



Wisconsin Public Service Corporation

700 North Adams Street
P.O. Box 19001
Green Bay, WI 54307-9001

www.wisconsinpublicservice.com

December 13, 2013

FERC Project No. 2595

Ms. Kimberly D. Bose, Secretary
The Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Dear Secretary Bose:

Re: 2013 Water Quality Monitoring Report – High Falls Hydroelectric Project

Pursuant to the water quality monitoring plan for the High Falls Hydroelectric project, Wisconsin Public Service Corporation (WPSC) is pleased to submit the results of water quality monitoring conducted during the 2013 monitoring season.

As described in the monitoring plan, water quality monitoring is conducted downstream of the powerhouse annually from June 1st through September 30th. Monitoring downstream of the powerhouse is conducted where High Falls Road crosses the Peshtigo River (NE ¼ of the SW ¼, Section 1, T32N, R18E). Monitoring upstream of the project occurs every 5 years in conjunction with water quality monitoring conducted at the Caldron Falls Hydroelectric Project. Upstream monitoring is scheduled to occur again in 2016.

Monitoring data for dissolved oxygen (DO), temperature, and pH was collected at one-hour intervals on a continuous basis. Data was collected using portable water quality monitoring equipment manufactured by Hydrolab, Inc. As described in the water quality monitoring plan for the project, the instrumentation was cleaned and calibrated according to manufacturer specification every 7-10 days during the monitoring period. A post deployment calibration was conducted to determine the extent of calibration drift. Raw data was adjusted assuming a linear degradation of calibration based upon a post calibration of the equipment. The water quality monitoring equipment used to monitor dissolved oxygen has an accuracy of +/- 0.1 mg/l, per the manufacturer. For compliance purposes, dissolved oxygen concentrations more than 0.1 mg/l below the applicable water quality standard are potential deviations.

December 13, 2013

Ms. Kimberly D. Bose, Secretary

Page 2 of 3

Per the Project License, WPSC is required to ensure flow releases from the project, as measured immediately downstream from the dam, maintain the following standards, except when natural conditions prohibit attainment of the standards: (1) DO concentrations shall not be less than 5.0 milligrams per liter (mg/L) (minus the precision of the monitoring instrument) for more than 24 hours per year; (2) water temperature shall not exceed 89 degrees Fahrenheit; and (3) the pH shall be within the range of 6.0 to 9.0, with no change greater than 0.5 units outside the estimated natural seasonal maximum and minimum. Natural conditions include inflows to the project less than the 95 percent exceedance flow.

No deviations from the dissolved oxygen, pH or temperature water quality standards were observed during the 2013 monitoring season. There were 3 hours of missing monitoring data due to the maintenance and calibration of the monitoring equipment during the monitoring season. WPSC experienced two periods of equipment malfunction that resulted in erroneous dissolved oxygen data to be recorded. The equipment vendor has been contacted on the issue of dissolved oxygen sensor failures as this is an issue that has been observed over the past several monitoring seasons. They are aware of the issue and commented that the dissolved oxygen sensor failures are often due to a bad solder connection within the sensor. They have not provided a method to perform a diagnostic check on the equipment prior to use so that WPSC has reasonable assurance the equipment will not experience a failure during deployment. As a result, WPSC will be moving forward with changing monitoring equipment to a new vendor for the 2014 monitoring season in an effort to ensure data reliability.

Enclosed with this report are excel spreadsheets containing the monitoring data, in both tabular and graphical format, with the periods of missing data identified. Water quality monitoring data is enclosed in Attachment A. A summary of the 2013 monitoring data was provided to the Wisconsin Department of Natural Resources (WDNR) and U.S. Fish & Wildlife (FWS) for review and comment on October 25, 2013. Documentation of agency consultation is included in Attachment B. Should you have any questions or concerns, please do not hesitate to call Mr. Mark Metcalf at (920) 433-1833.

Sincerely,



Terry P. Jensky

Vice President – Generation Assets

Wisconsin Public Service Corporation

MWM

Enc: 2013 Water Quality Monitoring Data and Agency Correspondence.

December 13, 2013

Ms. Kimberly D. Bose, Secretary

Page 3 of 3

cc: Mr. Gil Snyder, WPSC - D2
Mr. Shawn Puzen, IBS - D2
Ms. Joan Johaneck, WPSC - D2
Mr. Conrad Weis, IBS - D2
Mr. John Myers, IBS - D2
Mr. John Zygaj, FERC - CRO

Mr. William Bosacki, WPSC – D2
Mr. Nick Utrup - FWS
Ms. Cheryl Laatsch - WDNR
Mr. Bill Bloczynski, WPSC MERH
Mr. Ed Brandt, WPSC – CRI
Ms. Patricia Grant, FERC

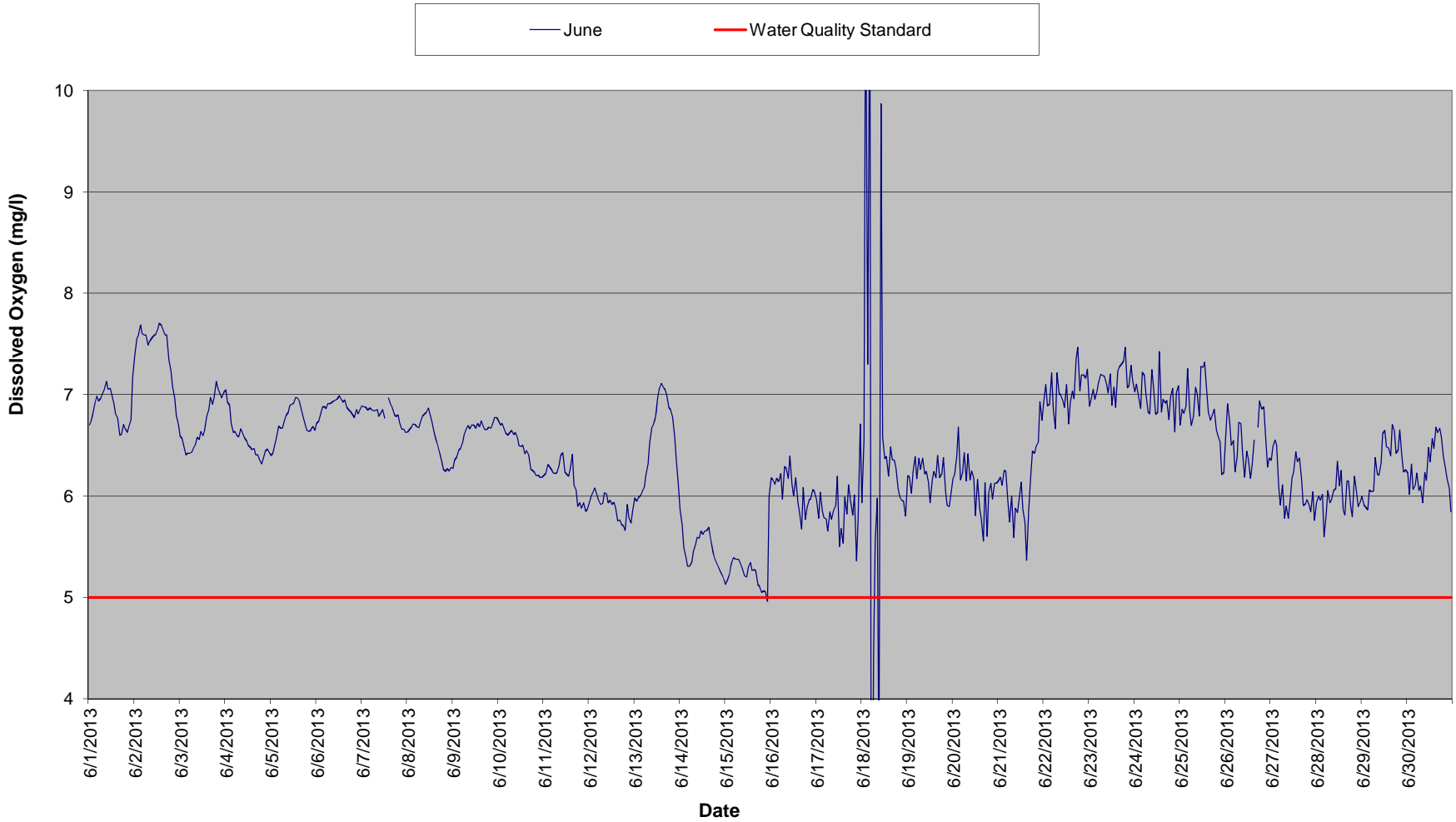
Attachment A

High Falls Hydroelectric Project

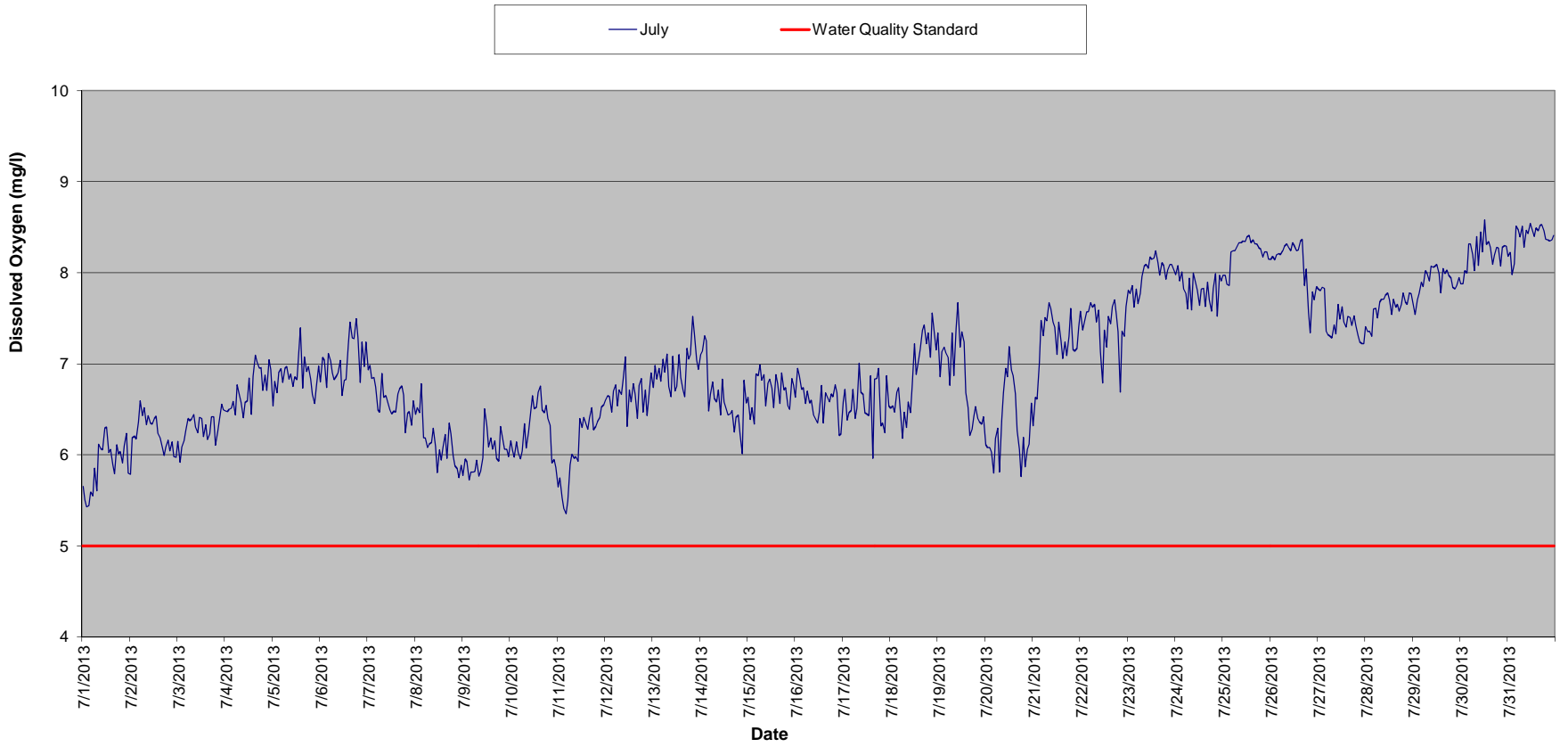
FERC No. 2595

2013 Water Quality Monitoring Data

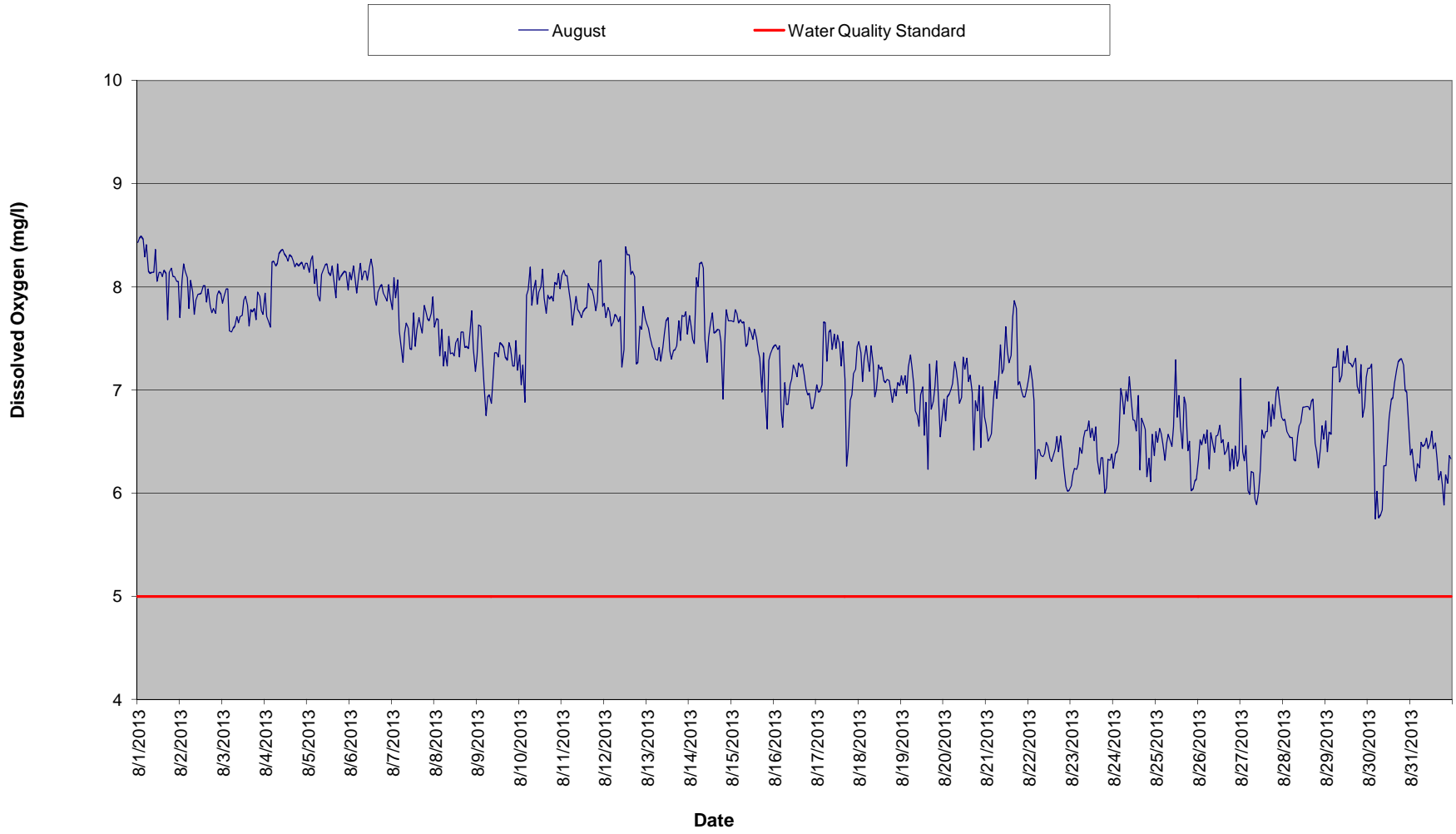
High Falls Tailrace Dissolved Oxygen - June 2013



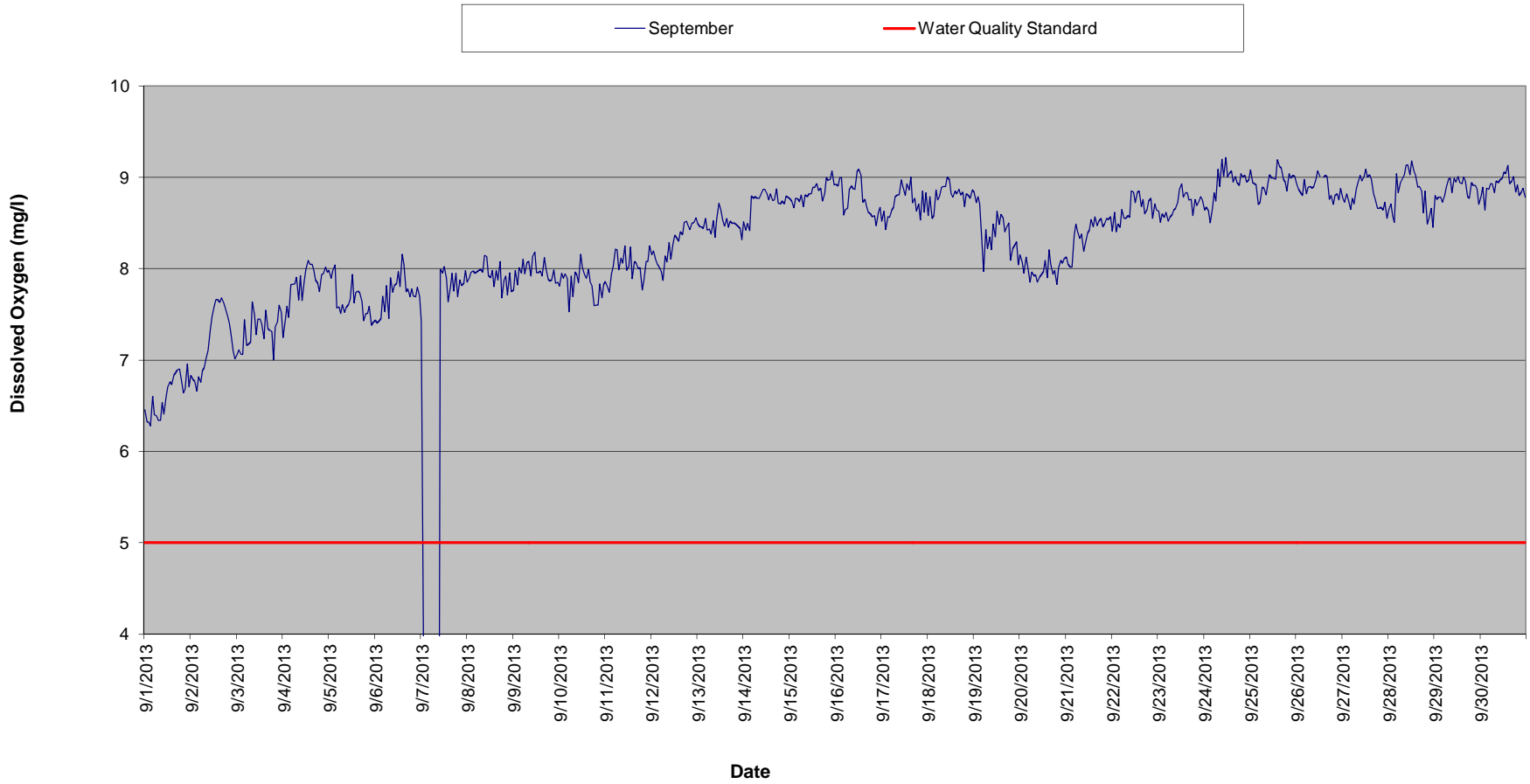
High Falls Tailrace Dissolved Oxygen - July 2013



High Falls Tailrace Dissolved Oxygen - August 2013




High Falls Tailrace Dissolved Oxygen - September 2013



High Falls Tailrace Dissolved Oxygen Summary - June 2013


Time HHMMSS	06/01/13	06/02/13	06/03/13	06/04/13	06/05/13	06/06/13	06/07/13	06/08/13	06/09/13	06/10/13	06/11/13	06/12/13	06/13/13	06/14/13	06/15/13	06/16/13
0	6.7	7.4	6.6	7.0	6.4	6.7	6.9	6.6	6.3	6.7	6.2	5.9	6.0	5.9	5.1	6.2
10000	6.7	7.6	6.6	6.9	6.4	6.7	6.9	6.7	6.4	6.7	6.2	6.0	5.9	5.7	5.2	6.2
20000	6.8	7.6	6.5	6.9	6.5	6.8	6.9	6.7	6.4	6.7	6.3	6.0	6.0	5.5	5.2	6.1
30000	6.9	7.7	6.4	6.7	6.6	6.9	6.8	6.7	6.5	6.7	6.3	6.1	6.0	5.4	5.3	6.2
40000	7.0	7.6	6.4	6.6	6.7	6.9	6.9	6.7	6.5	6.6	6.3	6.0	6.0	5.3	5.4	6.1
50000	6.9	7.6	6.4	6.6	6.7	6.9	6.9	6.7	6.5	6.6	6.2	6.0	6.1	5.3	5.4	6.2
60000	7.0	7.6	6.4	6.6	6.7	6.9	6.8	6.7	6.6	6.6	6.2	5.9	6.2	5.3	5.4	6.0
70000	7.0	7.5	6.5	6.6	6.7	6.9	6.8	6.7	6.7	6.6	6.2	5.9	6.3	5.5	5.4	6.3
80000	7.1	7.5	6.5	6.7	6.8	6.9	6.9	6.8	6.7	6.6	6.3	6.0	6.5	5.5	5.3	6.3
90000	7.1	7.6	6.6	6.6	6.8	6.9	6.8	6.8	6.7	6.6	6.4	6.0	6.7	5.6	5.3	6.2
100000	7.1	7.6	6.6	6.6	6.9	6.9	6.8	6.8	6.7	6.6	6.4	5.9	6.7	5.6	5.2	6.4
110000	7.1	7.6	6.6	6.5	6.9	7.0	6.9	6.9	6.7	6.5	6.2	6.0	6.8	5.7	5.2	6.1
120000	7.0	7.6	6.6	6.5	6.9	7.0	6.8	6.8	6.7	6.5	6.2	5.9	7.0	5.6	5.3	6.0
130000	6.9	7.7	6.6	6.5	7.0	7.0	6.8	6.7	6.7	6.5	6.2	5.9	7.1	5.7	5.3	6.2
140000	6.8	7.7	6.8	6.5	7.0	6.9	7.0	6.6	6.7	6.4	6.3	5.9	7.1	5.7	5.3	5.9
150000	6.8	7.6	6.9	6.5	6.9	6.9	6.9	6.6	6.7	6.4	6.4	5.8	7.1	5.7	5.3	5.8
160000	6.6	7.6	7.0	6.4	6.8	6.9	6.9	6.5	6.7	6.4	6.1	5.8	7.0	5.6	5.3	5.7
170000	6.6	7.6	6.9	6.4	6.8	6.9	6.8	6.4	6.7	6.3	6.1	5.7	7.0	5.5	5.1	6.1
180000	6.7	7.3	7.0	6.4	6.7	6.8	6.8	6.3	6.7	6.3	5.9	5.7	6.9	5.4	5.1	5.8
190000	6.7	7.2	7.1	6.3	6.6	6.8	6.8	6.3	6.7	6.2	5.9	5.7	6.8	5.3	5.0	5.9
200000	6.6	7.1	7.1	6.4	6.6	6.8	6.7	6.2	6.7	6.2	5.9	5.9	6.8	5.3	5.1	6.0
210000	6.7	7.0	7.0	6.4	6.6	6.9	6.7	6.3	6.7	6.2	5.9	5.8	6.6	5.3	5.1	6.0
220000	6.8	6.8	7.0	6.5	6.7	6.8	6.7	6.2	6.8	6.2	5.8	5.7	6.3	5.2	5.0	6.1
230000	7.2	6.7	7.0	6.4	6.6	6.9	6.6	6.3	6.8	6.2	5.9	5.9	6.1	5.2	6.0	6.0
Daily Max	7.2	7.7	7.1	7.0	7.0	7.0	7.0	6.9	6.8	6.7	6.4	6.1	7.1	5.9	6.0	6.4
Daily Min	6.6	6.7	6.4	6.3	6.4	6.7	6.6	6.2	6.3	6.2	5.8	5.7	5.9	5.2	5.0	5.7
Average	6.9	7.4	6.7	6.6	6.7	6.9	6.8	6.6	6.6	6.5	6.2	5.9	6.5	5.5	5.3	6.1


License Minimum DO: 5.0 mg/l

 Missing data - equipment maintenance

High Falls Tailrace Dissolved Oxygen Summary - June 2013

Time HHMMSS	06/17/13	06/18/13	06/19/13	06/20/13	06/21/13	06/22/13	06/23/13	06/24/13	06/25/13	06/26/13	06/27/13	06/28/13	06/29/13	06/30/13
0	6.0	5.9	6.2	6.2	6.1	6.9	6.9	7.0	6.7	6.5	6.4	5.9	6.0	6.2
10000	5.8	6.6	6.2	6.2	6.2	7.1	7.0	7.1	6.9	6.9	6.5	6.0	5.9	6.0
20000	6.0	11.4	6.0	6.4	6.1	6.9	7.1	7.0	6.8	6.7	6.6	6.0	5.9	6.3
30000	5.8	7.3	6.2	6.7	6.3	6.9	6.9	6.9	6.9	6.5	6.5	6.0	5.9	6.1
40000	5.8	11.4	6.4	6.2	6.2	7.2	7.0	7.2	7.3	6.5	6.1	5.6	6.1	6.1
50000	5.8	0.7	6.2	6.2	5.9	6.9	7.1	7.2	6.8	6.2	5.9	5.8	6.0	6.2
60000	5.7	4.4	6.4	6.4	5.7	6.7	7.2	7.0	6.7	6.4	6.1	6.1	6.0	6.1
70000	5.8	5.6	6.3	6.1	6.0	7.2	7.2	6.8	6.8	6.7	5.8	5.9	6.4	6.1
80000	5.8	6.0	6.4	6.4	5.6	7.0	7.2	6.8	7.1	6.7	5.9	6.0	6.2	5.9
90000	5.9	3.1	6.2	6.2	5.9	7.0	7.1	7.2	7.0	6.4	5.8	6.1	6.2	6.2
100000	5.9	9.9	6.2	6.2	5.8	6.9	7.0	7.1	6.8	6.2	5.9	6.1	6.3	6.2
110000	6.2	6.6	6.1	6.2	6.0	6.9	7.2	6.8	7.3	6.4	6.2	6.3	6.6	6.5
120000	5.5	6.4	5.9	5.8	6.1	7.1	6.9	6.8	7.3	6.4	6.2	6.1	6.6	6.3
130000	5.7	6.4	6.2	6.2	5.9	6.7	7.1	7.4	7.3	6.2	6.4	6.3	6.5	6.6
140000	5.5	6.2	6.2	5.9	5.7	6.9	6.9	6.8	7.0	6.3	6.3	5.9	6.5	6.5
150000	6.0	6.5	6.2	5.8	5.4	7.0	7.2	7.0	6.8	6.6	6.4	5.8	6.4	6.7
160000	5.8	6.4	6.4	5.6	5.9	7.0	7.3	6.9	6.7	6.2	6.2	6.1	6.7	6.6
170000	6.1	6.4	6.2	6.1	6.2	7.4	7.3	6.9	6.8	6.7	5.9	6.1	6.6	6.7
180000	5.9	6.3	6.2	5.6	6.4	7.5	7.3	6.8	6.9	6.9	5.9	5.9	6.4	6.6
190000	5.8	6.1	6.4	6.0	6.4	7.0	7.5	7.0	6.7	6.9	6.0	5.8	6.5	6.4
200000	6.0	6.0	6.0	6.1	6.5	7.2	7.1	7.1	6.6	6.9	5.9	6.2	6.6	6.3
210000	5.4	6.0	5.9	6.0	6.5	7.2	7.1	6.6	6.5	6.6	5.8	6.0	6.4	6.2
220000	5.8	6.0	5.9	6.1	6.9	7.2	7.3	7.0	6.2	6.3	6.0	5.9	6.2	6.1
230000	6.7	5.8	6.0	6.1	6.7	7.3	7.1	7.1	6.2	6.4	5.8	5.9	6.3	5.8
Daily Max	6.7	11.4	6.4	6.7	6.9	7.5	7.5	7.4	7.3	6.9	6.6	6.3	6.7	6.7
Daily Min	5.4	0.7	5.9	5.6	5.4	6.7	6.9	6.6	6.2	6.2	5.8	5.6	5.9	5.8
Average	5.9	6.4	6.2	6.1	6.1	7.0	7.1	7.0	6.8	6.5	6.1	6.0	6.3	6.3

 Non-representative data - Equipment Malfunction

 Missing data - equipment maintenance

High Falls Tailrace Dissolved Oxygen Summary - July 2013

Time HHMMSS	07/01/13	07/02/13	07/03/13	07/04/13	07/05/13	07/06/13	07/07/13	07/08/13	07/09/13	07/10/13	07/11/13	07/12/13	07/13/13	07/14/13	07/15/13	07/16/13
0	5.7	5.8	6.1	6.5	6.5	6.8	6.9	6.4	5.8	6.2	5.6	6.6	6.7	7.1	6.6	6.6
10000	5.5	6.2	5.9	6.5	6.8	7.1	7.0	6.5	6.0	6.0	5.7	6.7	7.0	7.1	6.4	7.0
20000	5.4	6.2	6.1	6.5	6.7	7.0	6.8	6.5	5.9	6.0	5.5	6.6	6.8	7.3	6.5	6.9
30000	5.4	6.2	6.2	6.5	6.9	6.7	6.8	6.8	5.7	6.1	5.4	6.5	7.0	7.3	6.3	6.7
40000	5.6	6.4	6.3	6.6	6.9	7.1	6.7	6.2	5.8	6.0	5.4	6.7	6.8	6.5	6.9	6.7
50000	5.5	6.6	6.4	6.4	6.8	7.0	6.5	6.2	5.8	6.0	5.5	6.8	7.1	6.7	6.9	6.6
60000	5.9	6.4	6.4	6.8	7.0	6.9	6.5	6.1	5.8	6.0	5.9	6.5	6.9	6.8	7.0	6.7
70000	5.6	6.5	6.4	6.7	7.0	6.8	6.9	6.1	5.9	6.3	6.0	6.7	7.1	6.6	6.8	6.6
80000	6.1	6.3	6.4	6.6	6.8	6.9	6.6	6.1	5.8	6.1	6.0	6.7	6.8	6.6	6.9	6.6
90000	6.1	6.4	6.3	6.4	6.9	6.9	6.7	6.3	5.8	6.2	6.0	6.8	6.6	6.7	6.5	6.4
100000	6.1	6.3	6.2	6.6	6.7	7.0	6.6	6.1	6.0	6.4	5.9	7.1	7.1	6.4	6.8	6.4
110000	6.3	6.3	6.4	6.6	6.9	6.6	6.5	5.8	6.5	6.6	6.4	6.3	6.7	6.8	6.8	6.4
120000	6.3	6.4	6.4	6.8	6.8	6.8	6.5	6.1	6.3	6.5	6.3	6.7	6.8	6.6	6.7	6.5
130000	6.0	6.4	6.2	6.4	7.1	6.8	6.5	5.9	6.1	6.5	6.4	6.6	7.1	6.5	6.5	6.8
140000	6.1	6.2	6.3	6.9	7.4	7.2	6.5	6.1	6.2	6.7	6.4	6.8	6.9	6.4	6.9	6.4
150000	5.9	6.2	6.2	7.1	6.7	7.5	6.7	6.2	6.1	6.8	6.3	6.7	6.7	6.5	6.8	6.7
160000	5.8	6.1	6.2	7.0	7.1	7.3	6.7	6.0	6.2	6.5	6.4	6.4	6.6	6.5	6.6	6.6
170000	6.1	6.0	6.4	7.0	6.9	7.3	6.8	6.3	6.0	6.5	6.5	6.8	7.2	6.3	6.9	6.6
180000	6.0	6.1	6.4	7.0	7.0	7.5	6.7	6.2	5.9	6.5	6.3	6.8	7.1	6.4	6.7	6.7
190000	6.0	6.2	6.1	6.7	6.8	7.3	6.2	6.0	6.3	6.4	6.3	6.5	7.1	6.4	6.7	6.6
200000	5.9	6.0	6.3	6.9	6.7	6.8	6.5	5.9	6.2	6.3	6.4	6.7	7.5	6.2	6.5	6.8
210000	6.1	6.1	6.4	6.7	6.6	7.2	6.5	5.8	6.1	5.9	6.4	6.4	7.3	6.0	6.5	6.7
220000	6.2	6.0	6.6	7.0	6.7	7.0	6.3	5.7	6.1	6.0	6.5	6.7	7.0	6.8	6.8	6.2
230000	5.8	6.0	6.5	6.9	7.0	7.2	6.6	5.9	6.0	5.9	6.6	6.9	6.9	6.6	6.8	6.2
Daily Max	6.3	6.6	6.6	7.1	7.4	7.5	7.0	6.8	6.5	6.8	6.6	7.1	7.5	7.3	7.0	7.0
Daily Min	5.4	5.8	5.9	6.4	6.5	6.6	6.2	5.7	5.7	5.9	5.4	6.3	6.6	6.0	6.3	6.2
Average	5.9	6.2	6.3	6.7	6.9	7.0	6.6	6.1	6.0	6.3	6.1	6.7	6.9	6.6	6.7	6.6

License Minimum Dissolved Oxygen: 5.0 mg/l

High Falls Tailrace Dissolved Oxygen Summary - July 2013

Time HHMMSS	07/17/13	07/18/13	07/19/13	07/20/13	07/21/13	07/22/13	07/23/13	07/24/13	07/25/13	07/26/13	07/27/13	07/28/13	07/29/13	07/30/13	07/31/13
0	6.6	6.5	7.3	6.1	6.3	7.6	7.8	8.0	8.0	8.2	7.8	7.4	7.6	7.9	8.2
10000	6.7	6.5	6.9	6.1	6.6	7.4	7.8	8.1	8.0	8.2	7.8	7.4	7.5	7.9	8.2
20000	6.4	6.5	7.1	6.1	6.6	7.5	7.9	7.9	7.9	8.1	7.8	7.4	7.7	8.0	8.0
30000	6.5	6.7	7.2	6.0	7.0	7.6	7.6	8.0	7.9	8.2	7.8	7.3	7.8	8.0	8.1
40000	6.5	6.7	7.1	5.8	7.5	7.6	7.8	7.8	8.2	8.2	7.4	7.6	7.9	8.3	8.5
50000	6.7	6.4	7.1	6.2	7.3	7.7	7.7	7.8	8.2	8.2	7.3	7.6	7.9	8.3	8.5
60000	6.4	6.2	6.8	6.3	7.5	7.6	7.8	7.6	8.2	8.2	7.3	7.5	8.0	8.2	8.4
70000	6.5	6.5	7.3	5.8	7.5	7.7	8.0	7.9	8.3	8.3	7.3	7.7	8.0	8.0	8.5
80000	7.0	6.3	6.9	6.4	7.7	7.5	8.1	7.6	8.3	8.3	7.4	7.7	7.9	8.4	8.3
90000	6.7	6.6	7.4	6.7	7.6	7.6	8.1	8.0	8.3	8.3	7.3	7.7	8.1	8.1	8.5
100000	6.7	6.5	7.7	7.0	7.5	7.1	8.1	7.9	8.4	8.2	7.7	7.8	8.1	8.5	8.4
110000	6.5	6.8	7.2	6.9	7.4	6.8	8.2	7.8	8.3	8.3	7.5	7.8	8.1	8.2	8.5
120000	6.5	7.2	7.4	7.2	7.1	7.4	8.2	7.6	8.4	8.3	7.6	7.7	8.1	8.6	8.5
130000	6.4	6.9	7.2	6.9	7.5	7.2	8.2	7.8	8.4	8.2	7.5	7.5	8.0	8.3	8.4
140000	6.9	7.0	6.7	6.9	7.3	7.5	8.2	7.8	8.3	8.3	7.4	7.7	7.8	8.3	8.5
150000	6.0	7.2	6.5	6.7	7.1	7.4	8.1	7.6	8.4	8.4	7.5	7.6	8.1	8.3	8.5
160000	6.8	7.4	6.2	6.3	7.2	7.6	8.0	7.9	8.3	8.4	7.5	7.7	8.0	8.1	8.5
170000	6.8	7.4	6.3	6.1	7.1	7.7	8.1	7.7	8.3	7.9	7.4	7.6	8.0	8.2	8.5
180000	7.0	7.2	6.4	5.8	7.3	7.5	8.1	7.6	8.3	8.0	7.5	7.7	8.0	8.3	8.5
190000	6.3	7.3	6.5	6.2	7.6	7.4	7.9	7.8	8.3	7.6	7.4	7.8	7.9	8.3	8.4
200000	6.4	7.1	6.4	5.9	7.2	6.7	8.0	8.0	8.2	7.3	7.3	7.7	7.8	8.1	8.4
210000	6.2	7.6	6.4	6.1	7.1	7.4	8.1	7.5	8.2	7.8	7.2	7.7	7.8	8.3	8.4
220000	6.9	7.3	6.3	6.1	7.2	7.3	8.1	8.0	8.2	7.7	7.2	7.8	7.9	8.3	8.4
230000	6.5	7.2	6.4	6.6	7.4	7.6	8.0	7.9	8.2	7.9	7.2	7.8	8.0	8.3	8.4
Daily Max	7.0	7.6	7.7	7.2	7.7	7.7	8.2	8.1	8.4	8.4	7.8	7.8	8.1	8.6	8.5
Daily Min	6.0	6.2	6.2	5.8	6.3	6.7	7.6	7.5	7.9	7.3	7.2	7.3	7.5	7.9	8.0
Average	6.6	6.9	6.9	6.3	7.2	7.4	8.0	7.8	8.2	8.1	7.5	7.6	7.9	8.2	8.4

High Falls Tailrace Dissolved Oxygen Summary - August 2013

Time HHMMSS	08/01/13	08/02/13	08/03/13	08/04/13	08/05/13	08/06/13	08/07/13	08/08/13	08/09/13	08/10/13	08/11/13	08/12/13	08/13/13	08/14/13	08/15/13	08/16/13
0	8.4	7.7	7.8	7.9	8.2	8.1	7.8	7.6	7.3	7.3	8.1	7.8	7.6	7.7	7.7	7.4
10000	8.5	8.1	7.9	7.7	8.1	8.1	8.1	7.7	7.6	7.1	8.2	7.7	7.6	7.6	7.7	7.4
20000	8.5	8.2	8.0	7.7	8.3	8.2	7.9	7.7	7.6	7.2	8.1	7.8	7.5	7.5	7.8	7.4
30000	8.5	8.2	8.0	7.6	8.3	8.1	8.1	7.3	7.3	6.9	8.1	7.8	7.4	7.5	7.7	7.4
40000	8.3	8.1	7.6	8.2	8.0	7.9	7.6	7.6	7.1	7.9	8.0	7.6	7.4	8.1	7.7	6.8
50000	8.4	7.8	7.6	8.3	8.2	8.1	7.4	7.2	6.8	8.0	7.8	7.7	7.3	8.0	7.7	6.6
60000	8.2	8.1	7.6	8.2	7.9	8.2	7.3	7.4	6.9	8.2	7.6	7.7	7.3	8.2	7.7	7.1
70000	8.1	8.0	7.6	8.2	7.9	8.1	7.6	7.2	7.0	7.8	7.8	7.7	7.4	8.2	7.7	6.9
80000	8.1	7.7	7.7	8.3	8.1	8.2	7.7	7.5	6.9	8.0	7.9	7.7	7.3	8.2	7.4	6.9
90000	8.1	7.9	7.7	8.4	8.2	8.2	7.6	7.4	7.1	8.1	7.8	7.7	7.4	7.5	7.5	7.1
100000	8.4	7.9	7.7	8.4	8.2	8.1	7.4	7.4	7.4	7.8	7.7	7.2	7.6	7.3	7.6	7.1
110000	8.1	7.9	7.7	8.3	8.2	8.2	7.4	7.3	7.4	8.0	7.7	7.4	7.7	7.5	7.6	7.2
120000	8.1	7.9	7.9	8.3	8.1	8.3	7.8	7.5	7.3	8.0	7.8	8.4	7.7	7.6	7.5	7.2
130000	8.1	8.0	7.9	8.3	8.1	8.2	7.4	7.5	7.5	8.2	7.8	8.3	7.4	7.8	7.6	7.1
140000	8.1	8.0	7.8	8.3	8.2	7.9	7.6	7.3	7.4	7.9	7.8	8.3	7.3	7.6	7.5	7.3
150000	8.2	7.9	7.6	8.3	8.1	7.8	7.7	7.6	7.4	7.7	8.0	8.1	7.4	7.6	7.4	7.2
160000	8.1	8.0	7.8	8.3	7.9	8.0	7.6	7.6	7.3	7.9	8.0	8.2	7.4	7.6	7.3	7.3
170000	7.7	7.8	7.8	8.2	8.2	8.0	7.6	7.4	7.3	7.9	8.0	8.1	7.4	7.6	7.0	7.2
180000	8.1	7.8	7.8	8.2	8.1	8.0	7.8	7.4	7.5	7.9	7.9	7.3	7.7	7.5	7.4	7.0
190000	8.2	7.8	7.7	8.2	8.1	7.9	7.8	7.4	7.4	7.9	7.8	7.3	7.5	6.9	6.9	7.0
200000	8.1	7.7	8.0	8.2	8.1	7.9	7.7	7.6	7.2	8.0	7.9	7.6	7.7	7.4	6.6	7.0
210000	8.1	7.9	7.9	8.2	8.2	7.9	7.7	7.8	7.2	8.0	8.2	7.6	7.7	7.8	7.3	6.8
220000	8.1	8.0	7.8	8.2	8.1	8.0	7.7	7.4	7.5	8.1	8.3	7.8	7.8	7.7	7.4	6.8
230000	8.1	7.9	7.7	8.2	8.0	7.9	7.9	7.2	7.2	8.0	7.8	7.7	7.5	7.7	7.4	6.9
Daily Max	8.5	8.2	8.0	8.4	8.3	8.3	8.1	7.8	7.6	8.2	8.3	8.4	7.8	8.2	7.8	7.4
Daily Min	7.7	7.7	7.6	7.6	7.9	7.8	7.3	7.2	6.8	6.9	7.6	7.2	7.3	6.9	6.6	6.6
Average	8.2	7.9	7.8	8.2	8.1	8.0	7.7	7.5	7.3	7.8	7.9	7.8	7.5	7.7	7.4	7.1

License Minimum Dissolved Oxygen: 5.0 mg/l

High Falls Tailrace Dissolved Oxygen Summary - August 2013

Time HHMMSS	08/17/13	08/18/13	08/19/13	08/20/13	08/21/13	08/22/13	08/23/13	08/24/13	08/25/13	08/26/13	08/27/13	08/28/13	08/29/13	08/30/13	08/31/13
0	7.1	7.5	7.1	6.9	6.7	7.1	6.1	6.2	6.6	6.3	6.3	6.7	6.7	7.2	6.4
10000	7.0	7.4	7.1	6.7	6.5	7.2	6.2	6.4	6.5	6.5	6.3	6.7	6.4	7.2	6.4
20000	7.0	7.1	7.1	6.9	6.5	7.1	6.2	6.4	6.6	6.5	7.1	6.6	6.6	7.3	6.2
30000	7.1	7.3	7.0	7.0	6.6	6.9	6.2	6.5	6.6	6.6	6.4	6.6	6.6	6.7	6.1
40000	7.7	7.4	7.2	7.0	6.9	6.1	6.3	7.0	6.5	6.5	6.3	6.5	7.2	5.8	6.3
50000	7.7	7.3	7.3	7.1	7.1	6.4	6.4	6.9	6.3	6.6	6.5	6.5	7.2	6.0	6.2
60000	7.3	7.2	7.2	7.3	6.9	6.4	6.4	6.8	6.5	6.2	6.0	6.3	7.2	5.8	6.5
70000	7.6	7.4	7.1	7.2	7.1	6.4	6.5	7.0	6.6	6.6	6.0	6.3	7.4	5.8	6.5
80000	7.6	7.3	6.8	7.1	7.4	6.4	6.6	6.9	6.5	6.5	6.2	6.6	7.1	5.8	6.5
90000	7.4	6.9	6.8	6.9	7.2	6.4	6.6	7.1	6.5	6.4	6.2	6.7	7.1	6.3	6.5
100000	7.5	7.0	6.7	6.9	7.2	6.5	6.7	6.9	6.6	6.6	5.9	6.7	7.4	6.3	6.4
110000	7.4	7.2	7.0	7.3	7.6	6.5	6.5	6.7	7.3	6.6	5.9	6.8	7.3	6.5	6.5
120000	7.5	7.2	7.0	7.2	7.4	6.3	6.6	6.7	6.7	6.7	6.0	6.8	7.4	6.7	6.6
130000	7.4	7.2	6.6	7.3	7.3	6.3	6.5	6.6	6.9	6.5	6.2	6.8	7.3	6.9	6.4
140000	7.2	7.1	6.9	7.1	7.3	6.4	6.6	6.9	6.6	6.5	6.6	6.8	7.3	6.9	6.5
150000	7.5	7.1	6.2	7.1	7.7	6.4	6.3	6.2	6.4	6.4	6.5	6.8	7.2	7.1	6.3
160000	7.1	7.1	7.3	7.0	7.9	6.6	6.2	6.7	6.9	6.4	6.6	6.9	7.3	7.2	6.1
170000	6.3	7.1	6.8	6.4	7.8	6.4	6.3	6.7	6.9	6.5	6.6	6.9	7.3	7.3	6.2
180000	6.4	7.0	6.9	6.9	7.0	6.6	6.3	6.6	6.4	6.2	6.9	6.5	7.0	7.3	6.1
190000	6.9	6.9	7.0	6.8	7.1	6.4	6.0	6.2	6.5	6.4	6.6	6.4	7.0	7.3	5.9
200000	7.0	7.0	7.3	7.0	7.0	6.2	6.0	6.3	6.0	6.2	6.9	6.2	7.2	7.2	6.2
210000	7.2	6.9	6.9	6.4	6.9	6.1	6.3	6.1	6.0	6.5	6.7	6.4	6.7	7.0	6.1
220000	7.2	7.1	6.5	7.0	6.9	6.0	6.3	6.6	6.1	6.3	7.0	6.7	6.8	7.0	6.4
230000	7.4	7.0	6.7	6.7	7.0	6.0	6.4	6.4	6.1	6.3	7.0	6.5	7.1	6.6	6.3
Daily Max	7.7	7.5	7.3	7.3	7.9	7.2	6.7	7.1	7.3	6.7	7.1	6.9	7.4	7.3	6.6
Daily Min	6.3	6.9	6.2	6.4	6.5	6.0	6.0	6.1	6.0	6.2	5.9	6.2	6.4	5.8	5.9
Average	7.2	7.2	6.9	7.0	7.1	6.5	6.4	6.6	6.5	6.4	6.5	6.6	7.1	6.7	6.3

High Falls Tailrace Dissolved Oxygen Summary - September 2013


Time HHMMSS	09/01/13	09/02/13	09/03/13	09/04/13	09/05/13	09/06/13	09/07/13	09/08/13	09/09/13	09/10/13	09/11/13	09/12/13	09/13/13	09/14/13	09/15/13	09/16/13
0	6.5	6.8	7.1	7.2	8.0	7.4	7.4	7.9	7.8	7.8	7.9	8.2	8.5	8.5	8.8	8.9
10000	6.3	6.8	7.1	7.4	7.9	7.4	3.8	7.9	8.0	8.0	7.8	8.2	8.5	8.4	8.7	8.9
20000	6.3	6.8	7.1	7.6	8.0	7.4	0.2	8.0	7.8	7.9	7.7	8.1	8.5	8.5	8.7	9.0
30000	6.3	6.7	7.1	7.5	8.0	7.5	0.2	8.0	8.0	7.9	7.9	8.0	8.4	8.4	8.8	9.0
40000	6.6	6.8	7.4	7.8	7.6	7.7	0.2	7.9	8.0	7.9	8.0	8.0	8.6	8.8	8.8	8.6
50000	6.4	6.8	7.2	7.8	7.6	7.5	0.2	8.0	8.1	7.5	8.2	8.0	8.4	8.8	8.7	8.6
60000	6.4	6.9	7.2	7.8	7.5	7.8	0.2	8.0	7.9	7.9	8.2	7.9	8.4	8.8	8.8	8.7
70000	6.3	6.9	7.2	7.9	7.6	7.5	0.2	8.0	8.1	7.7	8.0	8.1	8.4	8.8	8.7	8.9
80000	6.3	7.0	7.6	7.7	7.5	7.9	0.2	8.0	8.1	8.0	8.1	8.1	8.5	8.8	8.8	8.9
90000	6.5	7.1	7.5	7.9	7.6	7.7	0.2	8.1	7.9	7.9	8.1	8.3	8.3	8.8	8.8	8.9
100000	6.4	7.3	7.3	7.7	7.6	7.8	8.0	8.1	8.1	7.8	8.3	8.1	8.5	8.9	8.8	8.9
110000	6.6	7.5	7.4	7.9	7.7	7.8	8.0	7.9	8.2	8.2	8.0	8.3	8.7	8.9	8.8	9.1
120000	6.7	7.6	7.4	8.0	7.9	8.0	8.0	7.9	8.0	8.0	8.0	8.4	8.7	8.8	8.9	9.1
130000	6.8	7.7	7.4	8.1	7.6	7.8	7.9	8.0	8.0	7.9	8.2	8.3	8.5	8.8	8.9	9.0
140000	6.7	7.7	7.2	8.0	7.7	8.2	7.6	7.8	8.0	7.9	7.9	8.3	8.5	8.8	8.9	8.7
150000	6.8	7.6	7.5	8.0	7.8	8.1	7.8	8.0	7.9	8.0	8.1	8.4	8.5	8.7	8.9	8.8
160000	6.9	7.7	7.3	8.0	7.7	7.8	8.0	7.9	8.1	7.9	8.1	8.4	8.4	8.8	8.9	8.7
170000	6.9	7.6	7.3	7.9	7.6	7.8	7.8	8.1	8.0	7.8	8.0	8.5	8.5	8.9	8.7	8.6
180000	6.9	7.6	7.3	7.8	7.4	7.7	8.0	7.7	7.9	7.6	8.0	8.5	8.5	8.7	8.8	8.6
190000	6.8	7.5	7.0	7.7	7.5	7.8	7.7	7.9	7.9	7.6	7.8	8.5	8.5	8.7	9.0	8.6
200000	6.6	7.4	7.4	7.9	7.5	7.7	7.9	7.9	7.9	7.6	7.9	8.4	8.5	8.7	9.0	8.6
210000	6.7	7.3	7.4	7.9	7.6	7.7	7.8	7.7	8.0	7.8	8.1	8.5	8.5	8.7	9.0	8.5
220000	7.0	7.1	7.6	8.0	7.4	7.8	7.8	8.0	7.8	7.7	8.1	8.5	8.4	8.8	9.1	8.6
230000	6.7	7.0	7.5	8.0	7.4	7.7	8.0	7.7	7.9	7.8	8.3	8.6	8.3	8.8	8.9	8.7
Daily Max	7.0	7.7	7.6	8.1	8.0	8.2	8.0	8.1	8.2	8.2	8.3	8.6	8.7	8.9	9.1	9.1
Daily Min	6.3	6.7	7.0	7.2	7.4	7.4	0.2	7.7	7.8	7.5	7.7	7.9	8.3	8.4	8.7	8.5
Average	6.6	7.2	7.3	7.8	7.7	7.7	5.1	7.9	8.0	7.8	8.0	8.3	8.5	8.7	8.8	8.8

License Minimum Dissolved Oxygen: 5.0 mg/l

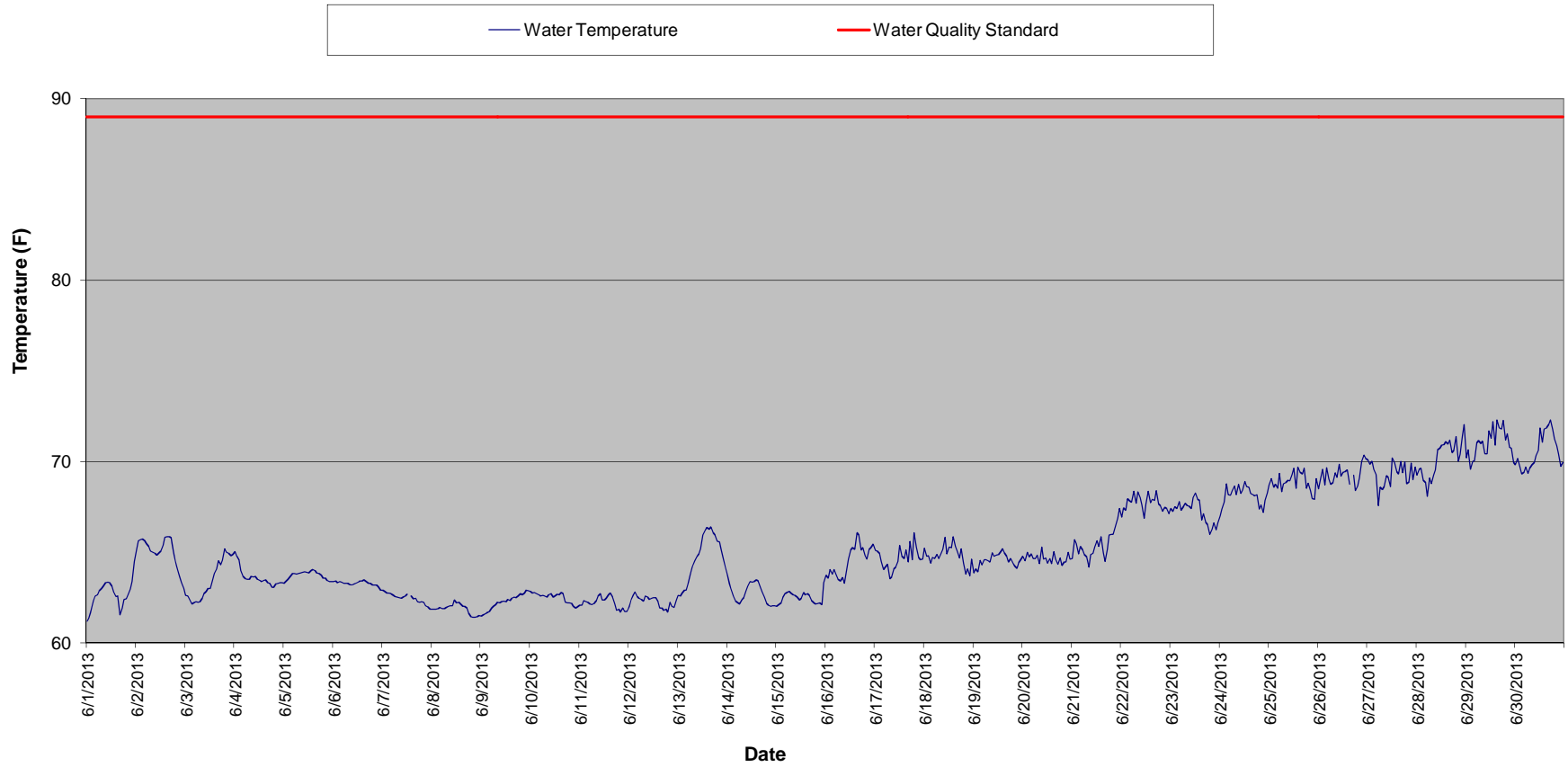
Non-representative data - Equipment Malfunction

High Falls Tailrace Dissolved Oxygen Summary - September 2013

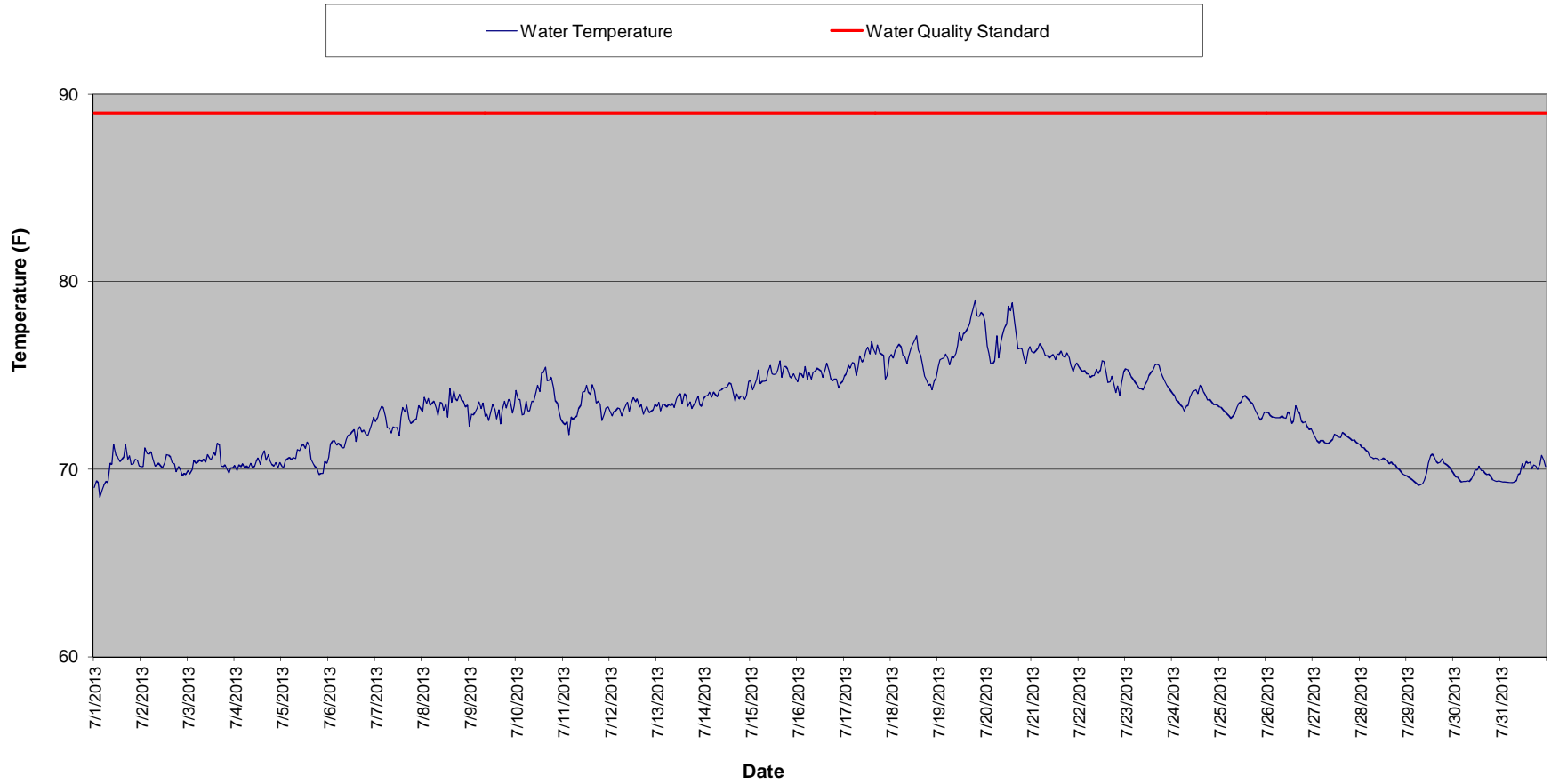
Time HHMMSS	09/17/13	09/18/13	09/19/13	09/20/13	09/21/13	09/22/13	09/23/13	09/24/13	09/25/13	09/26/13	09/27/13	09/28/13	09/29/13	09/30/13
0	8.5	8.6	8.8	8.2	8.1	8.4	8.6	8.6	9.1	8.9	8.8	8.6	8.8	8.8
10000	8.6	8.8	8.7	8.1	8.1	8.6	8.5	8.7	8.9	8.9	8.7	8.7	8.8	8.9
20000	8.4	8.6	8.8	8.0	8.0	8.4	8.6	8.6	8.9	8.8	8.8	8.6	8.8	8.6
30000	8.6	8.6	8.7	8.1	8.0	8.5	8.6	8.5	8.9	8.8	8.8	8.5	8.8	8.9
40000	8.6	8.9	8.3	8.0	8.4	8.5	8.6	8.7	8.7	9.0	8.7	9.0	8.7	8.9
50000	8.6	8.8	8.0	7.9	8.5	8.7	8.5	8.8	8.7	8.8	8.8	8.8	8.8	8.9
60000	8.7	8.8	8.4	8.0	8.4	8.6	8.6	8.7	8.9	8.9	8.7	8.9	8.9	8.9
70000	8.8	8.9	8.2	7.9	8.3	8.6	8.6	9.1	8.9	8.9	8.9	9.0	9.0	8.8
80000	8.8	8.9	8.4	7.9	8.4	8.6	8.6	8.9	8.8	8.9	8.9	9.0	9.0	9.0
90000	8.8	8.9	8.2	7.9	8.2	8.6	8.7	9.2	8.9	8.9	9.0	9.1	8.8	8.9
100000	9.0	9.0	8.5	7.9	8.3	8.9	8.7	9.0	9.0	9.0	9.0	9.1	9.0	9.0
110000	8.9	9.0	8.4	7.9	8.4	8.8	8.9	9.2	9.0	9.1	9.0	9.0	9.0	9.0
120000	8.8	8.8	8.6	8.0	8.4	8.7	8.9	9.0	9.0	9.0	9.1	9.2	9.0	9.1
130000	8.9	8.8	8.5	8.1	8.5	8.8	8.8	9.0	9.0		9.0	9.1	8.9	9.0
140000	8.9	8.9	8.6	7.9	8.5	8.9	8.8	9.1	9.2	9.0	9.0	9.0	8.9	9.1
150000	9.0	8.8	8.6	8.2	8.6	8.7	8.8	9.0	9.1	9.0	9.0	8.9	9.0	8.9
160000	8.7	8.9	8.4	8.1	8.5	8.8	8.8	9.0	9.1	9.0	8.8	8.9	9.0	9.0
170000	8.8	8.8	8.5	7.9	8.5	8.6	8.8	8.9	9.0	8.8	8.8	8.9	8.8	9.0
180000	8.6	8.8	8.5	8.0	8.6	8.6	8.6	8.9	9.0	8.8	8.7	8.6	8.8	8.8
190000	8.7	8.7	8.1	7.8	8.5	8.7	8.8	9.0	8.9	8.7	8.7	8.9	8.9	8.9
200000	8.5	8.8	8.2	8.0	8.5	8.8	8.7	9.0	9.0	8.8	8.7	8.5	8.9	8.8
210000	8.9	8.8	8.3	8.1	8.6	8.6	8.7	9.0	9.0	8.8	8.6	8.6	8.9	8.8
220000	8.6	8.8	8.3	8.1	8.5	8.7	8.8	9.0	9.0	8.8	8.7	8.7	8.9	8.9
230000	8.8	8.9	8.0	8.1	8.6	8.6	8.8	9.0	9.0	8.9	8.6	8.5	8.7	8.8
Daily Max	9.0	9.0	8.8	8.2	8.6	8.9	8.9	9.2	9.2	9.1	9.1	9.2	9.0	9.1
Daily Min	8.4	8.6	8.0	7.8	8.0	8.4	8.5	8.5	8.7	8.7	8.6	8.5	8.7	8.6
Average	8.7	8.8	8.4	8.0	8.4	8.6	8.7	8.9	9.0	8.9	8.8	8.8	8.9	8.9

 Missing data due to equipment maintenance.

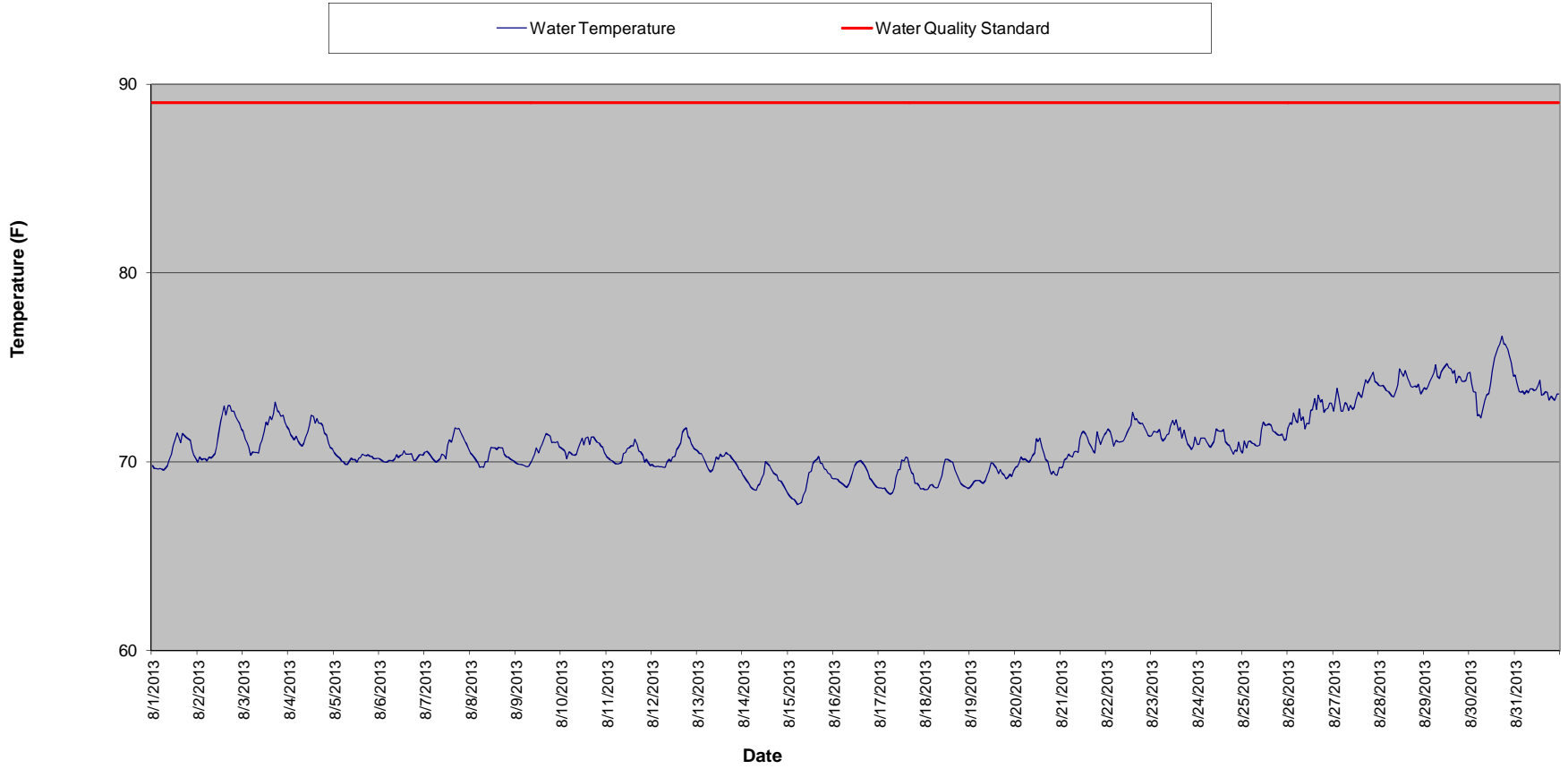
High Falls Tailrace Water Temperature - June 2013



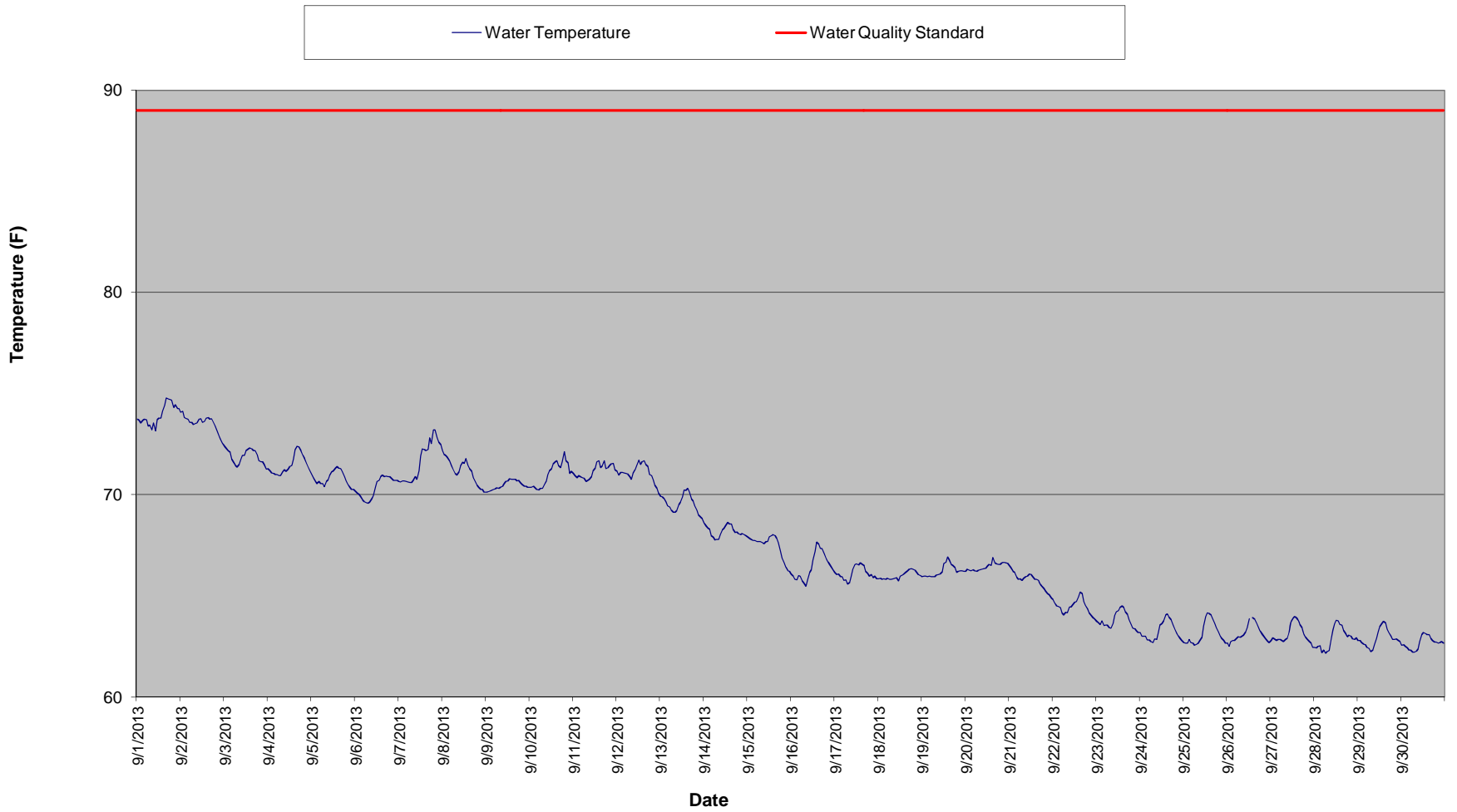
High Falls Tailrace Water Temperature - July 2013



High Falls Tailrace Water Temperature - August 2013



High Falls Tailrace Water Temperature - September 2013



High Falls Tailrace Temperature Summary - June 2013

Time HHMMSS	06/01/13	06/02/13	06/03/13	06/04/13	06/05/13	06/06/13	06/07/13	06/08/13	06/09/13	06/10/13	06/11/13	06/12/13	06/13/13	06/14/13	06/15/13	06/16/13
0	61.2	65.2	62.6	65.0	63.3	63.4	62.9	61.9	61.5	62.8	62.1	62.0	62.6	63.7	62.0	63.7
10000	61.4	65.6	62.6	64.8	63.4	63.4	62.8	61.9	61.6	62.8	62.1	62.4	62.6	63.2	62.1	63.6
20000	61.8	65.7	62.4	64.6	63.5	63.3	62.7	61.9	61.6	62.8	62.3	62.6	62.8	62.9	62.2	64.1
30000	62.3	65.8	62.2	64.0	63.7	63.4	62.7	61.9	61.7	62.7	62.3	62.8	62.9	62.6	62.5	63.8
40000	62.6	65.6	62.2	63.7	63.8	63.4	62.7	62.0	61.8	62.7	62.3	62.6	62.9	62.3	62.7	64.1
50000	62.7	65.5	62.3	63.6	63.8	63.3	62.7	61.9	61.9	62.6	62.2	62.5	63.4	62.2	62.8	63.7
60000	62.9	65.3	62.2	63.5	63.8	63.3	62.6	61.9	62.0	62.6	62.1	62.4	63.9	62.2	62.9	63.5
70000	63.0	65.1	62.3	63.5	63.8	63.3	62.5	62.0	62.1	62.6	62.2	62.3	64.3	62.4	62.8	63.4
80000	63.1	65.0	62.5	63.7	63.9	63.2	62.5	62.0	62.2	62.5	62.3	62.6	64.5	62.5	62.7	63.6
90000	63.3	65.0	62.7	63.6	63.9	63.2	62.5	62.0	62.2	62.7	62.6	62.5	64.7	62.9	62.6	63.3
100000	63.4	64.8	62.9	63.7	63.9	63.2	62.5	62.1	62.3	62.7	62.7	62.4	64.9	63.1	62.5	64.0
110000	63.3	65.0	63.0	63.5	63.9	63.3	62.6	62.4	62.3	62.5	62.4	62.5	65.2	63.4	62.4	64.6
120000	63.1	65.1	63.0	63.4	63.9	63.4	62.7	62.2	62.3	62.6	62.4	62.5	65.9	63.4	62.5	65.1
130000	62.8	65.4	63.4	63.4	64.0	63.4		62.2	62.4	62.7	62.5	62.5	66.2	63.4	62.8	65.3
140000	62.6	65.8	63.8	63.5	64.0	63.4	62.6	62.2	62.3	62.7	62.7	62.3	66.4	63.5	62.7	65.2
150000	62.6	65.9	64.1	63.5	64.0	63.5	62.4	62.0	62.5	62.8	62.8	61.9	66.3	63.4	62.7	66.1
160000	61.5	65.9	64.5	63.3	63.9	63.4	62.5	62.0	62.5	62.7	62.5	61.9	66.4	63.1	62.6	66.0
170000	61.9	65.8	64.3	63.3	63.8	63.3	62.3	61.9	62.5	62.3	62.2	61.8	66.1	62.8	62.3	65.1
180000	62.4	65.0	64.6	63.1	63.8	63.3	62.3	61.6	62.6	62.2	61.8	61.9	65.9	62.5	62.2	65.2
190000	62.4	64.5	65.2	63.1	63.6	63.2	62.3	61.5	62.7	62.2	61.9	61.7	65.6	62.2	62.2	64.8
200000	62.7	64.0	65.0	63.2	63.6	63.2	62.2	61.4	62.7	62.2	61.7	62.2	65.6	62.1	62.2	64.6
210000	63.0	63.7	64.9	63.3	63.5	63.2	62.0	61.4	62.8	62.0	61.9	62.0	65.1	62.0	62.2	65.2
220000	63.4	63.3	64.8	63.3	63.4	63.1	62.0	61.4	62.9	61.9	61.7	62.0	64.6	62.1	62.1	65.3
230000	64.5	63.0	64.9	63.3	63.4	62.9	61.9	61.5	62.9	62.0	61.8	62.4	64.2	62.1	63.3	65.5
Daily Max	64.5	65.9	65.2	65.0	64.0	63.5	62.9	62.4	62.9	62.8	62.8	62.8	66.4	63.7	63.3	66.1
Daily Min	61.2	63.0	62.2	63.1	63.3	62.9	61.9	61.4	61.5	61.9	61.7	61.7	62.6	62.0	62.0	63.3
Average	62.7	65.0	63.4	63.6	63.7	63.3	62.5	61.9	62.3	62.5	62.2	62.3	64.7	62.7	62.5	64.5

Monthly average Temp: 65.8
 License Maximum Temperature: 89 F

Missing data - equipment maintenance.

High Falls Tailrace Temperature Summary - June 2013

Time HHMMSS	06/17/13	06/18/13	06/19/13	06/20/13	06/21/13	06/22/13	06/23/13	06/24/13	06/25/13	06/26/13	06/27/13	06/28/13	06/29/13	06/30/13
0	65.1	65.2	63.9	64.8	64.7	66.9	67.4	67.0	68.7	68.5	70.1	69.2	70.2	69.8
10000	65.1	64.8	64.1	64.5	65.7	67.4	67.2	67.4	69.1	69.1	69.9	69.6	70.7	70.2
20000	65.0	64.8	63.9	65.0	65.5	67.3	67.5	67.8	68.6	69.6	70.0	69.6	69.6	69.7
30000	64.5	64.4	64.6	64.7	64.9	67.9	67.4	68.8	68.8	68.7	69.6	69.0	70.0	69.3
40000	64.1	64.7	64.3	64.9	65.3	67.8	67.8	68.2	68.5	69.7	69.3	68.8	70.0	69.4
50000	64.2	64.7	64.6	64.7	65.1	67.8	67.3	68.1	69.4	69.0	67.6	68.1	71.0	69.7
60000	64.3	64.9	64.6	64.7	64.9	68.4	67.5	68.4	68.3	68.7	68.6	69.1	71.2	69.4
70000	63.6	64.7	64.5	64.9	64.7	67.7	67.7	68.6	68.8	68.8	68.5	68.8	71.0	69.6
80000	63.6	65.0	64.5	64.4	64.2	68.3	67.6	68.2	68.8	69.4	68.6	69.3	71.1	69.8
90000	64.1	65.2	65.0	65.3	64.9	68.0	67.6	68.7	69.0	69.1	69.2	69.5	70.4	69.9
100000	64.2	65.8	64.8	64.6	64.9	67.6	67.4	68.2	68.9	69.9	69.1	70.6	70.4	70.3
110000	64.5	64.9	64.8	64.7	65.3	66.9	68.0	68.4	69.3	69.2	68.6	70.8	71.7	70.6
120000	65.4	65.3	64.9	64.4	65.6	67.7	68.3	68.9	69.6	69.4	70.2	70.9	71.3	71.9
130000	64.8	65.2	65.0	64.7	65.3	68.4	67.9	68.6	68.5	69.4	69.9	70.9	72.2	71.1
140000	64.7	65.9	65.2	64.4	65.9	67.7	67.9	68.6	69.7	69.5	69.4	71.1	70.9	71.8
150000	65.1	65.3	65.0	65.0	65.0	67.9	66.8	68.2	69.4	68.7	69.3	71.0	72.3	71.9
160000	64.5	65.1	64.8	64.6	64.5	67.9	67.1	68.2	69.3	Missing data - equipment maintenance.	70.0	71.2	71.9	72.1
170000	65.6	64.7	64.5	64.3	65.2	68.4	66.7	68.1	69.6	69.3	69.4	70.5	71.8	72.3
180000	64.6	65.2	64.7	64.7	65.9	67.7	66.5	68.2	68.5	68.4	70.0	70.6	72.3	71.8
190000	66.1	64.4	64.4	64.3	66.0	67.6	66.0	67.4	68.8	68.7	68.8	71.4	71.2	71.3
200000	65.3	63.8	64.2	64.5	66.0	67.3	66.3	67.6	68.4	69.1	68.9	70.0	71.5	70.9
210000	64.7	64.1	64.1	64.5	66.4	67.5	66.6	67.2	67.9	70.0	69.9	70.4	70.8	70.4
220000	64.6	63.7	64.4	65.0	66.9	67.4	66.3	67.9	67.9	70.4	69.0	71.4	70.7	69.7
230000	64.6	64.6	64.6	64.6	67.4	67.1	66.6	68.3	69.1	70.2	69.7	72.1	69.9	69.9
Daily Max	66.1	65.9	65.2	65.3	67.4	68.4	68.3	68.9	69.7	70.4	70.2	72.1	72.3	72.3
Daily Min	63.6	63.7	63.9	64.3	64.2	66.9	66.0	67.0	67.9	68.4	67.6	68.1	69.6	69.3
Average	64.7	64.8	64.6	64.7	65.4	67.7	67.2	68.1	68.9	69.3	69.3	70.2	71.0	70.5

Missing data - equipment maintenance.

High Falls Tailrace Temperature Summary - July 2013

Time HHMMSS	07/01/13	07/02/13	07/03/13	07/04/13	07/05/13	07/06/13	07/07/13	07/08/13	07/09/13	07/10/13	07/11/13	07/12/13	07/13/13	07/14/13	07/15/13	07/16/13
0	69.0	70.1	69.9	70.2	70.1	70.6	72.5	73.1	72.3	74.2	72.5	73.1	73.4	73.8	74.7	74.7
10000	69.4	70.1	69.7	69.9	70.1	71.3	72.7	73.9	72.9	73.7	72.4	72.8	73.6	73.9	74.2	75.1
20000	69.3	71.2	70.0	70.2	70.5	71.5	73.1	73.5	72.9	73.7	72.5	73.1	73.1	73.9	74.5	75.1
30000	68.5	70.8	70.5	70.1	70.6	71.5	73.3	73.8	73.0	72.9	71.8	73.1	73.5	74.1	74.8	74.9
40000	68.9	70.8	70.3	70.3	70.6	71.3	73.3	73.4	73.3	72.9	72.8	73.3	73.4	73.8	75.3	75.5
50000	69.1	70.9	70.4	70.1	70.5	71.4	72.8	73.5	73.6	73.6	72.6	73.2	73.3	74.1	74.6	74.8
60000	69.4	70.6	70.5	70.2	70.6	71.3	72.2	73.6	73.2	73.1	72.7	72.8	73.4	74.0	74.7	75.1
70000	69.3	70.2	70.4	70.1	70.6	71.2	72.2	73.3	73.5	73.1	72.8	73.1	73.4	73.9	74.7	74.8
80000	70.3	70.2	70.5	70.3	71.0	71.2	71.9	72.9	72.8	73.6	73.2	73.4	73.5	74.2	74.7	75.2
90000	70.3	70.3	70.4	70.1	71.0	71.6	72.2	73.6	72.9	73.6	73.4	73.6	73.3	74.2	75.2	75.2
100000	71.3	70.2	70.8	70.2	71.2	71.8	72.2	73.5	72.6	74.1	74.1	73.1	73.7	74.3	75.5	75.4
110000	70.8	70.1	70.6	70.4	71.3	71.9	72.2	73.1	73.1	74.5	74.1	73.6	73.9	74.4	75.1	75.3
120000	70.7	70.4	70.5	70.6	71.1	72.0	71.8	73.5	73.4	74.1	74.5	73.8	74.0	74.4	75.0	75.2
130000	70.4	70.8	70.9	70.3	71.4	72.1	72.8	72.8	73.2	75.1	74.1	73.6	73.5	74.6	75.1	74.9
140000	70.5	70.8	70.7	70.7	71.2	71.5	73.3	74.3	72.7	75.2	74.0	73.8	74.0	74.5	75.3	75.3
150000	70.7	70.6	71.4	71.0	70.5	72.1	73.1	73.6	73.2	75.4	74.5	73.3	73.9	74.2	75.8	75.7
160000	71.3	70.4	71.3	70.5	70.3	72.3	73.4	74.2	72.4	74.7	74.2	73.4	73.4	73.6	74.9	75.3
170000	70.5	70.3	70.2	70.8	70.1	72.0	72.7	73.7	73.2	74.8	73.5	72.9	73.6	74.0	75.5	74.8
180000	70.7	69.9	70.1	70.4	70.1	72.1	72.4	73.7	73.6	74.9	73.6	73.2	73.2	73.8	75.5	74.7
190000	70.3	70.1	70.2	70.3	69.7	71.9	72.5	74.0	73.3	74.4	73.5	73.3	73.4	73.9	75.4	74.8
200000	70.3	70.0	69.9	70.2	69.8	71.8	72.6	73.7	73.7	73.7	72.6	73.0	73.6	73.9	74.9	74.8
210000	70.5	69.6	69.8	70.3	69.8	72.1	72.7	73.6	73.6	73.5	72.9	73.1	73.9	73.7	74.9	74.3
220000	70.5	69.8	70.1	70.1	70.4	72.3	73.4	73.3	73.0	73.0	73.3	73.2	73.4	73.9	75.1	74.6
230000	70.2	69.7	70.1	70.4	70.3	72.8	73.3	73.4	73.4	72.7	73.3	73.4	73.4	74.7	74.9	74.7
Daily Max	71.3	71.2	71.4	71.0	71.4	72.8	73.4	74.3	73.7	75.4	74.5	73.8	74.0	74.7	75.8	75.7
Daily Min	68.5	69.6	69.7	69.9	69.7	70.6	71.8	72.8	72.3	72.7	71.8	72.8	73.1	73.6	74.2	74.3
Average	70.1	70.3	70.4	70.3	70.5	71.7	72.7	73.5	73.1	73.9	73.3	73.3	73.5	74.1	75.0	75.0

Monthly Average Temp: 73.0
 License Maximum Temperature: 89 F

High Falls Tailrace Temperature Summary - July 2013

Time	07/17/13	07/18/13	07/19/13	07/20/13	07/21/13	07/22/13	07/23/13	07/24/13	07/25/13	07/26/13	07/27/13	07/28/13	07/29/13	07/30/13	07/31/13
HHMMSS															
0	75.0	76.1	75.5	77.9	76.3	75.4	75.4	74.0	73.3	73.0	71.9	71.3	69.7	69.7	69.3
10000	75.1	75.9	75.8	76.6	76.2	75.3	75.3	73.9	73.3	73.0	71.7	71.2	69.6	69.6	69.3
20000	75.5	76.3	75.9	76.2	76.3	75.2	75.1	73.7	73.1	72.9	71.5	71.2	69.5	69.5	69.3
30000	75.4	76.5	75.9	75.6	76.4	75.3	74.9	73.6	73.1	72.8	71.4	71.0	69.4	69.4	69.3
40000	75.7	76.7	76.2	75.6	76.7	75.1	74.8	73.5	72.9	72.8	71.5	70.9	69.3	69.3	69.3
50000	75.7	76.5	75.9	75.8	76.5	75.1	74.6	73.3	72.8	72.7	71.5	70.7	69.2	69.3	69.3
60000	75.0	76.0	75.6	77.1	76.3	74.9	74.5	73.1	72.7	72.7	71.4	70.6	69.1	69.3	69.3
70000	75.4	76.0	76.0	75.9	76.1	75.0	74.3	73.3	72.8	72.8	71.4	70.6	69.2	69.4	69.3
80000	76.1	75.6	75.9	76.8	76.1	75.0	74.3	73.4	73.0	72.8	71.4	70.6	69.2	69.4	69.4
90000	75.7	76.0	76.2	77.2	75.9	75.3	74.2	73.8	73.3	72.7	71.5	70.6	69.4	69.5	69.7
100000	75.8	76.4	76.6	77.5	76.1	75.1	74.5	74.1	73.5	72.7	71.6	70.5	69.8	69.7	69.8
110000	76.3	76.7	77.3	77.7	76.1	75.3	74.7	74.2	73.6	73.1	71.9	70.5	70.3	69.9	70.3
120000	76.5	76.9	76.8	78.7	75.8	75.8	75.0	74.2	73.8	73.0	71.8	70.6	70.7	69.9	70.1
130000	76.2	77.1	77.2	78.5	76.1	75.8	75.2	74.0	73.9	72.4	71.7	70.5	70.8	70.2	70.4
140000	76.8	76.4	77.3	78.9	76.1	75.1	75.3	74.5	73.8	72.6	71.7	70.5	70.7	69.9	70.3
150000	76.4	76.1	77.5	77.9	76.3	74.6	75.6	74.4	73.7	73.4	71.9	70.3	70.4	69.9	70.4
160000	76.2	75.6	77.8	77.2	76.0	74.7	75.6	74.1	73.6	73.1	71.9	70.4	70.3	69.8	70.0
170000	76.6	75.0	78.2	76.4	76.0	75.0	75.5	73.9	73.5	73.0	71.8	70.3	70.4	69.7	70.2
180000	76.2	74.8	78.5	76.4	76.2	74.5	75.2	73.7	73.2	72.6	71.7	70.2	70.6	69.7	70.2
190000	76.1	74.5	79.0	76.4	76.0	74.1	74.9	73.7	73.0	72.5	71.6	70.1	70.3	69.6	70.0
200000	76.1	74.5	78.2	75.9	75.5	74.4	74.7	73.6	72.8	72.5	71.5	70.0	70.3	69.4	70.3
210000	74.8	74.2	78.2	75.7	75.2	73.9	74.5	73.5	72.6	72.3	71.6	69.9	70.2	69.4	70.7
220000	75.0	74.7	78.4	76.3	75.5	74.6	74.3	73.5	72.7	72.1	71.4	69.7	70.1	69.3	70.5
230000	75.9	74.8	78.2	76.5	75.7	75.2	74.2	73.4	73.0	72.2	71.3	69.7	69.9	69.4	70.1
Daily Max	76.8	77.1	79.0	78.9	76.7	75.8	75.6	74.5	73.9	73.4	71.9	71.3	70.8	70.2	70.7
Daily Min	74.8	74.2	75.5	75.6	75.2	73.9	74.2	73.1	72.6	72.1	71.3	69.7	69.1	69.3	69.3
Average	75.8	75.8	77.0	76.9	76.1	75.0	74.9	73.8	73.2	72.7	71.6	70.5	69.9	69.6	69.9

High Falls Tailrace Temperature Summary - August 2013

Time HHMMSS	08/01/13	08/02/13	08/03/13	08/04/13	08/05/13	08/06/13	08/07/13	08/08/13	08/09/13	08/10/13	08/11/13	08/12/13	08/13/13	08/14/13	08/15/13	08/16/13
0	69.8	70.0	71.6	71.7	70.5	70.2	70.5	70.5	69.9	70.7	70.2	69.8	70.6	69.3	68.3	69.1
10000	69.6	70.3	71.2	71.4	70.4	70.1	70.6	70.4	69.9	70.6	70.2	69.8	70.4	69.2	68.2	69.1
20000	69.6	70.1	71.0	71.3	70.3	70.0	70.5	70.3	69.8	70.5	70.1	69.7	70.4	69.0	68.0	69.1
30000	69.6	70.1	70.8	71.2	70.2	70.0	70.3	70.1	69.8	70.2	70.0	69.7	70.3	68.9	68.0	69.0
40000	69.6	70.1	70.3	71.3	70.0	70.0	70.1	69.9	69.8	70.5	69.9	69.7	70.0	68.7	67.9	68.9
50000	69.6	70.0	70.5	71.1	70.0	70.1	70.1	69.7	69.7	70.5	69.9	69.7	69.8	68.6	67.7	68.8
60000	69.5	70.2	70.5	71.0	69.8	70.1	70.0	69.7	69.7	70.4	69.9	69.7	69.6	68.5	67.8	68.7
70000	69.7	70.2	70.5	70.8	69.9	70.0	70.1	69.7	69.8	70.3	69.9	69.7	69.5	68.5	67.8	68.6
80000	69.8	70.3	70.5	71.0	70.0	70.1	70.2	70.0	70.0	70.4	70.0	70.0	69.6	68.7	68.2	68.8
90000	70.1	70.4	70.9	71.3	70.2	70.4	70.4	70.0	70.2	70.7	70.4	70.1	69.9	68.8	68.5	69.1
100000	70.4	70.8	71.1	71.6	70.1	70.2	70.3	70.4	70.4	71.0	70.5	70.0	70.2	69.2	69.0	69.4
110000	70.9	71.5	71.6	72.0	70.1	70.3	70.2	70.8	70.7	71.2	70.7	70.3	70.1	69.3	69.4	69.8
120000	71.1	72.2	72.1	72.4	70.0	70.4	70.9	70.7	70.5	70.9	70.7	70.3	70.4	70.0	69.5	69.9
130000	71.5	72.5	72.0	72.4	70.2	70.6	71.2	70.7	70.7	71.3	70.8	70.6	70.3	69.9	69.9	70.0
140000	71.3	73.0	72.4	72.1	70.2	70.4	71.0	70.6	70.9	71.3	70.8	70.8	70.3	69.8	70.0	70.1
150000	71.0	72.4	72.2	72.3	70.4	70.4	71.4	70.8	71.3	70.9	71.2	71.0	70.5	69.6	70.1	69.9
160000	71.5	73.0	72.5	72.1	70.3	70.4	71.8	70.7	71.5	71.3	70.9	71.5	70.4	69.4	70.3	69.9
170000	71.4	73.0	73.1	72.1	70.3	70.4	71.7	70.7	71.4	71.3	70.6	71.7	70.3	69.4	69.9	69.7
180000	71.3	72.7	72.7	71.9	70.4	70.1	71.8	70.4	71.4	71.2	70.5	71.8	70.2	69.3	69.9	69.4
190000	71.2	72.7	72.6	71.5	70.3	70.1	71.6	70.2	71.0	71.0	70.3	71.3	70.1	69.0	69.6	69.1
200000	71.1	72.4	72.4	71.4	70.3	70.2	71.3	70.2	71.0	71.0	70.0	71.2	70.0	69.0	69.6	69.0
210000	70.6	72.2	72.5	71.0	70.2	70.4	71.1	70.1	71.0	70.8	70.1	70.9	69.7	68.8	69.4	68.8
220000	70.3	72.0	72.1	70.8	70.2	70.4	70.9	70.1	71.1	70.8	70.0	70.7	69.6	68.7	69.3	68.7
230000	70.1	71.7	71.9	70.7	70.2	70.3	70.7	70.0	70.8	70.4	69.8	70.6	69.5	68.4	69.1	68.6
Daily Max	71.5	73.0	73.1	72.4	70.5	70.6	71.8	70.8	71.5	71.3	71.2	71.8	70.6	70.0	70.3	70.1
Daily Min	69.5	70.0	70.3	70.7	69.8	70.0	70.0	69.7	69.7	70.2	69.8	69.7	69.5	68.4	67.7	68.6
Average	70.4	71.4	71.6	71.5	70.2	70.2	70.8	70.3	70.5	70.8	70.3	70.4	70.1	69.1	69.0	69.2

Monthly Average Temp: 71.0
 License Maximum Temperature: 89 F

High Falls Tailrace Temperature Summary - August 2013

Time HHMMSS	08/17/13	08/18/13	08/19/13	08/20/13	08/21/13	08/22/13	08/23/13	08/24/13	08/25/13	08/26/13	08/27/13	08/28/13	08/29/13	08/30/13	08/31/13
0	68.6	68.5	68.6	69.7	69.7	71.5	71.4	70.9	70.5	71.8	72.7	74.0	73.9	74.7	74.6
10000	68.6	68.5	68.8	69.8	69.7	71.7	71.6	70.9	71.1	72.1	73.3	74.0	73.8	74.1	74.2
20000	68.6	68.5	68.9	69.9	70.1	71.6	71.6	71.2	70.7	72.0	73.9	74.0	74.0	73.7	73.7
30000	68.6	68.8	69.0	70.2	70.2	71.3	71.6	71.3	71.1	72.6	73.3	73.9	74.2	73.7	73.7
40000	68.4	68.8	69.0	70.1	70.4	70.8	71.7	71.3	71.1	72.2	72.7	73.8	74.5	72.4	73.7
50000	68.3	68.7	69.0	70.1	70.3	71.1	71.2	71.1	71.0	72.1	72.7	73.7	74.7	72.5	73.6
60000	68.3	68.6	68.9	70.1	70.3	71.1	71.1	70.8	71.0	72.8	73.1	73.6	75.1	72.3	73.8
70000	68.4	68.6	68.9	70.0	70.5	71.0	71.2	70.8	70.9	72.2	73.0	73.5	74.5	72.8	73.6
80000	68.6	68.9	69.0	70.1	70.5	71.1	71.4	70.9	70.8	72.4	72.7	73.4	74.4	73.2	73.9
90000	69.2	69.2	69.3	70.3	70.5	71.1	71.5	71.1	70.9	71.7	73.0	73.8	74.8	73.5	73.9
100000	69.6	69.7	69.5	70.4	71.2	71.3	71.9	71.7	71.7	72.1	72.8	74.1	74.9	73.6	73.8
110000	69.6	70.1	69.9	71.2	71.5	71.5	72.2	71.7	72.1	72.0	72.9	74.9	75.1	74.1	73.8
120000	70.1	70.1	69.9	71.1	71.6	71.7	72.0	71.6	71.9	72.7	73.3	74.7	75.2	74.8	74.0
130000	70.0	70.1	69.8	71.3	71.5	71.9	72.2	71.6	71.9	72.8	73.7	74.5	75.0	75.5	74.3
140000	70.3	70.0	69.7	70.7	71.3	72.6	71.6	71.7	72.0	73.3	73.5	74.8	74.9	75.8	73.5
150000	70.2	70.0	69.4	70.5	71.0	72.2	71.8	71.1	71.9	72.8	73.4	74.4	74.7	76.0	73.5
160000	69.8	69.5	69.6	70.1	70.8	72.3	71.3	70.9	71.6	73.5	74.0	74.2	74.8	76.2	73.7
170000	69.4	69.3	69.4	70.0	70.6	72.1	71.7	70.8	71.6	73.2	74.3	74.0	74.2	76.7	73.7
180000	69.4	69.1	69.3	69.6	70.5	72.0	71.3	70.6	71.5	73.3	74.2	74.0	74.5	76.3	73.2
190000	68.9	68.9	69.1	69.3	71.6	72.1	71.0	70.4	71.4	72.6	74.3	74.0	74.5	76.2	73.5
200000	68.8	68.8	69.2	69.5	71.2	71.9	70.8	70.6	71.4	72.8	74.6	74.0	74.3	76.0	73.3
210000	68.7	68.7	69.4	69.3	70.9	71.6	70.6	70.6	71.5	72.8	74.7	74.1	74.2	75.6	73.3
220000	68.6	68.6	69.2	69.3	71.3	71.4	70.8	71.0	71.1	73.1	74.3	73.6	74.3	75.3	73.6
230000	68.6	68.6	69.5	69.7	71.4	71.3	71.3	70.6	71.2	73.1	74.2	73.7	74.7	74.5	73.6
Daily Max	70.3	70.1	69.9	71.3	71.6	72.6	72.2	71.7	72.1	73.5	74.7	74.9	75.2	76.7	74.6
Daily Min	68.3	68.5	68.6	69.3	69.7	70.8	70.6	70.4	70.5	71.7	72.7	73.4	73.8	72.3	73.2
Average	69.1	69.1	69.3	70.1	70.8	71.6	71.4	71.1	71.3	72.6	73.5	74.0	74.6	74.6	73.7

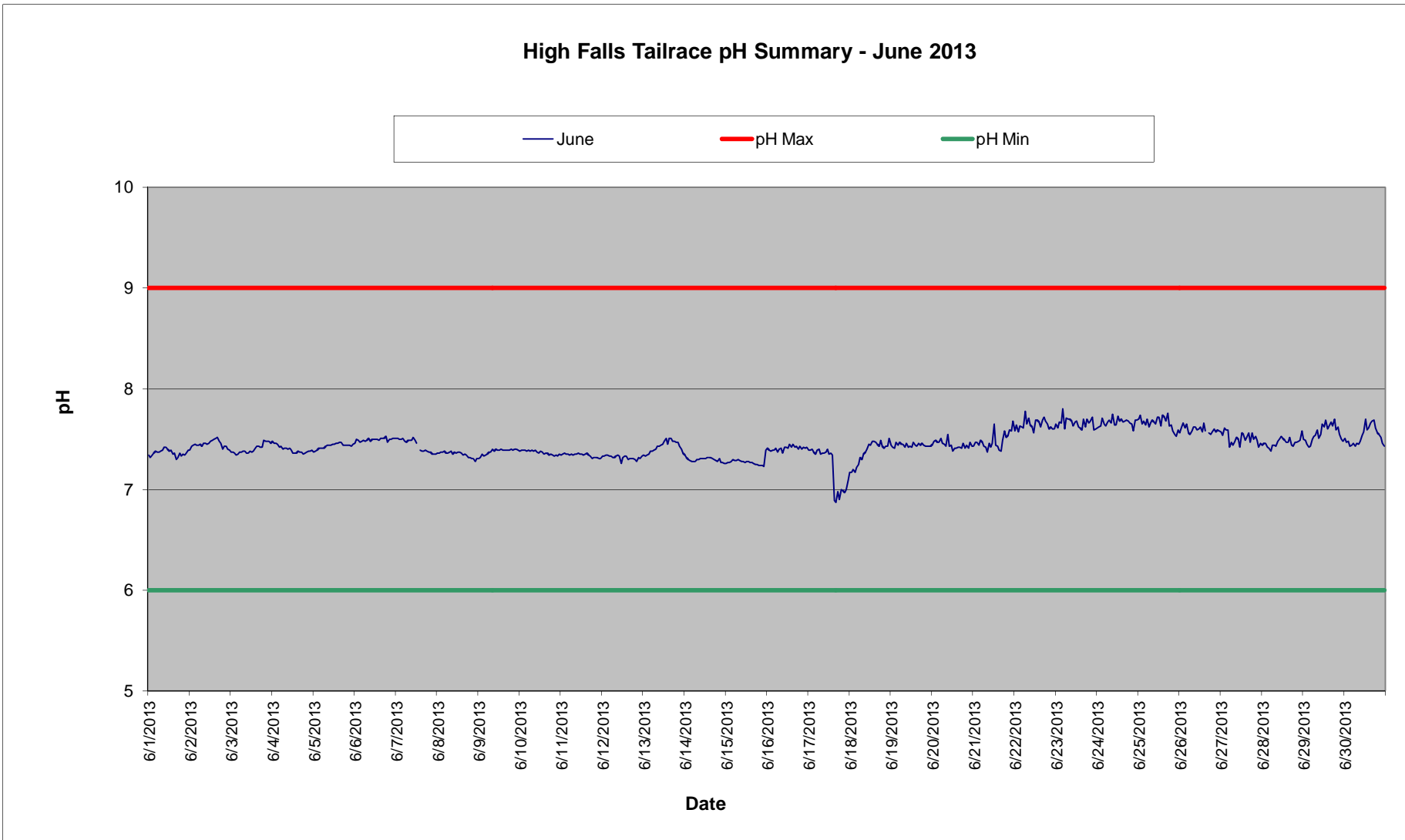
High Falls Tailrace Temperature Summary - September 2013

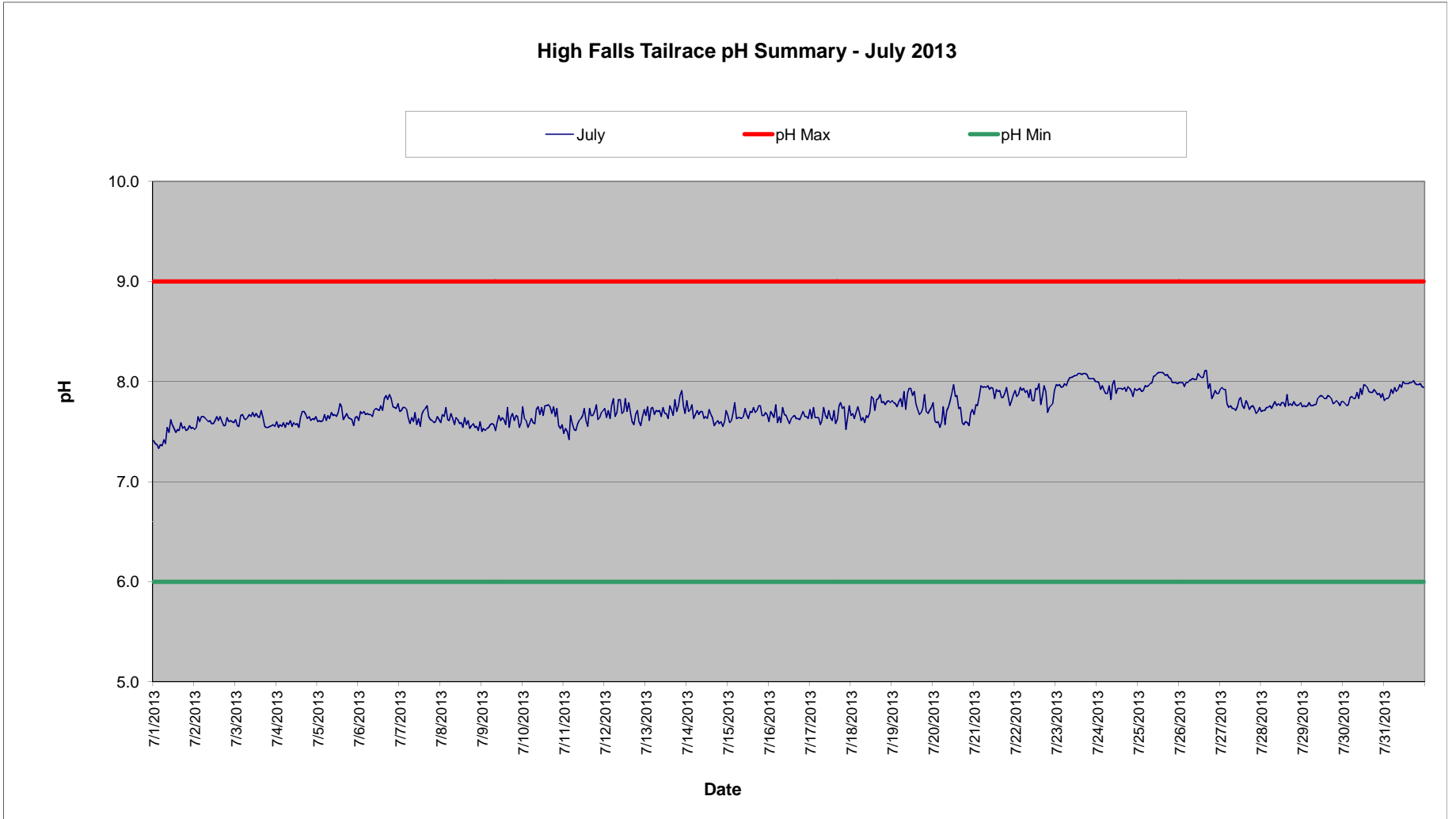
Time	09/01/13	09/02/13	09/03/13	09/04/13	09/05/13	09/06/13	09/07/13	09/08/13	09/09/13	09/10/13	09/11/13	09/12/13	09/13/13	09/14/13	09/15/13	09/16/13	
HHMMSS																	
0	73.7	74.1	72.4	71.3	71.0	70.2	70.7	72.2	70.1	70.4	71.1	71.2	69.9	68.6	67.9	66.1	
10000	73.7	74.1	72.3	71.2	70.8	70.1	70.6	72.0	70.1	70.4	70.9	71.0	69.9	68.5	67.8	66.0	
20000	73.5	73.8	72.2	71.1	70.7	70.0	70.7	71.9	70.2	70.4	70.8	71.1	69.8	68.4	67.8	65.8	
30000	73.7	73.8	72.1	71.0	70.5	69.9	70.7	71.8	70.2	70.3	71.0	71.1	69.6	68.3	67.7	65.8	
40000	73.7	73.7	71.8	71.0	70.7	69.7	70.7	71.6	70.3	70.3	70.9	71.1	69.4	68.0	67.7	66.0	
50000	73.7	73.6	71.6	71.0	70.6	69.7	70.6	71.4	70.3	70.2	70.8	71.0	69.4	67.9	67.7	66.0	
60000	73.4	73.6	71.4	70.9	70.5	69.6	70.6	71.3	70.3	70.3	70.8	71.0	69.2	67.8	67.7	65.8	
70000	73.5	73.5	71.4	71.0	70.4	69.6	70.6	71.1	70.3	70.3	70.7	70.9	69.1	67.8	67.7	65.6	
80000	73.2	73.5	71.5	71.1	70.6	69.6	70.7	71.0	70.4	70.5	70.7	70.8	69.1	67.8	67.6	65.5	
90000	73.5	73.6	71.7	71.2	70.7	69.8	70.9	71.1	70.4	70.7	70.8	71.1	69.2	68.0	67.6	65.8	
100000	73.1	73.7	71.9	71.2	70.9	69.9	70.8	71.4	70.5	71.0	70.9	71.2	69.5	68.3	67.7	66.2	
110000	73.7	73.8	71.9	71.3	71.1	70.4	71.2	71.6	70.6	71.2	71.2	71.5	69.6	68.3	67.7	66.3	
120000	73.8	73.6	72.2	71.4	71.2	70.7	71.9	71.5	70.7	71.3	71.3	71.7	69.9	68.5	67.9	66.8	
130000	73.8	73.6	72.3	71.4	71.3	70.7	72.3	71.8	70.8	71.5	71.6	71.5	70.2	68.6	68.0	67.2	
140000	74.1	73.8	72.3	71.8	71.4	70.9	72.2	71.4	70.8	71.6	71.7	71.6	70.2	68.6	68.0	67.7	
150000	74.4	73.8	72.3	72.2	71.3	71.0	72.2	71.3	70.8	71.7	71.3	71.7	70.3	68.6	68.0	67.6	
160000	74.8	73.7	72.2	72.4	71.3	70.9	72.2	71.2	70.8	71.4	71.4	71.5	70.1	68.3	67.8	67.4	
170000	74.7	73.8	72.2	72.4	71.1	70.9	72.8	70.8	70.7	71.3	71.7	71.4	69.8	68.1	67.6	67.4	
180000	74.7	73.5	72.0	72.2	70.9	70.9	72.5	70.7	70.7	71.6	71.3	71.0	69.7	68.1	67.2	67.1	
190000	74.7	73.4	71.7	72.0	70.7	70.9	73.2	70.5	70.6	72.1	71.3	70.9	69.5	68.1	66.9	66.9	
200000	74.3	73.1	71.6	71.8	70.5	70.8	73.2	70.4	70.5	71.7	71.5	70.7	69.2	68.0	66.6	66.7	
210000	74.4	72.9	71.6	71.6	70.4	70.7	72.8	70.3	70.4	71.6	71.5	70.5	69.0	68.1	66.4	66.6	
220000	74.3	72.7	71.5	71.4	70.3	70.7	72.6	70.3	70.4	71.1	71.5	70.3	68.9	68.0	66.2	66.5	
230000	74.3	72.5	71.3	71.2	70.3	70.7	72.5	70.1	70.4	71.2	71.2	70.1	68.8	68.0	66.2	66.3	
Daily Max	74.8	74.1	72.4	72.4	71.4	71.0	73.2	72.2	70.8	72.1	71.7	71.7	70.3	68.6	68.0	67.7	
Daily Min	73.1	72.5	71.3	70.9	70.3	69.6	70.6	70.1	70.1	70.2	70.7	70.1	68.8	67.8	66.2	65.5	
Average	74.0	73.6	71.9	71.5	70.8	70.3	71.6	71.2	70.5	71.0	71.2	71.1	69.6	68.2	67.5	66.4	
Monthly Average Temp:				67.7													
License Maximum Temperature:				89 F													

High Falls Tailrace Temperature Summary - September 2013

Time HHMMSS	09/17/13	09/18/13	09/19/13	09/20/13	09/21/13	09/22/13	09/23/13	09/24/13	09/25/13	09/26/13	09/27/13	09/28/13	09/29/13	09/30/13
0	66.1	65.8	65.9	66.2	66.5	64.8	63.7	63.2	62.7	62.7	62.8	62.5	62.8	62.6
10000	66.1	65.9	66.0	66.3	66.4	64.7	63.7	63.0	62.7	62.5	62.9	62.4	62.8	62.6
20000	66.1	65.8	66.0	66.3	66.2	64.5	63.6	63.0	62.7	62.7	62.9	62.5	62.7	62.5
30000	65.9	65.8	65.9	66.2	66.2	64.5	63.8	63.0	62.8	62.8	62.8	62.5	62.6	62.4
40000	65.9	65.8	66.0	66.3	65.9	64.4	63.5	62.8	62.7	62.8	62.8	62.2	62.6	62.3
50000	65.8	65.9	65.9	66.2	65.8	64.2	63.6	62.8	62.7	62.9	62.9	62.3	62.5	62.3
60000	65.8	65.8	65.9	66.2	65.8	64.1	63.6	62.7	62.6	63.0	62.8	62.2	62.4	62.2
70000	65.6	65.8	65.9	66.3	65.8	64.2	63.4	62.7	62.6	62.9	62.7	62.2	62.2	62.2
80000	65.7	65.8	66.0	66.3	65.9	64.1	63.4	62.9	62.7	63.0	62.9	62.3	62.3	62.3
90000	66.0	65.9	66.1	66.3	65.9	64.5	63.6	62.9	62.8	63.1	62.9	62.8	62.6	62.4
100000	66.3	65.9	66.1	66.3	66.0	64.5	64.0	63.2	62.9	63.2	63.2	63.3	62.9	62.7
110000	66.5	65.8	66.2	66.4	66.1	64.6	64.2	63.6	63.5	63.4	63.7	63.6	63.2	63.1
120000	66.6	66.0	66.6	66.5	66.1	64.7	64.3	63.6	64.0	63.9	63.9	63.8	63.5	63.2
130000	66.5	66.0	66.7	66.5	65.9	64.7	64.4	63.8	64.1		64.0	63.8	63.6	63.1
140000	66.6	66.1	66.9	66.5	65.8	64.9	64.5	64.1	64.1	63.9	63.9	63.6	63.7	63.1
150000	66.6	66.2	66.8	66.9	65.8	65.2	64.4	64.1	64.1	63.8	63.8	63.6	63.7	63.1
160000	66.5	66.2	66.6	66.6	65.8	65.1	64.2	64.0	63.9	63.7	63.6	63.3	63.4	62.9
170000	66.2	66.3	66.5	66.6	65.6	64.7	64.1	63.8	63.6	63.4	63.4	63.1	63.2	62.8
180000	66.1	66.3	66.4	66.6	65.5	64.5	63.8	63.6	63.4	63.3	63.1	63.0	63.0	62.7
190000	66.0	66.3	66.2	66.6	65.4	64.3	63.6	63.4	63.2	63.2	63.0	63.1	62.9	62.7
200000	66.1	66.3	66.2	66.6	65.2	64.2	63.4	63.2	63.0	63.0	62.9	63.0	62.9	62.7
210000	65.9	66.1	66.2	66.7	65.1	64.0	63.4	63.0	62.9	62.9	62.8	62.9	62.9	62.7
220000	66.0	66.1	66.2	66.6	65.0	63.9	63.3	62.9	62.8	62.8	62.7	62.8	62.8	62.7
230000	65.8	66.0	66.2	66.6	64.9	63.9	63.2	62.8	62.7	62.7	62.5	62.9	62.7	62.7
Daily Max	66.6	66.3	66.9	66.9	66.5	65.2	64.5	64.1	64.1	63.9	64.0	63.8	63.7	63.2
Daily Min	65.6	65.8	65.9	66.2	64.9	63.9	63.2	62.7	62.6	62.5	62.5	62.2	62.2	62.2
Average	66.1	66.0	66.2	66.4	65.8	64.5	63.8	63.2	63.1	63.1	63.1	62.9	62.9	62.7

Missing data due to equipment maintenance.

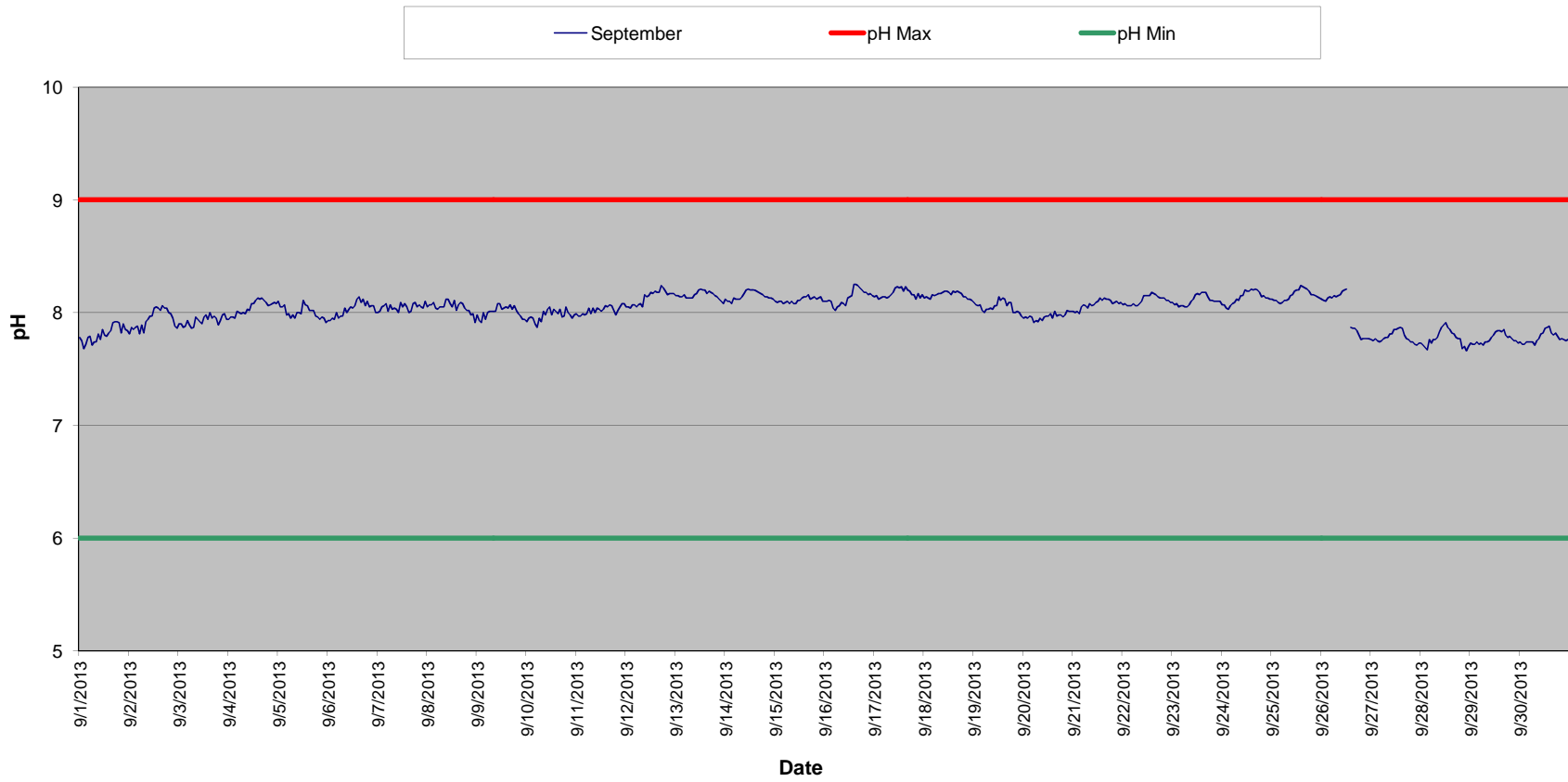




High Falls Tailrace pH Summary - August 2013



High Falls Tailrace pH Summary - September 2013



High Falls Tailrace pH Summary - June 2013

Time HHMMSS	06/01/13	06/02/13	06/03/13	06/04/13	06/05/13	06/06/13	06/07/13	06/08/13	06/09/13	06/10/13	06/11/13	06/12/13	06/13/13	06/14/13	06/15/13	06/16/13
0	7.3	7.4	7.4	7.5	7.4	7.5	7.5	7.4	7.3	7.4	7.3	7.3	7.3	7.3	7.3	7.4
10000	7.3	7.4	7.4	7.5	7.4	7.5	7.5	7.4	7.3	7.4	7.4	7.3	7.3	7.3	7.3	7.4
20000	7.3	7.4	7.4	7.5	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.3	7.3	7.3	7.4
30000	7.4	7.5	7.3	7.5	7.4	7.5	7.5	7.4	7.3	7.4	7.4	7.3	7.4	7.3	7.3	7.4
40000	7.4	7.4	7.4	7.4	7.4	7.5	7.5	7.4	7.3	7.4	7.4	7.3	7.4	7.3	7.3	7.4
50000	7.4	7.4	7.4	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.3	7.3	7.4	7.3	7.3	7.4
60000	7.4	7.5	7.4	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.3	7.4
70000	7.4	7.4	7.4	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.3	7.3	7.4	7.3	7.3	7.4
80000	7.4	7.5	7.4	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.3	7.4
90000	7.4	7.5	7.4	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.3	7.4
100000	7.4	7.5	7.4	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.3	7.4
110000	7.4	7.5	7.4	7.4	7.5	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.5	7.3	7.3	7.4
120000	7.4	7.5	7.4	7.4	7.5	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.5	7.3	7.3	7.4
130000	7.4	7.5	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.3	7.5	7.3	7.3	7.5
140000	7.4	7.5	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.4	7.3	7.5	7.3	7.3	7.4
150000	7.4	7.5	7.4	7.4	7.5	7.5	7.4	7.3	7.4	7.4	7.4	7.3	7.5	7.3	7.3	7.5
160000	7.3	7.5	7.4	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.3	7.5	7.3	7.3	7.4
170000	7.3	7.5	7.4	7.4	7.4	7.5	7.4	7.3	7.4	7.3	7.3	7.3	7.5	7.3	7.3	7.4
180000	7.4	7.5	7.4	7.4	7.4	7.5	7.4	7.3	7.4	7.4	7.3	7.3	7.5	7.3	7.3	7.4
190000	7.3	7.4	7.5	7.4	7.4	7.5	7.4	7.3	7.4	7.3	7.3	7.3	7.5	7.3	7.2	7.4
200000	7.4	7.4	7.5	7.4	7.4	7.5	7.4	7.3	7.4	7.3	7.3	7.3	7.5	7.3	7.2	7.4
210000	7.3	7.4	7.5	7.4	7.4	7.5	7.4	7.3	7.4	7.3	7.3	7.3	7.4	7.3	7.2	7.4
220000	7.4	7.4	7.5	7.4	7.4	7.5	7.4	7.3	7.4	7.3	7.3	7.3	7.4	7.3	7.2	7.4
230000	7.4	7.4	7.5	7.4	7.5	7.5	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.4	7.4
Daily Max	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.5	7.3	7.4	7.5
Daily Min	7.3	7.4	7.3	7.4	7.4	7.5	7.4	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.2	7.4
Average	7.4	7.4	7.4	7.4	7.4	7.5	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.3	7.4


License maximum pH: 9

License minimum pH: 6

Missing data - equipment maintenance

High Falls Tailrace pH Summary - June 2013

Time HHMMSS	06/17/13	06/18/13	06/19/13	06/20/13	06/21/13	06/22/13	06/23/13	06/24/13	06/25/13	06/26/13	06/27/13	06/28/13	06/29/13	06/30/13
0	7.4	7.2	7.4	7.5	7.4	7.6	7.7	7.6	7.7	7.6	7.6	7.4	7.5	7.5
10000	7.4	7.2	7.4	7.5	7.5	7.6	7.6	7.6	7.7	7.6	7.5	7.5	7.5	7.5
20000	7.4	7.2	7.4	7.5	7.5	7.6	7.7	7.6	7.7	7.7	7.6	7.5	7.5	7.5
30000	7.4	7.2	7.5	7.5	7.4	7.6	7.7	7.7	7.7	7.6	7.6	7.4	7.4	7.4
40000	7.4	7.2	7.4	7.5	7.5	7.6	7.8	7.7	7.6	7.7	7.6	7.4	7.4	7.4
50000	7.4	7.3	7.5	7.5	7.5	7.6	7.6	7.6	7.7	7.6	7.4	7.4	7.5	7.5
60000	7.4	7.3	7.5	7.5	7.4	7.8	7.7	7.7	7.6	7.6	7.5	7.4	7.5	7.4
70000	7.4	7.3	7.5	7.5	7.4	7.7	7.7	7.7	7.7	7.6	7.4	7.4	7.5	7.5
80000	7.4	7.4	7.4	7.4	7.4	7.7	7.7	7.7	7.7	7.6	7.5	7.4	7.6	7.5
90000	7.4	7.4	7.5	7.6	7.5	7.6	7.7	7.8	7.7	7.6	7.5	7.5	7.5	7.5
100000	7.4	7.4	7.4	7.4	7.4	7.6	7.6	7.6	7.7	7.6	7.5	7.5	7.6	7.5
110000	7.4	7.5	7.4	7.4	7.5	7.6	7.7	7.6	7.7	7.6	7.4	7.5	7.7	7.6
120000	7.4	7.4	7.4	7.4	7.7	7.7	7.7	7.7	7.7	7.6	7.6	7.5	7.6	7.7
130000	7.4	7.5	7.5	7.4	7.4	7.7	7.6	7.7	7.6	7.6	7.6	7.5	7.7	7.6
140000	7.3	7.5	7.4	7.4	7.4	7.7	7.6	7.7	7.7	7.7	7.5	7.5	7.6	7.6
150000	6.9	7.5	7.4	7.4	7.4	7.6	7.6	7.7	7.7	7.6	7.5	7.5	7.6	7.7
160000	6.9	7.5	7.5	7.4	7.4	7.7	7.7	7.7	7.7	7.6	7.5	7.5	7.7	7.7
170000	7.0	7.4	7.4	7.4	7.5	7.7	7.6	7.7	7.8	7.6	7.5	7.4	7.6	7.7
180000	6.9	7.5	7.5	7.5	7.6	7.7	7.7	7.7	7.6	7.6	7.6	7.4	7.7	7.6
190000	7.0	7.4	7.4	7.4	7.5	7.7	7.7	7.7	7.6	7.6	7.5	7.5	7.6	7.6
200000	7.0	7.4	7.4	7.4	7.5	7.6	7.7	7.7	7.6	7.6	7.5	7.5	7.6	7.6
210000	7.0	7.4	7.4	7.4	7.6	7.6	7.7	7.6	7.6	7.6	7.5	7.5	7.6	7.5
220000	7.0	7.4	7.4	7.5	7.6	7.6	7.6	7.7	7.5	7.6	7.4	7.5	7.5	7.5
230000	7.1	7.5	7.4	7.4	7.7	7.6	7.6	7.7	7.6	7.6	7.5	7.6	7.5	7.4
Daily Max	7.4	7.5	7.5	7.6	7.7	7.8	7.8	7.8	7.8	7.7	7.6	7.6	7.7	7.7
Daily Min	6.9	7.2	7.4	7.4	7.4	7.6	7.6	7.6	7.5	7.6	7.4	7.4	7.4	7.4
Average	7.2	7.4	7.4	7.4	7.5	7.6	7.7	7.7	7.7	7.6	7.5	7.5	7.6	7.5

 Missing data - equipment maintenance

High Falls Tailrace pH Summary - July 2013

Time HHMMSS	07/01/13	07/02/13	07/03/13	07/04/13	07/05/13	07/06/13	07/07/13	07/08/13	07/09/13	07/10/13	07/11/13	07/12/13	07/13/13	07/14/13	07/15/13	07/16/13
0	7.4	7.5	7.6	7.6	7.6	7.6	7.7	7.6	7.5	7.8	7.5	7.7	7.7	7.8	7.7	7.6
10000	7.4	7.5	7.6	7.5	7.6	7.7	7.7	7.7	7.5	7.6	7.5	7.6	7.8	7.7	7.6	7.7
20000	7.4	7.7	7.6	7.6	7.6	7.7	7.7	7.7	7.5	7.6	7.5	7.7	7.6	7.7	7.6	7.7
30000	7.3	7.6	7.7	7.6	7.6	7.7	7.7	7.7	7.5	7.5	7.4	7.6	7.7	7.8	7.7	7.6
40000	7.4	7.7	7.7	7.6	7.7	7.7	7.7	7.6	7.5	7.6	7.7	7.8	7.7	7.6	7.8	7.8
50000	7.4	7.7	7.6	7.5	7.6	7.7	7.6	7.6	7.6	7.6	7.6	7.8	7.7	7.7	7.6	7.6
60000	7.4	7.6	7.6	7.6	7.7	7.7	7.6	7.7	7.6	7.6	7.5	7.7	7.7	7.7	7.6	7.7
70000	7.4	7.6	7.6	7.6	7.6	7.7	7.6	7.6	7.6	7.6	7.5	7.7	7.7	7.7	7.6	7.6
80000	7.5	7.6	7.7	7.6	7.7	7.7	7.6	7.6	7.5	7.7	7.6	7.8	7.7	7.7	7.6	7.7
90000	7.5	7.6	7.7	7.6	7.7	7.7	7.7	7.6	7.6	7.8	7.6	7.8	7.7	7.7	7.7	7.7
100000	7.6	7.6	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.7	7.6	7.7	7.7	7.6	7.7	7.7
110000	7.6	7.6	7.7	7.6	7.7	7.7	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.7	7.7	7.6
120000	7.5	7.6	7.7	7.6	7.7	7.7	7.6	7.6	7.6	7.7	7.7	7.8	7.7	7.6	7.6	7.6
130000	7.5	7.7	7.7	7.5	7.8	7.8	7.7	7.5	7.6	7.8	7.6	7.7	7.6	7.7	7.7	7.6
140000	7.5	7.6	7.6	7.6	7.8	7.7	7.7	7.6	7.6	7.8	7.6	7.8	7.8	7.7	7.7	7.7
150000	7.5	7.7	7.7	7.7	7.6	7.8	7.7	7.6	7.7	7.8	7.7	7.7	7.7	7.6	7.7	7.7
160000	7.6	7.6	7.6	7.7	7.7	7.9	7.8	7.6	7.5	7.8	7.7	7.6	7.7	7.6	7.7	7.6
170000	7.5	7.6	7.6	7.7	7.7	7.8	7.7	7.5	7.6	7.7	7.7	7.6	7.8	7.6	7.7	7.6
180000	7.6	7.6	7.5	7.6	7.6	7.9	7.6	7.6	7.7	7.8	7.7	7.7	7.7	7.6	7.8	7.6
190000	7.5	7.6	7.5	7.7	7.6	7.8	7.6	7.6	7.6	7.7	7.8	7.7	7.8	7.6	7.8	7.7
200000	7.5	7.6	7.6	7.6	7.6	7.8	7.6	7.5	7.7	7.7	7.6	7.6	7.9	7.6	7.7	7.7
210000	7.6	7.6	7.6	7.6	7.6	7.7	7.6	7.6	7.7	7.6	7.6	7.6	7.9	7.6	7.7	7.7
220000	7.5	7.6	7.6	7.6	7.6	7.7	7.7	7.5	7.5	7.5	7.7	7.7	7.8	7.6	7.7	7.7
230000	7.5	7.6	7.6	7.7	7.7	7.8	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.7	7.6
Daily Max	7.6	7.7	7.7	7.7	7.8	7.9	7.8	7.7	7.7	7.8	7.8	7.8	7.9	7.8	7.8	7.8
Daily Min	7.3	7.5	7.5	7.5	7.6	7.6	7.6	7.5	7.5	7.5	7.4	7.6	7.6	7.6	7.6	7.6
Average	7.5	7.6	7.6	7.6	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.7	7.7	7.7	7.7	7.6

License maximum pH: 9

License minimum pH: 6

High Falls Tailrace pH Summary - July 2013

Time	07/17/13	07/18/13	07/19/13	07/20/13	07/21/13	07/22/13	07/23/13	07/24/13	07/25/13	07/26/13	07/27/13	07/28/13	07/29/13	07/30/13	07/31/13
HHMMSS															
0	7.7	7.7	7.8	7.8	7.7	7.9	8.0	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.8
10000	7.6	7.7	7.8	7.6	7.8	7.9	8.0	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.8
20000	7.7	7.6	7.8	7.6	7.8	7.9	8.0	7.9	7.9	8.0	7.9	7.7	7.8	7.8	7.8
30000	7.6	7.7	7.8	7.6	7.9	7.9	7.9	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.9
40000	7.6	7.8	7.8	7.5	8.0	7.9	8.0	7.9	8.0	8.0	7.8	7.7	7.8	7.8	7.9
50000	7.6	7.7	7.8	7.6	7.9	7.9	8.0	7.9	8.0	8.0	7.7	7.8	7.8	7.9	7.9
60000	7.6	7.6	7.8	7.8	8.0	7.9	8.0	7.9	8.0	8.0	7.8	7.7	7.8	7.8	7.9
70000	7.6	7.6	7.9	7.6	7.9	7.9	8.0	8.0	8.0	8.0	7.7	7.8	7.8	7.8	7.9
80000	7.7	7.6	7.7	7.7	8.0	7.8	8.0	7.8	8.0	8.0	7.7	7.8	7.8	7.9	7.9
90000	7.7	7.7	7.9	7.8	7.9	7.9	8.0	8.0	8.1	8.0	7.7	7.8	7.8	7.8	8.0
100000	7.6	7.6	7.9	7.8	7.9	7.8	8.1	8.0	8.1	8.0	7.8	7.8	7.9	7.9	7.9
110000	7.7	7.7	7.9	7.9	7.9	7.8	8.1	7.9	8.1	8.1	7.8	7.8	7.9	7.9	8.0
120000	7.6	7.9	7.9	8.0	7.8	7.9	8.1	7.9	8.1	8.1	7.8	7.8	7.9	8.0	8.0
130000	7.6	7.8	7.9	7.9	7.9	7.9	8.1	7.9	8.1	8.0	7.8	7.8	7.8	8.0	8.0
140000	7.7	7.7	7.8	7.9	7.9	8.0	8.1	7.9	8.1	8.0	7.7	7.8	7.8	7.9	8.0
150000	7.6	7.8	7.7	7.7	7.9	7.8	8.1	7.9	8.1	8.1	7.8	7.9	7.9	7.9	8.0
160000	7.6	7.8	7.7	7.7	7.8	7.9	8.1	7.9	8.1	8.1	7.8	7.8	7.9	7.9	8.0
170000	7.8	7.9	7.7	7.6	7.8	8.0	8.1	7.9	8.1	7.9	7.7	7.8	7.8	7.9	8.0
180000	7.8	7.8	7.7	7.6	7.9	7.9	8.1	8.0	8.0	8.0	7.8	7.8	7.8	7.9	8.0
190000	7.7	7.8	7.9	7.6	7.9	7.7	8.0	7.9	8.0	7.8	7.8	7.8	7.8	7.9	8.0
200000	7.8	7.8	7.7	7.6	7.8	7.7	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.9	8.0
210000	7.5	7.8	7.7	7.6	7.8	7.8	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.9	8.0
220000	7.6	7.8	7.7	7.7	7.8	7.8	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.8	8.0
230000	7.8	7.8	7.7	7.7	7.9	7.9	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.9	7.9
Daily Max	7.8	7.9	7.9	8.0	8.0	8.0	8.1	8.0	8.1	8.1	7.9	7.9	7.9	8.0	8.0
Daily Min	7.5	7.6	7.7	7.5	7.7	7.7	7.9	7.8	7.9	7.8	7.7	7.7	7.8	7.8	7.8
Average	7.7	7.7	7.8	7.7	7.9	7.9	8.0	7.9	8.0	8.0	7.8	7.8	7.8	7.9	7.9

High Falls Tailrace pH Summary - August 2013

Time HHMMSS	08/01/12	08/02/12	08/03/12	08/04/12	08/05/12	08/06/12	08/07/12	08/08/12	08/09/12	08/10/12	08/11/12	08/12/12	08/13/12	08/14/12	08/15/12	08/16/12
0	7.9	8.1	8.2	8.1	8.2	8.1	8.1	8.0	8.0	7.7	7.9	7.8	7.9	7.9	7.8	7.8
10000	7.9	8.2	8.1	8.1	8.2	8.1	8.2	8.0	8.0	7.7	7.9	7.8	7.9	7.8	7.8	7.8
20000	7.9	8.2	8.2	8.1	8.2	8.1	8.1	8.0	8.0	7.7	7.9	7.8	7.8	7.8	7.8	7.8
30000	7.9	8.2	8.1	8.0	8.2	8.1	8.2	7.9	8.0	7.5	7.9	7.8	7.8	7.8	7.8	7.8
40000	7.9	8.2	8.0	8.2	8.1	8.1	8.0	7.9	7.9	7.9	7.9	7.8	7.8	7.9	7.8	7.7
50000	7.9	8.1	8.1	8.2	8.1	8.1	8.0	7.8	7.9	7.9	7.8	7.8	7.8	7.9	7.8	7.7
60000	7.9	8.2	8.1	8.2	8.0	8.2	8.0	7.9	7.8	7.9	7.8	7.8	7.8	7.9	7.8	7.7
70000	7.9	8.1	8.1	8.2	8.0	8.1	8.0	7.9	7.9	7.9	7.8	7.8	7.7	7.9	7.8	7.7
80000	7.9	8.2	8.1	8.2	8.1	8.2	8.1	8.0	7.9	7.9	7.8	7.8	7.8	7.9	7.7	7.7
90000	7.9	8.1	8.1	8.2	8.1	8.2	8.1	8.0	7.9	7.9	7.9	7.8	7.8	7.7	7.8	7.7
100000	8.0	8.2	8.0	8.3	8.2	8.2	8.0	8.0	7.9	7.9	7.8	7.7	7.9	7.7	7.8	7.7
110000	8.2	8.2	8.1	8.3	8.2	8.2	8.0	8.0	8.0	7.9	7.8	7.8	7.9	7.8	7.9	7.8
120000	8.2	8.2	8.2	8.3	8.1	8.2	8.1	8.0	7.7	7.9	7.9	7.9	7.9	7.8	7.9	7.8
130000	8.3	8.2	8.2	8.3	8.1	8.2	8.1	7.9	7.8	8.0	7.9	8.0	7.9	7.9	7.9	7.8
140000	8.3	8.3	8.2	8.3	8.2	8.2	8.1	7.9	7.7	8.0	7.8	8.0	7.8	7.8	7.9	7.8
150000	8.2	8.2	8.1	8.3	8.2	8.1	8.1	8.1	7.8	7.9	7.9	8.0	7.9	7.8	7.9	7.8
160000	8.3	8.3	8.1	8.3	8.1	8.1	8.2	8.0	7.7	7.9	7.9	8.0	7.9	7.9	7.9	7.8
170000	8.2	8.2	8.3	8.3	8.2	8.1	8.1	8.1	7.8	7.9	7.9	8.0	7.9	7.8	7.9	7.8
180000	8.2	8.2	8.2	8.3	8.2	8.1	8.1	8.0	7.8	7.9	7.9	7.9	7.9	7.8	7.9	7.8
190000	8.3	8.2	8.2	8.2	8.2	8.0	8.1	8.0	7.7	7.9	7.9	7.8	7.9	7.8	7.8	7.7
200000	8.2	8.2	8.1	8.2	8.2	8.1	8.1	8.0	7.7	7.9	7.8	7.9	7.9	7.8	7.8	7.7
210000	8.2	8.2	8.2	8.2	8.1	8.1	8.1	8.0	7.7	7.9	7.9	7.9	7.9	7.8	7.8	7.7
220000	8.2	8.2	8.1	8.2	8.1	8.1	8.1	8.0	7.8	7.9	7.9	7.9	7.9	7.8	7.9	7.7
230000	8.1	8.2	8.1	8.2	8.1	8.1	8.1	8.0	7.7	7.9	7.8	7.9	7.8	7.8	7.8	7.7
Daily Max	8.3	8.3	8.3	8.3	8.2	8.2	8.2	8.1	8.0	8.0	7.9	8.0	7.9	7.9	7.9	7.8
Daily Min	7.9	8.1	8.0	8.0	8.0	8.0	8.0	7.8	7.7	7.5	7.8	7.7	7.7	7.7	7.7	7.7
Average	8.1	8.2	8.1	8.2	8.1	8.1	8.1	8.0	7.8	7.9	7.9	7.9	7.8	7.8	7.8	7.7

License maximum pH: 9

License minimum pH: 6

High Falls Tailrace pH Summary - August 2013

Time HHMMSS	08/17/12	08/18/12	08/19/12	08/20/12	08/21/12	08/22/12	08/23/12	08/24/12	08/25/12	08/26/12	08/27/12	08/28/12	08/29/12	08/30/12	08/31/12
0	7.7	7.7	7.7	7.8	7.7	7.8	7.6	7.6	7.6	7.6	7.7	7.8	7.7	8.1	7.8
10000	7.7	7.7	7.7	7.7	7.7	7.8	7.7	7.6	7.7	7.7	7.7	7.8	7.6	8.0	7.7
20000	7.7	7.7	7.7	7.8	7.7	7.8	7.6	7.7	7.7	7.7	7.7	7.7	7.7	8.0	7.7
30000	7.7	7.8	7.7	7.8	7.7	7.8	7.6	7.7	7.7	7.7	7.7	7.7	7.7	8.0	7.7
40000	7.8	7.8	7.8	7.8	7.8	7.6	7.7	7.8	7.7	7.6	7.6	7.7	7.8	7.6	7.7
50000	7.8	7.7	7.8	7.8	7.8	7.7	7.6	7.7	7.6	7.6	7.6	7.7	7.8	7.6	7.7
60000	7.8	7.7	7.7	7.8	7.8	7.7	7.6	7.7	7.6	7.7	7.7	7.7	7.8	7.6	7.8
70000	7.8	7.7	7.7	7.8	7.8	7.7	7.6	7.7	7.7	7.7	7.7	7.7	7.8	7.7	7.7
80000	7.8	7.8	7.7	7.8	7.8	7.7	7.7	7.7	7.6	7.7	7.6	7.7	7.8	7.7	7.8
90000	7.8	7.8	7.7	7.8	7.8	7.7	7.7	7.7	7.6	7.6	7.6	7.7	7.8	7.7	7.8
100000	7.9	7.8	7.7	7.8	7.9	7.7	7.7	7.8	7.7	7.7	7.6	7.8	7.9	7.7	7.8
110000	7.9	7.8	7.8	7.9	7.9	7.7	7.7	7.7	7.8	7.7	7.7	7.8	7.9	7.8	7.7
120000	7.9	7.9	7.8	7.8	7.9	7.7	7.7	7.7	7.7	7.7	7.7	7.8	7.9	7.9	7.8
130000	7.9	7.8	7.7	7.8	7.9	7.6	7.7	7.7	7.7	7.7	7.7	7.8	7.9	7.9	7.7
140000	7.9	7.8	8.1	7.8	7.8	7.8	7.7	7.7	7.7	7.7	7.7	7.8	8.0	8.0	7.8
150000	7.9	7.9	7.7	7.8	7.9	7.7	7.6	7.6	7.7	7.6	7.7	7.8	8.1	7.9	7.7
160000	7.8	7.8	7.7	7.7	8.0	7.7	7.6	7.7	7.7	7.7	7.8	7.8	8.1	8.0	7.7
170000	7.8	7.7	7.8	7.7	7.9	7.7	7.7	7.7	7.7	7.7	7.8	7.7	8.0	8.1	7.7
180000	7.8	7.7	7.8	7.7	7.8	7.7	7.6	7.7	7.6	7.7	7.8	7.7	8.0	8.0	7.8
190000	7.7	7.7	7.8	7.7	7.8	7.7	7.6	7.6	7.7	7.6	7.8	7.7	8.0	8.0	7.7
200000	7.7	7.7	7.8	7.7	7.8	7.6	7.6	7.7	7.6	7.7	7.8	7.7	8.0	8.0	7.7
210000	7.7	7.7	7.7	7.7	7.8	7.6	7.6	7.6	7.6	7.6	7.8	7.7	7.9	7.9	7.7
220000	7.7	7.7	7.7	7.7	7.8	7.6	7.6	7.7	7.6	7.6	7.8	7.7	8.0	7.9	7.7
230000	7.8	7.7	7.8	7.7	7.8	7.6	7.7	7.6	7.6	7.6	7.7	7.6	8.0	7.8	7.7
Daily Max	7.9	7.9	8.1	7.9	8.0	7.8	7.7	7.8	7.8	7.7	7.8	7.8	8.1	8.1	7.8
Daily Min	7.7	7.7	7.7	7.7	7.7	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.7
Average	7.8	7.8	7.7	7.8	7.8	7.7	7.6	7.7	7.7	7.7	7.7	7.7	7.9	7.9	7.7


High Falls Tailrace pH Summary - September 2013

Time HHMMSS	09/01/13	09/02/13	09/03/13	09/04/13	09/05/13	09/06/13	09/07/13	09/08/13	09/09/13	09/10/13	09/11/13	09/12/13	09/13/13	09/14/13	09/15/13	09/16/13
0	7.8	7.8	7.9	7.9	8.1	7.9	8.0	8.1	8.0	7.9	8.0	8.1	8.2	8.1	8.1	8.1
10000	7.8	7.9	7.9	8.0	8.1	7.9	8.0	8.1	7.9	8.0	8.0	8.1	8.2	8.1	8.1	8.1
20000	7.7	7.9	7.9	8.0	8.1	8.0	8.1	8.1	7.9	8.0	8.0	8.0	8.1	8.1	8.1	8.1
30000	7.7	7.9	7.9	8.0	8.1	7.9	8.1	8.1	8.0	8.0	8.0	8.1	8.1	8.1	8.1	8.1
40000	7.8	7.9	7.9	8.0	8.0	8.0	8.1	8.0	7.9	7.9	8.0	8.1	8.2	8.1	8.1	8.0
50000	7.8	7.8	7.9	8.0	8.0	8.0	8.0	8.0	8.0	7.9	8.0	8.1	8.1	8.1	8.1	8.0
60000	7.7	7.9	7.9	8.0	8.0	8.0	8.1	8.1	8.0	8.0	8.0	8.1	8.1	8.1	8.1	8.1
70000	7.7	7.8	7.9	8.0	8.0	8.0	8.0	8.1	8.0	7.9	8.0	8.1	8.1	8.1	8.1	8.1
80000	7.7	7.9	8.0	8.0	8.0	8.0	8.0	8.1	8.0	8.0	8.0	8.1	8.1	8.1	8.1	8.1
90000	7.8	7.9	7.9	8.0	8.0	8.0	8.0	8.1	8.0	8.0	8.0	8.2	8.2	8.2	8.1	8.1
100000	7.8	8.0	7.9	8.0	8.0	8.0	8.0	8.1	8.1	8.0	8.0	8.1	8.2	8.2	8.1	8.1
110000	7.9	8.0	7.9	8.1	8.0	8.1	8.1	8.1	8.1	8.1	8.0	8.2	8.2	8.2	8.1	8.1
120000	7.8	8.0	8.0	8.1	8.1	8.0	8.1	8.1	8.0	8.0	8.0	8.2	8.2	8.2	8.1	8.1
130000	7.8	8.1	8.0	8.1	8.1	8.1	8.1	8.1	8.0	8.0	8.0	8.2	8.2	8.2	8.1	8.2
140000	7.8	8.0	7.9	8.1	8.1	8.1	8.1	8.0	8.1	8.0	8.1	8.2	8.2	8.2	8.1	8.3
150000	7.8	8.0	8.0	8.1	8.0	8.1	8.0	8.1	8.0	8.0	8.1	8.2	8.2	8.2	8.1	8.3
160000	7.9	8.1	8.0	8.1	8.0	8.1	8.0	8.1	8.1	8.0	8.1	8.2	8.2	8.2	8.2	8.2
170000	7.9	8.0	8.0	8.1	8.0	8.1	8.1	8.1	8.0	8.0	8.1	8.2	8.2	8.2	8.1	8.2
180000	7.9	8.0	8.0	8.1	8.0	8.1	8.1	8.0	8.1	8.0	8.0	8.2	8.2	8.2	8.1	8.2
190000	7.9	8.0	7.9	8.1	8.0	8.1	8.1	8.0	8.0	8.1	8.0	8.2	8.2	8.1	8.1	8.2
200000	7.8	8.0	7.9	8.1	7.9	8.1	8.1	8.0	8.0	8.0	8.0	8.2	8.1	8.1	8.1	8.2
210000	7.9	8.0	8.0	8.1	8.0	8.1	8.1	8.0	8.0	8.0	8.1	8.2	8.1	8.1	8.1	8.2
220000	7.9	7.9	8.0	8.1	8.0	8.1	8.0	8.0	7.9	8.0	8.1	8.2	8.1	8.1	8.1	8.2
230000	7.8	7.9	7.9	8.1	7.9	8.0	8.1	7.9	7.9	8.0	8.1	8.2	8.1	8.1	8.1	8.2
Daily Max	7.9	8.1	8.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.2	8.2	8.2	8.2	8.3
Daily Min	7.7	7.8	7.9	7.9	7.9	7.9	8.0	7.9	7.9	7.9	8.0	8.0	8.1	8.1	8.1	8.0
Average	7.8	7.9	7.9	8.0	8.0	8.0	8.0	8.1	8.0	8.0	8.0	8.1	8.2	8.1	8.1	8.1

License maximum pH: 9
License minimum pH: 6

High Falls Tailrace pH Summary - September 2013

Time HHMMSS	09/17/13	09/18/13	09/19/13	09/20/13	09/21/13	09/22/13	09/23/13	09/24/13	09/25/13	09/26/13	09/27/13	09/28/13	09/29/13	09/30/13
0	8.1	8.1	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.1	7.8	7.7	7.7	7.7
10000	8.2	8.1	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.1	7.8	7.7	7.7	7.7
20000	8.1	8.1	8.1	8.0	8.0	8.1	8.1	8.0	8.1	8.1	7.8	7.7	7.7	7.7
30000	8.1	8.1	8.1	8.0	8.0	8.1	8.1	8.0	8.1	8.1	7.8	7.7	7.7	7.7
40000	8.1	8.2	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.1	7.7	7.8	7.7	7.7
50000	8.1	8.2	8.0	7.9	8.1	8.1	8.1	8.1	8.1	8.1	7.8	7.7	7.7	7.7
60000	8.1	8.2	8.0	7.9	8.1	8.1	8.1	8.1	8.1	8.2	7.8	7.8	7.7	7.7
70000	8.1	8.2	8.0	7.9	8.0	8.1	8.1	8.1	8.1	8.1	7.8	7.8	7.7	7.7
80000	8.2	8.2	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.2	7.8	7.8	7.7	7.8
90000	8.2	8.2	8.0	7.9	8.1	8.1	8.1	8.2	8.2	8.2	7.8	7.8	7.8	7.8
100000	8.2	8.2	8.1	8.0	8.1	8.2	8.1	8.2	8.2	8.2	7.8	7.9	7.8	7.8
110000	8.2	8.2	8.1	8.0	8.1	8.2	8.2	8.2	8.2	8.2	7.9	7.9	7.8	7.8
120000	8.2	8.2	8.1	8.0	8.1	8.2	8.2	8.2	8.2	8.2	7.9	7.9	7.8	7.9
130000	8.2	8.2	8.1	8.0	8.1	8.2	8.2	8.2	8.2	8.2	7.9	7.9	7.8	7.9
140000	8.2	8.2	8.1	8.0	8.1	8.2	8.2	8.2	8.2	7.9	7.9	7.9	7.8	7.9
150000	8.2	8.2	8.1	8.0	8.1	8.2	8.2	8.2	8.2	7.9	7.9	7.8	7.8	7.8
160000	8.2	8.2	8.1	8.0	8.1	8.2	8.2	8.2	8.2	7.9	7.8	7.8	7.9	7.8
170000	8.2	8.2	8.1	8.0	8.1	8.1	8.1	8.2	8.2	7.8	7.8	7.8	7.8	7.8
180000	8.2	8.2	8.1	8.0	8.1	8.1	8.1	8.2	8.2	7.8	7.8	7.8	7.8	7.8
190000	8.2	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.2	7.8	7.7	7.8	7.8	7.8
200000	8.1	8.1	8.0	8.0	8.1	8.1	8.1	8.2	8.2	7.8	7.7	7.7	7.8	7.8
210000	8.2	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.2	7.8	7.7	7.7	7.8	7.8
220000	8.1	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.1	7.8	7.7	7.7	7.8	7.8
230000	8.2	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.1	7.8	7.7	7.7	7.7	7.8
Daily Max	8.2	8.2	8.1	8.0	8.1	8.2	8.2	8.2	8.2	8.2	7.9	7.9	7.9	7.9
Daily Min	8.1	8.1	8.0	7.9	8.0	8.1	8.1	8.0	8.1	7.8	7.7	7.7	7.7	7.7
Average	8.2	8.2	8.1	8.0	8.1	8.1	8.1	8.1	8.2	8.0	7.8	7.8	7.8	7.8

 Missing data due to equipment maintenance.

Attachment B

High Falls Hydroelectric Project

FERC No. 2595

Documentation of Agency Consultation

Wisconsin Public Service Corporation – High Falls Hydroelectric Project

The following table is a list of the dates of letters or correspondence regarding potential deviations from Water Quality Standards

Date of Notice to WDNR and US Fish and Wildlife	Date of Notice to FERC	Re:
June 18, 2013	June 25, 2013	Non-representative data due to equipment malfunction
September 9, 2013	September 19, 2013	Monitoring equipment malfunction

Metcalfe, Mark W

From: Metcalf, Mark W
Sent: Tuesday, June 18, 2013 1:35 PM
To: Laatsch, Cheryl - DNR; 'Hudak, Andrew J - DNR'; Utrup, Nick
Cc: Puzen, Shawn C; Brandt, Edward S
Subject: Water quality monitoring - High Falls Hydroelectric Project.

Good afternoon,

Per the water quality monitoring plan for the High Falls Hydroelectric Project, Wisconsin Public Service Corporation (WPSC) is monitoring temperature, dissolved oxygen, and pH in the Peshtigo River downstream of the powerhouse at the High Falls Bridge Road. Monitoring is conducted from June 1st through September 31st. The dissolved oxygen standard at this location is 5 mg/l.

At approximately 2:45 a.m. this morning, the dissolved oxygen sensor on the water quality monitor failed, which resulted in non-representative dissolved oxygen data to be recorded. WPSC replaced the monitor at approximately 10:15 this morning. Prior to the equipment failure, dissolved oxygen levels at the monitoring location were fluctuating between 5.5 and 6 mg/l. At the time the monitor was replaced, dissolved oxygen levels at the monitoring location were approximately 6.5 mg/l. Please note that WPS has been releasing aeration flow from a gate since June 15th. At the time of the dissolved oxygen sensor failure, WPS was releasing roughly 36 cfs of aeration. As dissolved oxygen levels were above the water quality standard prior to the monitor malfunction and at the time the monitor was replaced, it is likely that the water quality standard was attained during the period of the equipment malfunction.

If you have questions, please feel free to contact me.

Mark

Mark Metcalf

Environmental Consultant - Air & Water | Integrys Business Support, LLC

920-433-1833 (Green Bay)

920-617-6046 (De Pere)

920-606-8432 *cell*

920-433-4916 *fax*

mwmetcalf@integrysgroup.com

www.integrysgroup.com

Providing support for Integrys Energy Group, Integrys Energy Services, Michigan Gas Utilities, Minnesota Energy Resources, North Shore Gas, Peoples Gas, Trillium CNG, Upper Peninsula Power Company and Wisconsin Public Service.

Metcalfe, Mark W

From: Metcalf, Mark W
Sent: Wednesday, June 19, 2013 11:53 AM
To: 'Laatsch, Cheryl - DNR'; 'Hudak, Andrew J - DNR'; 'Utrup, Nick'
Cc: Puzen, Shawn C; Brandt, Edward S; Bosacki, William K
Subject: RE: Water quality monitoring - High Falls Hydroelectric Project.
Attachments: 20130618 HF DO Summary.pdf

All:

I have a slight correction to yesterday's message. The monitor experienced a malfunction just before 2:00 on June 18th. Attached is the DO data for your reference. Feel free to contact me if you have questions.

Mark

Mark Metcalf

Environmental Consultant - Air & Water | Integrys Business Support, LLC

920-433-1833 (Green Bay)

920-617-6046 (De Pere)

920-606-8432 *cell*

920-433-4916 *fax*

mwmetcalf@integrysgroup.com

www.integrysgroup.com

Providing support for Integrys Energy Group, Integrys Energy Services, Michigan Gas Utilities, Minnesota Energy Resources, North Shore Gas, Peoples Gas, Trillium CNG, Upper Peninsula Power Company and Wisconsin Public Service.

From: Metcalf, Mark W
Sent: Tuesday, June 18, 2013 1:35 PM
To: Laatsch, Cheryl - DNR; 'Hudak, Andrew J - DNR'; Utrup, Nick
Cc: Puzen, Shawn C; Brandt, Edward S
Subject: Water quality monitoring - High Falls Hydroelectric Project.

Good afternoon,

Per the water quality monitoring plan for the High Falls Hydroelectric Project, Wisconsin Public Service Corporation (WPSC) is monitoring temperature, dissolved oxygen, and pH in the Peshtigo River downstream of the powerhouse at the High Falls Bridge Road. Monitoring is conducted from June 1st through September 31st. The dissolved oxygen standard at this location is 5 mg/l.

At approximately 2:45 a.m. this morning, the dissolved oxygen sensor on the water quality monitor failed, which resulted in non-representative dissolved oxygen data to be recorded. WPSC replaced the monitor at approximately 10:15 this morning. Prior to the equipment failure, dissolved oxygen levels at the monitoring location were fluctuating between 5.5 and 6 mg/l. At the time the monitor was replaced, dissolved oxygen levels at the monitoring location were approximately 6.5 mg/l. Please note that WPS has been releasing aeration flow from a gate since June 15th. At the time of the dissolved oxygen sensor failure, WPS was releasing roughly 36 cfs of aeration. As dissolved oxygen levels were above the water quality standard prior to the monitor malfunction and at the time the monitor was replaced, it is likely that the water quality standard was attained during the period of the equipment malfunction.

If you have questions, please feel free to contact me.

Mark

Mark Metcalf

Environmental Consultant - Air & Water | Integrys Business Support, LLC

920-433-1833 (Green Bay)

920-617-6046 (De Pere)

920-606-8432 *cell*

920-433-4916 *fax*

mwmetcalf@integrysgroup.com

www.integrysgroup.com

Providing support for Integrys Energy Group, Integrys Energy Services, Michigan Gas Utilities, Minnesota Energy Resources, North Shore Gas, Peoples Gas, Trillium CNG, Upper Peninsula Power Company and Wisconsin Public Service.

Metcalfe, Mark W

Subject: RE: Water quality monitoring - High Falls Hydroelectric Project.

Expires: Friday, September 18, 2015 12:00 AM

From: Metcalf, Mark W

Sent: Monday, September 09, 2013 8:30 AM

To: 'Laatsch, Cheryl - DNR'; 'Hudak, Andrew J - DNR'; 'Utrup, Nick'

Cc: Puzen, Shawn C; Brandt, Edward S; Bosacki, William K

Subject: Water quality monitoring - High Falls Hydroelectric Project.

Good morning,

Per the water quality monitoring plan for the High Falls Hydroelectric Project, Wisconsin Public Service Corporation (WPSC) is monitoring temperature, dissolved oxygen, and pH in the Peshtigo River downstream of the powerhouse at the High Falls Bridge Road. Monitoring is conducted from June 1st through September 31st. The dissolved oxygen standard at this location is 5 mg/l.

On Saturday, September 7th at approximately 1:00 a.m. the dissolved oxygen sensor on the water quality monitor failed, which resulted in non-representative dissolved oxygen data to be recorded. WPSC replaced the monitor just before 10:00 a.m. on the 7th. Prior to the equipment failure, dissolved oxygen levels at the monitoring location were approximately 7.7 mg/l. At the time the monitor was replaced, dissolved oxygen levels at the monitoring location were approximately 7.9 mg/l. Please note that WPS has been releasing aeration flow from a gate since June 15th. At the time of the dissolved oxygen sensor failure, WPS was releasing approximately 69 cfs of aeration flow. As dissolved oxygen levels were above the water quality standard prior to the monitor malfunction and at the time the monitor was replaced, it is likely that the water quality standard was attained during the period of the equipment malfunction. Temperature and pH data was not affected by the equipment failure.

WPSC has been in contact with the equipment manufacturer on the issue of dissolved oxygen sensor failures. The manufacturer has indicated they are aware of the issue and the failures are due to a bad solder connection within the sensor. At this time, the manufacturer has not provided a method to try and troubleshoot the equipment prior to use. WPSC is evaluating other equipment manufacturers to determine if switching equipment would result in improved data reliability.

If you have questions, please feel free to contact me.

Mark

Mark Metcalf

Environmental Consultant - Air & Water | Integrys Business Support, LLC

920-433-1833 (Green Bay)

920-617-6046 (De Pere)

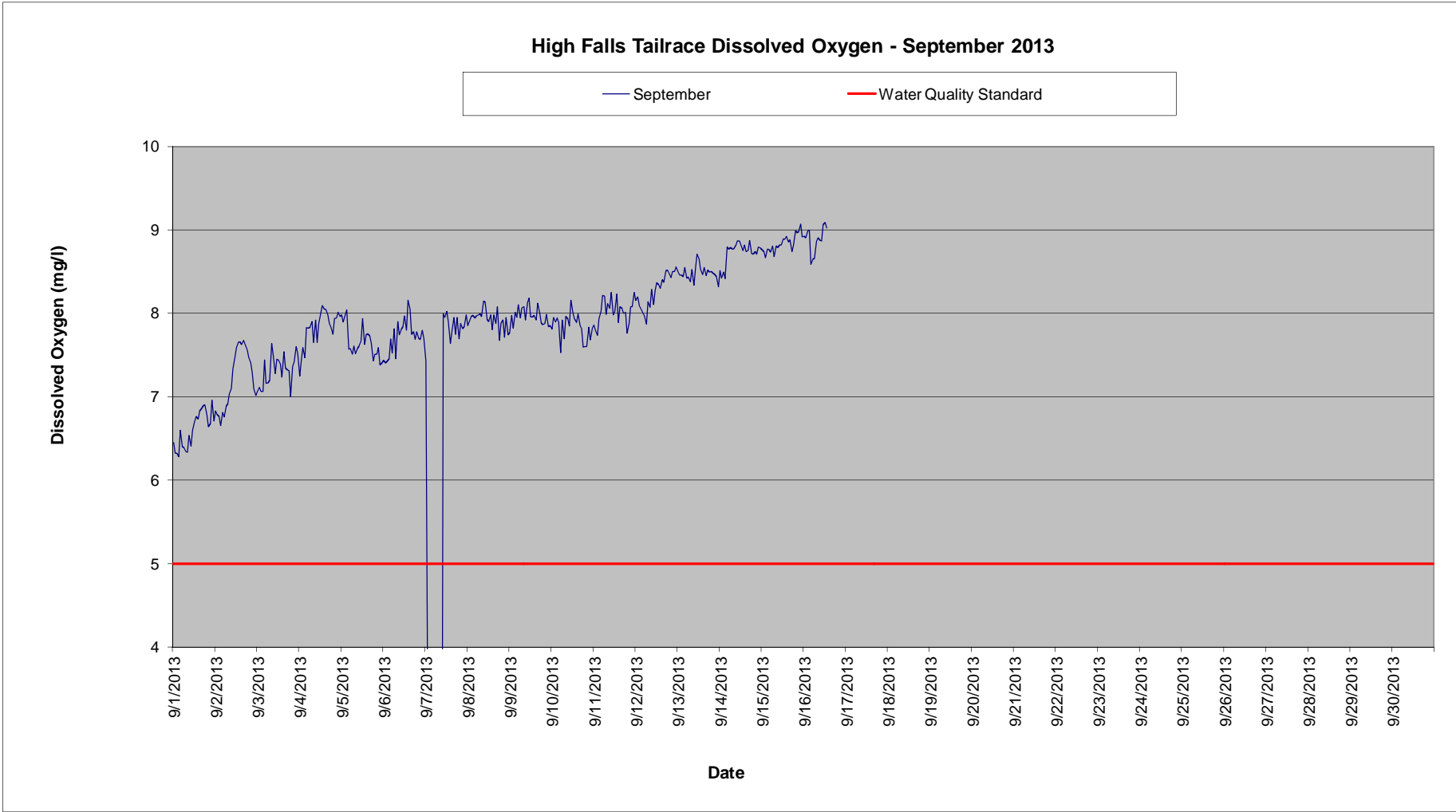
920-606-8432 *cell*

920-433-4916 *fax*

mwmetcalf@integrysgroup.com

www.integrysgroup.com

Providing support for Integrys Energy Group, Integrys Energy Services, Michigan Gas Utilities, Minnesota Energy Resources, North Shore Gas, Peoples Gas, Trillium CNG, Upper Peninsula Power Company and Wisconsin Public Service.



High Falls Tailrace Dissolved Oxygen Summary - September 2013

Time HHMMSS	09/01/13	09/02/13	09/03/13	09/04/13	09/05/13	09/06/13	09/07/13	09/08/13	09/09/13	09/10/13	09/11/13	09/12/13	09/13/13	09/14/13	09/15/13	09/16/13
0	6.5	6.8	7.1	7.2	8.0	7.4	7.4	7.9	7.8	7.8	7.9	8.2	8.5	8.5	8.8	8.9
10000	6.3	6.8	7.1	7.4	7.9	7.4	3.8	7.9	8.0	8.0	7.8	8.2	8.5	8.4	8.7	8.9
20000	6.3	6.8	7.1	7.6	8.0	7.4	0.2	8.0	7.8	7.9	7.7	8.1	8.5	8.5	8.7	9.0
30000	6.3	6.7	7.1	7.5	8.0	7.5	0.2	8.0	8.0	7.9	7.9	8.0	8.4	8.4	8.8	9.0
40000	6.6	6.8	7.4	7.8	7.6	7.7	0.2	7.9	8.0	7.9	8.0	8.0	8.6	8.8	8.8	8.6
50000	6.4	6.8	7.2	7.8	7.6	7.5	0.2	8.0	8.1	7.5	8.2	8.0	8.4	8.8	8.7	8.6
60000	6.4	6.9	7.2	7.8	7.5	7.8	0.2	8.0	7.9	7.9	8.2	7.9	8.4	8.8	8.8	8.7
70000	6.3	6.9	7.2	7.9	7.6	7.5	0.2	8.0	8.1	7.7	8.0	8.1	8.4	8.8	8.7	8.9
80000	6.3	7.0	7.6	7.7	7.5	7.9	0.2	8.0	8.1	8.0	8.1	8.1	8.5	8.8	8.8	8.9
90000	6.5	7.1	7.5	7.9	7.6	7.7	0.2	8.1	7.9	7.9	8.1	8.3	8.3	8.8	8.8	8.9
100000	6.4	7.3	7.3	7.7	7.6	7.8	8.0	8.1	8.1	7.8	8.3	8.1	8.5	8.9	8.8	8.9
110000	6.6	7.5	7.4	7.9	7.7	7.8	8.0	7.9	8.2	8.2	8.0	8.3	8.7	8.9	8.8	9.1
120000	6.7	7.6	7.4	8.0	7.9	8.0	8.0	7.9	8.0	8.0	8.0	8.4	8.7	8.8	8.9	9.1
130000	6.8	7.7	7.4	8.1	7.6	7.8	7.9	8.0	8.0	7.9	8.2	8.3	8.5	8.8	8.9	9.0
140000	6.7	7.7	7.2	8.0	7.7	8.2	7.6	7.8	8.0	7.9	7.9	8.3	8.5	8.8	8.9	0.0
150000	6.8	7.6	7.5	8.0	7.8	8.1	7.8	8.0	7.9	8.0	8.1	8.4	8.5	8.7	8.9	0.0
160000	6.9	7.7	7.3	8.0	7.7	7.8	8.0	7.9	8.1	7.9	8.1	8.4	8.4	8.8	8.9	0.0
170000	6.9	7.6	7.3	7.9	7.6	7.8	7.8	8.1	8.0	7.8	8.0	8.5	8.5	8.9	8.7	0.0
180000	6.9	7.6	7.3	7.8	7.4	7.7	8.0	7.7	7.9	7.6	8.0	8.5	8.5	8.7	8.8	0.0
190000	6.8	7.5	7.0	7.7	7.5	7.8	7.7	7.9	7.9	7.6	7.8	8.5	8.5	8.7	9.0	0.0
200000	6.6	7.4	7.4	7.9	7.5	7.7	7.9	7.9	7.9	7.6	7.9	8.4	8.5	8.7	9.0	0.0
210000	6.7	7.3	7.4	7.9	7.6	7.7	7.8	7.7	8.0	7.8	8.1	8.5	8.5	8.7	9.0	0.0
220000	7.0	7.1	7.6	8.0	7.4	7.8	7.8	8.0	7.8	7.7	8.1	8.5	8.4	8.8	9.1	0.0
230000	6.7	7.0	7.5	8.0	7.4	7.7	8.0	7.7	7.9	7.8	8.3	8.6	8.3	8.8	8.9	0.0
Daily Max	7.0	7.7	7.6	8.1	8.0	8.2	8.0	8.1	8.2	8.2	8.3	8.6	8.7	8.9	9.1	9.1
Daily Min	6.3	6.7	7.0	7.2	7.4	7.4	0.2	7.7	7.8	7.5	7.7	7.9	8.3	8.4	8.7	0.0
Average	6.6	7.2	7.3	7.8	7.7	7.7	5.1	7.9	8.0	7.8	8.0	8.3	8.5	8.7	8.8	5.2

License Minimum Dissolved Oxygen: 5.0 mg/l

Non-representative data - Equipment Malfunction



Wisconsin Public Service Corporation

700 North Adams Street
P.O. Box 19001
Green Bay, WI 54307-9001
www.wisconsinpublicservice.com

October 25, 2012

FERC Project No. 2595

Ms. Cheryl Laatsch
Wisconsin Department of Natural Resources
Office of Energy, Water Mgmt Specialist
101 S. Webster St.
Madison, WI 53703

Mr. Nicholas Utrup
U.S. Fish & Wildlife Service
Wisconsin Ecological Services Office
2661 Scott Tower Drive
New Franken, WI 54229

Dear Ms. Laatsch and Mr. Utrup:

Re: 2013 Water Quality Monitoring Report – High Falls Hydroelectric Project

Pursuant to the water quality monitoring plan for the High Falls Hydroelectric project, Wisconsin Public Service Corporation (WPSC) is submitting water quality monitoring data collected during the 2013 monitoring season for your review and comment.

As described in the monitoring plan, water quality monitoring is conducted downstream of the powerhouse annually from June 1st through September 30th. Monitoring downstream of the powerhouse is conducted where High Falls Road crosses the Peshtigo River. Monitoring upstream of the project occurs every 5 years in conjunction with water quality monitoring conducted at the Caldron Falls Hydroelectric Project. Upstream monitoring was conducted in 2011 and is scheduled to occur again in 2016.

Monitoring data for dissolved oxygen (DO), temperature, and pH is collected at one-hour intervals on a continuous basis. Data was collected using portable water quality monitoring equipment manufactured by Hydrolab, Inc. As described in the water quality monitoring plan for the project, the instrumentation was cleaned and calibrated according to manufacturer specification every 7-10 days during the monitoring period. A post deployment calibration was conducted to determine the extent of calibration drift. Raw data was adjusted assuming a linear degradation of calibration based upon a post calibration of the equipment. The water quality monitoring equipment used to monitor dissolved oxygen has an accuracy of +/- 0.1 mg/l, per the manufacturer. For compliance purposes, dissolved oxygen concentrations more than 0.1 mg/l below the applicable water quality standard are potential deviations.

October 25, 2012
Ms. Laatsch and Mr, Utrup
Page 2 of 2

Per the Project License, WPSC is required to ensure flow releases from the project, as measured immediately downstream from the dam, maintain the following standards, except when natural conditions prohibit attainment of the standards: (1) DO concentrations shall not be less than 5.0 milligrams per liter (mg/L) (minus the precision of the monitoring instrument) for more than 24 hours per year; (2) water temperature shall not exceed 89 degrees Fahrenheit; and (3) the pH shall be within the range of 6.0 to 9.0, with no change greater than 0.5 units outside the estimated natural seasonal maximum and minimum. Natural conditions include inflows to the project less than the 95 percent exceedance flow.

No deviations from the dissolved oxygen, pH or temperature water quality standards were observed during the 2013 monitoring season. There were 3 hours of missing monitoring data due to the maintenance and calibration of the monitoring equipment during the monitoring season. WPSC experienced two periods of equipment malfunction that resulted in erroneous dissolved oxygen data to be recorded. Hydrolab has been contacted on the issue of dissolved oxygen sensor failures as this is an issue that has been observed over the past several monitoring seasons. They are aware of the issue and commented that the dissolved oxygen sensor failures are often due to a bad solder connection within the sensor. They have not provided a method to perform a diagnostic check on the equipment prior to use so that WPSC has reasonable assurance the equipment will not experience a failure during deployment. As a result, WPSC is evaluating other equipment manufacturers to determine if switching equipment would result in improved data reliability.

Enclosed with this report are excel spreadsheets containing the monitoring data, in both tabular and graphical format, with the periods of missing data identified. Please review the enclosed data and provide any comments you may have within 30 days of this letter. Should you have any questions or concerns, please do not hesitate to call me at (920) 433-1833.

Sincerely,



Mark Metcalf
Environmental Consultant – Air & Water
Integrus Business Support, LLC
mwmetcalf@integrysgroup.com

Enc.

Cc: Mr. Shawn Puzen – IBS
Mr. Ed Brandt – WPSC

Mr. William Bosacki – WPSC
Mr. Andy Hudak - WDNR

Metcalf, Mark W

From: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>
Sent: Wednesday, November 13, 2013 9:14 AM
To: Nuthals, James D; Metcalf, Mark W
Subject: high falls DNR agency commens on WQ 2013

Jamie and Mark – Please let me know if we need to discuss.

WPS WQR for Project 2595 dated 10/25/2013-

I do not have any concerns with the monitoring data and information collected during 2013. This is also a project that could be served by uploading the continuous data into SWIMS for future tracking.

Cheryl Laatsch
Statewide FERC Coordinator
Wisconsin Dept of Natural Resources
N7725 Hwy 28
Horicon WI 53032
(T) 920-387-7869 (Fax) 920-387-7888
Cheryl.laatsch@wisconsin.gov

Response to Comments from the Wisconsin Department of Natural Resources on the 2013 High Falls Water Quality Monitoring Report:

Comment: I do not have any concerns with the monitoring data and information collected during 2013. This is also a project that could be served by uploading the continuous data into SWIMS for future tracking.

Response: Comment noted. The Surface Water Integrated Monitoring System (SWIMS) is a WDNR water division data system designed to ensure that Department staff and management have access to high quality surface water, sediment and aquatic invasives data in an accessible format. Per the water quality monitoring plan, continuous monitoring data is provided to the resource agencies in Microsoft Excel format, or equivalent, for review and comment. As the data is being provided in the format agreed to in the monitoring plan, the Department has the discretion as to how the data provided to them is retained and maintained.

Response to Comments from the U.S. Fish and Wildlife Service on the 2013 High Falls Water Quality Monitoring Report:

The U.S. Fish and Wildlife Service did not provide comments on the 2013 water quality monitoring report.

Document Content(s)

20131213 HighFalls FERC WaterQuality Report.PDF.....1-53