | 70.74 |
| 130000 | 71.11 | 71.01 | 71.46 | 71.10 | 70.84 | 70.63 | 72.39 | 71.28 | 70.48 | 70.68 | 70.50 | 71.74 | 72.21 | 72.54 | 71.85 | 71.01 |
| 140000 | 71.15 | 71.26 | 71.64 | 71.06 | 70.95 | 70.75 | 72.45 | 71.29 | 70.39 | 70.77 | 70.63 | 71.56 | 72.12 | 72.61 | 72.00 | 71.01 |
| 150000 | 71.22 | 71.31 | 71.58 | 70.56 | 70.95 | 70.65 | 72.28 | 71.15 | 70.32 | 70.74 | 70.47 | 71.26 | 72.12 | 72.72 | 71.96 | 71.56 |
| 160000 | 70.84 | 71.42 | 71.06 | 70.41 | 70.68 | 70.63 | 72.01 | 71.17 | 70.21 | 70.25 | 70.18 | 71.11 | 72.06 | 72.77 | 72.00 | 71.29 |
| 170000 | 70.88 | 71.33 | 71.13 | 70.41 | 70.52 | 70.45 | 71.76 | 71.11 | 70.20 | 70.12 | 70.16 | 70.84 | 71.98 | 72.79 | 71.74 | 71.31 |
| 180000 | 70.79 | 71.13 | 70.86 | 70.11 | 70.34 | 70.47 | 71.76 | 71.10 | 70.18 | 70.05 | 70.05 | 70.63 | 72.14 | 72.70 | 71.49 | 71.04 |
| 190000 | 70.43 | 70.86 | 70.84 | 69.86 | 70.12 | 70.45 | 71.78 | 71.04 | 70.25 | 70.18 | 70.18 | 70.65 | 72.01 | 72.61 | 71.10 | 70.61 |
| 200000 | 70.38 | 70.79 | 70.86 | 69.71 | 70.00 | 70.45 | 71.76 | 70.97 | 70.27 | 70.20 | 70.36 | 70.52 | 71.47 | 72.48 | 71.15 | 70.52 |
| 210000 | 70.32 | 70.57 | 70.90 | 69.67 | 69.96 | 70.54 | 71.76 | 70.90 | 70.18 | 70.18 | 70.43 | 71.06 | 72.09 | 72.37 | 71.06 | 70.20 |
| 220000 | 70.21 | 70.45 | 70.63 | 69.66 | 69.96 | 70.59 | 71.65 | 70.84 | 70.25 | 70.29 | 70.56 | 71.15 | 72.23 | 72.34 | 70.93 | 70.05 |
| 230000 | 70.11 | 70.21 | 70.52 | 69.66 | 69.93 | 70.72 | 71.51 | 70.83 | 70.36 | 70.27 | 70.77 | 71.37 | 72.19 | 72.25 | 70.96 | 69.94 |
| Daily Max | 71.22 | 71.42 | 71.64 | 71.10 | 70.95 | 70.81 | 72.45 | 71.46 | 70.75 | 70.77 | 70.90 | 71.96 | 72.23 | 72.79 | 72.14 | 71.56 |
| Daily Min | 70.11 | 69.31 | 69.67 | 69.66 | 69.10 | 70.00 | 70.83 | 70.83 | 70.18 | 70.05 | 70.05 | 70.52 | 71.47 | 71.89 | 70.93 | 69.94 |
| Average | 70.81 | 70.28 | 70.50 | 70.35 | 70.00 | 70.44 | 71.56 | 71.16 | 70.42 | 70.33 | 70.50 | 71.33 | 71.97 | 72.33 | 71.52 | 70.63 |

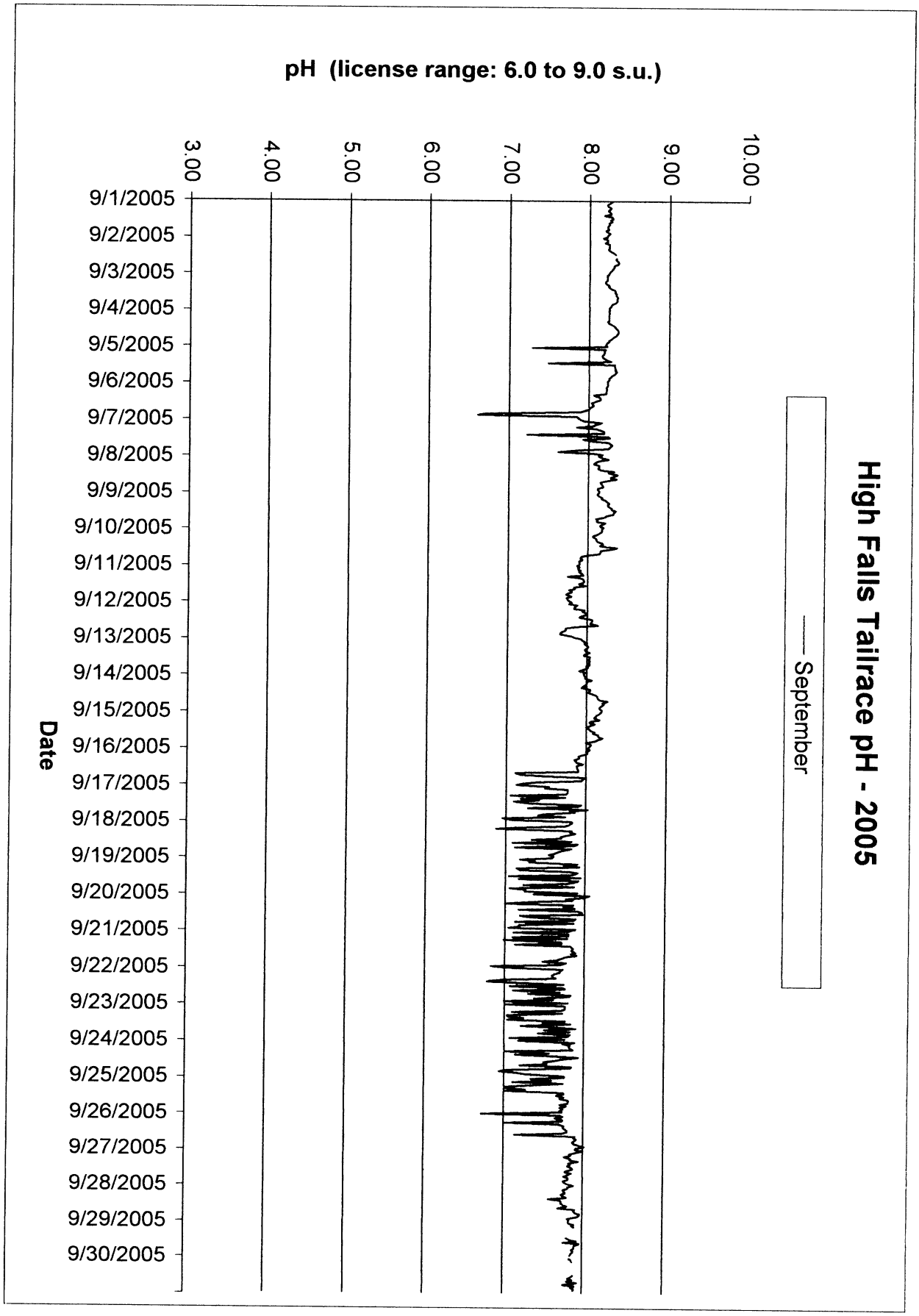
Monthly Average: 68.79
License Maximum Water Temperature: 89 F

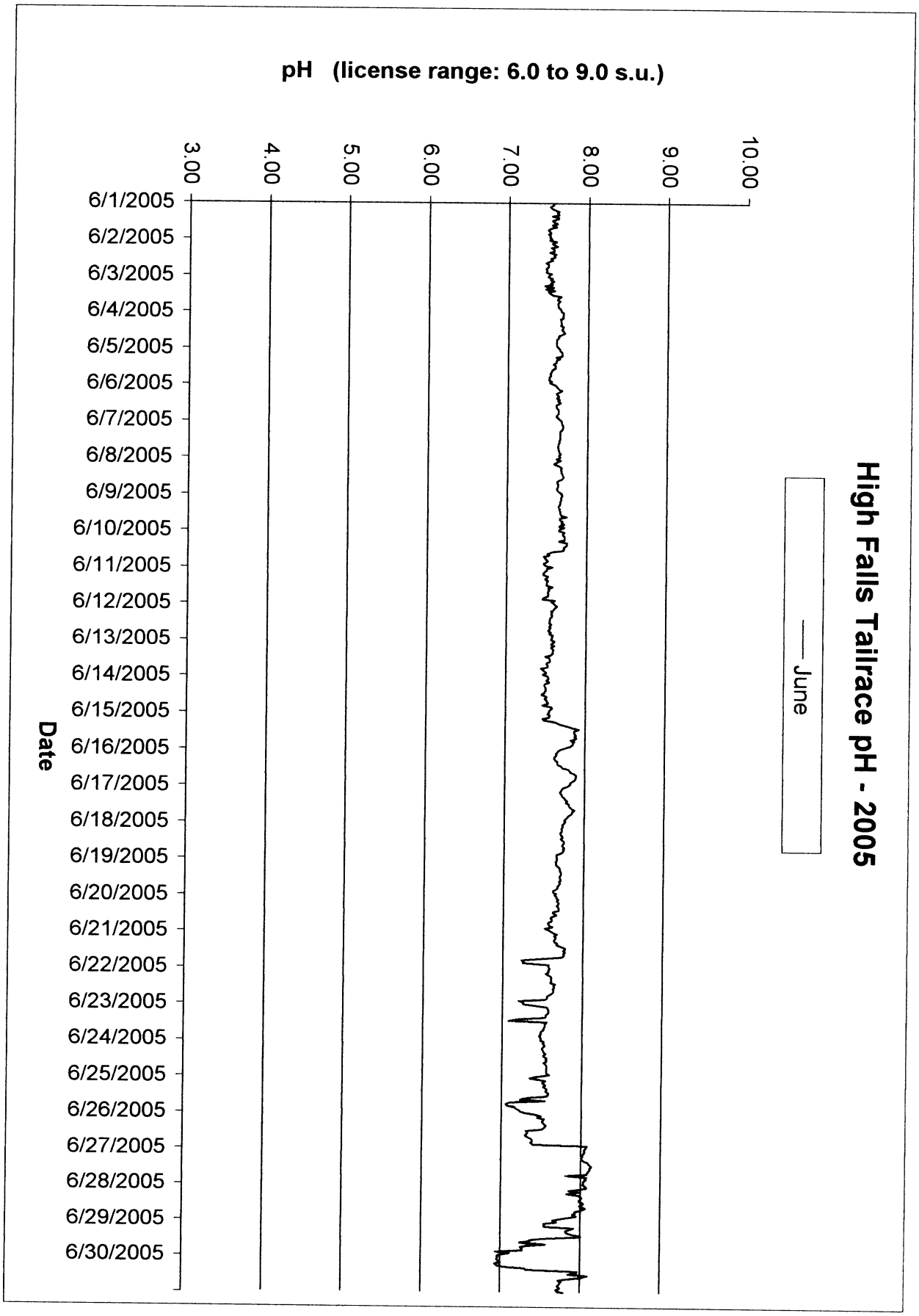
Hourly reading missed on 9/02/05 while calibrating equipment.
** A drawdown of the High Falls Reservoir was initiated on September 6th.

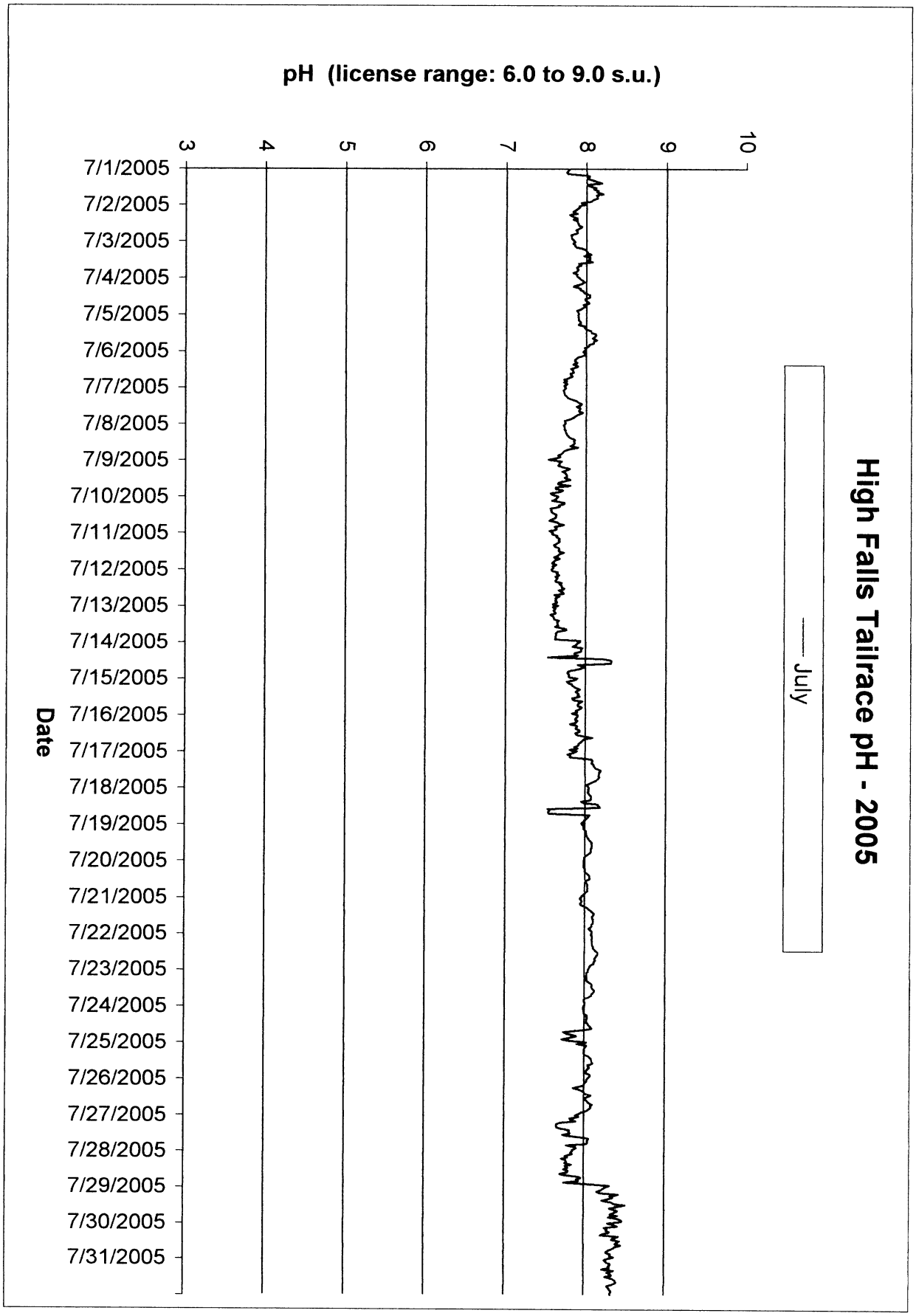
# High Falls Tailrace Temperature Summary - September 2005

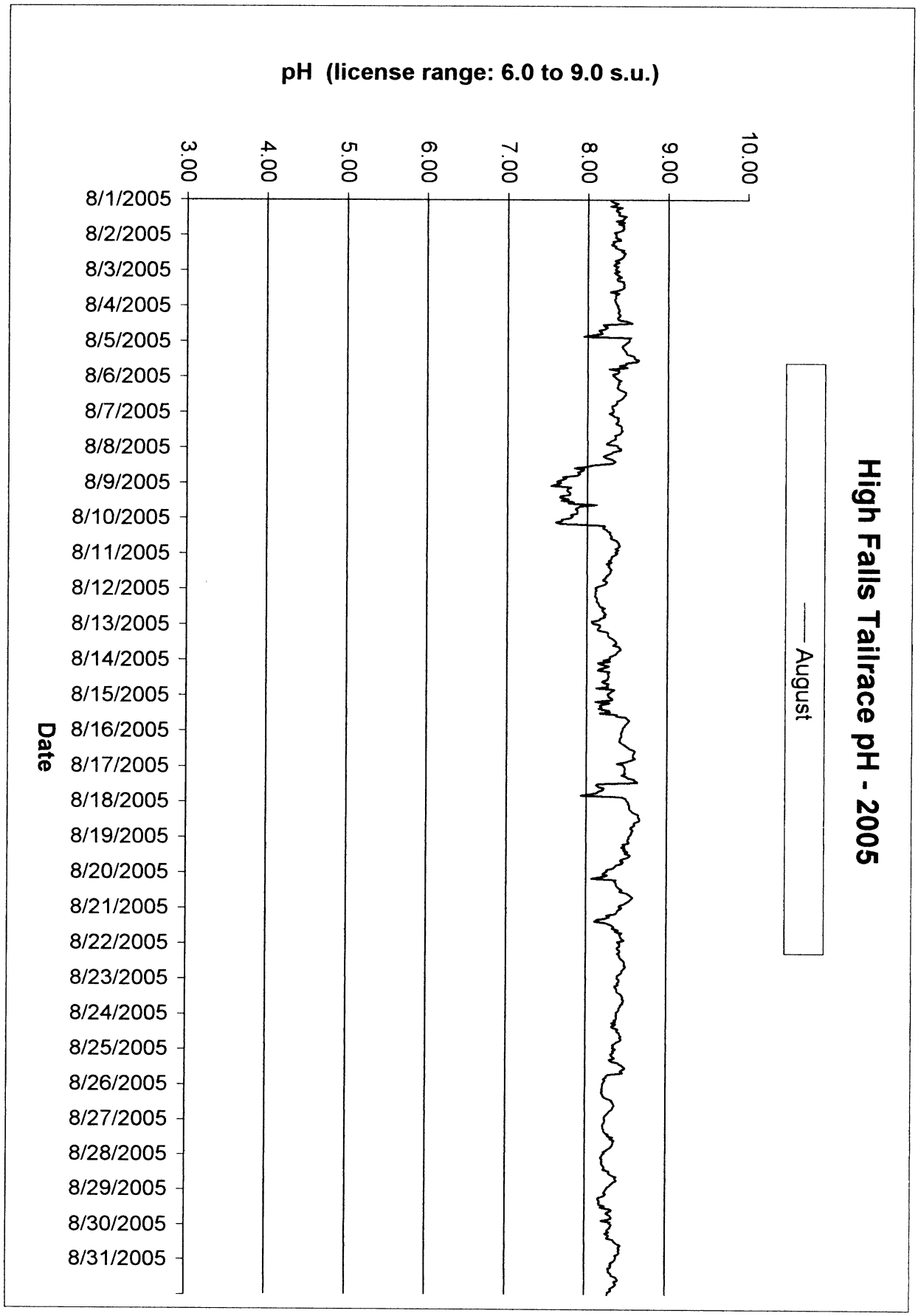
| Time HHMMSS | 09/17/05 | 09/18/05 | 09/19/05 | 09/20/05 | 09/21/05 | 09/22/05 | 09/23/05 | 09/24/05 | 09/25/05 | 09/26/05 | 09/27/05 | 09/28/05 | 09/29/05 | 09/30/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 69.80 | 69.12 | 68.65 | 68.68 | 68.04 | 68.09 | 67.26 | 66.58 | 66.07 | 65.64 | 65.50 | 64.49 | 62.58 | 61.56 |
| 10000 | 69.73 | 69.01 | 68.72 | 68.63 | 67.91 | 68.16 | 67.17 | 66.49 | 66.06 | 65.57 | 65.41 | 64.38 | 62.40 | 61.48 |
| 20000 | 69.64 | 68.99 | 68.85 | 68.50 | 67.95 | 68.00 | 67.05 | 66.42 | 66.07 | 65.53 | 65.28 | 64.29 | 62.24 | 61.41 |
| 30000 | 69.57 | 69.01 | 68.97 | 68.38 | 67.93 | 67.77 | 66.94 | 66.36 | 66.07 | 65.43 | 65.17 | 64.26 | 62.08 | |
| 40000 | 69.48 | 69.03 | 69.03 | 68.27 | 67.91 | 67.60 | 66.85 | 66.33 | 66.07 | 65.35 | 65.07 | 64.24 | | |
| 50000 | 69.42 | 69.04 | 69.08 | 68.13 | 67.86 | 67.53 | 66.76 | 66.25 | 66.04 | 65.21 | 64.96 | 64.22 | | |
| 60000 | 69.35 | 69.01 | 69.12 | 68.02 | 67.80 | 67.64 | 66.61 | 66.13 | 65.98 | 65.14 | 64.90 | 64.18 | | |
| 70000 | 69.26 | 68.99 | 69.15 | 67.93 | 67.73 | 67.78 | 66.49 | 66.07 | 65.95 | 65.05 | 64.81 | 64.11 | | |
| 80000 | 69.24 | 68.99 | 69.12 | 67.82 | 67.77 | 67.84 | 66.43 | 66.09 | 65.97 | 65.01 | 64.76 | 64.06 | | |
| 90000 | 69.37 | 69.04 | 69.12 | 68.16 | 67.96 | 67.93 | 66.58 | 66.18 | 65.93 | 65.01 | 64.89 | 64.02 | | |
| 100000 | 69.56 | 69.26 | 69.15 | 68.59 | 68.29 | 67.96 | 66.81 | 66.36 | 65.98 | 65.16 | 65.03 | 63.96 | | |
| 110000 | 69.87 | 69.40 | 69.15 | 68.90 | 68.49 | 68.14 | 67.14 | 66.61 | 66.00 | 65.36 | 65.17 | 63.91 | | 61.11 |
| 120000 | 70.12 | 69.49 | 69.19 | 69.24 | 68.72 | 68.25 | 67.44 | 66.83 | 66.02 | 65.52 | 65.34 | 63.96 | | 61.20 |
| 130000 | 70.25 | 69.69 | 69.22 | 69.22 | 68.72 | 68.29 | 67.66 | 66.88 | 66.09 | 65.71 | 65.35 | 63.93 | | 61.12 |
| 140000 | 70.07 | 69.71 | 69.24 | 69.33 | 68.83 | 68.29 | 68.04 | 66.78 | 66.13 | 66.00 | 65.34 | 63.88 | | 61.11 |
| 150000 | 70.00 | 69.66 | 69.31 | 69.06 | 68.63 | 68.52 | 68.25 | 66.51 | 66.18 | 66.16 | 65.23 | 63.81 | | 61.11 |
| 160000 | 69.78 | 69.31 | 69.21 | 68.67 | 68.29 | 68.29 | 68.23 | 66.34 | 66.16 | 66.20 | 65.12 | 63.70 | | 61.12 |
| 170000 | 69.49 | 69.15 | 69.19 | 68.56 | 68.00 | 68.34 | 67.86 | 66.31 | 66.11 | 66.18 | 64.96 | 63.57 | | 60.96 |
| 180000 | 69.26 | 68.86 | 69.06 | 68.41 | 67.84 | 68.13 | 67.33 | 66.25 | 65.96 | 66.09 | 64.69 | 63.43 | | 60.85 |
| 190000 | 69.12 | 68.67 | 69.03 | 68.32 | 67.84 | 67.96 | 67.06 | 66.22 | 65.91 | 66.04 | 64.58 | 63.34 | | 60.80 |
| 200000 | 69.13 | 68.59 | 68.97 | 68.32 | 67.80 | 67.84 | 66.83 | 66.16 | 65.86 | 65.96 | 64.53 | 63.18 | | 60.87 |
| 210000 | 69.19 | 68.61 | 68.88 | 68.45 | 67.91 | 67.86 | 66.87 | 66.11 | 65.80 | 65.80 | 64.56 | 63.05 | | 60.86 |
| 220000 | 69.19 | 68.61 | 68.81 | 68.32 | 67.96 | 67.53 | 66.86 | 66.11 | 65.75 | 65.70 | 64.62 | 62.91 | | |
| 230000 | 69.15 | 68.63 | 68.76 | 68.14 | 68.02 | 67.44 | 66.63 | 66.09 | 65.70 | 65.59 | 64.51 | 62.74 | | 60.75 |
| Daily Max | 70.25 | 69.71 | 69.31 | 69.33 | 68.83 | 68.52 | 68.25 | 66.88 | 66.18 | 66.20 | 65.50 | 64.49 | 62.58 | 61.56 |
| Daily Min | 69.12 | 68.59 | 68.65 | 67.82 | 67.73 | 67.44 | 66.43 | 66.07 | 65.70 | 65.01 | 64.51 | 62.74 | 62.08 | 60.75 |
| Average | 69.54 | 69.06 | 69.04 | 68.50 | 68.09 | 67.96 | 67.12 | 66.36 | 65.99 | 65.60 | 64.99 | 63.82 | 62.33 | 61.09 |

Data Loss on 9/29 and 9/30 due to equipment power failure.









# High Falls Tailrace pH Summary - June 2005

| Time HHMMSS | 06/01/05 | 06/02/05 | 06/03/05 | 06/04/05 | 06/05/05 | 06/06/05 | 06/07/05 | 06/08/05 | 06/09/05 | 06/10/05 | 06/11/05 | 06/12/05 | 06/13/05 | 06/14/05 | 06/15/05 | 06/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7.55 | 7.50 | 7.48 | 7.68 | 7.64 | 7.59 | 7.67 | 7.60 | 7.68 | 7.71 | 7.50 | 7.60 | 7.60 | 7.53 | 7.52 | 7.66 |
| 10000 | 7.54 | 7.59 | 7.54 | 7.68 | 7.64 | 7.61 | 7.67 | 7.66 | 7.67 | 7.70 | 7.50 | 7.63 | 7.58 | 7.53 | 7.55 | 7.65 |
| 20000 | 7.50 | 7.53 | 7.51 | 7.67 | 7.67 | 7.63 | 7.68 | 7.62 | 7.67 | 7.69 | 7.47 | 7.60 | 7.55 | 7.50 | 7.54 | 7.63 |
| 30000 | 7.52 | 7.56 | 7.56 | 7.68 | 7.67 | 7.67 | 7.69 | 7.57 | 7.67 | 7.72 | 7.46 | 7.59 | 7.60 | 7.54 | 7.48 | 7.64 |
| 40000 | 7.57 | 7.60 | 7.51 | 7.64 | 7.67 | 7.64 | 7.68 | 7.61 | 7.66 | 7.72 | 7.45 | 7.55 | 7.56 | 7.49 | 7.47 | 7.62 |
| 50000 | 7.62 | 7.52 | 7.54 | 7.65 | 7.59 | 7.60 | 7.67 | 7.65 | 7.66 | 7.72 | 7.51 | 7.57 | 7.57 | 7.48 | 7.61 | 7.61 |
| 60000 | 7.59 | 7.56 | 7.44 | 7.65 | 7.64 | 7.61 | 7.65 | 7.67 | 7.65 | 7.64 | 7.50 | 7.55 | 7.59 | 7.48 | 7.65 | 7.62 |
| 70000 | 7.62 | 7.58 | 7.55 | 7.66 | 7.60 | 7.63 | 7.65 | 7.66 | 7.64 | 7.75 | 7.47 | 7.57 | 7.58 | 7.50 | 7.70 | 7.65 |
| 80000 | 7.53 | 7.50 | 7.45 | 7.64 | 7.60 | 7.60 | 7.65 | 7.67 | 7.64 | 7.75 | 7.51 | 7.56 | 7.58 | 7.50 | 7.77 | 7.65 |
| 90000 | 7.61 | 7.58 | 7.57 | 7.68 | 7.58 | 7.64 | 7.65 | 7.67 | 7.65 | 7.74 | 7.50 | 7.54 | 7.56 | 7.49 | 7.85 | 7.65 |
| 100000 | 7.60 | 7.55 | 7.49 | 7.67 | 7.56 | 7.62 | 7.65 | 7.68 | 7.65 | 7.70 | 7.50 | 7.54 | 7.48 | 7.48 | 7.92 | 7.70 |
| 110000 | 7.53 | 7.57 | 7.51 | 7.66 | 7.59 | 7.65 | 7.65 | 7.69 | 7.66 | 7.71 | 7.49 | 7.54 | 7.53 | 7.44 | 7.86 | 7.71 |
| 120000 | 7.55 | 7.51 | 7.54 | 7.68 | 7.59 | 7.62 | 7.64 | 7.70 | 7.66 | 7.70 | 7.57 | 7.53 | 7.54 | 7.49 | 7.86 | 7.79 |
| 130000 | 7.60 | 7.54 | 7.65 | 7.70 | 7.55 | 7.60 | 7.64 | 7.68 | 7.67 | 7.58 | 7.51 | 7.56 | 7.55 | 7.51 | 7.86 | 7.80 |
| 140000 | 7.53 | 7.49 | 7.63 | 7.66 | 7.54 | 7.60 | 7.63 | 7.63 | 7.74 | 7.50 | 7.53 | 7.53 | 7.52 | 7.48 | 7.88 | 7.81 |
| 150000 | 7.59 | 7.45 | 7.60 | 7.62 | 7.53 | 7.61 | 7.63 | 7.62 | 7.66 | 7.53 | 7.52 | 7.55 | 7.50 | 7.51 | 7.86 | 7.86 |
| 160000 | 7.52 | 7.49 | 7.64 | 7.63 | 7.52 | 7.63 | 7.62 | 7.62 | 7.65 | 7.45 | 7.51 | 7.53 | 7.52 | 7.51 | 7.89 | 7.89 |
| 170000 | 7.48 | 7.49 | 7.62 | 7.60 | 7.53 | 7.63 | 7.63 | 7.63 | 7.69 | 7.47 | 7.52 | 7.52 | 7.52 | 7.53 | 7.81 | 7.89 |
| 180000 | 7.49 | 7.47 | 7.61 | 7.60 | 7.51 | 7.63 | 7.63 | 7.63 | 7.67 | 7.49 | 7.52 | 7.55 | 7.43 | 7.45 | 7.86 | 7.88 |
| 190000 | 7.52 | 7.46 | 7.62 | 7.60 | 7.51 | 7.61 | 7.64 | 7.62 | 7.71 | 7.51 | 7.47 | 7.53 | 7.45 | 7.56 | 7.85 | 7.87 |
| 200000 | 7.48 | 7.47 | 7.61 | 7.60 | 7.50 | 7.60 | 7.64 | 7.62 | 7.64 | 7.48 | 7.44 | 7.58 | 7.48 | 7.58 | 7.84 | 7.85 |
| 210000 | 7.51 | 7.46 | 7.63 | 7.60 | 7.54 | 7.62 | 7.66 | 7.63 | 7.71 | 7.45 | 7.60 | 7.57 | 7.50 | 7.56 | 7.81 | 7.82 |
| 220000 | 7.50 | 7.53 | 7.65 | 7.60 | 7.51 | 7.64 | 7.63 | 7.65 | 7.65 | 7.48 | 7.56 | 7.57 | 7.45 | 7.54 | 7.75 | 7.82 |
| 230000 | 7.53 | 7.50 | 7.65 | 7.62 | 7.57 | 7.66 | 7.65 | 7.67 | 7.64 | 7.57 | 7.58 | 7.55 | 7.51 | 7.54 | 7.70 | 7.79 |
| Daily Max | 7.62 | 7.60 | 7.65 | 7.70 | 7.67 | 7.67 | 7.69 | 7.70 | 7.74 | 7.75 | 7.60 | 7.63 | 7.60 | 7.58 | 7.92 | 7.89 |
| Daily Min | 7.48 | 7.45 | 7.44 | 7.60 | 7.50 | 7.59 | 7.62 | 7.57 | 7.64 | 7.45 | 7.44 | 7.52 | 7.43 | 7.44 | 7.46 | 7.61 |
| Average | 7.55 | 7.52 | 7.57 | 7.64 | 7.58 | 7.62 | 7.65 | 7.64 | 7.67 | 7.61 | 7.51 | 7.56 | 7.53 | 7.51 | 7.74 | 7.74 |

License pH range: 5.0 to 9.0 s.u.

# High Falls Tailrace pH Summary - June 2005

| Time HHMMSS | 06/17/05 | 06/18/05 | 06/19/05 | 06/20/05 | 06/21/05 | 06/22/05 | 06/23/05 | 06/24/05 | 06/25/05 | 06/26/05 | 06/27/05 | 06/28/05 | 06/29/05 | 06/30/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7.74 | 7.73 | 7.66 | 7.66 | 7.62 | 7.58 | 7.39 | 7.52 | 7.34 | 7.41 | 8.03 | 8.04 | 7.70 | 6.96 |
| 10000 | 7.71 | 7.72 | 7.64 | 7.65 | 7.67 | 7.56 | 7.53 | 7.50 | 7.45 | 7.49 | 8.04 | 8.07 | 7.54 | 6.95 |
| 20000 | 7.70 | 7.73 | 7.65 | 7.68 | 7.63 | 7.57 | 7.56 | 7.52 | 7.54 | 7.44 | 8.03 | 7.98 | 7.54 | 6.96 |
| 30000 | 7.69 | 7.71 | 7.64 | 7.66 | 7.65 | 7.53 | 7.57 | 7.53 | 7.50 | 7.53 | 8.01 | 7.84 | 7.54 | 7 |
| 40000 | 7.69 | 7.72 | 7.66 | 7.69 | 7.64 | 7.57 | 7.57 | 7.50 | 7.52 | 7.52 | 8.02 | 7.98 | 7.91 | 6.92 |
| 50000 | 7.71 | 7.72 | 7.69 | 7.68 | 7.63 | 7.60 | 7.57 | 7.49 | 7.54 | 7.50 | 8.00 | 7.81 | 7.86 | 6.95 |
| 60000 | 7.71 | 7.70 | 7.70 | 7.66 | 7.64 | 7.60 | 7.54 | 7.51 | 7.51 | 7.52 | 8.00 | 7.98 | 7.81 | 7.03 |
| 70000 | 7.74 | 7.70 | 7.69 | 7.68 | 7.67 | 7.60 | 7.54 | 7.51 | 7.55 | 7.54 | 8.03 | 7.98 | 7.81 | 7.3 |
| 80000 | 7.75 | 7.72 | 7.71 | 7.69 | 7.66 | 7.60 | 7.53 | 7.54 | 7.56 | 7.55 | 8.06 | 8.01 | 7.87 | 7.31 |
| 90000 | 7.78 | 7.73 | 7.71 | 7.69 | 7.71 | 7.59 | 7.21 | 7.51 | 7.54 | 7.53 | 8.09 | 7.99 | 7.95 | 7.96 |
| 100000 | 7.76 | 7.70 | 7.70 | 7.62 | 7.77 | 7.65 | 7.07 | 7.52 | 7.56 | 7.50 | 8.10 | 7.97 | 8.00 | 7.95 |
| 110000 | 7.80 | 7.73 | 7.69 | 7.61 | 7.77 | 7.63 | 7.55 | 7.55 | 7.57 | 7.30 | 8.13 | 8.02 | 7.51 | 7.84 |
| 120000 | 7.80 | 7.75 | 7.70 | 7.66 | 7.74 | 7.64 | 7.53 | 7.54 | 7.56 | 7.32 | 8.10 | 8.03 | 7.37 | 8.09 |
| 130000 | 7.81 | 7.74 | 7.71 | 7.61 | 7.77 | 7.62 | 7.53 | 7.55 | 7.32 | 7.31 | 8.11 | 7.98 | 7.35 | 8 |
| 140000 | 7.83 | 7.72 | 7.68 | 7.58 | 7.75 | 7.63 | 7.53 | 7.51 | 7.22 | 7.29 | 8.09 | 8.02 | 7.23 | 7.84 |
| 150000 | 7.87 | 7.73 | 7.70 | 7.60 | 7.76 | 7.63 | 7.51 | 7.54 | 7.54 | 7.31 | 8.06 | 8.06 | 7.56 | 7.72 |
| 160000 | 7.86 | 7.75 | 7.69 | 7.60 | 7.74 | 7.61 | 7.52 | 7.55 | 7.09 | 7.36 | 8.07 | 7.99 | 7.32 | 7.76 |
| 170000 | 7.84 | 7.73 | 7.67 | 7.56 | 7.44 | 7.58 | 7.49 | 7.55 | 7.05 | 7.38 | 7.80 | 7.92 | 7.24 | 7.74 |
| 180000 | 7.82 | 7.74 | 7.67 | 7.55 | 7.22 | 7.55 | 7.47 | 7.55 | 7.06 | 7.38 | 8.07 | 7.93 | 7.27 | 7.73 |
| 190000 | 7.79 | 7.71 | 7.65 | 7.57 | 7.25 | 7.55 | 7.48 | 7.55 | 7.16 | 7.36 | 8.04 | 7.89 | 7.27 | 7.71 |
| 200000 | 7.78 | 7.66 | 7.62 | 7.61 | 7.24 | 7.53 | 7.46 | 7.55 | 7.17 | 7.38 | 8.06 | 7.94 | 6.93 | 7.75 |
| 210000 | 7.76 | 7.65 | 7.61 | 7.51 | 7.57 | 7.19 | 7.47 | 7.55 | 7.20 | 8.07 | 8.03 | 7.83 | 7.11 | 7.7 |
| 220000 | 7.74 | 7.65 | 7.65 | 7.55 | 7.57 | 7.25 | 7.48 | 7.59 | 7.22 | 8.06 | 8.03 | 7.73 | 6.96 | 7.7 |
| 230000 | 7.76 | 7.66 | 7.63 | 7.59 | 7.57 | 7.25 | 7.47 | 7.41 | 7.29 | 8.05 | 8.02 | 7.84 | 6.95 | 7.79 |
| Daily Max | 7.87 | 7.75 | 7.71 | 7.69 | 7.77 | 7.65 | 7.57 | 7.59 | 7.58 | 8.07 | 8.13 | 8.07 | 8.00 | 8.09 |
| Daily Min | 7.69 | 7.65 | 7.61 | 7.51 | 7.22 | 7.19 | 7.07 | 7.41 | 7.05 | 7.29 | 7.80 | 7.84 | 6.93 | 6.92 |
| Average | 7.77 | 7.71 | 7.67 | 7.62 | 7.61 | 7.55 | 7.48 | 7.53 | 7.38 | 7.50 | 8.04 | 7.94 | 7.48 | 7.53 |

# High Falls Tailrace pH Summary - July 2005

| Time HHMMSS | 07/01/05 | 07/02/05 | 07/03/05 | 07/04/05 | 07/05/05 | 07/06/05 | 07/07/05 | 07/08/05 | 07/09/05 | 07/10/05 | 07/11/05 | 07/12/05 | 07/13/05 | 07/14/05 | 07/15/05 | 07/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7.78 | 7.90 | 7.86 | 7.91 | 7.89 | 7.95 | 7.74 | 7.71 | 7.69 | 7.64 | 7.57 | 7.57 | 7.58 | 7.89 | 7.87 | 7.90 |
| 10000 | 7.76 | 7.91 | 7.82 | 7.94 | 7.89 | 7.98 | 7.71 | 7.72 | 7.66 | 7.62 | 7.64 | 7.65 | 7.62 | 7.87 | 7.76 | 7.88 |
| 20000 | 7.74 | 7.88 | 7.85 | 7.97 | 7.90 | 7.97 | 7.71 | 7.73 | 7.66 | 7.57 | 7.62 | 7.63 | 7.59 | 7.83 | 7.78 | 7.86 |
| 30000 | 7.76 | 7.85 | 7.86 | 7.94 | 7.89 | 7.91 | 7.72 | 7.72 | 7.64 | 7.73 | 7.67 | 7.66 | 7.60 | 7.96 | 7.83 | 7.90 |
| 40000 | 8.03 | 7.82 | 7.94 | 7.88 | 7.91 | 7.88 | 7.72 | 7.74 | 7.73 | 7.73 | 7.65 | 7.61 | 7.62 | 7.94 | 7.83 | 7.87 |
| 50000 | 8.03 | 7.88 | 7.99 | 7.83 | 7.93 | 7.85 | 7.74 | 7.74 | 7.79 | 7.65 | 7.67 | 7.64 | 7.55 | 7.94 | 7.87 | 7.80 |
| 60000 | 8.00 | 7.78 | 7.99 | 7.92 | 7.89 | 7.85 | 7.76 | 7.75 | 7.74 | 7.67 | 7.64 | 7.62 | 7.58 | 7.87 | 7.93 | 7.88 |
| 70000 | 8.06 | 7.82 | 8.01 | 7.91 | 7.98 | 7.88 | 7.80 | 7.76 | 7.69 | 7.55 | 7.60 | 7.61 | 7.60 | 7.85 | 7.90 | 7.89 |
| 80000 | 8.13 | 7.88 | 8.06 | 7.96 | 7.97 | 7.83 | 7.86 | 7.78 | 7.74 | 7.55 | 7.60 | 7.69 | 7.60 | 7.90 | 7.87 | 7.87 |
| 90000 | 8.18 | 7.82 | 7.96 | 7.96 | 7.96 | 7.89 | 7.89 | 7.82 | 7.75 | 7.56 | 7.65 | 7.66 | 7.66 | 7.52 | 7.91 | 7.92 |
| 100000 | 8.00 | 7.88 | 8.04 | 8.02 | 8.05 | 7.86 | 7.94 | 7.86 | 7.76 | 7.57 | 7.66 | 7.70 | 7.64 | 8.20 | 7.89 | 7.92 |
| 110000 | 8.02 | 7.88 | 8.04 | 8.04 | 8.05 | 7.80 | 7.93 | 7.84 | 7.72 | 7.63 | 7.65 | 7.69 | 7.64 | 8.30 | 7.92 | 7.87 |
| 120000 | 8.11 | 7.89 | 8.01 | 8.04 | 8.10 | 7.83 | 7.87 | 7.85 | 7.80 | 7.62 | 7.72 | 7.73 | 7.65 | 8.32 | 7.83 | 7.88 |
| 130000 | 8.06 | 7.90 | 8.07 | 7.98 | 8.12 | 7.84 | 7.92 | 7.83 | 7.73 | 7.62 | 7.66 | 7.65 | 7.61 | 8.31 | 7.84 | 7.98 |
| 140000 | 8.14 | 7.94 | 7.89 | 7.98 | 8.10 | 7.79 | 7.91 | 7.79 | 7.65 | 7.58 | 7.65 | 7.70 | 7.73 | 7.89 | 7.98 | 8.08 |
| 150000 | 8.12 | 7.89 | 7.93 | 8.01 | 8.07 | 7.80 | 7.90 | 7.89 | 7.64 | 7.53 | 7.59 | 7.72 | 7.76 | 7.96 | 7.92 | 7.96 |
| 160000 | 8.20 | 7.86 | 7.88 | 8.03 | 8.13 | 7.82 | 7.95 | 7.77 | 7.80 | 7.63 | 7.67 | 7.60 | 7.65 | 7.97 | 7.90 | 7.96 |
| 170000 | 8.11 | 7.88 | 7.87 | 7.96 | 8.09 | 7.77 | 7.90 | 7.73 | 7.62 | 7.65 | 7.62 | 7.67 | 7.62 | 7.88 | 7.90 | 7.94 |
| 180000 | 8.13 | 7.88 | 7.89 | 7.98 | 8.09 | 7.71 | 7.87 | 7.71 | 7.61 | 7.72 | 7.60 | 7.61 | 7.63 | 7.79 | 7.95 | 7.91 |
| 190000 | 8.13 | 7.80 | 7.87 | 7.95 | 8.03 | 7.75 | 7.84 | 7.69 | 7.71 | 7.60 | 7.57 | 7.63 | 7.62 | 7.77 | 7.93 | 7.91 |
| 200000 | 8.07 | 7.81 | 7.82 | 7.92 | 8.03 | 7.71 | 7.79 | 7.64 | 7.67 | 7.63 | 7.63 | 7.61 | 7.62 | 7.77 | 7.87 | 7.85 |
| 210000 | 8.06 | 7.81 | 7.88 | 7.87 | 7.97 | 7.76 | 7.73 | 7.67 | 7.55 | 7.63 | 7.58 | 7.64 | 7.61 | 7.79 | 7.89 | 7.90 |
| 220000 | 7.92 | 7.81 | 7.87 | 7.89 | 7.99 | 7.72 | 7.73 | 7.62 | 7.57 | 7.53 | 7.59 | 7.58 | 7.93 | 7.78 | 7.82 | 7.79 |
| 230000 | 7.97 | 7.84 | 7.89 | 7.90 | 7.97 | 7.72 | 7.74 | 7.52 | 7.65 | 7.58 | 7.57 | 7.65 | 7.92 | 7.89 | 7.90 | 7.89 |
| Daily Max | 8.20 | 7.94 | 8.07 | 8.04 | 8.13 | 7.98 | 7.95 | 7.89 | 7.80 | 7.73 | 7.72 | 7.73 | 7.93 | 8.32 | 7.96 | 8.08 |
| Daily Min | 7.74 | 7.78 | 7.82 | 7.83 | 7.89 | 7.71 | 7.71 | 7.52 | 7.55 | 7.53 | 7.57 | 7.57 | 7.55 | 7.52 | 7.76 | 7.79 |
| Average | 8.02 | 7.86 | 7.93 | 7.95 | 8.00 | 7.83 | 7.82 | 7.75 | 7.69 | 7.62 | 7.63 | 7.65 | 7.65 | 7.92 | 7.88 | 7.90 |

License Minimum Dissolved Oxygen: 5.0 mg/l

# High Falls Tailrace pH Summary - July 2005

| Time HHMMSS | 07/17/05 | 07/18/05 | 07/19/05 | 07/20/05 | 07/21/05 | 07/22/05 | 07/23/05 | 07/24/05 | 07/25/05 | 07/26/05 | 07/27/05 | 07/28/05 | 07/29/05 | 07/30/05 | 07/31/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7.83 | 8.03 | 7.97 | 7.96 | 7.93 | 8.07 | 8.04 | 7.98 | 7.90 | 8.03 | 7.93 | 7.83 | 8.24 | 8.36 | 8.25 |
| 10000 | 7.77 | 8.04 | 7.96 | 7.96 | 7.95 | 8.09 | 8.02 | 7.98 | 8.02 | 8.02 | 7.82 | 7.86 | 8.22 | 8.42 | 8.27 |
| 20000 | 7.81 | 8.02 | 7.97 | 7.96 | 7.96 | 8.09 | 8.02 | 7.99 | 8.01 | 8.00 | 7.82 | 7.76 | 8.15 | 8.25 | 8.31 |
| 30000 | 7.80 | 8.04 | 8.00 | 7.96 | 7.94 | 8.08 | 8.02 | 7.99 | 8.00 | 7.99 | 7.89 | 7.79 | 8.19 | 8.29 | 8.33 |
| 40000 | 8.06 | 8.05 | 8.01 | 7.99 | 7.94 | 8.09 | 8.02 | 7.99 | 7.99 | 7.94 | 7.69 | 7.71 | 8.43 | 8.27 | 8.30 |
| 50000 | 8.09 | 8.07 | 8.01 | 8.00 | 7.96 | 8.09 | 8.02 | 8.03 | 8.00 | 7.85 | 7.65 | 7.77 | 8.32 | 8.32 | 8.32 |
| 60000 | 8.08 | 8.07 | 8.01 | 7.99 | 8.03 | 8.09 | 8.01 | 8.02 | 7.99 | 7.92 | 7.65 | 7.78 | 8.36 | 8.24 | 8.22 |
| 70000 | 8.07 | 8.06 | 8.02 | 8.01 | 8.04 | 8.09 | 8.03 | 8.03 | 8.00 | 7.96 | 7.65 | 7.75 | 8.29 | 8.20 | 8.37 |
| 80000 | 8.10 | 7.94 | 8.03 | 8.03 | 8.07 | 8.10 | 8.07 | 8.02 | 8.04 | 7.99 | 7.72 | 7.84 | 8.22 | 8.43 | 8.28 |
| 90000 | 8.10 | 7.96 | 8.04 | 8.05 | 8.09 | 8.10 | 8.09 | 8.02 | 8.06 | 8.01 | 7.81 | 7.76 | 8.34 | 8.37 | 8.32 |
| 100000 | 8.12 | 8.15 | 8.06 | 8.05 | 8.11 | 8.12 | 8.08 | 8.01 | 8.08 | 8.08 | 7.80 | 7.79 | 8.36 | 8.34 | 8.35 |
| 110000 | 8.17 | 8.16 | 8.06 | 8.06 | 8.10 | 8.14 | 8.06 | 8.04 | 8.09 | 8.02 | 7.82 | 7.74 | 8.51 | 8.45 | 8.26 |
| 120000 | 8.19 | 8.18 | 8.06 | 8.00 | 8.09 | 8.16 | 8.10 | 8.05 | 8.09 | 8.01 | 7.72 | 7.80 | 8.42 | 8.42 | 8.34 |
| 130000 | 8.17 | 7.52 | 8.06 | 8.01 | 8.09 | 8.16 | 8.12 | 8.07 | 8.10 | 8.01 | 7.83 | 7.80 | 8.31 | 8.38 | 8.37 |
| 140000 | 8.17 | 7.55 | 8.06 | 8.02 | 8.10 | 8.14 | 8.11 | 8.09 | 8.04 | 8.03 | 8.03 | 7.89 | 8.38 | 8.46 | 8.39 |
| 150000 | 8.16 | 7.53 | 8.07 | 8.03 | 8.10 | 8.13 | 8.09 | 7.97 | 8.04 | 8.06 | 8.05 | 7.76 | 8.42 | 8.39 | 8.40 |
| 160000 | 8.17 | 7.54 | 8.07 | 8.03 | 8.10 | 8.12 | 8.06 | 7.73 | 8.06 | 8.10 | 8.03 | 7.92 | 8.37 | 8.37 | 8.35 |
| 170000 | 8.16 | 8.05 | 8.07 | 8.03 | 8.08 | 8.13 | 8.05 | 7.76 | 8.03 | 8.07 | 8.04 | 7.96 | 8.32 | 8.31 | 8.28 |
| 180000 | 8.14 | 8.04 | 8.05 | 8.03 | 8.06 | 8.11 | 8.00 | 7.84 | 8.02 | 8.06 | 8.03 | 7.90 | 8.42 | 8.29 | 8.30 |
| 190000 | 8.09 | 8.01 | 8.03 | 8.03 | 8.07 | 8.11 | 7.99 | 7.89 | 8.01 | 8.05 | 7.77 | 7.93 | 8.30 | 8.27 | 8.31 |
| 200000 | 8.05 | 8.00 | 8.00 | 8.00 | 8.04 | 8.07 | 7.99 | 7.79 | 8.06 | 8.03 | 7.87 | 7.74 | 8.41 | 8.33 | 8.33 |
| 210000 | 8.01 | 7.98 | 7.99 | 7.99 | 8.07 | 8.06 | 8.00 | 7.71 | 8.07 | 7.97 | 7.90 | 8.00 | 8.47 | 8.32 | 8.34 |
| 220000 | 8.02 | 7.96 | 7.99 | 7.96 | 8.09 | 8.05 | 8.00 | 7.82 | 8.06 | 7.94 | 7.85 | 8.32 | 8.47 | 8.37 | 8.32 |
| 230000 | 8.04 | 7.95 | 7.96 | 7.95 | 8.06 | 8.04 | 7.99 | 8.02 | 8.03 | 7.88 | 7.85 | 8.27 | 8.29 | 8.29 | 8.33 |
| Daily Max | 8.19 | 8.18 | 8.06 | 8.06 | 8.11 | 8.16 | 8.12 | 8.09 | 8.10 | 8.10 | 8.05 | 8.32 | 8.51 | 8.46 | 8.40 |
| Daily Min | 7.77 | 7.52 | 7.97 | 7.95 | 7.93 | 8.04 | 7.99 | 7.71 | 7.90 | 7.85 | 7.65 | 7.69 | 8.15 | 8.20 | 8.22 |
| Average | 8.06 | 7.96 | 8.03 | 8.01 | 8.05 | 8.10 | 8.04 | 7.95 | 8.03 | 8.00 | 7.84 | 7.86 | 8.34 | 8.34 | 8.32 |

# High Falls Tailrace pH Summary - August 2005

| Time HHMMSS | 08/01/05 | 08/02/05 | 08/03/05 | 08/04/05 | 08/05/05 | 08/06/05 | 08/07/05 | 08/08/05 | 08/09/05 | 08/10/05 | 08/11/05 | 08/12/05 | 08/13/05 | 08/14/05 | 08/15/05 | 08/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8.27 | 8.35 | 8.38 | 8.36 | 8.49 | 8.36 | 8.26 | 8.41 | 7.61 | 7.67 | 8.34 | 8.11 | 8.16 | 8.28 | 8.27 | 8.43 |
| 10000 | 8.30 | 8.33 | 8.32 | 8.37 | 8.47 | 8.36 | 8.30 | 8.41 | 7.54 | 7.68 | 8.30 | 8.10 | 8.15 | 8.13 | 8.31 | 8.42 |
| 20000 | 8.37 | 8.39 | 8.35 | 8.38 | 8.44 | 8.41 | 8.32 | 8.31 | 7.79 | 7.60 | 8.30 | 8.10 | 8.13 | 8.17 | 8.32 | 8.43 |
| 30000 | 8.34 | 8.40 | 8.37 | 8.39 | 8.42 | 8.38 | 8.38 | 8.30 | 7.75 | 7.66 | 8.30 | 8.10 | 8.13 | 8.27 | 8.10 | 8.43 |
| 40000 | 8.27 | 8.30 | 8.41 | 8.37 | 8.43 | 8.39 | 8.37 | 8.24 | 7.74 | 8.20 | 8.26 | 8.09 | 8.25 | 8.21 | 8.28 | 8.41 |
| 50000 | 8.42 | 8.32 | 8.36 | 8.38 | 8.45 | 8.37 | 8.36 | 8.19 | 7.75 | 8.21 | 8.30 | 8.11 | 8.26 | 8.16 | 8.19 | 8.41 |
| 60000 | 8.35 | 8.28 | 8.36 | 8.40 | 8.46 | 8.37 | 8.36 | 8.22 | 7.78 | 8.19 | 8.23 | 8.12 | 8.26 | 8.13 | 8.16 | 8.40 |
| 70000 | 8.34 | 8.34 | 8.44 | 8.37 | 8.48 | 8.36 | 8.35 | 8.29 | 7.78 | 8.23 | 8.27 | 8.12 | 8.26 | 8.28 | 8.18 | 8.41 |
| 80000 | 8.39 | 8.33 | 8.43 | 8.36 | 8.48 | 8.38 | 8.39 | 8.32 | 7.66 | 8.24 | 8.26 | 8.11 | 8.28 | 8.26 | 8.14 | 8.44 |
| 90000 | 8.38 | 8.37 | 8.45 | 8.38 | 8.54 | 8.43 | 8.42 | 8.34 | 7.65 | 8.28 | 8.27 | 8.14 | 8.32 | 8.26 | 8.26 | 8.48 |
| 100000 | 8.37 | 8.44 | 8.44 | 8.49 | 8.58 | 8.47 | 8.42 | 8.31 | 7.76 | 8.27 | 8.30 | 8.14 | 8.35 | 8.27 | 8.28 | 8.50 |
| 110000 | 8.47 | 8.41 | 8.45 | 8.55 | 8.58 | 8.47 | 8.42 | 8.05 | 7.67 | 8.29 | 8.28 | 8.15 | 8.36 | 8.26 | 8.15 | 8.52 |
| 120000 | 8.44 | 8.46 | 8.42 | 8.18 | 8.63 | 8.46 | 8.43 | 7.99 | 7.82 | 8.30 | 8.29 | 8.22 | 8.36 | 8.26 | 8.37 | 8.57 |
| 130000 | 8.43 | 8.44 | 8.36 | 8.20 | 8.62 | 8.44 | 8.41 | 7.83 | 7.76 | 8.28 | 8.27 | 8.19 | 8.32 | 8.21 | 8.36 | 8.60 |
| 140000 | 8.34 | 8.44 | 8.27 | 8.24 | 8.47 | 8.43 | 8.40 | 7.96 | 8.11 | 8.34 | 8.25 | 8.18 | 8.39 | 8.18 | 8.49 | 8.59 |
| 150000 | 8.45 | 8.42 | 8.38 | 8.21 | 8.48 | 8.40 | 8.33 | 7.93 | 7.91 | 8.36 | 8.23 | 8.20 | 8.40 | 8.27 | 8.50 | 8.58 |
| 160000 | 8.37 | 8.38 | 8.36 | 8.13 | 8.39 | 8.36 | 8.36 | 7.87 | 7.87 | 8.39 | 8.22 | 8.23 | 8.42 | 8.25 | 8.53 | 8.58 |
| 170000 | 8.44 | 8.33 | 8.34 | 8.16 | 8.49 | 8.36 | 8.35 | 7.90 | 7.84 | 8.38 | 8.19 | 8.20 | 8.39 | 8.26 | 8.51 | 8.57 |
| 180000 | 8.43 | 8.38 | 8.34 | 8.17 | 8.26 | 8.36 | 8.31 | 7.87 | 7.87 | 8.40 | 8.23 | 8.22 | 8.37 | 8.11 | 8.50 | 8.60 |
| 190000 | 8.44 | 8.33 | 8.33 | 8.06 | 8.38 | 8.30 | 8.28 | 7.68 | 7.87 | 8.38 | 8.24 | 8.16 | 8.36 | 8.34 | 8.48 | 8.54 |
| 200000 | 8.43 | 8.31 | 8.33 | 7.94 | 8.39 | 8.30 | 8.25 | 7.73 | 7.87 | 8.34 | 8.22 | 8.15 | 8.32 | 8.32 | 8.47 | 8.50 |
| 210000 | 8.39 | 8.37 | 8.34 | 8.53 | 8.37 | 8.30 | 8.23 | 7.68 | 7.78 | 8.38 | 8.18 | 8.06 | 8.28 | 8.28 | 8.45 | 8.37 |
| 220000 | 8.32 | 8.35 | 8.34 | 8.51 | 8.30 | 8.32 | 8.37 | 7.61 | 7.81 | 8.34 | 8.10 | 8.06 | 8.28 | 8.26 | 8.45 | 8.45 |
| 230000 | 8.34 | 8.33 | 8.37 | 8.51 | 8.32 | 8.32 | 8.37 | 7.66 | 7.78 | 8.37 | 8.10 | 8.14 | 8.20 | 8.26 | 8.44 | 8.46 |
| Daily Max | 8.47 | 8.46 | 8.45 | 8.55 | 8.63 | 8.47 | 8.43 | 8.41 | 8.11 | 8.40 | 8.34 | 8.23 | 8.42 | 8.34 | 8.53 | 8.60 |
| Daily Min | 8.27 | 8.28 | 8.27 | 7.94 | 8.26 | 8.30 | 8.23 | 7.61 | 7.54 | 7.60 | 8.10 | 8.06 | 8.13 | 8.11 | 8.10 | 8.37 |
| Average | 8.38 | 8.37 | 8.37 | 8.32 | 8.46 | 8.38 | 8.35 | 8.05 | 7.78 | 8.20 | 8.25 | 8.14 | 8.29 | 8.24 | 8.34 | 8.49 |

License Minimum Dissolved Oxygen: 5.0 mg/l

# High Falls Tailrace pH Summary - August 2005

| Time HHMMSS | 08/17/05 | 08/18/05 | 08/19/05 | 08/20/05 | 08/21/05 | 08/22/05 | 08/23/05 | 08/24/05 | 08/25/05 | 08/26/05 | 08/27/05 | 08/28/05 | 08/29/05 | 08/30/05 | 08/31/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8.47 | 8.52 | 8.53 | 8.20 | 8.42 | 8.42 | 8.41 | 8.37 | 8.33 | 8.21 | 8.24 | 8.21 | 8.25 | 8.32 | 8.36 |
| 10000 | 8.48 | 8.51 | 8.51 | 8.26 | 8.39 | 8.42 | 8.41 | 8.38 | 8.35 | 8.21 | 8.23 | 8.19 | 8.23 | 8.31 | 8.32 |
| 20000 | 8.47 | 8.53 | 8.51 | 8.16 | 8.38 | 8.38 | 8.38 | 8.38 | 8.31 | 8.20 | 8.22 | 8.21 | 8.26 | 8.28 | 8.33 |
| 30000 | 8.47 | 8.53 | 8.53 | 8.06 | 8.36 | 8.39 | 8.40 | 8.35 | 8.31 | 8.21 | 8.22 | 8.20 | 8.24 | 8.27 | 8.31 |
| 40000 | 8.48 | 8.53 | 8.45 | 8.37 | 8.25 | 8.42 | 8.36 | 8.37 | 8.33 | 8.20 | 8.22 | 8.21 | 8.18 | 8.30 | 8.33 |
| 50000 | 8.43 | 8.54 | 8.48 | 8.35 | 8.29 | 8.42 | 8.36 | 8.32 | 8.36 | 8.20 | 8.22 | 8.20 | 8.16 | 8.25 | 8.29 |
| 60000 | 8.49 | 8.56 | 8.43 | 8.36 | 8.25 | 8.38 | 8.38 | 8.37 | 8.29 | 8.22 | 8.23 | 8.21 | 8.16 | 8.30 | 8.30 |
| 70000 | 8.50 | 8.59 | 8.48 | 8.37 | 8.14 | 8.41 | 8.38 | 8.32 | 8.32 | 8.22 | 8.23 | 8.23 | 8.18 | 8.29 | 8.29 |
| 80000 | 8.58 | 8.64 | 8.48 | 8.37 | 8.10 | 8.42 | 8.38 | 8.33 | 8.40 | 8.25 | 8.25 | 8.24 | 8.17 | 8.27 | 8.31 |
| 90000 | 8.60 | 8.64 | 8.51 | 8.39 | 8.24 | 8.42 | 8.42 | 8.40 | 8.41 | 8.30 | 8.29 | 8.22 | 8.17 | 8.35 | 8.33 |
| 100000 | 8.63 | 8.64 | 8.47 | 8.41 | 8.28 | 8.44 | 8.44 | 8.39 | 8.45 | 8.33 | 8.27 | 8.28 | 8.24 | 8.36 | 8.33 |
| 110000 | 8.14 | 8.66 | 8.53 | 8.44 | 8.32 | 8.46 | 8.45 | 8.38 | 8.47 | 8.33 | 8.34 | 8.30 | 8.19 | 8.37 | 8.39 |
| 120000 | 8.11 | 8.66 | 8.54 | 8.41 | 8.34 | 8.48 | 8.46 | 8.42 | 8.49 | 8.35 | 8.30 | 8.29 | 8.31 | 8.40 | 8.40 |
| 130000 | 8.14 | 8.62 | 8.51 | 8.49 | 8.32 | 8.48 | 8.45 | 8.42 | 8.44 | 8.36 | 8.36 | 8.33 | 8.33 | 8.44 | 8.41 |
| 140000 | 8.21 | 8.59 | 8.43 | 8.53 | 8.40 | 8.47 | 8.47 | 8.44 | 8.43 | 8.35 | 8.35 | 8.39 | 8.29 | 8.43 | 8.36 |
| 150000 | 8.20 | 8.60 | 8.42 | 8.55 | 8.36 | 8.49 | 8.45 | 8.42 | 8.46 | 8.34 | 8.35 | 8.37 | 8.26 | 8.41 | 8.37 |
| 160000 | 8.14 | 8.57 | 8.46 | 8.58 | 8.44 | 8.48 | 8.46 | 8.44 | 8.28 | 8.33 | 8.34 | 8.37 | 8.29 | 8.43 | 8.39 |
| 170000 | 8.13 | 8.54 | 8.44 | 8.56 | 8.42 | 8.46 | 8.43 | 8.43 | 8.26 | 8.30 | 8.33 | 8.39 | 8.32 | 8.42 | 8.37 |
| 180000 | 8.03 | 8.56 | 8.37 | 8.54 | 8.42 | 8.44 | 8.43 | 8.39 | 8.26 | 8.29 | 8.32 | 8.35 | 8.33 | 8.43 | 8.33 |
| 190000 | 7.92 | 8.58 | 8.36 | 8.52 | 8.43 | 8.45 | 8.41 | 8.36 | 8.22 | 8.27 | 8.26 | 8.33 | 8.29 | 8.42 | 8.31 |
| 200000 | 8.43 | 8.56 | 8.33 | 8.48 | 8.44 | 8.41 | 8.41 | 8.33 | 8.24 | 8.25 | 8.26 | 8.31 | 8.20 | 8.37 | 8.33 |
| 210000 | 8.49 | 8.58 | 8.25 | 8.43 | 8.47 | 8.39 | 8.40 | 8.35 | 8.23 | 8.24 | 8.22 | 8.29 | 8.32 | 8.39 | 8.29 |
| 220000 | 8.49 | 8.54 | 8.26 | 8.40 | 8.38 | 8.39 | 8.37 | 8.33 | 8.22 | 8.23 | 8.24 | 8.27 | 8.30 | 8.39 | 8.29 |
| 230000 | 8.50 | 8.52 | 8.23 | 8.44 | 8.40 | 8.38 | 8.38 | 8.37 | 8.21 | 8.24 | 8.21 | 8.26 | 8.33 | 8.38 | 8.28 |
| Daily Max | 8.63 | 8.66 | 8.54 | 8.58 | 8.47 | 8.49 | 8.47 | 8.44 | 8.49 | 8.36 | 8.36 | 8.39 | 8.33 | 8.44 | 8.41 |
| Daily Min | 7.92 | 8.51 | 8.23 | 8.06 | 8.10 | 8.38 | 8.36 | 8.32 | 8.21 | 8.20 | 8.21 | 8.19 | 8.16 | 8.25 | 8.28 |
| Average | 8.36 | 8.57 | 8.44 | 8.40 | 8.34 | 8.43 | 8.41 | 8.38 | 8.34 | 8.27 | 8.27 | 8.28 | 8.25 | 8.36 | 8.33 |

# High Falls Tailrace pH Summary - September 2005

| Time HHMMSS | 09/01/05 | 09/02/05 | 09/03/05 | 09/04/05 | 09/05/05 | 09/06/05 | 09/07/05 | 09/08/05 | 09/09/05 | 09/10/05 | 09/11/05 | 09/12/05 | 09/13/05 | 09/14/05 | 09/15/05 | 09/16/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8.27 | 8.16 | 8.22 | 8.24 | 7.28 | 8.23 | 7.95 | 8.17 | 8.11 | 8.17 | 7.89 | 7.76 | 7.93 | 7.98 | 8.15 | 8.04 |
| 10000 | 8.24 | 8.22 | 8.21 | 8.25 | 8.20 | 8.23 | 8.16 | 8.25 | 8.12 | 8.16 | 7.87 | 7.87 | 7.97 | 7.97 | 8.12 | 7.99 |
| 20000 | 8.21 | 8.22 | 8.22 | 8.24 | 8.19 | 8.21 | 8.08 | 8.13 | 8.17 | 8.13 | 7.91 | 7.84 | 7.96 | 8.06 | 8.11 | 8.01 |
| 30000 | 8.21 | 8.18 | 8.22 | 8.24 | 8.19 | 8.22 | 8.05 | 8.09 | 8.16 | 8.07 | 7.88 | 7.82 | 7.97 | 7.99 | 8.09 | 7.95 |
| 40000 | 8.26 | 8.24 | 8.20 | 8.24 | 8.18 | 8.22 | 7.84 | 8.06 | 8.21 | 8.05 | 7.91 | 7.96 | 8.01 | 8.00 | 8.16 | 7.90 |
| 50000 | 8.24 | 8.24 | 8.19 | 8.24 | 8.16 | 8.21 | 8.08 | 8.13 | 8.23 | 8.09 | 7.94 | 7.93 | 8.00 | 7.99 | 8.06 | 7.91 |
| 60000 | 8.22 | 8.24 | 8.20 | 8.24 | 8.16 | 8.21 | 8.16 | 8.13 | 8.26 | 8.10 | 7.74 | 7.99 | 7.97 | 7.96 | 8.03 | 7.85 |
| 70000 | 8.25 | 8.23 | 8.24 | 8.22 | 8.18 | 8.06 | 8.19 | 8.11 | 8.24 | 8.11 | 7.90 | 7.96 | 7.97 | 7.93 | 8.10 | 7.86 |
| 80000 | 8.26 | 8.23 | 8.23 | 8.25 | 8.21 | 8.11 | 8.19 | 8.15 | 8.24 | 8.17 | 7.94 | 7.92 | 8.03 | 8.02 | 8.03 | 7.87 |
| 90000 | 8.17 | 8.27 | 8.26 | 8.26 | 8.27 | 8.14 | 7.22 | 8.32 | 8.29 | 8.18 | 7.95 | 7.89 | 7.97 | 8.04 | 7.99 | 7.96 |
| 100000 | 8.27 | 8.30 | 8.31 | 8.31 | 7.48 | 8.14 | 8.23 | 8.24 | 8.26 | 8.14 | 7.94 | 8.04 | 7.96 | 8.01 | 8.02 | 7.88 |
| 110000 | 8.28 | 8.32 | 8.32 | 8.32 | 8.32 | 8.08 | 8.26 | 8.36 | 8.34 | 8.36 | 7.88 | 8.06 | 8.03 | 8.06 | 8.04 | 7.88 |
| 120000 | 8.25 | | 8.31 | 8.35 | 8.32 | 8.02 | 7.92 | 8.31 | 8.32 | 8.29 | 7.97 | 8.05 | 8.03 | 8.11 | 8.10 | 7.88 |
| 130000 | 8.27 | 8.33 | 8.33 | 8.36 | 8.32 | 8.04 | 8.06 | 8.27 | 8.31 | 8.16 | 7.82 | 8.03 | 8.01 | 8.13 | 8.07 | 7.90 |
| 140000 | 8.23 | 8.32 | 8.33 | 8.36 | 8.33 | 8.05 | 8.24 | 8.35 | 8.23 | 8.15 | 7.84 | 8.13 | 8.03 | 8.13 | 8.14 | 7.90 |
| 150000 | 8.24 | 8.34 | 8.35 | 8.35 | 8.32 | 8.01 | 8.26 | 8.21 | 8.21 | 8.14 | 7.76 | 7.86 | 8.01 | 8.15 | 8.14 | 7.11 |
| 160000 | 8.22 | 8.36 | 8.34 | 8.33 | 8.34 | 8.00 | 8.29 | 8.14 | 8.09 | 7.99 | 7.80 | 7.72 | 8.03 | 8.26 | 8.20 | 7.17 |
| 170000 | 8.22 | 8.34 | 8.34 | 8.30 | 8.32 | 7.94 | 8.26 | 8.15 | 8.11 | 7.91 | 7.75 | 7.73 | 7.96 | 8.19 | 8.14 | 7.50 |
| 180000 | 8.23 | 8.30 | 8.33 | 8.28 | 8.28 | 7.89 | 8.25 | 8.17 | 8.10 | 7.90 | 7.72 | 7.69 | 8.01 | 8.21 | 8.12 | 7.96 |
| 190000 | 8.19 | 8.30 | 8.29 | 8.24 | 8.27 | 6.71 | 7.87 | 8.18 | 8.21 | 7.93 | 7.79 | 7.86 | 7.95 | 8.18 | 7.99 | 7.96 |
| 200000 | 8.21 | 8.28 | 8.27 | 8.24 | 8.25 | 6.60 | 7.61 | 8.12 | 8.16 | 7.88 | 7.73 | 7.65 | 7.89 | 8.16 | 8.04 | 7.94 |
| 210000 | 8.25 | 8.27 | 8.26 | 8.21 | 8.25 | 7.84 | 8.04 | 8.11 | 8.14 | 7.89 | 7.74 | 7.79 | 7.97 | 8.16 | 8.05 | 7.39 |
| 220000 | 8.22 | 8.25 | 8.24 | 8.20 | 8.23 | 7.85 | 8.17 | 8.13 | 8.19 | 7.89 | 7.75 | 7.83 | 7.96 | 8.19 | 8.02 | 7.22 |
| 230000 | 8.21 | 8.24 | 8.25 | 8.22 | 8.23 | 7.89 | 8.12 | 8.13 | 8.17 | 7.86 | 7.80 | 7.92 | 7.96 | 8.18 | 8.01 | 7.12 |
| Daily Max | 8.28 | 8.36 | 8.35 | 8.36 | 8.34 | 8.23 | 8.29 | 8.36 | 8.34 | 8.36 | 7.97 | 8.13 | 8.03 | 8.26 | 8.20 | 8.04 |
| Daily Min | 8.17 | 8.16 | 8.19 | 8.20 | 7.28 | 6.60 | 7.22 | 8.06 | 8.09 | 7.86 | 7.72 | 7.65 | 7.89 | 7.93 | 7.99 | 7.11 |
| Average | 8.23 | 8.27 | 8.27 | 8.27 | 8.18 | 7.95 | 8.06 | 8.18 | 8.20 | 8.07 | 7.84 | 7.88 | 7.96 | 8.09 | 8.08 | 7.76 |

License Minimum Dissolved Oxygen: 5.0 mg/l

Hourly reading missed on 9/02/05 while calibrating equipment.
** A drawdown of the High Falls Reservoir was initiated on September 6th.

# High Falls Tailrace pH Summary - September 2005

| Time HHMMSS | 09/17/05 | 09/18/05 | 09/19/05 | 09/20/05 | 09/21/05 | 09/22/05 | 09/23/05 | 09/24/05 | 09/25/05 | 09/26/05 | 09/27/05 | 09/28/05 | 09/29/05 | 09/30/05 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7.53 | 7.83 | 7.17 | 8.05 | 7.10 | 7.73 | 7.74 | 7.88 | 7.33 | 7.70 | 7.99 | 7.81 | 7.82 | 7.83 |
| 10000 | 7.48 | 7.79 | 7.36 | 7.97 | 7.79 | 7.69 | 7.76 | 7.73 | 7.59 | 7.74 | 7.89 | 7.81 | 7.89 | 7.86 |
| 20000 | 7.77 | 7.73 | 7.29 | 7.76 | 7.79 | 7.69 | 7.76 | 7.82 | 7.10 | 7.64 | 7.82 | 7.75 | 7.86 | 7.87 |
| 30000 | 7.77 | 7.16 | 7.90 | 7.84 | 7.09 | 7.63 | 7.70 | 7.81 | 7.74 | 7.74 | 7.84 | 7.76 | 7.89 | |
| 40000 | 7.77 | 6.87 | 7.72 | 7.33 | 7.78 | 7.59 | 7.09 | 7.82 | 7.42 | 7.73 | 7.76 | 7.78 | | |
| 50000 | 7.75 | 7.82 | 7.92 | 6.99 | 6.96 | 7.60 | 7.73 | 7.86 | 7.02 | 7.01 | 7.84 | 7.73 | | |
| 60000 | 7.05 | 7.80 | 7.13 | 7.85 | 7.68 | 7.64 | 7.03 | 7.00 | 7.00 | 7.68 | 7.83 | 7.74 | | |
| 70000 | 7.74 | 7.87 | 7.17 | 7.72 | 7.71 | 6.97 | 7.04 | 7.56 | 7.27 | 7.75 | 7.94 | 7.79 | | |
| 80000 | 7.18 | 7.78 | 7.79 | 7.87 | 7.12 | 6.77 | 7.24 | 7.13 | 7.00 | 7.74 | 7.81 | 7.56 | | |
| 90000 | 7.41 | 7.68 | 7.90 | 7.16 | 7.81 | 7.20 | 7.03 | 7.61 | 7.74 | 7.75 | 7.84 | 7.71 | | |
| 100000 | 7.09 | 7.69 | 7.83 | 7.90 | 7.84 | 7.74 | 7.76 | 7.93 | 7.75 | 7.79 | 7.80 | 7.73 | | |
| 110000 | 7.30 | 7.32 | 7.04 | 7.96 | 7.85 | 7.06 | 7.48 | 7.71 | 7.65 | 7.79 | 7.84 | 7.72 | | 7.88 |
| 120000 | 7.94 | 7.82 | 7.94 | 7.97 | 7.83 | 7.72 | 7.83 | 7.63 | 7.75 | 7.72 | 7.87 | 7.75 | | 7.86 |
| 130000 | 7.89 | 7.08 | 7.16 | 7.18 | 7.88 | 7.76 | 7.20 | 7.49 | 7.70 | 7.13 | 7.80 | 7.80 | | 7.81 |
| 140000 | 7.27 | 7.90 | 7.91 | 7.33 | 7.82 | 7.10 | 7.62 | 7.53 | 7.79 | 7.89 | 7.77 | 7.68 | | 7.87 |
| 150000 | 8.02 | 7.85 | 7.86 | 7.88 | 7.90 | 7.69 | 7.89 | 7.19 | 7.81 | 7.87 | 7.85 | 7.90 | | 7.80 |
| 160000 | 7.79 | 7.11 | 7.75 | 7.85 | 7.76 | 7.29 | 7.50 | 7.84 | 7.80 | 7.91 | 7.79 | 7.88 | | 7.93 |
| 170000 | 7.86 | 7.82 | 7.22 | 7.12 | 7.70 | 7.83 | 7.82 | 7.83 | 7.70 | 7.90 | 7.75 | 7.90 | | 7.75 |
| 180000 | 7.46 | 7.73 | 7.86 | 7.86 | 7.84 | 7.81 | 7.42 | 7.01 | 7.78 | 7.86 | 7.81 | 7.96 | | 7.90 |
| 190000 | 7.40 | 7.66 | 7.05 | 7.17 | 7.47 | 7.37 | 7.82 | 6.93 | 7.70 | 7.87 | 7.81 | 7.96 | | 7.85 |
| 200000 | 7.74 | 7.81 | 7.25 | 7.18 | 7.77 | 7.61 | 7.79 | 7.15 | 7.74 | 7.93 | 7.75 | 7.93 | | 7.89 |
| 210000 | 6.95 | 7.53 | 7.24 | 7.04 | 7.68 | 6.99 | 7.06 | 7.27 | 7.70 | 8.01 | 7.76 | 7.80 | | 7.86 |
| 220000 | 7.09 | 7.80 | 7.90 | 7.88 | 6.82 | 7.79 | 7.76 | 7.74 | 7.73 | 7.91 | 7.79 | 7.83 | | |
| 230000 | 7.81 | 7.58 | 7.35 | 7.79 | 6.99 | 7.00 | 7.17 | 7.76 | 6.71 | 7.89 | 7.86 | 7.82 | | 7.74 |
| Daily Max | 8.02 | 7.90 | 7.94 | 8.05 | 7.90 | 7.83 | 7.89 | 7.93 | 7.81 | 8.01 | 7.99 | 7.96 | 7.89 | 7.93 |
| Daily Min | 6.95 | 6.87 | 7.04 | 6.99 | 6.82 | 6.77 | 7.03 | 6.93 | 6.71 | 7.01 | 7.75 | 7.56 | 7.82 | 7.74 |
| Average | 7.54 | 7.61 | 7.53 | 7.61 | 7.58 | 7.47 | 7.51 | 7.55 | 7.52 | 7.75 | 7.83 | 7.80 | 7.87 | 7.85 |

Data Loss on 9/29 and 9/30 due to equipment power failure.

# Appendix B

# Equipment Calibration Data

# Field Notes for Datasonde Deployment

Date/Time: May 27, 2005 12:40 Analyst: HP

Location: High Falls Bridge Datasonde Serial #: 364468

**Calibration Information** Datasonde Battery [volts]: 11.4 V

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.67 | 7.00 |
| 10.00 Std | 10.07 | 10.00 |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.289 | Std | 0.298 | 0.289 | Before 0.000 After 0.000 |

Barometric Pressure (mm Hg) 732 mm Hg

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 97.2% | 100.0% |
| mg/L D.O. | 8.22 mg/L | 8.42 mg/L |
| Temp – °C | 21.98°C | 21.98°C |

YSI calibration (See field notes for YSI Model 95 MEA calibration information)

| | Before Calibration | After Calibration | |
|---|---|---|---|
| % Saturation | 94.3% | 97.9% | Cal. elev. @ 8 |
| mg/L D.O. | 8.43 mg/L | 8.56 mg/L | New cap memb. on 4/22/05 |
| Temp – °C | 20.8°C | 20.8°C | |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 87.9% | 90.8% | |
| mg/L D.O. | 8.46 mg/L | 8.98 mg/L | |
| Temp – °C | 15.43°C | 15.5°C | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | Deploy | | | |
| Temp – °C | | | | |

**YSI Reading at Tube**

| | |
|---|---|
| Time | 13:25 |
| % Saturation | 90.9% |
| mg/L D.O. | 8.99 mg/L |
| Temp – °C | 15.5°C |

***Check Status***

Battery Life @ Start: 66%

Battery Life @ End: 25%

Notes: Party/mostly cloudy, light wind, 60°F
Test TTY mode transfer, works well
Circulator works well.
Test program named HFT0527.txt
setup through 6/6/05 @ 17:00

# Field Notes for Datasonde Deployment

Date/Time: June 3, 2005 12:00 Analyst: HP

Location: High Falls Bridge Datasonde Serial #: 364466

**Calibration Information** Datasonde Battery [volts]: 5.6 V

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 6.93 | 7.00 |
| 10.00 Std | 10.06 | 10.00 |

Conductivity (mS/cm) Before Cal. After Cal. Zero Conductivity Calibration – Air Cal.

0.290 Std 0.288 0.290 Before 0.000 After 0.000

Barometric Pressure (mm Hg) 734 mm Hg

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 101.9% | 100.0% |
| mg/L D.O. | 8.24 mg/L | 8.00 mg/L |
| Temp – °C | 24.77°C | 24.77°C |

> Calibrated in Lab before trip

YSI calibration (See field notes for YSI Model 55 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 75.9% | 97.1% |
| mg/L D.O. | 5.99 mg/L | 7.67 mg/L |
| Temp – °C | 27.5°C | 27.5°C |

New membr. on 6/2/05
Cal. elev. @ 8

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 80.2% | 82.4% | |
| mg/L D.O. | 7.50 mg/L | 7.90 mg/L | > Ran off Fishing Bridge |
| Temp – °C | 16.94 | 17.3°C | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | Deploy | | | |
| Temp – °C | | | | |

**YSI Reading at Tube** – outside tube at datasonde depth

| | |
|---|---|
| Time | 13:00 |
| % Saturation | 80.3% |
| mg/L D.O. | 7.79 mg/L |
| Temp – °C | 16.8°C |

**Check Status** – 6/10/05 @ 17:00
Battery Life @ Start: 81%
Battery Life @ End: 53%

Notes: Clear, light wind, 78°F
Test file named HFT06003.txt
Adjusted datasonde depth outside of tube. Just probes are sticking out.
Circulator works good

# Field Notes for Datasonde Deployment

Date/Time: 6/10/05 10:00 Analyst: MWM

Location: High Falls Datasonde Serial #: 36468

**Calibration Information** Datasonde Battery [volts]: 6.3

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 6.91 | 7.00 @ 24.88°c |
| 10.00 Std | 10.06 | 10.00 @ 25.45°c |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.288 | Std | 0.278 | 0.288 | Before .0000 After .0000 |

Barometric Pressure (mm Hg) 741

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 101.4 | 100.0 |
| mg/L D.O. | 8.21 | 8.19 |
| Temp – °C | 24.12 | 24.09 |

YSI calibration (See field notes for YSI Model 95 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 103.7 | 96.9 |
| mg/L D.O. | 8.18 | 7.63 |
| Temp – °C | 22.60 | 27.7 |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 75.7% | 73.9 | |
| mg/L D.O. | 6.81 | 6.77 | OK-Deploy |
| Temp – °C | 19.25 | 19.6 | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp – °C | | | | |

**YSI Reading at Tube**

| | |
|---|---|
| Time | |
| % Saturation | |
| mg/L D.O. | |
| Temp – °C | |

***Check Status***

Battery Life @ Start: _____

Battery Life @ End: _____

Notes: HF test 0610.TXT - OK

# Field Notes for Datasonde Deployment

Date/Time: 6/20/05 9:50 Analyst: MLM

Location: High Falls - Bridge Datasonde Serial #: 36464

**Calibration Information** Datasonde Battery (volts): 5.3

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.69 | 7.01 |
| 10.00 Std | 10.00 | 10.03 |

at 23° C

| Conductivity (mS/cm) | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|
| 0.290 Std | 0.287 | 0.290 | Before .0000 After .0000 |

Barometric Pressure (mm Hg) 741.3

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 101.3 | 100.0 |
| mg/L D.O. | 8.35 | 8.31 |
| Temp - °C | 23.24 | 23.34 |

YSI calibration (See field notes for YSI Model 95 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 103.5 | 96.9 |
| mg/L D.O. | 8.77 | 8.23 |
| Temp - °C | 23.6 | 23.6 |

10:00
End #'s

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 77.4 | 80.2 | - ok |
| mg/L D.O. | 6.70 | 7.07 | |
| Temp - °C | 21.23 | 21.3 | |

73.2
6.36
20.99

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp - °C | | | | |

**YSI Reading at Tube**

| | |
|---|---|
| Time | 10:15 |
| % Saturation | 77.9 |
| mg/L D.O. | 6.92 |
| Temp - °C | 21.2 |

***Check Status***
Battery Life @ Start: 58 %
Battery Life @ End: 36 %

Notes: NFT620.txt = ok
Circulator - ok
Sunny +80° - South Wind - 10-15 MPH

# Field Notes for Datasonde Deployment

Date/Time: 6/30/05 9:50 am Analyst: MHW

Location: Above Falls Fr. Dam Datasonde Serial #: 3466

**Calibration Information** Datasonde Battery [volts]: 5.6

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.15 | 7.01 |
| 10.00 Std | 10.02 | 10.03 @2:06 |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.481 | Std | 0.248 | 0.247 | Before 0.000 After 0.000 |

Barometric Pressure (mm Hg) 732

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 103.4 | 100.1 |
| mg/L D.O. | 8.49 | 8.15 |
| Temp – °C | 23.61 | 22.73 |

Elevation 314' Pressure = 782 mm Hg

YSI calibration (See field notes for YSI Model 55 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 97.5 | 91.4 |
| mg/L D.O. | 8.26 | 8.28 |
| Temp – °C | 23.6 | 22.6 |

**Test Program Readings** Final #'s

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 91.5 | 92.8 | 86.4 |
| mg/L D.O. | 7.54 | 7.93 | 7.25 |
| Temp – °C | 23.1 | 23.4 | 24.86 |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp – °C | | | | |

**YSI Reading at Tube**

| | |
|---|---|
| Time | 10:25 am |
| % Saturation | 88.8% |
| mg/L D.O. | 7.62 |
| Temp – °C | 23 |

***Check Status***

Battery Life @ Start: 73%

Battery Life @ End: 55%

Notes: End Date - 7/8/05

HFTL[illegible].txt - ok

Calculator - ok

Downloaded

# Field Notes for Datasonde Deployment

Date/Time: July 8th 2005 Analyst: Myeisha Woode

Location: High Falls Hydro Datasonde Serial #: 36468

**Calibration Information** Datasonde Battery [volts]: 5.9

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.12 | 6.99 |
| 10.00 Std | 9.89 | 10.00 |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.287 | Std | 0.309 | 0.289 | Before 0 After 0 |

Barometric Pressure (mm Hg) 739.7

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 114.6 | 100.1 |
| mg/L D.O. | 9.04 | 7.98 |
| Temp - °C | 25.42 | 26.06 |

YSI calibration (See field notes for YSI Model 95 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 69.4 | 98.5 |
| mg/L D.O. | 6.55 | 7.60 |
| Temp - °C | 27.1 | 25.8 |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 92.8 | 92.4 | |
| mg/L D.O. | 7.7 | 7.90 | |
| Temp - °C | 28.28 | 28.6 | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp - °C | | | | |

**YSI Reading at Tube**

| | |
|---|---|
| Time | 12:25 |
| % Saturation | 8.06 |
| mg/L D.O. | 6.92 |
| Temp - °C | 28°C |

***Check Status***

Battery Life @ Start: 5.9

Battery Life @ End:

Notes: YSI reading at dd tube was taken when reading became most stable ... after about 10 mins.

# Field Notes for Datasonde Deployment

Date/Time: 7/18/05 12:00 Analyst: MWH

Location: High Falls Datasonde Serial #: 36464

**Calibration Information** Datasonde Battery (volts): 5.2

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 6.97 | 7.00 @ 24.19° |
| 10.00 Std | 10.06 | 10.01 @ 24.42° |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.284 | Std | 0.285 | 0.284 | Before .0000 After .0000 |

Barometric Pressure (mm Hg) 730

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 114.0 | 100.0 |
| mg/L D.O. | 9.15 | 8.00 |
| Temp - °C | 24.50 | 24.51 |

YSI calibration (See field notes for YSI Model 95 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 98.9 | 96.8 |
| mg/L D.O. | 8.02 | 7.86 |
| Temp - °C | 26.1 | 26.1 |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 93.7 | 92.4 | |
| mg/L D.O. | 7.56 | 7.75 | ok - Depby |
| Temp - °C | 24.09 | 29.2 | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp - °C | | | | |

**YSI Reading at Tube**

Time
% Saturation
mg/L D.O.
Temp - °C

***Check Status***

Battery Life @ Start:
Battery Life @ End:

Notes: HFTest.TXT - OK

# Field Notes for Datasonde Deployment

Date/Time: July 28th 2005 7:00 pm Analyst: Myrtle Wicks

Location: High Falls Hydro Datasonde Serial #: 36466

**Calibration Information** Datasonde Battery (volts): 5.5

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 6.92 | 6.99 |
| 10.00 Std | 4.98 | 9.96 |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.284 | Std | 0.29 | 0.284 | Before 0 After 0 |

Barometric Pressure (mm Hg) 742

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 101.4 | 99.9 |
| mg/L D.O. | 7.67 | 7.58 |
| Temp - °C | 28.54 | 28.36 |

YSI calibration (See field notes for YSI Model 55 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 96.8 | 97.0 |
| mg/L D.O. | 7.20 | 7.27 |
| Temp - °C | 30.5 | 30.5 |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 98.6 | 81.9 | |
| mg/L D.O. | 7.37 | 7.57 | |
| Temp - °C | 23.81 | 25.4 | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp - °C | | | | |

**YSI Reading at Tube**

| | |
|---|---|
| Time | 8:02 |
| % Saturation | 78.5 |
| mg/L D.O. | 23.2 |
| Temp - °C | 6.76 |

***Check Status***

Battery Life @ Start:

Battery Life @ End:

Notes: Taken out of water after deploy to be reconfigured for dry mode

# Field Notes for Datasonde Deployment

Date/Time: August 5th 2005 11:33 am Analyst: Myrtle H Wade

Location: High Falls Hydro Datasonde Serial #: 364558

**Calibration Information** Datasonde Battery (volts): 5.8

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.02 | 7.00 |
| 10.00 Std | 9.89 | 10.00 |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.284 | Std | 0.286 | 0.284 | Before 0 After 0 |

Barometric Pressure (mm Hg) 742.6

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 123.3 | 100.3 |
| mg/L D.O. | 9.71 | 8.09 |
| Temp - °C | 25.49 | 25.11 |

YSI calibration (See field notes for YSI Model 55 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 100.7 | 97.1 |
| mg/L D.O. | 8.37 | 8.09 |
| Temp - °C | 24.6 | 24.6 |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 95.7 | 76.2 | |
| mg/L D.O. | 7.6 | 6.20 | Recalibrated. |
| Temp - °C | 25.81 | 25.7 | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | 92.2 | 101.2 | 98.8 | 90.4 |
| mg/L D.O. | 7.51 | 8.26 | 7.89 | 7.45 |
| Temp - °C | [illegible] 24.28 | 24.43 | 25.62 | 25.8 |

**YSI Reading at Tube**

| | |
|---|---|
| Time | 13:34:00 |
| % Saturation | 92.2 |
| mg/L D.O. | 7.63 |
| Temp - °C | 25.7 |

***Check Status***

Battery Life @ Start:

Battery Life @ End: 5.2

Notes:

# Field Notes for Datasonde Deployment

Date/Time: August 15 2005 Analyst: Alycia Wade

Location: High Falls Hydro Datasonde Serial #: 364466

**Calibration Information** Datasonde Battery [volts]: 6.5

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 1.00 | 7.00 |
| 10.00 Std | 9.98 | 10.00 |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.798 | Std | 0.804 | 0.798 | Before 0.0020 After 0.0000 |

Barometric Pressure (mm Hg) 740.4

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 113.2 | 100.1 |
| mg/L D.O. | 9.07 | 8.00 |
| Temp – °C | 25.84 | 25.85 |

YSI calibration (See field notes for YSI Model 55 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 96.6 | 98.8 |
| mg/L D.O. | 7.81 | 7.98 |
| Temp – °C | 26.2 | 26.2 |

**Test Program Readings**

| | *Datasonde* | YSI Meter | **(Must be within 0.5 mg/L D.O.)** |
|---|---|---|---|
| % Saturation | 85.5 | 92.4 | |
| mg/L D.O. | 6.97 | 7.71 | Recalibrated |
| Temp – °C | 24.29 | 24.4 | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | 102.7 | 95.9 | 91.2 |
| mg/L D.O. | | 8.37 | 7.82 | 7.66 |
| Temp – °C | | 24.26 | 24.29 | 24.4 |

**YSI Reading at Tube**

| | |
|---|---|
| Time | 14:00 |
| % Saturation | 98.4 |
| mg/L D.O. | 8.27 |
| Temp – °C | 24.3 |

***Check Status***

Battery Life @ Start:

Battery Life @ End: 5.7

Notes:

# Field Notes for Datasonde Deployment

Date/Time: 8/25/05 2:30 pm Analyst: MWM

Location: High Falls Datasonde Serial #: 36464

**Calibration Information** Datasonde Battery [volts]: 5.7

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.01 | 7.02 @ 24.04° |
| 10.00 Std | 10.04 | 10.02 @ 23.80° |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.292 | Std | 0.285 | 0.292 | Before .0000 After .0000 |

Barometric Pressure (mm Hg) 743

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 123.2 | 100.0 |
| mg/L D.O. | 10.17 | 8.27 |
| Temp - °C | 23.70 | 23.71 |

YSI calibration (See field notes for YSI Model 55 calibration 800' information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 86.4 | 97.2 |
| mg/L D.O. | 7.16 | 8.04 |
| Temp - °C | 24.8 | 24.8 |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 89.5 | 91.5 | |
| mg/L D.O. | 7.64 | 7.99 | OK - Deploy |
| Temp - °C | 21.38 | 22.0 | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp - °C | | | | |

**YSI Reading at Tube**

Time
% Saturation
mg/L D.O.
Temp - °C

***Check Status***

Battery Life @ Start:
Battery Life @ End:

Notes: Uf to t. T,T - OK

# Field Notes for Datasonde Deployment

Date/Time: September 2, 2005 11:30 Analyst: HP

Location: High Falls Tailrace Datasonde Serial #: 364468

**Calibration Information** Datasonde Battery (volts): 5.7v

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.01 | 7.00 |
| 10.00 Std | 10.04 | 10.00 |

Conductivity (mS/cm) Before Cal. After Cal. Zero Conductivity Calibration - In Air

0.292 Std 0.303 0.292 Before 0.000 After 0.000

Barometric Pressure (mm Hg) 737.6 mm Hg

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 99.3% | 100.0% |
| mg/L D.O. | 8.35 mg/L | 8.35 mg/L |
| Temp - °C | 22.8°C | 22.8°C |

YSI calibration (See field notes for YSI Model 95 MEA calibration information) Cal. elev. @ 800

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 95.4% | 97.0% |
| mg/L D.O. | 7.87 mg/L | 8.02 mg/L |
| Temp - °C | 25.0°C | 25.0°C |

New cap memb. on 8/19/05

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 95.3% | 100.6% | Test ran at High Falls |
| mg/L D.O. | 8.17 mg/L | 8.81 mg/L | Tailrace Fishing bridge |
| Temp - °C | 21.4°C | 21.5°C | |

Re-cal. 5: 11:45 E: 12:00

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | 93.9% | 100.0 | 96.9% | 100.5% |
| mg/L D.O. | 7.76 mg/L | 8.28 | 8.30 mg/L | 8.80 mg/L |
| Temp - °C | 23.08 | 23.08 | 21.5% | 21.5 |

**YSI Reading at Tube** - outside Tube 2nd Test 5:12:10 E: 12:24 Setup through 9/12/05 17:00

Time 12:45

% Saturation 101.1%

mg/L D.O. 8.88 mg/L

Temp - °C 21.7°C

***Check Status***

Battery Life @ Start: 77%

Battery Life @ End: 37%

Notes: Mostly Sunny, Moderate Winds, 72°F

HFT0902.txt

# Field Notes for Datasonde Deployment

Date/Time: 9/12/05 Analyst: AWM

Location: High Falls Datasonde Serial #: 36466

**Calibration Information** Datasonde Battery (volts): 5.3

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.02 | 7.00 @ 24.26 |
| 10.00 Std | 10.04 | 10.01 @ 24.68° |

| Conductivity (mS/cm) | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|
| 0.289 Std | 0.255 | | Before .0000 After .0000 |

Barometric Pressure (mm Hg) 736

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 120.8 | 100.1 |
| mg/L D.O. | 9.86 | 8.10 |
| Temp - °C | 24.25 | 24.32 |

YSI calibration (See field notes for YSI Model 95 calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 97.1 | 97.0 |
| mg/L D.O. | ~~24.~~ 8.02 | 8.02 |
| Temp - °C | 24.9 | 25.0 |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 77.0 | 77.2 | |
| mg/L D.O. | 6.45 | 6.70 | OK - Deploy |
| Temp - °C | 22.45 | | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp - °C | | | | |

**YSI Reading at Tube**

Time
% Saturation
mg/L D.O.
Temp - °C

***Check Status***

Battery Life @ Start:
Battery Life @ End:

Notes: High test. Txt - OK

# Field Notes for Datasonde Deployment

Date/Time: September 16, 2005 13:15 Analyst: HR

Location: High Falls Bridge Datasonde Serial #: 364468

**Calibration Information** Datasonde Battery (volts): 5.7V

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.06 | 7.00 |
| 10.00 Std | 10.06 | 10.00 |

Conductivity (mS/cm) Before Cal. After Cal. Zero Conductivity Calibration - In Air

0.298 Std 0.299 0.298 Before 0.000 After 0.000

Barometric Pressure (mm Hg) 738.7 mm Hg

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 97.3% | 100.0% |
| mg/L D.O. | 8.17 mg/L | 8.42 mg/L |
| Temp - °C | 22.40°C | 22.40°C |

YSI calibration (See field notes for YSI Model 95 MEA calibration information)

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 93.5% | 97.1% |
| mg/L D.O. | 7.97 mg/L | 8.27 mg/L |
| Temp - °C | 23.3°C | 23.3°C |

New Cap. membs. on 9/6/05
Cal. elev. @ 800

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 80.4% | 77.7% | Test ran off fishing |
| mg/L D.O. | 6.83 mg/L | 6.77 mg/L | Bridge in High Falls |
| Temp - °C | 22.04°C | 22.0°C | tailrace |

S: 13:36
E: 13:51

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI |
|---|---|---|---|---|
| % Saturation | | | | |
| mg/L D.O. | | | | |
| Temp - °C | | | | |

Deploy

Not Deployed in TTY Mode

**YSI Reading at Tube**

| | |
|---|---|
| Time | 14:00 |
| % Saturation | 75.8% |
| mg/L D.O. | 6.65 mg/L |
| Temp - °C | 21.8°C |

***Check Status***

Battery Life @ Start: 77%
Battery Life @ End: 37%

Setup through 17:00 on 9/20/05

Notes: Clear, light winds, 70°F
Unscheduled trip because Datasonde failure alarm in DeMaxx. Investigate and deploy different datasonde
DeMaxx was disabled because of draw down

# Field Notes for Datasonde Deployment

Date/Time: 9/26/05 10:35 Analyst: MWH

Location: High Falls Datasonde Serial #: 36466

**Calibration Information** Datasonde Battery [volts]: 5.1

| pH (s.u.) | Before Cal. | After Cal. |
|---|---|---|
| 7.00 Std | 7.07 | 7.00 @ 20.26° |
| 10.00 Std | 9.99 | 10.04 @ 20.90° |

| Conductivity (mS/cm) | | Before Cal. | After Cal. | Zero Conductivity Calibration |
|---|---|---|---|---|
| 0.303 | Std | 0.294 | 0.303 | Before .0000 After .0000 |

Barometric Pressure (mm Hg) 739.5

| Dissolved Oxygen | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 109.0 | 99.9 |
| mg/L D.O. | 9.71 | 8.92 |
| Temp - °C | 19.54 | 19.46 |

YSI calibration information) (See field notes for YSI Model 95 calibration

| | Before Calibration | After Calibration |
|---|---|---|
| % Saturation | 95.9 | 97.4 |
| mg/L D.O. | 8.45 | 8.60 |
| Temp - °C | 21.6 | 21.5 |

**Test Program Readings**

| | Datasonde | YSI Meter | (Must be within 0.5 mg/L D.O.) |
|---|---|---|---|
| % Saturation | 75.1 | 82.8 | |
| mg/L D.O. | 6.94 | 7.86 | - Recalibrate. |
| Temp - °C | 17.82 | 18.0 | |

**Re-calibration required if outside 0.5 mg/l limit**

| | Before Cal. | After Cal. | Datasonde | YSI | |
|---|---|---|---|---|---|
| % Saturation | 89.3 | 100.0 | 83.7 | 82.4 | |
| mg/L D.O. | 8.16 | 9.14 | 7.72 | 7.80 | OK - Deploy |
| Temp - °C | 18.41 | 18.34 | 17.89 | 18.0 | |

**YSI Reading at Tube**

Time _____
% Saturation _____
mg/L D.O. _____
Temp - °C _____

***Check Status***

Battery Life @ Start: _____
Battery Life @ End: _____

Notes: Calibrated @ Grand Rapids Hftest.TXT - OK

AFTest2.TXT - OK

# Field Notes for Datasonde Post Calibration

Date/Time: June 3, 2005 Analyst: HR

Location: High Falls Bridge Datasonde Serial #: 364468

Ending Datasonde Battery [volts]: 5.3V

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 6.96 |
| 10.00 Std | 10.05 |

Conductivity (mS/cm) 0.290 Std 0.281 Reads 0.000 Zero Reads – In Air

Barometric Pressure (mm Hg) 734 mm Hg

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 94.6% | 99.7% |
| mg/L D.O. | 7.86 mg/L | 8.33 mg/L |
| Temp – °C | 22.63 °C | 22.63 °C |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | |
| mg/L D.O. | |
| Temp – °C | |

Notes:

Setup for D.O. calibration w/ tap water; Download file named HF060305.txt and then calibrate D.O. and read other parameters.

Circulator works ⇒ is good

Low D.O value ⇒ 6.71 mg/L, 69.7% @ 15.46 °C on 6/2/05 @ 20:00

pH range ⇒ 7.45 to 7.66

# Field Notes for Datasonde Post Calibration

Date/Time: 6/10/05 12:45 Analyst: MWH

Location: High Falls Datasonde Serial #: 36466

Ending Datasonde Battery [volts]: 5.7

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.17 @ 27.92° |
| 10.00 Std | 10.11 @ 28.25° |

Conductivity (mS/cm) 0.288 Std 0.287 Reads

Barometric Pressure (mm Hg) 733

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 99.8 | 100.2 |
| mg/L D.O. | 7.76 | 7.77 |
| Temp – °C | 26.42 | 26.5 |

- No Cal. Adjustment

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | |
| mg/L D.O. | |
| Temp – °C | |

Notes:

HF061005.TXT - OK

End #'s 71.3%

6.33 mg/L

19.45°C

# Field Notes for Datasonde Post Calibration

Date/Time: 6/20/05 10:40 Analyst: MLM

Location: High Falls Bridge Datasonde Serial #: 36468

Ending Datasonde Battery [volts]: 6.2

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 6.99 |
| 10.00 Std | 9.96 |

Conductivity (mS/cm) 0.290 Std 0.353 Reads .0000 Zero Reads

Barometric Pressure (mm Hg) 739.4

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 99.1 | 100.0 |
| mg/L D.O. | 8.17 | 8.20 |
| Temp – °C | 23.73 | 23.80 |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | |
| mg/L D.O. | |
| Temp – °C | |

Notes:

circulator - ok

NFB620.txt

Sunny +80° · South Wind 10-15 MPH

DO - <5 = ok

PH - <6 or >9 : ok

# Field Notes for Datasonde Post Calibration

Date/Time: 6/30/05 Analyst: MLM

Location: High Falls Bridge Datasonde Serial #: 36464

Ending Datasonde Battery [volts]: _____

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 6.91 |
| 10.00 Std | 9.93 |

Conductivity (mS/cm) 0.287 Std 0.454 Reads 0.000 Zero Reads

Barometric Pressure (mm Hg) 732

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 90.1 | 100.1 |
| mg/L D.O. | 1.36 | 8.06 |
| Temp – °C | 24.23 | 24.32 |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | _____ |
| mg/L D.O. | _____ |
| Temp – °C | _____ |

Notes:

Circulator = okay

HFB6~~28~~30.txt = okay

Weather: Slightly cloudy - mostly sunny 80°F and windy

DO - (<5) = 6/26/2005 20:00 4.92
6/29/2005 23:00 4.96
6/30/2005 05:00 4.97

pH - (<6 or >9) = okay

# Field Notes for Datasonde Post Calibration

Date/Time: July 08 2005 Analyst: Myella Wade

Location: High Falls Hydro Datasonde Serial #: 36466

Ending Datasonde Battery [volts]: 5.4

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.07 |
| 10.00 Std | 9.96 |

Conductivity (mS/cm) 0.281 Std 0.307 Reads 0.0019 Zero Reads

Barometric Pressure (mm Hg) 739.4

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 91.9 | 99.2 |
| mg/L D.O. | 6.99 | 7.62 |
| Temp - °C | 27.42 | 27.50 |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | 97.4 |
| mg/L D.O. | 7.51 |
| Temp - °C | 28.7 |

Notes:

# Field Notes for Datasonde Post Calibration

Date/Time: 7/18/05 12:47 Analyst: MWM

Location: High Falls Datasonde Serial #: 36468

Ending Datasonde Battery [volts]: 5.8

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.09 @ 25.42° |
| 10.00 Std | 10.11 @ 25.30° |

Conductivity (mS/cm) 0.284 Std 0.279 Reads _____ Zero Reads

Barometric Pressure (mm Hg) 730

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 79.9 | 99.9 |
| mg/L D.O. | 6.32 | 7.86 |
| Temp - °C | 25.42 | 25.45 |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | _____ |
| mg/L D.O. | _____ |
| Temp - °C | _____ |

Notes:

Insect larvae present on D.O. membrane

AF 071805 · T+T - OK End #'s 6.45 mg/L

78.9%

24.09°C

# Field Notes for Datasonde Post Calibration

Date/Time: July 28th 2005 Analyst: Mellie Wade

Location: High Falls Hydro Datasonde Serial #: 36464

Ending Datasonde Battery [volts]: _____

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.07 |
| 10.00 Std | 9.94 |

Conductivity (mS/cm) 0.284 Std [illegible] Reads 0.000 Zero Reads

Barometric Pressure (mm Hg) 742

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 86.4 | 44.8 |
| mg/L D.O. | 7.20 | 8.40 |
| Temp - °C | 22.60 | 22.53 |

YSI calibration (See field notes for 55 for calibration info.)

| | |
|---|---|
| % Saturation | 78.5 |
| mg/L D.O. | 6.76 |
| Temp - °C | 23.2 |

Notes:

# Field Notes for Datasonde Post Calibration

Date/Time: August 05 2005 12:34 pm Analyst: Myella Waite

Location: High Falls Hydro Datasonde Serial #: 36466

Ending Datasonde Battery [volts]: 5.3

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.07 |
| 10.00 Std | 10.03 |

Conductivity (mS/cm) 0.484 Std 0.247 Reads _____ Zero Reads

Barometric Pressure (mm Hg) 742.6

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 90.0 | 99.6 |
| mg/L D.O. | 7.40 | 8.09 |
| Temp - °C | 24.30 | 24.31 |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | _____ |
| mg/L D.O. | _____ |
| Temp - °C | _____ |

Notes:

# Field Notes for Datasonde Post Calibration

Date/Time: August 15 2005 14:05 Analyst: Myeun Wade

Location: High Falls Datasonde Serial #: 36469

Ending Datasonde Battery [volts]: 5.7

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.03 |
| 10.00 Std | 10.11 |

Conductivity (mS/cm) 0.289 Std 0.948 Reads 0.0352 Zero Reads

Barometric Pressure (mm Hg) 740.0

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 92.9 | 100.2 |
| mg/L D.O. | 7.74 | 8.32 |
| Temp – °C | 23.30 | 23.30 |

YSI calibration (See field notes for 55 for calibration info.)

| | |
|---|---|
| % Saturation | 103.0 |
| mg/L D.O. | 8.37 |
| Temp – °C | 25.1 |

Notes:

# Field Notes for Datasonde Post Calibration

Date/Time: 8/25/05 15:20 Analyst: MWM

Location: High Falls Datasonde Serial #: 36466

Ending Datasonde Battery [volts]: 5.5

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.16 @ 24.09 |
| 10.00 Std | 9.57 @ 24.46° |

Conductivity (mS/cm) 0.292 Std 0.259 Reads _____ Zero Reads

Barometric Pressure (mm Hg) 743

| Dissolved Oxygen | before cal | after cal | |
|---|---|---|---|
| % Saturation | 101.3 | 100.0 | |
| mg/L D.O. | 8.37 | 8.28 | - No DO correction |
| Temp - °C | 23.59 | 23.65 | |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | _____ |
| mg/L D.O. | _____ |
| Temp - °C | _____ |

Notes:

High. Txt - OK All pH reading between 8+9

lots of bio accumulation on sensors

End #'s 7.24 mg/L

84.9%

21.9°

pH 10 buffer very slow to stabilize

# Field Notes for Datasonde Post Calibration

Date/Time: September 2, 2005 11:55 Analyst: HP

Location: High Falls Tailrace Datasonde Serial #: 36464

Ending Datasonde Battery [volts]: 5.5 v

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.07 |
| 10.00 Std | 10.05 |

Conductivity (mS/cm) 0.292 Std 0.279 Reads 0.000 Zero Reads – In Air

Barometric Pressure (mm Hg) 737.6 mm Hg

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 80.0% | 100.0% |
| mg/L D.O. | 6.73 mg/L | 8.36 mg/L |
| Temp – °C | 22.73 °C | 22.71 °C |

YSI calibration (See field notes for — for calibration info.)

| | |
|---|---|
| % Saturation | X |
| mg/L D.O. | X |
| Temp – °C | X |

Notes:

Post Calibrate D.O. w/ tap water

File named HF090205.txt

D.O. low value: 6.45 mg/L on 9/1/05 @ 09:00

pH readings: Good - low to mid' Eight's

Circulator - needs cleaning.

# Field Notes for Datasonde Post Calibration

Date/Time: 9/12/05 13:55 Analyst: MWM

Location: High Falls Datasonde Serial #: 36468

Ending Datasonde Battery [volts]: 5.6

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.06 @ 26.66° |
| 10.00 Std | 10.04 @ 26.34° |

Conductivity (mS/cm) 0.298 Std 0.299 Reads _____ Zero Reads

Barometric Pressure (mm Hg) 736

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 106.2 | 100.1 |
| mg/L D.O. | 8.22 | 7.77 |
| Temp - °C | 26.49 | 26.56° |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | _____ |
| mg/L D.O. | _____ |
| Temp - °C | _____ |

Notes:

HF 091205.TXT - OK All pH OK

Circulator - OK End #'s 68.8%

5.83 mg/L

12.08°

# Field Notes for Datasonde Post Calibration

Date/Time: Sept 16, 2005 13:45 Analyst: HA

Location: High Falls Bridge Datasonde Serial #: 364666

Ending Datasonde Battery [volts]: 5.0v

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.14 |
| 10.00 Std | 10.10 |

Conductivity (mS/cm) 0.298 Std 0.300 Reads 0.000 Zero Reads - In Air

Barometric Pressure (mm Hg) 738.8 mm Hg

| Dissolved Oxygen (circ. on) | before cal | (circ. off) | after cal |
|---|---|---|---|
| % Saturation | 96.4% | 91.0% | 100.0% |
| mg/L D.O. | 8.12 mg/L | 7.66 | 8.45 mg/L |
| Temp - °C | 22.24°C | 22.23 | 22.23 |

YSI calibration (See field notes for ~~—~~ for calibration info.)

| | |
|---|---|
| % Saturation | ~~X~~ |
| mg/L D.O. | |
| Temp - °C | |

Notes:

File name HF091605.txt

low D.O. 4.76 mg/L on 9/12/05 @ 20:00

pH is Fine

Circulator works good

# Field Notes for Datasonde Post Calibration

Date/Time: 9/26/05 13:20 Analyst: MWM

Location: High Falls Datasonde Serial #: 36468

Ending Datasonde Battery [volts]: 5.2

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.07 @ 19.88° |
| 10.00 Std | 10.10 @ 19.79° |

Conductivity (mS/cm) 0.303 Std 0.299 Reads — Zero Reads

Barometric Pressure (mm Hg) 735.5

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 97.8 | 100.0 |
| mg/L D.O. | 8.92 | 9.11 |
| Temp – °C | 18.39 | 18.25 |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | |
| mg/L D.O. | |
| Temp – °C | |

Notes:

High Fall. TxT - OK low reading - 4.34 on 9/18

Circulator OK Grad #'s 6.99 mg/L

77.1%

18.73°

# Field Notes for Datasonde Post Calibration

Date/Time: 10/3/05 11:25 Analyst: MLM

Location: High Falls Hydro Datasonde Serial #: 36466

Ending Datasonde Battery [volts]: 4.4

**Calibration Information**

| pH (s.u.) | Reads |
|---|---|
| 7.00 Std | 7.11 |
| 10.00 Std | 10.14 |

Conductivity (mS/cm) 0.298 Std 0.341 Reads .0000 Zero Reads

Barometric Pressure (mm Hg) 738.5

| Dissolved Oxygen | before cal | after cal |
|---|---|---|
| % Saturation | 102.4 | 100.1 |
| mg/L D.O. | 8.58 | 8.38 |
| Temp - °C | 22.74 | 22.72 |

YSI calibration (See field notes for _____ for calibration info.)

| | |
|---|---|
| % Saturation | |
| mg/L D.O. | |
| Temp - °C | |

Notes:

HF1003.txt: ok but No Readings from 9/29/05 - 080000 to 090000 - Power Loss Circulator: ok *

Overcast & 75° Winds: S at 10 MPH

* More Lost Readings - Power Loss Also 9/29 - 230000 9/30 - 030000 - 100000 9/30 - 220000

# Appendix C

# Documentation of Agency Consultation

**From:** Mark Metcalf
**To:** Donofrio, Michael; Hasz, Justine; Martini, Bob; Smith, Janet <Janet_Smith@fws.gov>
**Date:** 9/13/2005 3:54:31 PM
**Subject:** High Falls Water Quality Monitoring Data

Hello everyone,

Per the Water Quality Monitoring Plan for the High Falls Hydroelectric Project, Wisconsin Public Service Corporation is supplying a notice of deviations from the water quality standard observed in the Peshtigo River below the High Falls Powerhouse. Water quality monitoring has been ongoing below the Powerhouse since June 1, 2005. Periods below the dissolved oxygen water quality standard of 5.0 mg/l were observed between September 11th at 13:00 and September 12th at 01:00. During this time period, the High Falls Reservoir was being drawn down for improvements on the Dam and earthen berms. All water discharged was through the High Falls Powerhouse. I have attached an excel spreadsheet with monitoring data collected between September 2nd and September 12th (please note that the drawdown began on September 6th).

If you have any questions regarding the data, feel free to contact me at (920) 433-1833.

Thanks,

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

**CC:** Crocker, Bruce; Puzen, Shawn; Taylor, Terrie

**From:** "Martini, Robert E" <Robert.E.Martini@dnr.state.wi.us>
**To:** "Mark Metcalf" <MMETCAL@wpsr.com>, "Hasz, Justine R" <Justine.Hasz@dnr.state.wi.us>, "Donofrio, Michael C." <Michael.Donofrio@dnr.state.wi.us>, Smith Janet <Janet_Smith@fws.gov>
**Date:** 9/14/2005 6:36:04 AM
**Subject:** RE: High Falls Water Quality Monitoring Data

Were there any dead fish, insects, mussels observed during the next shoreline survey after the low DO event? Was the low DO the result of suspended material decay from the drawdown or some other factor? What were the weather conditions that day?

-----Original Message-----
From: Mark Metcalf [mailto:MMETCAL@wpsr.com]
Sent: Tuesday, September 13, 2005 3:55 PM
To: Hasz, Justine R; Donofrio, Michael C.; Martini, Robert E; Smith Janet <Janet_Smith@fws.gov
Cc: Bruce Crocker; Shawn Puzen; Terrie Taylor
Subject: High Falls Water Quality Monitoring Data

Hello everyone,

Per the Water Quality Monitoring Plan for the High Falls Hydroelectric Project, Wisconsin Public Service Corporation is supplying a notice of deviations from the water quality standard observed in the Peshtigo River below the High Falls Powerhouse. Water quality monitoring has been ongoing below the Powerhouse since June 1, 2005. Periods below the dissolved oxygen water quality standard of 5.0 mg/l were observed between September 11th at 13:00 and September 12th at 01:00. During this time period, the High Falls Reservoir was being drawn down for improvements on the Dam and earthen berms. All water discharged was through the High Falls Powerhouse. I have attached an excel spreadsheet with monitoring data collected between September 2nd and September 12th (please note that the drawdown began on September 6th).

If you have any questions regarding the data, feel free to contact me at (920) 433-1833.

Thanks,

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

**CC:** "Bruce Crocker" <BCROCKE@wpsr.com>, "Shawn Puzen" <SPUZEN@wpsr.com>, "Terrie Taylor" <Ttaylor@wpsr.com>

**From:** "Martini, Robert E" <Robert.E.Martini@dnr.state.wi.us>
**To:** "Mark Metcalf" <MMETCAL@wpsr.com>
**Date:** 9/14/2005 8:29:38 AM
**Subject:** RE: High Falls Water Quality Monitoring Data

When you did your visit, was the unit in acceptable calibration range?

----Original Message----
From: Mark Metcalf [mailto:MMETCAL@wpsr.com]
Sent: Wednesday, September 14, 2005 7:05 AM
To: Hasz, Justine R; Donofrio, Michael C.; Martini, Robert E; Janet_Smith@fws.gov
Cc: Bruce Crocker; Shawn Puzen; Terrie Taylor
Subject: RE: High Falls Water Quality Monitoring Data

Bob,

I was at the High Falls monitoring location on the 12th to install a different datasonde as part of our standard monitoring procedure. I did not observe any signs of an adverse impact, however, I was not at the monitoring location until 12 hours after the period of low DO. On Sunday September 11 and Monday September 12, the weather was warm (upper 80's) and breezy.

As to a possible cause, I can only speculate. There could have been suspended material released from the reservoir during this time period, or possibly the reservoir was still stratified and low DO water was being drawn in/released at that time. Weeds may have been surrounding the monitor as well, causing non-representative readings. At this point it is difficult to say what may have been occurring at the times low DO water was observed.

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

>>> "Martini, Robert E" <Robert.E.Martini@dnr.state.wi.us> 9/14/2005 6:35:22 AM >>>
Were there any dead fish, insects, mussels observed during the next shoreline survey after the low DO event? Was the low DO the result of suspended material decay from the drawdown or some other factor? What were the weather conditions that day?

----Original Message----
From: Mark Metcalf [mailto:MMETCAL@wpsr.com]
Sent: Tuesday, September 13, 2005 3:55 PM
To: Hasz, Justine R; Donofrio, Michael C.; Martini, Robert E; Smith Janet <Janet_Smith@fws.gov
Cc: Bruce Crocker; Shawn Puzen; Terrie Taylor
Subject: High Falls Water Quality Monitoring Data

**From:** Shawn Puzen
**To:** Donofrio, Michael C.; Hasz, Justine R; Janet, Smith; Martini, Robert E; Metcalf, Mark
**Date:** 9/14/2005 3:28:45 PM
**Subject:** RE: High Falls Water Quality Monitoring Data

Bob-

To add to Mark's response. The DO levels experienced at High Falls below the standard were still near 5.0 Mg/L. According to published research, the levels experienced at High Falls just recently do not normally result in fish kills. The fish are able to survive at these levels. However, they become less active and if the levels persist, it can impact their growth rates.

Please feel to contact me if you would like to discuss this further.

Thanks,

Shawn C. Puzen
Environmental Consultant
Wisconsin Public Service Corporation
(920)433-1094
spuzen@wpsr.com



>>> Mark Metcalf 9/14/2005 8:05:00 AM >>>
Bob,

I was at the High Falls monitoring location on the 12th to install a different datasonde as part of our standard monitoring procedure. I did not observe any signs of an adverse impact, however, I was not at the monitoring location until 12 hours after the period of low DO. On Sunday September 11 and Monday September 12, the weather was warm (upper 80's) and breezy.

As to a possible cause, I can only speculate. There could have been suspended material released from the reservoir during this time period, or possibly the reservoir was still stratified and low DO water was being drawn in/released at that time. Weeds may have been surrounding the monitor as well, causing non-representative readings. At this point it is difficult to say what may have been occurring at the times low DO water was observed.

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

>>> "Martini, Robert E" <Robert.E.Martini@dnr.state.wi.us> 9/14/2005 6:35:22 AM >>>
Were there any dead fish, insects, mussels observed during the next shoreline survey after the low DO event? Was the low DO the result of suspended material decay from the drawdown or some other factor?

What were the weather conditions that day?

---Original Message---
From: Mark Metcalf [mailto:MMETCAL@wpsr.com]
Sent: Tuesday, September 13, 2005 3:55 PM
To: Hasz, Justine R; Donofrio, Michael C.; Martini, Robert E; Smith Janet <Janet_Smith@fws.gov
Cc: Bruce Crocker; Shawn Puzen; Terrie Taylor
Subject: High Falls Water Quality Monitoring Data

Hello everyone,

Per the Water Quality Monitoring Plan for the High Falls Hydroelectric Project, Wisconsin Public Service Corporation is supplying a notice of deviations from the water quality standard observed in the Peshtigo River below the High Falls Powerhouse. Water quality monitoring has been ongoing below the Powerhouse since June 1, 2005. Periods below the dissolved oxygen water quality standard of 5.0 mg/l were observed between September 11th at 13:00 and September 12th at 01:00. During this time period, the High Falls Reservoir was being drawn down for improvements on the Dam and earthen berms. All water discharged was through the High Falls Powerhouse. I have attached an excel spreadsheet with monitoring data collected between September 2nd and September 12th (please note that the drawdown began on September 6th).

If you have any questions regarding the data, feel free to contact me at (920) 433-1833.

Thanks,

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

CC: Crocker, Bruce; Taylor, Terrie

**From:** "Martini, Robert E" <Robert.E.Martini@dnr.state.wi.us>
**To:** "Shawn Puzen" <SPUZEN@wpsr.com>, "Hasz, Justine R" <Justine.Hasz@dnr.state.wi.us>, "Donofrio, Michael C." <Michael.Donofrio@dnr.state.wi.us>, <Janet_Smith@fws.gov>, "Mark Metcalf" <MMETCAL@wpsr.com>
**Date:** 9/14/2005 3:49:00 PM
**Subject:** RE: High Falls Water Quality Monitoring Data

I know fish don't die at 4.5ppm but the single probe does not give a representative value for the whole flowage and there may be microhabitats that are lower or there may be other species that are more sensetive than fish.It doesn't hurt to look for dead organisms since you are out there for the surveys anyway.It may be wise to document suspended solids or BOD in future drawdowns if there are demonstrated DO drops.

---Original Message---
From: Shawn Puzen [mailto:SPUZEN@wpsr.com]
Sent: Wednesday, September 14, 2005 3:29 PM
To: Hasz, Justine R; Donofrio, Michael C.; Martini, Robert E; Janet_Smith@fws.gov; Mark Metcalf
Cc: Bruce Crocker; Terrie Taylor
Subject: RE: High Falls Water Quality Monitoring Data

Bob-

To add to Mark's response. The DO levels experienced at High Falls below the standard were still near 5.0 Mg/L. According to published research, the levels experienced at High Falls just recently do not normally result in fish kills. The fish are able to survive at these levels. However, they become less active and if the levels persist, it can impact their growth rates.

Please feel to contact me if you would like to discuss this further.

Thanks,

Shawn C. Puzen
Environmental Consultant
Wisconsin Public Service Corporation
(920)433-1094
spuzen@wpsr.com



>>> Mark Metcalf 9/14/2005 8:05:00 AM >>>

Bob,

I was at the High Falls monitoring location on the 12th to install a different datasonde as part of our standard monitoring procedure. I did not observe any signs of an adverse impact, however, I was not at the monitoring location until 12 hours after the period of low DO. On Sunday September 11 and Monday September 12, the weather was warm (upper 80's) and breezy.

As to a possible cause, I can only speculate. There could have been suspended material released from the reservoir during this time period, or possibly the reservoir was still stratified and low DO water was being drawn in/released at that time. Weeds may have been surrounding the monitor as well, causing non-representative readings. At this point it is difficult to say what may have been occurring at the times low DO water was observed.

Mark

Mark Metcalf
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920-433-1833
mmetcal@wpsr.com

>>> "Martini, Robert E" <Robert.E.Martini@dnr.state.wi.us> 9/14/2005 6:35:22 AM >>>
Were there any dead fish, insects, mussels observed during the next shoreline survey after the low DO event? Was the low DO the result of suspended material decay from the drawdown or some other factor? What were the weather conditions that day?

-----Original Message-----
From: Mark Metcalf [mailto:MMETCAL@wpsr.com]
Sent: Tuesday, September 13, 2005 3:55 PM
To: Hasz, Justine R; Donofrio, Michael C.; Martini, Robert E; Smith Janet <Janet_Smith@fws.gov
Cc: Bruce Crocker; Shawn Puzen; Terrie Taylor
Subject: High Falls Water Quality Monitoring Data

Hello everyone,

Per the Water Quality Monitoring Plan for the High Falls Hydroelectric Project, Wisconsin Public Service Corporation is supplying a notice of deviations from the water quality standard observed in the Peshtigo River below the High Falls Powerhouse. Water quality monitoring has been ongoing below the Powerhouse since June 1, 2005. Periods below the
dissolved oxygen water quality standard of 5.0 mg/l were observed between September 11th at 13:00 and September 12th at 01:00. During this time period, the High Falls Reservoir was being drawn down for improvements on the Dam and earthen berms. All water discharged was through the High Falls Powerhouse. I have attached an excel spreadsheet

with monitoring data collected between September 2nd and September 12th
(please note that the drawdown began on September 6th).

If you have any questions regarding the data, feel free to contact me at (920) 433-1833.

Thanks,

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

CC: "Bruce Crocker" <BCROCKE@wpsr.com>, "Terrie Taylor" <Ttaylor@wpsr.com>

**From:** Mark Metcalf
**To:** Donofrio, Michael; Hasz, Justine; Martini, Bob; Smith, Janet <Janet_Smith@fws.gov>
**Date:** 9/20/2005 2:44:01 PM
**Subject:** High Falls water quality monitoring data

Good Afternoon,

Water quality monitoring data collected between September 12th and 16th has been reviewed for deviations from the water quality standard. Three hourly readings were observed on September 12th below the water quality standard (5.0 mg/l). Dissolved oxygen corrective action could not be taken during the period of low DO as the reservoir level was below the bottom of the tainer gate due to the drawdown on the High Falls Reservoir. I have attached a spreadsheet with the water quality monitoring data with the dissolved oxygen concentration corrected for calibration drift of the monitoring instrument.

Please contact me if you have any questions.

Thanks,

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

**CC:** Crocker, Bruce; Puzen, Shawn; Taylor, Terrie

**From:** Mark Metcalf
**To:** Donofrio, Michael; Hasz, Justine; Martini, Bob; Smith, Janet
**Date:** 9/28/2005 10:59:39 AM
**Subject:** High Falls Water quality monitoring data

Good Morning,

*Water quality monitoring data collected between sept. 16 and Sept. 26th has been reviewed for deviations* from the water quality standard. Deviations were recorded on September 18th and 22nd, 2005, with the lowest reading being 4.38 mg/l on Sept. 18.

As you know, High Falls reservoir has been drawn down to perform construction/repair activities on the dam and earthen berm. Corrective actions for the low DO could not be taken as the reservoir level is below the tainer gates. Dissolved oxygen, temperature, and powerhouse discharge information is included in the attached spreadsheet for your review. Feel free to contactl me if you have any questions about this information.

Thanks, and have a nice day.

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

**CC:** Crocker, Bruce; Puzen, Shawn; Taylor, Terrie

**From:** Mark Metcalf
**To:** Donofrio, Michael; Hasz, Justine; Martini, Bob; Smith, Janet
**Date:** 10/5/2005 12:57:39 PM
**Subject:** High Falls DO monitoring data

Good afternoon,

I have reviewed water quality monitoring data collected from September 26 through Setpember 30th, 2005. during this time period, some data was lost due to equipment malfuctions, and there are a few periods where the dissolved oxygen level fell below the 7.0 mg/l water quality standard (the lowest DO reading was 6.40 mg/l). The data is attached for your review. Feel free to contact me if you have any questions.

Thanks,

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

**CC:** Crocker, Bruce; Puzen, Shawn; Taylor, Terrie

**From:** Mark Metcalf
**To:** Donofrio, Michael; Hasz, Justine; Martini, Bob; Smith, Janet
**Date:** 10/7/2005 8:06:14 AM
**Subject:** High Falls water quality monitoring

Good Morning,

I need to make a clarification regarding the previous e-mail I sent about water quality monitoring at High Falls from Sept. 26th through Sept. 30th. In that e-mail, I stated that the water quality standard was 7.0 mg/l D.O., when in fact it is 5.0 mg/l. There were no dissolved oxygen deviations to note, however, there was some data lost due to equipment malfuntions. Sorry for the confusion.

If you have any questions, feel free to give me a call.

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

**CC:** Crocker, Bruce; Puzen, Shawn; Taylor, Terrie

**From:** Mark Metcalf
**To:** Donofrio, Michael; Hasz, Justine; Martini, Bob; Smith, Janet
**Date:** 10/21/2005 11:55:34 AM
**Subject:** High Falls water quality monitoring data

Good afternoon.

Attached to this message is a summary of the water quality monitoing data collected during the 2005 monitoring period below the High Falls Dam for your review and comment. Please review the attached documents, and if you have any questions or concerns about the data, feel free to contact me at (920) 433-1833.

Thanks, and have a nice weekend.

Mark

Mark Metcalf
Environmental Consultant\Chemist
Wisconsin Public Service Corp.
920-433-1833
mmetcal@wpsr.com

**CC:** Crocker, Bruce; Puzen, Shawn; Taylor, Terrie

Wisconsin Public Service Corporation
(a subsidiary of WPS Resources Corporatio
700 North Adams Street
P.O. Box 19002
Green Bay, WI 54307-9002

October 21, 2005

FERC Project No. 2595

To: Ms. Janet Smith, U.S. Fish and Wildlife Service
Ms. Justine Hasz, Wisconsin Department of Natural Resources
Mr. Michael Donofrio, Wisconsin Department of Natural Resources
Mr. Bob Martini, Wisconsin Department of Natural Resources

Re: High Falls Hydroelectric Project - Water Quality Monitoring Data

Wisconsin Public Service Corporation (WPSC) is pleased to submit water quality monitoring data for the 2005 monitoring year for your review and comment. Per the Order Amending Water Quality Monitoring Plan for the High Falls Hydroelectric Facility, dated April 30, 2002, dissolved oxygen (D.O.), temperature, and pH was monitored hourly from June 1st to September 30th, 2005, below the dam. The data collected is enclosed for your review. The D.O. data has been corrected for a loss of calibration when the uncorrected data would show a non-compliant condition.

Please note that there are hourly readings below the dissolved oxygen standard of 5.0 mg/l. These readings occurred during a drawdown of the High Falls Reservoir, which began on September 6, 2005. The drawdown occurred so that improvements could be made to the dam and earthen berm adjacent to the dam. At the time of the low DO readings, all water was being released through the powerhouse. DO corrective action could not be taken during the periods when low DO water was observed as the reservoir level was below the bottom of the tainer gates, which lift up to release water through the spillway.

There are no other pH, temperature, or dissolved oxygen deviations to note. Please review the enclosed data and make any comments you may have as soon as possible, but within 30 days of this letter. Should you have any questions or concerns, please do not hesitate to call me at (920) 433-1833. Thank you for your time and consideration.

Sincerely,

Mark Metcalf

Mark W. Metcalf
*Environmental Consultant – Chemist*
Wisconsin Public Service Corporation
Telephone: (920) 433-1833

Enc.

cc: Mr. Shawn Puzen, WPSC - D2
Ms. Terrie Taylor, WPSC – CRI
Mr. Bruce Crocker, WPSC – D2