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Upper Peninsula Power Company
700 North Adams Street
P.O. Box 19001
Green Bay, WI 54307-9001
www.uppco.com

January 8, 2013

FERC Project No. 10855

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

Dear Secretary Bose:

Re: Dead River Hydroelectric Project – 2012 Water Quality Monitoring Report

Per the Order Modifying and Approving Water Quality Monitoring Plan Under Article 408, dated April 17, 2003, and the Order Approving Modification to Approved Water Quality Monitoring Plan Under Article 408, dated March 3, 2005, Upper Peninsula Power Company (UPPCO) is pleased to submit water quality monitoring data collected at the Dead River Hydroelectric Project in 2012.

During the 2012 monitoring period, water quality monitoring was conducted at the following locations:

- In the Dead River where County Road AAO crosses the Dead River (SE ¼ of the NE ¼, Section 22, T49N, R28W, Township of Champion).
- Downstream of the Hoist Powerhouse in the natural river channel (SE ¼ of the NE ¼, Section 16, T48N, R26W, Township of Negaunee).
- Downstream of the McClure Dam in the Dead River, east of where the LS&I railroad crosses the Dead River (SW ¼ of the NE ¼, Section 16, T48N, R26W, Township of Negaunee).
- In the tailrace of the McClure Powerhouse, upstream of the confluence of the tailrace and the Forestville Basin (SW ¼ of the NE ¼, Section 7, T48N, R25W, Township of Marquette).

Per the water quality monitoring plan, water temperature was monitored at each of the above locations on an hourly basis from May 1st through October 31st, while dissolved oxygen (D.O.) was monitored from June 1st through September 30th. Monitoring data for each location can be found in Appendix A. In addition to the hourly monitoring, D.O. and temperature profiles were taken at the intake structures of the Dead River Storage Basin and the McClure Storage Basin powerhouses every two weeks during the months of June through September. Profile data can be found in Appendix B. All equipment quality assurance data can be found in Appendix C.

Please note that the D.O. water quality monitoring equipment has an accuracy of +/- 0.1 mg/l, per the manufacturer. The water quality monitoring equipment was cleaned and calibrated every other week during the monitoring period. Equipment calibration information was used to determine

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calibration drift that occurred since the previous calibration event. In the event that the meter calibration had drifted by more than 0.1 mg/l between calibration events, the raw monitoring data is corrected assuming a linear degradation of calibration. Therefore, dissolved oxygen concentrations less than 6.9 mg/l are potential deviations from the water quality standard.

AAO Bridge Monitoring Location

At the County Road AAO monitoring location, deviations from the D.O. water quality standard were observed intermittently between July 1st and September 5th. Please note that there were significant diel fluctuations in the D.O. and temperature readings. Both D.O. and temperature decreased during the overnight hours and increased during the day. All of the readings below the D.O. water quality standard occurred during the evening or early morning hours. Daily fluctuations of more than 2 mg/l and 10 °F were observed during the monitoring period. During the monitoring season, there were 168 hourly readings of 6.8 mg/l or less (7.8% of all readings). The majority (128 readings) occurred during the month of July when water temperatures were the highest. At this location, a deviation from the License monthly maximum average temperature of 68°F occurred in July. The average monthly water temperature at this location for the month of July was 71.1°F. A maximum daily average water temperature of 75°F was observed on July 4th and 5th, while an hourly maximum water temperature of 82°F was observed on 3 separate days during the month.

The combination of low water flows and warm water temperatures likely caused the dissolved oxygen deviations observed. Due to low water levels in the Silver Lake Storage Basin, UPPCO released minimum flow (15 cfs in June, 10 cfs July - September) in an attempt to maintain the reservoir elevation. As the Silver Lake Reservoir is still being refilled and UPPCO is only able to release minimum flow from the reservoir, less cold water is available to be released from the reservoir to mitigate high water temperatures and low dissolved oxygen levels downstream of the facility.

Hoist Powerhouse Monitoring Location

At the Hoist Powerhouse monitoring location, deviations from the dissolved oxygen water quality standard were observed between June 26th and August 13th. During the monitoring season, there were 796 hourly readings of 6.8 mg/l or less (27.2% of all readings). The majority (526 readings) occurred during the month of July when water temperatures were the highest. Unusually low DO levels were recorded between August 2nd and August 8th, with readings dropping to 3.5 mg/l. UPPCO does not believe these readings between the 2nd and 8th are representative of actual river conditions. During the monitoring period, there were no operational changes that could have caused or contributed to the low DO readings. When the water quality monitor was retrieved on August 14th, there was a significant amount of bioaccumulation on the monitor. A post-deployment calibration of the probe showed that the monitor had not drifted. The last DO reading recorded at the downstream monitoring location on the 14th was 7.5 mg/l. To assess the monitor accuracy, a comparison DO reading was taken in the river immediately below the Hoist Powerhouse with a hand held DO meter. DO levels immediately below the powerhouse was varying between 7.5 and 7.6 mg/l. Consequently, it does not appear that the monitor malfunctioned. UPPCO suspects that the low readings were due to bio-fouling or debris buildup around the probe.

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The likely cause of the low DO readings is low flow levels, warm water temperatures, and a natural stratification of the Dead River Storage Basin. As agreed to with the resource agencies, UPPCO released less than the License minimum flow of 100 cfs from the Hoist Powerhouse in order to maintain the water elevation in the Dead River Storage Basin during the monitoring season. All hourly water temperature readings between June 29th and August 17th were above the License maximum monthly average water temperature of 68°F. As a result, a deviation from the License monthly maximum average temperature of 68°F occurred in July and August. The average monthly water temperature at this location was 71.7°F and 70.2°F, respectively. A maximum daily average water temperature of 74°F was observed on July 23rd, July 21st, and August 2nd. The maximum hourly temperature observed during the monitoring period was 77°F on July 23rd.

D.O. and temperature profiles conducted at the Hoist Powerhouse intake showed that the Dead River Storage Basin was stratified from early July through the end of August/early September, with low levels of dissolved oxygen in the bottom 1.5 meters of water column. Between July 17th and August 28th, water temperatures were above the downstream license maximum monthly average water temperature of 68°F degrees to a depth of 8.5 to 9.5 meters. As a result, water released through the powerhouse was near or above the License downstream water temperature limitation. Water quality monitoring conducted in 2007 determined that water temperature does increase with distance from the powerhouse due to atmospheric conditions. With elevated water temperatures in the reservoir and a warming of the Dead River due to atmospheric conditions, this resulted in low D.O readings and deviations from the temperature standard at the monitoring location.

Downstream of the McClure Dam

Downstream of the McClure Dam at the LS&I Railroad Bridge monitoring location, there were no deviations from the dissolved oxygen or temperature standards during the monitoring season. Dissolved oxygen levels were above 8.0 mg/l all season. The water temperature at this location was significantly lower than the temperature at the Hoist Powerhouse monitoring location (Table 1). This is expected due to groundwater seepage and springs feeding into this section of river and the deep-water draw at the McClure Dam, located approximately 18' below the spillway crest, which is releasing 20 cfs of cold water from the hypolimnion of the McClure Storage Basin into the bypassed reach of the Dead River.

Table 1: Monthly Average Temperature Data (°F)

	AAO Bridge	Hoist Powerhouse	McClure Powerhouse	Dead River @ LS&I Railroad Bridge
May	57.7	55.5	56.0	51.6
June	65.2	65.1	65.0	60.4
July	71.1	71.9	72.5	65.7
August	66.6	70.2	69.9	65.4
September	57.1	62.9	61.3	59.2
October	46.2	49.4	49.5	48.8

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Downstream of the McClure Powerhouse

Downstream of the McClure Powerhouse, there were no deviations from the dissolved oxygen or temperature standards during the monitoring season. Dissolved oxygen levels were above the water quality standard of 5.0 mg/l all season. The water temperature observed at this location was consistent with the temperature observed at the Hoist Powerhouse monitoring location. Dissolved oxygen concentrations at this location were above 7 mg/l throughout June, August and September, and were above 6 mg/l in July. DO levels were slightly higher at this monitoring location compared to the monitoring location downstream of the Hoist Powerhouse.

UPPCO provided the 2012 water quality monitoring report to the Michigan Department of Natural Resources (MDNR), Michigan Department of Environmental Quality (MDEQ), and the U.S. Fish and Wildlife Service (FWS) by e-mail on November 26, 2012 for review and comment. UPPCO did not receive comments from the resource agencies on the report. Documentation of agency consultation can be found in Appendix D. Should you have any questions or concerns about this report, 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

Enc: 2012 water quality monitoring report.

cc: Mr. Gil Snyder, WPSC - D2
Mr. Shawn Puzen, IBS - D2
Ms. Joan Johanek, WPSC - D2
Mr. Dave Giesler, IBS - D2
Mr. John Myers, IBS - D2
Mr. Keith Moyle, UPPCO - UISC
Mr. Virgil Schlorke, UPPCO- UISC
Mr. Robert Meyers, UPPCO - UISC
Mr. Bill Taft - MDEQ
Mr. Mitch Koetje - MDEQ
Mr. Burr Fisher - FWS
Mr. Kyle Kruger - MDNR
Mr. John Zygaj, FERC - CRO

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Appendix A

Dead River Hydroelectric Project

FERC Project No. 10855

2012 Water Quality Monitoring Data

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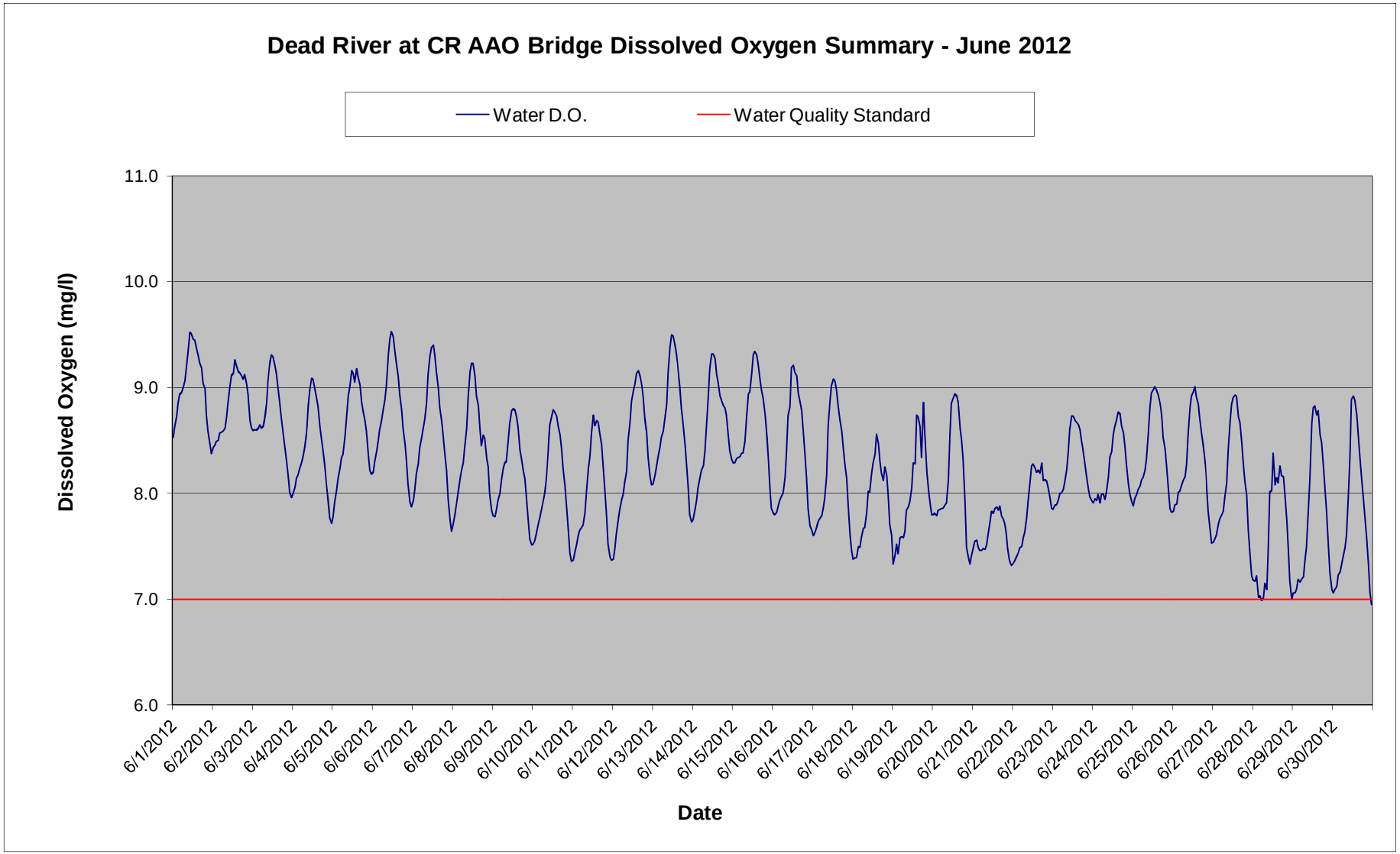
Dead River Water Quality Monitoring Data

at the

AAO Bridge Below the Silver Lake Storage Basin



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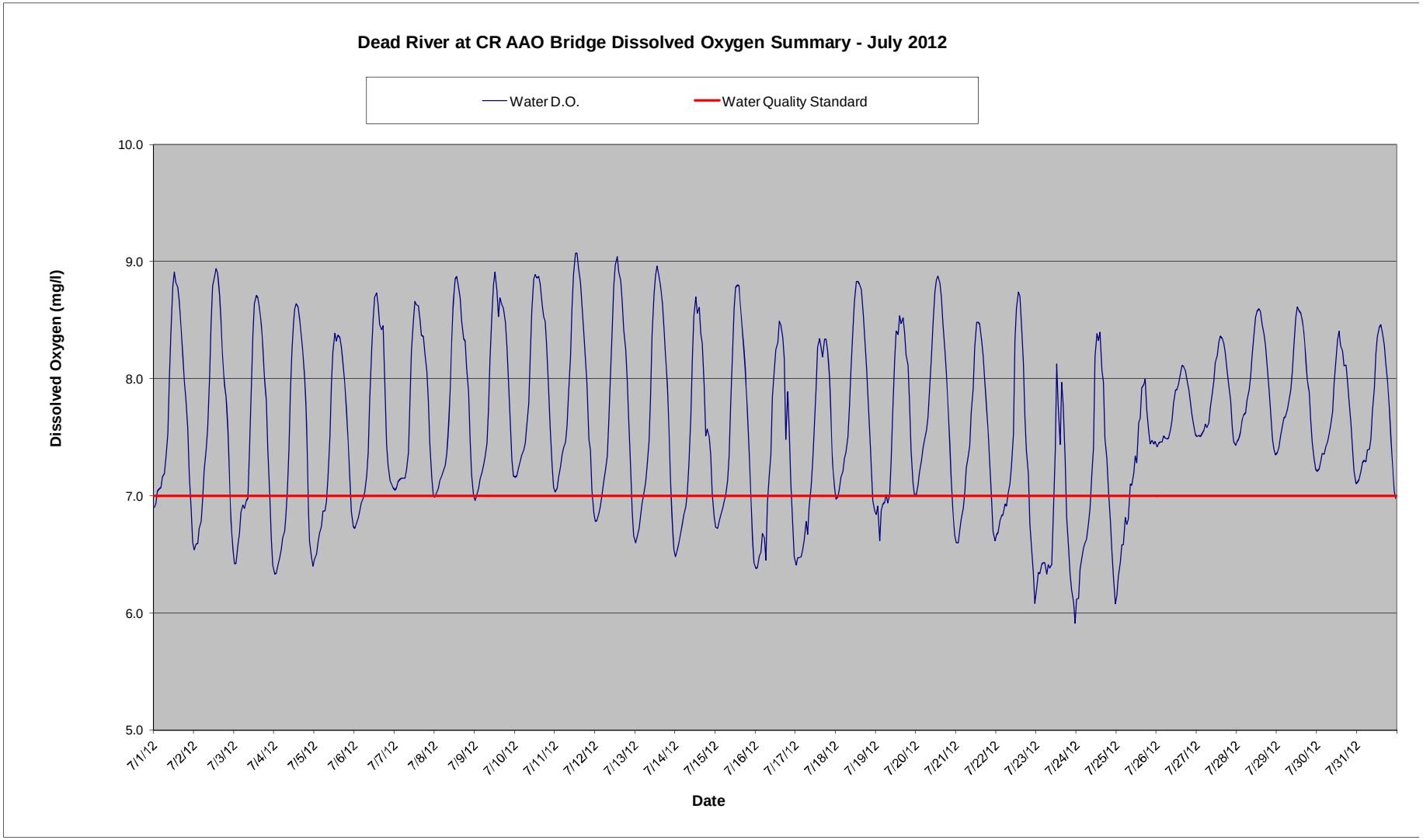

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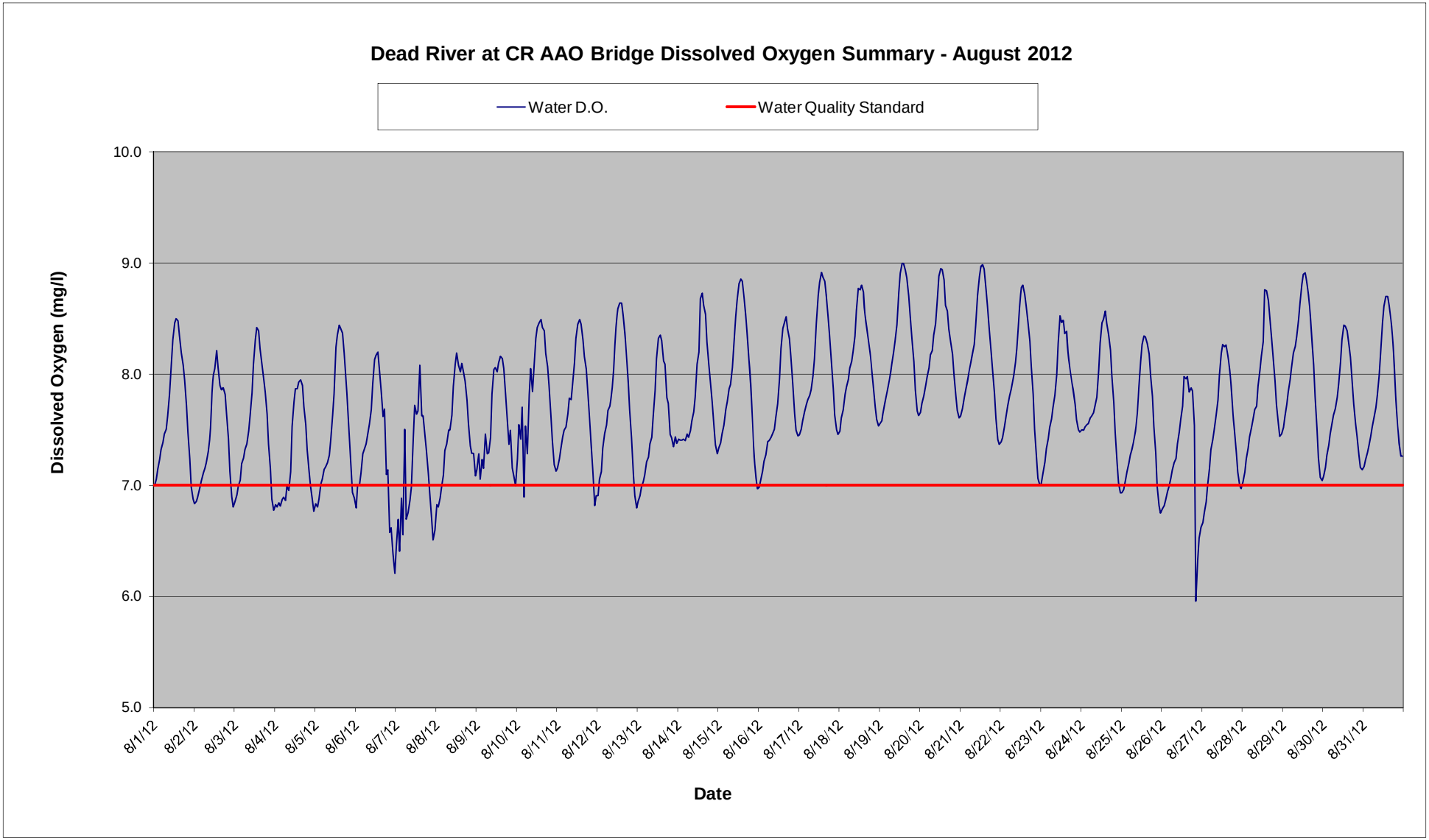

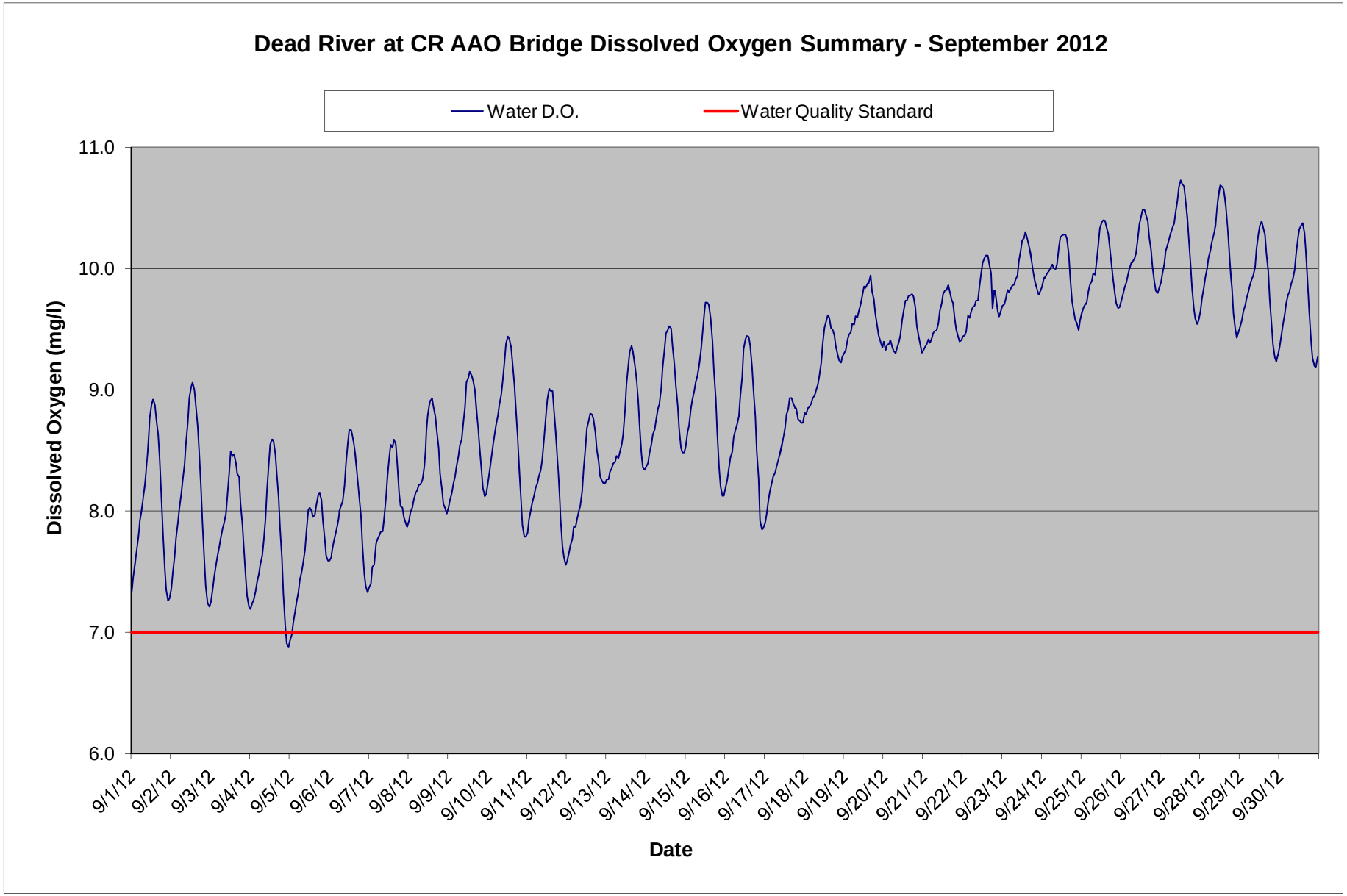

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Dead River at County Road AAO Bridge - June 2012 Dissolved Oxygen Summary

Time HHMMSS	06/01/12	06/02/12	06/03/12	06/04/12	06/05/12	06/06/12	06/07/12	06/08/12	06/09/12	06/10/12	06/11/12	06/12/12	06/13/12	06/14/12	06/15/12	06/16/12
0	8.5	8.4	8.6	8.0	7.8	8.2	7.9	7.7	7.8	7.5	7.4	7.4	8.1	7.9	8.3	7.8
10000	8.6	8.5	8.6	8.1	7.9	8.3	8.0	7.8	7.8	7.6	7.4	7.5	8.2	7.9	8.3	7.8
20000	8.7	8.5	8.6	8.1	8.0	8.4	8.2	7.9	7.9	7.6	7.5	7.6	8.3	8.1	8.3	7.9
30000	8.9	8.5	8.6	8.2	8.1	8.5	8.3	8.0	7.9	7.7	7.6	7.8	8.4	8.2	8.4	7.9
40000	8.9	8.6	8.6	8.2	8.2	8.6	8.4	8.1	8.0	7.8	7.7	7.9	8.4	8.2	8.4	8.0
50000	9.0	8.6	8.6	8.3	8.3	8.7	8.5	8.2	8.1	7.9	7.7	7.9	8.5	8.3	8.4	8.0
60000	9.0	8.6	8.6	8.4	8.4	8.8	8.6	8.3	8.2	7.9	7.7	8.0	8.6	8.4	8.5	8.2
70000	9.1	8.6	8.7	8.4	8.5	8.9	8.7	8.4	8.3	8.0	7.8	8.1	8.7	8.6	8.7	8.4
80000	9.2	8.7	8.9	8.6	8.7	9.0	8.9	8.6	8.3	8.2	8.0	8.2	8.8	8.9	8.9	8.7
90000	9.4	8.9	9.1	8.8	8.9	9.3	9.1	8.9	8.5	8.4	8.2	8.5	9.2	9.2	9.0	8.8
100000	9.5	9.0	9.3	9.0	9.0	9.5	9.3	9.2	8.7	8.7	8.4	8.7	9.4	9.3	9.1	9.2
110000	9.5	9.1	9.3	9.1	9.2	9.5	9.4	9.2	8.8	8.7	8.6	8.9	9.5	9.3	9.3	9.2
120000	9.5	9.1	9.3	9.1	9.1	9.5	9.4	9.2	8.8	8.8	8.7	9.0	9.5	9.3	9.3	9.1
130000	9.4	9.3	9.2	9.0	9.1	9.4	9.3	9.1	8.8	8.8	8.6	9.0	9.4	9.1	9.3	9.1
140000	9.4	9.2	9.1	8.9	9.2	9.2	9.2	8.9	8.7	8.7	8.7	9.1	9.3	9.1	9.2	9.0
150000	9.3	9.1	9.0	8.8	9.1	9.1	9.0	8.8	8.6	8.6	8.7	9.2	9.1	8.9	9.1	8.9
160000	9.2	9.1	8.8	8.6	9.0	8.9	8.8	8.6	8.4	8.6	8.6	9.1	8.8	8.9	9.0	8.8
170000	9.2	9.1	8.7	8.5	8.9	8.8	8.7	8.5	8.3	8.4	8.5	9.0	8.6	8.8	8.9	8.6
180000	9.0	9.1	8.6	8.4	8.8	8.6	8.5	8.6	8.2	8.2	8.3	8.9	8.5	8.8	8.8	8.4
190000	9.0	9.1	8.5	8.3	8.7	8.5	8.4	8.5	8.1	8.1	8.0	8.7	8.3	8.7	8.6	8.1
200000	8.7	9.0	8.3	8.1	8.6	8.3	8.2	8.3	8.0	7.9	7.8	8.6	8.0	8.5	8.3	7.9
210000	8.6	8.9	8.2	7.9	8.4	8.1	8.0	8.3	7.7	7.6	7.5	8.3	7.8	8.4	8.1	7.7
220000	8.5	8.7	8.0	7.8	8.2	7.9	7.8	8.0	7.6	7.4	7.4	8.2	7.7	8.3	7.9	7.7
230000	8.4	8.6	8.0	7.7	8.2	7.9	7.6	7.8	7.5	7.4	7.4	8.1	7.8	8.3	7.8	7.6
Daily Max	9.5	9.3	9.3	9.1	9.2	9.5	9.4	9.2	8.8	8.8	8.7	9.2	9.5	9.3	9.3	9.2
Daily Min	8.4	8.4	8.0	7.7	7.8	7.9	7.6	7.7	7.5	7.4	7.4	7.4	7.7	7.9	7.8	7.6
Average	9.0	8.9	8.7	8.4	8.6	8.7	8.6	8.5	8.2	8.1	8.0	8.4	8.6	8.6	8.7	8.4

License Minimum Dissolved Oxygen: 7.0 mg/l

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Dead River at County Road AAO Bridge - June 2012 Dissolved Oxygen Summary

Time HHMMSS	06/17/12	06/18/12	06/19/12	06/20/12	06/21/12	06/22/12	06/23/12	06/24/12	06/25/12	06/26/12	06/27/12	06/28/12	06/29/12	06/30/12
0	7.6	7.4	7.4	7.8	7.6	7.4	7.9	7.9	7.9	7.8	7.5	7.2	7.1	7.1
10000	7.7	7.4	7.5	7.8	7.6	7.4	7.9	8.0	8.0	7.9	7.6	7.2	7.1	7.1
20000	7.7	7.5	7.4	7.8	7.5	7.4	7.9	7.9	8.0	7.9	7.6	7.2	7.1	7.1
30000	7.8	7.5	7.6	7.9	7.5	7.5	8.0	8.0	8.0	8.0	7.7	7.0	7.2	7.2
40000	7.8	7.6	7.6	7.9	7.5	7.5	8.0	7.9	8.1	8.0	7.8	7.0	7.2	7.3
50000	7.9	7.7	7.6	7.9	7.5	7.6	8.0	8.0	8.1	8.1	7.8	7.0	7.2	7.3
60000	8.0	7.7	7.6	7.9	7.5	7.6	8.1	8.0	8.2	8.1	7.8	7.0	7.2	7.4
70000	8.2	7.8	7.8	7.9	7.5	7.8	8.2	7.9	8.2	8.2	8.0	7.2	7.4	7.5
80000	8.6	8.0	7.9	8.1	7.6	7.9	8.4	8.0	8.3	8.3	8.1	7.1	7.5	7.6
90000	8.9	8.0	7.9	8.5	7.7	8.1	8.6	8.2	8.6	8.6	8.4	7.5	7.9	8.0
100000	9.0	8.2	8.1	8.9	7.8	8.3	8.7	8.3	8.8	8.8	8.7	8.0	8.1	8.4
110000	9.1	8.3	8.3	8.9	7.8	8.3	8.7	8.4	9.0	8.9	8.8	8.0	8.7	8.9
120000	9.1	8.4	8.3	8.9	7.9	8.2	8.7	8.6	9.0	9.0	8.9	8.4	8.8	8.9
130000	9.0	8.6	8.7	8.9	7.9	8.2	8.7	8.6	9.0	9.0	8.9	8.1	8.8	8.9
140000	8.8	8.5	8.7	8.9	7.8	8.2	8.7	8.7	9.0	8.9	8.9	8.2	8.7	8.7
150000	8.7	8.3	8.6	8.6	7.9	8.2	8.7	8.8	8.9	8.8	8.7	8.1	8.8	8.6
160000	8.6	8.2	8.3	8.5	7.8	8.3	8.6	8.8	8.8	8.7	8.7	8.3	8.6	8.4
170000	8.4	8.1	8.9	8.3	7.8	8.1	8.5	8.6	8.7	8.6	8.5	8.2	8.5	8.1
180000	8.3	8.3	8.5	7.9	7.7	8.1	8.4	8.6	8.5	8.5	8.3	8.2	8.2	8.0
190000	8.1	8.2	8.3	7.5	7.6	8.1	8.3	8.4	8.4	8.3	8.1	8.0	8.0	7.8
200000	7.9	8.0	8.1	7.4	7.5	8.1	8.1	8.3	8.3	8.1	8.0	7.7	7.8	7.6
210000	7.6	7.7	7.9	7.3	7.4	8.0	8.1	8.1	8.0	7.8	7.7	7.5	7.5	7.3
220000	7.5	7.6	7.8	7.4	7.3	7.9	8.0	8.0	7.9	7.7	7.4	7.2	7.3	7.1
230000	7.4	7.3	7.8	7.5	7.3	7.9	7.9	7.9	7.8	7.5	7.2	7.0	7.1	7.0
Daily Max	9.1	8.6	8.9	8.9	7.9	8.3	8.7	8.8	9.0	9.0	8.9	8.4	8.8	8.9
Daily Min	7.4	7.3	7.4	7.3	7.3	7.4	7.9	7.9	7.8	7.5	7.2	7.0	7.1	7.0
Average	8.2	7.9	8.0	8.1	7.6	7.9	8.3	8.2	8.4	8.3	8.1	7.6	7.8	7.8

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Dead River at County Road AAO Bridge - July 2012 Dissolved Oxygen Monitoring Data

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

License Minimum Dissolved Oxygen: 7.0 mg/l

Readings below the water quality standard

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Dead River at County Road AAO Bridge - July 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	07/17/12	07/18/12	07/19/12	07/20/12	07/21/12	07/22/12	07/23/12	07/24/12	07/25/12	07/26/12	07/27/12	07/28/12	07/29/12	07/30/12	07/31/12
0	6.4	7.0	6.8	7.0	6.6	6.7	6.2	6.1	6.1	7.4	7.5	7.5	7.4	7.2	7.1
10000	6.5	7.0	6.9	7.1	6.6	6.7	6.3	6.1	6.3	7.4	7.5	7.5	7.4	7.2	7.1
20000	6.5	7.1	6.6	7.2	6.7	6.8	6.3	6.4	6.4	7.5	7.5	7.6	7.5	7.3	7.2
30000	6.5	7.2	6.9	7.3	6.8	6.8	6.4	6.5	6.6	7.5	7.5	7.6	7.6	7.4	7.3
40000	6.5	7.2	6.9	7.4	6.9	6.8	6.4	6.6	6.6	7.5	7.6	7.7	7.7	7.4	7.3
50000	6.6	7.3	6.9	7.5	7.0	6.9	6.4	6.6	6.8	7.5	7.6	7.7	7.7	7.4	7.3
60000	6.8	7.4	7.0	7.6	7.2	6.9	6.3	6.6	6.8	7.5	7.6	7.8	7.7	7.5	7.4
70000	6.7	7.5	6.9	7.7	7.3	7.0	6.4	6.8	6.8	7.5	7.6	7.9	7.8	7.5	7.4
80000	6.9	7.8	7.0	7.9	7.4	7.1	6.4	6.9	7.1	7.6	7.8	8.0	7.9	7.6	7.5
90000	7.1	8.1	7.3	8.2	7.7	7.3	6.4	7.2	7.1	7.6	7.9	8.2	8.1	7.7	7.7
100000	7.3	8.4	7.7	8.5	7.9	7.5	6.8	7.4	7.2	7.8	8.0	8.4	8.3	8.0	7.9
110000	7.6	8.7	8.2	8.7	8.3	8.3	7.4	8.2	7.3	7.9	8.1	8.5	8.5	8.1	8.2
120000	7.9	8.8	8.4	8.8	8.5	8.6	8.1	8.4	7.3	7.9	8.2	8.6	8.6	8.3	8.4
130000	8.3	8.8	8.4	8.9	8.5	8.7	7.8	8.3	7.6	8.0	8.3	8.6	8.6	8.4	8.4
140000	8.3	8.8	8.5	8.8	8.5	8.7	7.4	8.4	7.7	8.0	8.4	8.6	8.6	8.3	8.5
150000	8.3	8.8	8.5	8.7	8.3	8.5	8.0	8.1	7.9	8.1	8.3	8.5	8.5	8.2	8.4
160000	8.2	8.6	8.5	8.5	8.2	8.1	7.8	8.0	7.9	8.1	8.3	8.4	8.4	8.1	8.3
170000	8.3	8.4	8.4	8.2	8.0	7.7	7.3	7.5	8.0	8.1	8.2	8.3	8.2	8.1	8.1
180000	8.3	8.1	8.2	8.1	7.7	7.4	6.8	7.3	7.7	8.0	8.1	8.1	8.0	8.0	8.0
190000	8.2	7.9	8.1	7.8	7.6	7.2	6.6	7.1	7.6	7.9	7.9	7.9	7.9	7.8	7.8
200000	8.0	7.6	7.8	7.5	7.3	6.8	6.3	6.8	7.4	7.8	7.8	7.7	7.6	7.6	7.5
210000	7.7	7.2	7.4	7.1	7.0	6.5	6.2	6.5	7.5	7.7	7.6	7.5	7.5	7.4	7.2
220000	7.3	7.0	7.1	6.8	6.7	6.3	6.1	6.3	7.4	7.6	7.5	7.4	7.3	7.2	7.0
230000	7.1	6.9	7.0	6.7	6.6	6.1	5.9	6.1	7.5	7.5	7.4	7.3	7.2	7.1	7.0
Daily Max	8.3	8.8	8.5	8.9	8.5	8.7	8.1	8.4	8.0	8.1	8.4	8.6	8.6	8.4	8.5
Daily Min	6.4	6.9	6.6	6.7	6.6	6.1	5.9	6.1	6.1	7.4	7.4	7.3	7.2	7.1	7.0
Average	7.4	7.8	7.6	7.8	7.5	7.3	6.8	7.1	7.2	7.7	7.8	8.0	7.9	7.7	7.7

Readings below the water quality standard

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Dead River at County Road AAO Bridge - August 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	8/1/2012	8/2/2012	8/3/2012	8/4/2012	8/5/2012	8/6/2012	8/7/2012	8/8/2012	8/9/2012	8/10/2012	8/11/2012	8/12/2012	8/13/2012	8/14/2012	8/15/2012	8/16/2012	8/17/2012
0	7.0	6.8	6.9	6.8	6.8	6.8	6.4	6.8	7.1	7.2	7.2	6.9	6.9	7.4	7.3	7.0	7.5
10000	7.1	6.9	6.9	6.8	6.8	7.0	6.7	6.8	7.3	7.5	7.2	7.1	6.9	7.4	7.4	7.0	7.5
20000	7.1	6.9	7.0	6.8	6.9	7.0	6.4	6.9	7.1	7.4	7.3	7.1	7.0	7.4	7.5	7.1	7.6
30000	7.2	7.0	7.0	6.8	7.0	7.1	6.9	7.0	7.2	7.7	7.4	7.3	7.0	7.4	7.5	7.2	7.7
40000	7.3	7.1	7.2	6.9	7.1	7.3	6.6	7.1	7.2	6.9	7.5	7.5	7.1	7.4	7.7	7.3	7.7
50000	7.4	7.1	7.2	6.9	7.1	7.3	7.5	7.3	7.5	7.5	7.5	7.5	7.2	7.5	7.7	7.4	7.8
60000	7.5	7.2	7.3	6.9	7.2	7.4	6.7	7.4	7.3	7.3	7.6	7.7	7.3	7.4	7.9	7.4	7.8
70000	7.5	7.2	7.4	7.0	7.2	7.5	6.8	7.5	7.3	7.8	7.8	7.7	7.4	7.5	7.9	7.4	7.9
80000	7.6	7.3	7.5	7.0	7.3	7.6	6.9	7.5	7.4	8.1	7.8	7.8	7.4	7.6	8.1	7.5	8.0
90000	7.8	7.5	7.6	7.1	7.4	7.7	7.0	7.6	7.8	7.8	7.9	8.0	7.6	7.7	8.3	7.5	8.1
100000	8.1	7.7	7.8	7.5	7.6	7.9	7.4	7.9	8.0	8.1	8.1	8.2	7.9	7.8	8.5	7.6	8.5
110000	8.3	8.0	8.1	7.8	7.8	8.1	7.7	8.1	8.1	8.3	8.3	8.5	8.1	8.1	8.7	7.7	8.7
120000	8.5	8.0	8.3	7.9	8.2	8.2	7.6	8.2	8.0	8.4	8.4	8.6	8.3	8.2	8.8	8.0	8.8
130000	8.5	8.2	8.4	7.9	8.3	8.2	7.7	8.1	8.1	8.5	8.5	8.6	8.3	8.7	8.9	8.2	8.9
140000	8.5	8.1	8.4	7.9	8.4	8.0	8.1	8.0	8.2	8.5	8.4	8.6	8.3	8.7	8.8	8.4	8.9
150000	8.3	7.9	8.2	7.9	8.4	7.8	7.6	8.1	8.1	8.4	8.3	8.5	8.1	8.6	8.7	8.5	8.8
160000	8.2	7.9	8.1	7.9	8.4	7.6	7.6	8.0	8.0	8.4	8.2	8.4	8.1	8.5	8.5	8.5	8.7
170000	8.1	7.9	7.9	7.7	8.2	7.7	7.4	7.9	7.8	8.2	8.0	8.2	7.8	8.3	8.3	8.4	8.5
180000	7.9	7.8	7.8	7.5	8.0	7.1	7.3	7.8	7.6	8.1	7.9	7.9	7.7	8.1	8.1	8.3	8.4
190000	7.7	7.6	7.6	7.3	7.7	7.1	7.1	7.6	7.4	7.9	7.6	7.7	7.5	7.9	7.9	8.2	8.1
200000	7.5	7.4	7.4	7.1	7.5	6.6	6.9	7.4	7.5	7.6	7.4	7.4	7.4	7.8	7.6	7.9	7.9
210000	7.2	7.1	7.1	7.0	7.1	6.6	6.7	7.3	7.2	7.4	7.1	7.1	7.3	7.5	7.3	7.6	7.6
220000	7.0	6.9	6.9	6.9	6.9	6.4	6.5	7.3	7.1	7.2	6.8	6.9	7.4	7.4	7.1	7.5	7.5
230000	6.9	6.8	6.8	6.8	6.9	6.2	6.6	7.1	7.0	7.1	6.9	6.8	7.4	7.3	7.0	7.4	7.5
Daily Max	8.5	8.2	8.4	7.9	8.4	8.2	8.1	8.2	8.2	8.5	8.5	8.6	8.3	8.7	8.9	8.5	8.9
Daily Min	6.9	6.8	6.8	6.8	6.8	6.2	6.4	6.8	7.0	6.9	6.8	6.8	6.9	7.3	7.0	7.0	7.5
Average	7.7	7.4	7.5	7.3	7.5	7.3	7.1	7.5	7.6	7.8	7.7	7.8	7.6	7.8	8.0	7.7	8.1

License Minimum Dissolved Oxygen: 7.0 mg/l

Readings below the water quality standard

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Dead River at County Road AAO Bridge - August 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	8/18/2012	8/19/2012	8/20/2012	8/21/2012	8/22/2012	8/23/2012	8/24/2012	8/25/2012	8/26/2012	8/27/2012	8/28/2012	8/29/2012	8/30/2012	8/31/2012
0	7.5	7.6	7.7	7.6	7.4	7.0	7.5	6.9	6.8	6.7	7.0	7.5	7.1	7.2
10000	7.6	7.6	7.7	7.7	7.4	7.1	7.5	7.0	6.8	6.8	7.1	7.6	7.2	7.2
20000	7.7	7.7	7.8	7.8	7.5	7.2	7.5	7.1	6.9	6.9	7.2	7.7	7.3	7.3
30000	7.8	7.8	7.9	7.9	7.6	7.3	7.5	7.1	6.9	7.0	7.3	7.8	7.4	7.4
40000	7.9	7.8	8.0	7.9	7.7	7.4	7.6	7.2	7.0	7.2	7.4	8.0	7.5	7.4
50000	8.0	7.9	8.1	8.0	7.8	7.5	7.6	7.3	7.1	7.3	7.5	8.1	7.6	7.5
60000	8.1	8.0	8.2	8.1	7.9	7.6	7.6	7.3	7.1	7.4	7.6	8.2	7.6	7.6
70000	8.1	8.1	8.2	8.2	8.0	7.7	7.7	7.4	7.2	7.5	7.7	8.3	7.7	7.7
80000	8.2	8.2	8.4	8.3	8.0	7.8	7.7	7.5	7.2	7.6	7.7	8.3	7.8	7.8
90000	8.3	8.3	8.5	8.4	8.2	8.0	7.8	7.7	7.4	7.8	7.9	8.5	7.9	8.0
100000	8.6	8.4	8.7	8.7	8.4	8.3	8.0	7.9	7.5	8.0	8.0	8.6	8.1	8.2
110000	8.8	8.7	8.9	8.9	8.6	8.5	8.3	8.1	7.6	8.2	8.2	8.8	8.3	8.5
120000	8.8	8.9	9.0	9.0	8.8	8.5	8.5	8.3	7.7	8.3	8.3	8.9	8.4	8.6
130000	8.8	9.0	8.9	9.0	8.8	8.5	8.5	8.3	8.0	8.2	8.8	8.9	8.4	8.7
140000	8.7	9.0	8.8	8.9	8.7	8.4	8.6	8.3	8.0	8.3	8.8	8.8	8.4	8.7
150000	8.5	8.9	8.6	8.8	8.6	8.4	8.5	8.3	8.0	8.2	8.7	8.7	8.3	8.6
160000	8.4	8.9	8.6	8.6	8.5	8.2	8.4	8.2	7.8	8.0	8.5	8.5	8.2	8.5
170000	8.3	8.7	8.4	8.4	8.3	8.0	8.2	8.0	7.9	7.9	8.3	8.3	7.9	8.3
180000	8.2	8.5	8.3	8.2	8.1	7.9	8.0	7.8	7.8	7.6	8.2	8.1	7.7	8.1
190000	8.0	8.3	8.2	8.0	7.8	7.9	7.7	7.5	7.5	7.5	7.9	7.8	7.6	7.8
200000	7.9	8.1	8.0	7.8	7.5	7.7	7.5	7.3	6.0	7.3	7.7	7.5	7.4	7.6
210000	7.7	7.9	7.8	7.6	7.3	7.6	7.2	7.0	6.3	7.1	7.6	7.3	7.3	7.4
220000	7.6	7.7	7.7	7.4	7.1	7.5	7.0	6.8	6.5	7.0	7.4	7.1	7.2	7.3
230000	7.5	7.6	7.6	7.4	7.0	7.5	6.9	6.7	6.6	7.0	7.5	7.0	7.1	7.3
Daily Max	8.8	9.0	9.0	9.0	8.8	8.5	8.6	8.3	8.0	8.3	8.8	8.9	8.4	8.7
Daily Min	7.5	7.6	7.6	7.4	7.0	7.0	6.9	6.7	6.0	6.7	7.0	7.0	7.1	7.2
Average	8.1	8.2	8.2	8.2	8.0	7.8	7.8	7.5	7.2	7.5	7.8	8.1	7.7	7.9

Readings below the water quality standard

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Dead River at County Road AAO Bridge - September 2012 Dissolved Oxygen Data

Time HHMMSS	9/1/2012	9/2/2012	9/3/2012	9/4/2012	9/5/2012	9/6/2012	9/7/2012	9/8/2012	9/9/2012	9/10/2012	9/11/2012	9/12/2012	9/13/2012	9/14/2012	9/15/2012	9/16/2012
0	7.3	7.4	7.3	7.2	6.9	7.6	7.4	7.9	8.0	8.2	7.8	7.6	8.3	8.4	8.5	8.2
10000	7.5	7.5	7.4	7.2	7.0	7.6	7.4	8.0	8.1	8.3	7.9	7.7	8.3	8.4	8.7	8.2
20000	7.6	7.6	7.5	7.3	7.1	7.7	7.5	8.0	8.2	8.4	8.0	7.7	8.3	8.5	8.7	8.4
30000	7.7	7.8	7.6	7.3	7.2	7.8	7.6	8.1	8.2	8.5	8.1	7.8	8.4	8.5	8.8	8.4
40000	7.8	7.9	7.6	7.4	7.3	7.8	7.7	8.2	8.3	8.6	8.1	7.9	8.4	8.6	8.9	8.5
50000	7.9	8.0	7.7	7.5	7.3	7.9	7.8	8.2	8.4	8.7	8.2	7.9	8.4	8.7	9.0	8.6
60000	8.0	8.1	7.8	7.6	7.4	8.0	7.8	8.2	8.5	8.8	8.2	7.9	8.5	8.8	9.1	8.7
70000	8.1	8.3	7.9	7.6	7.5	8.1	7.8	8.2	8.5	8.9	8.3	8.0	8.4	8.8	9.1	8.7
80000	8.2	8.4	7.9	7.7	7.6	8.1	7.8	8.3	8.6	9.0	8.3	8.0	8.5	8.9	9.2	8.8
90000	8.4	8.6	8.0	7.9	7.7	8.2	7.9	8.3	8.7	9.1	8.4	8.2	8.5	9.0	9.3	8.9
100000	8.6	8.7	8.1	8.2	7.8	8.4	8.1	8.5	8.9	9.2	8.6	8.3	8.6	9.2	9.4	9.1
110000	8.8	8.9	8.3	8.4	8.0	8.6	8.3	8.7	9.1	9.4	8.8	8.5	8.8	9.3	9.6	9.3
120000	8.9	9.0	8.5	8.6	8.0	8.7	8.4	8.9	9.1	9.4	8.9	8.7	9.0	9.5	9.7	9.4
130000	8.9	9.1	8.5	8.6	8.0	8.7	8.6	8.9	9.2	9.4	9.0	8.7	9.2	9.5	9.7	9.4
140000	8.9	9.0	8.5	8.6	8.0	8.6	8.5	8.9	9.1	9.4	9.0	8.8	9.3	9.5	9.7	9.4
150000	8.8	8.9	8.4	8.5	8.0	8.5	8.6	8.9	9.1	9.2	9.0	8.8	9.4	9.5	9.6	9.4
160000	8.6	8.7	8.3	8.3	8.1	8.4	8.6	8.8	9.0	9.0	8.8	8.8	9.3	9.4	9.4	9.2
170000	8.4	8.5	8.3	8.1	8.1	8.3	8.4	8.7	8.8	8.8	8.6	8.6	9.2	9.2	9.2	9.0
180000	8.1	8.2	8.1	7.9	8.2	8.1	8.2	8.5	8.7	8.6	8.4	8.5	9.1	9.0	8.9	8.8
190000	7.8	7.9	7.9	7.6	8.1	8.0	8.0	8.3	8.5	8.4	8.2	8.4	8.9	8.9	8.6	8.5
200000	7.5	7.6	7.7	7.3	7.9	7.7	8.0	8.2	8.3	8.1	7.9	8.3	8.7	8.7	8.4	8.3
210000	7.4	7.4	7.5	7.1	7.8	7.5	8.0	8.1	8.2	7.9	7.7	8.3	8.5	8.5	8.2	7.9
220000	7.3	7.2	7.3	6.9	7.6	7.4	7.9	8.0	8.1	7.8	7.6	8.2	8.4	8.5	8.1	7.9
230000	7.3	7.2	7.2	6.9	7.6	7.3	7.9	8.0	8.1	7.8	7.6	8.2	8.3	8.5	8.1	7.9
Daily Max	8.9	9.1	8.5	8.6	8.2	8.7	8.6	8.9	9.2	9.4	9.0	8.8	9.4	9.5	9.7	9.4
Daily Min	7.3	7.2	7.2	6.9	6.9	7.3	7.4	7.9	8.0	7.8	7.6	7.6	8.3	8.4	8.1	7.9
Average	8.1	8.2	7.9	7.7	7.7	8.0	8.0	8.4	8.6	8.7	8.3	8.2	8.7	8.9	9.0	8.7

License Minimum Dissolved Oxygen: 7.0 mg/l

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Dead River at County Road AAO Bridge - September 2012 Dissolved Oxygen Data

Time HHMMSS	9/17/2012	9/18/2012	9/19/2012	9/20/2012	9/21/2012	9/22/2012	9/23/2012	9/24/2012	9/25/2012	9/26/2012	9/27/2012	9/28/2012	9/29/2012	9/30/2012
0	7.9	8.8	9.3	9.4	9.3	9.4	9.7	9.8	9.6	9.7	9.9	9.7	9.5	9.4
10000	8.0	8.8	9.3	9.3	9.4	9.4	9.7	9.9	9.7	9.8	10.0	9.8	9.6	9.5
20000	8.1	8.8	9.4	9.4	9.4	9.5	9.7	9.9	9.7	9.8	10.0	9.8	9.6	9.5
30000	8.2	8.9	9.5	9.4	9.4	9.6	9.8	10.0	9.7	9.9	10.1	9.9	9.7	9.6
40000	8.2	8.9	9.5	9.4	9.4	9.6	9.8	10.0	9.8	9.9	10.2	10.0	9.8	9.7
50000	8.3	8.9	9.5	9.4	9.4	9.7	9.8	10.0	9.9	10.0	10.2	10.1	9.8	9.8
60000	8.3	9.0	9.5	9.3	9.5	9.7	9.9	10.0	9.9	10.0	10.3	10.1	9.9	9.8
70000	8.4	9.0	9.6	9.3	9.5	9.7	9.9	10.0	10.0	10.1	10.3	10.2	9.9	9.9
80000	8.4	9.0	9.6	9.3	9.5	9.7	9.9	10.0	9.9	10.1	10.4	10.3	9.9	9.9
90000	8.5	9.1	9.6	9.4	9.5	9.7	9.9	10.0	10.1	10.1	10.5	10.4	10.0	10.0
100000	8.5	9.2	9.7	9.4	9.7	9.8	10.1	10.2	10.2	10.3	10.6	10.5	10.2	10.1
110000	8.6	9.4	9.8	9.6	9.7	10.0	10.2	10.3	10.3	10.4	10.7	10.6	10.3	10.2
120000	8.7	9.5	9.9	9.6	9.8	10.0	10.2	10.3	10.4	10.4	10.7	10.7	10.4	10.3
130000	8.8	9.6	9.8	9.7	9.8	10.1	10.3	10.3	10.4	10.5	10.7	10.7	10.4	10.4
140000	8.8	9.6	9.9	9.7	9.8	10.1	10.3	10.3	10.4	10.5	10.7	10.7	10.3	10.4
150000	8.9	9.6	9.9	9.8	9.9	10.1	10.2	10.2	10.3	10.4	10.6	10.6	10.3	10.3
160000	8.9	9.5	9.9	9.8	9.8	10.0	10.2	10.1	10.3	10.4	10.4	10.4	10.1	10.1
170000	8.9	9.5	9.8	9.8	9.7	10.0	10.1	9.9	10.2	10.3	10.2	10.2	10.0	9.9
180000	8.9	9.4	9.7	9.8	9.7	9.7	10.0	9.7	10.0	10.2	10.0	10.0	9.7	9.6
190000	8.8	9.4	9.6	9.7	9.6	9.8	9.9	9.7	9.9	10.0	9.8	9.8	9.5	9.4
200000	8.8	9.3	9.5	9.5	9.5	9.8	9.9	9.6	9.8	9.9	9.7	9.6	9.4	9.3
210000	8.7	9.2	9.4	9.4	9.4	9.7	9.8	9.6	9.7	9.8	9.6	9.5	9.3	9.2
220000	8.7	9.2	9.4	9.4	9.4	9.6	9.8	9.5	9.7	9.8	9.5	9.4	9.2	9.2
230000	8.7	9.3	9.3	9.3	9.4	9.7	9.8	9.6	9.7	9.8	9.6	9.5	9.3	9.3
Daily Max	8.9	9.6	9.9	9.8	9.9	10.1	10.3	10.3	10.4	10.5	10.7	10.7	10.4	10.4
Daily Min	7.9	8.8	9.3	9.3	9.3	9.4	9.7	9.5	9.6	9.7	9.5	9.4	9.2	9.2
Average	8.5	9.2	9.6	9.5	9.6	9.8	10.0	10.0	10.0	10.1	10.2	10.1	9.8	9.8

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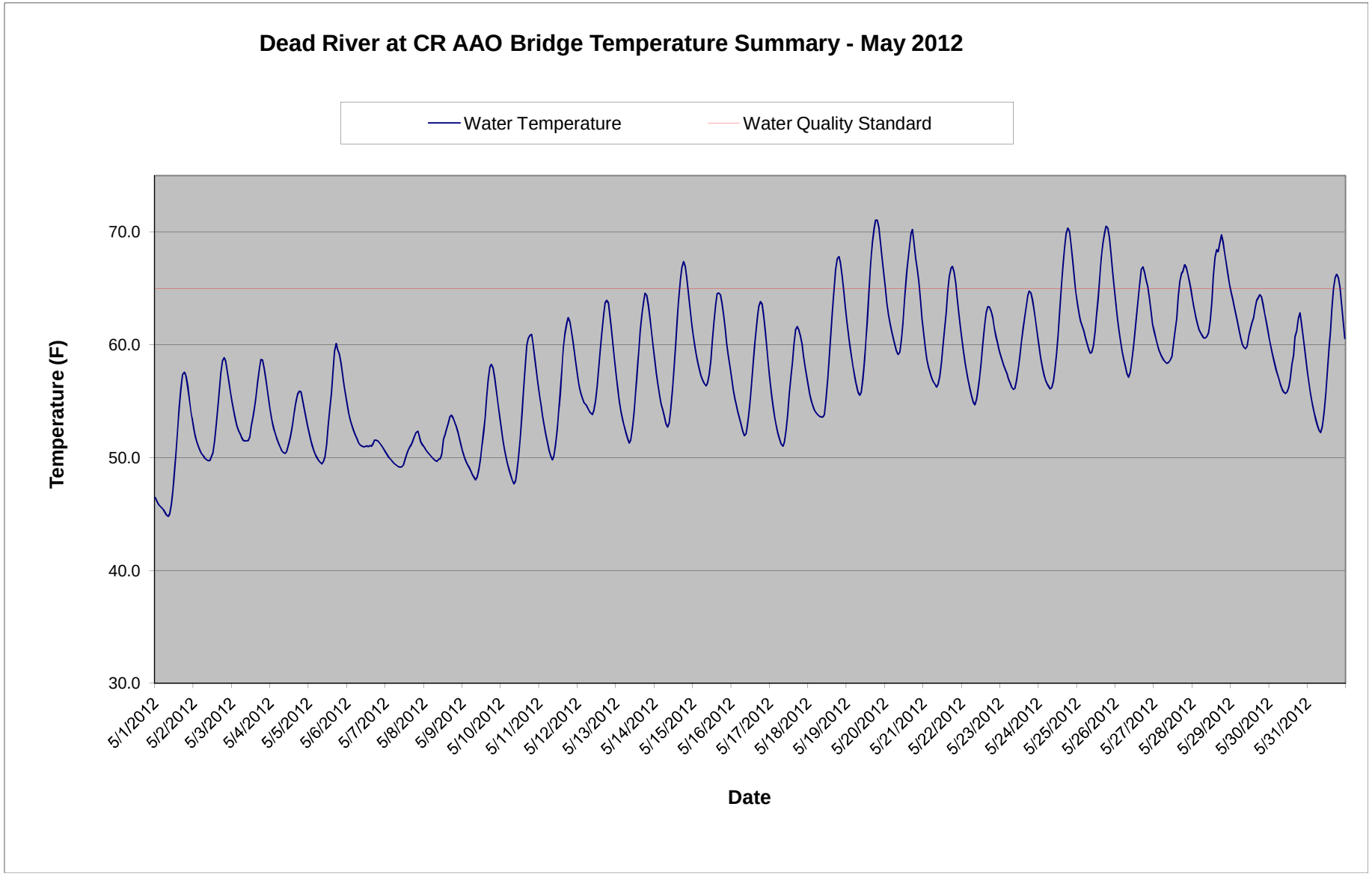

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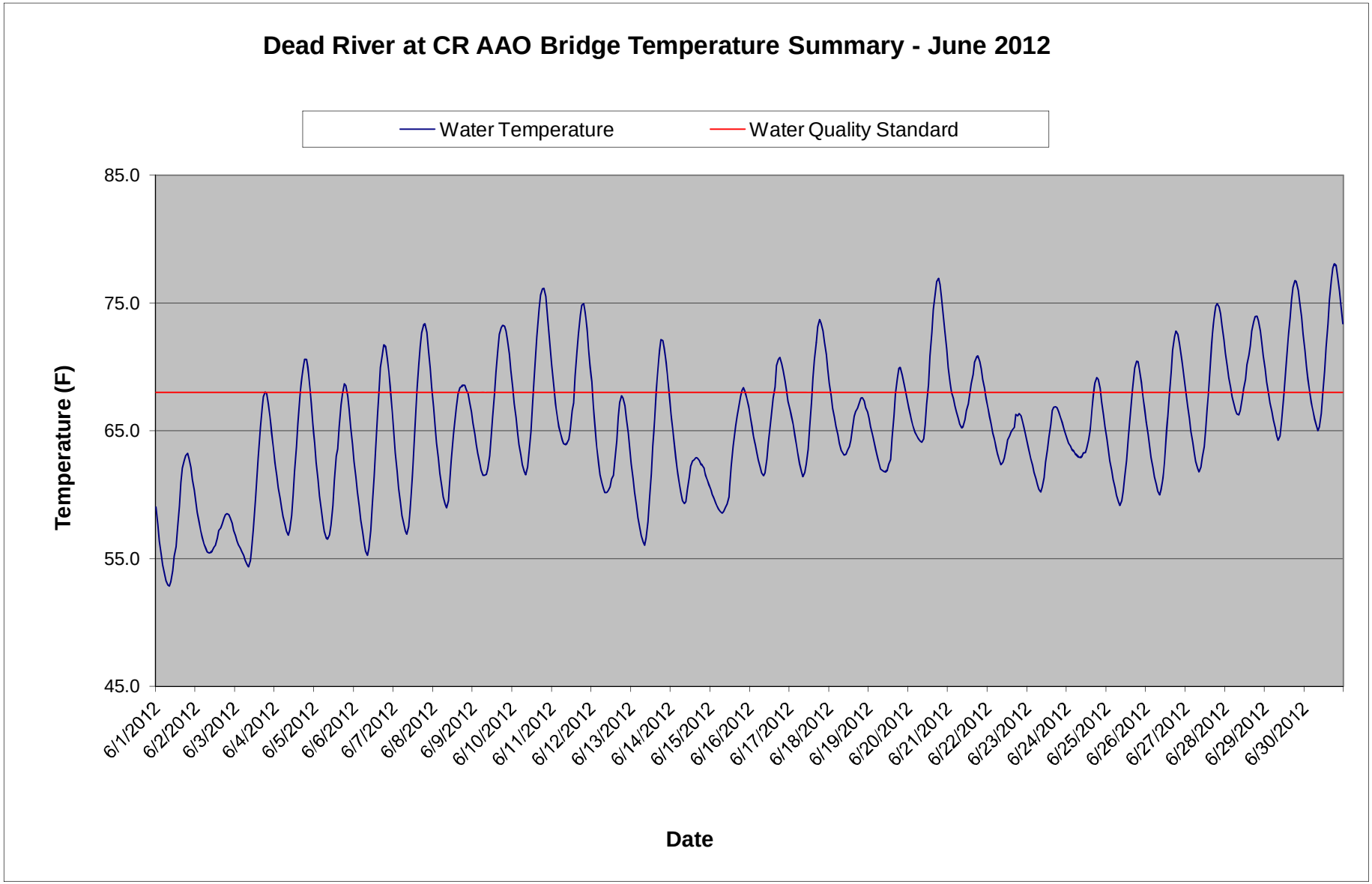

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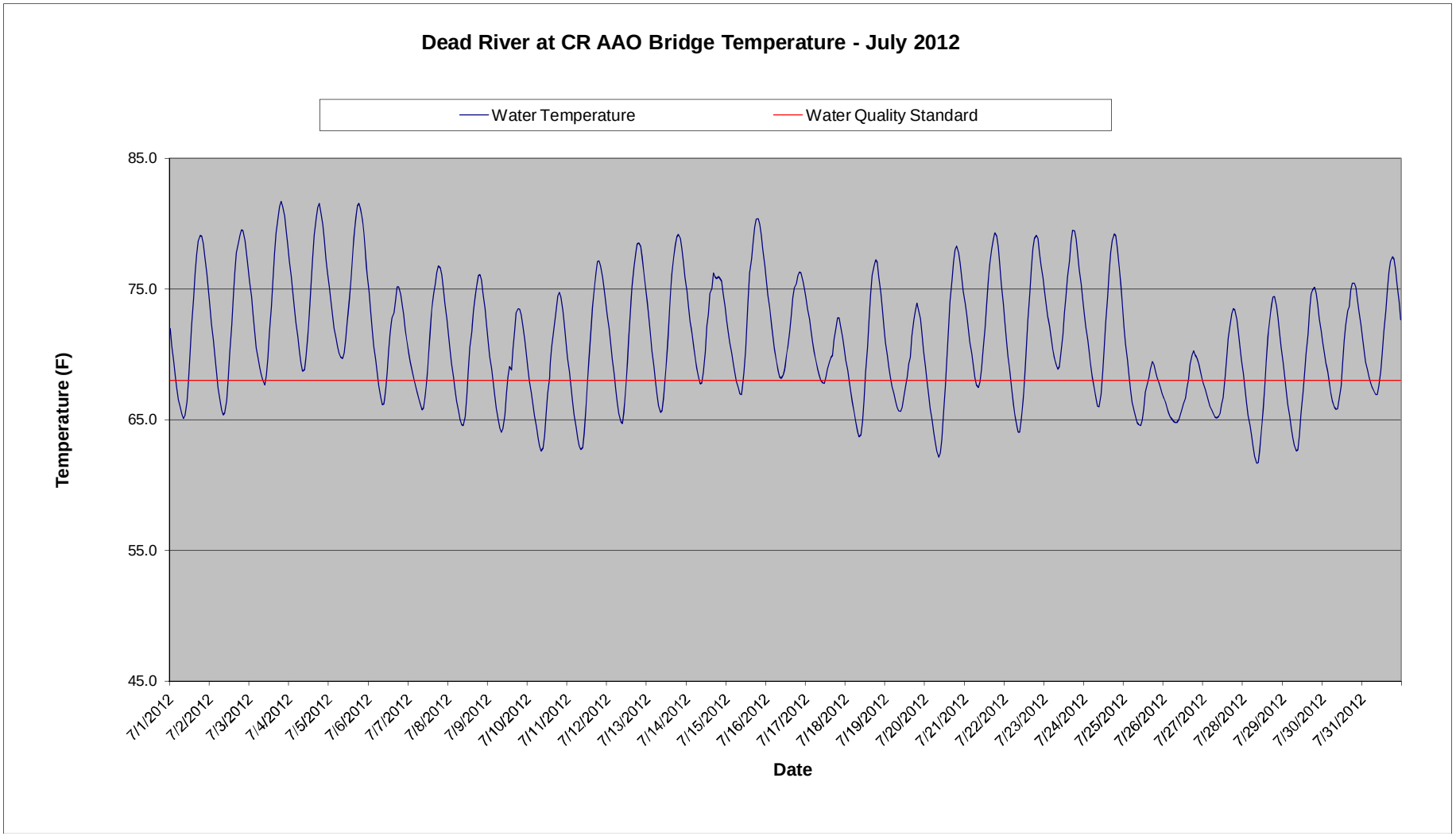

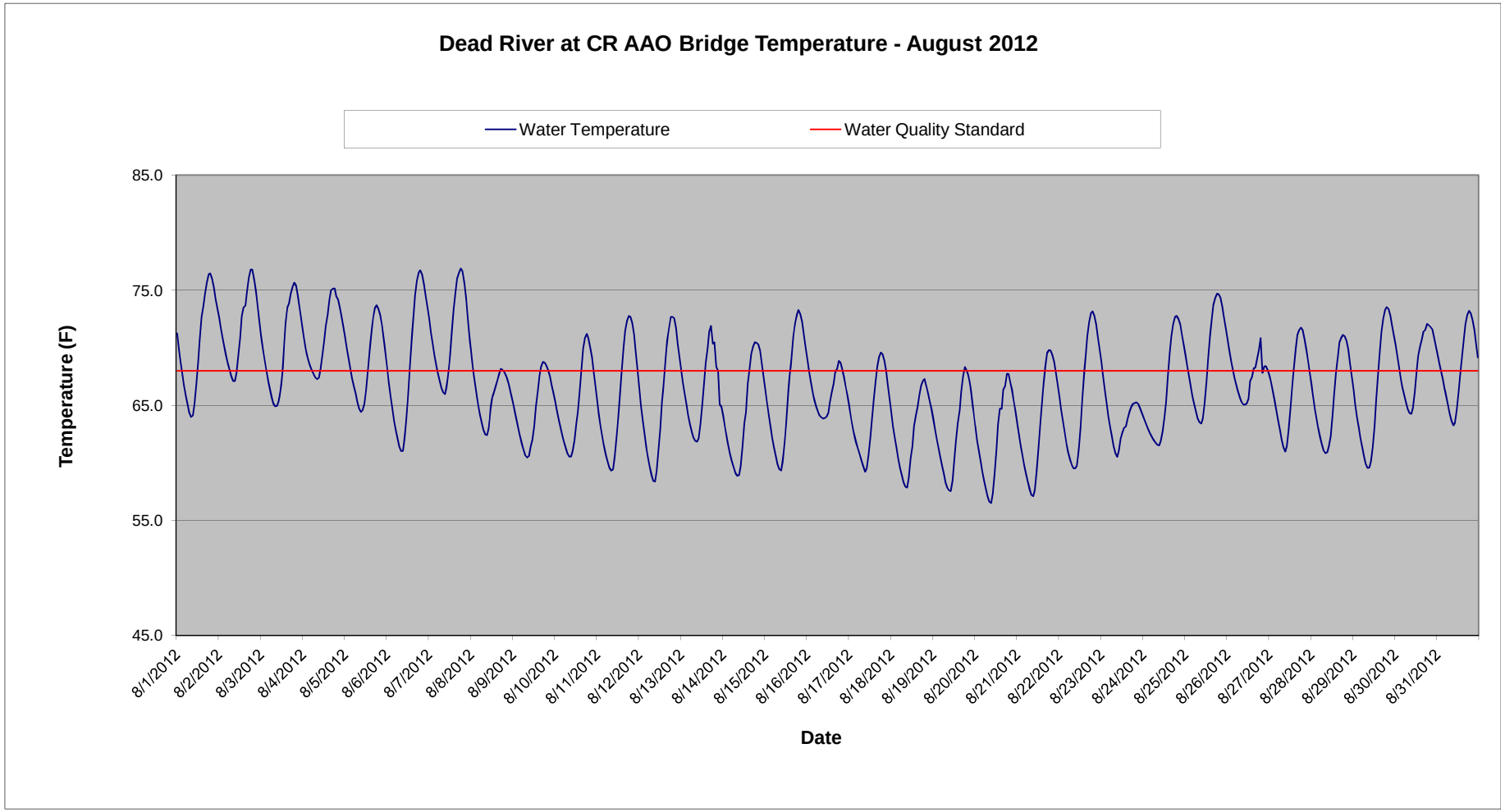

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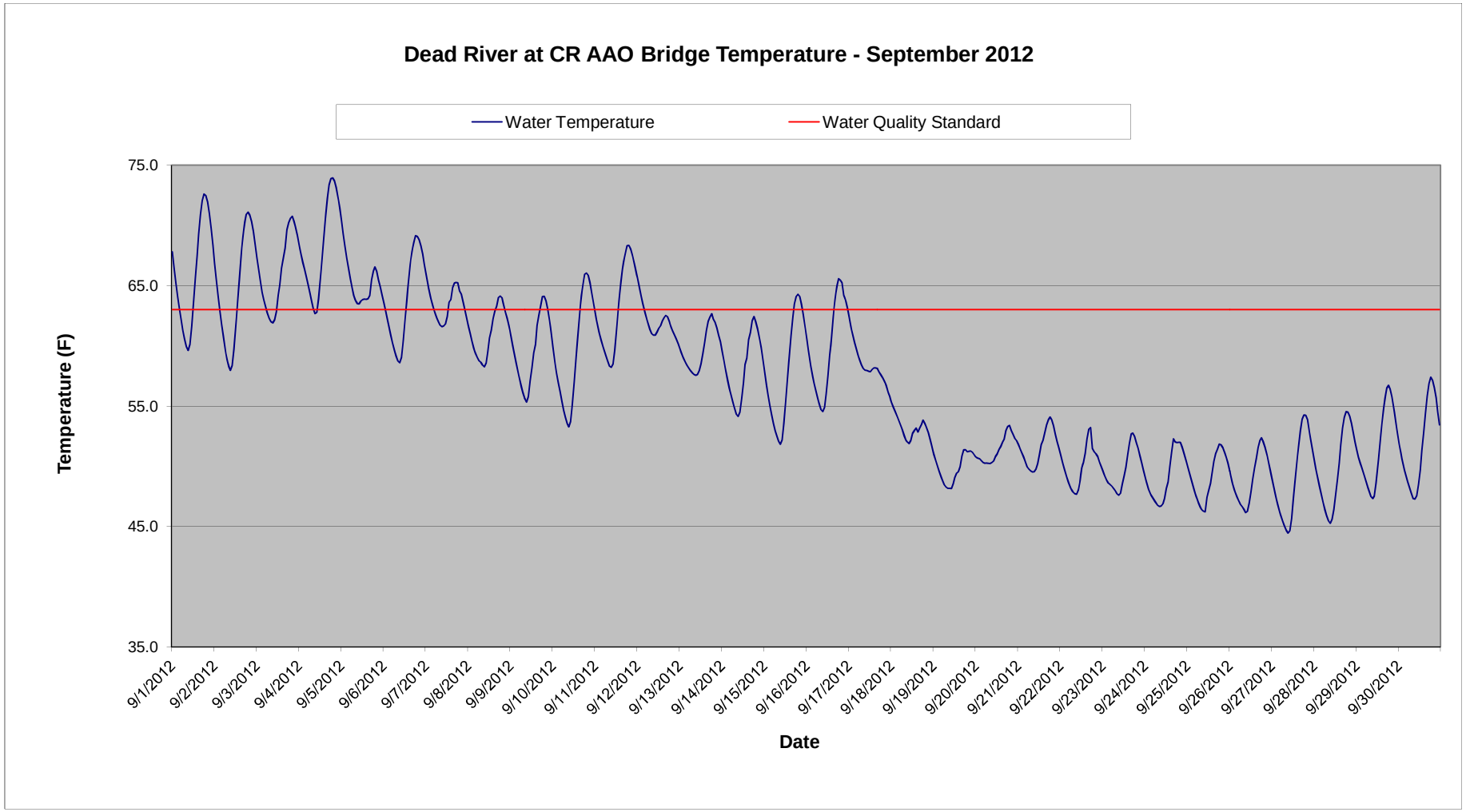

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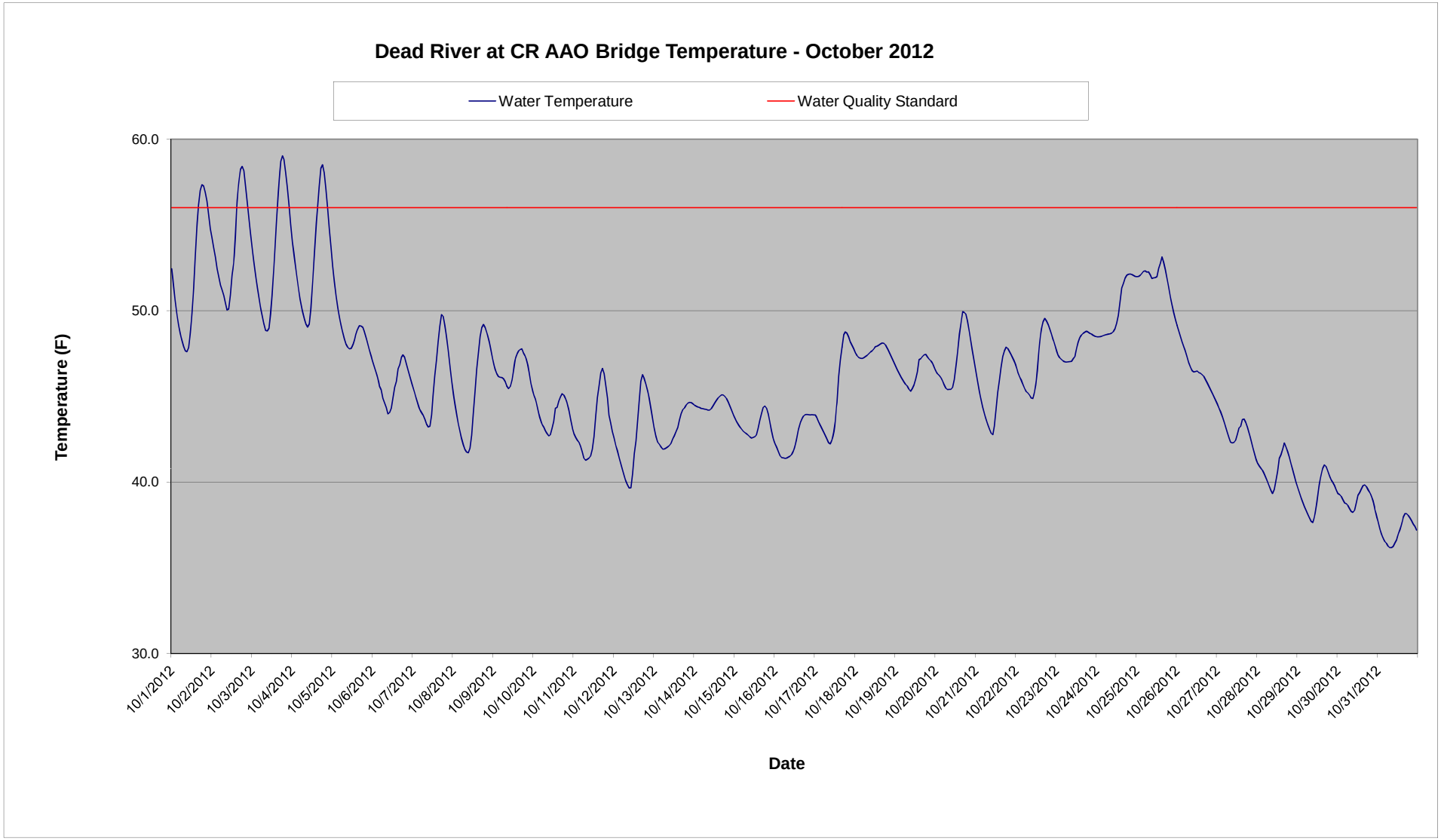

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Dead River at County Road AAO Bridge - May 2012 Temperature Monitoring Data

Time HHMMSS	5/1/12	5/2/12	5/3/12	5/4/12	5/5/12	5/6/12	5/7/12	5/8/12	5/9/12	5/10/12	5/11/12	5/12/12	5/13/12	5/14/12	5/15/12	5/16/12
0	46.5	52.6	54.9	54.0	52.3	54.6	50.5	50.9	50.5	52.7	55.6	57.0	57.2	58.6	60.9	57.0
10000	46.1	51.9	54.1	53.2	51.6	53.8	50.2	50.7	50.1	51.7	54.6	56.2	56.0	57.5	59.9	56.1
20000	45.9	51.4	53.4	52.5	51.1	53.2	50.0	50.5	49.7	50.8	53.7	55.6	54.9	56.4	59.1	55.3
30000	45.7	51.0	52.8	52.1	50.7	52.8	49.9	50.3	49.4	50.1	52.8	55.2	54.0	55.5	58.4	54.6
40000	45.6	50.6	52.4	51.7	50.3	52.4	49.7	50.2	49.1	49.5	52.0	54.8	53.3	54.8	57.7	54.0
50000	45.4	50.3	52.1	51.3	50.0	52.0	49.5	50.0	48.8	49.0	51.3	54.7	52.7	54.2	57.2	53.5
60000	45.2	50.2	51.8	51.0	49.8	51.7	49.4	49.8	48.5	48.5	50.6	54.4	52.2	53.6	56.9	52.9
70000	44.9	49.9	51.5	50.6	49.6	51.3	49.3	49.7	48.3	48.0	50.1	54.2	51.7	53.0	56.6	52.3
80000	44.8	49.8	51.5	50.5	49.4	51.1	49.2	49.7	48.0	47.7	49.8	54.0	51.3	52.7	56.4	51.9
90000	45.0	49.7	51.5	50.4	49.6	51.0	49.2	49.9	48.2	47.9	50.1	53.8	51.6	53.1	56.6	52.1
100000	45.8	49.7	51.5	50.5	50.1	51.0	49.2	49.9	48.9	48.8	51.1	54.2	52.6	54.2	57.4	52.9
110000	47.1	50.1	51.8	51.0	51.2	51.0	49.4	50.3	49.8	50.2	52.4	55.0	54.0	55.9	58.6	54.2
120000	48.8	50.4	52.8	51.7	52.8	51.1	49.8	51.6	51.0	51.9	54.1	56.3	55.7	57.9	60.4	55.8
130000	50.5	51.5	53.6	52.3	54.3	51.0	50.3	52.1	52.2	53.8	55.8	58.1	57.6	60.0	62.1	57.5
140000	52.5	52.8	54.5	53.2	55.7	51.1	50.7	52.6	53.5	55.9	57.9	59.6	59.4	62.2	63.6	59.2
150000	54.5	54.4	55.4	54.2	57.5	51.0	50.9	53.0	55.3	58.0	59.7	61.2	61.3	64.2	64.5	60.9
160000	56.2	56.1	56.8	55.1	59.5	51.2	51.2	53.7	57.0	60.0	61.1	62.6	62.7	65.8	64.6	62.4
170000	57.4	57.5	57.9	55.6	60.1	51.6	51.6	53.8	58.0	60.6	61.9	63.7	63.8	66.9	64.4	63.4
180000	57.6	58.6	58.7	55.9	59.6	51.5	51.9	53.5	58.3	60.8	62.4	63.9	64.6	67.4	63.8	63.8
190000	57.4	58.9	58.7	55.8	59.2	51.5	52.2	53.1	58.0	60.9	62.1	63.7	64.4	67.0	62.7	63.6
200000	56.5	58.6	57.9	55.1	58.4	51.3	52.3	52.8	57.1	60.2	61.1	62.7	63.5	66.0	61.4	62.7
210000	55.4	57.6	57.0	54.4	57.3	51.1	51.8	52.3	55.9	58.8	60.2	61.2	62.3	64.6	60.1	61.3
220000	54.4	56.7	56.0	53.6	56.3	50.9	51.4	51.7	54.8	57.7	59.1	59.8	61.1	63.2	59.0	59.7
230000	53.5	55.8	55.0	53.0	55.5	50.7	51.1	51.1	53.8	56.6	58.0	58.5	59.8	62.0	58.0	58.2
Daily Max	57.6	58.9	58.7	55.9	60.1	54.6	52.3	53.8	58.3	60.9	62.4	63.9	64.6	67.4	64.6	63.8
Daily Min	44.8	49.7	51.5	50.4	49.4	50.7	49.2	49.7	48.0	47.7	49.8	53.8	51.3	52.7	56.4	51.9
Average	50.1	53.2	54.3	52.9	53.8	51.7	50.4	51.4	52.3	53.7	55.7	57.9	57.4	59.4	60.0	57.3

Monthly average temp (F): 57.7

License Maximum Monthly Average: 65ºF

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Dead River at County Road AAO Bridge - May 2012 Temperature Monitoring Data

Time HHMMSS	5/17/12	5/18/12	5/19/12	5/20/12	5/21/12	5/22/12	5/23/12	5/24/12	5/25/12	5/26/12	5/27/12	5/28/12	5/29/12	5/30/12	5/31/12
0	56.8	56.2	62.1	65.0	61.0	60.3	59.1	59.9	63.7	63.6	61.1	64.0	64.7	60.5	57.3
10000	55.5	55.5	60.9	63.7	59.7	59.2	58.6	58.9	62.8	62.4	60.6	63.2	64.0	59.8	56.3
20000	54.5	54.9	59.8	62.6	58.7	58.3	58.2	58.1	62.1	61.2	60.0	62.4	63.4	59.1	55.4
30000	53.5	54.5	58.9	61.8	58.0	57.4	57.8	57.4	61.7	60.2	59.5	61.8	62.7	58.4	54.6
40000	52.8	54.2	57.9	61.2	57.5	56.7	57.4	56.9	61.2	59.4	59.2	61.4	62.0	57.8	53.9
50000	52.1	53.9	57.1	60.6	57.1	56.0	57.0	56.6	60.7	58.7	58.9	61.1	61.4	57.4	53.3
60000	51.6	53.8	56.4	60.0	56.7	55.4	56.6	56.3	60.1	58.0	58.6	60.8	60.7	56.9	52.8
70000	51.2	53.7	55.8	59.5	56.5	54.9	56.2	56.1	59.6	57.4	58.5	60.6	60.1	56.4	52.4
80000	51.0	53.6	55.5	59.1	56.3	54.7	56.0	56.2	59.3	57.1	58.4	60.6	59.8	56.0	52.2
90000	51.4	53.6	55.8	59.3	56.5	55.2	56.2	56.8	59.3	57.6	58.4	60.8	59.6	55.8	52.8
100000	52.4	53.8	56.9	60.3	57.2	56.1	56.9	57.8	60.0	58.6	58.7	61.1	59.9	55.7	53.9
110000	53.9	55.2	58.6	61.9	58.4	57.2	57.9	59.2	61.2	59.8	59.0	62.2	60.8	55.8	55.5
120000	55.5	56.9	60.7	63.9	59.8	58.6	58.9	61.0	62.7	61.2	60.1	63.9	61.4	56.2	57.3
130000	57.1	58.7	62.9	65.8	61.3	60.1	60.2	63.0	64.3	62.7	61.2	66.1	61.9	56.9	59.3
140000	58.5	60.9	65.1	67.2	62.9	61.6	61.4	65.1	66.1	64.1	62.3	67.8	62.4	58.2	61.1
150000	60.1	63.1	67.3	68.5	64.7	62.9	62.3	67.1	67.7	65.6	64.2	68.5	63.2	59.1	63.2
160000	61.4	65.0	69.2	69.9	66.1	63.4	63.3	68.7	69.1	66.7	65.6	68.3	63.9	60.7	65.0
170000	61.6	66.7	70.4	70.2	66.8	63.4	64.4	69.9	70.0	66.9	66.3	69.0	64.2	61.2	66.0
180000	61.3	67.7	71.0	68.9	67.0	63.0	64.8	70.3	70.5	66.4	66.5	69.7	64.5	62.3	66.3
190000	60.8	67.8	71.0	67.6	66.5	62.5	64.6	70.1	70.4	65.7	67.1	69.1	64.3	62.8	66.0
200000	60.1	67.3	70.4	66.7	65.4	61.6	64.0	69.0	69.5	65.2	66.8	68.1	63.6	61.9	65.1
210000	59.0	66.1	69.1	65.5	64.1	60.9	63.1	67.6	68.2	64.1	66.3	67.2	62.8	60.7	63.7
220000	58.0	64.8	67.7	63.9	62.7	60.2	62.0	66.0	66.5	62.9	65.6	66.3	62.1	59.5	62.2
230000	57.1	63.5	66.4	62.3	61.4	59.6	60.9	64.7	65.0	61.8	64.9	65.4	61.3	58.4	60.6
Daily Max	61.6	67.8	71.0	70.2	67.0	63.4	64.8	70.3	70.5	66.9	67.1	69.7	64.7	62.8	66.3
Daily Min	51.0	53.6	55.5	59.1	56.3	54.7	56.0	56.1	59.3	57.1	58.4	60.6	59.6	55.7	52.2
Average	56.1	59.2	62.8	64.0	60.9	59.1	59.9	62.2	64.2	62.0	62.0	64.6	62.3	58.7	58.6

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Dead River at County Road AAO Bridge - June 2012 Temperature Monitoring Data

Time HHMMSS	06/01/12	06/02/12	06/03/12	06/04/12	06/05/12	06/06/12	06/07/12	06/08/12	06/09/12	06/10/12	06/11/12	06/12/12	06/13/12	06/14/12	06/15/12	06/16/12
0	59.0	59.5	56.8	62.5	64.0	62.6	64.9	66.8	65.6	68.4	69.8	68.8	62.4	66.3	60.4	66.2
10000	57.7	58.6	56.4	61.5	62.5	61.4	63.3	65.4	64.7	67.1	68.4	67.0	61.3	65.0	60.0	65.4
20000	56.4	57.9	56.1	60.5	61.2	60.2	61.8	64.1	63.9	66.0	67.2	65.2	60.2	63.9	59.7	64.6
30000	55.3	57.2	55.8	59.7	59.9	59.1	60.5	62.8	63.2	64.9	66.1	63.7	59.2	62.8	59.4	63.9
40000	54.5	56.6	55.6	59.0	58.8	58.0	59.3	61.7	62.5	63.9	65.3	62.5	58.2	61.8	59.1	63.3
50000	53.8	56.1	55.3	58.3	57.9	57.1	58.4	60.6	61.9	63.1	64.8	61.6	57.4	60.9	58.8	62.7
60000	53.2	55.8	54.9	57.7	57.1	56.3	57.7	59.8	61.5	62.3	64.3	60.9	56.8	60.2	58.7	62.2
70000	52.9	55.5	54.5	57.1	56.6	55.6	57.1	59.3	61.5	61.8	64.0	60.5	56.3	59.5	58.6	61.7
80000	52.8	55.4	54.4	56.8	56.5	55.3	56.9	58.9	61.6	61.6	63.9	60.2	56.0	59.3	58.7	61.5
90000	53.2	55.5	54.8	57.3	56.9	55.8	57.5	59.5	62.0	62.1	64.0	60.2	56.6	59.5	59.0	61.7
100000	54.1	55.6	55.9	58.4	57.6	57.2	58.9	61.2	63.1	63.3	64.3	60.3	57.9	60.4	59.3	62.8
110000	55.2	55.9	57.4	59.9	59.1	59.1	60.9	62.8	64.5	64.9	65.1	60.6	59.6	61.3	59.8	64.1
120000	55.9	56.0	59.2	61.8	61.1	61.4	63.2	64.5	66.1	66.9	66.6	61.2	61.6	62.2	61.5	65.4
130000	57.3	56.6	61.2	63.7	63.0	63.5	65.8	65.8	67.9	68.9	67.2	61.5	63.8	62.7	62.8	66.5
140000	59.1	57.2	63.1	65.6	63.6	66.2	68.0	66.9	69.6	70.9	69.3	62.7	65.9	62.7	64.2	67.6
150000	61.0	57.4	65.0	67.6	65.2	68.0	70.1	67.9	71.3	72.8	71.2	64.2	68.0	62.9	65.1	68.4
160000	62.1	57.7	66.5	68.8	67.0	70.0	71.6	68.4	72.6	74.5	72.6	66.0	69.9	62.9	66.2	70.1
170000	62.7	58.2	67.7	69.9	67.9	70.9	72.6	68.5	73.1	75.6	74.0	67.2	71.3	62.7	66.8	70.6
180000	63.1	58.4	68.1	70.6	68.7	71.7	73.3	68.6	73.3	76.1	74.8	67.7	72.1	62.4	67.7	70.7
190000	63.2	58.5	67.9	70.6	68.5	71.6	73.4	68.6	73.2	76.2	74.9	67.6	72.1	62.3	68.2	70.2
200000	62.8	58.4	67.2	69.9	67.7	70.8	72.7	68.2	72.8	75.5	74.3	66.9	71.4	62.1	68.4	69.7
210000	62.1	58.2	66.1	68.7	66.6	69.6	71.4	67.9	72.1	74.2	73.0	65.9	70.3	61.5	68.0	68.9
220000	61.2	57.8	64.9	67.2	65.3	68.1	69.9	67.2	71.0	72.7	71.4	64.8	69.1	61.1	67.5	68.1
230000	60.3	57.2	63.7	65.6	63.9	66.5	68.4	66.5	69.7	71.2	70.2	63.6	67.7	60.8	66.9	67.3
Daily Max	63.2	59.5	68.1	70.6	68.7	71.7	73.4	68.6	73.3	76.2	74.9	68.8	72.1	66.3	68.4	70.7
Daily Min	52.8	55.4	54.4	56.8	56.5	55.3	56.9	58.9	61.5	61.6	63.9	60.2	56.0	59.3	58.6	61.5
Average	57.9	57.1	60.3	63.3	62.4	63.2	64.9	64.7	67.0	68.5	68.6	63.8	63.5	62.0	62.7	66.0

Monthly average temp (F): 65.2

License Maximum Monthly Average: 68ºF

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Dead River at County Road AAO Bridge - June 2012 Temperature Monitoring Data

Time HHMMSS	06/17/12	06/18/12	06/19/12	06/20/12	06/21/12	06/22/12	06/23/12	06/24/12	06/25/12	06/26/12	06/27/12	06/28/12	06/29/12	06/30/12
0	66.7	68.7	66.0	66.8	69.9	66.8	64.0	64.3	64.4	65.7	68.0	71.1	69.8	71.3
10000	66.1	67.7	65.3	66.3	68.7	66.1	63.4	64.0	63.5	64.7	67.0	70.0	68.8	70.1
20000	65.5	66.8	64.8	65.7	68.0	65.5	62.8	63.8	62.7	63.8	66.0	69.2	67.9	69.0
30000	64.7	66.0	64.1	65.2	67.5	64.8	62.3	63.6	61.9	62.9	65.0	68.4	67.2	68.0
40000	63.8	65.4	63.5	64.9	67.0	64.2	61.7	63.4	61.2	62.1	64.1	67.7	66.5	67.2
50000	63.1	64.7	63.0	64.6	66.5	63.7	61.3	63.2	60.5	61.4	63.3	67.1	65.9	66.5
60000	62.4	64.0	62.5	64.3	66.0	63.2	60.8	63.1	60.0	60.8	62.6	66.6	65.2	65.9
70000	61.8	63.4	62.0	64.2	65.5	62.7	60.4	62.9	59.5	60.3	62.1	66.3	64.6	65.4
80000	61.4	63.3	61.9	64.1	65.2	62.3	60.2	62.9	59.2	60.0	61.8	66.3	64.2	65.0
90000	61.8	63.1	61.8	64.4	65.4	62.5	60.6	63.0	59.5	60.4	62.2	66.6	64.6	65.3
100000	62.4	63.2	61.8	65.4	65.9	62.9	61.3	63.3	60.3	61.3	62.9	67.5	65.7	66.3
110000	63.5	63.5	61.9	67.1	66.6	63.6	62.5	63.3	61.4	62.6	63.8	68.3	67.2	67.8
120000	65.2	63.8	62.4	68.6	67.1	64.3	63.6	63.6	62.7	64.2	65.1	69.0	69.0	69.7
130000	67.2	64.3	62.7	70.8	67.9	64.6	64.5	64.3	64.2	66.1	66.7	70.2	70.6	71.5
140000	69.1	65.4	64.4	72.7	68.7	64.9	65.5	65.0	65.8	67.7	68.7	70.9	72.3	73.4
150000	70.5	66.1	66.2	74.5	69.4	65.1	66.6	66.8	67.4	69.6	70.4	71.6	73.8	75.3
160000	71.9	66.5	67.9	75.7	70.4	65.2	66.8	67.9	68.8	71.3	72.6	72.8	75.2	76.8
170000	73.1	66.8	69.1	76.7	70.8	66.3	66.9	68.8	69.9	72.4	73.7	73.5	76.2	77.7
180000	73.7	67.1	69.8	76.9	70.9	66.2	66.8	69.2	70.4	72.8	74.8	73.9	76.7	78.0
190000	73.4	67.6	70.0	76.5	70.4	66.4	66.4	69.0	70.4	72.6	74.9	74.0	76.6	77.9
200000	72.8	67.6	69.4	75.4	69.9	66.2	66.1	68.3	69.7	72.0	74.7	73.6	76.0	77.1
210000	72.0	67.3	68.8	73.9	69.0	65.7	65.6	67.2	68.8	71.1	74.2	72.8	75.1	75.9
220000	71.0	66.8	68.1	72.8	68.3	65.1	65.2	66.2	67.7	70.1	73.2	71.9	73.9	74.8
230000	69.8	66.5	67.4	71.4	67.5	64.6	64.7	65.3	66.7	69.0	72.1	70.9	72.6	73.4
Daily Max	73.7	68.7	70.0	76.9	70.9	66.8	66.9	69.2	70.4	72.8	74.9	74.0	76.7	78.0
Daily Min	61.4	63.1	61.8	64.1	65.2	62.3	60.2	62.9	59.2	60.0	61.8	66.3	64.2	65.0
Average	67.2	65.6	65.2	69.5	68.0	64.7	63.8	65.1	64.4	66.0	67.9	70.0	70.2	71.2

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Dead River at County Road AAO Bridge - July 2012 Temperature Monitoring Data

Time HHMMSS	07/01/12	07/02/12	07/03/12	07/04/12	07/05/12	07/06/12	07/07/12	07/08/12	07/09/12	07/10/12	07/11/12	07/12/12	07/13/12	07/14/12	07/15/12	07/16/12
0	72.0	73.7	75.5	77.2	75.1	74.8	70.0	71.5	71.0	69.0	69.7	73.0	74.0	74.8	72.6	75.7
10000	70.6	72.3	74.4	75.9	74.0	73.3	69.4	70.4	69.9	68.0	68.6	71.9	72.8	73.6	71.7	74.5
20000	69.4	71.0	73.0	74.8	73.0	71.9	68.8	69.3	68.9	67.0	67.5	70.8	71.5	72.5	70.9	73.5
30000	68.3	69.8	71.7	73.6	72.0	70.7	68.2	68.2	67.8	66.2	66.4	69.6	70.3	71.6	70.1	72.3
40000	67.4	68.6	70.5	72.4	71.2	69.6	67.7	67.3	66.8	65.3	65.4	68.5	69.1	70.6	69.3	71.3
50000	66.5	67.4	69.6	71.3	70.6	68.5	67.2	66.4	65.9	64.5	64.4	67.3	67.9	69.8	68.6	70.3
60000	65.9	66.5	69.0	70.2	70.1	67.6	66.7	65.6	65.0	63.6	63.6	66.3	66.9	69.0	67.9	69.5
70000	65.4	65.8	68.5	69.3	69.8	66.7	66.2	65.0	64.4	63.0	63.0	65.4	66.1	68.2	67.4	68.7
80000	65.1	65.4	68.0	68.7	69.7	66.1	65.8	64.6	64.0	62.6	62.7	64.9	65.6	67.7	66.9	68.3
90000	65.3	65.5	67.7	68.8	70.1	66.2	65.9	64.6	64.3	62.8	62.9	64.7	65.7	67.8	66.9	68.2
100000	66.4	66.4	68.4	69.7	71.2	67.2	66.8	65.2	65.4	63.8	64.0	65.6	66.6	68.6	67.8	68.4
110000	68.0	68.1	69.7	71.3	72.5	68.8	68.3	66.8	67.0	65.4	65.7	67.2	68.3	70.2	69.6	68.9
120000	70.1	70.1	71.7	73.3	74.2	70.5	70.1	68.8	68.3	67.0	67.8	69.4	70.2	72.2	71.7	69.7
130000	72.2	72.2	73.7	75.5	75.5	72.0	71.6	70.6	69.0	68.3	69.9	71.7	72.2	73.1	74.0	70.5
140000	74.3	74.4	75.7	77.4	77.2	72.8	73.5	71.8	68.8	70.2	71.8	73.5	74.3	74.7	76.2	71.8
150000	76.2	76.3	77.7	79.1	78.9	73.2	74.6	73.3	70.5	71.3	73.6	75.2	76.1	75.0	77.3	73.0
160000	77.7	77.8	79.3	80.4	80.5	74.1	75.4	74.2	71.8	72.3	74.7	76.7	77.5	76.2	78.6	74.4
170000	78.7	78.5	80.5	81.2	81.4	75.2	76.2	75.1	73.2	73.3	76.2	77.7	78.4	76.0	79.7	75.1
180000	79.1	79.1	81.3	81.6	81.5	75.2	76.7	76.0	73.5	74.5	77.1	78.4	79.0	75.8	80.3	75.4
190000	79.0	79.5	81.7	80.9	81.1	74.6	76.6	76.1	73.5	74.8	77.2	78.5	79.2	75.9	80.4	76.0
200000	78.5	79.4	81.3	79.9	80.3	73.8	76.0	75.7	73.0	74.4	76.7	78.3	78.9	75.8	79.9	76.3
210000	77.5	78.7	80.6	78.7	79.1	73.0	75.0	74.6	72.2	73.3	75.9	77.4	78.0	75.6	79.1	76.2
220000	76.2	77.7	79.5	77.4	77.7	71.9	73.9	73.5	71.1	72.2	75.0	76.2	77.0	74.7	78.0	75.6
230000	74.9	76.6	78.4	76.3	76.2	70.9	72.7	72.2	70.1	71.0	74.0	75.2	75.9	73.6	76.8	75.0
Daily Max	79.1	79.5	81.7	81.6	81.5	75.2	76.7	76.1	73.5	74.8	77.2	78.5	79.2	76.2	80.4	76.3
Daily Min	65.1	65.4	67.7	68.7	69.7	66.1	65.8	64.6	64.0	62.6	62.7	64.7	65.6	67.7	66.9	68.2
Average	71.9	72.5	74.5	75.2	75.1	71.2	71.0	70.3	69.0	68.5	69.7	71.8	72.6	72.6	73.4	72.4

Monthly average temp (F): 71.1

License Maximum Monthly Average: 68ºF

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Dead River at County Road AAO Bridge - July 2012 Temperature Monitoring Data

Time HHMMSS	07/17/12	07/18/12	07/19/12	07/20/12	07/21/12	07/22/12	07/23/12	07/24/12	07/25/12	07/26/12	07/27/12	07/28/12	07/29/12	07/30/12	07/31/12
0	74.3	69.6	70.9	69.0	73.9	72.4	74.8	73.1	72.1	66.7	67.8	68.5	69.4	70.8	71.3
10000	73.5	68.8	69.9	67.9	73.0	71.1	73.9	72.1	70.8	66.3	67.3	67.4	68.3	70.1	70.4
20000	72.7	67.9	69.0	66.9	72.0	69.8	72.9	71.1	69.6	65.9	66.9	66.3	67.2	69.3	69.4
30000	71.7	67.1	68.2	65.9	70.9	68.6	72.1	70.1	68.3	65.5	66.4	65.3	66.2	68.6	68.8
40000	70.9	66.3	67.6	64.9	70.0	67.5	71.2	69.0	67.3	65.2	66.0	64.6	65.2	67.8	68.3
50000	70.1	65.5	67.0	64.1	69.1	66.4	70.4	68.1	66.3	65.0	65.7	63.8	64.3	67.0	67.8
60000	69.5	64.8	66.4	63.3	68.2	65.5	69.8	67.4	65.7	64.9	65.4	62.9	63.6	66.4	67.5
70000	68.8	64.1	65.9	62.6	67.6	64.6	69.2	66.6	65.2	64.8	65.2	62.2	63.0	65.9	67.2
80000	68.4	63.7	65.7	62.2	67.5	64.0	68.9	66.0	64.8	64.8	65.1	61.7	62.6	65.8	66.9
90000	68.0	63.8	65.6	62.4	67.9	64.0	69.1	66.0	64.6	65.0	65.3	61.7	62.7	65.8	66.9
100000	67.8	64.8	65.9	63.5	68.9	65.0	70.1	66.9	64.5	65.4	65.5	62.6	63.8	66.6	67.6
110000	67.8	66.4	66.7	65.3	70.3	66.6	71.5	68.5	65.0	65.8	66.2	64.1	65.4	67.6	68.7
120000	68.2	68.6	67.4	67.6	72.0	68.3	73.2	70.3	65.8	66.2	66.7	65.8	67.0	69.4	70.2
130000	68.9	70.6	68.3	69.7	73.8	70.4	74.4	72.4	67.1	66.7	68.3	67.7	68.5	71.0	71.8
140000	69.4	72.7	69.3	71.9	75.5	72.6	75.9	74.4	67.7	67.5	69.7	69.6	70.0	72.2	73.4
150000	69.8	74.6	69.8	74.0	76.9	74.7	77.1	76.4	68.2	68.1	71.2	71.4	71.6	73.3	75.0
160000	69.9	76.1	71.4	75.7	78.0	76.6	78.6	77.8	68.9	69.3	72.3	72.7	73.4	73.7	76.3
170000	71.1	76.8	72.6	77.1	78.8	78.1	79.5	78.7	69.5	70.0	73.1	73.8	74.6	74.9	77.1
180000	72.1	77.2	73.3	78.0	79.3	78.9	79.5	79.2	69.2	70.3	73.5	74.4	74.9	75.5	77.5
190000	72.8	77.0	73.9	78.3	79.0	79.1	78.8	79.1	68.7	70.0	73.4	74.4	75.1	75.5	77.3
200000	72.8	75.9	73.4	77.8	78.2	78.9	77.7	78.1	68.2	69.7	72.7	73.7	74.7	75.1	76.5
210000	72.1	74.8	72.7	76.9	76.8	77.7	76.5	76.9	67.8	69.3	71.7	72.8	73.8	74.2	75.3
220000	71.3	73.5	71.5	75.9	75.3	76.8	75.4	75.4	67.4	68.7	70.6	71.6	72.7	73.3	74.0
230000	70.4	72.2	70.3	74.8	73.8	75.8	74.2	73.7	67.0	68.2	69.6	70.5	71.7	72.2	72.6
Daily Max	74.3	77.2	73.9	78.3	79.3	79.1	79.5	79.2	72.1	70.3	73.5	74.4	75.1	75.5	77.5
Daily Min	67.8	63.7	65.6	62.2	67.5	64.0	68.9	66.0	64.5	64.8	65.1	61.7	62.6	65.8	66.9
Average	70.5	70.1	69.3	69.8	73.2	71.4	73.9	72.4	67.5	67.0	68.6	67.9	68.7	70.5	71.6

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Dead River at County Road AAO Bridge - August 2012 Temperature Monitoring Data

Time HHMMSS	8/1/2012	8/2/2012	8/3/2012	8/4/2012	8/5/2012	8/6/2012	8/7/2012	8/8/2012	8/9/2012	8/10/2012	8/11/2012	8/12/2012	8/13/2012	8/14/2012	8/15/2012	8/16/2012
0	71.3	72.6	71.1	71.3	70.8	68.3	72.5	69.6	65.1	65.3	65.3	66.5	68.0	64.1	66.3	69.0
10000	70.0	71.8	70.0	70.4	70.0	66.9	71.4	68.3	64.4	64.5	64.1	65.0	66.9	63.1	65.2	68.0
20000	68.8	70.9	69.0	69.5	69.0	65.8	70.4	67.1	63.7	63.8	63.1	63.7	66.0	62.2	64.2	67.0
30000	67.7	70.0	68.1	68.9	68.1	64.6	69.3	66.0	62.9	63.1	62.2	62.5	65.0	61.4	63.1	66.2
40000	66.7	69.3	67.2	68.4	67.3	63.7	68.6	65.0	62.3	62.4	61.4	61.4	64.1	60.7	62.2	65.5
50000	65.8	68.6	66.4	68.0	66.7	62.8	67.8	64.2	61.6	61.8	60.6	60.4	63.4	60.1	61.3	64.9
60000	65.0	68.1	65.7	67.7	66.0	62.0	67.1	63.5	61.1	61.3	60.1	59.6	62.7	59.6	60.6	64.5
70000	64.4	67.5	65.2	67.4	65.3	61.4	66.5	62.9	60.6	60.8	59.6	58.9	62.2	59.1	59.9	64.1
80000	64.0	67.1	64.9	67.3	64.7	61.0	66.1	62.5	60.5	60.5	59.3	58.4	61.9	58.9	59.5	64.0
90000	64.1	67.1	64.9	67.4	64.4	61.0	66.0	62.4	60.6	60.5	59.4	58.4	61.8	58.9	59.3	63.8
100000	65.1	67.8	65.3	68.1	64.6	62.1	66.6	63.0	61.4	61.0	60.5	59.3	62.1	59.7	60.1	63.9
110000	66.8	69.4	66.2	69.4	65.1	63.9	67.9	64.6	62.0	61.9	62.2	61.1	63.4	61.4	61.7	64.0
120000	68.8	70.9	67.6	70.6	66.5	66.1	69.5	65.7	63.2	63.4	64.0	63.0	65.1	63.5	63.7	64.3
130000	70.7	72.7	69.7	71.9	68.0	68.3	71.4	66.1	64.9	64.4	65.8	65.2	66.8	64.4	65.7	65.3
140000	72.7	73.5	72.1	72.8	69.7	70.6	73.4	66.7	66.1	66.3	68.0	67.0	68.7	66.9	67.7	66.1
150000	73.6	73.7	73.5	74.2	71.3	72.7	74.8	67.2	67.6	68.2	70.0	69.0	69.9	68.2	69.2	66.9
160000	74.7	74.9	73.9	75.0	72.6	74.6	76.0	67.7	68.4	69.9	71.5	70.7	71.4	69.4	70.9	67.9
170000	75.6	76.1	74.8	75.1	73.5	75.8	76.5	68.2	68.8	70.8	72.3	71.7	71.9	70.1	72.1	68.2
180000	76.4	76.8	75.3	75.1	73.7	76.5	76.9	68.1	68.7	71.2	72.8	72.7	70.3	70.5	72.9	68.9
190000	76.5	76.8	75.7	74.5	73.4	76.7	76.7	67.9	68.5	70.8	72.7	72.7	70.5	70.4	73.3	68.7
200000	76.0	76.0	75.4	74.2	72.9	76.3	75.7	67.6	68.0	70.0	72.2	72.6	68.4	70.3	72.9	68.1
210000	75.2	75.0	74.5	73.5	72.0	75.5	74.4	67.1	67.5	69.2	71.2	71.7	68.0	69.8	72.3	67.4
220000	74.3	73.6	73.5	72.7	70.8	74.6	72.7	66.5	66.8	67.9	69.7	70.4	65.1	68.7	71.2	66.6
230000	73.4	72.2	72.4	71.8	69.6	73.6	71.0	65.8	66.1	66.7	68.1	69.2	64.9	67.5	70.1	65.8
Daily Max	76.5	76.8	75.7	75.1	73.7	76.7	76.9	69.6	68.8	71.2	72.8	72.7	71.9	70.5	73.3	69.0
Daily Min	64.0	67.1	64.9	67.3	64.4	61.0	66.0	62.4	60.5	60.5	59.3	58.4	61.8	58.9	59.3	63.8
Average	70.3	71.8	70.1	71.1	69.0	68.5	71.2	66.0	64.6	65.3	65.7	65.5	66.2	64.5	66.1	66.2

Monthly average temp (F): 66.6
License Maximum Monthly Average: 68ºF

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Dead River at County Road AAO Bridge - August 2012 Temperature Monitoring Data

Time HHMMSS	8/17/2012	8/18/2012	8/19/2012	8/20/2012	8/21/2012	8/22/2012	8/23/2012	8/24/2012	8/25/2012	8/26/2012	8/27/2012	8/28/2012	8/29/2012	8/30/2012	8/31/2012
0	64.9	64.3	63.8	63.1	63.3	65.8	68.7	64.0	69.4	70.8	67.6	66.8	66.4	70.3	69.4
10000	64.0	63.2	62.9	62.0	62.3	64.7	67.5	63.6	68.5	69.9	66.9	65.7	65.1	69.4	68.7
20000	63.0	62.2	62.0	61.0	61.4	63.7	66.3	63.2	67.6	69.0	66.2	64.6	64.0	68.3	68.0
30000	62.3	61.2	61.2	60.1	60.6	62.6	65.1	62.8	66.6	68.1	65.4	63.7	63.1	67.3	67.3
40000	61.7	60.4	60.5	59.3	59.7	61.7	64.1	62.5	65.8	67.4	64.5	62.9	62.2	66.5	66.5
50000	61.2	59.5	59.7	58.4	59.0	60.9	63.1	62.2	65.1	66.8	63.6	62.2	61.4	65.9	65.8
60000	60.7	58.9	59.0	57.7	58.3	60.3	62.2	61.9	64.4	66.2	62.8	61.5	60.5	65.2	65.0
70000	60.2	58.3	58.3	57.1	57.7	59.9	61.4	61.8	63.9	65.7	62.0	61.1	59.9	64.7	64.3
80000	59.7	57.9	57.8	56.6	57.2	59.5	60.8	61.6	63.5	65.3	61.3	60.8	59.6	64.3	63.6
90000	59.2	57.8	57.6	56.5	57.1	59.5	60.5	61.5	63.4	65.1	61.0	60.9	59.6	64.3	63.2
100000	59.5	58.7	57.6	57.3	57.6	59.7	61.0	61.9	63.9	65.1	61.5	61.4	60.1	64.8	63.5
110000	60.7	60.4	58.5	59.1	59.2	61.1	62.1	62.8	65.2	65.1	62.9	62.3	61.4	66.1	64.6
120000	62.2	61.4	60.4	61.1	61.3	63.0	62.7	64.0	67.1	65.6	64.8	64.1	63.2	67.9	66.2
130000	63.8	63.2	62.0	63.3	63.2	65.3	63.1	65.3	69.0	67.1	66.6	66.0	65.4	69.3	67.7
140000	65.6	64.1	63.5	64.7	65.1	67.4	63.2	67.6	70.9	67.5	68.3	67.8	67.6	70.1	69.2
150000	67.1	64.9	64.5	64.7	66.8	69.4	63.9	69.6	72.5	68.2	69.9	69.2	69.7	70.7	70.8
160000	68.3	65.8	66.2	66.4	68.4	71.0	64.4	71.0	73.7	68.3	71.1	70.5	71.3	71.4	72.1
170000	69.2	66.7	67.6	66.7	69.5	72.2	64.9	72.1	74.3	69.1	71.5	70.9	72.5	71.6	72.9
180000	69.6	67.1	68.3	67.7	69.8	73.0	65.1	72.7	74.7	69.9	71.8	71.1	73.3	72.1	73.2
190000	69.5	67.3	68.1	67.7	69.8	73.2	65.2	72.8	74.7	70.8	71.5	71.0	73.5	72.0	73.0
200000	68.9	66.7	67.5	66.9	69.4	72.8	65.3	72.5	74.4	67.8	70.8	70.6	73.4	71.8	72.4
210000	68.0	66.0	66.8	66.3	68.8	72.0	65.1	72.0	73.6	68.4	69.9	69.8	72.8	71.6	71.6
220000	66.8	65.3	65.6	65.3	67.9	71.0	64.8	71.2	72.7	68.4	68.9	68.7	72.0	71.0	70.4
230000	65.6	64.7	64.5	64.4	66.8	69.9	64.4	70.3	71.7	68.1	67.9	67.6	71.1	70.2	69.2
Daily Max	69.6	67.3	68.3	67.7	69.8	73.2	68.7	72.8	74.7	70.8	71.8	71.1	73.5	72.1	73.2
Daily Min	59.2	57.8	57.6	56.5	57.1	59.5	60.5	61.5	63.4	65.1	61.0	60.8	59.6	64.3	63.2
Average	64.2	62.7	62.7	62.2	63.3	65.8	64.0	66.3	69.0	67.6	66.6	65.9	66.2	68.6	68.3

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Dead River at County Road AAO Bridge - September 2012 Temperature Monitoring Data

Time HHMMSS	9/1/2012	9/2/2012	9/3/2012	9/4/2012	9/5/2012	9/6/2012	9/7/2012	9/8/2012	9/9/2012	9/10/2012	9/11/2012	9/12/2012	9/13/2012	9/14/2012	9/15/2012	9/16/2012
0	67.8	66.9	67.3	68.3	70.3	63.6	65.9	61.6	60.9	59.9	62.7	65.6	59.7	59.5	58.0	60.5
10000	66.5	65.5	66.3	67.6	69.3	62.9	65.2	61.0	60.1	58.8	61.9	64.9	59.3	58.7	56.9	59.5
20000	65.2	64.1	65.3	67.0	68.3	62.2	64.3	60.4	59.3	57.7	61.2	64.1	59.0	57.9	55.9	58.6
30000	64.1	62.9	64.5	66.4	67.3	61.5	63.8	59.8	58.6	56.9	60.6	63.4	58.7	57.1	55.0	57.7
40000	63.1	61.8	63.8	65.7	66.4	60.9	63.2	59.4	57.9	56.2	60.1	62.8	58.4	56.5	54.3	57.0
50000	62.1	60.7	63.2	65.1	65.6	60.2	62.7	59.1	57.2	55.4	59.6	62.3	58.1	56.0	53.5	56.4
60000	61.3	59.7	62.7	64.4	64.8	59.6	62.3	58.8	56.6	54.6	59.2	61.8	57.9	55.4	52.9	55.7
70000	60.5	58.9	62.3	63.8	64.1	59.1	62.0	58.6	56.1	54.1	58.7	61.4	57.7	54.8	52.5	55.2
80000	59.9	58.2	62.0	63.1	63.7	58.7	61.7	58.4	55.6	53.5	58.3	61.0	57.6	54.3	52.1	54.7
90000	59.6	58.0	61.9	62.7	63.5	58.6	61.6	58.2	55.3	53.3	58.2	60.9	57.5	54.1	51.8	54.5
100000	60.1	58.4	62.2	62.8	63.5	59.0	61.6	58.6	55.8	53.7	58.5	60.9	57.6	54.5	52.2	54.9
110000	61.6	59.7	62.8	63.9	63.7	60.5	61.8	59.4	57.1	55.2	59.6	61.1	57.9	55.6	53.6	56.0
120000	63.6	61.6	64.2	65.6	63.8	62.2	62.4	60.6	58.2	56.9	61.1	61.4	58.5	56.9	55.4	57.5
130000	65.6	63.6	65.0	67.4	63.9	63.7	63.6	61.3	59.4	58.9	63.0	61.7	59.3	58.4	57.3	59.2
140000	67.4	65.6	66.4	69.2	63.9	65.3	63.8	62.2	60.1	60.7	64.5	62.1	60.2	59.0	59.1	60.7
150000	69.3	67.4	67.3	70.8	63.9	66.8	64.8	62.9	61.7	62.5	65.8	62.3	61.3	60.5	60.9	62.4
160000	70.9	69.0	68.1	72.2	64.2	67.8	65.2	63.3	62.5	64.1	67.0	62.5	62.0	61.1	62.4	63.9
170000	72.1	70.3	69.6	73.4	65.5	68.6	65.2	64.0	63.3	65.1	67.6	62.4	62.4	62.1	63.5	65.0
180000	72.6	70.9	70.2	73.9	66.2	69.1	65.2	64.1	64.1	65.9	68.3	62.0	62.7	62.4	64.1	65.6
190000	72.5	71.1	70.6	73.9	66.5	69.1	64.6	64.0	64.1	66.0	68.3	61.5	62.2	62.0	64.3	65.4
200000	71.9	70.8	70.8	73.7	66.2	68.8	64.3	63.4	63.7	65.9	68.0	61.2	62.0	61.4	64.1	65.2
210000	71.0	70.3	70.3	73.1	65.5	68.3	63.6	62.8	63.0	65.3	67.5	60.9	61.5	60.6	63.4	64.2
220000	69.7	69.5	69.8	72.3	64.9	67.6	63.0	62.3	62.1	64.3	66.9	60.5	60.9	59.9	62.5	63.8
230000	68.3	68.4	69.2	71.4	64.2	66.8	62.3	61.7	60.9	63.5	66.3	60.2	60.3	59.0	61.5	63.2
Daily Max	72.6	71.1	70.8	73.9	70.3	69.1	65.9	64.1	64.1	66.0	68.3	65.6	62.7	62.4	64.3	65.6
Daily Min	59.6	58.0	61.9	62.7	63.5	58.6	61.6	58.2	55.3	53.3	58.2	60.2	57.5	54.1	51.8	54.5
Average	66.1	64.7	66.1	68.2	65.4	63.8	63.5	61.1	59.7	59.5	63.0	62.0	59.7	58.2	57.8	59.9

Monthly average temp (F): 57.1
License Maximum Monthly Average: 63ºF

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Dead River at County Road AAO Bridge - September 2012 Temperature Monitoring Data

Time HHMMSS	9/17/2012	9/18/2012	9/19/2012	9/20/2012	9/21/2012	9/22/2012	9/23/2012	9/24/2012	9/25/2012	9/26/2012	9/27/2012	9/28/2012	9/29/2012	9/30/2012
0	62.4	55.3	51.0	50.8	51.8	50.9	49.6	49.0	50.0	49.6	48.9	50.4	51.3	51.9
10000	61.6	55.0	50.5	50.7	51.5	50.4	49.2	48.5	49.4	48.9	48.2	49.6	50.8	51.1
20000	60.9	54.6	50.1	50.6	51.1	49.8	48.9	48.1	48.9	48.3	47.5	48.9	50.3	50.3
30000	60.3	54.2	49.6	50.5	50.8	49.3	48.6	47.7	48.4	47.9	46.9	48.2	49.8	49.7
40000	59.8	53.9	49.2	50.3	50.4	48.9	48.5	47.4	47.9	47.5	46.4	47.6	49.4	49.2
50000	59.3	53.5	48.8	50.3	49.9	48.5	48.4	47.2	47.5	47.1	45.9	46.9	48.9	48.7
60000	58.8	53.1	48.5	50.3	49.7	48.1	48.1	47.0	47.1	46.8	45.4	46.4	48.4	48.2
70000	58.4	52.6	48.3	50.3	49.6	47.9	47.9	46.8	46.7	46.6	45.0	45.9	47.9	47.7
80000	58.1	52.2	48.2	50.2	49.5	47.7	47.7	46.7	46.4	46.4	44.7	45.5	47.5	47.3
90000	58.0	52.0	48.2	50.3	49.6	47.7	47.6	46.7	46.3	46.1	44.5	45.2	47.3	47.3
100000	58.0	51.9	48.1	50.4	49.7	48.0	47.8	46.9	46.2	46.3	44.6	45.6	47.5	47.6
110000	57.9	52.1	48.5	50.8	50.2	48.8	48.5	47.3	47.4	46.9	45.7	46.4	48.6	48.5
120000	57.8	52.7	49.1	51.0	51.0	49.9	49.2	48.1	48.0	47.9	47.2	47.6	50.1	49.7
130000	58.0	53.0	49.4	51.4	51.8	50.3	49.9	48.7	48.6	49.0	48.7	48.9	51.7	51.3
140000	58.2	53.2	49.6	51.7	52.2	51.1	51.0	50.0	49.4	49.9	50.2	50.3	53.1	52.8
150000	58.2	52.8	50.0	52.0	52.8	52.3	51.9	51.2	50.4	50.6	51.6	51.8	54.4	54.4
160000	58.1	53.2	50.8	52.2	53.4	53.1	52.7	52.3	51.0	51.6	53.0	53.2	55.7	55.8
170000	57.8	53.5	51.4	53.0	53.9	53.2	52.8	52.0	51.4	52.1	53.9	54.1	56.5	56.9
180000	57.6	53.8	51.4	53.3	54.1	51.5	52.5	52.0	51.8	52.4	54.3	54.5	56.7	57.4
190000	57.3	53.6	51.2	53.4	53.9	51.2	51.9	52.0	51.8	52.1	54.2	54.5	56.4	57.1
200000	57.1	53.2	51.2	53.0	53.4	51.0	51.5	52.0	51.5	51.6	53.9	54.2	55.8	56.5
210000	56.7	52.8	51.3	52.6	52.7	50.8	50.8	51.6	51.1	51.0	53.0	53.5	54.9	55.7
220000	56.2	52.2	51.2	52.3	52.1	50.4	50.3	51.1	50.7	50.3	52.1	52.8	53.8	54.5
230000	55.8	51.6	50.9	52.1	51.5	50.0	49.6	50.6	50.2	49.6	51.3	52.0	52.8	53.4
Daily Max	62.4	55.3	51.4	53.4	54.1	53.2	52.8	52.3	51.8	52.4	54.3	54.5	56.7	57.4
Daily Min	55.8	51.6	48.1	50.2	49.5	47.7	47.6	46.7	46.2	46.1	44.5	45.2	47.3	47.3
Average	58.4	53.2	49.8	51.4	51.5	50.0	49.8	49.2	49.1	49.0	49.0	49.7	51.6	51.8

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Dead River at County Road AAO Bridge - October 2012 Temperature Monitoring Data

Time HHMMSS	10/1/2012	10/2/2012	10/3/2012	10/4/2012	10/5/2012	10/6/2012	10/7/2012	10/8/2012	10/9/2012	10/10/2012	10/11/2012	10/12/2012	10/13/2012	10/14/2012	10/15/2012	10/16/2012	10/17/2012
0	52.4	54.2	53.6	54.0	52.6	47.0	45.5	45.2	47.0	45.1	42.8	42.6	43.1	44.5	43.8	42.2	43.9
10000	51.5	53.7	52.8	53.2	51.7	46.7	45.2	44.5	46.6	44.9	42.6	42.1	42.6	44.4	43.6	42.0	43.8
20000	50.6	53.1	52.1	52.4	50.9	46.4	44.8	43.9	46.3	44.4	42.4	41.8	42.3	44.4	43.4	41.8	43.5
30000	49.9	52.4	51.4	51.7	50.2	46.1	44.5	43.4	46.1	44.0	42.3	41.4	42.2	44.3	43.2	41.5	43.3
40000	49.2	52.0	50.8	51.0	49.6	45.6	44.2	42.9	46.1	43.7	42.1	41.1	42.0	44.3	43.1	41.4	43.1
50000	48.7	51.5	50.2	50.5	49.1	45.4	44.1	42.5	46.1	43.4	41.8	40.7	41.9	44.3	43.0	41.4	42.9
60000	48.3	51.2	49.7	49.9	48.7	44.9	43.9	42.2	46.0	43.2	41.4	40.4	41.9	44.3	42.9	41.4	42.7
70000	47.9	50.9	49.2	49.5	48.4	44.6	43.7	41.9	45.9	43.0	41.3	40.0	42.0	44.2	42.8	41.4	42.5
80000	47.7	50.5	48.8	49.2	48.1	44.3	43.4	41.8	45.6	42.8	41.3	39.8	42.1	44.2	42.7	41.5	42.3
90000	47.6	50.0	48.8	49.0	47.9	44.0	43.2	41.7	45.4	42.7	41.4	39.7	42.1	44.2	42.6	41.5	42.2
100000	47.8	50.1	49.0	49.2	47.8	44.1	43.3	42.0	45.6	42.8	41.5	39.7	42.3	44.3	42.6	41.6	42.4
110000	48.7	50.9	49.8	50.1	47.8	44.3	43.9	42.7	46.0	43.1	41.9	40.5	42.5	44.4	42.6	41.8	42.9
120000	49.9	52.1	51.2	51.6	48.0	44.9	45.1	44.1	46.5	43.5	42.7	41.7	42.7	44.6	42.7	42.1	43.5
130000	51.4	52.8	52.8	53.2	48.3	45.5	46.2	45.3	47.2	44.3	43.8	42.4	42.9	44.8	42.7	42.6	44.7
140000	53.0	54.5	54.3	54.5	48.7	45.9	47.1	46.6	47.5	44.3	44.9	43.6	43.2	44.9	43.1	43.0	46.2
150000	54.8	56.4	56.1	56.0	48.9	46.6	48.2	47.6	47.7	44.7	45.6	44.7	43.6	45.0	43.6	43.4	47.1
160000	56.2	57.5	57.6	57.2	49.1	46.9	49.1	48.5	47.7	45.0	46.4	45.9	44.0	45.1	44.0	43.7	47.9
170000	57.0	58.2	58.7	58.3	49.1	47.3	49.8	49.0	47.8	45.2	46.6	46.3	44.2	45.1	44.3	43.8	48.6
180000	57.3	58.4	59.0	58.5	49.0	47.4	49.7	49.2	47.5	45.1	46.3	46.0	44.3	45.0	44.4	43.9	48.8
190000	57.3	58.2	58.8	58.0	48.7	47.3	49.1	49.0	47.4	44.9	45.6	45.7	44.5	44.9	44.3	44.0	48.7
200000	56.9	57.2	58.1	57.1	48.4	46.9	48.5	48.7	47.0	44.6	44.9	45.3	44.6	44.7	44.0	43.9	48.5
210000	56.4	56.3	57.2	56.0	48.0	46.5	47.6	48.3	46.6	44.2	43.9	44.9	44.7	44.5	43.5	43.9	48.2
220000	55.6	55.3	56.2	54.8	47.6	46.2	46.8	47.9	46.0	43.7	43.4	44.3	44.6	44.2	43.0	43.9	48.0
230000	54.8	54.4	55.0	53.7	47.3	45.9	45.9	47.4	45.5	43.2	42.9	43.7	44.6	44.0	42.5	43.9	47.8
Daily Max	57.3	58.4	59.0	58.5	52.6	47.4	49.8	49.2	47.8	45.2	46.6	46.3	44.7	45.1	44.4	44.0	48.8
Daily Min	47.6	50.0	48.8	49.0	47.3	44.0	43.2	41.7	45.4	42.7	41.3	39.7	41.9	44.0	42.5	41.4	42.2
Average	52.1	53.8	53.4	53.3	48.9	45.9	45.9	45.3	46.5	44.0	43.3	42.7	43.1	44.5	43.3	42.6	45.1

Monthly average temp (F): 46.2
License Maximum Monthly Average: 56ºF

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Dead River at County Road AAO Bridge - October 2012 Temperature Monitoring Data

Time HHMMSS	10/18/2012	10/19/2012	10/20/2012	10/21/2012	10/22/2012	10/23/2012	10/24/2012	10/25/2012	10/26/2012	10/27/2012	10/28/2012	10/29/2012	10/30/2012	10/31/2012
0	47.6	46.7	46.5	46.4	46.7	47.7	48.5	52.0	49.2	44.6	41.1	39.7	39.3	37.7
10000	47.4	46.5	46.3	45.8	46.4	47.4	48.5	52.0	48.8	44.3	41.0	39.4	39.3	37.3
20000	47.3	46.3	46.2	45.3	46.1	47.2	48.5	52.1	48.5	44.1	40.8	39.1	39.2	37.0
30000	47.2	46.2	46.1	44.8	46.0	47.2	48.5	52.2	48.2	43.8	40.7	38.8	39.0	36.7
40000	47.2	46.0	45.9	44.4	45.7	47.1	48.5	52.3	47.9	43.5	40.5	38.6	38.8	36.5
50000	47.2	45.8	45.7	44.0	45.5	47.0	48.6	52.3	47.6	43.2	40.3	38.4	38.7	36.4
60000	47.3	45.7	45.5	43.6	45.3	47.0	48.6	52.3	47.3	42.9	40.0	38.1	38.6	36.3
70000	47.4	45.6	45.4	43.4	45.2	47.0	48.6	52.3	46.9	42.6	39.8	37.9	38.5	36.2
80000	47.5	45.4	45.4	43.1	45.1	47.0	48.7	52.1	46.7	42.3	39.5	37.7	38.3	36.2
90000	47.6	45.3	45.4	42.9	44.9	47.0	48.7	51.9	46.5	42.3	39.3	37.6	38.2	36.2
100000	47.7	45.4	45.5	42.8	44.9	47.2	48.8	51.9	46.4	42.3	39.6	38.0	38.4	36.4
110000	47.8	45.7	46.0	43.3	45.3	47.3	48.9	51.9	46.5	42.4	40.1	38.6	38.8	36.6
120000	47.9	46.0	46.8	44.2	45.9	47.8	49.3	52.0	46.5	42.8	40.6	39.3	39.2	37.0
130000	47.9	46.4	47.6	45.2	47.0	48.2	49.7	52.5	46.4	43.2	41.4	39.9	39.4	37.2
140000	48.0	47.1	48.6	45.9	48.1	48.5	50.5	52.8	46.3	43.3	41.6	40.4	39.6	37.6
150000	48.1	47.2	49.2	46.7	48.9	48.6	51.3	53.1	46.3	43.6	41.9	40.8	39.8	38.0
160000	48.1	47.3	49.9	47.3	49.4	48.7	51.6	52.8	46.2	43.7	42.3	41.0	39.8	38.2
170000	48.1	47.4	49.9	47.7	49.6	48.7	51.9	52.4	46.0	43.5	42.0	40.9	39.7	38.2
180000	48.0	47.4	49.8	47.9	49.4	48.8	52.1	51.8	45.8	43.2	41.8	40.6	39.5	38.1
190000	47.8	47.3	49.4	47.8	49.2	48.7	52.1	51.3	45.6	42.9	41.5	40.4	39.4	37.9
200000	47.6	47.2	48.8	47.6	48.9	48.7	52.1	50.8	45.4	42.5	41.1	40.1	39.1	37.8
210000	47.4	47.1	48.2	47.4	48.6	48.6	52.1	50.4	45.2	42.1	40.7	40.0	38.9	37.6
220000	47.2	46.9	47.6	47.2	48.3	48.6	52.1	49.9	45.0	41.7	40.4	39.8	38.4	37.4
230000	47.0	46.7	47.0	47.0	48.1	48.5	52.0	49.5	44.8	41.4	40.0	39.5	38.0	37.2
Daily Max	48.1	47.4	49.9	47.9	49.6	48.8	52.1	53.1	49.2	44.6	42.3	41.0	39.8	38.2
Daily Min	47.0	45.3	45.4	42.8	44.9	47.0	48.5	49.5	44.8	41.4	39.3	37.6	38.0	36.2
Average	47.6	46.5	47.2	45.5	47.0	47.9	50.0	51.9	46.7	43.0	40.7	39.4	39.0	37.1

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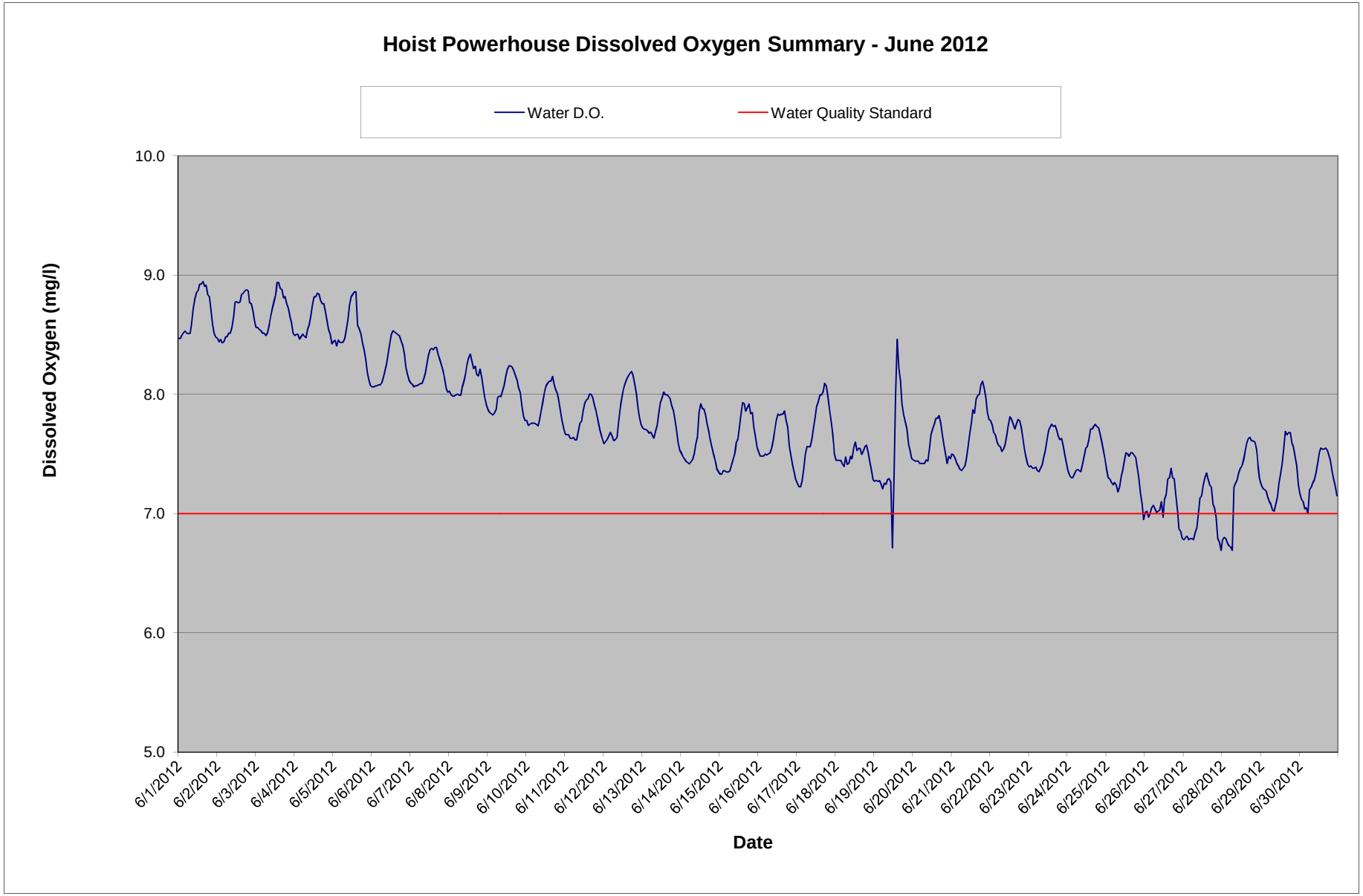
Dead River Water Quality Monitoring Data

Downstream of the Hoist Powerhouse



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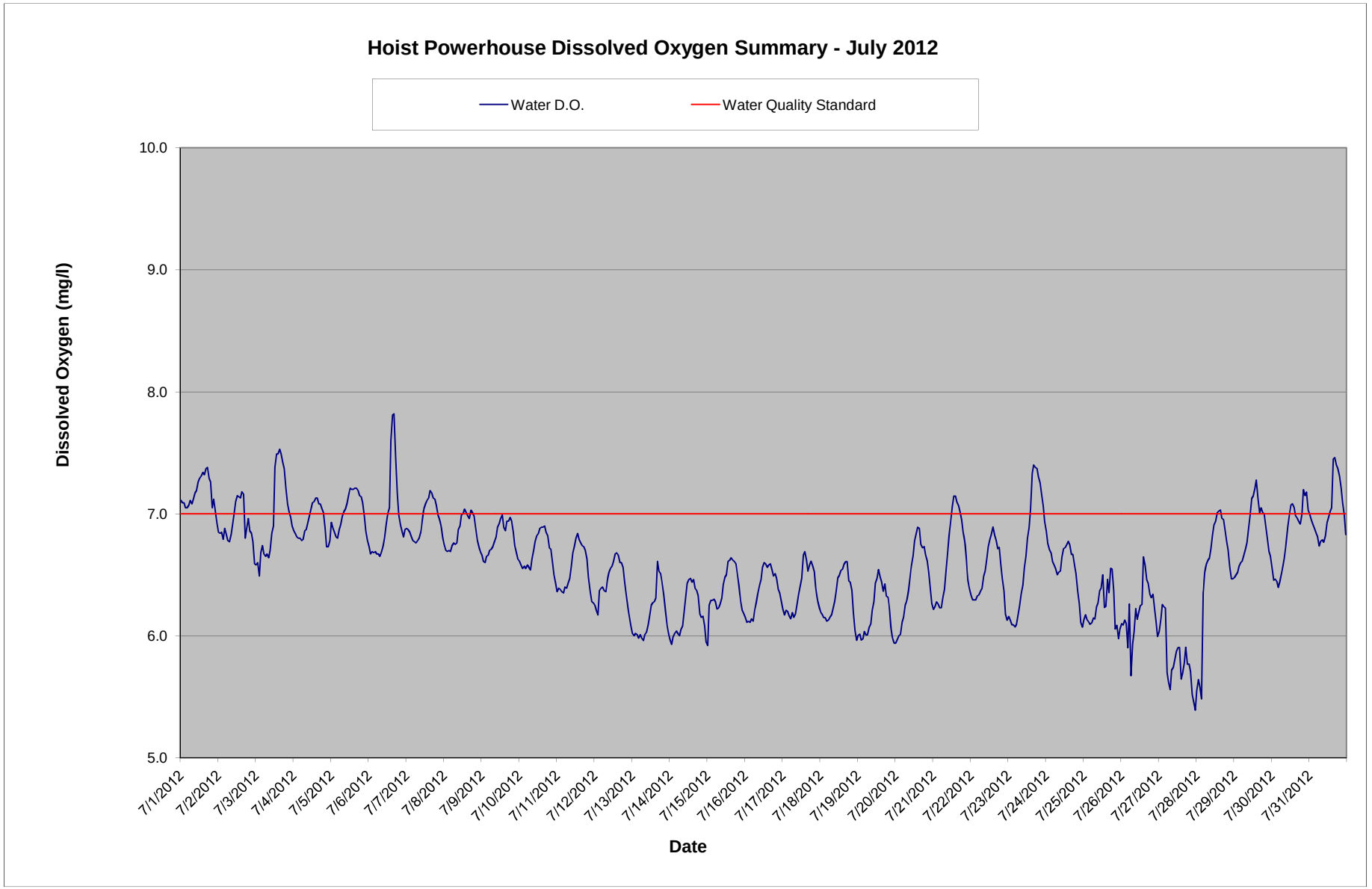

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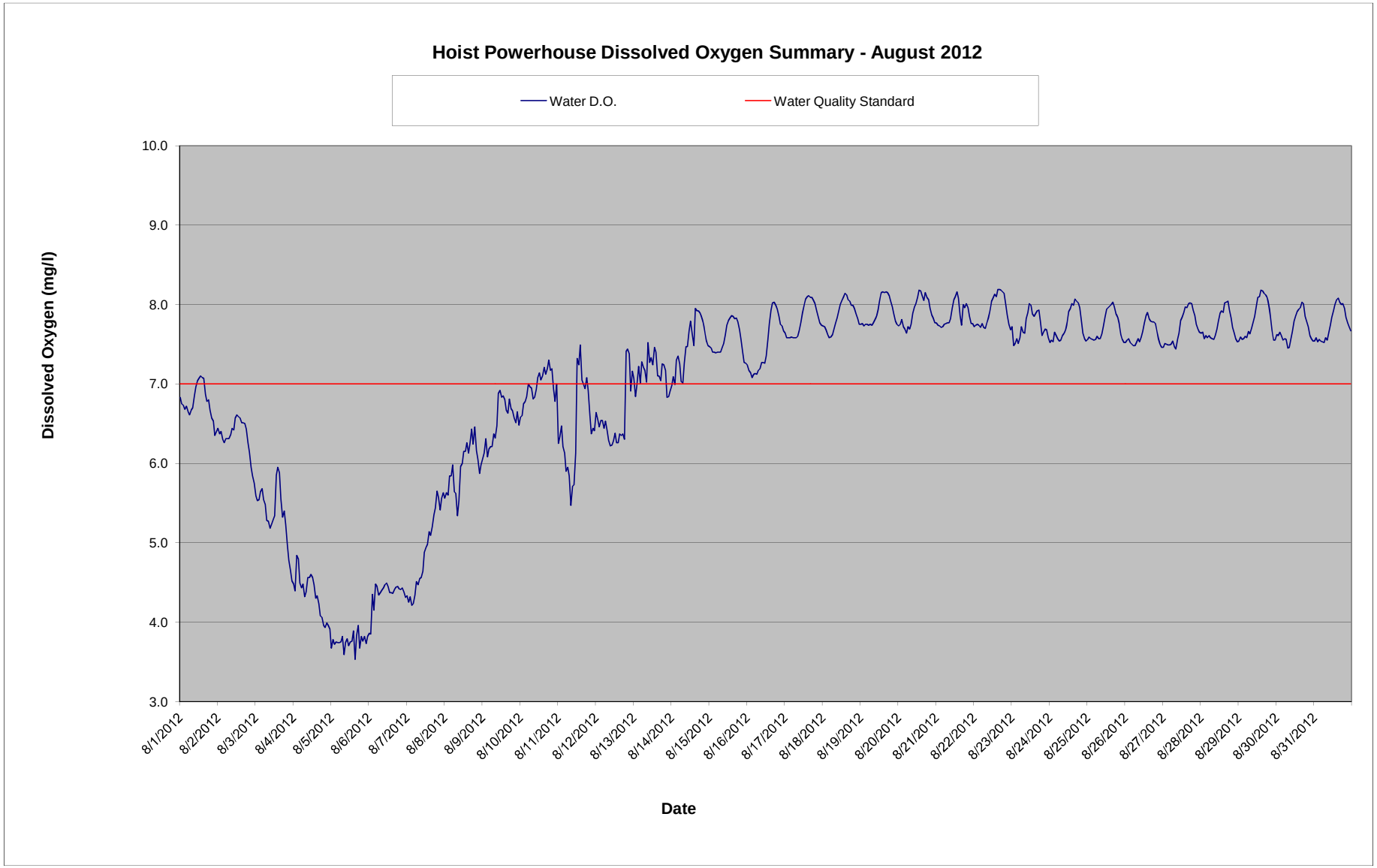

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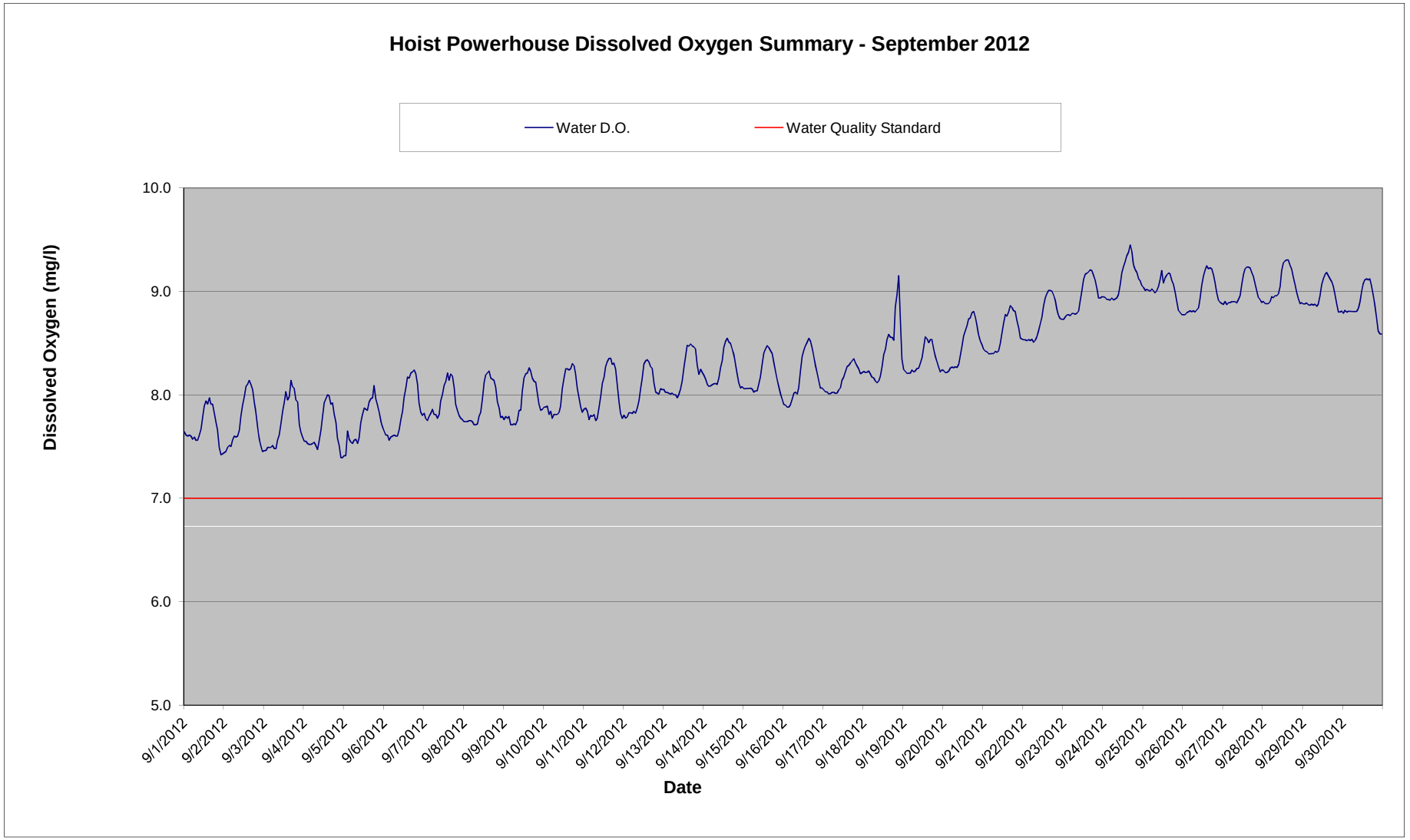

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Dead River Below Hoist Powerhouse - June 2012 Dissolved Oxygen Monitoring Data

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

Water Quality Standard: 7 mg/l Dissolved Oxygen

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Dead River Below Hoist Powerhouse - June 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	06/17/12	06/18/12	06/19/12	06/20/12	06/21/12	06/22/12	06/23/12	06/24/12	06/25/12	06/26/12	06/27/12	06/28/12	06/29/12	06/30/12
0	7.3	7.4	7.3	7.5	7.5	7.8	7.4	7.4	7.4	7.0	6.8	6.8	7.2	7.2
10000	7.2	7.4	7.3	7.4	7.5	7.7	7.4	7.3	7.3	7.0	6.8	6.8	7.2	7.1
20000	7.2	7.4	7.3	7.4	7.5	7.7	7.4	7.3	7.3	7.0	6.8	6.8	7.2	7.1
30000	7.3	7.4	7.3	7.4	7.4	7.7	7.4	7.3	7.3	7.0	6.8	6.8	7.2	7.0
40000	7.4	7.4	7.2	7.4	7.4	7.6	7.4	7.3	7.2	7.1	6.8	6.7	7.1	7.1
50000	7.5	7.4	7.2	7.4	7.4	7.6	7.4	7.4	7.3	7.1	6.8	6.7	7.1	7.0
60000	7.6	7.5	7.3	7.4	7.4	7.6	7.4	7.4	7.2	7.0	6.8	6.7	7.1	7.2
70000	7.6	7.4	7.2	7.4	7.4	7.5	7.4	7.4	7.2	7.0	6.8	7.2	7.0	7.2
80000	7.6	7.4	7.3	7.5	7.4	7.5	7.4	7.4	7.2	7.0	6.9	7.3	7.0	7.3
90000	7.6	7.5	7.3	7.4	7.5	7.6	7.5	7.4	7.3	7.0	7.0	7.3	7.1	7.3
100000	7.7	7.5	7.3	7.6	7.6	7.7	7.5	7.5	7.4	7.1	7.1	7.3	7.1	7.3
110000	7.8	7.5	6.7	7.7	7.7	7.7	7.6	7.6	7.4	7.0	7.2	7.4	7.3	7.4
120000	7.9	7.6	7.3	7.7	7.8	7.8	7.7	7.6	7.5	7.1	7.2	7.4	7.3	7.5
130000	7.9	7.5	8.0	7.8	7.9	7.8	7.7	7.6	7.5	7.2	7.3	7.5	7.4	7.6
140000	8.0	7.5	8.5	7.8	7.8	7.8	7.8	7.7	7.5	7.3	7.3	7.5	7.6	7.5
150000	8.0	7.5	8.2	7.8	8.0	7.7	7.7	7.7	7.5	7.3	7.3	7.6	7.7	7.5
160000	8.0	7.5	8.1	7.8	8.0	7.8	7.7	7.7	7.5	7.4	7.2	7.6	7.7	7.6
170000	8.1	7.5	7.9	7.8	8.0	7.8	7.7	7.8	7.5	7.3	7.2	7.6	7.7	7.5
180000	8.1	7.6	7.8	7.7	8.1	7.8	7.7	7.7	7.5	7.3	7.1	7.6	7.7	7.5
190000	8.0	7.6	7.8	7.6	8.1	7.7	7.6	7.7	7.4	7.2	7.1	7.6	7.6	7.4
200000	7.9	7.5	7.7	7.5	8.1	7.6	7.6	7.7	7.3	7.0	7.0	7.6	7.6	7.4
210000	7.8	7.4	7.6	7.4	8.0	7.5	7.6	7.6	7.2	6.9	6.8	7.5	7.5	7.3
220000	7.7	7.4	7.5	7.5	7.9	7.5	7.5	7.5	7.1	6.9	6.8	7.4	7.4	7.2
230000	7.5	7.3	7.5	7.5	7.8	7.4	7.4	7.5	7.0	6.8	6.7	7.3	7.2	7.2
Daily Max	8.1	7.6	8.5	7.8	8.1	7.8	7.8	7.8	7.5	7.4	7.3	7.6	7.7	7.6
Daily Min	7.2	7.3	6.7	7.4	7.4	7.4	7.4	7.3	7.0	6.8	6.7	6.7	7.0	7.0
Average	7.7	7.5	7.5	7.6	7.7	7.7	7.5	7.5	7.3	7.1	7.0	7.3	7.3	7.3

Low DO occurred after unit trip.

Below water quality standard

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Dead River Below Hoist Powerhouse - July 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	07/01/12	07/02/12	07/03/12	07/04/12	07/05/12	07/06/12	07/07/12	07/08/12	07/09/12	07/10/12	07/11/12	07/12/12	07/13/12	07/14/12	07/15/12	07/16/12
0	7.1	6.9	6.6	6.9	6.9	6.7	6.9	6.8	6.7	6.6	6.4	6.3	6.0	6.0	5.9	6.2
10000	7.1	6.8	6.6	6.8	6.9	6.7	6.9	6.7	6.6	6.6	6.4	6.2	6.0	5.9	6.3	6.1
20000	7.1	6.9	6.5	6.8	6.9	6.7	6.9	6.7	6.6	6.6	6.4	6.2	6.0	6.0	6.3	6.1
30000	7.1	6.8	6.7	6.8	6.8	6.7	6.8	6.7	6.7	6.6	6.4	6.4	6.0	6.0	6.3	6.1
40000	7.1	6.9	6.7	6.8	6.8	6.7	6.8	6.7	6.7	6.6	6.4	6.4	6.0	6.0	6.3	6.1
50000	7.1	6.8	6.7	6.8	6.9	6.7	6.8	6.7	6.7	6.6	6.4	6.4	6.0	6.0	6.3	6.1
60000	7.1	6.8	6.7	6.8	6.9	6.7	6.8	6.8	6.7	6.6	6.4	6.4	6.0	6.0	6.2	6.2
70000	7.1	6.8	6.7	6.9	7.0	6.7	6.8	6.8	6.7	6.5	6.4	6.4	6.0	6.1	6.2	6.3
80000	7.1	6.8	6.6	6.9	7.0	6.7	6.8	6.8	6.8	6.6	6.5	6.5	6.0	6.1	6.3	6.4
90000	7.2	6.9	6.7	6.9	7.0	6.7	6.9	6.9	6.8	6.7	6.6	6.5	6.0	6.2	6.3	6.4
100000	7.2	7.0	6.8	7.0	7.1	6.8	6.9	6.9	6.9	6.8	6.7	6.6	6.1	6.3	6.4	6.5
110000	7.3	7.1	6.9	7.0	7.2	6.9	7.0	7.0	6.9	6.8	6.7	6.6	6.2	6.4	6.5	6.6
120000	7.3	7.2	7.4	7.1	7.2	7.0	7.1	7.0	7.0	6.8	6.8	6.6	6.3	6.5	6.5	6.6
130000	7.3	7.1	7.5	7.1	7.2	7.1	7.1	7.0	7.0	6.9	6.8	6.7	6.3	6.5	6.6	6.6
140000	7.3	7.1	7.5	7.1	7.2	7.6	7.1	7.0	6.9	6.9	6.8	6.7	6.3	6.4	6.6	6.6
150000	7.3	7.2	7.5	7.1	7.2	7.8	7.2	7.0	6.9	6.9	6.8	6.7	6.3	6.5	6.6	6.6
160000	7.4	7.2	7.5	7.1	7.2	7.8	7.2	7.0	6.9	6.9	6.7	6.6	6.6	6.4	6.6	6.6
170000	7.4	6.8	7.4	7.1	7.2	7.5	7.1	7.0	6.9	6.9	6.7	6.6	6.5	6.4	6.6	6.5
180000	7.3	6.9	7.4	7.0	7.2	7.2	7.1	7.0	7.0	6.8	6.7	6.6	6.5	6.3	6.6	6.5
190000	7.3	7.0	7.2	7.0	7.1	7.0	7.1	7.0	6.9	6.7	6.6	6.5	6.4	6.2	6.5	6.5
200000	7.1	6.9	7.1	6.9	7.1	6.9	7.0	6.9	6.9	6.7	6.5	6.3	6.3	6.2	6.4	6.5
210000	7.1	6.8	7.0	6.7	7.0	6.9	7.0	6.8	6.7	6.6	6.4	6.3	6.2	6.2	6.3	6.4
220000	7.0	6.8	7.0	6.7	6.9	6.8	6.9	6.7	6.7	6.5	6.3	6.2	6.1	6.1	6.2	6.4
230000	6.9	6.6	6.9	6.8	6.8	6.9	6.8	6.7	6.6	6.4	6.3	6.1	6.0	6.0	6.2	6.3
Daily Max	7.4	7.2	7.5	7.1	7.2	7.8	7.2	7.0	7.0	6.9	6.8	6.7	6.6	6.5	6.6	6.6
Daily Min	6.9	6.6	6.5	6.7	6.8	6.7	6.8	6.7	6.6	6.4	6.3	6.1	6.0	5.9	5.9	6.1
Average	7.2	6.9	7.0	6.9	7.0	7.0	6.9	6.9	6.8	6.7	6.5	6.4	6.2	6.2	6.4	6.4

Water Quality Standard: 7 mg/l Dissolved Oxygen

Below water quality standard

Powerhouse trip - flow released through low level outlet.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Dead River Below Hoist Powerhouse - July 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	07/17/12	07/18/12	07/19/12	07/20/12	07/21/12	07/22/12	07/23/12	07/24/12	07/25/12	07/26/12	07/27/12	07/28/12	07/29/12	07/30/12	07/31/12
0	6.2	6.2	6.0	5.9	6.2	6.3	6.2	6.9	6.1	6.1	6.0	5.6	6.5	6.6	7.0
10000	6.2	6.2	6.0	6.0	6.2	6.3	6.1	6.8	6.2	6.1	6.1	5.6	6.5	6.5	7.0
20000	6.2	6.1	6.0	6.0	6.3	6.3	6.1	6.7	6.1	6.1	6.3	5.6	6.5	6.5	6.9
30000	6.2	6.1	6.0	6.0	6.3	6.3	6.1	6.7	6.1	6.1	6.2	5.5	6.6	6.4	6.9
40000	6.2	6.1	6.0	6.1	6.2	6.3	6.1	6.6	6.1	5.9	6.2	6.4	6.6	6.4	6.8
50000	6.1	6.1	6.0	6.2	6.2	6.3	6.1	6.6	6.1	6.3	5.7	6.5	6.6	6.4	6.8
60000	6.2	6.2	6.0	6.3	6.3	6.4	6.2	6.5	6.1	5.7	5.6	6.6	6.7	6.5	6.7
70000	6.2	6.2	6.1	6.3	6.4	6.4	6.2	6.5	6.1	5.9	5.6	6.6	6.7	6.6	6.8
80000	6.2	6.2	6.1	6.4	6.5	6.5	6.3	6.5	6.2	6.0	5.7	6.6	6.8	6.7	6.8
90000	6.3	6.3	6.2	6.5	6.7	6.5	6.4	6.5	6.3	6.2	5.7	6.7	6.9	6.8	6.8
100000	6.3	6.4	6.3	6.6	6.8	6.6	6.6	6.6	6.4	6.1	5.8	6.8	7.0	6.9	6.8
110000	6.4	6.5	6.4	6.7	6.9	6.7	6.7	6.7	6.4	6.2	5.9	6.9	7.1	7.0	6.9
120000	6.5	6.5	6.5	6.8	7.1	6.8	6.8	6.7	6.5	6.2	5.9	6.9	7.1	7.1	7.0
130000	6.7	6.5	6.5	6.8	7.1	6.8	6.9	6.7	6.2	6.3	5.9	7.0	7.2	7.1	7.0
140000	6.7	6.5	6.5	6.9	7.1	6.9	7.0	6.8	6.2	6.6	5.6	7.0	7.3	7.1	7.1
150000	6.6	6.6	6.4	6.9	7.1	6.8	7.3	6.7	6.5	6.6	5.7	7.0	7.1	7.0	7.5
160000	6.5	6.6	6.4	6.8	7.1	6.8	7.4	6.7	6.4	6.5	5.8	7.0	7.0	7.0	7.5
170000	6.6	6.6	6.4	6.7	7.0	6.7	7.4	6.7	6.6	6.4	5.9	7.0	7.0	6.9	7.4
180000	6.6	6.4	6.3	6.7	6.9	6.7	7.4	6.6	6.5	6.3	5.8	6.9	7.0	6.9	7.4
190000	6.6	6.4	6.3	6.7	6.8	6.6	7.3	6.5	6.4	6.3	5.8	6.8	7.0	7.0	7.3
200000	6.5	6.4	6.2	6.6	6.8	6.5	7.3	6.4	6.1	6.3	5.7	6.7	6.9	7.2	7.2
210000	6.4	6.2	6.1	6.5	6.6	6.4	7.2	6.3	6.1	6.2	5.5	6.6	6.8	7.1	7.1
220000	6.3	6.0	6.0	6.4	6.5	6.2	7.1	6.1	6.0	6.1	5.5	6.5	6.7	7.2	7.0
230000	6.2	6.0	5.9	6.3	6.4	6.1	6.9	6.1	6.1	6.0	5.4	6.5	6.7	7.0	6.8
Daily Max	6.7	6.6	6.5	6.9	7.1	6.9	7.4	6.9	6.6	6.6	6.3	7.0	7.3	7.2	7.5
Daily Min	6.1	6.0	5.9	5.9	6.2	6.1	6.1	6.1	6.0	5.7	5.4	5.5	6.5	6.4	6.7
Average	6.4	6.3	6.2	6.5	6.7	6.5	6.7	6.6	6.2	6.2	5.8	6.5	6.8	6.8	7.0

Below water quality standard

Powerhouse trip - flow released through low level outlet.

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Dead River Below Hoist Powerhouse - August 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	8/1/2012	8/2/2012	8/3/2012	8/4/2012	8/5/2012	8/6/2012	8/7/2012	8/8/2012	8/9/2012	8/10/2012	8/11/2012	8/12/2012	8/13/2012	8/14/2012	8/15/2012	8/16/2012	8/17/2012
0	6.8	6.4	5.6	4.5	3.7	3.9	4.3	5.6	6.1	6.6	6.3	6.6	7.1	7.0	7.5	7.2	7.6
10000	6.8	6.4	5.5	4.4	3.8	3.9	4.3	5.6	6.1	6.6	6.3	6.6	6.8	7.1	7.5	7.2	7.6
20000	6.7	6.4	5.5	4.8	3.7	4.4	4.3	5.6	6.3	6.8	6.5	6.5	7.0	7.0	7.4	7.1	7.6
30000	6.7	6.3	5.6	4.8	3.8	4.2	4.2	5.8	6.1	6.8	6.2	6.5	7.2	7.3	7.4	7.1	7.6
40000	6.7	6.3	5.7	4.5	3.7	4.5	4.2	5.8	6.2	6.8	6.1	6.5	7.0	7.4	7.4	7.1	7.6
50000	6.7	6.3	5.5	4.4	3.7	4.5	4.3	6.0	6.2	7.0	5.9	6.4	7.3	7.3	7.4	7.1	7.6
60000	6.6	6.3	5.5	4.5	3.8	4.3	4.5	5.6	6.2	7.0	6.0	6.5	7.2	7.0	7.4	7.1	7.6
70000	6.7	6.3	5.3	4.3	3.8	4.4	4.5	5.6	6.4	7.0	5.8	6.4	7.2	7.0	7.4	7.2	7.6
80000	6.7	6.4	5.3	4.4	3.6	4.4	4.6	5.3	6.3	6.8	5.5	6.3	7.0	7.3	7.5	7.2	7.6
90000	6.9	6.4	5.2	4.6	3.7	4.4	4.6	5.5	6.5	6.8	5.7	6.2	7.5	7.5	7.5	7.3	7.7
100000	7.0	6.4	5.2	4.6	3.8	4.5	4.6	6.0	6.9	6.9	5.7	6.2	7.3	7.5	7.6	7.3	7.8
110000	7.0	6.6	5.3	4.6	3.7	4.5	4.9	6.0	6.9	7.1	6.1	6.3	7.3	7.7	7.7	7.3	7.9
120000	7.1	6.6	5.3	4.6	3.8	4.5	4.9	6.2	6.8	7.1	7.3	6.4	7.2	7.8	7.8	7.4	8.0
130000	7.1	6.6	5.9	4.5	3.8	4.4	5.0	6.2	6.9	7.1	7.2	6.3	7.5	7.6	7.8	7.6	8.1
140000	7.1	6.6	6.0	4.3	3.9	4.4	5.1	6.3	6.8	7.1	7.5	6.3	7.4	7.5	7.9	7.8	8.1
150000	7.1	6.5	5.9	4.3	3.5	4.4	5.1	6.1	6.7	7.2	7.1	6.4	7.1	8.0	7.9	7.9	8.1
160000	6.9	6.5	5.6	4.2	3.8	4.4	5.2	6.3	6.6	7.1	7.0	6.4	7.1	7.9	7.8	8.0	8.1
170000	6.8	6.5	5.3	4.1	4.0	4.4	5.4	6.4	6.8	7.2	6.9	6.4	7.0	7.9	7.8	8.0	8.1
180000	6.8	6.4	5.4	4.1	3.7	4.5	5.4	6.2	6.7	7.3	7.1	6.3	7.3	7.9	7.8	8.0	8.1
190000	6.7	6.3	5.2	4.0	3.8	4.4	5.7	6.5	6.7	7.2	6.9	7.4	7.2	7.8	7.7	7.9	8.0
200000	6.6	6.1	5.0	3.9	3.8	4.4	5.6	6.2	6.6	7.2	6.6	7.4	7.2	7.8	7.6	7.9	7.9
210000	6.5	6.0	4.8	4.0	3.8	4.4	5.4	6.1	6.5	6.9	6.4	7.4	6.8	7.7	7.4	7.8	7.8
220000	6.4	5.8	4.7	4.0	3.7	4.4	5.6	5.9	6.7	6.8	6.4	6.9	6.8	7.5	7.3	7.7	7.8
230000	6.4	5.8	4.5	3.9	3.8	4.3	5.6	6.0	6.5	7.0	6.4	7.2	6.9	7.5	7.3	7.7	7.7
Daily Max	7.1	6.6	6.0	4.8	4.0	4.5	5.7	6.5	6.9	7.3	7.5	7.4	7.5	8.0	7.9	8.0	8.1
Daily Min	6.4	5.8	4.5	3.9	3.5	3.9	4.2	5.3	6.1	6.6	5.5	6.2	6.8	7.0	7.3	7.1	7.6
Average	6.8	6.3	5.4	4.3	3.8	4.4	4.9	5.9	6.5	7.0	6.5	6.6	7.1	7.5	7.6	7.5	7.8

Water Quality Standard: 7.0 mg/l Dissolved Oxygen

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Dead River Below Hoist Powerhouse - August 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	8/18/2012	8/19/2012	8/20/2012	8/21/2012	8/22/2012	8/23/2012	8/24/2012	8/25/2012	8/26/2012	8/27/2012	8/28/2012	8/29/2012	8/30/2012	8/31/2012
0	7.7	7.8	7.7	7.8	7.7	7.7	7.5	7.6	7.5	7.5	7.6	7.5	7.6	7.5
10000	7.7	7.8	7.8	7.7	7.7	7.5	7.6	7.6	7.6	7.5	7.7	7.6	7.6	7.6
20000	7.7	7.7	7.8	7.7	7.8	7.5	7.5	7.6	7.6	7.5	7.6	7.6	7.7	7.5
30000	7.6	7.8	7.7	7.7	7.7	7.6	7.7	7.6	7.5	7.5	7.6	7.6	7.6	7.6
40000	7.6	7.8	7.7	7.7	7.7	7.5	7.6	7.6	7.5	7.5	7.6	7.6	7.6	7.5
50000	7.6	7.7	7.6	7.8	7.8	7.6	7.6	7.6	7.5	7.5	7.6	7.6	7.6	7.5
60000	7.6	7.8	7.7	7.8	7.7	7.7	7.5	7.6	7.5	7.5	7.6	7.7	7.6	7.5
70000	7.7	7.7	7.7	7.8	7.7	7.7	7.6	7.6	7.5	7.5	7.6	7.6	7.5	7.6
80000	7.8	7.8	7.8	7.8	7.8	7.6	7.6	7.6	7.6	7.4	7.6	7.7	7.5	7.6
90000	7.8	7.8	7.9	7.8	7.8	7.8	7.6	7.6	7.5	7.6	7.6	7.8	7.6	7.6
100000	7.9	7.9	8.0	8.0	7.9	7.9	7.7	7.7	7.6	7.6	7.7	7.9	7.7	7.7
110000	8.0	7.9	8.0	8.1	8.0	8.0	7.8	7.8	7.7	7.8	7.8	8.0	7.8	7.8
120000	8.1	8.1	8.1	8.1	8.1	8.0	7.9	7.9	7.8	7.8	7.9	8.1	7.9	7.9
130000	8.1	8.2	8.2	8.2	8.1	7.9	8.0	8.0	7.9	7.9	7.9	8.1	7.9	8.0
140000	8.1	8.2	8.2	8.1	8.1	7.9	8.0	8.0	7.9	8.0	7.9	8.2	7.9	8.1
150000	8.1	8.2	8.1	7.9	8.2	7.9	8.0	8.0	7.8	8.0	8.0	8.2	8.0	8.1
160000	8.1	8.2	8.1	7.7	8.2	7.9	8.1	8.0	7.8	8.0	8.0	8.1	8.0	8.0
170000	8.0	8.2	8.2	8.0	8.2	7.9	8.0	8.0	7.8	8.0	8.0	8.1	8.0	8.0
180000	8.0	8.1	8.1	8.0	8.2	7.8	8.0	7.9	7.8	8.0	7.9	8.1	7.9	8.0
190000	8.0	8.0	8.1	8.0	8.1	7.6	8.0	7.8	7.8	7.9	7.8	8.0	7.8	8.0
200000	8.0	8.0	8.0	8.0	8.0	7.7	7.8	7.8	7.7	7.9	7.7	7.8	7.7	7.8
210000	7.9	7.9	7.9	7.9	7.9	7.7	7.6	7.6	7.6	7.8	7.6	7.7	7.6	7.8
220000	7.8	7.8	7.8	7.8	7.8	7.7	7.6	7.6	7.5	7.7	7.6	7.6	7.6	7.7
230000	7.8	7.8	7.8	7.8	7.7	7.6	7.5	7.5	7.5	7.7	7.5	7.6	7.5	7.7
Daily Max	8.1	8.2	8.2	8.2	8.2	8.0	8.1	8.0	7.9	8.0	8.0	8.2	8.0	8.1
Daily Min	7.6	7.7	7.6	7.7	7.7	7.5	7.5	7.5	7.5	7.4	7.5	7.5	7.5	7.5
Average	7.9	7.9	7.9	7.9	7.9	7.7	7.7	7.7	7.6	7.7	7.7	7.8	7.7	7.8

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Dead River Below Hoist Powerhouse - September 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	9/1/2012	9/2/2012	9/3/2012	9/4/2012	9/5/2012	9/6/2012	9/7/2012	9/8/2012	9/9/2012	9/10/2012	9/11/2012	9/12/2012	9/13/2012	9/14/2012	9/15/2012	9/16/2012
0	7.6	7.4	7.5	7.6	7.4	7.7	7.8	7.7	7.8	7.9	7.9	7.8	8.1	8.2	8.1	7.9
10000	7.6	7.5	7.5	7.6	7.4	7.6	7.8	7.7	7.8	7.9	7.9	7.8	8.0	8.2	8.1	7.9
20000	7.6	7.5	7.5	7.5	7.7	7.6	7.8	7.7	7.8	7.9	7.8	7.8	8.0	8.1	8.1	7.9
30000	7.6	7.5	7.5	7.5	7.6	7.6	7.8	7.8	7.8	7.8	7.8	7.8	8.0	8.1	8.1	7.9
40000	7.6	7.5	7.5	7.5	7.5	7.6	7.8	7.8	7.7	7.8	7.8	7.8	8.0	8.1	8.1	7.9
50000	7.6	7.6	7.5	7.5	7.5	7.6	7.9	7.7	7.7	7.8	7.8	7.8	8.0	8.1	8.1	8.0
60000	7.6	7.6	7.5	7.5	7.6	7.6	7.8	7.7	7.7	7.8	7.8	7.8	8.0	8.1	8.0	8.0
70000	7.6	7.6	7.5	7.5	7.6	7.6	7.8	7.7	7.7	7.8	7.8	7.8	8.0	8.1	8.0	8.0
80000	7.6	7.6	7.6	7.5	7.5	7.6	7.8	7.7	7.8	7.8	7.8	7.9	8.0	8.1	8.0	8.0
90000	7.6	7.7	7.6	7.6	7.6	7.7	7.8	7.8	7.9	7.8	7.9	7.9	8.0	8.2	8.1	8.1
100000	7.7	7.8	7.7	7.7	7.7	7.8	7.9	7.8	7.9	7.9	8.0	8.1	8.1	8.3	8.2	8.2
110000	7.8	7.9	7.8	7.8	7.8	7.8	8.0	8.0	8.0	8.1	8.1	8.2	8.1	8.3	8.3	8.4
120000	7.9	8.0	7.9	7.9	7.9	8.0	8.1	8.1	8.2	8.2	8.2	8.3	8.3	8.5	8.4	8.4
130000	7.9	8.1	8.0	8.0	7.9	8.1	8.1	8.2	8.2	8.3	8.3	8.3	8.4	8.5	8.4	8.5
140000	7.9	8.1	8.0	8.0	7.9	8.2	8.2	8.2	8.2	8.3	8.3	8.3	8.5	8.5	8.5	8.5
150000	8.0	8.1	8.0	8.0	7.9	8.2	8.1	8.2	8.3	8.2	8.4	8.3	8.5	8.5	8.5	8.5
160000	7.9	8.1	8.1	7.9	8.0	8.2	8.2	8.2	8.2	8.3	8.4	8.3	8.5	8.5	8.4	8.5
170000	7.9	8.1	8.1	7.9	8.0	8.2	8.2	8.2	8.2	8.3	8.3	8.3	8.5	8.4	8.4	8.4
180000	7.8	7.9	8.1	7.8	8.1	8.2	8.1	8.1	8.1	8.3	8.3	8.1	8.5	8.4	8.3	8.4
190000	7.7	7.8	8.0	7.7	8.0	8.2	7.9	8.1	8.1	8.2	8.2	8.0	8.4	8.3	8.2	8.3
200000	7.7	7.7	7.9	7.6	7.9	8.1	7.9	7.9	8.0	8.1	8.1	8.0	8.3	8.2	8.1	8.2
210000	7.5	7.6	7.7	7.5	7.8	7.9	7.8	7.9	7.9	8.0	7.9	8.0	8.2	8.1	8.1	8.1
220000	7.4	7.5	7.6	7.4	7.7	7.8	7.8	7.8	7.9	7.9	7.8	8.1	8.2	8.1	8.0	8.1
230000	7.4	7.5	7.6	7.4	7.7	7.8	7.8	7.8	7.9	7.8	7.8	8.0	8.2	8.1	8.0	8.1
Daily Max	8.0	8.1	8.1	8.0	8.1	8.2	8.2	8.2	8.3	8.3	8.4	8.3	8.5	8.5	8.5	8.5
Daily Min	7.4	7.4	7.5	7.4	7.4	7.6	7.8	7.7	7.7	7.8	7.8	7.8	8.0	8.1	8.0	7.9
Average	7.7	7.7	7.7	7.7	7.7	7.9	7.9	7.9	7.9	8.0	8.0	8.0	8.2	8.2	8.2	8.2

Water Quality Standard: 7 mg/l Dissolved Oxygen

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Dead River Below Hoist Powerhouse - September 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	9/17/2012	9/18/2012	9/19/2012	9/20/2012	9/21/2012	9/22/2012	9/23/2012	9/24/2012	9/25/2012	9/26/2012	9/27/2012	9/28/2012	9/29/2012	9/30/2012
0	8.0	8.2	8.2	8.2	8.4	8.5	8.7	8.9	9.0	8.8	8.9	8.9	8.9	8.8
10000	8.0	8.2	8.2	8.2	8.4	8.5	8.8	8.9	9.0	8.8	8.9	8.9	8.9	8.8
20000	8.0	8.2	8.2	8.2	8.4	8.5	8.8	8.9	9.0	8.8	8.9	8.9	8.9	8.8
30000	8.0	8.2	8.2	8.2	8.4	8.5	8.8	8.9	9.0	8.8	8.9	8.9	8.9	8.8
40000	8.0	8.2	8.2	8.3	8.4	8.5	8.8	8.9	9.0	8.8	8.9	8.9	8.9	8.8
50000	8.0	8.2	8.2	8.3	8.4	8.5	8.8	8.9	9.0	8.8	8.9	8.9	8.9	8.8
60000	8.0	8.2	8.2	8.3	8.4	8.5	8.8	8.9	9.0	8.8	8.9	8.9	8.9	8.8
70000	8.0	8.1	8.2	8.3	8.4	8.5	8.8	8.9	9.0	8.8	8.9	9.0	8.9	8.8
80000	8.0	8.1	8.3	8.3	8.4	8.6	8.8	8.9	9.0	8.8	8.9	9.0	8.9	8.8
90000	8.0	8.1	8.3	8.3	8.4	8.6	8.8	9.0	9.0	8.8	8.9	9.0	8.9	8.8
100000	8.1	8.2	8.3	8.4	8.5	8.7	8.9	9.1	9.1	8.9	9.0	9.0	9.0	8.9
110000	8.1	8.3	8.4	8.5	8.6	8.8	9.0	9.2	9.2	9.1	9.1	9.2	9.1	9.0
120000	8.2	8.4	8.5	8.6	8.7	8.9	9.1	9.2	9.1	9.1	9.2	9.3	9.1	9.1
130000	8.2	8.4	8.6	8.6	8.8	8.9	9.2	9.3	9.1	9.2	9.2	9.3	9.2	9.1
140000	8.3	8.5	8.5	8.7	8.8	9.0	9.2	9.3	9.2	9.2	9.2	9.3	9.2	9.1
150000	8.3	8.6	8.5	8.7	8.8	9.0	9.2	9.4	9.2	9.2	9.2	9.3	9.2	9.1
160000	8.3	8.6	8.5	8.7	8.9	9.0	9.2	9.4	9.2	9.2	9.2	9.3	9.1	9.1
170000	8.3	8.6	8.5	8.8	8.8	9.0	9.2	9.4	9.1	9.2	9.2	9.2	9.1	9.0
180000	8.3	8.5	8.4	8.8	8.8	9.0	9.2	9.3	9.1	9.2	9.1	9.1	9.1	9.0
190000	8.3	8.8	8.4	8.7	8.8	8.9	9.1	9.2	9.0	9.1	9.1	9.1	9.0	8.9
200000	8.3	9.0	8.3	8.7	8.7	8.8	9.0	9.2	8.9	9.0	9.0	9.0	8.9	8.7
210000	8.3	9.2	8.3	8.6	8.6	8.8	8.9	9.1	8.8	8.9	8.9	8.9	8.8	8.6
220000	8.2	8.7	8.2	8.5	8.5	8.7	8.9	9.1	8.8	8.9	8.9	8.9	8.8	8.6
230000	8.2	8.3	8.2	8.5	8.5	8.7	8.9	9.1	8.8	8.9	8.9	8.9	8.8	8.6
Daily Max	8.3	9.2	8.6	8.8	8.9	9.0	9.2	9.4	9.2	9.2	9.2	9.3	9.2	9.1
Daily Min	8.0	8.1	8.2	8.2	8.4	8.5	8.7	8.9	8.8	8.8	8.9	8.9	8.8	8.6
Average	8.2	8.4	8.3	8.5	8.6	8.7	8.9	9.1	9.0	9.0	9.0	9.0	9.0	8.9

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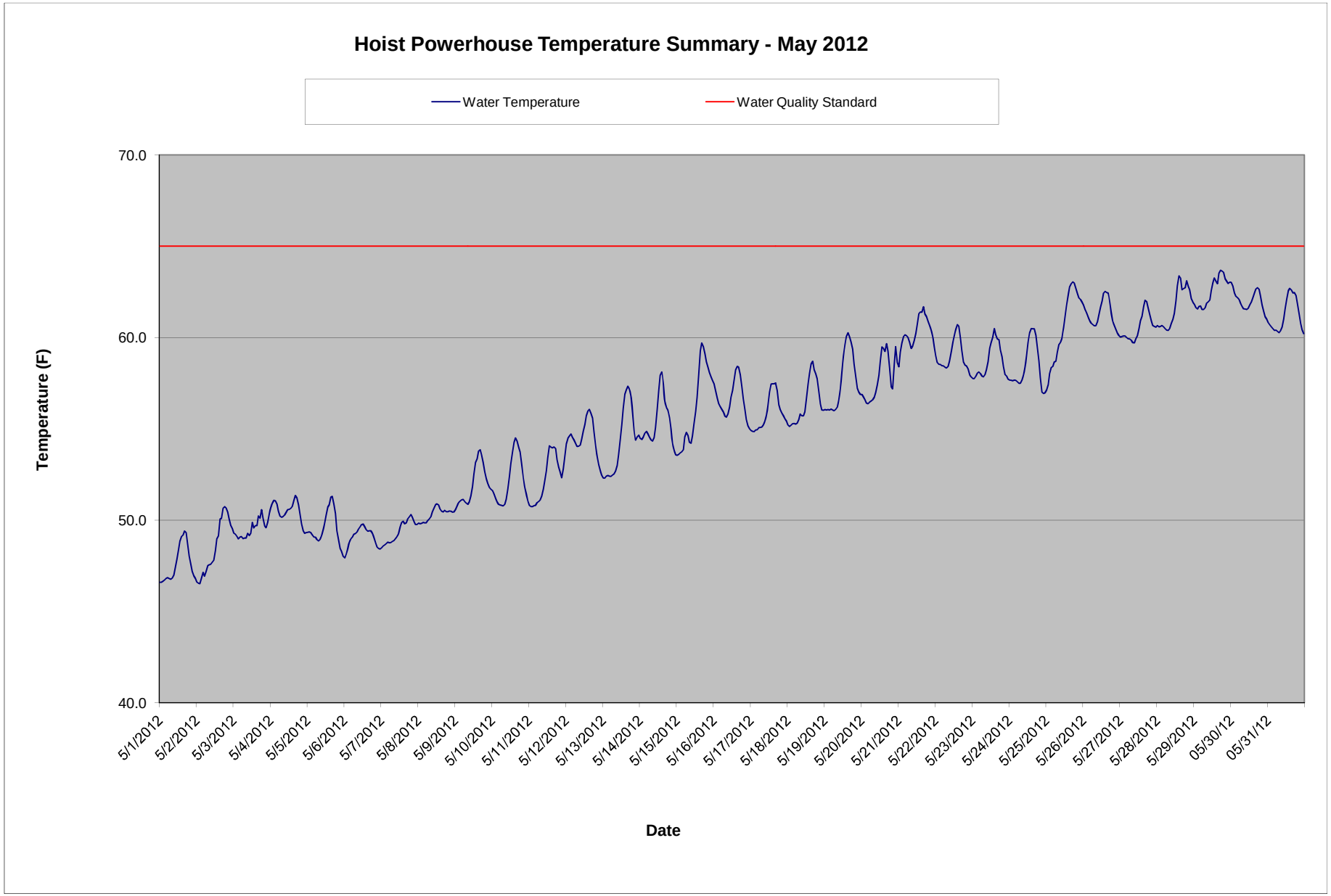

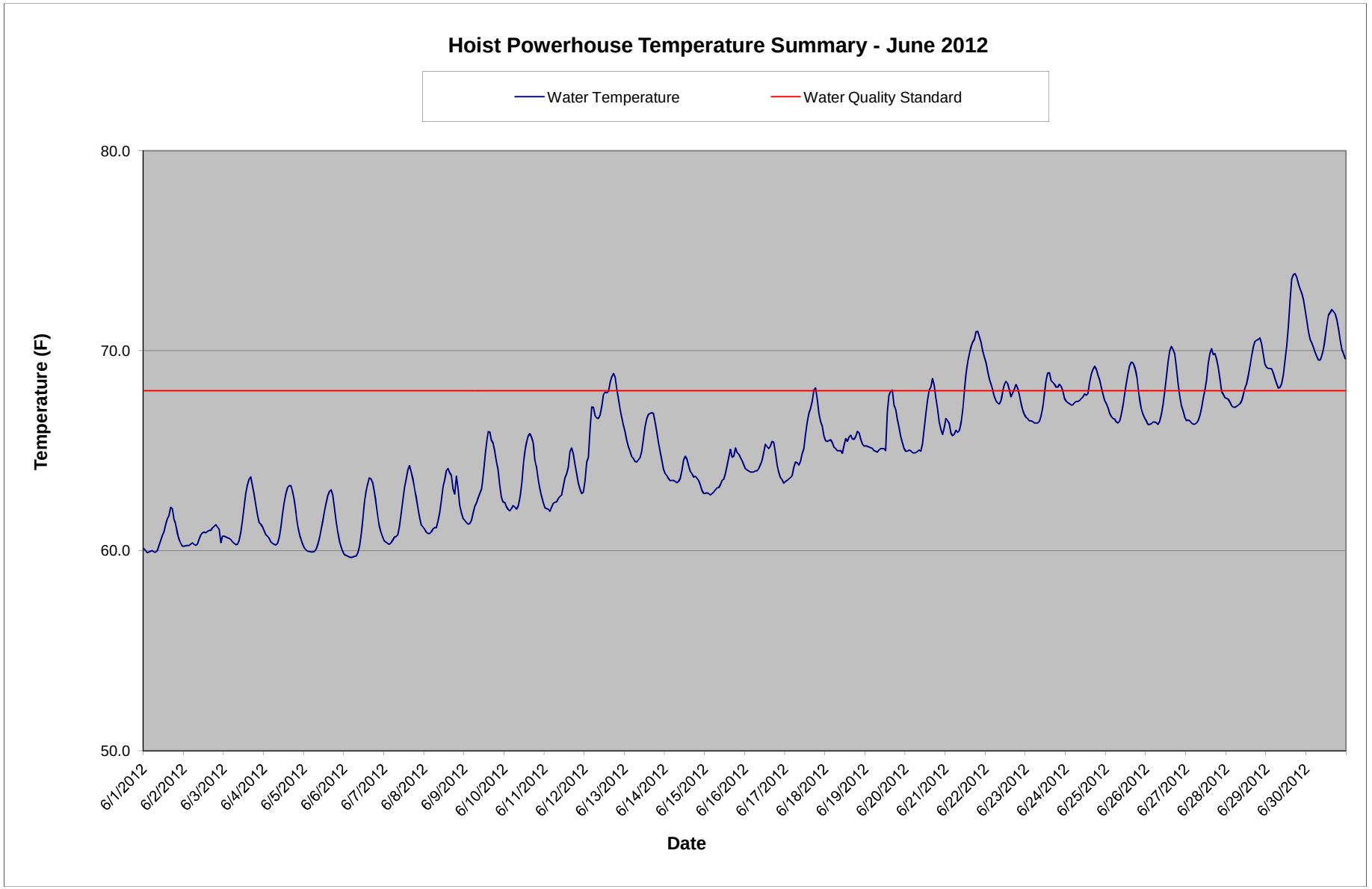

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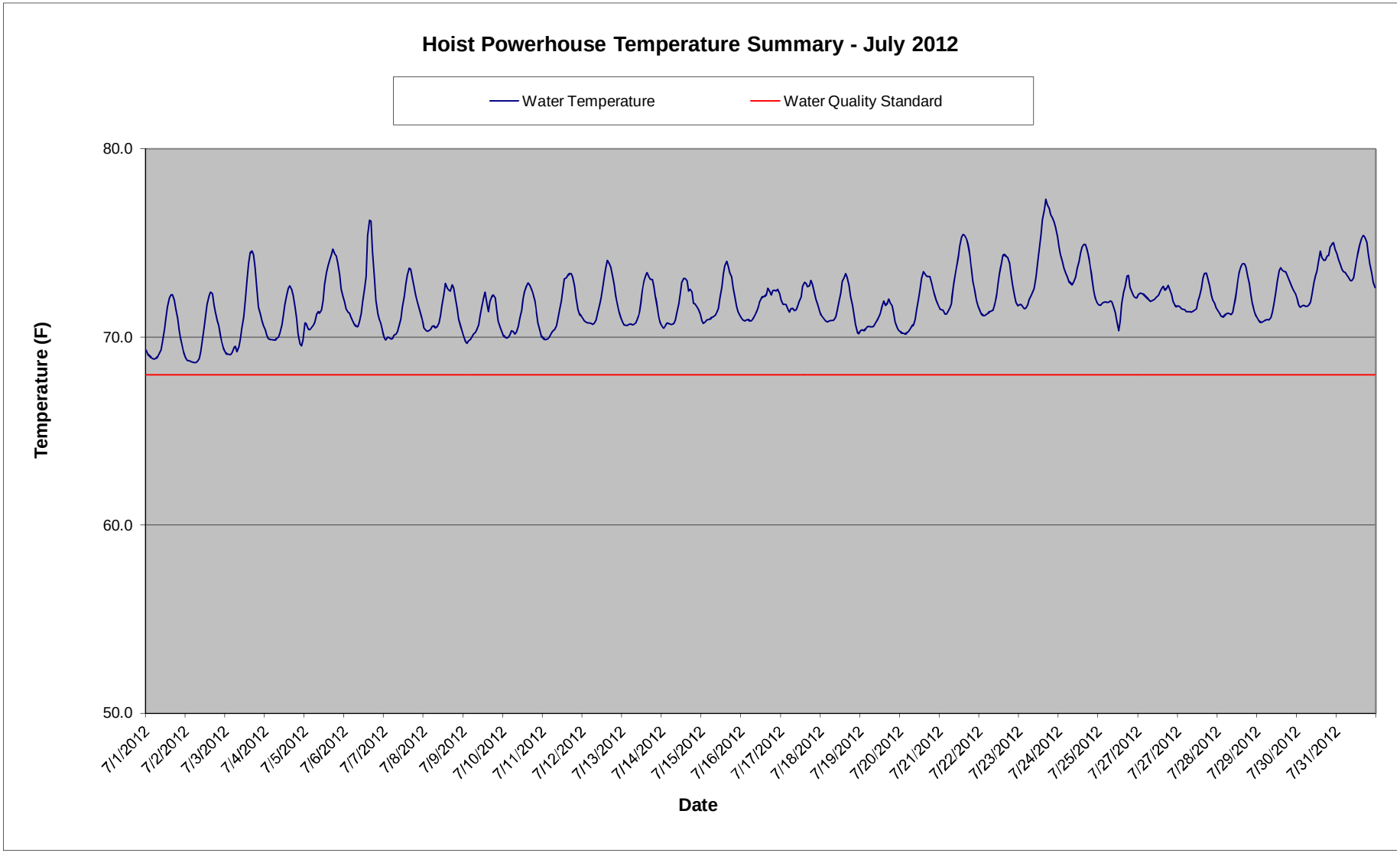

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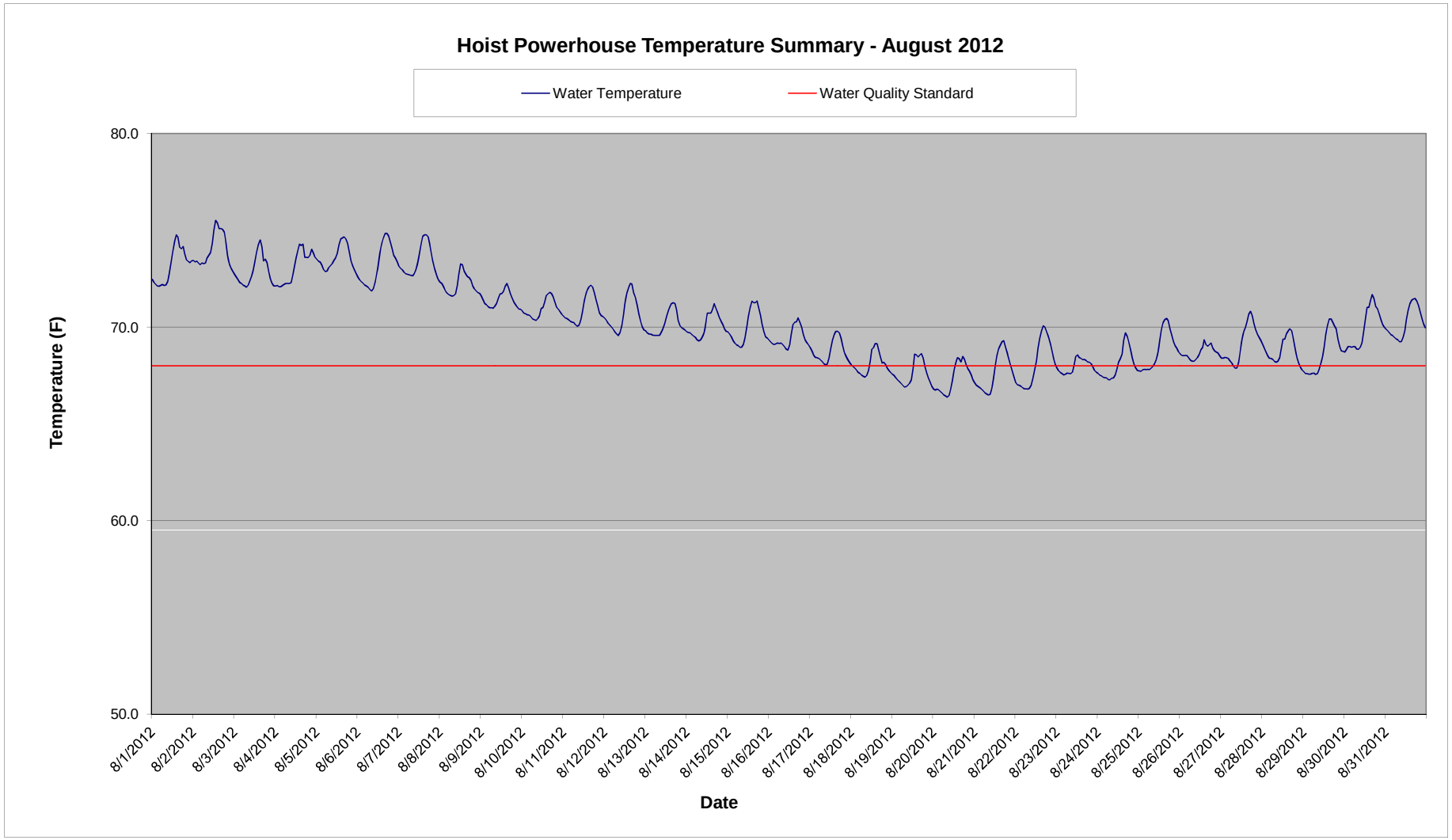

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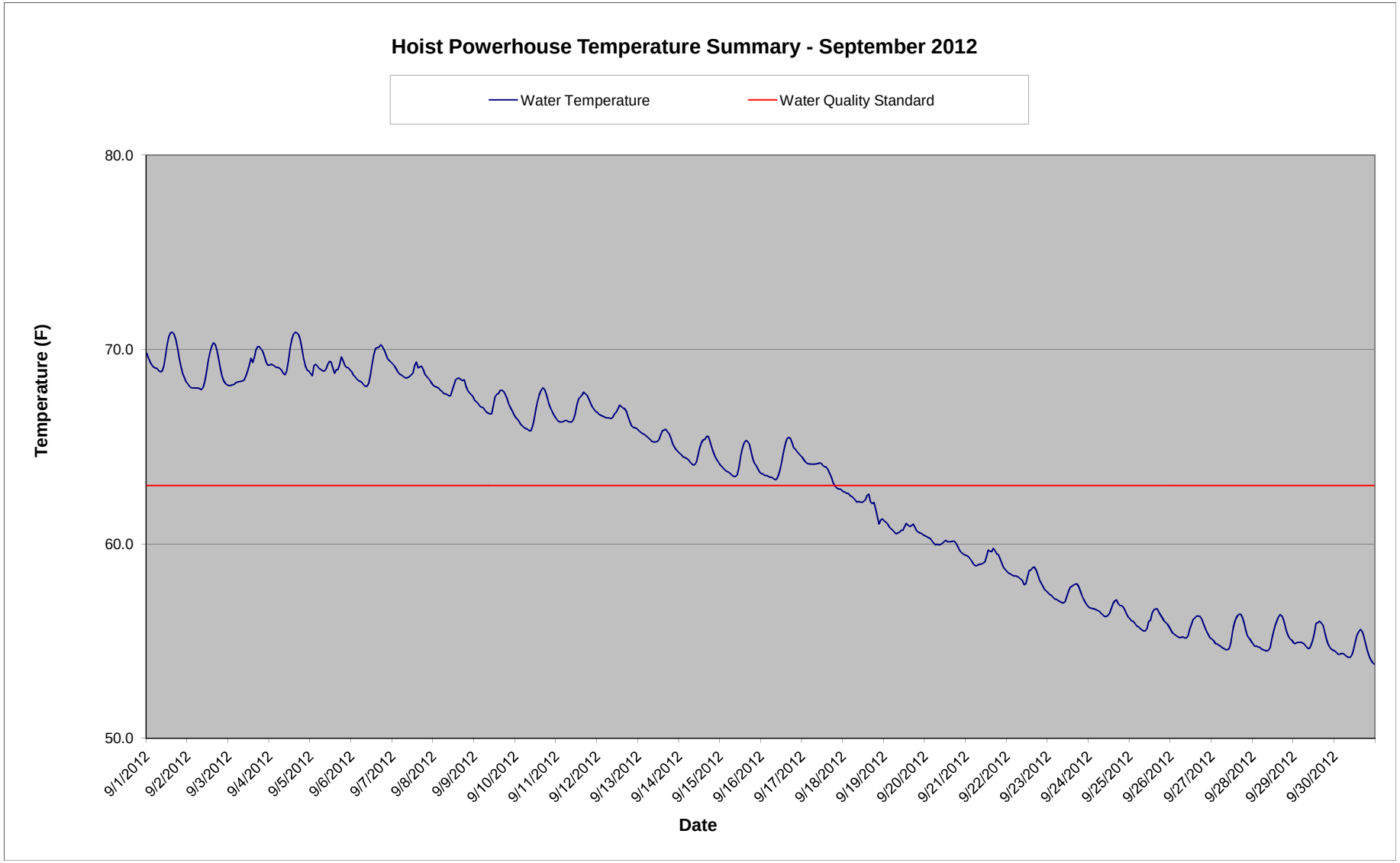

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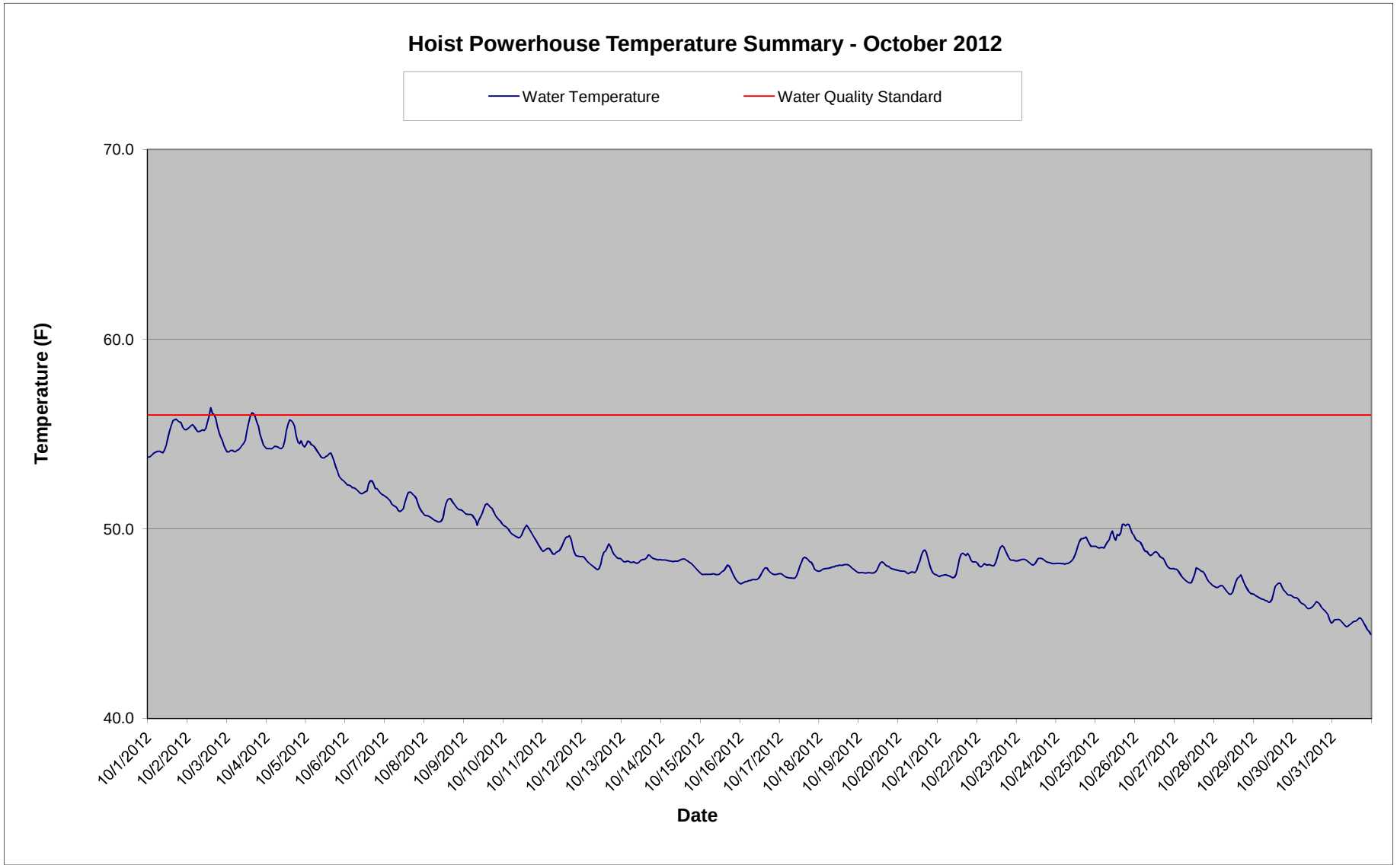

Dead River Below Hoist Powerhouse - May 2012 Temperature Monitoring Data

Time HHMMSS	5/1/2012	5/2/2012	5/3/2012	5/4/2012	5/5/2012	5/6/2012	5/7/2012	5/8/2012	5/9/2012	5/10/2012	5/11/2012	5/12/2012	5/13/2012	5/14/2012	5/15/2012	5/16/2012
0	46.6	46.6	49.3	50.7	49.3	47.9	48.5	49.8	50.6	51.6	50.8	54.2	52.3	54.5	53.5	57.5
10000	46.6	46.5	49.2	50.9	49.4	48.1	48.6	49.8	50.8	51.5	50.7	54.5	52.3	54.4	53.6	57.1
20000	46.7	46.5	49.1	51.1	49.3	48.4	48.7	49.8	51.0	51.2	50.7	54.6	52.4	54.5	53.7	56.7
30000	46.7	46.8	49.0	51.1	49.2	48.8	48.7	49.9	51.0	51.0	50.8	54.7	52.4	54.8	53.7	56.4
40000	46.8	47.1	49.1	50.9	49.1	49.0	48.8	49.9	51.1	50.9	50.8	54.5	52.4	54.9	53.9	56.2
50000	46.9	46.9	49.1	50.5	49.1	49.1	48.8	49.9	51.1	50.8	51.0	54.4	52.4	54.7	54.6	56.1
60000	46.8	47.2	49.0	50.2	48.9	49.2	48.8	50.0	51.0	50.8	51.0	54.2	52.5	54.5	54.8	55.9
70000	46.8	47.5	49.0	50.2	48.9	49.3	48.8	50.1	50.9	50.8	51.1	54.0	52.5	54.4	54.6	55.7
80000	46.8	47.6	49.0	50.2	48.9	49.4	48.9	50.2	50.9	50.9	51.3	54.1	52.7	54.3	54.3	55.6
90000	47.0	47.6	49.3	50.3	49.1	49.5	49.0	50.5	51.0	51.1	51.7	54.1	53.0	54.5	54.2	55.8
100000	47.4	47.7	49.2	50.4	49.5	49.6	49.1	50.6	51.3	51.7	52.1	54.4	53.6	55.1	54.6	56.2
110000	47.8	47.8	49.3	50.6	49.8	49.7	49.2	50.8	51.8	52.4	52.7	54.9	54.4	56.0	55.3	56.7
120000	48.4	48.3	49.9	50.6	50.3	49.8	49.6	50.9	52.5	53.1	53.4	55.2	55.2	57.1	56.0	57.1
130000	48.8	49.0	49.6	50.6	50.7	49.6	49.9	50.8	53.2	53.7	54.1	55.7	56.1	57.9	56.7	57.6
140000	49.1	49.1	49.7	50.8	50.8	49.5	49.9	50.6	53.4	54.3	54.0	56.0	56.9	58.1	58.0	58.2
150000	49.2	50.1	49.7	51.1	51.3	49.4	49.8	50.5	53.8	54.5	54.0	56.1	57.1	57.4	59.3	58.4
160000	49.4	50.1	50.2	51.4	51.3	49.4	49.9	50.5	53.9	54.3	54.0	55.9	57.3	56.5	59.7	58.4
170000	49.3	50.6	50.1	51.2	50.9	49.4	50.1	50.5	53.6	54.0	53.9	55.6	57.2	56.2	59.5	58.0
180000	48.7	50.7	50.6	50.8	50.3	49.3	50.2	50.5	53.2	53.7	53.3	54.8	56.8	56.0	59.1	57.3
190000	48.0	50.7	50.1	50.3	49.4	49.1	50.3	50.5	52.6	53.1	52.9	54.1	55.9	55.6	58.7	56.6
200000	47.6	50.4	49.7	49.8	48.9	48.8	50.2	50.5	52.3	52.3	52.6	53.5	54.9	55.0	58.4	56.0
210000	47.2	50.1	49.6	49.4	48.5	48.5	49.9	50.5	52.0	51.8	52.3	53.1	54.4	54.2	58.1	55.5
220000	47.0	49.7	49.9	49.3	48.3	48.5	49.8	50.4	51.8	51.4	52.8	52.7	54.6	53.8	57.8	55.2
230000	46.8	49.5	50.4	49.3	48.0	48.4	49.8	50.5	51.7	51.0	53.4	52.5	54.7	53.6	57.6	55.0
Daily Max	49.4	50.7	50.6	51.4	51.3	49.8	50.3	50.9	53.9	54.5	54.1	56.1	57.3	58.1	59.7	58.4
Daily Min	46.6	46.5	49.0	49.3	48.0	47.9	48.5	49.8	50.6	50.8	50.7	52.5	52.3	53.6	53.5	55.0
Average	47.6	48.5	49.5	50.5	49.6	49.1	49.4	50.3	51.9	52.2	52.3	54.5	54.3	55.3	56.2	56.6

Monthly average temp (F): 55.5

License Max. Average Temperature: 65ºF

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Dead River Below Hoist Powerhouse - May 2012 Temperature Monitoring Data

Time HHMMSS	5/17/2012	5/18/2012	5/19/2012	5/20/2012	5/21/2012	5/22/2012	5/23/2012	5/24/2012	5/25/2012	5/26/2012	5/27/2012	5/28/2012	5/29/2012	5/30/2012	5/31/2012
0	54.9	55.2	56.0	56.9	58.4	59.0	57.8	57.7	57.1	61.8	60.0	60.7	61.8	63.0	60.8
10000	54.9	55.1	56.0	56.8	59.2	58.6	57.7	57.7	57.4	61.5	60.1	60.6	61.6	62.8	60.7
20000	54.8	55.2	56.0	56.6	59.7	58.5	57.9	57.6	58.0	61.4	60.1	60.6	61.6	62.4	60.6
30000	54.9	55.3	56.0	56.4	60.0	58.5	58.0	57.7	58.4	61.1	60.1	60.7	61.7	62.3	60.5
40000	55.0	55.3	56.1	56.4	60.2	58.5	58.1	57.7	58.4	60.9	60.0	60.6	61.7	62.2	60.4
50000	55.1	55.3	56.0	56.5	60.1	58.4	58.0	57.6	58.7	60.8	59.9	60.5	61.5	62.1	60.4
60000	55.1	55.3	56.0	56.5	60.0	58.4	57.9	57.5	58.7	60.7	59.9	60.4	61.5	61.9	60.3
70000	55.1	55.5	56.1	56.6	59.7	58.3	57.8	57.5	59.2	60.6	59.8	60.4	61.6	61.7	60.3
80000	55.2	55.8	56.2	56.7	59.4	58.4	58.0	57.7	59.6	60.6	59.7	60.5	61.9	61.6	60.4
90000	55.4	55.7	56.6	57.0	59.5	58.7	58.2	58.0	59.7	60.9	59.7	60.8	62.0	61.6	60.6
100000	55.8	55.7	57.2	57.4	59.8	59.2	58.7	58.4	60.0	61.2	59.9	61.0	62.1	61.5	61.0
110000	56.3	55.9	58.0	57.9	60.2	59.7	59.4	59.0	60.5	61.6	60.1	61.3	62.6	61.6	61.6
120000	57.0	56.7	59.0	58.7	60.7	60.1	59.7	59.7	61.2	62.0	60.5	62.0	63.0	61.8	62.1
130000	57.5	57.5	59.6	59.5	61.3	60.5	60.0	60.3	61.8	62.4	60.9	62.8	63.3	62.0	62.6
140000	57.5	58.0	60.1	59.4	61.4	60.7	60.5	60.5	62.3	62.5	61.2	63.4	63.1	62.2	62.7
150000	57.5	58.6	60.3	59.2	61.4	60.6	60.2	60.5	62.8	62.5	61.7	63.2	62.9	62.4	62.6
160000	57.5	58.7	60.0	59.7	61.7	60.0	59.9	60.5	62.9	62.4	62.0	62.6	63.5	62.7	62.4
170000	57.1	58.2	59.8	59.3	61.3	59.3	59.9	60.1	63.1	61.9	62.0	62.7	63.7	62.7	62.5
180000	56.3	58.0	59.4	58.3	61.1	58.7	59.3	59.5	63.0	61.4	61.6	62.7	63.6	62.6	62.3
190000	56.0	57.7	58.6	57.3	60.9	58.5	58.9	58.7	62.7	60.9	61.3	63.1	63.6	62.3	61.8
200000	55.9	57.1	57.9	57.2	60.7	58.4	58.4	57.8	62.4	60.6	60.9	62.8	63.2	61.8	61.3
210000	55.7	56.4	57.2	58.5	60.4	58.3	58.0	57.0	62.2	60.5	60.7	62.6	63.1	61.4	60.8
220000	55.6	56.0	57.0	59.5	60.0	58.0	57.9	56.9	62.1	60.2	60.6	62.1	63.0	61.1	60.4
230000	55.4	56.0	56.9	58.6	59.5	57.8	57.7	57.0	62.0	60.1	60.6	61.9	63.0	61.0	60.2
Daily Max	57.5	58.7	60.3	59.7	61.7	60.7	60.5	60.5	63.1	62.5	62.0	63.4	63.7	63.0	62.7
Daily Min	54.8	55.1	56.0	56.4	58.4	57.8	57.7	56.9	57.1	60.1	59.7	60.4	61.5	61.0	60.2
Average	55.9	56.4	57.6	57.8	60.3	59.0	58.7	58.4	60.6	61.3	60.6	61.7	62.5	62.0	61.2

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Dead River Below Hoist Powerhouse - June 2012 Temperature Monitoring Data

Time HHMMSS	6/1/2012	6/2/2012	6/3/2012	6/4/2012	6/5/2012	6/6/2012	6/7/2012	6/8/2012	6/9/2012	6/10/2012	6/11/2012	6/12/2012	6/13/2012	6/14/2012	6/15/2012	6/16/2012
0	60.1	60.2	60.7	61.0	60.1	59.8	60.5	61.1	61.5	62.4	62.2	63.5	66.0	63.9	62.9	64.1
10000	60.0	60.2	60.7	60.8	60.0	59.8	60.4	60.9	61.4	62.2	62.1	64.4	65.5	63.8	62.9	64.0
20000	59.9	60.3	60.6	60.7	60.0	59.7	60.4	60.9	61.3	62.1	62.1	64.7	65.2	63.6	62.9	64.0
30000	59.9	60.3	60.6	60.6	60.0	59.7	60.3	60.9	61.4	62.0	62.0	66.1	65.0	63.5	62.8	63.9
40000	60.0	60.3	60.5	60.4	59.9	59.7	60.4	60.9	61.5	62.1	62.2	67.2	64.7	63.5	62.9	63.9
50000	60.0	60.4	60.4	60.4	59.9	59.7	60.5	61.1	61.9	62.3	62.4	67.2	64.6	63.5	62.9	63.9
60000	59.9	60.3	60.4	60.3	60.0	59.7	60.7	61.2	62.2	62.2	62.4	66.8	64.5	63.5	63.1	64.0
70000	59.9	60.3	60.3	60.3	60.1	59.7	60.7	61.1	62.4	62.1	62.4	66.6	64.4	63.4	63.1	64.0
80000	60.0	60.3	60.3	60.4	60.3	59.9	60.8	61.5	62.6	62.2	62.6	66.6	64.5	63.5	63.2	64.1
90000	60.2	60.6	60.5	60.7	60.6	60.2	61.2	61.9	62.9	62.6	62.7	66.8	64.7	63.6	63.3	64.3
100000	60.5	60.8	60.9	61.2	61.1	60.8	61.9	62.5	63.1	63.2	62.8	67.2	65.0	64.0	63.5	64.5
110000	60.7	60.9	61.5	61.8	61.4	61.6	62.5	63.2	63.8	64.1	63.2	67.8	65.6	64.5	63.6	64.9
120000	60.9	60.9	62.2	62.4	62.0	62.4	63.2	63.5	64.6	64.9	63.6	67.9	66.2	64.7	63.9	65.3
130000	61.3	60.9	62.9	62.9	62.4	63.0	63.6	64.0	65.4	65.4	63.8	67.9	66.6	64.6	64.3	65.2
140000	61.6	61.0	63.3	63.2	62.7	63.3	64.0	64.1	65.9	65.7	64.2	68.0	66.8	64.3	64.7	65.1
150000	61.8	61.0	63.6	63.2	63.0	63.6	64.3	63.9	65.9	65.9	65.0	68.4	66.9	64.0	65.1	65.2
160000	62.2	61.0	63.7	63.2	63.1	63.6	63.9	63.8	65.5	65.7	65.1	68.7	66.9	63.8	64.7	65.5
170000	62.1	61.1	63.3	62.9	62.8	63.4	63.6	63.1	65.4	65.4	64.8	68.9	66.9	63.7	64.7	65.4
180000	61.6	61.2	62.8	62.5	62.1	62.9	63.1	62.8	65.0	64.5	64.3	68.7	66.4	63.7	65.1	64.9
190000	61.3	61.3	62.3	61.9	61.5	62.4	62.7	63.7	64.5	64.2	63.8	68.1	65.9	63.6	64.9	64.3
200000	60.9	61.2	61.8	61.3	60.9	61.8	62.1	63.1	64.1	63.6	63.4	67.6	65.4	63.5	64.8	63.9
210000	60.6	61.1	61.4	60.9	60.5	61.2	61.7	62.3	63.3	63.1	63.1	67.1	65.0	63.3	64.7	63.7
220000	60.4	60.4	61.3	60.6	60.2	60.9	61.3	61.9	62.7	62.7	62.9	66.7	64.5	63.0	64.5	63.6
230000	60.2	60.7	61.2	60.3	60.0	60.7	61.2	61.6	62.4	62.4	62.9	66.3	64.1	62.9	64.3	63.4
Daily Max	62.2	61.3	63.7	63.2	63.1	63.6	64.3	64.1	65.9	65.9	65.1	68.9	66.9	64.7	65.1	65.5
Daily Min	59.9	60.2	60.3	60.3	59.9	59.7	60.3	60.9	61.3	62.0	62.0	63.5	64.1	62.9	62.8	63.4
Average	60.7	60.7	61.6	61.4	61.0	61.2	61.9	62.3	63.4	63.5	63.2	67.1	65.5	63.7	63.9	64.4

Monthly average temp (F): 65.1

License Max. Average Temperature: 68 F

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Dead River Below Hoist Powerhouse - June 2012 Temperature Monitoring Data

Time HHMMSS	6/17/2012	6/18/2012	6/19/2012	6/20/2012	6/21/2012	6/22/2012	6/23/2012	6/24/2012	6/25/2012	6/26/2012	6/27/2012	6/28/2012	6/29/2012	6/30/2012
0	63.5	65.5	65.2	65.0	66.6	69.4	66.7	67.5	67.4	66.5	66.5	67.6	69.2	71.5
10000	63.5	65.5	65.2	65.0	66.5	69.0	66.6	67.4	67.2	66.3	66.5	67.6	69.1	71.0
20000	63.6	65.5	65.2	65.0	66.4	68.6	66.5	67.4	66.9	66.3	66.5	67.4	69.1	70.6
30000	63.7	65.6	65.2	65.0	65.9	68.3	66.5	67.3	66.7	66.3	66.4	67.2	69.1	70.4
40000	63.8	65.4	65.1	64.9	65.8	68.0	66.5	67.3	66.6	66.4	66.3	67.2	68.9	70.2
50000	64.2	65.2	65.0	64.9	65.8	67.7	66.4	67.4	66.6	66.4	66.3	67.2	68.6	69.9
60000	64.4	65.1	65.0	64.9	66.0	67.5	66.4	67.5	66.4	66.4	66.4	67.2	68.4	69.7
70000	64.4	65.0	64.9	65.0	65.9	67.4	66.4	67.5	66.4	66.3	66.5	67.3	68.1	69.5
80000	64.3	65.0	65.0	65.0	66.0	67.3	66.5	67.5	66.5	66.5	66.8	67.4	68.2	69.5
90000	64.5	65.0	65.1	65.0	66.3	67.5	66.7	67.6	66.8	66.8	67.1	67.5	68.3	69.7
100000	64.9	64.9	65.1	65.3	67.0	67.9	67.2	67.7	67.2	67.3	67.6	67.8	68.8	70.1
110000	65.1	65.3	65.1	66.1	67.9	68.3	67.8	67.8	67.8	67.9	68.0	68.1	69.5	70.7
120000	65.8	65.6	65.0	66.8	68.8	68.5	68.5	67.8	68.3	68.7	68.5	68.3	70.2	71.3
130000	66.4	65.5	66.9	67.5	69.4	68.4	68.9	67.9	68.8	69.4	69.4	68.7	71.2	71.8
140000	66.9	65.7	67.8	68.0	69.9	68.1	68.9	68.4	69.2	70.0	69.9	69.2	72.5	71.9
150000	67.1	65.8	68.0	68.2	70.2	67.7	68.5	68.8	69.4	70.2	70.1	69.7	73.6	72.1
160000	67.5	65.6	68.0	68.6	70.4	67.9	68.4	69.1	69.4	70.1	69.8	70.2	73.8	72.0
170000	68.0	65.6	67.3	68.3	70.6	68.1	68.3	69.2	69.2	69.8	69.9	70.4	73.9	71.8
180000	68.1	65.7	67.1	67.6	71.0	68.3	68.2	69.1	68.9	69.2	69.6	70.5	73.7	71.5
190000	67.6	66.0	66.6	67.1	71.0	68.1	68.2	68.8	68.2	68.4	69.2	70.6	73.4	71.1
200000	66.9	65.9	66.2	66.4	70.7	67.8	68.3	68.5	67.6	67.7	68.6	70.6	73.1	70.5
210000	66.5	65.6	65.7	66.1	70.4	67.4	68.2	68.2	67.1	67.2	67.9	70.4	72.9	70.1
220000	66.2	65.3	65.4	65.8	70.0	67.0	68.0	67.8	66.8	67.0	67.8	69.8	72.6	69.8
230000	65.7	65.2	65.1	66.1	69.7	66.8	67.6	67.5	66.6	66.7	67.7	69.3	72.1	69.6
Daily Max	68.1	66.0	68.0	68.6	71.0	69.4	68.9	69.2	69.4	70.2	70.1	70.6	73.9	72.1
Daily Min	63.5	64.9	64.9	64.9	65.8	66.8	66.4	67.3	66.4	66.3	66.3	67.2	68.1	69.5
Average	65.5	65.4	65.8	66.2	68.3	68.0	67.5	68.0	67.6	67.7	67.9	68.6	70.7	70.7

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Dead River Below Hoist Powerhouse - July 2012 Temperature Monitoring Data

Time HHMMSS	7/1/12	7/2/12	7/3/12	7/4/12	7/5/12	7/6/12	7/7/12	7/8/12	7/9/12	7/10/12	7/11/12	7/12/12	7/13/12	7/14/12	7/15/12	7/16/12
0	69.3	68.8	69.2	70.4	70.7	71.9	70.0	70.5	70.1	70.1	69.9	71.0	70.8	70.6	70.9	71.0
10000	69.1	68.8	69.1	70.1	70.7	71.5	69.8	70.4	69.8	70.0	69.9	70.8	70.6	70.5	70.7	70.9
20000	69.0	68.7	69.1	69.9	70.4	71.3	70.0	70.3	69.7	69.9	69.9	70.8	70.6	70.6	70.8	70.8
30000	68.9	68.7	69.1	69.9	70.4	71.3	70.0	70.3	69.8	70.0	69.9	70.8	70.6	70.7	70.9	70.9
40000	68.8	68.7	69.2	69.9	70.5	71.1	69.9	70.4	69.9	70.1	70.0	70.8	70.7	70.7	70.9	70.9
50000	68.8	68.6	69.4	69.8	70.6	70.8	69.9	70.6	70.0	70.3	70.2	70.7	70.7	70.7	71.0	70.9
60000	68.9	68.6	69.5	69.8	70.8	70.7	70.1	70.6	70.2	70.3	70.3	70.7	70.6	70.7	71.0	70.9
70000	69.0	68.7	69.2	69.9	71.2	70.6	70.1	70.5	70.2	70.1	70.4	70.7	70.7	70.7	71.1	71.0
80000	69.1	68.8	69.5	70.0	71.3	70.5	70.3	70.5	70.4	70.3	70.6	70.9	70.7	70.9	71.2	71.2
90000	69.3	69.2	69.9	70.2	71.3	70.8	70.6	70.7	70.6	70.6	71.0	71.3	70.9	71.3	71.3	71.3
100000	69.8	69.8	70.5	70.6	71.5	71.2	71.0	71.2	71.1	71.0	71.4	71.6	71.2	71.8	71.5	71.5
110000	70.4	70.5	71.1	71.2	71.9	71.9	71.6	71.7	71.6	71.4	71.9	72.1	71.8	72.3	72.1	71.9
120000	71.0	71.2	71.9	71.7	72.8	72.6	72.2	72.3	72.1	72.1	72.5	72.5	72.4	72.9	72.6	72.1
130000	71.6	71.7	73.1	72.2	73.4	73.2	72.8	72.9	72.4	72.4	73.1	73.2	73.0	73.1	73.3	72.1
140000	72.1	72.2	74.0	72.6	73.8	75.4	73.3	72.6	71.8	72.7	73.1	73.7	73.3	73.1	73.8	72.2
150000	72.2	72.4	74.5	72.7	74.1	76.2	73.7	72.5	71.3	72.9	73.3	74.1	73.4	73.0	74.0	72.2
160000	72.3	72.3	74.6	72.5	74.4	76.2	73.6	72.4	71.9	72.8	73.4	73.9	73.2	72.4	73.8	72.6
170000	72.0	71.7	74.4	72.2	74.7	74.6	73.1	72.8	72.1	72.6	73.4	73.7	73.1	72.6	73.4	72.4
180000	71.5	71.3	73.7	71.6	74.4	73.1	72.7	72.6	72.2	72.3	73.2	73.3	73.1	72.4	73.2	72.2
190000	71.0	70.8	72.5	71.0	74.3	71.9	72.3	72.1	72.1	71.9	72.7	72.8	72.7	71.8	72.6	72.5
200000	70.4	70.6	71.6	70.2	73.9	71.2	71.8	71.5	71.4	71.3	72.1	72.2	72.1	71.8	72.1	72.5
210000	69.9	70.1	71.2	69.6	73.3	70.9	71.6	71.0	70.8	70.7	71.4	71.7	71.6	71.6	71.6	72.4
220000	69.4	69.7	70.9	69.5	72.6	70.7	71.3	70.6	70.5	70.4	71.2	71.3	71.1	71.5	71.3	72.5
230000	69.1	69.3	70.6	69.8	72.1	70.3	70.9	70.3	70.3	70.1	71.2	71.1	70.7	71.2	71.2	72.3
Daily Max	72.3	72.4	74.6	72.7	74.7	76.2	73.7	72.9	72.4	72.9	73.4	74.1	73.4	73.1	74.0	72.6
Daily Min	68.8	68.6	69.1	69.5	70.4	70.3	69.8	70.3	69.7	69.9	69.9	70.7	70.6	70.5	70.7	70.8
Average	70.1	70.1	71.1	70.7	72.3	72.1	71.3	71.3	70.9	71.1	71.5	71.9	71.6	71.6	71.9	71.7

Monthly average temp (F): 71.9

License Max. Average Temperature: 68 F

Powerhouse trip - flow released through low level outlet.

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Dead River Below Hoist Powerhouse - July 2012 Temperature Monitoring Data

Time HHMMSS	7/17/12	7/18/12	7/19/12	7/20/12	7/21/12	7/22/12	7/23/12	7/24/12	7/25/12	7/26/12	7/27/12	7/28/12	7/29/12	7/30/12	7/31/12
0	72.0	71.2	70.3	70.3	71.5	71.4	71.7	74.8	71.7	72.2	71.7	71.4	71.0	72.0	74.4
10000	71.7	71.1	70.4	70.2	71.5	71.2	71.7	74.4	71.7	72.3	71.6	71.3	70.9	71.7	74.1
20000	71.7	71.0	70.3	70.2	71.4	71.2	71.6	74.0	71.8	72.3	71.5	71.1	70.8	71.6	73.8
30000	71.7	70.9	70.4	70.2	71.2	71.1	71.5	73.7	71.9	72.3	71.5	71.1	70.8	71.7	73.6
40000	71.5	70.8	70.5	70.2	71.2	71.2	71.5	73.4	71.9	72.2	71.4	71.1	70.8	71.7	73.5
50000	71.3	70.9	70.6	70.3	71.4	71.3	71.7	73.2	71.8	72.1	71.3	71.2	70.9	71.6	73.4
60000	71.5	70.9	70.5	70.4	71.6	71.3	72.0	73.0	71.9	72.0	71.3	71.3	70.9	71.6	73.3
70000	71.5	70.9	70.5	70.6	71.8	71.4	72.2	72.9	71.9	71.9	71.3	71.2	70.9	71.7	73.2
80000	71.4	70.9	70.6	70.7	72.7	71.4	72.4	72.8	71.9	71.9	71.3	71.2	71.0	71.9	73.0
90000	71.5	71.1	70.7	70.9	73.2	71.7	72.6	72.9	71.6	72.0	71.4	71.3	71.3	72.3	73.0
100000	71.7	71.5	70.9	71.4	73.7	72.2	73.2	73.2	71.3	72.0	71.4	71.7	71.7	72.9	73.1
110000	71.9	72.0	71.1	72.1	74.2	72.8	73.9	73.6	70.8	72.1	71.5	72.3	72.4	73.3	73.6
120000	72.1	72.3	71.3	72.6	74.8	73.3	74.5	74.0	70.3	72.2	71.9	72.9	73.0	73.5	74.1
130000	72.7	73.0	71.6	73.1	75.3	73.9	75.4	74.5	70.8	72.4	72.2	73.4	73.5	74.1	74.6
140000	72.9	73.2	71.9	73.5	75.5	74.3	76.2	74.8	71.8	72.6	72.6	73.8	73.7	74.6	75.0
150000	72.9	73.4	71.7	73.3	75.4	74.4	76.8	74.9	72.4	72.7	73.1	73.9	73.6	74.2	75.3
160000	72.7	73.2	71.8	73.2	75.2	74.3	77.3	74.9	72.7	72.5	73.4	73.9	73.5	74.1	75.4
170000	72.7	72.7	72.0	73.2	74.9	74.2	77.0	74.7	73.2	72.6	73.4	73.7	73.5	74.1	75.3
180000	73.0	72.1	71.8	73.2	74.3	73.9	76.8	74.2	73.3	72.8	73.1	73.3	73.3	74.3	75.0
190000	72.8	71.7	71.7	72.8	73.6	73.3	76.5	73.7	72.6	72.6	72.7	72.8	73.0	74.3	74.4
200000	72.4	71.2	71.3	72.5	72.9	72.8	76.4	73.0	72.4	72.2	72.3	72.2	72.9	74.8	73.9
210000	72.0	70.7	70.8	72.1	72.4	72.2	76.1	72.5	72.2	71.9	72.0	71.8	72.6	74.9	73.4
220000	71.7	70.3	70.5	71.9	72.0	71.8	75.8	72.1	72.1	71.7	71.8	71.4	72.4	75.0	72.9
230000	71.5	70.2	70.4	71.7	71.7	71.7	75.3	71.8	72.1	71.6	71.6	71.2	72.3	74.7	72.6
Daily Max	73.0	73.4	72.0	73.5	75.5	74.4	77.3	74.9	73.3	72.8	73.4	73.9	73.7	75.0	75.4
Daily Min	71.3	70.2	70.3	70.2	71.2	71.1	71.5	71.8	70.3	71.6	71.3	71.1	70.8	71.6	72.6
Average	72.0	71.5	71.0	71.7	73.1	72.4	74.2	73.6	71.9	72.2	72.0	72.1	72.1	73.2	73.9

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Dead River Below Hoist Powerhouse - August 2012 Temperature Monitoring Data

Time HHMMSS	8/1/2012	8/2/2012	8/3/2012	8/4/2012	8/5/2012	8/6/2012	8/7/2012	8/8/2012	8/9/2012	8/10/2012	8/11/2012	8/12/2012	8/13/2012	8/14/2012	8/15/2012	8/16/2012
0	72.5	73.4	72.7	72.1	73.5	72.6	73.1	72.3	71.6	70.8	70.6	70.5	69.8	69.7	69.7	69.3
10000	72.3	73.4	72.6	72.1	73.4	72.4	73.0	72.2	71.4	70.7	70.5	70.4	69.7	69.7	69.6	69.2
20000	72.2	73.4	72.5	72.1	73.3	72.3	73.0	72.1	71.2	70.7	70.4	70.2	69.6	69.7	69.5	69.1
30000	72.1	73.3	72.3	72.1	73.2	72.3	72.8	71.9	71.2	70.6	70.4	70.1	69.6	69.6	69.3	69.1
40000	72.1	73.2	72.2	72.1	73.0	72.2	72.8	71.8	71.1	70.6	70.3	70.0	69.6	69.5	69.2	69.1
50000	72.2	73.3	72.2	72.2	72.9	72.1	72.7	71.7	71.0	70.5	70.3	69.9	69.6	69.5	69.1	69.2
60000	72.2	73.3	72.1	72.2	72.9	72.1	72.7	71.6	71.0	70.4	70.2	69.7	69.6	69.4	69.0	69.2
70000	72.1	73.3	72.1	72.2	73.1	71.9	72.7	71.6	71.0	70.4	70.1	69.6	69.6	69.3	69.0	69.2
80000	72.2	73.6	72.2	72.2	73.2	71.9	72.6	71.6	71.1	70.3	70.0	69.5	69.6	69.3	69.0	69.1
90000	72.4	73.7	72.4	72.3	73.3	72.0	72.8	71.7	71.2	70.4	70.1	69.7	69.7	69.5	69.1	69.0
100000	72.8	73.9	72.6	72.6	73.4	72.3	73.0	72.1	71.5	70.6	70.3	70.1	69.9	69.7	69.5	68.9
110000	73.3	74.3	73.0	73.1	73.6	72.8	73.4	72.7	71.7	71.0	70.8	70.6	70.1	70.1	70.0	68.8
120000	73.9	75.0	73.5	73.6	73.8	73.3	73.8	73.3	71.7	71.0	71.2	71.3	70.5	70.7	70.6	69.1
130000	74.4	75.5	73.9	74.0	74.2	73.8	74.3	73.2	71.8	71.3	71.7	71.7	70.8	70.7	71.0	69.6
140000	74.8	75.4	74.3	74.3	74.6	74.4	74.7	72.9	72.1	71.6	71.9	72.0	71.0	70.7	71.3	70.1
150000	74.7	75.1	74.5	74.2	74.6	74.6	74.8	72.8	72.2	71.7	72.1	72.2	71.2	70.9	71.3	70.3
160000	74.1	75.1	74.1	74.3	74.7	74.8	74.8	72.6	72.0	71.8	72.2	72.2	71.3	71.2	71.3	70.3
170000	74.0	75.1	73.4	73.6	74.6	74.8	74.7	72.6	71.7	71.7	72.1	71.8	71.2	71.0	71.3	70.5
180000	74.2	74.9	73.5	73.6	74.3	74.7	74.3	72.4	71.5	71.6	71.8	71.5	70.9	70.7	71.0	70.3
190000	73.8	74.3	73.3	73.6	73.9	74.4	73.7	72.1	71.3	71.3	71.4	71.1	70.3	70.5	70.6	70.0
200000	73.5	73.7	72.8	73.7	73.4	74.0	73.3	72.0	71.2	71.0	71.1	70.6	70.1	70.3	70.1	69.6
210000	73.4	73.3	72.5	74.0	73.1	73.7	73.0	71.9	71.0	70.9	70.7	70.3	70.0	70.1	69.8	69.3
220000	73.3	73.0	72.2	73.8	73.0	73.6	72.6	71.8	70.9	70.8	70.6	70.0	69.9	69.9	69.5	69.2
230000	73.4	72.9	72.1	73.6	72.8	73.4	72.4	71.7	70.9	70.7	70.5	69.8	69.8	69.8	69.4	69.1
Daily Max	74.8	75.5	74.5	74.3	74.7	74.8	74.8	73.3	72.2	71.8	72.2	72.2	71.3	71.2	71.3	70.5
Daily Min	72.1	72.9	72.1	72.1	72.8	71.9	72.4	71.6	70.9	70.3	70.0	69.5	69.6	69.3	69.0	68.8
Average	73.2	74.0	72.9	73.1	73.6	73.2	73.4	72.2	71.4	70.9	70.9	70.6	70.1	70.1	70.0	69.4

Monthly average temp (F): 70.2
License Max. Average Temperature: 68 F

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Dead River Below Hoist Powerhouse - August 2012 Temperature Monitoring Data

Time HHMMSS	8/17/2012	8/18/2012	8/19/2012	8/20/2012	8/21/2012	8/22/2012	8/23/2012	8/24/2012	8/25/2012	8/26/2012	8/27/2012	8/28/2012	8/29/2012	8/30/2012	8/31/2012
0	68.9	68.1	67.6	66.8	67.1	67.1	67.9	67.6	67.7	68.6	68.4	69.1	67.7	68.7	69.9
10000	68.8	68.0	67.5	66.7	67.0	67.0	67.7	67.5	67.7	68.5	68.4	68.9	67.6	68.8	69.8
20000	68.6	67.9	67.4	66.8	66.9	67.0	67.7	67.5	67.8	68.5	68.4	68.7	67.6	69.0	69.7
30000	68.4	67.8	67.3	66.8	66.9	66.9	67.6	67.4	67.8	68.5	68.4	68.5	67.6	69.0	69.6
40000	68.4	67.7	67.2	66.7	66.8	66.9	67.5	67.4	67.8	68.5	68.4	68.4	67.6	69.0	69.5
50000	68.4	67.6	67.1	66.6	66.7	66.8	67.6	67.4	67.8	68.4	68.3	68.4	67.6	69.0	69.5
60000	68.3	67.5	67.0	66.5	66.6	66.8	67.6	67.3	67.8	68.3	68.1	68.3	67.6	69.0	69.4
70000	68.2	67.5	66.9	66.4	66.5	66.8	67.6	67.3	67.9	68.2	68.0	68.2	67.6	68.9	69.3
80000	68.1	67.4	66.9	66.4	66.5	66.8	67.6	67.4	68.0	68.2	67.9	68.2	67.6	68.8	69.2
90000	68.1	67.5	67.0	66.5	66.5	67.0	67.7	67.4	68.1	68.3	67.9	68.2	67.8	69.0	69.2
100000	68.1	67.7	67.1	66.8	66.8	67.4	68.0	67.5	68.3	68.4	68.2	68.4	68.1	69.2	69.5
110000	68.4	68.3	67.3	67.2	67.3	67.8	68.5	67.8	68.7	68.6	68.7	68.9	68.5	69.7	69.8
120000	68.9	68.8	67.9	67.8	68.0	68.3	68.6	68.2	69.3	68.8	69.3	69.4	69.0	70.4	70.4
130000	69.3	68.9	68.6	68.2	68.5	68.9	68.4	68.4	69.8	69.0	69.7	69.4	69.6	71.0	70.9
140000	69.6	69.2	68.6	68.4	68.9	69.4	68.4	68.6	70.2	69.4	70.0	69.7	70.1	71.0	71.2
150000	69.8	69.1	68.5	68.4	69.1	69.8	68.3	69.3	70.4	69.1	70.3	69.8	70.4	71.3	71.4
160000	69.8	68.8	68.6	68.2	69.2	70.1	68.3	69.7	70.4	69.0	70.7	69.9	70.4	71.7	71.4
170000	69.7	68.5	68.6	68.5	69.3	70.0	68.3	69.5	70.3	69.1	70.8	69.8	70.2	71.5	71.5
180000	69.4	68.1	68.4	68.3	69.0	69.7	68.2	69.2	69.9	69.2	70.6	69.4	70.1	71.1	71.3
190000	69.0	68.2	67.9	68.1	68.7	69.5	68.2	68.8	69.6	68.9	70.2	68.9	69.9	71.0	71.1
200000	68.7	68.1	67.6	67.9	68.3	69.2	68.1	68.4	69.2	68.8	69.9	68.4	69.4	70.7	70.8
210000	68.5	67.9	67.4	67.7	68.0	68.9	67.9	68.1	69.0	68.7	69.6	68.2	69.0	70.4	70.5
220000	68.3	67.7	67.2	67.5	67.7	68.4	67.8	67.9	68.9	68.7	69.5	67.9	68.8	70.1	70.2
230000	68.2	67.6	66.9	67.3	67.4	68.1	67.7	67.7	68.7	68.5	69.3	67.8	68.7	70.0	70.0
Daily Max	69.8	69.2	68.6	68.5	69.3	70.1	68.6	69.7	70.4	69.4	70.8	69.9	70.4	71.7	71.5
Daily Min	68.1	67.4	66.9	66.4	66.5	66.8	67.5	67.3	67.7	68.2	67.9	67.8	67.6	68.7	69.2
Average	68.7	68.1	67.6	67.3	67.7	68.1	68.0	68.0	68.8	68.7	69.1	68.8	68.7	69.9	70.2

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Dead River Below Hoist Powerhouse - September 2012 Temperature Monitoring Data

Time HHMMSS	9/1/2012	9/2/2012	9/3/2012	9/4/2012	9/5/2012	9/6/2012	9/7/2012	9/8/2012	9/9/2012	9/10/2012	9/11/2012	9/12/2012	9/13/2012	9/14/2012	9/15/2012	9/16/2012
0	69.8	68.2	68.1	69.2	68.8	68.9	69.3	68.1	67.4	66.5	66.4	66.8	65.8	64.7	64.1	63.6
10000	69.6	68.1	68.1	69.2	68.6	68.7	69.2	68.1	67.3	66.4	66.3	66.7	65.8	64.6	64.0	63.6
20000	69.4	68.0	68.2	69.2	69.2	68.6	69.0	68.1	67.2	66.3	66.3	66.6	65.7	64.5	63.9	63.5
30000	69.2	68.0	68.2	69.1	69.2	68.5	68.8	68.0	67.1	66.1	66.3	66.6	65.7	64.5	63.8	63.5
40000	69.1	68.0	68.3	69.1	69.1	68.4	68.7	67.9	67.0	66.1	66.3	66.5	65.6	64.4	63.7	63.5
50000	69.0	68.0	68.3	69.1	69.0	68.4	68.7	67.8	67.0	66.0	66.3	66.5	65.5	64.3	63.7	63.4
60000	69.0	68.0	68.3	69.0	69.0	68.3	68.6	67.7	66.9	65.9	66.3	66.5	65.4	64.2	63.6	63.4
70000	68.9	68.0	68.4	68.9	68.9	68.2	68.6	67.7	66.8	65.9	66.3	66.5	65.4	64.1	63.5	63.4
80000	68.8	67.9	68.4	68.8	68.9	68.1	68.5	67.7	66.7	65.8	66.3	66.5	65.3	64.1	63.5	63.3
90000	68.9	68.1	68.4	68.7	69.0	68.1	68.6	67.6	66.7	65.8	66.3	66.5	65.2	64.1	63.5	63.3
100000	69.1	68.4	68.6	68.9	69.2	68.3	68.6	67.6	66.7	66.1	66.4	66.7	65.2	64.2	63.6	63.5
110000	69.7	68.9	68.9	69.4	69.4	68.7	68.7	67.9	67.1	66.5	66.7	66.8	65.3	64.6	64.0	63.8
120000	70.3	69.4	69.2	70.1	69.4	69.3	68.8	68.2	67.6	67.0	67.1	66.9	65.4	65.0	64.5	64.2
130000	70.7	69.8	69.5	70.5	69.0	69.7	69.2	68.5	67.7	67.4	67.5	67.1	65.6	65.2	64.9	64.8
140000	70.9	70.2	69.3	70.8	68.8	70.1	69.4	68.5	67.7	67.7	67.6	67.1	65.8	65.4	65.2	65.1
150000	70.9	70.3	69.6	70.9	69.0	70.1	69.0	68.5	67.9	67.9	67.7	67.0	65.9	65.4	65.3	65.4
160000	70.8	70.3	70.0	70.8	69.0	70.1	69.1	68.5	67.9	68.0	67.8	67.0	65.9	65.5	65.3	65.5
170000	70.5	70.0	70.1	70.8	69.2	70.3	69.1	68.4	67.8	67.9	67.7	66.8	65.8	65.5	65.1	65.4
180000	70.1	69.5	70.1	70.5	69.6	70.1	69.0	68.4	67.7	67.7	67.6	66.5	65.7	65.3	64.8	65.2
190000	69.6	69.1	70.0	70.0	69.4	70.0	68.7	68.1	67.5	67.4	67.5	66.3	65.4	65.0	64.4	64.9
200000	69.1	68.6	69.9	69.5	69.2	69.8	68.6	67.9	67.2	67.1	67.2	66.1	65.2	64.7	64.1	64.9
210000	68.8	68.4	69.6	69.1	69.1	69.5	68.5	67.8	67.0	66.9	67.0	66.0	65.0	64.5	64.0	64.7
220000	68.6	68.3	69.4	68.9	69.1	69.4	68.4	67.7	66.8	66.7	66.9	66.0	64.9	64.3	63.9	64.6
230000	68.3	68.2	69.2	68.9	69.0	69.4	68.3	67.6	66.7	66.6	66.8	65.9	64.8	64.2	63.7	64.5
Daily Max	70.9	70.3	70.1	70.9	69.6	70.3	69.4	68.5	67.9	68.0	67.8	67.1	65.9	65.5	65.3	65.5
Daily Min	68.3	67.9	68.1	68.7	68.6	68.1	68.3	67.6	66.7	65.8	66.3	65.9	64.8	64.1	63.5	63.3
Average	69.5	68.7	69.0	69.6	69.1	69.1	68.8	68.0	67.2	66.7	66.9	66.6	65.5	64.7	64.2	64.2

Monthly average temp (F): 62.9
License Max. Average Temperature: 63 F

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Dead River Below Hoist Powerhouse - September 2012 Temperature Monitoring Data

Time HHMMSS	9/17/2012	9/18/2012	9/19/2012	9/20/2012	9/21/2012	9/22/2012	9/23/2012	9/24/2012	9/25/2012	9/26/2012	9/27/2012	9/28/2012	9/29/2012	9/30/2012
0	64.5	62.7	61.2	60.4	59.4	58.6	57.5	56.7	56.2	55.6	55.1	54.9	54.9	54.5
10000	64.3	62.7	61.1	60.4	59.4	58.5	57.4	56.7	56.0	55.4	55.0	54.7	54.9	54.4
20000	64.2	62.6	61.0	60.3	59.3	58.5	57.3	56.7	56.0	55.3	54.9	54.8	54.9	54.3
30000	64.1	62.6	60.9	60.3	59.1	58.4	57.3	56.7	55.9	55.3	54.9	54.7	54.9	54.3
40000	64.1	62.5	60.8	60.2	59.0	58.4	57.2	56.6	55.8	55.2	54.8	54.7	55.0	54.4
50000	64.1	62.4	60.7	60.0	58.9	58.4	57.1	56.6	55.7	55.2	54.8	54.6	54.9	54.4
60000	64.1	62.4	60.6	60.0	58.9	58.3	57.1	56.5	55.7	55.2	54.7	54.6	54.9	54.3
70000	64.1	62.3	60.5	60.0	58.9	58.3	57.0	56.4	55.6	55.2	54.6	54.5	54.8	54.2
80000	64.1	62.2	60.6	60.0	59.0	58.2	57.0	56.4	55.5	55.2	54.6	54.5	54.6	54.2
90000	64.1	62.2	60.6	60.0	59.0	58.1	57.0	56.3	55.5	55.2	54.6	54.5	54.6	54.2
100000	64.2	62.2	60.7	60.0	59.0	57.9	57.0	56.3	55.7	55.3	54.6	54.7	54.8	54.3
110000	64.1	62.1	60.7	60.1	59.1	58.0	57.3	56.3	56.0	55.6	54.9	55.1	55.0	54.6
120000	64.0	62.2	60.9	60.2	59.3	58.3	57.6	56.4	56.1	55.9	55.5	55.4	55.4	55.0
130000	64.0	62.3	61.1	60.1	59.7	58.6	57.8	56.7	56.4	56.1	55.9	55.8	55.9	55.3
140000	64.0	62.5	61.0	60.1	59.6	58.7	57.8	56.9	56.6	56.2	56.2	56.0	55.9	55.5
150000	63.8	62.6	60.9	60.1	59.6	58.8	57.9	57.1	56.7	56.3	56.3	56.2	56.0	55.6
160000	63.6	62.2	60.9	60.1	59.8	58.8	57.9	57.1	56.7	56.3	56.4	56.4	55.9	55.5
170000	63.4	62.1	61.0	60.1	59.6	58.7	57.9	56.9	56.5	56.3	56.4	56.3	55.8	55.2
180000	63.2	62.1	60.9	60.0	59.5	58.4	57.8	56.8	56.3	56.1	56.2	56.1	55.5	54.9
190000	63.0	61.8	60.7	59.9	59.4	58.1	57.6	56.8	56.2	55.9	55.9	55.7	55.1	54.5
200000	62.9	61.4	60.6	59.7	59.2	58.0	57.3	56.8	56.0	55.7	55.5	55.4	54.9	54.2
210000	62.8	61.0	60.6	59.6	59.0	57.8	57.1	56.6	56.0	55.5	55.2	55.2	54.7	54.1
220000	62.8	61.2	60.5	59.5	58.8	57.7	57.0	56.4	55.9	55.3	55.1	55.1	54.6	53.9
230000	62.8	61.3	60.5	59.4	58.7	57.6	56.8	56.2	55.7	55.2	55.0	55.0	54.5	53.8
Daily Max	64.5	62.7	61.2	60.4	59.8	58.8	57.9	57.1	56.7	56.3	56.4	56.4	56.0	55.6
Daily Min	62.8	61.0	60.5	59.4	58.7	57.6	56.8	56.2	55.5	55.2	54.6	54.5	54.5	53.8
Average	63.8	62.1	60.8	60.0	59.2	58.3	57.4	56.6	56.0	55.6	55.3	55.2	55.1	54.6

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Dead River Below Hoist Powerhouse - October 2012 Temperature Monitoring Data

Time HHMMSS	10/1/2012	10/2/2012	10/3/2012	10/4/2012	10/5/2012	10/6/2012	10/7/2012	10/8/2012	10/9/2012	10/10/2012	10/11/2012	10/12/2012	10/13/2012	10/14/2012	10/15/2012	10/16/2012
0	53.8	55.3	54.1	54.2	54.4	52.4	51.7	50.7	50.9	50.2	48.8	48.5	48.4	48.4	47.6	47.1
10000	53.8	55.3	54.1	54.2	54.6	52.3	51.7	50.7	50.8	50.1	48.9	48.5	48.3	48.4	47.6	47.1
20000	53.9	55.4	54.1	54.2	54.6	52.3	51.6	50.7	50.8	50.1	48.9	48.4	48.3	48.4	47.6	47.2
30000	54.0	55.5	54.1	54.2	54.4	52.3	51.5	50.6	50.8	50.0	49.0	48.3	48.3	48.3	47.6	47.2
40000	54.0	55.4	54.1	54.3	54.4	52.2	51.3	50.6	50.8	49.8	49.0	48.2	48.3	48.3	47.6	47.2
50000	54.1	55.3	54.1	54.4	54.3	52.2	51.2	50.5	50.7	49.7	48.8	48.1	48.2	48.3	47.6	47.3
60000	54.1	55.1	54.1	54.3	54.2	52.1	51.2	50.5	50.6	49.7	48.7	48.1	48.2	48.3	47.6	47.3
70000	54.1	55.1	54.2	54.3	54.1	52.1	51.1	50.4	50.5	49.6	48.7	48.0	48.3	48.3	47.6	47.3
80000	54.0	55.2	54.3	54.2	53.9	52.0	51.0	50.4	50.2	49.6	48.8	47.9	48.2	48.3	47.6	47.3
90000	54.0	55.2	54.4	54.2	53.8	51.9	50.9	50.4	50.5	49.5	48.8	47.8	48.2	48.3	47.6	47.3
100000	54.2	55.2	54.5	54.3	53.7	51.9	51.0	50.4	50.6	49.6	48.9	47.9	48.2	48.3	47.6	47.3
110000	54.4	55.3	54.7	54.7	53.7	51.9	51.1	50.6	50.8	49.7	49.0	48.1	48.3	48.3	47.6	47.4
120000	54.8	55.6	55.1	55.2	53.8	52.0	51.4	50.9	51.1	49.9	49.2	48.5	48.4	48.4	47.7	47.5
130000	55.1	55.9	55.6	55.5	53.9	52.0	51.7	51.3	51.3	50.1	49.4	48.8	48.4	48.4	47.8	47.7
140000	55.4	56.4	55.9	55.7	54.0	52.4	51.9	51.5	51.3	50.2	49.6	48.8	48.4	48.4	47.8	47.8
150000	55.7	56.1	56.1	55.7	54.0	52.5	51.9	51.6	51.2	50.1	49.6	49.0	48.5	48.3	47.9	47.9
160000	55.7	56.0	56.1	55.6	53.8	52.5	51.9	51.6	51.2	49.9	49.6	49.2	48.6	48.3	48.1	47.9
170000	55.8	55.9	55.9	55.4	53.6	52.4	51.8	51.4	51.1	49.8	49.5	49.1	48.6	48.2	48.1	47.8
180000	55.7	55.4	55.6	54.9	53.3	52.1	51.7	51.3	50.9	49.6	49.0	48.8	48.5	48.2	47.9	47.7
190000	55.6	55.1	55.4	54.6	53.0	52.1	51.6	51.2	50.7	49.5	48.8	48.7	48.4	48.1	47.7	47.6
200000	55.6	54.9	55.0	54.5	52.8	52.0	51.3	51.1	50.6	49.4	48.6	48.6	48.4	48.0	47.5	47.6
210000	55.4	54.7	54.7	54.6	52.7	51.9	51.1	51.0	50.5	49.2	48.6	48.5	48.4	47.9	47.4	47.6
220000	55.2	54.4	54.4	54.4	52.6	51.8	50.9	51.0	50.4	49.0	48.5	48.4	48.4	47.8	47.2	47.6
230000	55.2	54.2	54.3	54.3	52.5	51.8	50.8	51.0	50.3	48.9	48.5	48.4	48.4	47.7	47.2	47.6
Daily Max	55.8	56.4	56.1	55.7	54.6	52.5	51.9	51.6	51.3	50.2	49.6	49.2	48.6	48.4	48.1	47.9
Daily Min	53.8	54.2	54.1	54.2	52.5	51.8	50.8	50.4	50.2	48.9	48.5	47.8	48.2	47.7	47.2	47.1
Average	54.7	55.3	54.8	54.7	53.8	52.1	51.4	50.9	50.8	49.7	49.0	48.4	48.4	48.2	47.6	47.5

Monthly average temp (F): 49.4
License Max. Average Temperature: 56 F

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Dead River Below Hoist Powerhouse - October 2012 Temperature Monitoring Data

Time HHMMSS	10/17/2012	10/18/2012	10/19/2012	10/20/2012	10/21/2012	10/22/2012	10/23/2012	10/24/2012	10/25/2012	10/26/2012	10/27/2012	10/28/2012	10/29/2012	10/30/2012	10/31/2012
0	47.6	47.8	47.7	47.8	47.5	48.2	48.3	48.2	49.1	49.5	47.9	47.0	46.5	46.4	45.1
10000	47.6	47.8	47.7	47.8	47.5	48.1	48.3	48.2	49.0	49.4	47.9	46.9	46.5	46.4	45.2
20000	47.6	47.9	47.7	47.8	47.5	48.0	48.4	48.2	49.0	49.4	47.8	46.9	46.4	46.4	45.2
30000	47.5	47.9	47.7	47.8	47.6	48.1	48.4	48.2	49.0	49.3	47.6	47.0	46.4	46.3	45.2
40000	47.4	47.9	47.7	47.8	47.6	48.2	48.4	48.2	49.0	49.1	47.5	47.0	46.3	46.1	45.2
50000	47.4	47.9	47.7	47.7	47.6	48.1	48.4	48.1	49.0	49.0	47.4	47.0	46.3	46.1	45.1
60000	47.4	47.9	47.7	47.6	47.5	48.1	48.3	48.2	49.2	48.8	47.3	46.9	46.3	46.0	45.0
70000	47.4	48.0	47.7	47.7	47.5	48.1	48.3	48.2	49.3	48.8	47.2	46.8	46.2	46.0	44.9
80000	47.4	48.0	47.7	47.7	47.5	48.1	48.2	48.2	49.4	48.7	47.2	46.7	46.2	45.9	44.8
90000	47.4	48.0	47.7	47.7	47.4	48.1	48.1	48.3	49.7	48.6	47.2	46.6	46.1	45.8	44.9
100000	47.5	48.1	47.7	47.7	47.4	48.1	48.1	48.4	49.9	48.6	47.2	46.5	46.1	45.8	44.9
110000	47.8	48.1	47.8	47.8	47.6	48.2	48.2	48.6	49.6	48.7	47.4	46.7	46.3	45.9	45.0
120000	48.0	48.1	48.1	48.1	48.0	48.5	48.3	48.8	49.4	48.8	47.6	46.9	46.7	45.9	45.1
130000	48.2	48.1	48.2	48.3	48.4	48.8	48.4	49.1	49.7	48.8	47.9	47.2	47.0	46.0	45.1
140000	48.5	48.1	48.3	48.6	48.7	49.0	48.5	49.3	49.6	48.7	47.9	47.4	47.1	46.2	45.1
150000	48.5	48.1	48.2	48.8	48.7	49.1	48.4	49.5	49.8	48.5	47.8	47.5	47.1	46.1	45.2
160000	48.5	48.1	48.1	48.9	48.7	49.0	48.4	49.5	50.2	48.5	47.8	47.6	47.1	46.0	45.3
170000	48.4	48.1	48.0	48.7	48.6	48.8	48.3	49.5	50.3	48.4	47.8	47.4	47.0	45.9	45.3
180000	48.3	48.1	48.0	48.4	48.7	48.7	48.3	49.6	50.2	48.3	47.6	47.2	46.8	45.8	45.2
190000	48.2	48.0	47.9	48.1	48.6	48.5	48.2	49.4	50.3	48.1	47.4	47.0	46.7	45.7	45.0
200000	48.1	47.9	47.9	47.8	48.3	48.4	48.2	49.2	50.2	48.0	47.3	46.8	46.6	45.6	44.8
210000	47.9	47.8	47.9	47.7	48.3	48.3	48.2	49.1	50.0	47.9	47.2	46.7	46.5	45.5	44.7
220000	47.8	47.8	47.8	47.6	48.3	48.3	48.2	49.1	49.8	47.9	47.1	46.6	46.5	45.2	44.6
230000	47.8	47.7	47.8	47.6	48.3	48.3	48.2	49.1	49.7	47.9	47.0	46.6	46.5	45.0	44.4
Daily Max	48.5	48.1	48.3	48.9	48.7	49.1	48.5	49.6	50.3	49.5	47.9	47.6	47.1	46.4	45.3
Daily Min	47.4	47.7	47.7	47.6	47.4	48.0	48.1	48.1	49.0	47.9	47.0	46.5	46.1	45.0	44.4
Average	47.8	48.0	47.9	48.0	48.0	48.4	48.3	48.7	49.6	48.6	47.5	46.9	46.5	45.9	45.0

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Dead River Water Quality Monitoring Data

Downstream of the McClure Dam in the Dead River at the LS&I Railroad Bridge

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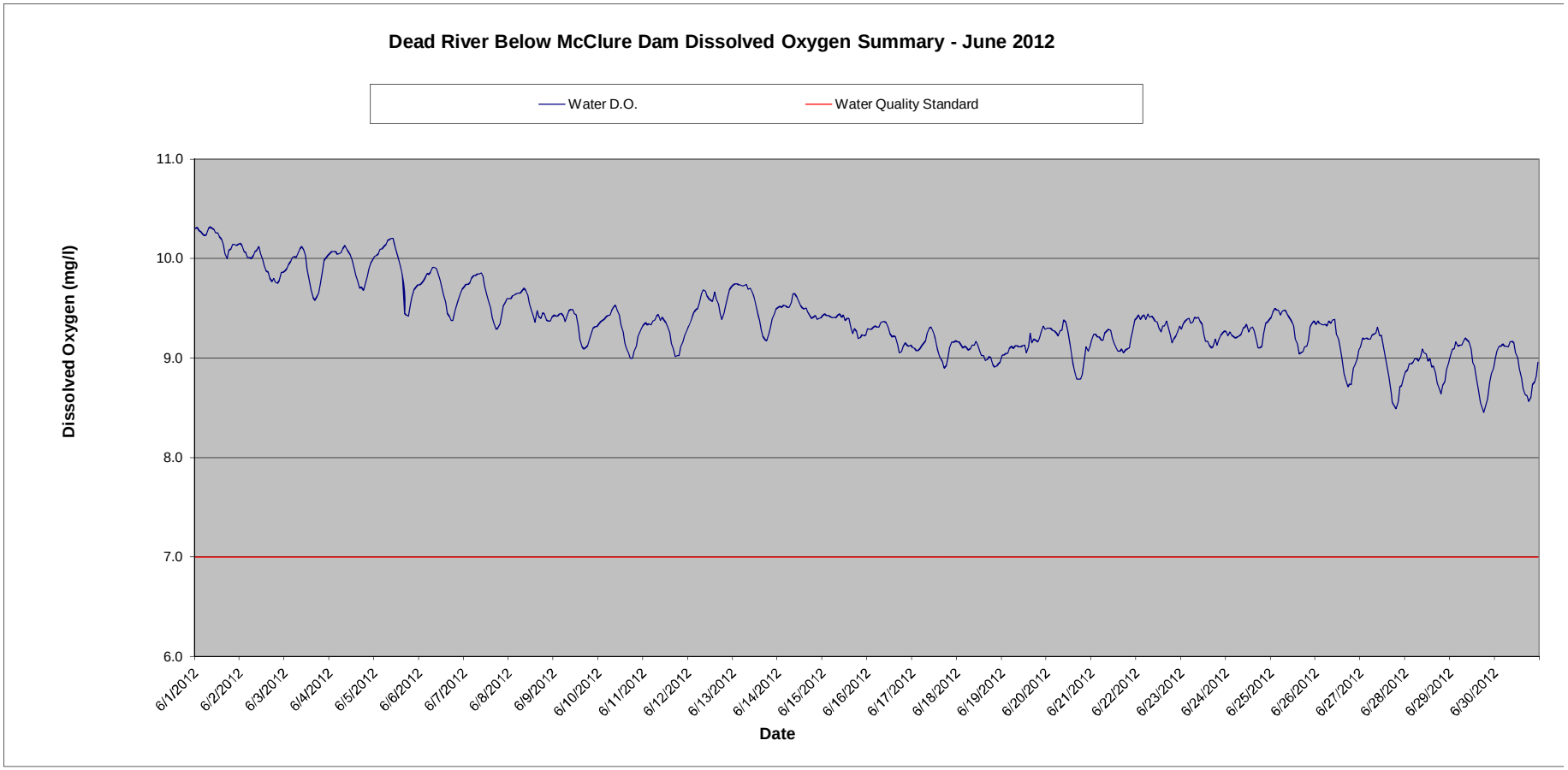

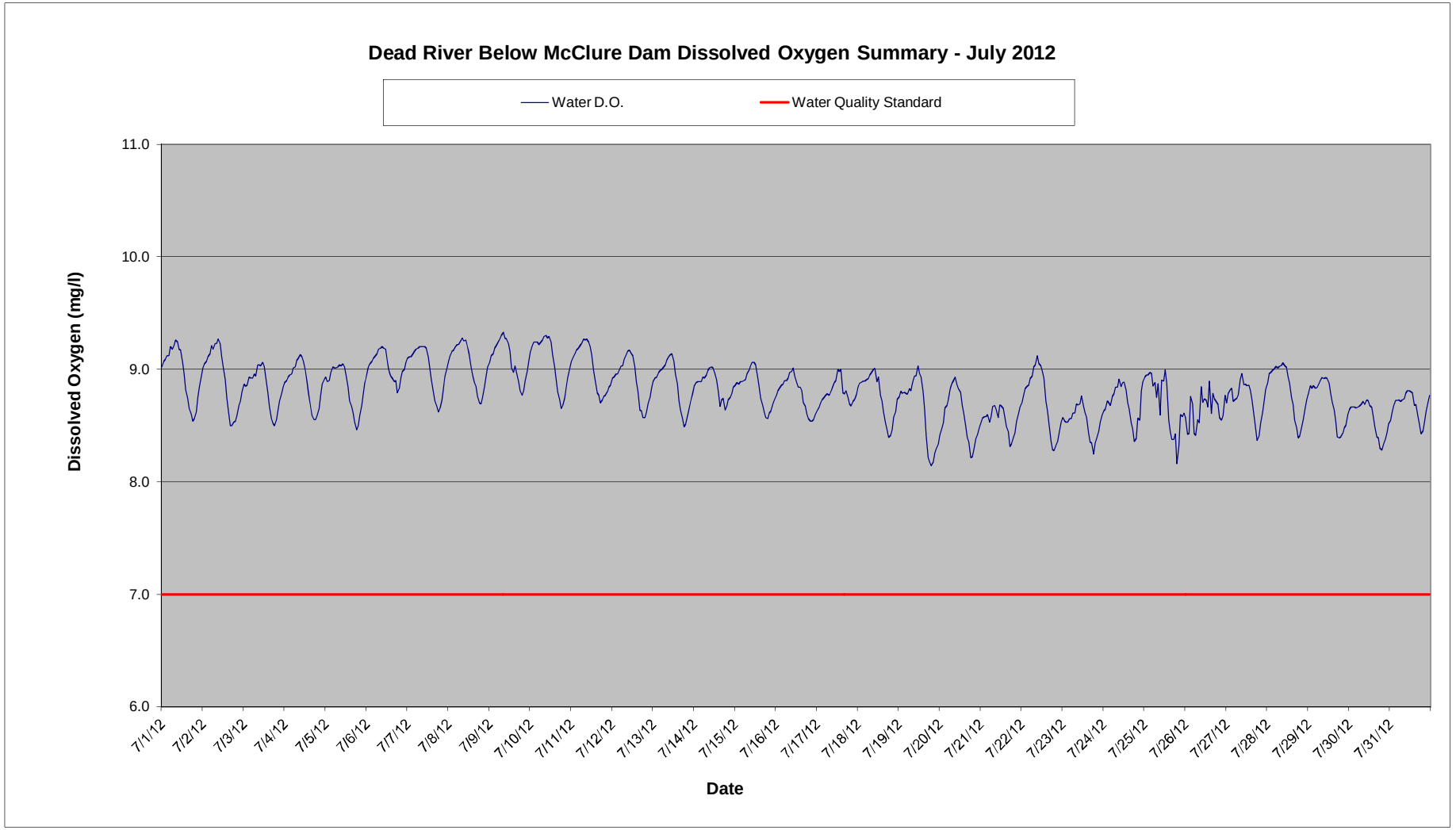

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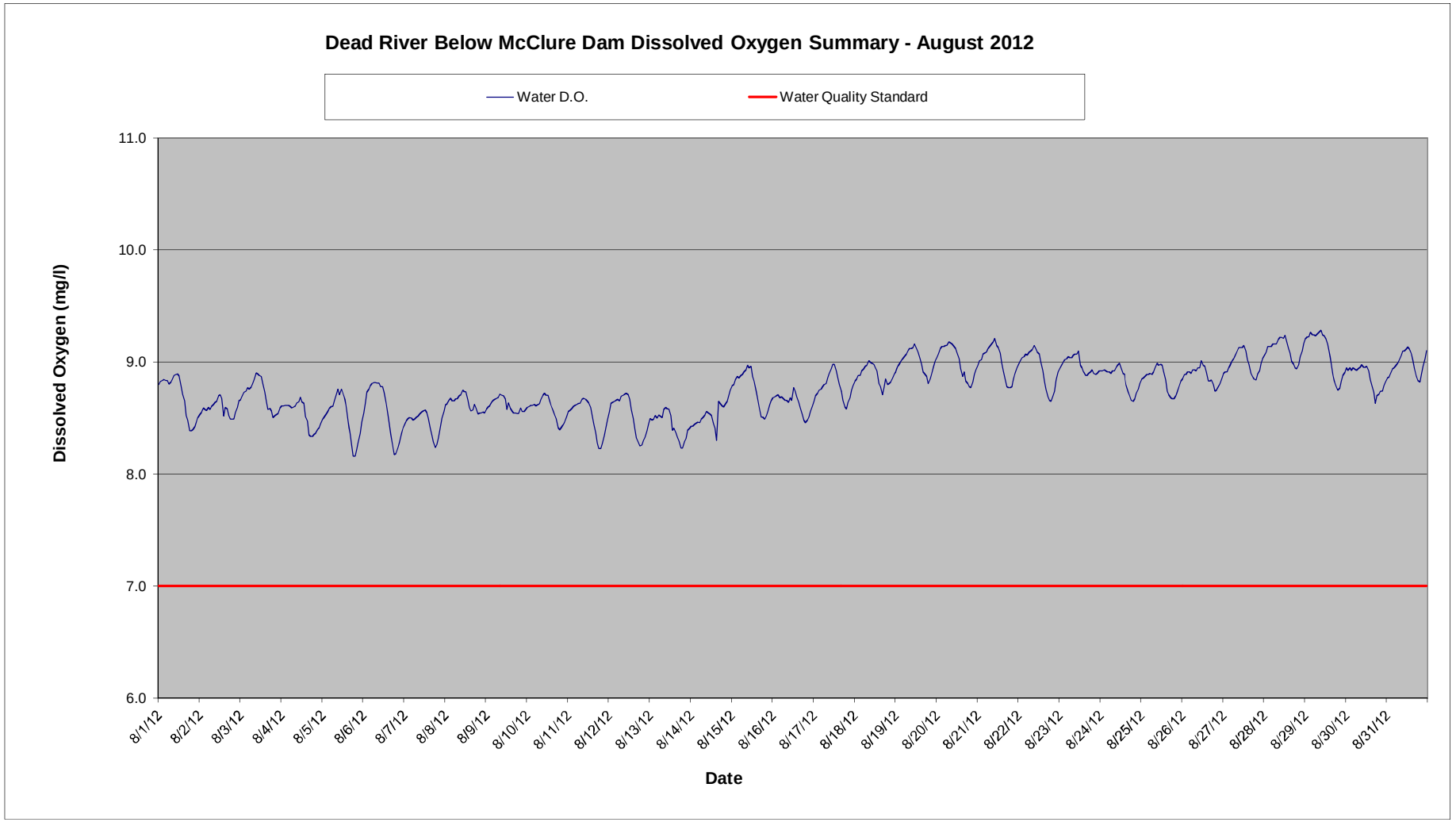

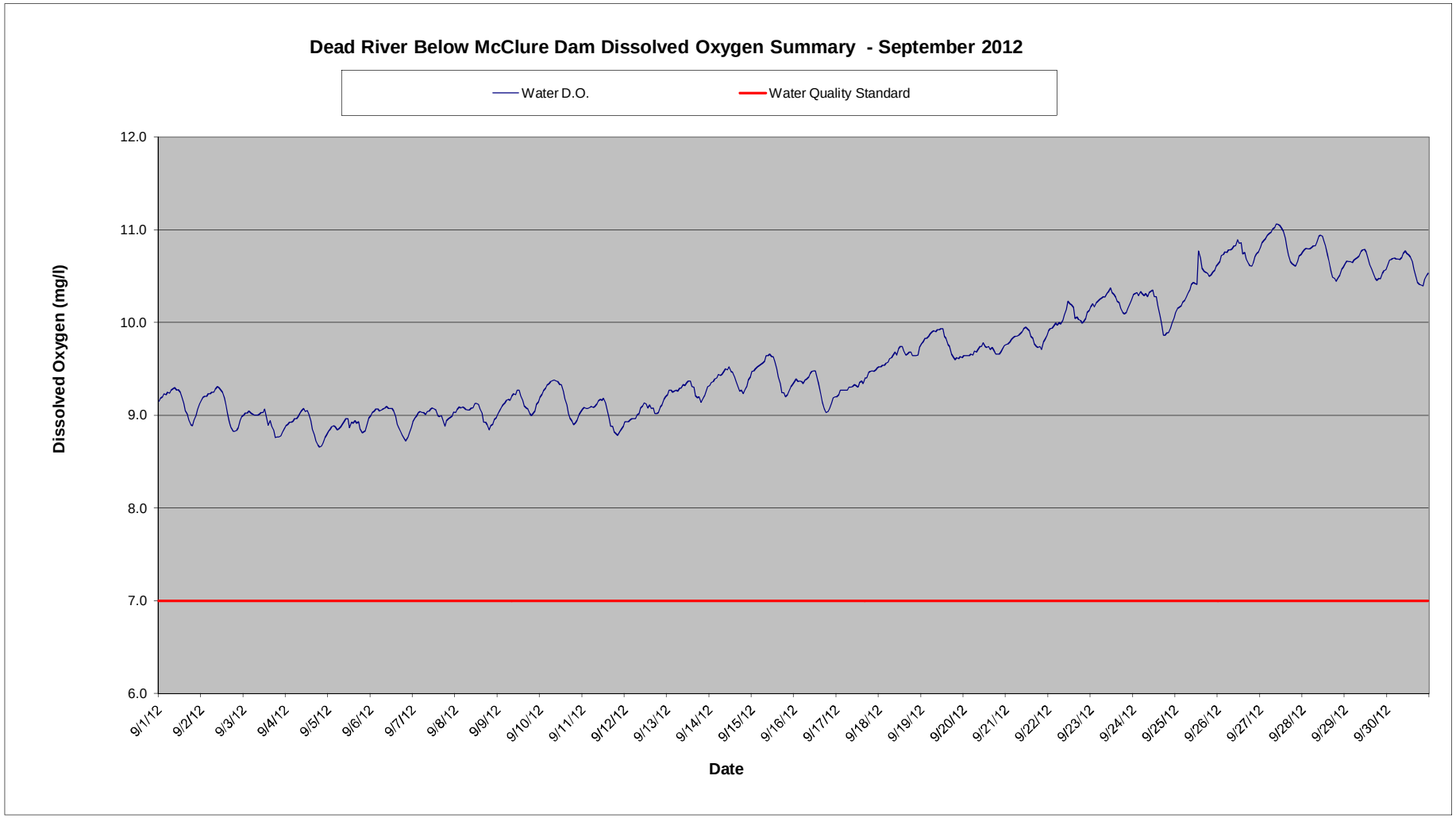

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Dead River Below McClure Dam - June 2012 Dissolved Oxygen Summary

Time HHMMSS	06/01/12	06/02/12	06/03/12	06/04/12	06/05/12	06/06/12	06/07/12	06/08/12	06/09/12	06/10/12	06/11/12	06/12/12	06/13/12	06/14/12	06/15/12	06/16/12
0	10.3	10.2	9.9	10.1	10.0	9.7	9.7	9.6	9.4	9.3	9.3	9.3	9.7	9.5	9.4	9.3
10000	10.3	10.1	9.9	10.1	10.0	9.7	9.7	9.6	9.4	9.4	9.4	9.3	9.7	9.5	9.4	9.3
20000	10.3	10.1	9.9	10.1	10.1	9.8	9.7	9.6	9.4	9.4	9.3	9.4	9.7	9.5	9.4	9.3
30000	10.3	10.1	10.0	10.1	10.1	9.8	9.8	9.6	9.4	9.4	9.3	9.5	9.7	9.5	9.4	9.3
40000	10.2	10.0	10.0	10.0	10.1	9.9	9.8	9.6	9.4	9.4	9.3	9.5	9.7	9.5	9.4	9.3
50000	10.2	10.0	10.0	10.1	10.1	9.8	9.8	9.7	9.4	9.4	9.4	9.5	9.7	9.5	9.4	9.3
60000	10.2	10.0	10.0	10.1	10.1	9.9	9.8	9.7	9.4	9.4	9.4	9.6	9.7	9.5	9.4	9.3
70000	10.3	10.0	10.1	10.1	10.2	9.9	9.8	9.7	9.4	9.5	9.4	9.6	9.7	9.6	9.4	9.4
80000	10.3	10.1	10.1	10.1	10.2	9.9	9.8	9.7	9.5	9.5	9.4	9.7	9.7	9.6	9.4	9.4
90000	10.3	10.1	10.1	10.1	10.2	9.9	9.9	9.7	9.5	9.5	9.4	9.7	9.7	9.6	9.4	9.4
100000	10.3	10.1	10.1	10.1	10.2	9.8	9.8	9.6	9.5	9.5	9.4	9.6	9.7	9.6	9.4	9.4
110000	10.3	10.1	10.0	10.0	10.1	9.8	9.7	9.5	9.4	9.4	9.4	9.6	9.6	9.6	9.4	9.3
120000	10.3	10.0	9.9	10.0	10.1	9.7	9.6	9.5	9.4	9.3	9.4	9.6	9.5	9.5	9.4	9.2
130000	10.2	9.9	9.8	9.9	10.0	9.6	9.6	9.4	9.3	9.3	9.3	9.6	9.5	9.5	9.4	9.2
140000	10.2	9.9	9.7	9.8	9.9	9.6	9.5	9.4	9.2	9.1	9.3	9.7	9.4	9.5	9.4	9.2
150000	10.1	9.9	9.6	9.8	9.8	9.4	9.4	9.5	9.1	9.1	9.1	9.6	9.3	9.5	9.3	9.2
160000	10.1	9.8	9.6	9.7	9.4	9.4	9.4	9.4	9.1	9.0	9.1	9.5	9.2	9.5	9.2	9.1
170000	10.0	9.8	9.6	9.7	9.4	9.4	9.3	9.4	9.1	9.0	9.0	9.4	9.2	9.4	9.3	9.1
180000	10.1	9.8	9.7	9.7	9.4	9.4	9.3	9.5	9.1	9.0	9.0	9.4	9.2	9.4	9.3	9.1
190000	10.1	9.8	9.7	9.7	9.5	9.5	9.3	9.4	9.2	9.1	9.0	9.4	9.2	9.4	9.2	9.1
200000	10.1	9.8	9.9	9.8	9.6	9.5	9.4	9.4	9.2	9.1	9.1	9.5	9.3	9.4	9.2	9.1
210000	10.1	9.8	10.0	9.9	9.7	9.6	9.5	9.4	9.3	9.2	9.2	9.6	9.4	9.4	9.2	9.1
220000	10.1	9.9	10.0	10.0	9.7	9.7	9.6	9.4	9.3	9.3	9.2	9.7	9.4	9.4	9.2	9.1
230000	10.1	9.9	10.0	10.0	9.7	9.7	9.6	9.4	9.3	9.3	9.3	9.7	9.5	9.4	9.2	9.1
Daily Max	10.3	10.2	10.1	10.1	10.2	9.9	9.9	9.7	9.5	9.5	9.4	9.7	9.7	9.6	9.4	9.4
Daily Min	10.0	9.8	9.6	9.7	9.4	9.4	9.3	9.4	9.1	9.0	9.0	9.3	9.2	9.4	9.2	9.1
Average	10.2	10.0	9.9	10.0	9.9	9.7	9.6	9.5	9.3	9.3	9.3	9.5	9.5	9.5	9.4	9.2

License Minimum Dissolved Oxygen: 7.0 mg/l

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Dead River Below McClure Dam - June 2012 Dissolved Oxygen Summary

Time HHMMSS	06/17/12	06/18/12	06/19/12	06/20/12	06/21/12	06/22/12	06/23/12	06/24/12	06/25/12	06/26/12	06/27/12	06/28/12	06/29/12	06/30/12
0	9.1	9.2	9.0	9.3	9.2	9.4	9.3	9.3	9.4	9.3	9.1	8.9	9.0	9.0
10000	9.1	9.2	9.0	9.3	9.2	9.4	9.4	9.2	9.5	9.4	9.2	8.9	9.1	9.1
20000	9.1	9.1	9.0	9.3	9.2	9.4	9.4	9.3	9.5	9.4	9.2	8.9	9.1	9.1
30000	9.1	9.1	9.0	9.3	9.2	9.4	9.4	9.2	9.5	9.3	9.2	8.9	9.2	9.1
40000	9.1	9.1	9.1	9.3	9.2	9.4	9.4	9.2	9.5	9.3	9.2	9.0	9.1	9.1
50000	9.1	9.1	9.1	9.3	9.2	9.4	9.4	9.2	9.4	9.3	9.2	9.0	9.1	9.1
60000	9.2	9.1	9.1	9.2	9.2	9.4	9.4	9.2	9.5	9.3	9.2	9.0	9.1	9.1
70000	9.2	9.1	9.1	9.3	9.3	9.4	9.4	9.2	9.5	9.4	9.2	9.0	9.2	9.1
80000	9.3	9.1	9.1	9.3	9.3	9.4	9.4	9.2	9.5	9.4	9.3	9.0	9.2	9.2
90000	9.3	9.1	9.1	9.4	9.3	9.4	9.4	9.3	9.4	9.4	9.3	9.1	9.2	9.2
100000	9.3	9.2	9.1	9.4	9.3	9.4	9.4	9.3	9.4	9.4	9.2	9.1	9.2	9.2
110000	9.3	9.1	9.1	9.3	9.2	9.4	9.3	9.3	9.4	9.2	9.2	9.0	9.1	9.1
120000	9.2	9.1	9.1	9.2	9.2	9.3	9.2	9.3	9.3	9.2	9.1	9.0	9.0	9.0
130000	9.1	9.0	9.1	9.1	9.1	9.3	9.2	9.3	9.2	9.1	9.0	9.0	8.9	8.9
140000	9.0	9.0	9.1	8.9	9.1	9.3	9.2	9.3	9.1	9.0	8.9	8.9	8.8	8.8
150000	9.0	9.0	9.3	8.9	9.1	9.3	9.1	9.3	9.0	8.8	8.8	8.9	8.7	8.7
160000	9.0	9.0	9.2	8.8	9.1	9.4	9.1	9.2	9.1	8.8	8.7	8.9	8.6	8.6
170000	8.9	9.0	9.2	8.8	9.1	9.3	9.1	9.1	9.1	8.7	8.6	8.8	8.5	8.6
180000	8.9	9.0	9.2	8.8	9.1	9.2	9.2	9.1	9.1	8.7	8.5	8.7	8.5	8.6
190000	9.0	8.9	9.2	8.8	9.1	9.2	9.1	9.1	9.1	8.7	8.5	8.6	8.5	8.6
200000	9.1	8.9	9.2	9.0	9.1	9.2	9.2	9.2	9.2	8.9	8.6	8.7	8.6	8.7
210000	9.2	8.9	9.3	9.1	9.2	9.2	9.2	9.4	9.3	8.9	8.7	8.8	8.8	8.8
220000	9.2	8.9	9.3	9.1	9.3	9.3	9.3	9.4	9.4	9.0	8.7	8.9	8.8	8.8
230000	9.2	9.0	9.3	9.1	9.4	9.3	9.3	9.4	9.4	9.1	8.8	9.0	8.9	9.0
Daily Max	9.3	9.2	9.3	9.4	9.4	9.4	9.4	9.4	9.5	9.4	9.3	9.1	9.2	9.2
Daily Min	8.9	8.9	9.0	8.8	9.1	9.2	9.1	9.1	9.0	8.7	8.5	8.6	8.5	8.6
Average	9.1	9.1	9.1	9.1	9.2	9.3	9.3	9.2	9.3	9.1	9.0	8.9	8.9	8.9

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Dead River Below McClure Dam - July 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	07/01/12	07/02/12	07/03/12	07/04/12	07/05/12	07/06/12	07/07/12	07/08/12	07/09/12	07/10/12	07/11/12	07/12/12	07/13/12	07/14/12	07/15/12	07/16/12
0	9.0	9.0	8.9	8.9	8.9	9.0	9.1	9.1	9.1	9.2	9.1	8.9	8.9	8.9	8.9	8.8
10000	9.1	9.1	8.9	8.9	8.9	9.0	9.1	9.1	9.1	9.2	9.1	8.9	8.9	8.9	8.9	8.8
20000	9.1	9.1	8.9	8.9	8.9	9.1	9.1	9.2	9.1	9.2	9.1	9.0	8.9	8.9	8.9	8.8
30000	9.1	9.1	8.9	9.0	9.0	9.1	9.1	9.2	9.2	9.2	9.2	9.0	9.0	8.9	8.9	8.9
40000	9.1	9.1	8.9	9.0	9.0	9.1	9.2	9.2	9.2	9.2	9.2	9.0	9.0	8.9	8.9	8.9
50000	9.2	9.2	8.9	9.0	9.0	9.1	9.2	9.2	9.2	9.2	9.2	9.0	9.0	8.9	8.9	8.9
60000	9.2	9.2	9.0	9.0	9.0	9.1	9.2	9.2	9.3	9.2	9.2	9.0	9.0	8.9	8.9	8.9
70000	9.2	9.2	8.9	9.1	9.0	9.2	9.2	9.3	9.3	9.3	9.3	9.1	9.0	9.0	9.0	8.9
80000	9.3	9.2	9.0	9.1	9.0	9.2	9.2	9.3	9.3	9.3	9.3	9.1	9.1	9.0	9.0	9.0
90000	9.2	9.3	9.0	9.1	9.0	9.2	9.2	9.3	9.3	9.3	9.3	9.2	9.1	9.0	9.0	9.0
100000	9.2	9.2	9.0	9.1	9.1	9.2	9.2	9.3	9.3	9.3	9.2	9.2	9.1	9.0	9.1	9.0
110000	9.2	9.1	9.1	9.1	9.0	9.2	9.2	9.2	9.2	9.3	9.2	9.1	9.1	9.0	9.1	8.9
120000	9.1	9.0	9.0	9.0	9.0	9.1	9.1	9.2	9.2	9.2	9.1	9.1	9.1	9.0	9.0	8.9
130000	9.0	8.9	8.9	8.9	8.8	9.0	9.0	9.0	9.0	9.1	9.0	9.0	9.0	8.9	8.9	8.8
140000	8.8	8.8	8.8	8.8	8.7	8.9	8.9	9.0	9.0	9.0	8.9	8.9	8.9	8.8	8.8	8.8
150000	8.7	8.6	8.7	8.7	8.7	8.9	8.8	8.9	9.0	8.9	8.8	8.8	8.7	8.7	8.7	8.8
160000	8.7	8.5	8.6	8.6	8.6	8.9	8.7	8.9	9.0	8.8	8.8	8.6	8.6	8.7	8.7	8.7
170000	8.6	8.5	8.5	8.6	8.5	8.9	8.7	8.8	8.9	8.7	8.7	8.6	8.6	8.7	8.6	8.7
180000	8.5	8.5	8.5	8.6	8.5	8.8	8.6	8.7	8.8	8.7	8.7	8.6	8.5	8.6	8.6	8.6
190000	8.6	8.5	8.6	8.6	8.5	8.8	8.7	8.7	8.8	8.7	8.8	8.6	8.5	8.7	8.6	8.6
200000	8.6	8.6	8.6	8.7	8.6	8.9	8.7	8.8	8.8	8.8	8.8	8.6	8.6	8.7	8.6	8.5
210000	8.8	8.7	8.7	8.8	8.7	9.0	8.8	8.9	8.9	8.8	8.8	8.7	8.7	8.8	8.6	8.5
220000	8.8	8.7	8.8	8.9	8.8	9.0	8.9	8.9	9.0	8.9	8.8	8.8	8.7	8.8	8.7	8.6
230000	8.9	8.8	8.8	8.9	8.9	9.1	9.0	9.0	9.1	9.0	8.9	8.8	8.8	8.8	8.7	8.6
Daily Max	9.3	9.3	9.1	9.1	9.1	9.2	9.2	9.3	9.3	9.3	9.3	9.2	9.1	9.0	9.1	9.0
Daily Min	8.5	8.5	8.5	8.6	8.5	8.8	8.6	8.7	8.8	8.7	8.7	8.6	8.5	8.6	8.6	8.5
Average	9.0	8.9	8.8	8.9	8.8	9.0	9.0	9.0	9.1	9.1	9.0	8.9	8.9	8.9	8.8	8.8

License Minimum Dissolved Oxygen: 7.0 mg/l

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Dead River Below McClure Dam - July 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	07/17/12	07/18/12	07/19/12	07/20/12	07/21/12	07/22/12	07/23/12	07/24/12	07/25/12	07/26/12	07/27/12	07/28/12	07/29/12	07/30/12	07/31/12
0	8.6	8.8	8.8	8.4	8.5	8.7	8.6	8.6	8.9	8.6	8.7	8.9	8.8	8.6	8.5
10000	8.7	8.9	8.8	8.5	8.6	8.8	8.5	8.6	8.9	8.4	8.8	9.0	8.9	8.7	8.6
20000	8.7	8.9	8.8	8.5	8.6	8.8	8.5	8.7	9.0	8.4	8.8	9.0	8.8	8.7	8.7
30000	8.7	8.9	8.8	8.7	8.6	8.8	8.5	8.7	9.0	8.8	8.8	9.0	8.9	8.7	8.7
40000	8.8	8.9	8.8	8.7	8.6	8.9	8.6	8.7	9.0	8.7	8.7	9.0	8.8	8.7	8.7
50000	8.8	8.9	8.8	8.7	8.5	8.9	8.6	8.8	8.9	8.4	8.7	9.0	8.8	8.7	8.7
60000	8.8	8.9	8.8	8.8	8.6	8.9	8.6	8.8	8.9	8.4	8.7	9.0	8.9	8.7	8.7
70000	8.8	8.9	8.8	8.9	8.7	9.0	8.6	8.8	8.8	8.6	8.8	9.0	8.9	8.7	8.7
80000	8.8	9.0	8.9	8.9	8.7	9.0	8.7	8.8	8.9	8.5	8.9	9.0	8.9	8.7	8.7
90000	8.8	9.0	8.9	8.9	8.6	9.1	8.7	8.9	8.6	8.8	9.0	9.1	8.9	8.7	8.8
100000	8.9	9.0	8.9	8.9	8.6	9.1	8.7	8.8	8.9	8.7	8.9	9.0	8.9	8.7	8.8
110000	8.9	8.9	9.0	8.8	8.7	9.0	8.8	8.9	8.9	8.7	8.9	9.0	8.9	8.7	8.8
120000	9.0	8.9	9.0	8.8	8.7	9.0	8.7	8.9	9.0	8.7	8.9	8.9	8.9	8.7	8.8
130000	9.0	8.8	8.9	8.7	8.7	8.9	8.6	8.8	8.9	8.7	8.9	8.9	8.8	8.7	8.8
140000	9.0	8.7	8.8	8.6	8.6	8.7	8.6	8.7	8.5	8.9	8.8	8.7	8.7	8.6	8.7
150000	8.8	8.6	8.6	8.5	8.5	8.6	8.4	8.6	8.4	8.6	8.7	8.7	8.6	8.5	8.7
160000	8.8	8.5	8.4	8.4	8.4	8.5	8.4	8.5	8.4	8.8	8.6	8.5	8.5	8.4	8.6
170000	8.8	8.5	8.2	8.4	8.3	8.4	8.3	8.5	8.4	8.7	8.5	8.5	8.4	8.4	8.5
180000	8.8	8.4	8.2	8.2	8.3	8.3	8.2	8.4	8.4	8.7	8.4	8.4	8.4	8.3	8.4
190000	8.7	8.4	8.1	8.2	8.4	8.3	8.3	8.4	8.2	8.7	8.4	8.4	8.4	8.3	8.5
200000	8.7	8.5	8.2	8.3	8.4	8.3	8.4	8.6	8.3	8.6	8.5	8.5	8.4	8.3	8.5
210000	8.7	8.6	8.3	8.4	8.5	8.4	8.4	8.5	8.6	8.5	8.6	8.6	8.5	8.4	8.6
220000	8.7	8.6	8.3	8.4	8.6	8.5	8.5	8.8	8.6	8.6	8.7	8.7	8.5	8.4	8.7
230000	8.8	8.7	8.3	8.5	8.7	8.5	8.6	8.9	8.6	8.8	8.8	8.7	8.6	8.5	8.8
Daily Max	9.0	9.0	9.0	8.9	8.7	9.1	8.8	8.9	9.0	8.9	9.0	9.1	8.9	8.7	8.8
Daily Min	8.6	8.4	8.1	8.2	8.3	8.3	8.2	8.4	8.2	8.4	8.4	8.4	8.4	8.3	8.4
Average	8.8	8.8	8.6	8.6	8.6	8.7	8.5	8.7	8.7	8.6	8.7	8.8	8.7	8.6	8.7

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Dead River Below McClure Dam - August 2012 Dissolved Oxugen Monitoring Data

Time HHMMSS	8/1/2012	8/2/2012	8/3/2012	8/4/2012	8/5/2012	8/6/2012	8/7/2012	8/8/2012	8/9/2012	8/10/2012	8/11/2012	8/12/2012	8/13/2012	8/14/2012	8/15/2012	8/16/2012
0	8.8	8.5	8.7	8.6	8.5	8.5	8.4	8.6	8.6	8.6	8.6	8.6	8.5	8.4	8.8	8.7
10000	8.8	8.6	8.7	8.6	8.5	8.6	8.5	8.6	8.6	8.6	8.6	8.6	8.5	8.4	8.8	8.7
20000	8.8	8.6	8.7	8.6	8.5	8.7	8.5	8.7	8.6	8.6	8.6	8.6	8.5	8.4	8.8	8.7
30000	8.8	8.6	8.7	8.6	8.6	8.8	8.5	8.7	8.6	8.6	8.6	8.6	8.5	8.5	8.9	8.7
40000	8.8	8.6	8.8	8.6	8.6	8.8	8.5	8.7	8.7	8.6	8.6	8.7	8.5	8.5	8.9	8.7
50000	8.8	8.6	8.8	8.6	8.6	8.8	8.5	8.7	8.7	8.6	8.6	8.7	8.5	8.5	8.9	8.7
60000	8.8	8.6	8.8	8.6	8.6	8.8	8.5	8.7	8.7	8.6	8.6	8.7	8.5	8.5	8.9	8.7
70000	8.8	8.6	8.8	8.6	8.7	8.8	8.5	8.7	8.7	8.6	8.6	8.7	8.5	8.5	8.9	8.7
80000	8.8	8.6	8.8	8.6	8.7	8.8	8.5	8.7	8.7	8.7	8.7	8.7	8.6	8.5	8.9	8.7
90000	8.9	8.6	8.9	8.6	8.8	8.8	8.5	8.7	8.7	8.7	8.7	8.7	8.6	8.6	9.0	8.6
100000	8.9	8.7	8.9	8.6	8.7	8.8	8.6	8.7	8.7	8.7	8.7	8.7	8.6	8.5	9.0	8.7
110000	8.9	8.7	8.9	8.7	8.8	8.8	8.6	8.7	8.7	8.7	8.7	8.7	8.6	8.5	9.0	8.7
120000	8.9	8.7	8.9	8.6	8.7	8.7	8.6	8.7	8.6	8.7	8.6	8.7	8.5	8.5	8.9	8.8
130000	8.8	8.7	8.8	8.6	8.7	8.7	8.6	8.7	8.6	8.7	8.6	8.6	8.4	8.5	8.8	8.7
140000	8.7	8.5	8.7	8.5	8.6	8.5	8.5	8.6	8.6	8.6	8.5	8.5	8.4	8.4	8.7	8.7
150000	8.7	8.6	8.6	8.5	8.5	8.5	8.4	8.6	8.6	8.6	8.5	8.4	8.4	8.3	8.7	8.6
160000	8.5	8.6	8.6	8.3	8.4	8.4	8.3	8.6	8.5	8.5	8.4	8.3	8.3	8.7	8.6	8.6
170000	8.5	8.5	8.6	8.3	8.3	8.3	8.3	8.6	8.5	8.5	8.3	8.3	8.3	8.6	8.5	8.5
180000	8.4	8.5	8.6	8.3	8.2	8.2	8.2	8.6	8.5	8.4	8.2	8.3	8.2	8.6	8.5	8.5
190000	8.4	8.5	8.5	8.4	8.2	8.2	8.3	8.5	8.5	8.4	8.2	8.3	8.2	8.6	8.5	8.5
200000	8.4	8.5	8.5	8.4	8.2	8.2	8.3	8.5	8.6	8.4	8.3	8.3	8.3	8.6	8.5	8.5
210000	8.4	8.5	8.5	8.4	8.3	8.3	8.4	8.5	8.6	8.4	8.3	8.3	8.3	8.7	8.6	8.5
220000	8.5	8.6	8.5	8.4	8.4	8.3	8.5	8.6	8.6	8.5	8.4	8.4	8.4	8.7	8.6	8.6
230000	8.5	8.7	8.6	8.5	8.5	8.4	8.6	8.5	8.6	8.5	8.5	8.4	8.4	8.8	8.7	8.6
Daily Max	8.9	8.7	8.9	8.7	8.8	8.8	8.6	8.7	8.7	8.7	8.7	8.7	8.6	8.8	9.0	8.8
Daily Min	8.4	8.5	8.5	8.3	8.2	8.2	8.2	8.5	8.5	8.4	8.2	8.3	8.2	8.3	8.5	8.5
Average	8.7	8.6	8.7	8.5	8.5	8.6	8.5	8.6	8.6	8.6	8.5	8.5	8.4	8.5	8.8	8.6

License Minimum Dissolved Oxygen: 7.0 mg/l

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Dead River Below McClure Dam - August 2012 Dissolved Oxugen Monitoring Data

Time HHMMSS	8/17/2012	8/18/2012	8/19/2012	8/20/2012	8/21/2012	8/22/2012	8/23/2012	8/24/2012	8/25/2012	8/26/2012	8/27/2012	8/28/2012	8/29/2012	8/30/2012	8/31/2012
0	8.7	8.8	8.9	9.0	9.0	9.0	8.9	8.9	8.9	8.9	8.9	9.1	9.2	8.9	8.9
10000	8.7	8.9	9.0	9.1	9.0	9.0	9.0	8.9	8.9	8.9	8.9	9.1	9.2	8.9	8.9
20000	8.7	8.9	9.0	9.1	9.0	9.0	9.0	8.9	8.9	8.9	8.9	9.1	9.2	8.9	8.9
30000	8.8	8.9	9.0	9.1	9.1	9.1	9.0	8.9	8.9	8.9	9.0	9.1	9.3	8.9	8.9
40000	8.8	8.9	9.0	9.1	9.1	9.1	9.0	8.9	8.9	8.9	9.0	9.1	9.2	8.9	8.9
50000	8.8	8.9	9.1	9.2	9.1	9.1	9.1	8.9	8.9	8.9	9.0	9.2	9.2	8.9	9.0
60000	8.8	9.0	9.1	9.2	9.1	9.1	9.0	8.9	8.9	8.9	9.0	9.2	9.2	8.9	9.0
70000	8.8	9.0	9.1	9.2	9.1	9.1	9.0	8.9	8.9	8.9	9.1	9.2	9.3	8.9	9.0
80000	8.9	9.0	9.1	9.2	9.2	9.1	9.1	8.9	9.0	8.9	9.1	9.2	9.3	9.0	9.1
90000	8.9	9.0	9.1	9.2	9.2	9.2	9.1	9.0	9.0	9.0	9.1	9.2	9.3	9.0	9.1
100000	8.9	9.0	9.1	9.1	9.2	9.1	9.1	9.0	9.0	9.0	9.1	9.2	9.2	9.0	9.1
110000	9.0	9.0	9.2	9.1	9.2	9.1	9.1	9.0	9.0	9.0	9.1	9.2	9.2	9.0	9.1
120000	9.0	9.0	9.1	9.1	9.1	9.1	9.0	9.0	9.0	9.0	9.2	9.2	9.2	9.0	9.1
130000	8.9	8.9	9.1	9.0	9.1	9.0	9.0	8.9	8.9	9.0	9.1	9.2	9.2	8.9	9.1
140000	8.9	8.8	9.0	8.9	9.0	8.9	8.9	8.9	8.8	8.9	9.0	9.1	9.1	8.8	9.1
150000	8.8	8.8	9.0	8.9	8.9	8.8	8.9	8.8	8.7	8.8	9.0	9.1	9.0	8.8	9.0
160000	8.7	8.7	8.9	8.9	8.8	8.8	8.9	8.7	8.7	8.8	8.9	9.0	8.9	8.7	8.9
170000	8.7	8.8	8.9	8.8	8.8	8.7	8.9	8.7	8.7	8.8	8.9	9.0	8.8	8.6	8.9
180000	8.6	8.9	8.9	8.8	8.8	8.7	8.9	8.7	8.7	8.8	8.9	8.9	8.8	8.7	8.8
190000	8.6	8.8	8.8	8.8	8.8	8.7	8.9	8.7	8.7	8.7	8.8	8.9	8.7	8.7	8.8
200000	8.6	8.8	8.9	8.8	8.8	8.7	8.9	8.7	8.7	8.8	8.9	9.0	8.8	8.7	8.9
210000	8.7	8.8	8.9	8.8	8.9	8.7	8.9	8.7	8.7	8.8	8.9	9.0	8.8	8.7	9.0
220000	8.8	8.9	9.0	8.9	8.9	8.8	8.9	8.8	8.8	8.8	9.0	9.1	8.9	8.8	9.0
230000	8.8	8.9	9.0	8.9	9.0	8.9	8.9	8.8	8.8	8.9	9.0	9.2	8.9	8.8	9.1
Daily Max	9.0	9.0	9.2	9.2	9.2	9.2	9.1	9.0	9.0	9.0	9.2	9.2	9.3	9.0	9.1
Daily Min	8.6	8.7	8.8	8.8	8.8	8.7	8.9	8.7	8.7	8.7	8.8	8.9	8.7	8.6	8.8
Average	8.8	8.9	9.0	9.0	9.0	8.9	9.0	8.8	8.8	8.9	9.0	9.1	9.1	8.9	9.0

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Dead River Below McClure Dam - September 2012 Dissolved Oxygen Data

Time HHMMSS	9/1/2012	9/2/2012	9/3/2012	9/4/2012	9/5/2012	9/6/2012	9/7/2012	9/8/2012	9/9/2012	9/10/2012	9/11/2012	9/12/2012	9/13/2012	9/14/2012	9/15/2012	9/16/2012
0	9.2	9.2	9.0	8.9	8.8	9.0	8.9	9.0	9.0	9.2	9.1	8.9	9.2	9.3	9.5	9.4
10000	9.2	9.2	9.0	8.9	8.8	9.0	9.0	9.1	9.1	9.2	9.1	8.9	9.3	9.4	9.5	9.4
20000	9.2	9.2	9.0	8.9	8.9	9.0	9.0	9.1	9.1	9.3	9.1	8.9	9.3	9.4	9.5	9.4
30000	9.2	9.2	9.0	8.9	8.9	9.1	9.0	9.1	9.1	9.3	9.1	9.0	9.3	9.4	9.5	9.4
40000	9.2	9.2	9.0	8.9	8.9	9.1	9.0	9.1	9.1	9.3	9.1	9.0	9.3	9.4	9.5	9.4
50000	9.2	9.2	9.0	9.0	8.8	9.0	9.0	9.1	9.2	9.3	9.1	9.0	9.3	9.4	9.6	9.3
60000	9.2	9.3	9.0	9.0	8.9	9.1	9.0	9.1	9.2	9.4	9.1	9.0	9.3	9.4	9.6	9.4
70000	9.3	9.2	9.0	9.0	8.9	9.1	9.0	9.1	9.2	9.4	9.1	9.0	9.3	9.4	9.6	9.4
80000	9.3	9.3	9.0	9.0	8.9	9.1	9.0	9.1	9.2	9.4	9.1	9.0	9.3	9.5	9.6	9.4
90000	9.3	9.3	9.0	9.1	8.9	9.1	9.0	9.1	9.2	9.4	9.2	9.1	9.3	9.5	9.6	9.5
100000	9.3	9.3	9.0	9.1	9.0	9.1	9.1	9.1	9.2	9.4	9.2	9.1	9.3	9.5	9.7	9.5
110000	9.3	9.3	9.0	9.0	9.0	9.1	9.1	9.1	9.3	9.3	9.2	9.1	9.4	9.5	9.6	9.5
120000	9.2	9.2	9.1	9.1	8.9	9.1	9.1	9.1	9.3	9.3	9.2	9.1	9.4	9.5	9.6	9.5
130000	9.2	9.2	9.0	9.0	8.9	9.0	9.1	9.1	9.2	9.3	9.1	9.1	9.4	9.5	9.6	9.4
140000	9.1	9.1	8.9	8.9	8.9	9.0	9.0	9.1	9.2	9.2	9.1	9.1	9.3	9.4	9.5	9.3
150000	9.0	9.0	8.9	8.8	8.9	8.9	9.0	9.0	9.1	9.1	9.0	9.1	9.3	9.4	9.4	9.2
160000	9.0	8.9	8.9	8.8	8.9	8.9	9.0	8.9	9.1	9.0	8.9	9.1	9.2	9.3	9.3	9.1
170000	8.9	8.9	8.8	8.7	8.9	8.8	8.9	8.9	9.1	9.0	8.9	9.0	9.2	9.3	9.2	9.1
180000	8.9	8.8	8.8	8.7	8.9	8.8	8.9	8.9	9.0	8.9	8.8	9.0	9.2	9.3	9.2	9.0
190000	8.9	8.8	8.8	8.7	8.8	8.7	8.9	8.8	9.0	8.9	8.8	9.0	9.1	9.2	9.2	9.0
200000	8.9	8.8	8.8	8.7	8.8	8.7	9.0	8.9	9.0	8.9	8.8	9.1	9.2	9.3	9.2	9.1
210000	9.0	8.9	8.8	8.7	8.8	8.8	9.0	8.9	9.0	8.9	8.8	9.1	9.2	9.3	9.3	9.1
220000	9.1	8.9	8.8	8.8	8.9	8.8	9.0	9.0	9.1	9.0	8.9	9.2	9.3	9.4	9.3	9.2
230000	9.1	9.0	8.9	8.8	9.0	8.9	9.0	9.0	9.1	9.0	8.9	9.2	9.3	9.4	9.3	9.2
Daily Max	9.3	9.3	9.1	9.1	9.0	9.1	9.1	9.1	9.3	9.4	9.2	9.2	9.4	9.5	9.7	9.5
Daily Min	8.9	8.8	8.8	8.7	8.8	8.7	8.9	8.8	9.0	8.9	8.8	8.9	9.1	9.2	9.2	9.0
Average	9.1	9.1	8.9	8.9	8.9	9.0	9.0	9.0	9.1	9.2	9.0	9.0	9.3	9.4	9.5	9.3

License Minimum Dissolved Oxygen: 7.0 mg/l

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Dead River Below McClure Dam - September 2012 Dissolved Oxygen Data

Time HHMMSS	9/17/2012	9/18/2012	9/19/2012	9/20/2012	9/21/2012	9/22/2012	9/23/2012	9/24/2012	9/25/2012	9/26/2012	9/27/2012	9/28/2012	9/29/2012	9/30/2012
0	9.2	9.5	9.8	9.6	9.8	9.9	10.2	10.3	10.1	10.6	10.8	10.8	10.6	10.6
10000	9.2	9.5	9.8	9.6	9.8	9.9	10.2	10.3	10.2	10.7	10.9	10.8	10.7	10.7
20000	9.3	9.5	9.8	9.6	9.8	9.9	10.2	10.3	10.2	10.7	10.9	10.8	10.7	10.7
30000	9.3	9.5	9.8	9.6	9.8	10.0	10.2	10.3	10.2	10.7	10.9	10.8	10.7	10.7
40000	9.3	9.6	9.9	9.7	9.8	10.0	10.2	10.3	10.2	10.8	10.9	10.8	10.6	10.7
50000	9.3	9.6	9.9	9.7	9.9	10.0	10.3	10.3	10.2	10.8	11.0	10.8	10.7	10.7
60000	9.3	9.6	9.9	9.7	9.9	10.0	10.3	10.3	10.3	10.8	11.0	10.8	10.7	10.7
70000	9.3	9.6	9.9	9.7	9.9	10.0	10.3	10.3	10.3	10.8	11.0	10.8	10.7	10.7
80000	9.3	9.7	9.9	9.7	9.9	10.0	10.3	10.3	10.4	10.8	11.0	10.9	10.7	10.7
90000	9.3	9.7	9.9	9.7	9.9	10.1	10.3	10.3	10.4	10.8	11.1	10.9	10.8	10.7
100000	9.3	9.7	9.9	9.7	9.9	10.1	10.3	10.3	10.4	10.8	11.1	10.9	10.8	10.8
110000	9.3	9.7	9.9	9.8	10.0	10.2	10.4	10.4	10.4	10.9	11.0	10.9	10.8	10.7
120000	9.3	9.7	9.9	9.7	9.9	10.2	10.3	10.3	10.4	10.9	11.0	10.9	10.8	10.7
130000	9.4	9.7	9.9	9.7	9.9	10.2	10.3	10.3	10.8	10.9	11.0	10.8	10.7	10.7
140000	9.4	9.7	9.8	9.7	9.9	10.2	10.3	10.2	10.7	10.7	10.9	10.7	10.6	10.7
150000	9.3	9.7	9.8	9.7	9.8	10.0	10.2	10.1	10.6	10.8	10.8	10.7	10.6	10.6
160000	9.4	9.7	9.7	9.7	9.8	10.1	10.2	10.0	10.6	10.7	10.7	10.5	10.5	10.5
170000	9.4	9.7	9.7	9.7	9.7	10.0	10.2	9.9	10.5	10.6	10.7	10.5	10.5	10.4
180000	9.5	9.7	9.6	9.7	9.7	10.0	10.1	9.9	10.5	10.6	10.6	10.5	10.5	10.4
190000	9.5	9.6	9.6	9.7	9.7	10.0	10.1	9.9	10.5	10.6	10.6	10.4	10.5	10.4
200000	9.5	9.6	9.6	9.7	9.7	10.0	10.1	9.9	10.5	10.6	10.6	10.5	10.5	10.4
210000	9.5	9.6	9.6	9.7	9.8	10.0	10.2	9.9	10.5	10.7	10.7	10.5	10.5	10.5
220000	9.5	9.7	9.6	9.7	9.8	10.1	10.2	10.0	10.6	10.7	10.7	10.6	10.6	10.5
230000	9.5	9.7	9.6	9.8	9.9	10.1	10.2	10.1	10.6	10.8	10.7	10.6	10.6	10.5
Daily Max	9.5	9.7	9.9	9.8	10.0	10.2	10.4	10.4	10.8	10.9	11.1	10.9	10.8	10.8
Daily Min	9.2	9.5	9.6	9.6	9.7	9.9	10.1	9.9	10.1	10.6	10.6	10.4	10.5	10.4
Average	9.3	9.6	9.8	9.7	9.8	10.0	10.2	10.2	10.4	10.7	10.9	10.7	10.6	10.6

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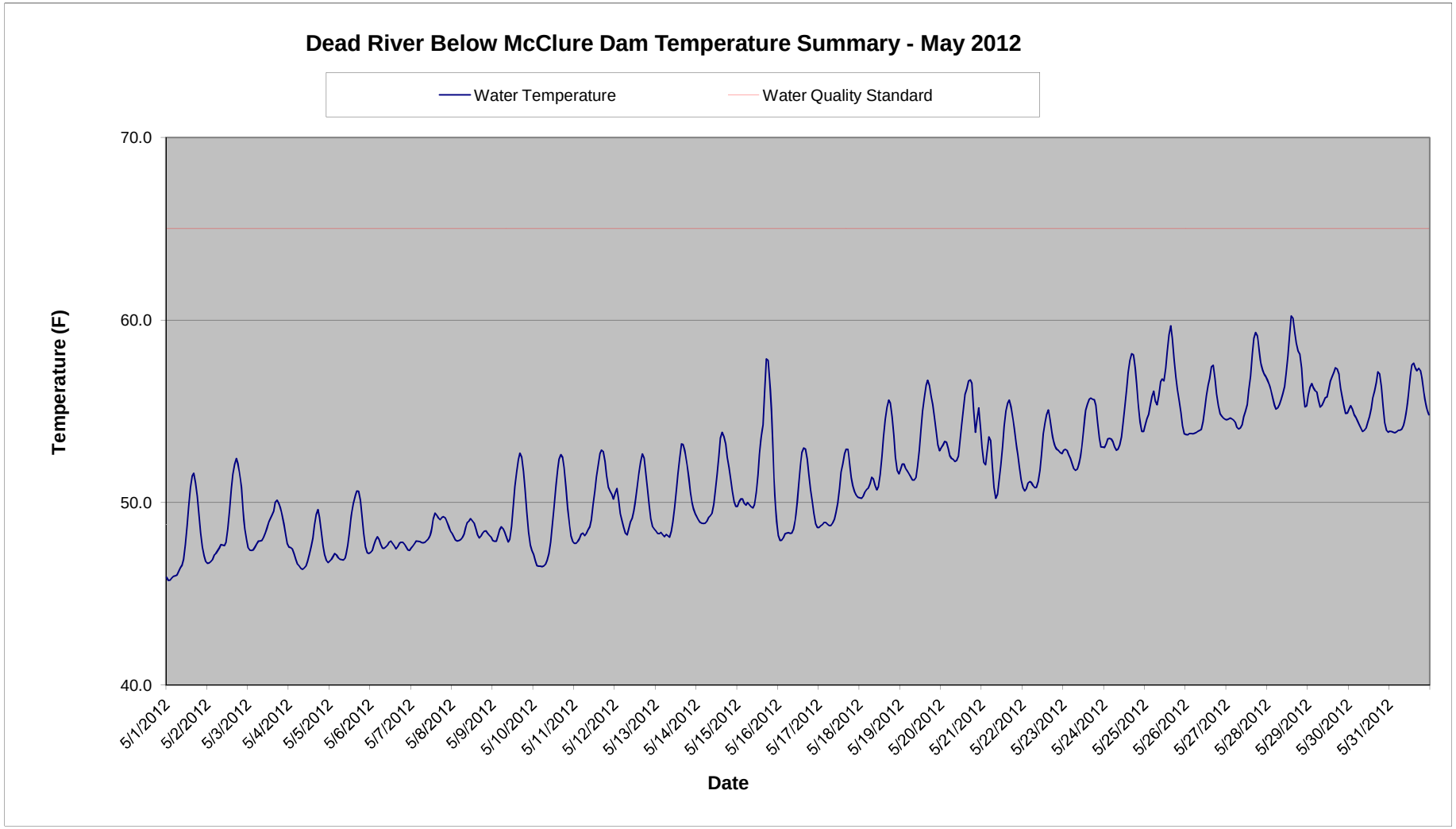

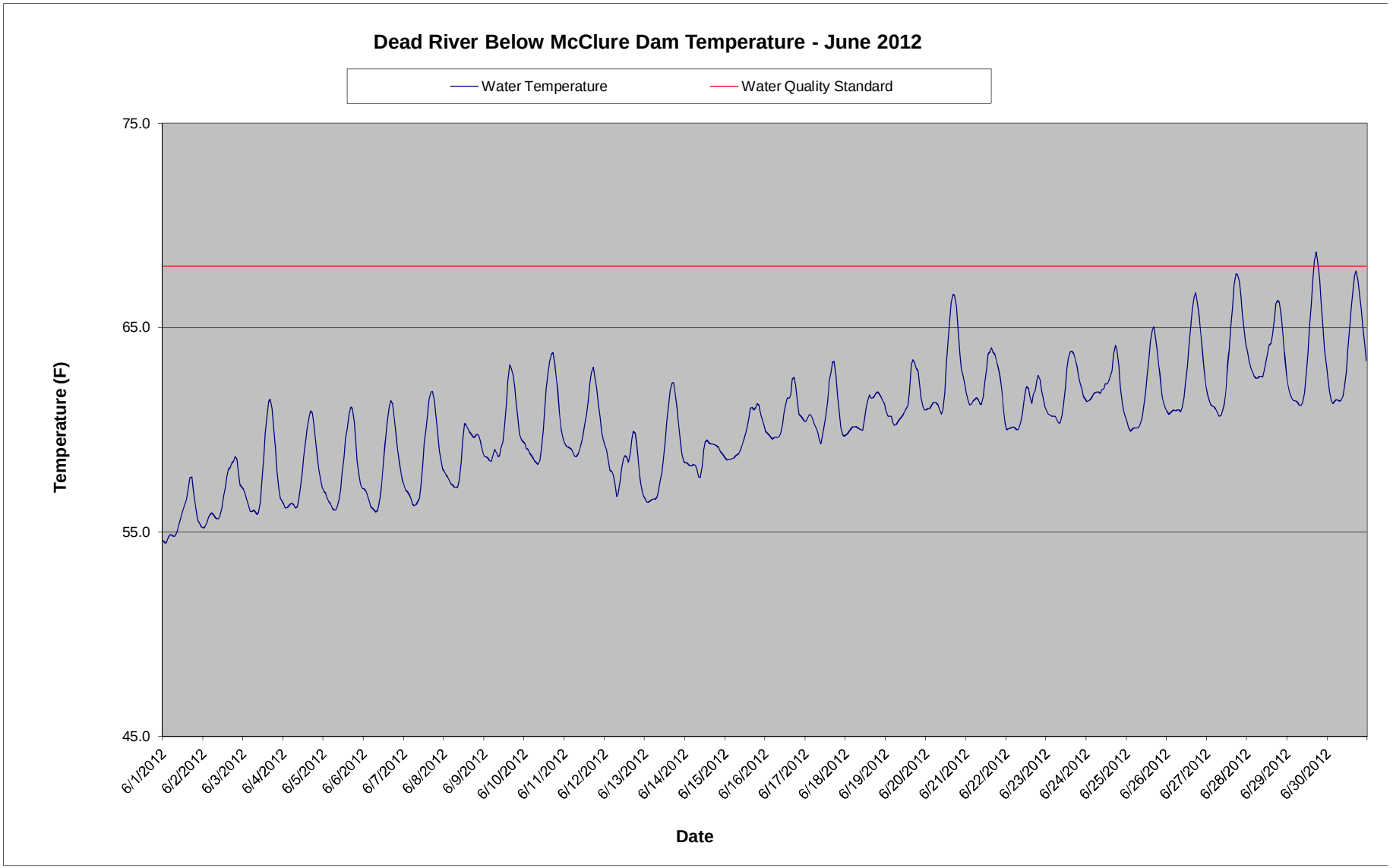

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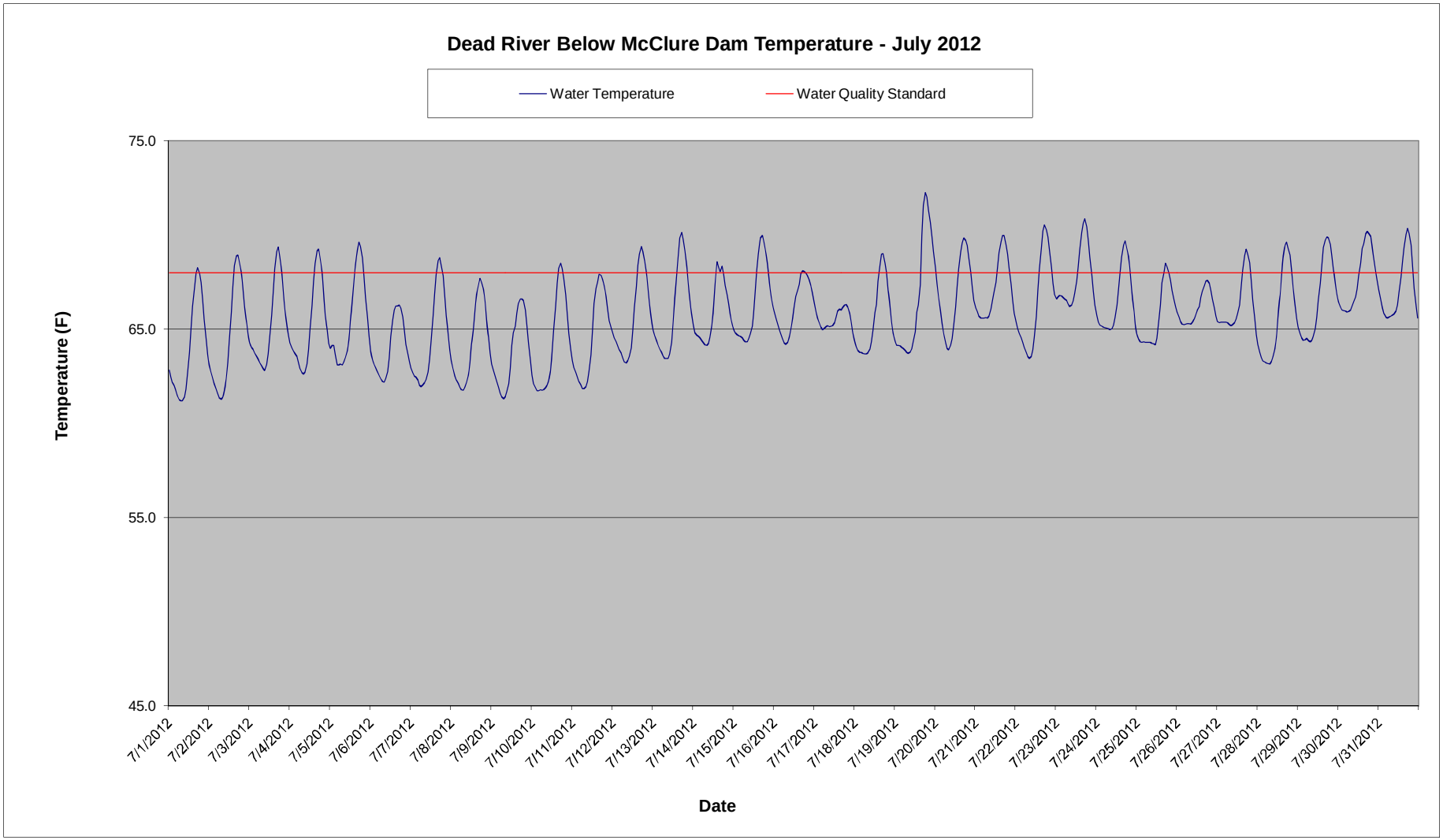

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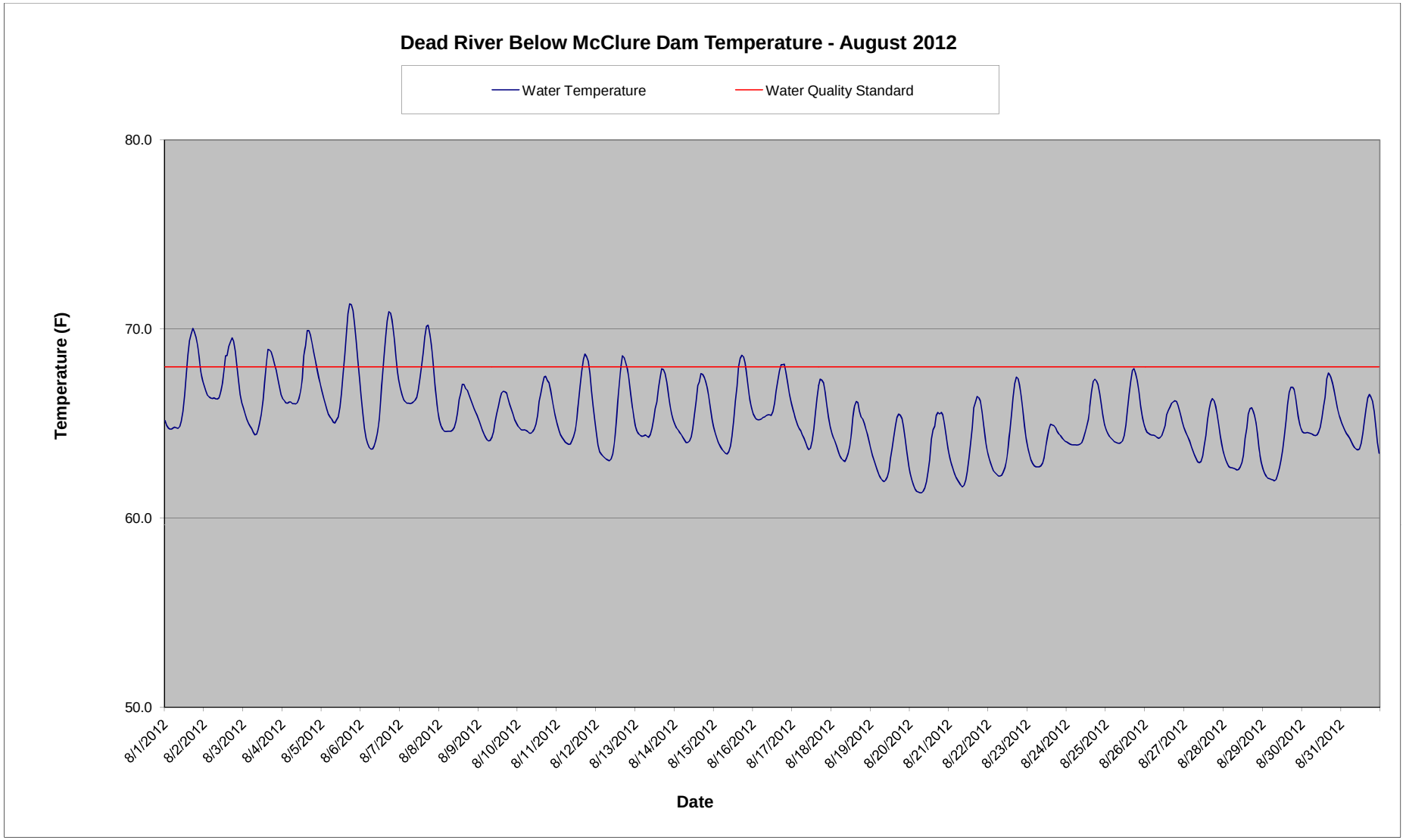

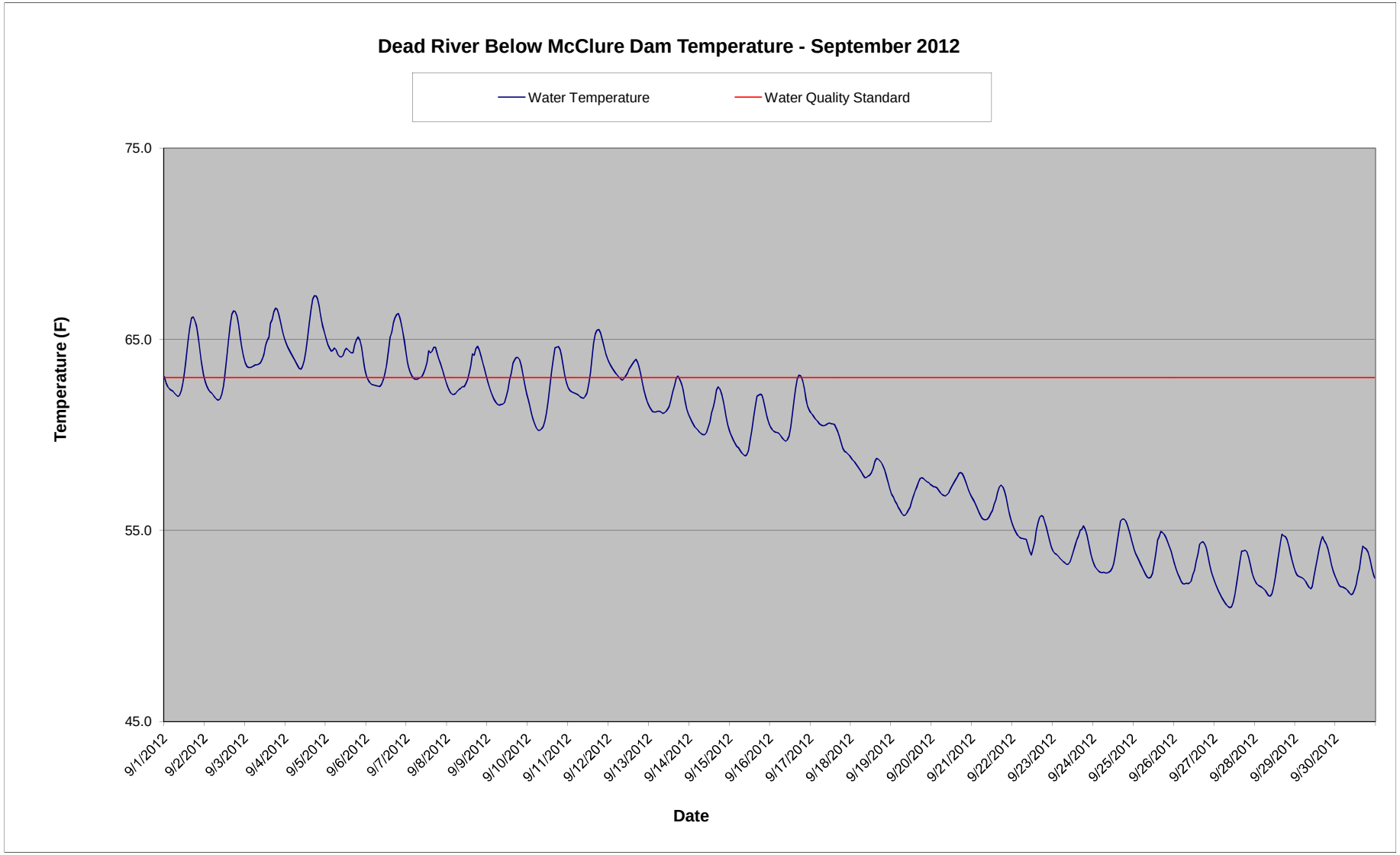

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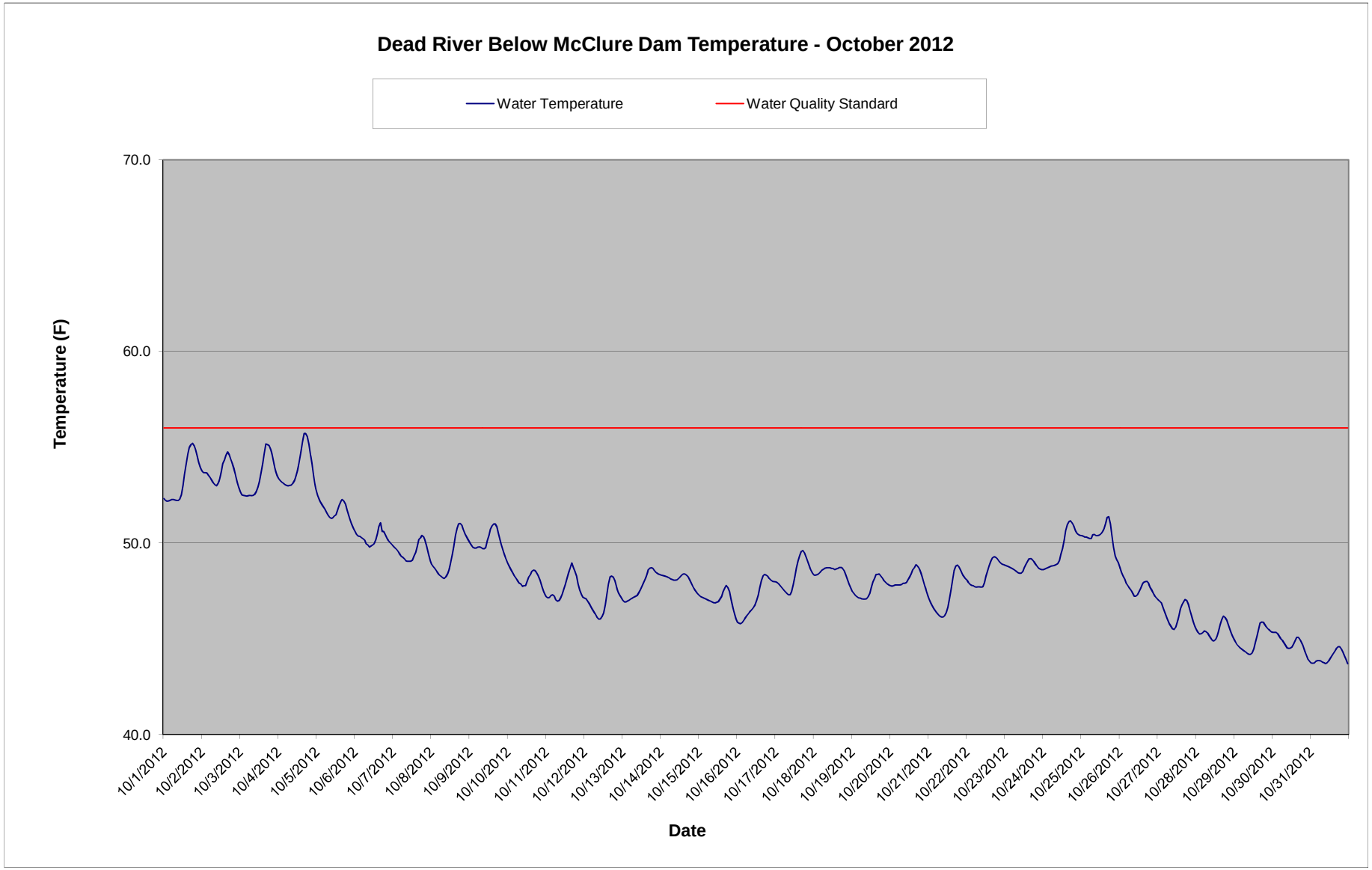

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Dead River Below McClure Dam - May 2012 Temperature Monitoring Data

Time HHMMSS	5/1/12	5/2/12	5/3/12	5/4/12	5/5/12	5/6/12	5/7/12	5/8/12	5/9/12	5/10/12	5/11/12	5/12/12	5/13/12	5/14/12	5/15/12	5/16/12
0	45.9	46.7	47.5	47.6	46.8	47.3	47.5	48.3	47.9	47.2	47.8	50.5	48.5	49.2	49.8	48.2
10000	45.7	46.7	47.4	47.5	46.9	47.4	47.6	48.1	47.9	46.8	47.8	50.8	48.3	49.0	50.1	47.9
20000	45.8	46.8	47.4	47.5	47.0	47.7	47.8	47.9	47.9	46.5	47.9	50.2	48.3	48.9	50.2	47.9
30000	45.9	46.9	47.4	47.2	47.2	47.9	47.9	47.9	48.1	46.5	48.0	49.4	48.4	48.9	50.2	48.1
40000	46.0	47.1	47.6	46.9	47.1	48.1	47.9	47.9	48.5	46.5	48.3	49.0	48.2	48.8	49.9	48.3
50000	46.0	47.2	47.7	46.6	47.0	48.0	47.9	48.0	48.7	46.5	48.3	48.7	48.1	48.9	49.9	48.3
60000	46.0	47.4	47.9	46.5	46.9	47.7	47.8	48.1	48.6	46.5	48.2	48.3	48.3	49.0	50.0	48.3
70000	46.2	47.5	47.9	46.4	46.9	47.5	47.8	48.3	48.4	46.6	48.3	48.2	48.2	49.2	49.9	48.3
80000	46.4	47.7	47.9	46.3	46.9	47.5	47.8	48.6	48.1	46.8	48.5	48.5	48.1	49.3	49.8	48.3
90000	46.6	47.7	48.1	46.4	47.0	47.6	47.9	48.9	47.8	47.2	48.7	48.9	48.4	49.4	49.7	48.5
100000	46.9	47.6	48.3	46.5	47.3	47.7	48.0	49.0	48.0	47.8	49.0	49.1	48.9	49.9	49.9	49.0
110000	47.7	47.8	48.6	46.8	47.9	47.8	48.2	49.1	48.7	48.7	49.9	49.5	49.7	50.6	50.5	49.8
120000	48.7	48.6	48.9	47.2	48.7	47.9	48.6	49.0	49.8	49.7	50.6	50.2	50.7	51.5	51.5	50.9
130000	49.8	49.6	49.1	47.6	49.5	47.8	49.1	48.9	50.9	50.8	51.4	50.9	51.6	52.5	52.7	52.0
140000	50.8	50.8	49.3	48.0	50.0	47.6	49.4	48.5	51.7	51.7	52.0	51.7	52.4	53.5	53.6	52.8
150000	51.5	51.5	49.5	48.7	50.4	47.5	49.3	48.2	52.4	52.4	52.7	52.2	53.2	53.9	54.2	53.0
160000	51.6	52.1	50.0	49.3	50.6	47.6	49.2	48.1	52.7	52.6	52.9	52.7	53.2	53.6	56.0	52.9
170000	51.1	52.4	50.1	49.6	50.6	47.8	49.1	48.2	52.5	52.5	52.8	52.4	52.8	53.2	57.9	52.4
180000	50.3	52.1	49.9	49.2	50.1	47.8	49.2	48.3	51.7	51.9	52.3	51.7	52.2	52.5	57.8	51.6
190000	49.4	51.5	49.7	48.4	49.3	47.8	49.2	48.4	50.8	50.8	51.5	50.8	51.7	51.9	56.7	50.7
200000	48.3	50.8	49.3	47.6	48.3	47.7	49.2	48.5	49.5	49.6	50.8	49.8	50.8	51.2	55.0	50.0
210000	47.6	49.6	48.8	47.2	47.6	47.6	48.9	48.3	48.4	49.0	50.6	49.1	50.1	50.6	52.6	49.4
220000	47.1	48.6	48.2	46.8	47.2	47.4	48.7	48.2	47.7	48.2	50.4	48.7	49.7	50.1	50.5	48.8
230000	46.8	48.0	47.8	46.7	47.2	47.4	48.5	48.1	47.4	47.9	50.2	48.5	49.4	49.8	49.0	48.6
Daily Max	51.6	52.4	50.1	49.6	50.6	48.1	49.4	49.1	52.7	52.6	52.9	52.7	53.2	53.9	57.9	53.0
Daily Min	45.7	46.7	47.4	46.3	46.8	47.3	47.5	47.9	47.4	46.5	47.8	48.2	48.1	48.8	49.0	47.9
Average	47.8	48.9	48.5	47.4	48.1	47.7	48.4	48.4	49.3	48.8	50.0	50.0	50.0	50.6	52.0	49.8

Monthly average temp (F): 51.6

License Maximum Monthly Average: 65ºF

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Dead River Below McClure Dam - May 2012 Temperature Monitoring Data

Time HHMMSS	5/17/12	5/18/12	5/19/12	5/20/12	5/21/12	5/22/12	5/23/12	5/24/12	5/25/12	5/26/12	5/27/12	5/28/12	5/29/12	5/30/12	5/31/12
0	48.6	50.3	51.8	53.0	53.0	50.8	52.9	53.0	54.2	53.7	54.5	56.7	55.9	55.1	53.9
10000	48.7	50.2	52.1	53.2	52.2	50.6	52.9	53.2	54.6	53.7	54.6	56.5	56.3	55.3	53.9
20000	48.8	50.3	52.1	53.3	52.1	50.7	52.8	53.5	54.8	53.8	54.6	56.2	56.5	55.1	53.9
30000	48.9	50.6	51.9	53.3	52.8	51.1	52.6	53.5	55.3	53.8	54.6	55.7	56.3	54.8	53.8
40000	48.9	50.7	51.7	53.0	53.6	51.2	52.4	53.5	55.8	53.8	54.5	55.3	56.1	54.7	53.9
50000	48.8	50.8	51.5	52.6	53.4	51.1	52.1	53.3	56.1	53.8	54.4	55.1	56.0	54.5	54.0
60000	48.7	51.0	51.4	52.4	52.1	50.9	51.9	53.0	55.6	53.8	54.1	55.2	55.6	54.2	54.0
70000	48.7	51.4	51.2	52.4	50.8	50.8	51.8	52.9	55.3	53.9	54.0	55.4	55.2	54.1	54.0
80000	48.9	51.3	51.2	52.3	50.2	50.8	51.8	52.9	55.9	53.9	54.1	55.6	55.3	53.9	54.2
90000	49.1	50.9	51.4	52.3	50.5	51.2	52.1	53.2	56.6	54.0	54.3	56.0	55.5	54.0	54.6
100000	49.4	50.7	52.0	52.5	51.2	51.8	52.6	53.6	56.8	54.4	54.7	56.4	55.7	54.1	55.2
110000	50.0	50.9	52.9	53.3	52.1	52.6	53.4	54.3	56.7	55.1	55.0	57.1	55.8	54.4	56.0
120000	50.8	51.5	54.1	54.3	53.1	53.8	54.3	55.2	57.4	55.8	55.4	58.0	56.2	54.7	56.9
130000	51.7	52.5	55.0	55.2	54.2	54.4	55.1	56.2	58.3	56.4	56.2	59.3	56.6	55.1	57.5
140000	52.1	53.6	55.8	55.9	55.0	54.8	55.4	57.1	59.2	56.8	56.9	60.2	56.9	55.7	57.6
150000	52.7	54.6	56.4	56.2	55.5	55.1	55.7	57.8	59.7	57.4	58.2	60.1	57.1	56.1	57.4
160000	52.9	55.2	56.7	56.7	55.6	54.5	55.7	58.2	59.0	57.5	59.0	59.3	57.4	56.6	57.2
170000	52.9	55.6	56.4	56.7	55.3	53.9	55.7	58.1	57.8	56.8	59.3	58.7	57.3	57.2	57.4
180000	52.1	55.5	55.8	56.5	54.6	53.4	55.6	57.5	56.9	56.0	59.1	58.3	57.0	57.1	57.2
190000	51.4	54.7	55.4	55.1	54.1	53.1	55.3	56.4	56.2	55.3	58.4	58.1	56.3	56.3	56.8
200000	50.9	53.7	54.6	53.9	53.3	52.9	54.4	55.2	55.6	54.9	57.7	57.4	55.8	55.2	56.0
210000	50.6	52.5	53.9	54.5	52.6	52.8	53.5	54.4	54.9	54.8	57.3	56.1	55.3	54.4	55.5
220000	50.4	51.8	53.2	55.2	51.9	52.7	53.0	53.9	54.2	54.6	57.1	55.2	54.9	54.0	55.1
230000	50.3	51.6	52.8	54.1	51.2	52.7	53.0	53.9	53.8	54.6	56.9	55.3	54.9	53.9	54.8
Daily Max	52.9	55.6	56.7	56.7	55.6	55.1	55.7	58.2	59.7	57.5	59.3	60.2	57.4	57.2	57.6
Daily Min	48.6	50.2	51.2	52.3	50.2	50.6	51.8	52.9	53.8	53.7	54.0	55.1	54.9	53.9	53.8
Average	50.3	52.2	53.4	54.1	52.9	52.4	53.6	54.7	56.3	54.9	56.0	57.0	56.1	55.0	55.4

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Dead River Below McClure Dam - June 2012 Temperature Monitoring Data

Time HHMMSS	06/01/12	06/02/12	06/03/12	06/04/12	06/05/12	06/06/12	06/07/12	06/08/12	06/09/12	06/10/12	06/11/12	06/12/12	06/13/12	06/14/12	06/15/12	06/16/12
0	54.5	55.3	56.8	56.2	56.9	57.0	57.0	57.8	58.7	59.1	59.2	59.0	56.4	58.4	58.5	59.8
10000	54.5	55.5	56.6	56.2	56.7	56.8	56.9	57.7	58.6	59.0	59.2	58.4	56.4	58.3	58.6	59.8
20000	54.7	55.7	56.3	56.3	56.5	56.5	56.8	57.5	58.5	58.9	59.1	58.0	56.5	58.2	58.6	59.6
30000	54.9	55.9	56.0	56.4	56.4	56.2	56.6	57.4	58.4	58.8	59.0	58.0	56.6	58.2	58.6	59.5
40000	54.9	55.9	56.0	56.4	56.2	56.2	56.4	57.3	58.7	58.6	58.8	57.8	56.6	58.3	58.6	59.6
50000	54.8	55.9	56.1	56.3	56.1	56.1	56.3	57.2	59.1	58.5	58.7	57.3	56.6	58.3	58.7	59.6
60000	54.8	55.7	56.0	56.2	56.1	56.0	56.3	57.2	58.9	58.4	58.7	56.8	56.7	58.0	58.8	59.6
70000	55.0	55.7	55.9	56.2	56.2	56.0	56.4	57.2	58.7	58.3	58.8	56.9	57.0	57.7	58.8	59.7
80000	55.3	55.6	56.0	56.6	56.6	56.4	56.6	57.5	58.7	58.5	59.1	57.5	57.5	57.7	59.0	59.8
90000	55.6	55.8	56.5	57.1	57.0	57.0	57.2	58.4	59.1	59.1	59.4	58.1	57.9	58.2	59.3	60.2
100000	55.9	56.2	57.5	57.9	57.9	57.8	58.3	59.5	59.4	60.0	59.8	58.6	58.6	59.0	59.5	60.8
110000	56.1	56.7	58.7	58.7	58.6	58.9	59.4	60.3	60.1	61.1	60.4	58.7	59.5	59.4	59.8	61.3
120000	56.4	57.2	59.8	59.4	59.6	59.7	60.1	60.2	61.2	62.0	60.8	58.6	60.4	59.5	60.1	61.6
130000	56.6	57.7	60.7	60.0	60.1	60.4	60.8	60.0	62.4	62.8	61.3	58.4	61.3	59.4	60.6	61.5
140000	57.2	58.0	61.4	60.6	60.7	61.1	61.5	59.9	63.2	63.4	62.3	58.9	61.9	59.3	61.1	61.7
150000	57.7	58.2	61.5	60.9	61.1	61.4	61.9	59.8	63.0	63.7	62.8	59.5	62.3	59.3	61.1	62.5
160000	57.7	58.4	61.1	60.8	61.1	61.3	61.9	59.7	62.7	63.8	63.1	59.9	62.3	59.3	61.0	62.6
170000	57.1	58.5	60.2	60.3	60.4	60.6	61.4	59.6	62.1	63.2	62.6	59.8	61.8	59.3	61.1	62.2
180000	56.4	58.7	59.1	59.6	59.5	59.8	60.7	59.8	61.4	62.4	62.0	59.3	61.1	59.2	61.3	61.3
190000	55.9	58.5	58.0	58.7	58.5	59.1	59.8	59.8	60.5	61.6	61.3	58.4	60.3	59.1	61.2	60.8
200000	55.5	57.8	57.1	58.1	57.8	58.4	59.0	59.6	59.8	60.6	60.6	57.6	59.5	58.9	60.8	60.7
210000	55.4	57.3	56.6	57.5	57.3	58.0	58.5	59.3	59.5	60.0	59.9	57.1	58.8	58.8	60.5	60.6
220000	55.2	57.2	56.5	57.2	57.1	57.5	58.1	58.9	59.4	59.5	59.5	56.8	58.4	58.7	60.2	60.4
230000	55.2	57.1	56.4	57.0	57.1	57.3	58.0	58.7	59.3	59.3	59.2	56.6	58.4	58.6	59.9	60.4
Daily Max	57.7	58.7	61.5	60.9	61.1	61.4	61.9	60.3	63.2	63.8	63.1	59.9	62.3	59.5	61.3	62.6
Daily Min	54.5	55.3	55.9	56.2	56.1	56.0	56.3	57.2	58.4	58.3	58.7	56.6	56.4	57.7	58.5	59.5
Average	55.7	56.8	57.8	57.9	58.0	58.1	58.6	58.8	60.1	60.4	60.2	58.2	58.9	58.7	59.8	60.7

Monthly average temp (F): 60.4

License Maximum Monthly Average: 68ºF

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Dead River Below McClure Dam - June 2012 Temperature Monitoring Data

Time HHMMSS	06/17/12	06/18/12	06/19/12	06/20/12	06/21/12	06/22/12	06/23/12	06/24/12	06/25/12	06/26/12	06/27/12	06/28/12	06/29/12	06/30/12
0	60.5	59.8	60.7	61.0	61.4	60.0	60.9	61.4	60.4	60.9	61.8	63.8	62.3	62.5
10000	60.7	59.9	60.7	61.0	61.2	60.0	60.7	61.4	60.1	60.8	61.4	63.4	61.9	61.9
20000	60.7	60.0	60.7	61.2	61.3	60.1	60.7	61.5	59.9	60.8	61.2	63.0	61.6	61.4
30000	60.5	60.1	60.4	61.3	61.4	60.1	60.7	61.6	60.0	60.9	61.2	62.8	61.4	61.3
40000	60.3	60.1	60.2	61.3	61.5	60.1	60.7	61.8	60.1	61.0	61.1	62.6	61.4	61.4
50000	60.1	60.2	60.3	61.3	61.6	60.1	60.7	61.8	60.1	60.9	61.0	62.5	61.4	61.5
60000	59.9	60.1	60.4	61.2	61.5	60.0	60.5	61.9	60.1	61.0	60.8	62.5	61.3	61.4
70000	59.5	60.0	60.5	61.0	61.3	60.0	60.3	61.8	60.1	61.0	60.7	62.6	61.2	61.4
80000	59.3	60.0	60.6	60.8	61.2	60.3	60.3	61.8	60.3	60.9	60.7	62.6	61.2	61.4
90000	59.7	60.0	60.7	61.0	61.6	60.6	60.7	62.0	60.6	61.1	60.9	62.6	61.3	61.6
100000	60.2	60.4	60.9	61.8	62.3	61.1	61.2	62.0	61.1	61.6	61.3	62.9	61.8	62.1
110000	60.7	61.1	61.0	63.2	63.0	61.8	62.0	62.3	61.8	62.3	61.9	63.4	62.6	62.9
120000	61.4	61.4	61.2	64.5	63.7	62.1	63.0	62.2	62.6	63.1	62.9	63.8	63.7	64.0
130000	62.4	61.7	61.8	65.4	63.8	62.0	63.5	62.4	63.5	64.1	63.9	64.1	65.0	65.0
140000	62.8	61.5	63.2	66.2	64.0	61.6	63.8	62.6	64.3	65.1	65.0	64.2	66.2	66.0
150000	63.3	61.6	63.4	66.6	63.8	61.3	63.8	62.9	64.9	65.9	66.0	64.6	67.3	66.9
160000	63.3	61.6	63.2	66.6	63.7	61.7	63.7	63.7	65.0	66.5	67.1	65.4	68.2	67.6
170000	62.7	61.8	63.0	66.0	63.4	61.9	63.5	64.1	64.6	66.7	67.6	66.1	68.7	67.8
180000	61.8	61.8	62.9	65.0	63.0	62.4	63.1	63.9	63.8	66.3	67.6	66.3	68.2	67.3
190000	60.8	61.8	62.2	63.7	62.7	62.7	62.6	63.1	63.1	65.6	67.2	66.2	67.4	66.7
200000	60.1	61.6	61.6	63.0	62.0	62.4	62.3	62.1	62.4	64.8	66.6	65.6	66.3	65.8
210000	59.8	61.4	61.1	62.6	61.2	61.9	62.0	61.3	61.6	63.9	65.7	64.8	65.0	65.0
220000	59.7	61.3	61.0	62.2	60.3	61.5	61.6	60.9	61.2	63.0	64.8	63.9	63.9	64.1
230000	59.8	60.9	61.0	61.8	60.0	61.1	61.5	60.7	61.1	62.2	64.2	63.0	63.2	63.4
Daily Max	63.3	61.8	63.4	66.6	64.0	62.7	63.8	64.1	65.0	66.7	67.6	66.3	68.7	67.8
Daily Min	59.3	59.8	60.2	60.8	60.0	60.0	60.3	60.7	59.9	60.8	60.7	62.5	61.2	61.3
Average	60.8	60.8	61.4	62.9	62.1	61.1	61.8	62.1	61.8	62.9	63.4	63.9	63.9	63.8

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Dead River Below McClure Dam - July 2012 Temperature Monitoring Data

Time HHMMSS	07/01/12	07/02/12	07/03/12	07/04/12	07/05/12	07/06/12	07/07/12	07/08/12	07/09/12	07/10/12	07/11/12	07/12/12	07/13/12	07/14/12	07/15/12	07/16/12
0	62.8	63.1	64.3	64.3	64.0	63.9	62.9	63.3	63.2	62.5	63.3	64.8	65.0	65.2	65.0	65.9
10000	62.4	62.7	64.0	64.0	64.1	63.4	62.7	62.9	62.8	62.1	63.0	64.5	64.7	64.8	64.8	65.6
20000	62.2	62.4	63.9	63.8	64.1	63.1	62.5	62.5	62.5	61.9	62.7	64.3	64.4	64.7	64.7	65.3
30000	62.0	62.1	63.7	63.7	63.7	63.0	62.5	62.3	62.2	61.7	62.4	64.1	64.1	64.6	64.7	65.0
40000	61.7	61.8	63.6	63.5	63.1	62.7	62.3	62.1	61.9	61.7	62.2	63.9	64.0	64.5	64.6	64.7
50000	61.4	61.6	63.4	63.2	63.1	62.5	62.0	61.9	61.6	61.8	62.0	63.7	63.8	64.4	64.5	64.5
60000	61.3	61.4	63.2	62.9	63.1	62.4	62.0	61.8	61.4	61.8	61.8	63.5	63.6	64.3	64.4	64.3
70000	61.2	61.3	63.1	62.7	63.1	62.2	62.1	61.8	61.3	61.8	61.8	63.3	63.4	64.2	64.3	64.2
80000	61.2	61.4	62.9	62.6	63.3	62.2	62.2	61.9	61.4	61.9	61.9	63.2	63.4	64.1	64.3	64.3
90000	61.4	61.7	62.8	62.7	63.5	62.4	62.3	62.2	61.7	62.0	62.2	63.3	63.4	64.3	64.5	64.5
100000	61.8	62.4	63.1	63.2	63.8	62.7	62.7	62.5	62.1	62.3	62.7	63.5	63.7	64.6	64.7	65.0
110000	62.6	63.2	63.7	63.9	64.4	63.5	63.4	63.2	62.9	62.8	63.6	64.0	64.3	65.3	65.2	65.6
120000	63.8	64.4	64.6	65.0	65.5	64.6	64.4	64.2	64.1	63.8	64.9	65.0	65.4	66.2	66.0	66.2
130000	65.0	65.9	65.7	66.3	66.6	65.5	65.7	65.0	64.8	65.0	66.4	66.1	66.7	67.4	67.2	66.7
140000	66.2	67.3	66.9	67.5	67.5	66.0	66.9	66.0	65.2	66.2	67.2	67.2	67.9	68.6	68.4	67.1
150000	67.2	68.4	68.2	68.5	68.4	66.2	67.9	66.8	65.9	67.4	67.5	68.4	68.9	68.3	69.4	67.4
160000	68.0	68.9	69.1	69.1	69.2	66.2	68.6	67.3	66.4	68.2	67.9	69.0	69.9	68.1	69.8	67.9
170000	68.3	68.9	69.4	69.2	69.6	66.3	68.8	67.7	66.6	68.5	67.9	69.4	70.1	68.3	70.0	68.1
180000	68.0	68.5	68.8	68.7	69.4	66.1	68.4	67.5	66.6	68.2	67.6	69.1	69.7	67.9	69.6	68.0
190000	67.5	68.0	68.1	68.0	68.8	65.6	67.8	67.1	66.5	67.7	67.3	68.7	69.2	67.3	69.2	68.0
200000	66.6	67.2	67.0	66.9	67.8	64.9	66.8	66.4	66.0	66.8	66.7	68.0	68.4	66.8	68.5	67.8
210000	65.5	66.2	66.0	65.8	66.7	64.2	65.7	65.5	65.2	65.8	66.1	67.2	67.4	66.3	67.7	67.6
220000	64.5	65.4	65.3	65.0	65.6	63.7	64.7	64.6	64.3	64.8	65.5	66.3	66.5	65.8	66.9	67.3
230000	63.6	64.8	64.7	64.3	64.6	63.3	63.9	63.7	63.3	63.9	65.1	65.5	65.8	65.3	66.3	66.8
Daily Max	68.3	68.9	69.4	69.2	69.6	66.3	68.8	67.7	66.6	68.5	67.9	69.4	70.1	68.6	70.0	68.1
Daily Min	61.2	61.3	62.8	62.6	63.1	62.2	62.0	61.8	61.3	61.7	61.8	63.2	63.4	64.1	64.3	64.2
Average	64.0	64.5	65.2	65.2	65.5	64.0	64.5	64.2	63.7	64.2	64.6	65.7	66.0	65.9	66.4	66.2

Monthly average temp (F): 65.7

License Maximum Monthly Average: 68ºF

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Dead River Below McClure Dam - July 2012 Temperature Monitoring Data

Time HHMMSS	07/17/12	07/18/12	07/19/12	07/20/12	07/21/12	07/22/12	07/23/12	07/24/12	07/25/12	07/26/12	07/27/12	07/28/12	07/29/12	07/30/12	07/31/12
0	66.4	64.4	64.3	68.3	66.1	65.4	66.6	65.7	64.8	65.9	65.4	64.2	65.1	66.4	67.1
10000	65.9	64.1	64.1	67.4	65.9	65.0	66.7	65.4	64.5	65.6	65.4	63.8	64.7	66.2	66.6
20000	65.6	63.9	64.1	66.7	65.7	64.8	66.8	65.2	64.3	65.4	65.4	63.5	64.5	66.0	66.1
30000	65.3	63.8	64.1	66.0	65.6	64.5	66.8	65.2	64.3	65.3	65.4	63.3	64.4	66.0	65.8
40000	65.1	63.8	64.0	65.4	65.6	64.3	66.7	65.1	64.3	65.2	65.4	63.2	64.4	65.9	65.6
50000	65.0	63.7	64.0	64.8	65.6	64.0	66.6	65.1	64.3	65.3	65.4	63.2	64.5	65.9	65.6
60000	65.0	63.7	63.9	64.3	65.6	63.8	66.5	65.0	64.3	65.3	65.4	63.2	64.4	65.9	65.6
70000	65.1	63.7	63.8	64.0	65.6	63.6	66.3	65.0	64.3	65.3	65.2	63.2	64.3	66.0	65.7
80000	65.2	63.7	63.7	63.9	65.7	63.4	66.2	65.0	64.3	65.3	65.2	63.3	64.4	66.2	65.7
90000	65.1	63.9	63.8	64.1	66.1	63.5	66.3	65.0	64.2	65.4	65.2	63.5	64.6	66.4	65.8
100000	65.2	64.3	64.0	64.5	66.5	63.9	66.5	65.2	64.2	65.5	65.4	64.0	65.0	66.7	65.9
110000	65.2	64.9	64.3	65.2	67.0	64.6	66.9	65.6	64.2	65.8	65.5	64.6	65.6	67.1	66.3
120000	65.3	65.9	64.9	66.2	67.5	65.7	67.6	66.3	64.5	66.0	65.8	65.6	66.6	67.8	66.9
130000	65.6	66.3	65.9	67.3	68.3	67.1	68.3	67.1	65.5	66.2	66.3	66.7	67.4	68.5	67.7
140000	66.0	67.5	66.3	68.2	69.1	68.2	69.2	68.0	66.3	66.7	67.2	67.8	68.4	69.3	68.6
150000	66.1	68.4	67.4	69.1	69.6	69.3	70.1	68.8	67.5	67.0	68.1	68.7	69.3	69.5	69.3
160000	66.0	69.0	70.0	69.6	70.0	70.2	70.6	69.5	68.0	67.3	68.9	69.4	69.7	70.1	70.0
170000	66.1	69.0	71.6	69.9	70.0	70.5	70.9	69.7	68.5	67.5	69.3	69.6	69.9	70.2	70.4
180000	66.3	68.5	72.2	69.7	69.5	70.3	70.4	69.3	68.3	67.6	69.0	69.3	69.9	70.1	70.1
190000	66.3	68.0	72.0	69.4	69.0	69.9	69.7	68.8	68.0	67.4	68.5	68.9	69.5	69.9	69.5
200000	66.2	67.1	71.3	68.8	68.2	69.2	68.8	68.0	67.6	67.1	67.6	68.1	68.8	69.4	68.3
210000	65.8	66.2	70.6	68.0	67.4	68.3	67.9	67.1	67.1	66.6	66.6	67.2	68.1	68.7	67.2
220000	65.4	65.4	69.9	67.2	66.6	67.4	67.0	66.1	66.6	66.1	65.6	66.3	67.4	68.0	66.2
230000	64.8	64.8	69.1	66.5	65.9	66.8	66.3	65.3	66.2	65.7	64.7	65.6	66.8	67.5	65.6
Daily Max	66.4	69.0	72.2	69.9	70.0	70.5	70.9	69.7	68.5	67.6	69.3	69.6	69.9	70.2	70.4
Daily Min	64.8	63.7	63.7	63.9	65.6	63.4	66.2	65.0	64.2	65.2	64.7	63.2	64.3	65.9	65.6
Average	65.6	65.6	66.6	66.8	67.2	66.4	67.7	66.5	65.7	66.1	66.3	65.7	66.6	67.7	67.2

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Dead River Below McClure Dam - August 2012 Temperature Monitoring Data

Time HHMMSS	8/1/2012	8/2/2012	8/3/2012	8/4/2012	8/5/2012	8/6/2012	8/7/2012	8/8/2012	8/9/2012	8/10/2012	8/11/2012	8/12/2012	8/13/2012	8/14/2012	8/15/2012	8/16/2012
0	65.2	67.0	65.8	66.3	66.7	66.5	66.9	65.2	65.2	64.9	65.0	64.4	64.8	65.0	64.7	65.5
10000	64.9	66.7	65.5	66.2	66.4	65.6	66.5	64.9	64.9	64.8	64.7	63.9	64.6	64.8	64.4	65.3
20000	64.8	66.5	65.2	66.1	66.1	64.8	66.3	64.7	64.7	64.7	64.4	63.5	64.4	64.7	64.1	65.2
30000	64.7	66.4	65.0	66.1	65.8	64.2	66.2	64.6	64.5	64.7	64.3	63.4	64.4	64.5	63.9	65.2
40000	64.7	66.3	64.9	66.1	65.5	64.0	66.1	64.6	64.3	64.7	64.1	63.3	64.3	64.4	63.8	65.2
50000	64.8	66.3	64.7	66.1	65.4	63.7	66.1	64.6	64.1	64.6	64.0	63.2	64.3	64.3	63.6	65.2
60000	64.8	66.4	64.5	66.1	65.2	63.6	66.1	64.6	64.1	64.6	64.0	63.1	64.4	64.1	63.5	65.3
70000	64.8	66.3	64.4	66.1	65.1	63.7	66.1	64.6	64.1	64.5	63.9	63.1	64.3	64.0	63.4	65.4
80000	64.7	66.3	64.4	66.0	65.0	63.8	66.1	64.7	64.3	64.5	63.9	63.0	64.3	64.0	63.4	65.4
90000	64.9	66.4	64.7	66.1	65.2	64.1	66.2	64.8	64.6	64.6	64.1	63.1	64.4	64.1	63.5	65.5
100000	65.1	66.6	65.1	66.3	65.4	64.5	66.4	65.1	65.1	64.7	64.3	63.4	64.7	64.3	63.8	65.5
110000	65.6	67.0	65.5	66.8	65.9	65.2	66.8	65.6	65.5	65.0	64.6	64.0	65.2	64.7	64.3	65.4
120000	66.5	67.7	66.3	67.4	66.6	66.2	67.4	66.3	65.9	65.4	65.3	64.9	65.8	65.5	65.1	65.6
130000	67.6	68.6	67.2	68.6	67.6	67.4	68.1	66.6	66.3	66.2	66.1	66.1	66.1	66.2	66.2	66.1
140000	68.6	68.6	68.1	69.1	68.6	68.6	68.8	67.1	66.6	66.6	67.0	67.1	66.9	67.0	67.0	66.7
150000	69.4	69.1	68.9	69.9	69.8	69.6	69.6	67.1	66.7	67.1	67.8	68.1	67.5	67.2	68.0	67.3
160000	69.7	69.3	68.9	69.9	70.8	70.4	70.1	66.8	66.7	67.5	68.4	68.6	67.9	67.6	68.5	67.8
170000	70.0	69.5	68.8	69.7	71.3	70.9	70.2	66.8	66.6	67.5	68.7	68.5	67.9	67.6	68.6	68.1
180000	69.9	69.4	68.5	69.3	71.3	70.8	69.7	66.5	66.3	67.3	68.5	68.2	67.6	67.4	68.5	68.1
190000	69.6	68.8	68.1	68.8	71.0	70.5	69.2	66.3	66.0	67.2	68.3	67.9	67.2	67.2	68.2	68.1
200000	69.1	68.0	67.8	68.3	70.3	69.7	68.3	66.1	65.7	66.8	67.6	67.3	66.6	66.8	67.6	67.7
210000	68.4	67.2	67.4	67.9	69.4	68.8	67.2	65.8	65.5	66.3	66.8	66.6	66.0	66.3	66.8	67.2
220000	67.7	66.5	67.0	67.4	68.3	67.9	66.3	65.6	65.2	65.8	65.9	65.9	65.5	65.6	66.2	66.6
230000	67.3	66.1	66.5	67.1	67.4	67.3	65.6	65.4	65.0	65.3	65.2	65.3	65.2	65.1	65.8	66.2
Daily Max	70.0	69.5	68.9	69.9	71.3	70.9	70.2	67.1	66.7	67.5	68.7	68.6	67.9	67.6	68.6	68.1
Daily Min	64.7	66.1	64.4	66.0	65.0	63.6	65.6	64.6	64.1	64.5	63.9	63.0	64.3	64.0	63.4	65.2
Average	66.8	67.4	66.4	67.4	67.5	66.8	67.3	65.6	65.3	65.6	65.7	65.2	65.6	65.5	65.5	66.2

Monthly average temp (F): 65.4

License Maximum Monthly Average: 68ºF

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Dead River Below McClure Dam - August 2012 Temperature Monitoring Data

Time HHMMSS	8/17/2012	8/18/2012	8/19/2012	8/20/2012	8/21/2012	8/22/2012	8/23/2012	8/24/2012	8/25/2012	8/26/2012	8/27/2012	8/28/2012	8/29/2012	8/30/2012	8/31/2012
0	65.8	64.5	63.6	62.4	63.3	63.3	63.7	64.0	64.7	64.7	64.7	63.4	62.6	64.6	65.0
10000	65.5	64.3	63.3	62.0	62.9	63.0	63.4	64.0	64.5	64.5	64.5	63.1	62.3	64.5	64.8
20000	65.2	64.1	63.0	61.8	62.7	62.7	63.1	63.9	64.3	64.5	64.3	62.9	62.2	64.5	64.7
30000	65.0	63.8	62.8	61.5	62.4	62.5	62.9	63.9	64.2	64.4	64.1	62.7	62.1	64.5	64.5
40000	64.7	63.5	62.5	61.4	62.2	62.4	62.8	63.9	64.1	64.4	63.8	62.7	62.1	64.5	64.3
50000	64.6	63.3	62.3	61.4	62.0	62.3	62.7	63.9	64.0	64.4	63.6	62.7	62.0	64.5	64.2
60000	64.4	63.1	62.1	61.3	61.9	62.2	62.7	63.9	64.0	64.3	63.3	62.6	62.0	64.4	64.1
70000	64.2	63.1	62.0	61.3	61.8	62.2	62.7	63.9	64.0	64.3	63.1	62.6	62.0	64.4	63.9
80000	64.0	63.0	61.9	61.4	61.6	62.3	62.8	63.9	64.0	64.2	63.0	62.5	62.0	64.4	63.7
90000	63.8	63.1	62.0	61.6	61.7	62.4	62.9	64.0	64.0	64.3	62.9	62.6	62.3	64.4	63.6
100000	63.6	63.4	62.2	61.9	62.0	62.7	63.2	64.2	64.1	64.4	63.0	62.7	62.7	64.5	63.6
110000	63.7	63.8	62.5	62.5	62.4	63.1	63.8	64.5	64.4	64.6	63.3	62.9	63.1	64.8	63.7
120000	64.1	64.5	63.1	63.1	63.1	63.7	64.3	64.9	64.9	64.9	63.8	63.3	63.6	65.3	64.0
130000	64.7	65.3	63.7	64.2	64.0	64.6	64.7	65.2	65.7	65.5	64.4	64.2	64.3	65.9	64.5
140000	65.5	65.9	64.3	64.7	64.8	65.5	65.0	65.9	66.5	65.7	65.2	64.8	65.2	66.4	65.1
150000	66.3	66.2	64.9	64.9	65.8	66.4	64.9	66.7	67.2	65.9	65.8	65.5	66.0	67.4	65.8
160000	67.0	66.1	65.3	65.4	66.1	67.1	64.9	67.2	67.8	66.1	66.1	65.8	66.7	67.7	66.3
170000	67.4	65.7	65.5	65.6	66.4	67.5	64.8	67.4	67.9	66.1	66.3	65.8	66.9	67.5	66.5
180000	67.3	65.4	65.4	65.5	66.4	67.4	64.6	67.3	67.7	66.2	66.2	65.6	66.9	67.3	66.4
190000	67.2	65.2	65.3	65.6	66.2	67.0	64.5	67.0	67.3	66.2	65.9	65.4	66.8	67.0	66.2
200000	66.6	65.0	64.8	65.5	65.6	66.4	64.4	66.6	66.7	66.0	65.4	64.8	66.3	66.5	65.6
210000	66.0	64.7	64.2	65.0	64.9	65.6	64.2	66.0	66.0	65.6	64.8	64.1	65.7	66.0	64.8
220000	65.4	64.4	63.5	64.4	64.2	64.9	64.1	65.4	65.4	65.3	64.2	63.4	65.1	65.7	64.0
230000	64.9	64.0	62.9	63.8	63.7	64.2	64.1	64.9	65.0	64.9	63.8	62.9	64.8	65.3	63.4
Daily Max	67.4	66.2	65.5	65.6	66.4	67.5	65.0	67.4	67.9	66.2	66.3	65.8	66.9	67.7	66.5
Daily Min	63.6	63.0	61.9	61.3	61.6	62.2	62.7	63.9	64.0	64.2	62.9	62.5	62.0	64.4	63.4
Average	65.3	64.4	63.5	63.3	63.7	64.2	63.8	65.1	65.3	65.1	64.4	63.7	64.0	65.5	64.7

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Dead River Below McClure Dam - September 2012 Temperature Monitoring Data

Time HHMMSS	9/1/2012	9/2/2012	9/3/2012	9/4/2012	9/5/2012	9/6/2012	9/7/2012	9/8/2012	9/9/2012	9/10/2012	9/11/2012	9/12/2012	9/13/2012	9/14/2012	9/15/2012	9/16/2012
0	63.0	62.9	63.8	64.9	65.0	63.1	64.0	62.6	62.8	61.9	62.4	63.8	61.5	60.9	60.1	60.4
10000	62.7	62.6	63.6	64.6	64.7	62.9	63.6	62.3	62.5	61.5	62.3	63.6	61.3	60.7	59.9	60.3
20000	62.5	62.4	63.5	64.4	64.5	62.7	63.3	62.2	62.3	61.1	62.2	63.5	61.2	60.6	59.7	60.2
30000	62.4	62.3	63.5	64.3	64.4	62.6	63.1	62.1	62.0	60.8	62.2	63.4	61.2	60.4	59.6	60.1
40000	62.3	62.2	63.6	64.1	64.4	62.6	63.0	62.1	61.8	60.6	62.2	63.2	61.2	60.3	59.4	60.1
50000	62.3	62.1	63.6	64.0	64.5	62.6	62.9	62.2	61.7	60.4	62.1	63.1	61.2	60.2	59.3	60.1
60000	62.2	62.0	63.7	63.8	64.4	62.6	62.9	62.3	61.6	60.2	62.1	63.0	61.2	60.1	59.2	60.0
70000	62.1	61.9	63.7	63.6	64.2	62.5	63.0	62.4	61.6	60.2	62.0	62.9	61.2	60.1	59.1	59.8
80000	62.0	61.8	63.7	63.5	64.1	62.5	63.0	62.4	61.6	60.3	61.9	62.9	61.1	60.0	59.0	59.7
90000	62.1	61.9	63.8	63.4	64.1	62.7	63.1	62.5	61.6	60.4	61.9	62.9	61.2	60.0	58.9	59.7
100000	62.3	62.1	64.0	63.6	64.1	62.9	63.2	62.5	61.7	60.7	62.0	63.1	61.2	60.1	59.0	59.7
110000	62.7	62.6	64.2	63.9	64.4	63.2	63.5	62.7	62.0	61.1	62.2	63.2	61.4	60.4	59.2	59.9
120000	63.4	63.2	64.7	64.4	64.5	63.7	63.8	62.9	62.3	61.8	62.7	63.4	61.5	60.7	59.7	60.4
130000	64.1	64.0	64.9	65.1	64.5	64.4	64.4	63.2	62.9	62.5	63.2	63.6	61.9	61.2	60.3	61.0
140000	64.9	64.9	65.1	65.8	64.4	65.1	64.3	63.6	63.2	63.3	64.0	63.7	62.3	61.4	60.9	61.8
150000	65.6	65.7	65.8	66.5	64.3	65.4	64.4	64.2	63.8	64.0	64.8	63.8	62.6	61.8	61.5	62.4
160000	66.1	66.3	66.0	67.1	64.3	65.8	64.6	64.2	63.9	64.6	65.3	64.0	62.9	62.3	62.0	62.9
170000	66.2	66.5	66.4	67.3	64.7	66.1	64.6	64.5	64.0	64.6	65.5	63.8	63.1	62.5	62.1	63.1
180000	66.0	66.5	66.6	67.3	65.0	66.3	64.2	64.6	64.0	64.6	65.5	63.6	62.9	62.4	62.1	63.1
190000	65.7	66.2	66.6	67.1	65.1	66.3	64.0	64.4	63.9	64.5	65.4	63.2	62.7	62.2	62.1	62.9
200000	65.2	65.8	66.3	66.7	65.0	66.1	63.7	64.1	63.6	64.1	65.0	62.7	62.4	61.8	61.8	62.5
210000	64.4	65.1	65.9	66.1	64.6	65.6	63.5	63.8	63.1	63.6	64.6	62.3	61.9	61.3	61.3	61.9
220000	63.7	64.6	65.4	65.7	64.0	65.2	63.1	63.5	62.6	63.1	64.3	62.0	61.5	60.8	60.9	61.5
230000	63.2	64.1	65.1	65.4	63.5	64.6	62.9	63.1	62.2	62.7	64.0	61.7	61.2	60.4	60.6	61.3
Daily Max	66.2	66.5	66.6	67.3	65.1	66.3	64.6	64.6	64.0	64.6	65.5	64.0	63.1	62.5	62.1	63.1
Daily Min	62.0	61.8	63.5	63.4	63.5	62.5	62.9	62.1	61.6	60.2	61.9	61.7	61.1	60.0	58.9	59.7
Average	63.6	63.7	64.7	65.1	64.4	64.1	63.6	63.1	62.6	62.2	63.3	63.2	61.7	60.9	60.3	61.0

Monthly average temp (F): 59.2

License Maximum Monthly Average: 63ºF

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Dead River Below McClure Dam - September 2012 Temperature Monitoring Data

Time HHMMSS	9/17/2012	9/18/2012	9/19/2012	9/20/2012	9/21/2012	9/22/2012	9/23/2012	9/24/2012	9/25/2012	9/26/2012	9/27/2012	9/28/2012	9/29/2012	9/30/2012
0	61.2	58.8	56.9	57.3	56.7	55.3	53.9	53.3	54.1	53.3	52.3	52.4	52.8	52.5
10000	61.1	58.7	56.8	57.3	56.5	55.1	53.8	53.1	53.8	53.0	52.1	52.2	52.7	52.3
20000	60.9	58.6	56.5	57.3	56.3	54.9	53.7	53.0	53.6	52.8	51.9	52.1	52.6	52.1
30000	60.8	58.5	56.4	57.2	56.2	54.7	53.7	52.9	53.4	52.6	51.7	52.1	52.6	52.1
40000	60.7	58.3	56.2	57.1	55.9	54.6	53.5	52.8	53.2	52.3	51.5	52.0	52.5	52.1
50000	60.6	58.2	56.1	57.0	55.7	54.6	53.5	52.8	53.0	52.2	51.4	51.9	52.4	52.0
60000	60.5	58.0	55.9	56.9	55.6	54.6	53.4	52.8	52.9	52.2	51.2	51.9	52.3	51.9
70000	60.5	57.9	55.8	56.8	55.6	54.6	53.3	52.8	52.7	52.2	51.1	51.7	52.2	51.9
80000	60.5	57.8	55.8	56.8	55.6	54.5	53.2	52.8	52.5	52.2	51.0	51.6	52.0	51.7
90000	60.5	57.8	55.9	56.9	55.6	54.2	53.2	52.8	52.5	52.3	51.0	51.6	51.9	51.6
100000	60.6	57.8	56.1	57.0	55.7	53.9	53.3	52.9	52.6	52.3	51.0	51.7	52.1	51.7
110000	60.6	57.9	56.2	57.2	55.9	53.7	53.6	53.0	52.8	52.7	51.3	52.1	52.6	51.9
120000	60.6	58.0	56.6	57.3	56.0	54.1	53.9	53.3	53.3	52.9	51.7	52.6	53.1	52.2
130000	60.6	58.2	56.8	57.5	56.4	54.4	54.2	53.7	53.8	53.4	52.2	53.2	53.5	52.6
140000	60.5	58.6	57.1	57.7	56.6	55.0	54.5	54.4	54.5	53.8	52.8	53.8	54.0	53.0
150000	60.4	58.8	57.3	57.8	57.0	55.4	54.7	54.9	54.7	54.3	53.4	54.4	54.4	53.7
160000	60.2	58.7	57.5	58.0	57.3	55.7	55.0	55.5	55.0	54.4	53.9	54.8	54.7	54.2
170000	59.9	58.6	57.7	58.0	57.4	55.8	55.1	55.6	54.9	54.4	53.9	54.7	54.5	54.1
180000	59.6	58.5	57.8	58.0	57.3	55.7	55.2	55.6	54.8	54.3	54.0	54.7	54.3	54.0
190000	59.3	58.4	57.7	57.8	57.1	55.4	55.1	55.5	54.6	54.1	53.9	54.5	54.1	53.9
200000	59.1	58.1	57.6	57.6	56.8	55.1	54.8	55.3	54.4	53.7	53.6	54.2	53.8	53.6
210000	59.1	57.8	57.5	57.3	56.3	54.8	54.4	55.0	54.2	53.2	53.2	53.8	53.3	53.2
220000	59.0	57.5	57.5	57.0	55.9	54.4	53.9	54.7	53.9	52.8	52.9	53.4	53.0	52.8
230000	58.9	57.2	57.4	56.8	55.5	54.1	53.6	54.4	53.6	52.6	52.6	53.1	52.7	52.5
Daily Max	61.2	58.8	57.8	58.0	57.4	55.8	55.2	55.6	55.0	54.4	54.0	54.8	54.7	54.2
Daily Min	58.9	57.2	55.8	56.8	55.5	53.7	53.2	52.8	52.5	52.2	51.0	51.6	51.9	51.6
Average	60.2	58.2	56.8	57.3	56.3	54.8	54.0	53.9	53.7	53.1	52.3	52.9	53.1	52.6

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Dead River Below McClure Dam - October 2012 Temperature Monitoring Data

Time HHMMSS	10/1/2012	10/2/2012	10/3/2012	10/4/2012	10/5/2012	10/6/2012	10/7/2012	10/8/2012	10/9/2012	10/10/2012	10/11/2012	10/12/2012	10/13/2012	10/14/2012	10/15/2012	10/16/2012	10/17/2012
0	52.3	53.7	52.7	53.4	52.6	50.6	49.8	48.9	50.0	48.9	47.2	47.1	47.0	48.3	47.3	45.9	48.0
10000	52.2	53.7	52.5	53.3	52.3	50.5	49.7	48.8	49.9	48.7	47.1	47.1	46.9	48.3	47.2	45.8	47.9
20000	52.2	53.7	52.5	53.2	52.2	50.4	49.7	48.7	49.8	48.6	47.2	47.0	46.9	48.3	47.2	45.8	47.9
30000	52.2	53.7	52.5	53.1	52.0	50.3	49.6	48.6	49.7	48.4	47.3	46.8	47.0	48.3	47.1	45.8	47.8
40000	52.2	53.5	52.4	53.0	51.9	50.3	49.4	48.4	49.7	48.3	47.3	46.7	47.0	48.2	47.1	46.0	47.7
50000	52.3	53.4	52.5	53.0	51.8	50.2	49.3	48.3	49.8	48.2	47.2	46.5	47.1	48.2	47.0	46.1	47.6
60000	52.3	53.3	52.5	53.0	51.6	50.1	49.2	48.3	49.8	48.0	47.0	46.4	47.1	48.1	47.0	46.2	47.5
70000	52.3	53.2	52.5	53.0	51.5	50.0	49.2	48.2	49.8	47.9	47.0	46.3	47.2	48.1	47.0	46.3	47.4
80000	52.2	53.0	52.5	53.0	51.4	49.9	49.1	48.1	49.7	47.9	47.0	46.1	47.2	48.1	46.9	46.4	47.3
90000	52.2	53.0	52.5	53.1	51.3	49.8	49.0	48.2	49.7	47.7	47.1	46.0	47.3	48.1	46.9	46.5	47.3
100000	52.3	53.1	52.7	53.3	51.3	49.8	49.0	48.4	49.7	47.8	47.3	46.0	47.4	48.1	46.9	46.6	47.5
110000	52.5	53.3	52.9	53.5	51.4	49.9	49.0	48.6	50.1	47.8	47.6	46.1	47.6	48.1	46.9	46.8	47.8
120000	53.0	53.7	53.2	53.8	51.5	50.0	49.1	49.0	50.4	48.0	47.8	46.3	47.7	48.2	46.9	47.0	48.3
130000	53.6	54.1	53.7	54.3	51.7	50.2	49.3	49.4	50.7	48.2	48.2	46.8	47.9	48.3	47.1	47.3	48.7
140000	54.1	54.3	54.2	54.7	52.0	50.5	49.5	49.8	50.9	48.3	48.5	47.3	48.1	48.4	47.2	47.7	49.1
150000	54.6	54.6	54.7	55.3	52.2	50.9	49.8	50.4	51.0	48.5	48.7	47.9	48.3	48.4	47.5	48.0	49.4
160000	55.0	54.8	55.2	55.7	52.3	51.1	50.2	50.8	51.0	48.6	49.0	48.2	48.6	48.3	47.6	48.3	49.6
170000	55.1	54.6	55.1	55.7	52.2	50.6	50.3	51.0	50.8	48.6	48.7	48.3	48.7	48.2	47.8	48.4	49.6
180000	55.2	54.4	55.1	55.6	52.0	50.6	50.4	51.0	50.5	48.5	48.5	48.2	48.7	48.1	47.7	48.3	49.5
190000	55.1	54.1	54.9	55.1	51.7	50.4	50.3	50.9	50.2	48.3	48.3	48.0	48.7	47.9	47.5	48.3	49.3
200000	54.8	53.9	54.6	54.6	51.4	50.3	50.1	50.7	49.8	48.1	47.9	47.8	48.5	47.7	47.1	48.1	49.0
210000	54.5	53.5	54.2	54.1	51.2	50.1	49.8	50.5	49.6	47.8	47.6	47.4	48.5	47.6	46.7	48.1	48.8
220000	54.2	53.2	53.8	53.5	51.0	50.0	49.5	50.3	49.4	47.6	47.3	47.3	48.4	47.5	46.3	48.0	48.6
230000	53.9	52.9	53.5	53.0	50.8	49.9	49.2	50.2	49.1	47.3	47.2	47.2	48.4	47.4	46.1	48.0	48.4
Daily Max	55.2	54.8	55.2	55.7	52.6	51.1	50.4	51.0	51.0	48.9	49.0	48.3	48.7	48.4	47.8	48.4	49.6
Daily Min	52.2	52.9	52.4	53.0	50.8	49.8	49.0	48.1	49.1	47.3	47.0	46.0	46.9	47.4	46.1	45.8	47.3
Average	53.3	53.7	53.4	53.9	51.7	50.3	49.6	49.4	50.0	48.2	47.7	47.0	47.8	48.1	47.1	47.1	48.3

Monthly average temp (F): 48.8
License Maximum Monthly Average: 56ºF

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Dead River Below McClure Dam - October 2012 Temperature Monitoring Data

Time HHMMSS	10/18/2012	10/19/2012	10/20/2012	10/21/2012	10/22/2012	10/23/2012	10/24/2012	10/25/2012	10/26/2012	10/27/2012	10/28/2012	10/29/2012	10/30/2012	10/31/2012
0	48.3	47.5	47.8	47.1	48.1	48.8	48.6	50.4	48.7	47.0	45.5	44.9	45.3	43.7
10000	48.3	47.4	47.8	46.9	47.9	48.8	48.7	50.4	48.5	47.0	45.3	44.8	45.3	43.7
20000	48.3	47.3	47.8	46.8	47.8	48.8	48.7	50.3	48.3	46.9	45.2	44.7	45.3	43.7
30000	48.4	47.2	47.8	46.6	47.8	48.7	48.7	50.3	48.1	46.7	45.3	44.6	45.3	43.8
40000	48.5	47.1	47.8	46.5	47.8	48.7	48.8	50.3	47.9	46.4	45.3	44.5	45.1	43.9
50000	48.6	47.1	47.8	46.4	47.7	48.6	48.8	50.2	47.8	46.2	45.4	44.4	45.0	43.9
60000	48.6	47.1	47.8	46.3	47.7	48.6	48.8	50.2	47.7	46.0	45.4	44.4	44.9	43.8
70000	48.7	47.1	47.8	46.2	47.7	48.5	48.8	50.4	47.5	45.8	45.3	44.3	44.8	43.8
80000	48.7	47.1	47.9	46.1	47.7	48.5	48.9	50.5	47.4	45.6	45.2	44.2	44.7	43.8
90000	48.7	47.1	47.9	46.1	47.7	48.4	48.9	50.4	47.2	45.5	45.0	44.2	44.5	43.7
100000	48.7	47.2	47.9	46.2	47.7	48.4	49.1	50.4	47.2	45.5	44.9	44.2	44.5	43.8
110000	48.7	47.4	48.1	46.4	47.9	48.5	49.4	50.4	47.3	45.6	44.9	44.3	44.5	43.8
120000	48.7	47.7	48.2	46.7	48.3	48.7	49.7	50.5	47.4	45.9	45.0	44.5	44.6	44.0
130000	48.6	48.0	48.4	47.0	48.5	48.9	50.2	50.6	47.6	46.2	45.1	44.8	44.7	44.1
140000	48.7	48.2	48.6	47.6	48.8	49.0	50.6	50.7	47.8	46.5	45.4	45.1	44.9	44.2
150000	48.7	48.4	48.7	48.1	49.0	49.2	51.0	51.0	47.9	46.8	45.8	45.5	45.1	44.4
160000	48.7	48.4	48.9	48.6	49.2	49.2	51.1	51.3	48.0	46.9	46.0	45.8	45.1	44.5
170000	48.7	48.4	48.8	48.8	49.3	49.1	51.2	51.4	48.0	47.0	46.2	45.9	45.0	44.6
180000	48.7	48.3	48.7	48.8	49.3	49.0	51.0	51.0	47.9	47.0	46.1	45.9	44.8	44.6
190000	48.5	48.2	48.5	48.8	49.2	48.9	50.9	50.4	47.7	46.8	46.0	45.7	44.6	44.5
200000	48.3	48.0	48.2	48.6	49.1	48.8	50.7	49.8	47.5	46.5	45.8	45.6	44.3	44.3
210000	48.1	47.9	47.9	48.4	49.0	48.7	50.5	49.3	47.4	46.2	45.5	45.5	44.2	44.1
220000	47.9	47.9	47.6	48.3	48.9	48.6	50.4	49.1	47.2	45.9	45.3	45.4	43.9	43.9
230000	47.7	47.8	47.4	48.1	48.9	48.6	50.4	49.0	47.1	45.7	45.1	45.4	43.8	43.7
Daily Max	48.7	48.4	48.9	48.8	49.3	49.2	51.2	51.4	48.7	47.0	46.2	45.9	45.3	44.6
Daily Min	47.7	47.1	47.4	46.1	47.7	48.4	48.6	49.0	47.1	45.5	44.9	44.2	43.8	43.7
Average	48.5	47.6	48.1	47.3	48.4	48.8	49.7	50.3	47.7	46.3	45.4	44.9	44.8	44.0

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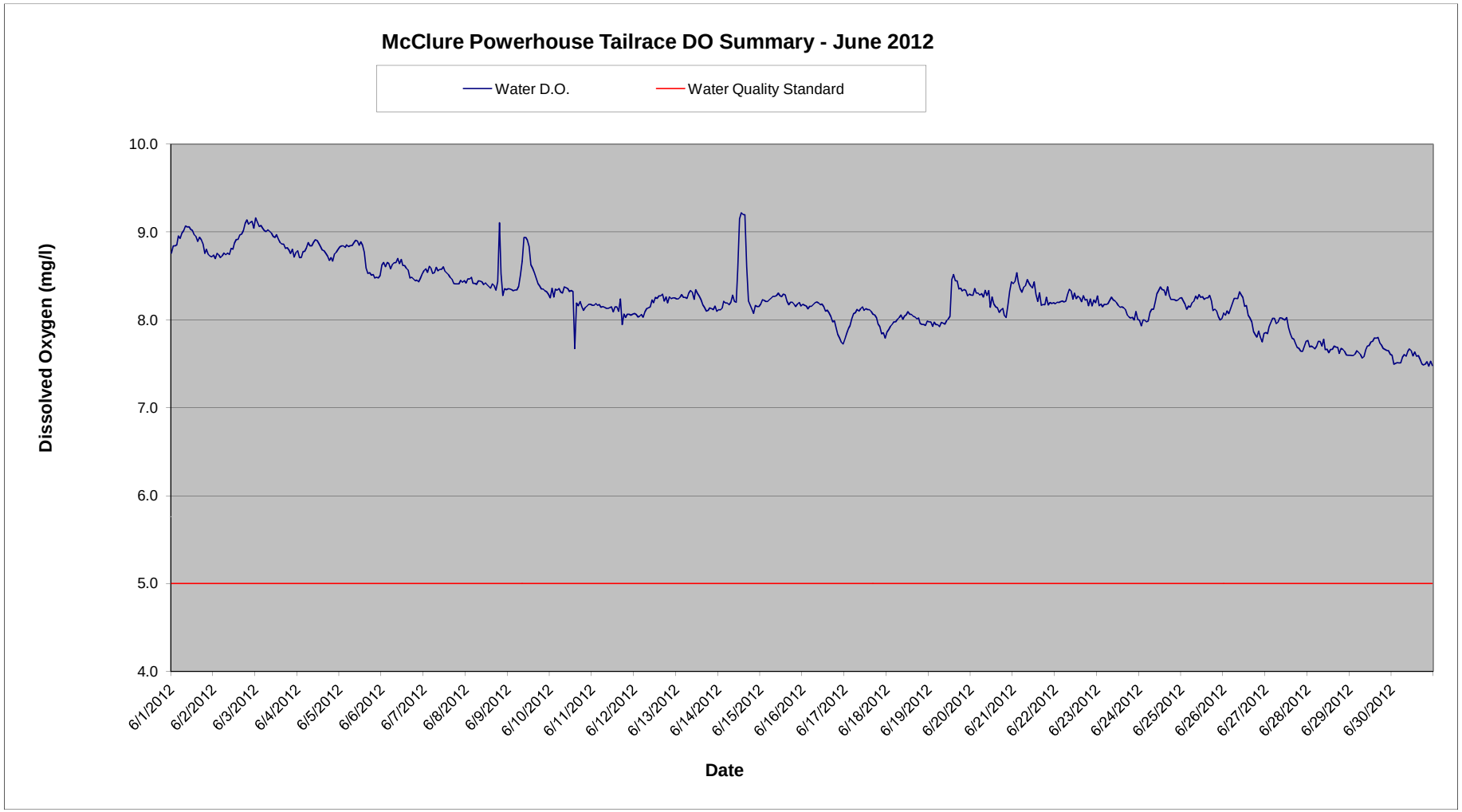
Dead River Water Quality Monitoring Data

Downstream of the McClure Powerhouse



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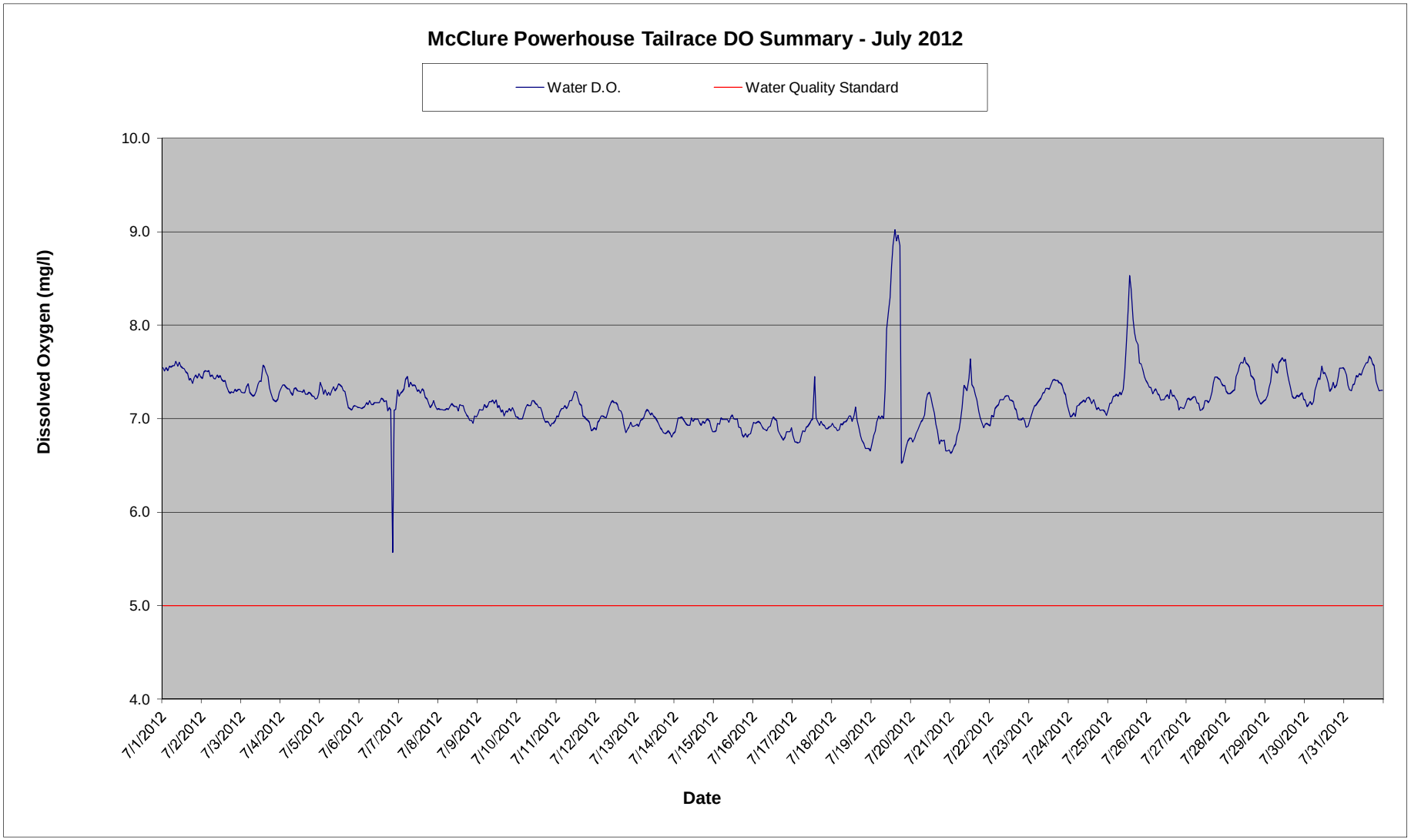

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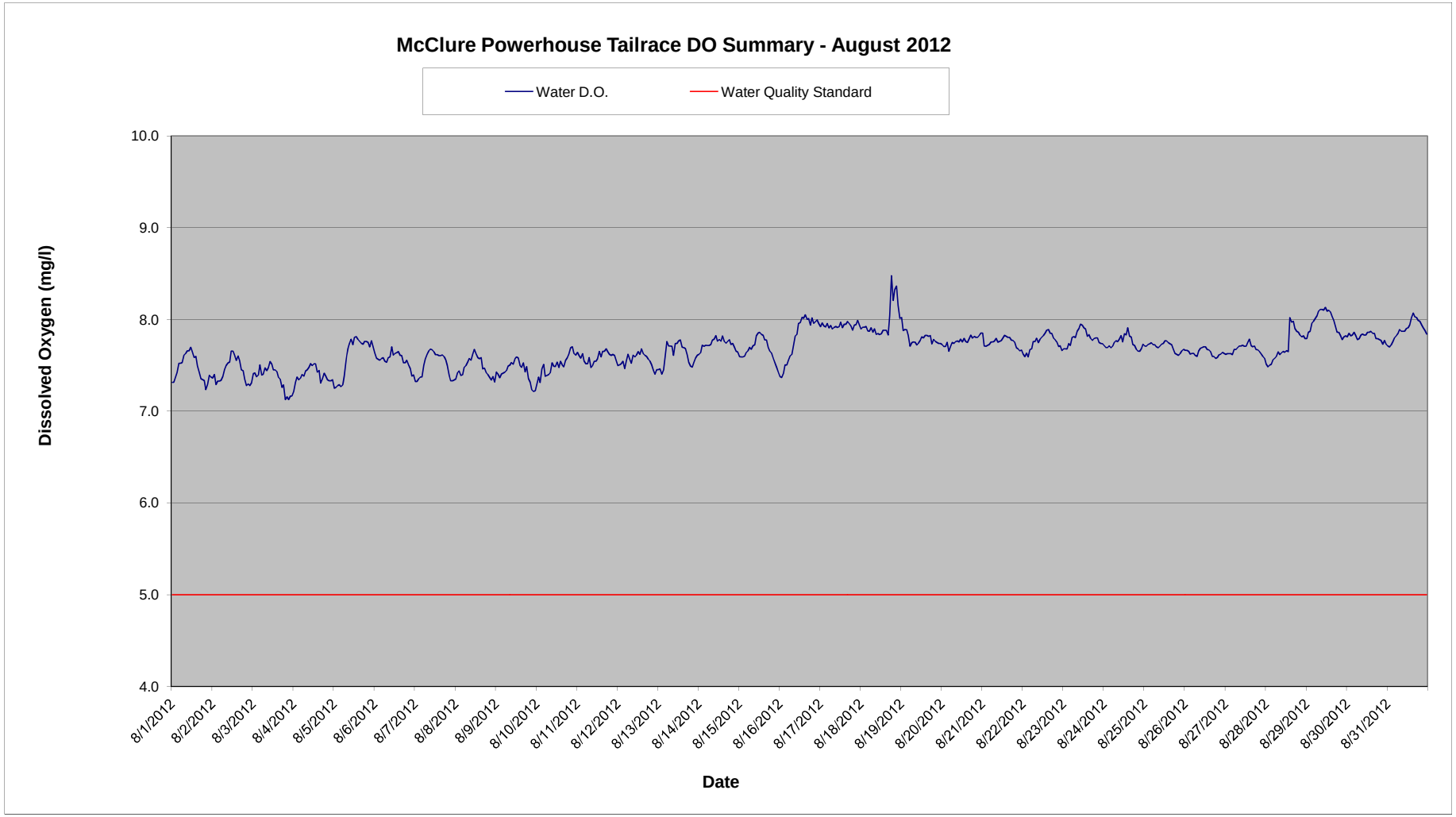

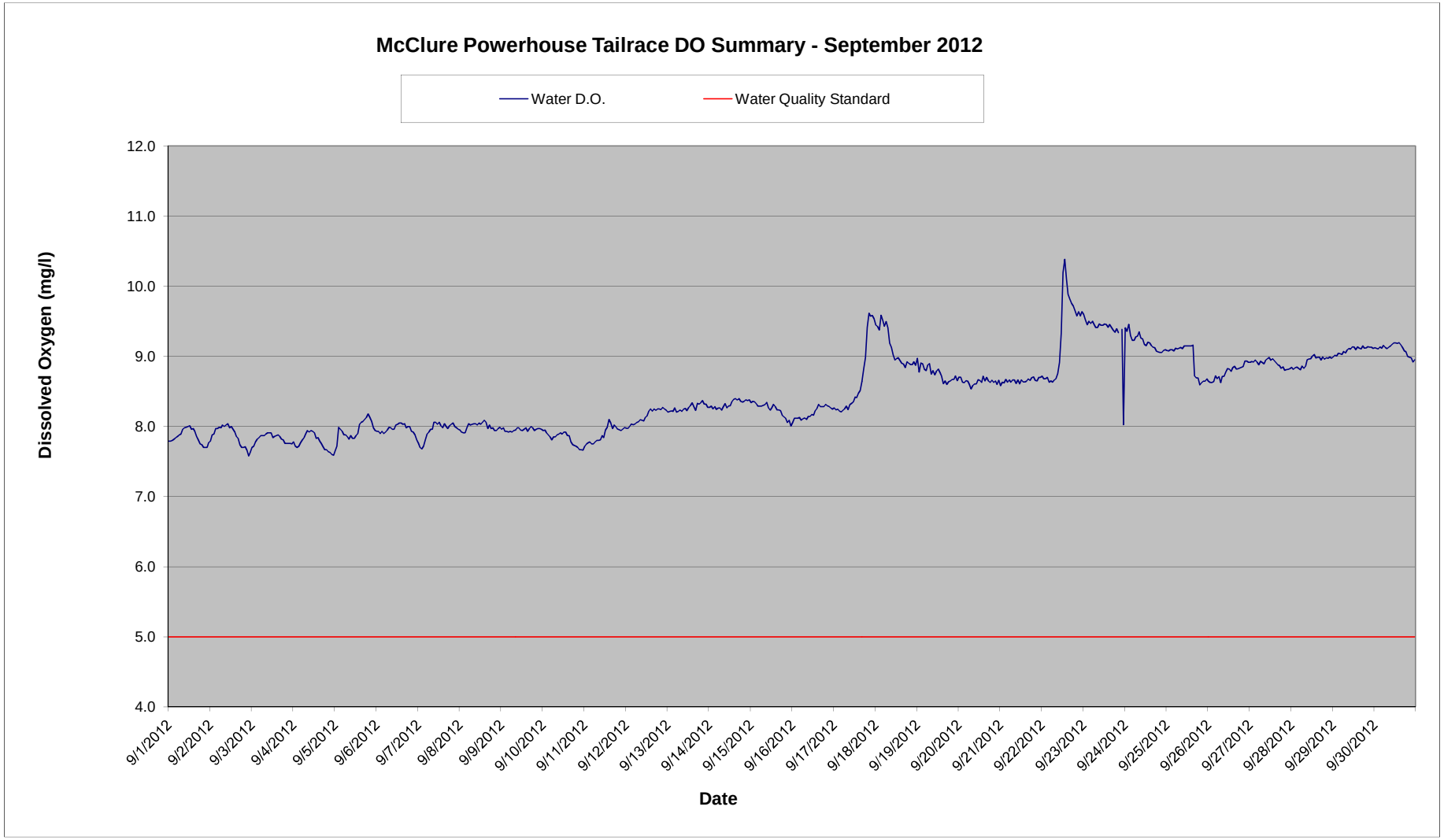

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McClure Powerhouse Tailrace - June 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	06/01/12	06/02/12	06/03/12	06/04/12	06/05/12	06/06/12	06/07/12	06/08/12	06/09/12	06/10/12	06/11/12	06/12/12	06/13/12	06/14/12	06/15/12	06/16/12
0	8.8	8.7	9.2	8.8	8.8	8.6	8.6	8.4	8.4	8.2	8.2	8.1	8.2	8.1	8.2	8.2
10000	8.8	8.7	9.1	8.7	8.8	8.7	8.6	8.5	8.4	8.4	8.2	8.1	8.2	8.1	8.2	8.2
20000	8.8	8.8	9.1	8.7	8.8	8.6	8.5	8.5	8.3	8.3	8.2	8.0	8.3	8.1	8.2	8.2
30000	8.9	8.7	9.1	8.8	8.8	8.7	8.6	8.5	8.3	8.3	8.2	8.0	8.3	8.2	8.2	8.1
40000	9.0	8.7	9.0	8.8	8.9	8.6	8.6	8.4	8.3	8.3	8.2	8.1	8.3	8.2	8.2	8.2
50000	8.9	8.7	9.0	8.8	8.8	8.6	8.5	8.4	8.3	8.4	8.1	8.0	8.3	8.2	8.2	8.2
60000	9.0	8.8	9.0	8.9	8.8	8.6	8.5	8.4	8.4	8.3	8.2	8.1	8.2	8.2	8.2	8.2
70000	9.0	8.7	9.0	8.8	8.8	8.7	8.6	8.4	8.5	8.3	8.1	8.1	8.3	8.2	8.3	8.2
80000	9.1	8.8	9.0	8.8	8.9	8.6	8.6	8.4	8.7	8.4	8.1	8.1	8.3	8.3	8.3	8.2
90000	9.1	8.7	9.0	8.9	8.9	8.7	8.6	8.4	8.9	8.4	8.1	8.1	8.3	8.2	8.3	8.2
100000	9.1	8.8	8.9	8.9	8.9	8.6	8.6	8.4	8.9	8.4	8.1	8.2	8.2	8.2	8.3	8.2
110000	9.0	8.8	8.9	8.9	8.8	8.7	8.6	8.4	8.9	8.3	8.1	8.2	8.3	8.6	8.3	8.2
120000	9.0	8.9	9.0	8.9	8.9	8.6	8.6	8.4	8.8	8.3	8.1	8.3	8.3	9.1	8.3	8.2
130000	9.0	8.9	8.9	8.8	8.8	8.6	8.5	8.4	8.6	8.3	8.1	8.2	8.3	9.2	8.3	8.1
140000	9.0	8.9	8.9	8.8	8.8	8.6	8.5	8.4	8.6	7.7	8.1	8.3	8.2	9.2	8.3	8.1
150000	8.9	9.0	8.9	8.8	8.6	8.6	8.5	8.4	8.5	8.2	8.1	8.3	8.2	9.2	8.2	8.1
160000	8.9	9.0	8.9	8.8	8.5	8.5	8.5	8.4	8.5	8.2	8.2	8.3	8.1	8.6	8.2	8.0
170000	8.9	9.0	8.8	8.7	8.5	8.5	8.4	8.3	8.4	8.2	7.9	8.2	8.1	8.2	8.2	8.0
180000	8.9	9.1	8.8	8.7	8.5	8.5	8.4	8.4	8.4	8.1	8.1	8.3	8.1	8.2	8.2	8.0
190000	8.8	9.1	8.8	8.7	8.5	8.4	8.4	9.1	8.4	8.1	8.0	8.2	8.1	8.1	8.2	7.9
200000	8.8	9.1	8.8	8.7	8.5	8.5	8.4	8.5	8.4	8.1	8.1	8.3	8.1	8.1	8.2	7.8
210000	8.7	9.1	8.8	8.7	8.5	8.4	8.4	8.3	8.3	8.2	8.1	8.2	8.1	8.2	8.2	7.8
220000	8.7	9.1	8.7	8.8	8.5	8.5	8.4	8.4	8.3	8.2	8.1	8.2	8.2	8.2	8.2	7.7
230000	8.7	9.0	8.8	8.8	8.5	8.5	8.4	8.3	8.3	8.2	8.1	8.2	8.1	8.2	8.2	7.7
Daily Max	9.1	9.1	9.2	8.9	8.9	8.7	8.6	9.1	8.9	8.4	8.2	8.3	8.3	9.2	8.3	8.2
Daily Min	8.7	8.7	8.7	8.7	8.5	8.4	8.4	8.3	8.3	7.7	7.9	8.0	8.1	8.1	8.2	7.7
Average	8.9	8.9	8.9	8.8	8.7	8.6	8.5	8.4	8.5	8.2	8.1	8.2	8.2	8.4	8.2	8.1

License Minimum Dissolved Oxygen: 5.0 mg/l

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McClure Powerhouse Tailrace - June 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	06/17/12	06/18/12	06/19/12	06/20/12	06/21/12	06/22/12	06/23/12	06/24/12	06/25/12	06/26/12	06/27/12	06/28/12	06/29/12	06/30/12
0	7.8	7.9	8.0	8.3	8.4	8.2	8.3	8.0	8.3	8.1	7.9	7.8	7.6	7.6
10000	7.8	7.9	8.0	8.3	8.4	8.2	8.2	7.9	8.2	8.1	7.8	7.7	7.6	7.5
20000	7.9	7.9	7.9	8.4	8.5	8.2	8.2	8.0	8.2	8.1	7.9	7.7	7.6	7.5
30000	7.9	7.9	8.0	8.3	8.4	8.2	8.1	8.0	8.1	8.1	8.0	7.7	7.6	7.5
40000	8.0	8.0	7.9	8.3	8.4	8.2	8.2	8.0	8.2	8.1	8.0	7.7	7.7	7.5
50000	8.1	8.0	7.9	8.3	8.3	8.2	8.2	8.0	8.1	8.2	8.0	7.7	7.6	7.5
60000	8.1	8.0	7.9	8.3	8.4	8.2	8.2	8.1	8.2	8.2	8.0	7.8	7.6	7.6
70000	8.1	8.0	8.0	8.3	8.4	8.3	8.2	8.1	8.2	8.2	8.0	7.8	7.6	7.6
80000	8.1	8.1	8.0	8.3	8.5	8.3	8.3	8.1	8.3	8.2	8.0	7.7	7.6	7.6
90000	8.1	8.0	8.0	8.3	8.4	8.3	8.2	8.2	8.2	8.3	8.0	7.8	7.7	7.6
100000	8.1	8.0	8.0	8.3	8.4	8.2	8.2	8.3	8.3	8.3	8.0	7.7	7.7	7.7
110000	8.1	8.1	8.0	8.1	8.4	8.3	8.2	8.3	8.3	8.3	8.0	7.7	7.7	7.6
120000	8.1	8.1	8.0	8.3	8.4	8.2	8.2	8.4	8.3	8.2	8.0	7.6	7.7	7.6
130000	8.1	8.1	8.5	8.2	8.3	8.3	8.1	8.3	8.2	8.2	7.9	7.7	7.8	7.6
140000	8.1	8.1	8.5	8.1	8.2	8.2	8.1	8.3	8.3	8.1	7.8	7.7	7.8	7.6
150000	8.1	8.0	8.4	8.1	8.3	8.2	8.1	8.3	8.2	8.0	7.8	7.7	7.8	7.6
160000	8.1	8.0	8.4	8.1	8.2	8.3	8.1	8.4	8.3	8.0	7.8	7.7	7.8	7.6
170000	8.1	8.0	8.4	8.1	8.2	8.2	8.1	8.3	8.2	7.9	7.7	7.7	7.7	7.5
180000	8.0	8.0	8.4	8.1	8.2	8.2	8.0	8.2	8.1	7.8	7.7	7.6	7.7	7.5
190000	8.0	8.0	8.3	8.0	8.3	8.2	8.0	8.2	8.1	7.8	7.7	7.7	7.7	7.5
200000	7.9	7.9	8.3	8.0	8.2	8.2	8.0	8.2	8.1	7.9	7.6	7.7	7.7	7.5
210000	7.8	7.9	8.3	8.2	8.2	8.2	8.0	8.2	8.0	7.8	7.6	7.6	7.7	7.5
220000	7.9	7.9	8.3	8.3	8.2	8.2	8.1	8.2	8.0	7.7	7.7	7.6	7.7	7.5
230000	7.8	8.0	8.3	8.4	8.2	8.2	8.0	8.2	8.0	7.8	7.8	7.6	7.6	7.5
Daily Max	8.1	8.1	8.5	8.4	8.5	8.3	8.3	8.4	8.3	8.3	8.0	7.8	7.8	7.7
Daily Min	7.8	7.9	7.9	8.0	8.2	8.2	8.0	7.9	8.0	7.7	7.6	7.6	7.6	7.5
Average	8.0	8.0	8.2	8.2	8.3	8.2	8.1	8.2	8.2	8.1	7.9	7.7	7.7	7.6

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McClure Powerhouse Tailrace - July 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	07/01/12	07/02/12	07/03/12	07/04/12	07/05/12	07/06/12	07/07/12	07/08/12	07/09/12	07/10/12	07/11/12	07/12/12	07/13/12	07/14/12	07/15/12	07/16/12
0	7.5	7.4	7.3	7.3	7.4	7.1	7.2	7.1	7.1	7.0	7.0	6.9	6.9	6.9	6.9	7.0
10000	7.5	7.5	7.3	7.4	7.3	7.1	7.3	7.1	7.1	7.0	7.0	7.0	6.9	6.9	6.9	7.0
20000	7.5	7.5	7.3	7.4	7.3	7.1	7.3	7.1	7.1	7.0	7.1	7.0	6.9	7.0	7.0	7.0
30000	7.5	7.5	7.3	7.3	7.3	7.1	7.3	7.1	7.1	7.0	7.1	7.0	7.0	7.0	6.9	7.0
40000	7.6	7.5	7.4	7.3	7.3	7.2	7.4	7.1	7.2	7.1	7.1	7.0	7.0	7.0	7.0	7.0
50000	7.6	7.5	7.3	7.3	7.3	7.2	7.5	7.1	7.1	7.1	7.1	7.0	7.0	7.0	7.0	6.9
60000	7.6	7.5	7.3	7.3	7.3	7.2	7.3	7.1	7.1	7.2	7.1	7.0	7.1	7.0	7.0	6.9
70000	7.6	7.4	7.2	7.3	7.3	7.2	7.4	7.1	7.2	7.1	7.1	7.1	7.1	6.9	7.0	6.9
80000	7.6	7.4	7.3	7.3	7.3	7.2	7.4	7.2	7.2	7.1	7.2	7.1	7.1	6.9	7.0	6.9
90000	7.6	7.5	7.3	7.3	7.3	7.2	7.4	7.1	7.2	7.2	7.2	7.2	7.0	6.9	7.0	6.9
100000	7.6	7.4	7.4	7.3	7.3	7.2	7.4	7.1	7.2	7.2	7.2	7.2	7.1	7.0	7.0	6.9
110000	7.6	7.5	7.4	7.3	7.4	7.2	7.3	7.1	7.2	7.2	7.3	7.2	7.0	7.0	7.0	7.0
120000	7.5	7.4	7.4	7.3	7.4	7.2	7.3	7.1	7.1	7.2	7.3	7.2	7.0	7.0	7.0	7.0
130000	7.5	7.4	7.6	7.3	7.3	7.2	7.3	7.2	7.1	7.1	7.2	7.2	7.0	7.0	7.0	7.0
140000	7.5	7.4	7.6	7.3	7.3	7.2	7.3	7.1	7.1	7.1	7.2	7.1	7.0	7.0	7.0	7.0
150000	7.5	7.3	7.5	7.3	7.3	7.2	7.3	7.1	7.1	7.1	7.1	7.1	6.9	7.0	6.9	6.9
160000	7.4	7.3	7.5	7.3	7.2	7.2	7.2	7.1	7.0	7.0	7.0	7.0	6.9	6.9	6.9	6.8
170000	7.4	7.3	7.3	7.3	7.1	7.1	7.2	7.0	7.1	7.0	7.0	6.9	6.9	7.0	6.8	6.8
180000	7.4	7.3	7.3	7.3	7.1	7.1	7.2	7.0	7.1	7.0	7.0	6.9	6.8	7.0	6.8	6.8
190000	7.4	7.3	7.2	7.2	7.1	7.1	7.1	7.0	7.1	7.0	7.0	6.9	6.9	7.0	6.8	6.8
200000	7.5	7.3	7.2	7.2	7.1	5.6	7.2	7.0	7.1	6.9	7.0	6.9	6.9	7.0	6.8	6.9
210000	7.4	7.3	7.2	7.2	7.1	7.1	7.2	7.0	7.1	7.0	6.9	7.0	6.8	7.0	6.8	6.9
220000	7.5	7.3	7.2	7.2	7.1	7.1	7.1	7.0	7.1	7.0	6.9	6.9	6.8	6.9	6.8	6.9
230000	7.5	7.3	7.3	7.3	7.1	7.3	7.1	7.0	7.0	7.0	6.9	6.9	6.8	6.9	6.9	6.9
Daily Max	7.6	7.5	7.6	7.4	7.4	7.3	7.5	7.2	7.2	7.2	7.3	7.2	7.1	7.0	7.0	7.0
Daily Min	7.4	7.3	7.2	7.2	7.1	5.6	7.1	7.0	7.0	6.9	6.9	6.9	6.8	6.9	6.8	6.8
Average	7.5	7.4	7.3	7.3	7.3	7.1	7.3	7.1	7.1	7.1	7.1	7.0	6.9	7.0	6.9	6.9

License Minimum Dissolved Oxygen: 5.0 mg/l

Anomolie - No interuptions or changes in powerhouse operation to explain sudden change.

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McClure Powerhouse Tailrace - July 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	07/17/12	07/18/12	07/19/12	07/20/12	07/21/12	07/22/12	07/23/12	07/24/12	07/25/12	07/26/12	07/27/12	07/28/12	07/29/12	07/30/12	07/31/12
0	6.8	6.9	6.7	6.8	6.6	6.9	7.0	7.1	7.1	7.4	7.2	7.3	7.2	7.2	7.5
10000	6.8	6.9	6.8	6.8	6.6	7.0	7.0	7.0	7.2	7.3	7.2	7.3	7.3	7.1	7.5
20000	6.8	6.9	6.9	6.8	6.7	7.0	7.1	7.0	7.2	7.3	7.2	7.3	7.3	7.1	7.5
30000	6.7	6.9	7.0	6.8	6.7	7.1	7.1	7.1	7.2	7.3	7.2	7.3	7.4	7.2	7.4
40000	6.8	6.9	7.0	6.9	6.8	7.1	7.1	7.0	7.2	7.3	7.2	7.3	7.6	7.2	7.3
50000	6.8	6.9	7.0	6.9	6.9	7.1	7.2	7.1	7.3	7.3	7.2	7.3	7.5	7.2	7.3
60000	6.9	6.9	7.0	7.0	7.0	7.2	7.2	7.1	7.2	7.3	7.2	7.5	7.5	7.3	7.4
70000	6.9	7.0	7.0	7.0	7.1	7.2	7.2	7.2	7.3	7.2	7.2	7.5	7.5	7.4	7.4
80000	6.9	7.0	7.3	7.0	7.4	7.2	7.3	7.2	7.3	7.2	7.1	7.6	7.6	7.4	7.5
90000	6.9	7.0	8.0	7.2	7.3	7.2	7.3	7.2	7.3	7.2	7.1	7.6	7.6	7.4	7.4
100000	7.0	7.0	8.2	7.3	7.3	7.2	7.3	7.2	7.5	7.2	7.1	7.6	7.7	7.6	7.5
110000	7.0	7.0	8.3	7.3	7.4	7.2	7.3	7.2	7.8	7.2	7.2	7.7	7.6	7.5	7.5
120000	7.0	7.0	8.6	7.2	7.6	7.2	7.3	7.2	8.2	7.3	7.2	7.6	7.6	7.5	7.5
130000	7.5	7.0	8.9	7.1	7.4	7.2	7.4	7.2	8.5	7.2	7.2	7.6	7.5	7.4	7.6
140000	7.0	7.1	9.0	7.1	7.3	7.2	7.4	7.2	8.4	7.3	7.2	7.5	7.4	7.4	7.6
150000	7.0	7.0	8.9	6.9	7.3	7.1	7.4	7.2	8.1	7.2	7.3	7.5	7.3	7.3	7.6
160000	6.9	6.9	9.0	6.9	7.2	7.1	7.4	7.2	7.9	7.2	7.4	7.4	7.2	7.3	7.7
170000	7.0	6.8	8.9	6.7	7.1	7.0	7.4	7.1	7.8	7.2	7.4	7.4	7.2	7.4	7.6
180000	6.9	6.8	6.5	6.8	7.0	7.0	7.4	7.1	7.8	7.2	7.4	7.3	7.2	7.3	7.6
190000	6.9	6.7	6.5	6.8	7.0	7.0	7.4	7.1	7.6	7.1	7.4	7.2	7.3	7.4	7.6
200000	6.9	6.7	6.6	6.8	6.9	7.0	7.4	7.1	7.6	7.1	7.4	7.2	7.2	7.4	7.4
210000	6.9	6.7	6.7	6.7	6.9	7.0	7.3	7.1	7.5	7.1	7.4	7.2	7.3	7.5	7.3
220000	6.9	6.7	6.8	6.7	7.0	6.9	7.3	7.1	7.4	7.1	7.4	7.2	7.3	7.5	7.3
230000	6.9	6.7	6.8	6.7	6.9	6.9	7.2	7.0	7.4	7.1	7.4	7.2	7.2	7.5	7.3
Daily Max	7.5	7.1	9.0	7.3	7.6	7.2	7.4	7.2	8.5	7.4	7.4	7.7	7.7	7.6	7.7
Daily Min	6.7	6.7	6.5	6.7	6.6	6.9	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.1	7.3
Average	6.9	6.9	7.5	6.9	7.1	7.1	7.3	7.1	7.6	7.2	7.3	7.4	7.4	7.4	7.5

McClure Powerhouse off-line for substation work.

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McClure Powerhouse Tailrace - August 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	8/1/2012	8/2/2012	8/3/2012	8/4/2012	8/5/2012	8/6/2012	8/7/2012	8/8/2012	8/9/2012	8/10/2012	8/11/2012	8/12/2012	8/13/2012	8/14/2012	8/15/2012	8/16/2012
0	7.3	7.4	7.4	7.2	7.3	7.6	7.3	7.3	7.4	7.3	7.6	7.5	7.5	7.6	7.6	7.4
10000	7.3	7.4	7.4	7.3	7.3	7.6	7.3	7.4	7.4	7.4	7.6	7.5	7.5	7.6	7.6	7.4
20000	7.4	7.3	7.4	7.4	7.3	7.6	7.4	7.4	7.4	7.3	7.6	7.5	7.4	7.7	7.6	7.4
30000	7.4	7.3	7.4	7.3	7.3	7.6	7.4	7.4	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.5
40000	7.5	7.3	7.5	7.4	7.3	7.6	7.4	7.4	7.4	7.5	7.5	7.5	7.6	7.7	7.6	7.5
50000	7.5	7.3	7.4	7.4	7.3	7.6	7.5	7.5	7.4	7.4	7.5	7.5	7.8	7.7	7.7	7.6
60000	7.5	7.4	7.4	7.4	7.4	7.5	7.6	7.5	7.4	7.4	7.5	7.6	7.7	7.7	7.7	7.6
70000	7.6	7.5	7.5	7.4	7.5	7.5	7.6	7.5	7.5	7.4	7.6	7.6	7.7	7.7	7.7	7.6
80000	7.6	7.5	7.4	7.4	7.7	7.6	7.7	7.6	7.5	7.4	7.5	7.5	7.7	7.8	7.7	7.7
90000	7.7	7.5	7.5	7.5	7.7	7.6	7.7	7.6	7.5	7.5	7.5	7.6	7.6	7.8	7.7	7.8
100000	7.7	7.5	7.5	7.5	7.8	7.7	7.7	7.6	7.5	7.5	7.5	7.6	7.7	7.8	7.8	7.8
110000	7.7	7.7	7.5	7.5	7.7	7.6	7.6	7.7	7.6	7.5	7.5	7.6	7.7	7.8	7.9	8.0
120000	7.6	7.7	7.5	7.5	7.8	7.6	7.6	7.6	7.6	7.5	7.6	7.6	7.8	7.8	7.9	8.0
130000	7.6	7.6	7.4	7.5	7.8	7.6	7.6	7.6	7.6	7.5	7.7	7.6	7.8	7.8	7.8	8.0
140000	7.6	7.6	7.4	7.4	7.8	7.6	7.6	7.6	7.5	7.5	7.6	7.7	7.7	7.8	7.8	8.0
150000	7.5	7.6	7.4	7.4	7.8	7.6	7.6	7.6	7.5	7.5	7.7	7.6	7.7	7.8	7.8	8.1
160000	7.4	7.6	7.3	7.3	7.7	7.6	7.6	7.5	7.5	7.5	7.7	7.6	7.7	7.7	7.8	8.0
170000	7.4	7.5	7.3	7.4	7.7	7.5	7.6	7.5	7.4	7.6	7.7	7.6	7.6	7.8	7.7	8.0
180000	7.3	7.4	7.3	7.4	7.8	7.5	7.6	7.4	7.5	7.6	7.6	7.6	7.5	7.8	7.7	7.9
190000	7.3	7.3	7.1	7.4	7.8	7.6	7.5	7.4	7.4	7.6	7.6	7.5	7.5	7.7	7.6	8.0
200000	7.2	7.3	7.2	7.3	7.7	7.5	7.4	7.4	7.3	7.7	7.6	7.5	7.5	7.7	7.6	8.0
210000	7.3	7.3	7.1	7.3	7.7	7.5	7.3	7.3	7.2	7.7	7.6	7.4	7.5	7.7	7.5	8.0
220000	7.4	7.3	7.2	7.3	7.8	7.4	7.3	7.4	7.2	7.6	7.6	7.4	7.6	7.7	7.5	8.0
230000	7.4	7.3	7.2	7.3	7.7	7.4	7.3	7.3	7.2	7.6	7.5	7.5	7.6	7.6	7.4	8.0
Daily Max	7.7	7.7	7.5	7.5	7.8	7.7	7.7	7.7	7.6	7.7	7.7	7.7	7.8	7.8	7.9	8.1
Daily Min	7.2	7.3	7.1	7.2	7.3	7.4	7.3	7.3	7.2	7.3	7.5	7.4	7.4	7.6	7.4	7.4
Average	7.5	7.4	7.4	7.4	7.6	7.6	7.5	7.5	7.4	7.5	7.6	7.6	7.6	7.7	7.7	7.8

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McClure Powerhouse Tailrace - August 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	8/17/2012	8/18/2012	8/19/2012	8/20/2012	8/21/2012	8/22/2012	8/23/2012	8/24/2012	8/25/2012	8/26/2012	8/27/2012	8/28/2012	8/29/2012	8/30/2012	8/31/2012
0	7.9	7.9	8.0	7.7	7.9	7.6	7.7	7.7	7.7	7.7	7.6	7.5	7.8	7.8	7.7
10000	8.0	7.9	7.9	7.7	7.7	7.6	7.7	7.7	7.7	7.7	7.6	7.5	7.9	7.9	7.7
20000	7.9	7.9	7.9	7.7	7.7	7.6	7.7	7.7	7.7	7.7	7.6	7.5	7.9	7.8	7.7
30000	7.9	7.9	7.9	7.8	7.7	7.6	7.7	7.7	7.7	7.6	7.6	7.5	8.0	7.8	7.8
40000	8.0	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.7	7.6	7.6	7.6	8.0	7.9	7.8
50000	7.9	7.9	7.7	7.7	7.8	7.7	7.8	7.7	7.7	7.6	7.7	7.6	8.0	7.8	7.8
60000	7.9	7.9	7.7	7.7	7.8	7.8	7.8	7.7	7.7	7.6	7.7	7.6	8.0	7.8	7.9
70000	7.9	7.9	7.8	7.7	7.8	7.8	7.8	7.8	7.7	7.6	7.7	7.6	8.1	7.8	7.9
80000	7.9	7.9	7.8	7.8	7.8	7.8	7.9	7.8	7.7	7.7	7.7	7.6	8.1	7.8	7.9
90000	7.9	7.8	7.7	7.8	7.8	7.7	7.9	7.8	7.7	7.7	7.7	7.6	8.1	7.8	7.9
100000	7.9	7.8	7.7	7.8	7.8	7.8	7.9	7.8	7.7	7.7	7.7	7.7	8.1	7.8	7.9
110000	7.9	7.8	7.8	7.8	7.8	7.8	7.9	7.8	7.7	7.7	7.7	7.6	8.1	7.8	7.9
120000	8.0	7.8	7.8	7.8	7.8	7.8	7.9	7.8	7.8	7.7	7.7	7.7	8.1	7.9	7.9
130000	7.9	7.9	7.8	7.8	7.8	7.9	7.9	7.8	7.8	7.7	7.7	7.7	8.1	7.9	7.9
140000	7.9	7.9	7.8	7.8	7.8	7.9	7.8	7.9	7.7	7.7	7.8	8.0	8.1	7.9	8.0
150000	7.9	7.9	7.8	7.8	7.8	7.9	7.8	7.8	7.7	7.6	7.7	8.0	8.0	7.9	8.1
160000	8.0	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.7	7.6	7.7	8.0	8.0	7.9	8.0
170000	8.0	8.0	7.8	7.8	7.8	7.8	7.8	7.7	7.7	7.6	7.7	7.9	7.9	7.8	8.0
180000	7.9	8.5	7.7	7.8	7.8	7.8	7.8	7.7	7.6	7.6	7.7	7.9	7.9	7.8	8.0
190000	7.9	8.2	7.8	7.8	7.8	7.8	7.8	7.7	7.6	7.6	7.7	7.9	7.9	7.8	8.0
200000	7.9	8.3	7.8	7.8	7.7	7.8	7.8	7.7	7.6	7.6	7.6	7.8	7.8	7.8	7.9
210000	7.9	8.4	7.7	7.8	7.7	7.7	7.7	7.7	7.6	7.6	7.6	7.8	7.8	7.7	7.9
220000	8.0	8.2	7.7	7.8	7.7	7.7	7.7	7.7	7.7	7.6	7.6	7.8	7.8	7.8	7.9
230000	7.9	8.0	7.7	7.9	7.7	7.7	7.7	7.7	7.7	7.6	7.6	7.8	7.8	7.7	7.8
Daily Max	8.0	8.5	8.0	7.9	7.9	7.9	7.9	7.9	7.8	7.7	7.8	8.0	8.1	7.9	8.1
Daily Min	7.9	7.8	7.7	7.7	7.7	7.6	7.7	7.7	7.6	7.6	7.6	7.5	7.8	7.7	7.7
Average	7.9	8.0	7.8	7.8	7.8	7.7	7.8	7.7	7.7	7.6	7.7	7.7	8.0	7.8	7.9

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McClure Powerhouse Tailrace - September 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	9/1/2012	9/2/2012	9/3/2012	9/4/2012	9/5/2012	9/6/2012	9/7/2012	9/8/2012	9/9/2012	9/10/2012	9/11/2012	9/12/2012	9/13/2012	9/14/2012	9/15/2012	9/16/2012
0	7.8	7.8	7.7	7.8	7.7	7.9	7.8	8.0	8.0	7.9	7.7	8.0	8.2	8.3	8.3	8.1
10000	7.8	7.9	7.7	7.7	7.7	7.9	7.7	7.9	8.0	8.0	7.8	8.0	8.2	8.3	8.4	8.1
20000	7.8	7.9	7.8	7.7	8.0	7.9	7.7	7.9	7.9	7.9	7.8	8.0	8.2	8.3	8.4	8.1
30000	7.8	8.0	7.8	7.7	8.0	7.9	7.7	7.9	7.9	7.9	7.8	8.0	8.2	8.3	8.3	8.1
40000	7.8	8.0	7.8	7.8	7.9	7.9	7.8	8.0	7.9	7.9	7.8	8.0	8.3	8.2	8.3	8.1
50000	7.9	8.0	7.9	7.8	7.9	7.9	7.9	8.0	7.9	7.8	7.8	8.0	8.2	8.3	8.3	8.1
60000	7.9	8.0	7.9	7.8	7.9	8.0	7.9	8.0	7.9	7.9	7.8	8.1	8.2	8.3	8.3	8.1
70000	7.9	8.0	7.9	7.9	7.9	8.0	8.0	8.0	7.9	7.9	7.8	8.1	8.2	8.2	8.3	8.1
80000	8.0	8.0	7.9	7.9	7.8	8.0	8.0	8.0	8.0	7.9	7.8	8.1	8.2	8.3	8.3	8.1
90000	8.0	8.0	7.9	7.9	7.9	8.0	8.1	8.0	8.0	7.9	7.8	8.1	8.2	8.3	8.3	8.1
100000	8.0	8.0	7.9	7.9	7.8	8.0	8.1	8.0	8.0	7.9	7.9	8.1	8.3	8.3	8.3	8.1
110000	8.0	8.0	7.9	7.9	7.8	8.0	8.0	8.1	8.0	7.9	7.8	8.1	8.2	8.3	8.2	8.2
120000	8.0	8.0	7.8	7.9	7.9	8.0	8.1	8.0	7.9	7.9	8.0	8.1	8.3	8.3	8.3	8.2
130000	8.0	8.0	7.9	7.8	7.9	8.1	8.0	8.1	8.0	7.9	8.0	8.2	8.3	8.4	8.3	8.2
140000	8.0	7.9	7.9	7.8	8.0	8.1	8.0	8.1	8.0	7.9	8.1	8.2	8.3	8.4	8.3	8.3
150000	7.9	7.9	7.9	7.8	8.1	8.0	8.0	8.1	7.9	7.9	8.1	8.2	8.3	8.4	8.2	8.3
160000	7.9	7.8	7.9	7.8	8.1	8.0	8.0	8.0	8.0	7.8	8.0	8.2	8.2	8.4	8.2	8.3
170000	7.8	7.7	7.8	7.7	8.1	8.0	8.0	8.0	8.0	7.7	8.0	8.2	8.3	8.4	8.2	8.3
180000	7.8	7.7	7.8	7.7	8.1	8.0	8.0	8.0	8.0	7.7	8.0	8.3	8.3	8.4	8.2	8.3
190000	7.7	7.7	7.8	7.7	8.2	8.0	8.0	8.0	7.9	7.7	8.0	8.3	8.3	8.3	8.1	8.3
200000	7.7	7.7	7.8	7.6	8.1	7.9	8.1	7.9	8.0	7.7	8.0	8.2	8.4	8.4	8.1	8.3
210000	7.7	7.7	7.8	7.6	8.1	7.9	8.0	7.9	8.0	7.7	7.9	8.3	8.3	8.4	8.1	8.3
220000	7.7	7.6	7.8	7.6	8.0	7.9	8.0	8.0	8.0	7.7	8.0	8.3	8.3	8.4	8.1	8.3
230000	7.8	7.6	7.8	7.6	7.9	7.8	8.0	8.0	8.0	7.7	8.0	8.2	8.3	8.4	8.0	8.2
Daily Max	8.0	8.0	7.9	7.9	8.2	8.1	8.1	8.1	8.0	8.0	8.1	8.3	8.4	8.4	8.4	8.3
Daily Min	7.7	7.6	7.7	7.6	7.7	7.8	7.7	7.9	7.9	7.7	7.7	8.0	8.2	8.2	8.0	8.1
Average	7.9	7.9	7.8	7.8	7.9	8.0	7.9	8.0	8.0	7.8	7.9	8.1	8.3	8.3	8.2	8.2

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McClure Powerhouse Tailrace - September 2012 Dissolved Oxygen Monitoring Data

Time HHMMSS	9/17/2012	9/18/2012	9/19/2012	9/20/2012	9/21/2012	9/22/2012	9/23/2012	9/24/2012	9/25/2012	9/26/2012	9/27/2012	9/28/2012	9/29/2012	9/30/2012
0	8.3	9.4	9.0	8.7	8.6	8.7	9.6	9.4	9.1	8.6	8.9	8.8	9.0	9.1
10000	8.2	9.4	8.8	8.7	8.6	8.7	9.5	9.4	9.1	8.6	8.9	8.8	9.0	9.1
20000	8.2	9.4	8.9	8.6	8.6	8.7	9.4	9.5	9.1	8.6	8.9	8.8	9.0	9.1
30000	8.2	9.6	8.9	8.6	8.7	8.7	9.5	9.3	9.1	8.6	8.9	8.8	9.0	9.1
40000	8.2	9.5	8.8	8.7	8.6	8.6	9.5	9.2	9.1	8.7	8.9	8.8	9.0	9.1
50000	8.2	9.4	8.8	8.6	8.7	8.7	9.5	9.2	9.1	8.7	8.9	8.8	9.0	9.2
60000	8.2	9.5	8.9	8.6	8.6	8.6	9.4	9.3	9.1	8.7	8.9	8.9	9.1	9.1
70000	8.3	9.4	8.9	8.5	8.7	8.7	9.4	9.3	9.1	8.6	8.9	8.8	9.0	9.1
80000	8.2	9.2	8.7	8.6	8.7	8.7	9.4	9.3	9.1	8.7	8.9	8.9	9.1	9.1
90000	8.3	9.1	8.8	8.6	8.6	8.8	9.5	9.3	9.1	8.7	8.9	9.0	9.1	9.1
100000	8.3	9.0	8.7	8.6	8.7	8.9	9.4	9.2	9.1	8.8	9.0	9.0	9.1	9.2
110000	8.4	8.9	8.8	8.7	8.6	9.3	9.4	9.2	9.1	8.8	9.0	9.0	9.1	9.2
120000	8.4	9.0	8.8	8.7	8.7	10.2	9.5	9.2	9.1	8.8	8.9	9.0	9.1	9.2
130000	8.4	9.0	8.8	8.6	8.6	10.4	9.5	9.2	9.1	8.8	9.0	9.0	9.1	9.2
140000	8.5	8.9	8.7	8.7	8.6	10.1	9.4	9.2	9.1	8.8	8.9	9.0	9.1	9.2
150000	8.5	8.9	8.6	8.6	8.6	9.9	9.5	9.2	9.2	8.9	8.9	9.0	9.1	9.2
160000	8.6	8.9	8.6	8.7	8.7	9.8	9.4	9.1	8.7	8.8	8.9	9.0	9.1	9.1
170000	8.8	8.8	8.6	8.6	8.7	9.8	9.4	9.1	8.7	8.8	8.9	8.9	9.1	9.1
180000	9.0	8.9	8.6	8.6	8.7	9.7	9.3	9.1	8.7	8.8	8.8	9.0	9.1	9.1
190000	9.4	8.9	8.7	8.7	8.7	9.6	9.4	9.1	8.6	8.8	8.9	9.0	9.1	9.0
200000	9.6	8.9	8.7	8.6	8.7	9.6	9.3	9.1	8.6	8.9	8.8	9.0	9.1	9.0
210000	9.6	8.9	8.7	8.6	8.6	9.6		9.1	8.6	8.9	8.8	9.0	9.1	9.0
220000	9.6	8.9	8.7	8.6	8.7	9.6	9.4	9.1	8.6	8.9	8.8	9.0	9.1	8.9
230000	9.5	8.9	8.7	8.7	8.7	9.6	8.0	9.1	8.7	8.9	8.8	9.0	9.1	9.0
Daily Max	9.6	9.6	9.0	8.7	8.7	10.4	9.6	9.5	9.2	8.9	9.0	9.0	9.1	9.2
Daily Min	8.2	8.8	8.6	8.5	8.6	8.6	8.0	9.1	8.6	8.6	8.8	8.8	9.0	8.9
Average	8.6	9.1	8.8	8.6	8.7	9.3	9.4	9.2	9.0	8.8	8.9	8.9	9.1	9.1

Missing data due to equipment malfunction

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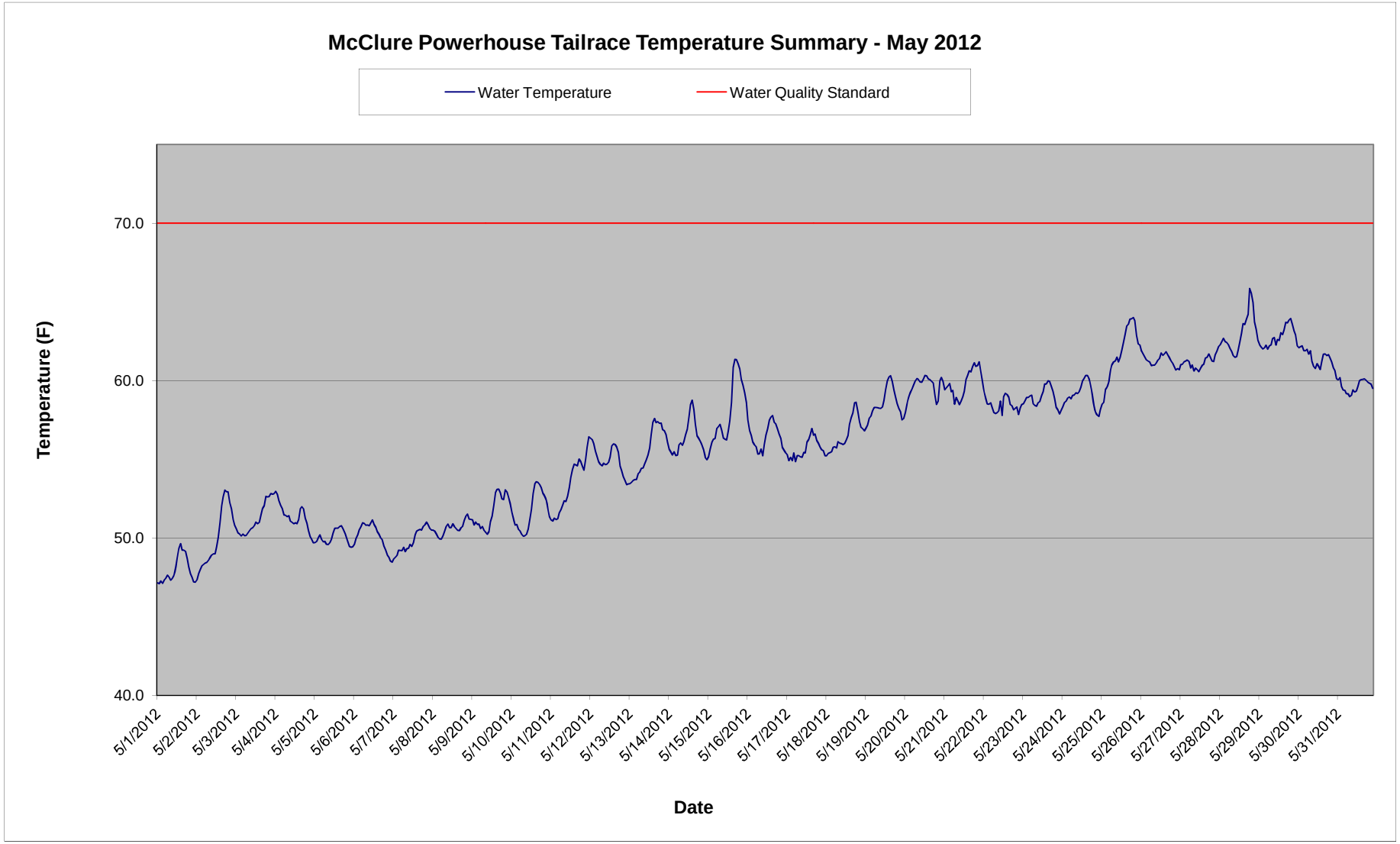

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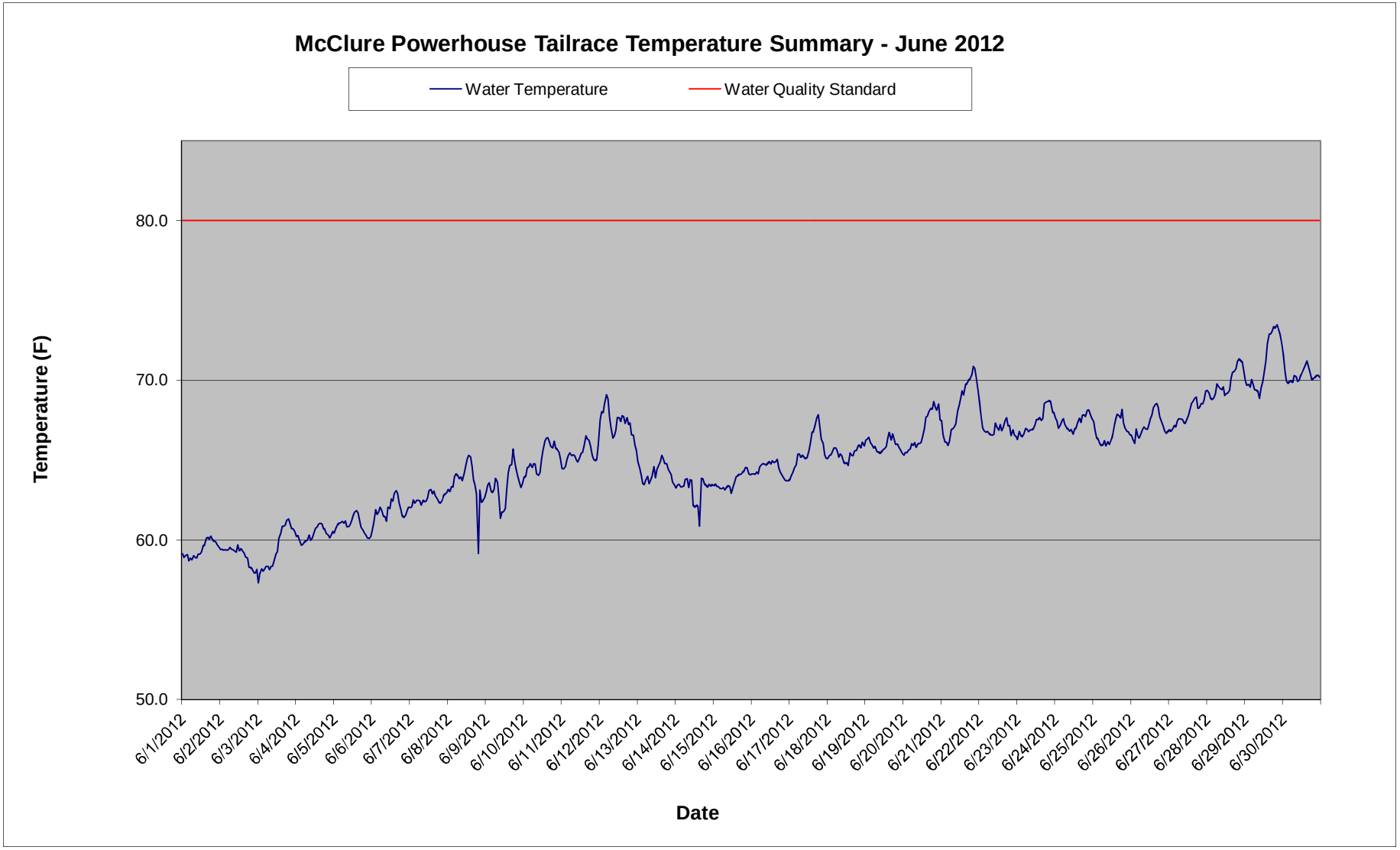

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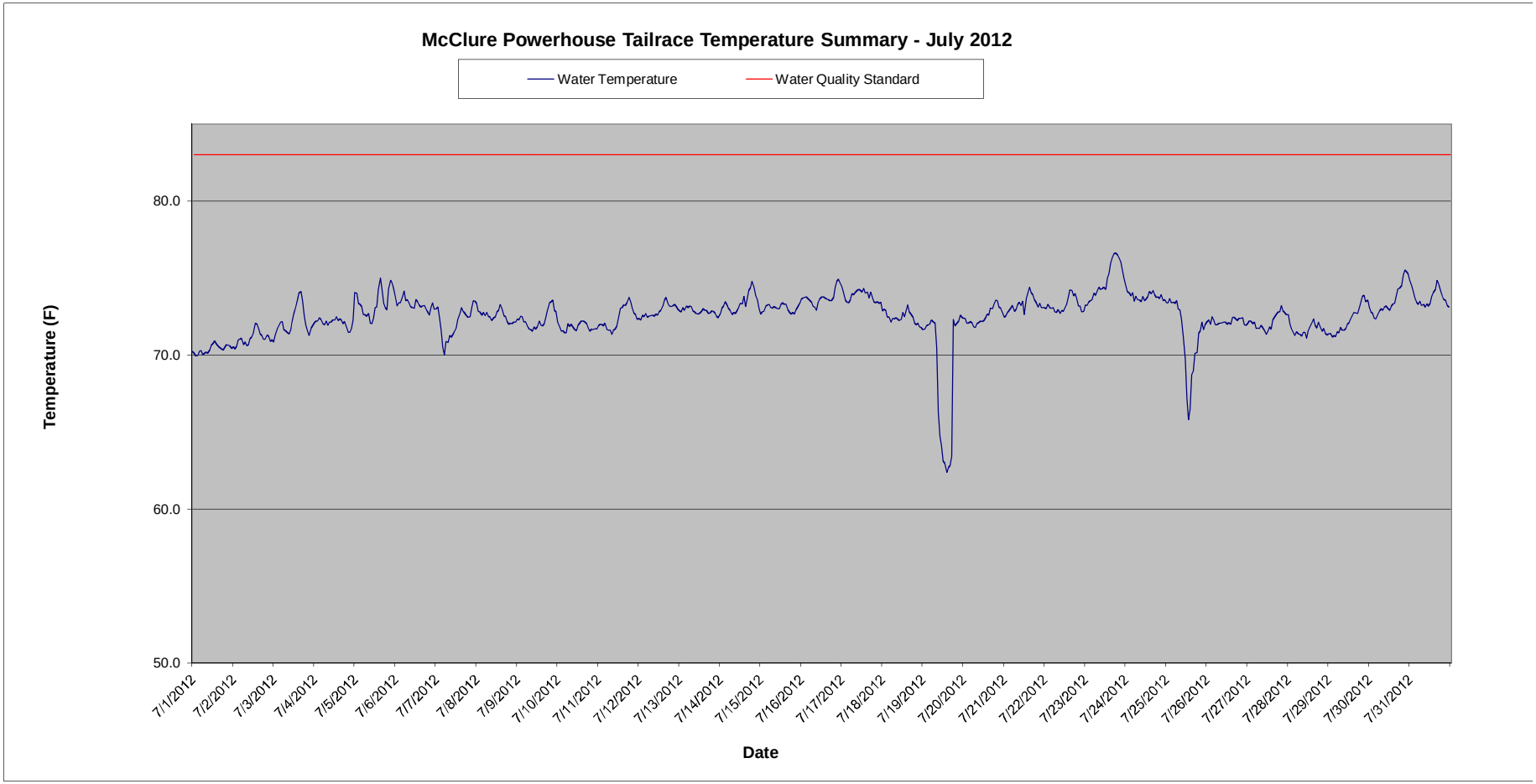

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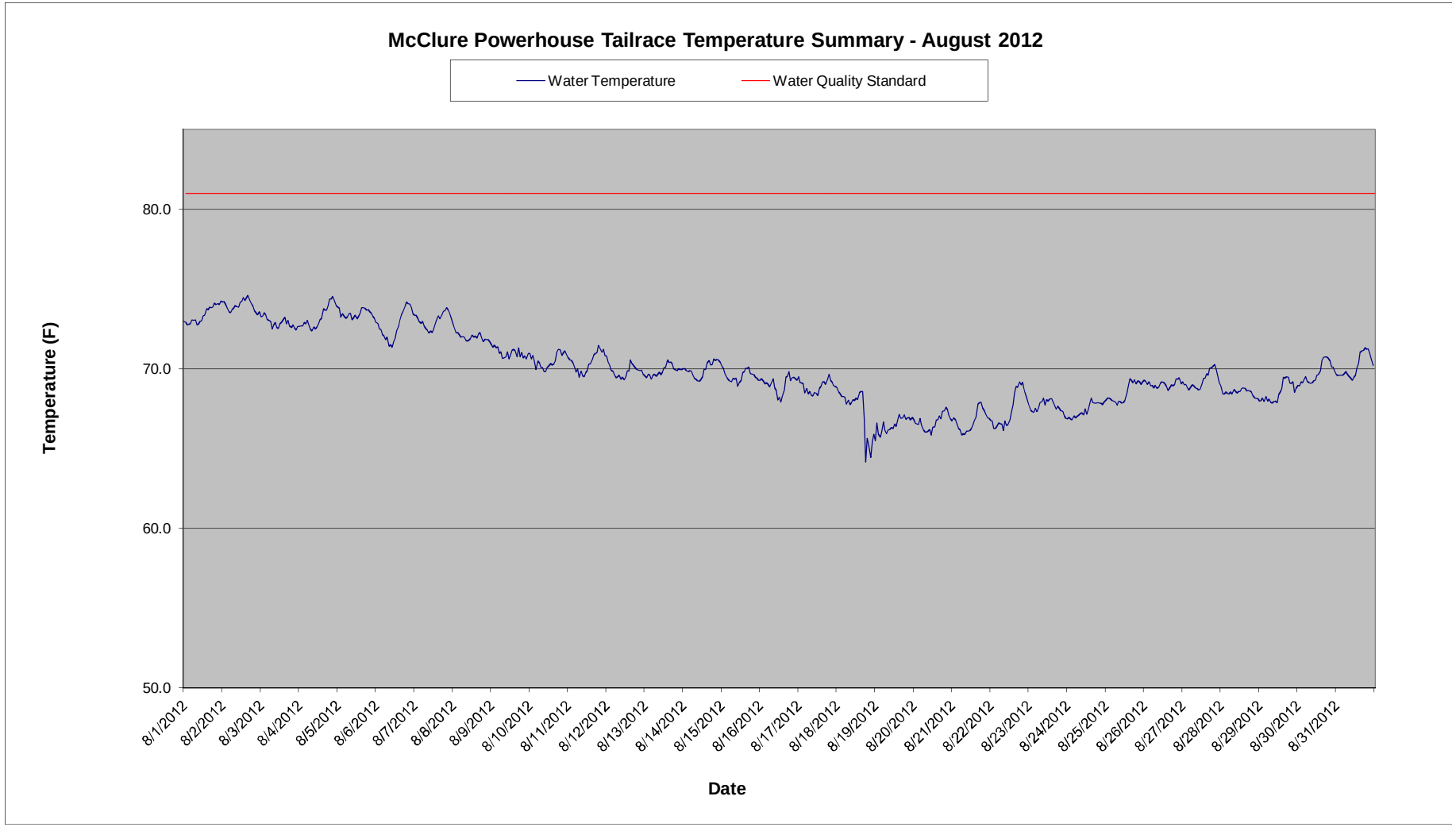

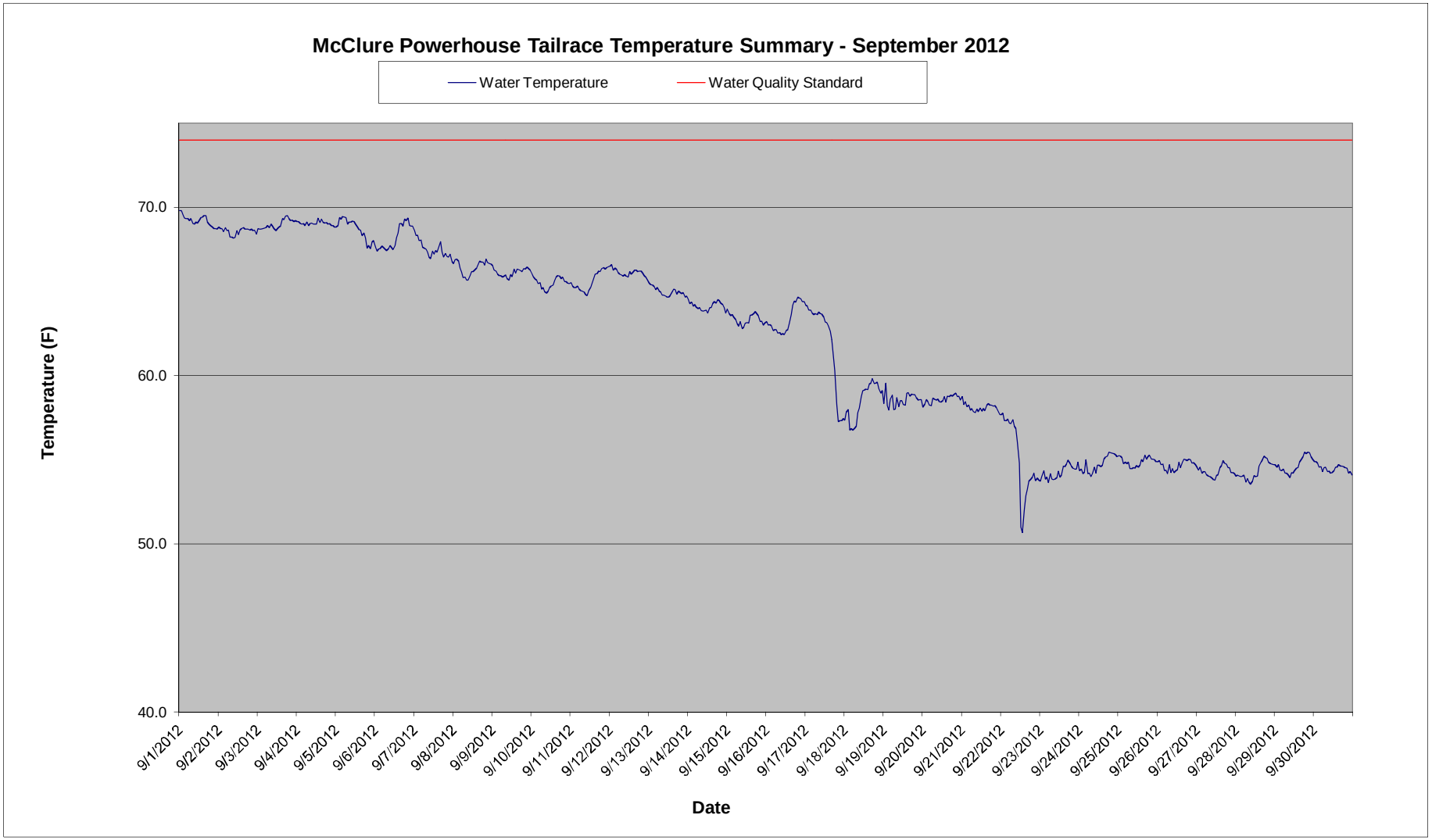

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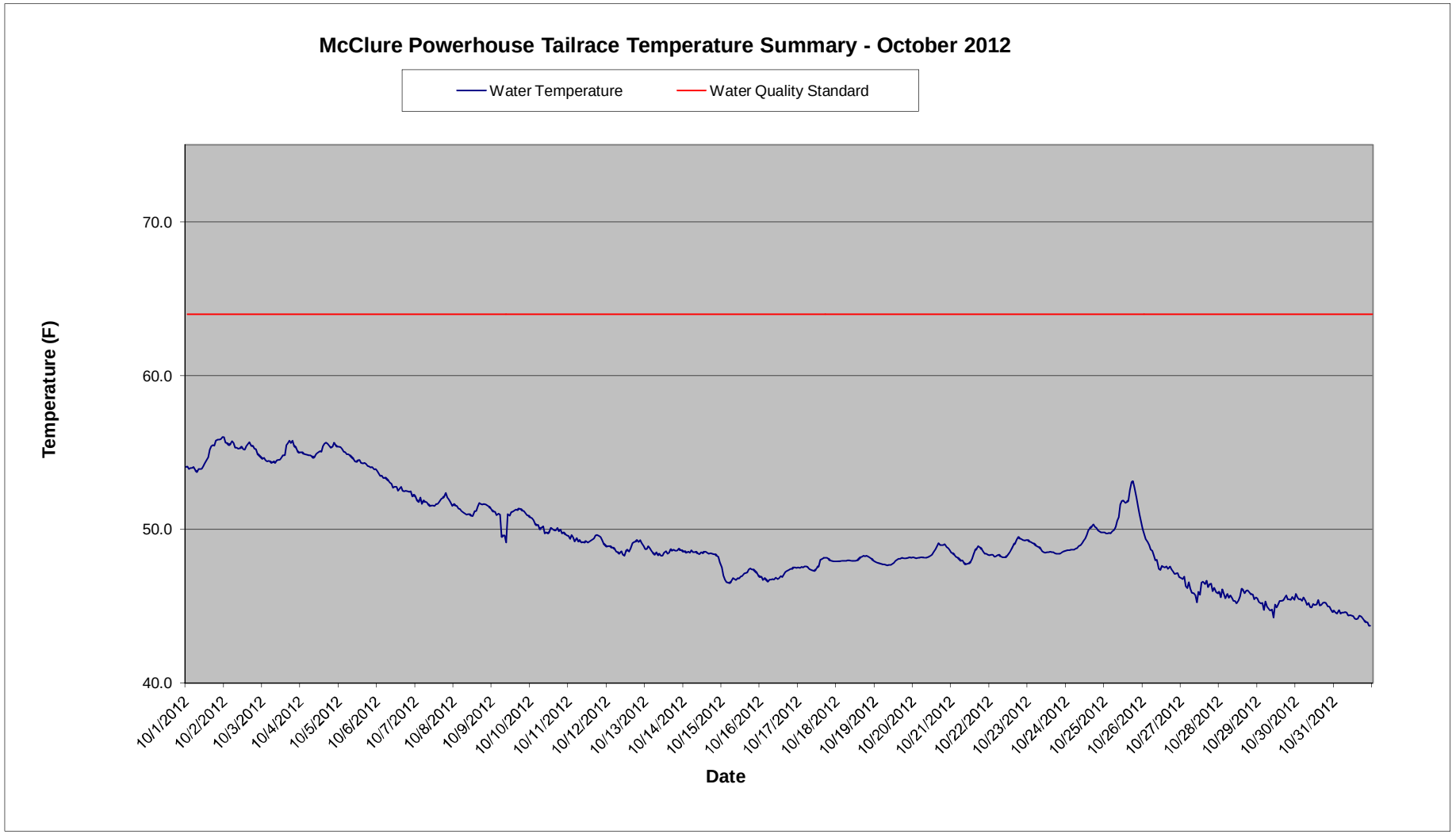

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McClure Powerhouse Tailrace - May 2012 Temperature Monitoring Data

Time HHMMSS	5/1/2012	5/2/2012	5/3/2012	5/4/2012	5/5/2012	5/6/2012	5/7/2012	5/8/2012	5/9/2012	5/10/2012	5/11/2012	5/12/2012	5/13/2012	5/14/2012	5/15/2012	5/16/2012
0	47.1	47.4	50.6	53.0	49.7	49.6	48.7	50.5	51.2	51.6	51.1	56.3	53.5	55.6	55.2	57.5
10000	47.1	47.8	50.3	52.8	49.8	50.0	48.8	50.4	51.2	51.3	51.1	56.2	53.5	55.5	55.7	56.8
20000	47.3	48.0	50.3	52.4	50.0	50.2	48.9	50.3	50.8	50.8	51.3	56.0	53.7	55.3	56.1	56.5
30000	47.1	48.2	50.1	52.1	50.2	50.5	49.2	50.0	51.0	50.9	51.2	55.5	53.7	55.5	56.3	56.1
40000	47.3	48.3	50.3	51.9	49.9	50.7	49.2	49.9	50.9	50.5	51.2	55.2	53.7	55.2	56.3	55.9
50000	47.4	48.4	50.1	51.5	49.7	51.0	49.2	49.9	50.9	50.5	51.6	54.8	54.1	55.3	57.0	55.8
60000	47.6	48.5	50.2	51.4	49.8	50.9	49.4	50.1	50.6	50.2	51.8	54.7	54.2	55.9	57.1	55.3
70000	47.5	48.6	50.3	51.4	49.6	50.8	49.1	50.4	50.7	50.1	52.1	54.6	54.4	56.0	57.2	55.3
80000	47.3	48.8	50.5	51.4	49.6	50.8	49.3	50.7	50.5	50.1	52.4	54.8	54.4	55.9	56.8	55.7
90000	47.4	48.9	50.6	51.1	49.7	50.8	49.4	50.9	50.4	50.2	52.3	54.7	54.7	56.1	56.3	55.2
100000	47.6	49.0	50.6	51.0	49.9	51.0	49.6	50.6	50.2	50.6	52.7	54.7	55.0	56.6	56.3	55.9
110000	48.2	49.0	50.8	50.9	50.3	51.2	49.5	50.6	50.4	51.2	53.2	54.8	55.3	56.9	56.2	56.5
120000	48.7	49.4	51.0	51.0	50.6	50.9	49.7	50.9	51.0	51.8	53.8	55.1	55.7	57.7	56.8	56.9
130000	49.4	50.1	50.9	50.9	50.6	50.7	50.2	50.7	51.4	52.8	54.4	55.9	56.5	58.5	57.4	57.5
140000	49.6	51.0	51.0	51.2	50.6	50.4	50.4	50.6	52.1	53.4	54.7	56.0	57.3	58.8	58.6	57.7
150000	49.2	52.1	51.5	51.9	50.7	50.2	50.5	50.5	52.9	53.6	54.6	55.9	57.6	58.2	60.8	57.8
160000	49.2	52.6	51.9	52.0	50.8	50.0	50.5	50.5	53.1	53.5	54.6	55.8	57.3	57.2	61.4	57.3
170000	49.2	53.0	52.1	51.9	50.6	49.9	50.5	50.6	53.1	53.4	55.0	55.4	57.4	56.5	61.3	57.3
180000	48.7	52.9	52.6	51.3	50.4	49.5	50.7	50.7	52.9	53.2	54.8	54.6	57.3	56.3	61.1	56.9
190000	48.2	52.9	52.6	50.9	50.1	49.2	50.8	51.1	52.5	52.8	54.6	54.3	57.3	56.1	60.7	56.6
200000	47.7	52.3	52.6	50.5	49.7	48.9	51.0	51.4	52.4	52.7	54.3	53.9	56.9	55.9	60.1	56.3
210000	47.5	51.9	52.8	50.1	49.5	48.8	50.8	51.5	53.1	52.4	55.0	53.7	56.8	55.6	59.7	55.8
220000	47.2	51.2	52.8	49.9	49.4	48.5	50.6	51.2	52.9	51.9	55.8	53.4	56.6	55.1	59.2	55.6
230000	47.2	50.8	52.8	49.7	49.4	48.5	50.5	51.2	52.6	51.3	56.4	53.4	56.1	55.0	58.6	55.4
Daily Max	49.6	53.0	52.8	53.0	50.8	51.2	51.0	51.5	53.1	53.6	56.4	56.3	57.6	58.8	61.4	57.8
Daily Min	47.1	47.4	50.1	49.7	49.4	48.5	48.7	49.9	50.2	50.1	51.1	53.4	53.5	55.0	55.2	55.2
Average	48.0	50.0	51.2	51.3	50.0	50.1	49.9	50.6	51.6	51.7	53.3	55.0	55.5	56.3	58.0	56.4

Monthly average temp (F): 56.0
License Maximum Monthly Average: 70°F

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McClure Powerhouse Tailrace - May 2012 Temperature Monitoring Data

Time HHMMSS	5/17/2012	5/18/2012	5/19/2012	5/20/2012	5/21/2012	5/22/2012	5/23/2012	5/24/2012	5/25/2012	5/26/2012	5/27/2012	5/28/2012	5/29/2012	5/30/2012	5/31/2012
0	55.3	55.2	57.0	58.0	59.4	59.3	58.5	58.3	58.5	61.9	61.0	62.3	62.3	62.1	60.0
10000	54.9	55.4	57.2	58.5	59.6	58.9	58.7	58.6	58.6	61.7	61.1	62.5	62.2	62.2	60.2
20000	55.1	55.4	57.6	58.9	59.7	58.5	58.9	58.7	59.4	61.5	61.2	62.7	62.0	62.2	59.6
30000	54.9	55.5	57.8	59.3	59.8	58.5	58.9	58.9	59.6	61.3	61.3	62.5	62.1	61.9	59.4
40000	55.4	55.8	58.1	59.5	59.3	58.6	59.0	59.0	59.9	61.3	61.3	62.4	62.3	61.9	59.4
50000	54.8	55.8	58.3	59.7	59.4	58.3	59.1	58.8	60.6	61.2	61.2	62.3	62.0	62.0	59.2
60000	55.2	55.7	58.3	60.0	58.5	58.0	58.5	59.1	61.0	60.9	60.8	62.0	62.2	61.7	59.2
70000	55.2	56.1	58.3	60.1	58.9	57.9	58.4	59.1	61.2	61.0	61.0	61.8	62.3	61.9	59.0
80000	55.2	56.0	58.2	60.1	58.7	58.0	58.4	59.2	61.3	61.0	60.6	61.6	62.7	61.2	59.1
90000	55.1	56.0	58.2	59.9	58.5	58.1	58.6	59.2	61.5	61.1	60.8	61.5	62.7	60.9	59.4
100000	55.4	55.9	58.3	59.9	58.7	58.7	58.7	59.3	61.2	61.3	60.7	61.5	62.3	60.8	59.3
110000	55.4	56.0	58.7	60.1	59.0	57.8	59.0	59.6	61.5	61.4	60.6	61.9	62.6	61.1	59.3
120000	56.1	56.2	59.4	60.3	59.3	59.0	59.3	60.0	62.0	61.8	60.8	62.5	62.5	60.9	59.6
130000	56.3	56.5	60.0	60.3	60.1	59.2	59.8	60.1	62.4	61.6	61.0	63.0	63.1	60.7	60.0
140000	56.5	57.2	60.2	60.1	60.4	59.1	59.8	60.3	62.9	61.7	61.0	63.6	62.9	61.3	60.1
150000	57.0	57.7	60.3	60.1	60.6	58.9	60.0	60.3	63.5	61.8	61.4	63.6	63.2	61.7	60.1
160000	56.5	58.0	60.0	60.0	60.5	58.5	60.0	60.1	63.6	61.6	61.5	63.9	63.7	61.7	60.1
170000	56.6	58.6	59.4	59.8	60.9	58.4	59.6	59.7	63.9	61.5	61.7	64.2	63.7	61.6	60.0
180000	56.2	58.6	59.0	59.0	61.1	58.1	59.3	59.1	63.9	61.3	61.5	65.9	63.8	61.6	59.9
190000	56.0	58.1	58.6	58.5	60.9	58.2	58.8	58.4	64.0	61.1	61.3	65.6	64.0	61.4	59.8
200000	55.8	57.4	58.2	58.7	60.9	58.3	58.3	58.0	63.8	60.9	61.2	65.0	63.6	61.2	59.8
210000	55.6	57.0	58.0	60.0	61.2	57.8	58.1	57.8	62.9	60.7	61.6	63.7	63.2	60.8	59.5
220000	55.5	56.9	57.5	60.2	60.6	58.3	57.9	57.7	62.3	60.8	61.9	63.2	62.9	60.6	59.4
230000	55.2	56.8	57.6	59.9	60.0	58.5	58.1	58.2	62.3	60.7	62.2	62.6	62.2	60.1	59.3
Daily Max	57.0	58.6	60.3	60.3	61.2	59.3	60.0	60.3	64.0	61.9	62.2	65.9	64.0	62.2	60.2
Daily Min	54.8	55.2	57.0	58.0	58.5	57.8	57.9	57.7	58.5	60.7	60.6	61.5	62.0	60.1	59.0
Average	55.6	56.6	58.5	59.6	59.8	58.5	58.9	59.1	61.7	61.3	61.2	63.0	62.8	61.4	59.6

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McClure Powerhouse Tailrace - June 2012 Temperature Monitoring Data

Time HHMMSS	06/01/12	06/02/12	06/03/12	06/04/12	06/05/12	06/06/12	06/07/12	06/08/12	06/09/12	06/10/12	06/11/12	06/12/12	06/13/12	06/14/12	06/15/12	06/16/12
0	59.1	59.4	57.3	60.2	60.4	60.6	62.0	63.2	63.0	63.9	64.5	67.5	64.9	63.2	63.4	64.1
10000	58.9	59.4	57.9	60.3	60.8	61.1	62.1	63.0	63.4	64.0	64.4	68.0	64.5	63.4	63.5	64.1
20000	59.0	59.4	58.2	60.0	61.0	61.9	62.5	63.4	63.6	64.5	64.6	68.0	64.0	63.5	63.3	64.1
30000	59.1	59.4	58.0	59.7	61.1	61.6	62.3	63.3	63.1	64.6	65.0	68.6	63.5	63.3	63.3	64.3
40000	58.7	59.4	58.2	59.7	61.1	61.7	62.5	64.0	63.0	64.8	65.3	69.1	63.5	63.4	63.2	64.1
50000	58.9	59.4	58.3	59.8	61.2	62.1	62.5	64.1	63.2	64.5	65.5	68.8	63.7	63.4	63.2	64.6
60000	58.7	59.5	58.3	59.9	61.0	61.9	62.5	64.0	63.9	64.8	65.3	67.7	64.0	63.8	63.3	64.7
70000	59.0	59.4	58.1	60.0	61.2	61.5	62.2	63.8	63.6	64.7	65.3	67.0	63.5	63.8	63.1	64.8
80000	58.9	59.4	58.3	60.3	60.8	61.5	62.5	64.0	62.7	64.1	65.3	66.4	63.7	63.3	63.3	64.8
90000	58.9	59.3	58.3	60.0	60.8	61.2	62.4	63.7	61.4	64.1	65.0	66.5	64.0	63.8	63.4	64.7
100000	59.1	59.2	58.8	60.1	61.0	62.1	62.4	64.2	61.8	64.2	64.9	66.9	64.6	63.8	63.3	64.8
110000	59.1	59.7	59.1	60.4	61.2	62.0	62.6	64.6	61.8	65.0	65.2	67.7	63.9	62.2	62.9	64.9
120000	59.3	59.3	59.3	60.7	61.5	62.6	63.1	65.0	62.0	65.6	65.4	67.7	64.4	62.0	63.2	64.8
130000	59.6	59.5	60.1	60.8	61.7	62.4	63.2	65.3	63.2	66.2	65.5	67.4	64.6	62.2	63.6	65.0
140000	59.7	59.3	60.4	61.0	61.8	62.9	62.9	65.2	64.2	66.4	65.9	67.8	64.9	62.1	64.0	64.9
150000	60.1	59.2	60.9	61.0	61.7	63.1	63.1	64.6	64.7	66.4	66.5	67.7	65.3	60.9	64.0	64.9
160000	60.2	58.9	60.9	61.0	61.2	62.9	62.8	63.8	64.7	66.1	66.3	67.3	65.1	63.9	64.1	65.0
170000	60.1	58.9	60.9	60.7	60.8	62.3	62.6	63.4	65.7	65.8	66.3	67.7	64.8	63.8	64.1	64.5
180000	60.3	58.3	61.2	60.7	60.6	62.0	62.4	62.9	65.0	65.8	65.9	67.2	64.8	63.5	64.2	64.3
190000	60.0	58.3	61.3	60.4	60.4	61.5	62.3	59.1	64.5	66.2	65.3	67.3	64.4	63.4	64.3	64.1
200000	59.9	58.2	61.0	60.3	60.3	61.4	62.4	63.1	63.9	65.8	65.0	66.6	64.3	63.3	64.5	63.9
210000	59.9	58.0	60.7	60.1	60.1	61.5	62.8	62.4	63.6	65.7	65.0	66.6	64.1	63.5	64.5	63.8
220000	59.7	57.9	60.7	60.3	60.1	61.8	62.9	62.5	63.3	65.5	65.1	65.9	63.6	63.4	64.1	63.7
230000	59.6	58.2	60.5	60.5	60.2	62.0	62.9	62.7	63.5	65.0	65.9	65.6	63.4	63.5	64.1	63.7
Daily Max	60.3	59.7	61.3	61.0	61.8	63.1	63.2	65.3	65.7	66.4	66.5	69.1	65.3	63.9	64.5	65.0
Daily Min	58.7	57.9	57.3	59.7	60.1	60.6	62.0	59.1	61.4	63.9	64.4	65.6	63.4	60.9	62.9	63.7
Average	59.4	59.0	59.5	60.3	60.9	61.9	62.6	63.6	63.4	65.2	65.3	67.4	64.2	63.2	63.7	64.4

Monthly average temp (F): 65.0
License Maximum Monthly Average: 80 F

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McClure Powerhouse Tailrace - June 2012 Temperature Monitoring Data

Time HHMMSS	06/17/12	06/18/12	06/19/12	06/20/12	06/21/12	06/22/12	06/23/12	06/24/12	06/25/12	06/26/12	06/27/12	06/28/12	06/29/12	06/30/12
0	63.8	65.1	66.3	65.3	67.5	68.6	66.3	67.6	67.4	66.6	66.9	69.4	70.0	71.6
10000	64.0	65.3	66.3	65.5	66.6	67.7	66.8	67.5	66.8	66.3	66.8	69.2	69.7	70.6
20000	64.2	65.3	66.5	65.5	66.1	67.0	66.6	67.0	66.4	66.0	66.9	68.9	69.7	70.0
30000	64.5	65.5	66.1	65.6	66.1	66.8	66.5	67.2	66.3	67.0	67.2	68.8	69.6	69.8
40000	64.7	65.8	65.9	65.7	65.9	66.7	66.6	67.4	66.0	66.5	67.1	68.8	70.1	69.9
50000	65.4	65.8	65.8	66.0	66.1	66.8	67.0	67.6	65.9	66.4	67.4	69.2	69.7	70.0
60000	65.4	65.6	65.8	65.9	66.9	66.7	66.9	67.2	65.9	66.7	67.6	69.8	69.4	69.9
70000	65.2	65.2	65.5	66.1	67.0	66.6	66.8	67.0	66.2	66.9	67.6	69.6	69.4	70.3
80000	65.3	65.4	65.5	65.8	67.1	66.6	66.9	66.9	65.9	67.1	67.6	69.5	69.3	70.3
90000	65.2	65.3	65.4	66.0	67.3	66.6	66.9	66.8	66.2	67.0	67.4	69.4	68.9	69.9
100000	65.1	64.9	65.5	66.0	68.1	67.3	67.0	66.9	66.0	66.9	67.3	69.6	69.5	70.0
110000	65.1	64.8	65.7	66.1	68.4	67.1	67.2	66.6	66.2	67.2	67.5	69.0	70.0	70.3
120000	65.6	64.9	65.7	66.4	68.9	66.9	67.5	66.9	66.4	67.6	67.8	69.2	70.6	70.4
130000	66.1	64.7	65.9	67.0	69.4	67.2	67.6	67.0	67.2	67.8	68.2	69.2	71.2	70.8
140000	66.7	65.5	66.4	67.7	69.1	66.8	67.7	67.3	67.6	68.3	68.5	69.4	72.2	71.0
150000	66.8	65.3	66.7	67.8	69.7	67.1	67.5	67.6	67.9	68.5	68.7	70.1	72.9	71.2
160000	67.1	65.3	66.3	68.0	69.8	67.5	67.6	67.4	67.8	68.5	68.9	70.5	72.9	70.9
170000	67.7	65.6	66.7	68.3	70.0	67.7	68.5	67.8	67.6	68.3	68.9	70.5	73.1	70.4
180000	67.9	65.6	66.3	68.2	70.1	67.2	68.6	67.8	68.2	67.7	68.3	70.7	73.4	70.0
190000	67.1	65.8	66.0	68.7	70.4	67.2	68.7	67.7	67.3	67.4	68.3	71.2	73.3	70.1
200000	66.3	65.9	66.0	68.3	70.9	66.5	68.7	68.1	67.0	67.2	68.5	71.3	73.5	70.2
210000	66.0	65.8	65.8	68.1	70.7	66.9	68.6	68.2	66.8	66.8	68.5	71.3	73.2	70.3
220000	65.3	66.1	65.6	68.5	70.1	66.6	68.0	67.9	66.8	66.7	68.8	71.1	72.9	70.3
230000	65.1	65.9	65.4	67.5	69.3	66.5	67.9	67.6	66.6	66.8	69.3	70.6	72.4	70.2
Daily Max	67.9	66.1	66.7	68.7	70.9	68.6	68.7	68.2	68.2	68.5	69.3	71.3	73.5	71.6
Daily Min	63.8	64.7	65.4	65.3	65.9	66.5	66.3	66.6	65.9	66.0	66.8	68.8	68.9	69.8
Average	65.7	65.4	66.0	66.8	68.4	67.0	67.4	67.4	66.8	67.2	67.9	69.8	71.1	70.3

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McClure Powerhouse Tailrace - July 2012 Temperature Monitoring Data

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

Monthly average temp (F): 72.5
License Maximum Monthly Average: 83°F

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McClure Powerhouse Tailrace - July 2012 Temperature Monitoring Data

Time HHMMSS	07/17/12	07/18/12	07/19/12	07/20/12	07/21/12	07/22/12	07/23/12	07/24/12	07/25/12	07/26/12	07/27/12	07/28/12	07/29/12	07/30/12	07/31/12
0	74.5	72.9	71.7	72.4	72.4	73.1	73.2	74.6	73.4	72.1	72.0	72.6	71.3	73.1	74.8
10000	74.1	73.0	71.7	72.4	72.6	73.0	73.2	74.1	73.4	72.3	72.2	72.0	71.4	72.8	74.5
20000	73.5	72.9	71.9	72.1	72.8	73.3	73.4	74.0	73.7	72.0	72.2	71.7	71.2	72.7	74.1
30000	73.4	72.4	72.0	72.1	72.9	73.0	73.5	73.8	73.4	72.5	72.0	71.5	71.3	72.4	73.7
40000	73.4	72.5	72.0	72.2	73.0	73.0	73.6	74.0	73.4	72.3	72.1	71.3	71.2	72.3	73.4
50000	73.6	72.1	72.3	72.1	73.2	73.1	74.0	73.5	73.4	71.9	71.7	71.5	71.5	72.6	73.3
60000	74.0	72.4	72.2	71.8	72.8	72.8	73.9	73.8	73.5	72.0	71.8	71.3	71.4	72.9	73.5
70000	73.9	72.3	72.1	71.8	73.0	72.8	74.1	73.6	73.0	72.1	71.7	71.3	71.8	73.0	73.2
80000	74.0	72.4	70.5	72.0	73.3	72.9	74.4	73.5	72.9	72.1	71.9	71.2	71.6	72.9	73.3
90000	74.2	72.3	66.3	72.1	73.4	72.7	74.2	73.5	72.3	72.1	71.8	71.5	71.6	73.1	73.1
100000	74.2	72.2	64.8	72.2	73.2	72.9	74.3	73.8	71.3	72.1	71.5	71.5	71.7	73.2	73.3
110000	74.2	72.3	64.1	72.2	73.5	72.8	74.4	73.5	69.7	72.1	71.3	71.1	72.0	73.0	73.2
120000	74.1	72.8	63.1	72.2	72.6	73.1	74.3	73.6	67.2	72.0	71.5	71.6	72.1	72.9	73.3
130000	74.3	72.5	63.0	72.4	73.7	73.3	75.0	73.8	65.8	72.1	71.8	71.9	72.3	73.2	73.8
140000	74.0	72.9	62.4	72.6	74.0	73.7	75.3	74.1	66.5	72.0	71.7	72.1	72.5	73.3	74.0
150000	74.1	73.2	62.7	72.6	74.4	74.2	76.0	74.0	68.7	72.4	72.3	72.3	72.8	73.4	74.2
160000	73.7	72.8	62.8	73.0	74.0	74.2	76.3	74.2	69.0	72.4	72.4	71.9	72.7	73.8	74.8
170000	74.1	72.7	63.4	73.0	73.9	73.8	76.6	73.9	70.1	72.3	72.7	71.7	72.7	74.3	74.6
180000	73.8	72.4	72.3	73.3	73.6	74.0	76.6	73.7	70.2	72.2	72.8	72.1	73.0	74.3	74.2
190000	73.5	72.1	71.9	73.5	73.4	73.6	76.5	73.8	71.4	72.4	72.8	71.9	73.4	74.5	73.9
200000	73.4	71.9	72.0	73.5	73.1	73.2	76.3	73.7	71.6	72.4	73.2	71.5	73.8	75.1	73.6
210000	73.5	72.1	72.2	73.1	73.3	73.2	76.0	73.9	72.1	72.4	72.9	71.7	73.9	75.5	73.5
220000	73.4	71.8	72.6	73.0	73.1	72.8	75.5	73.5	71.7	72.0	72.8	71.4	73.5	75.4	73.2
230000	73.4	71.8	72.4	72.8	73.1	72.8	74.9	73.6	71.9	71.9	72.6	71.3	73.6	75.3	73.1
Daily Max	74.5	73.2	72.6	73.5	74.4	74.2	76.6	74.6	73.7	72.5	73.2	72.6	73.9	75.5	74.8
Daily Min	73.4	71.8	62.4	71.8	72.4	72.7	73.2	73.5	65.8	71.9	71.3	71.1	71.2	72.3	73.1
Average	73.8	72.4	68.8	72.5	73.3	73.2	74.8	73.8	71.2	72.2	72.2	71.7	72.3	73.5	73.7

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McClure Powerhouse Tailrace - August 2012 Temperature Monitoring Data

Time HHMMSS	8/1/2012	8/2/2012	8/3/2012	8/4/2012	8/5/2012	8/6/2012	8/7/2012	8/8/2012	8/9/2012	8/10/2012	8/11/2012	8/12/2012	8/13/2012	8/14/2012	8/15/2012	8/16/2012	8/17/2012
0	73.0	74.2	73.3	72.6	73.9	72.9	73.4	72.8	71.5	71.0	70.7	70.8	69.5	70.0	70.2	69.3	69.5
10000	72.9	74.2	73.3	72.7	73.8	72.8	73.3	72.5	71.3	70.6	70.6	70.4	69.4	70.0	70.0	69.4	69.1
20000	72.8	74.0	73.5	72.7	73.2	72.5	73.2	72.2	71.5	70.8	70.5	70.2	69.7	69.9	69.7	69.2	69.1
30000	72.8	73.8	73.4	72.9	73.5	72.5	73.0	72.3	71.3	70.5	70.4	69.9	69.6	69.8	69.5	69.1	69.0
40000	72.8	73.6	73.1	72.8	73.3	72.2	72.9	72.1	71.4	70.0	70.1	69.8	69.4	69.9	69.3	69.1	68.5
50000	73.1	73.5	73.0	73.0	73.2	72.1	73.0	72.0	71.0	70.5	69.8	69.6	69.6	69.9	69.3	69.0	68.8
60000	73.0	73.7	73.0	72.8	73.3	71.8	72.7	72.0	71.1	70.4	70.0	69.4	69.7	69.6	69.2	68.9	68.4
70000	73.1	73.8	72.5	72.5	73.4	72.0	72.5	72.0	70.7	70.1	69.5	69.5	69.5	69.4	69.4	69.1	68.6
80000	72.7	74.0	72.7	72.4	73.5	71.4	72.4	71.8	70.7	70.1	69.9	69.6	69.7	69.3	69.4	69.4	68.4
90000	72.8	73.9	72.9	72.6	73.1	71.5	72.2	71.7	70.7	69.8	69.6	69.3	69.8	69.3	69.4	68.8	68.3
100000	73.0	73.9	72.6	72.5	73.2	71.3	72.4	71.8	71.1	69.8	69.5	69.5	69.6	69.2	68.9	68.6	68.5
110000	73.0	74.2	72.5	72.6	73.3	71.7	72.3	71.9	70.6	70.1	69.8	69.3	69.8	69.4	69.1	68.1	68.5
120000	73.3	74.2	72.8	72.8	73.1	71.9	72.5	72.1	70.9	70.2	69.9	69.5	70.1	69.5	69.3	68.2	68.3
130000	73.3	74.5	73.0	73.1	73.3	72.4	72.9	72.0	71.2	70.3	70.3	69.9	70.1	70.0	69.7	67.9	68.8
140000	73.8	74.3	73.1	73.2	73.5	72.7	73.1	72.1	71.2	70.2	70.3	69.9	70.5	70.0	69.8	68.3	68.9
150000	73.7	74.4	73.2	73.8	73.8	73.1	73.3	71.9	71.1	70.3	70.6	70.6	70.4	70.4	70.0	68.7	69.2
160000	73.9	74.6	72.8	73.7	73.8	73.5	73.1	72.2	70.8	70.5	70.9	70.3	70.4	70.5	70.0	69.5	69.2
170000	73.8	74.3	73.0	73.7	73.8	73.6	73.4	72.3	71.3	71.0	71.0	70.2	70.3	70.2	70.1	69.5	69.0
180000	73.9	74.1	72.7	74.0	73.7	73.9	73.6	72.0	70.8	71.2	71.0	70.1	70.0	70.3	69.7	69.8	69.3
190000	74.1	73.9	72.6	74.4	73.7	74.2	73.6	71.7	71.0	71.2	71.5	69.9	70.0	70.6	69.7	69.2	69.7
200000	74.0	73.6	72.8	74.4	73.6	74.1	73.8	71.9	70.7	70.8	71.3	69.9	69.9	70.5	69.6	69.4	69.3
210000	74.1	73.5	72.6	74.5	73.5	74.1	73.7	71.8	70.8	71.0	71.0	69.9	70.0	70.6	69.5	69.5	69.2
220000	74.0	73.4	72.4	74.2	73.3	73.8	73.5	71.8	70.6	71.1	71.2	69.9	70.0	70.5	69.4	69.4	68.9
230000	74.2	73.6	72.7	74.0	73.1	73.4	73.2	71.7	71.0	70.9	70.8	69.7	69.9	70.4	69.3	69.3	68.9
Daily Max	74.2	74.6	73.5	74.5	73.9	74.2	73.8	72.8	71.5	71.2	71.5	70.8	70.5	70.6	70.2	69.8	69.7
Daily Min	72.7	73.4	72.4	72.4	73.1	71.3	72.2	71.7	70.6	69.8	69.5	69.3	69.4	69.2	68.9	67.9	68.3
Average	73.4	74.0	72.9	73.2	73.5	72.7	73.0	72.0	71.0	70.5	70.4	69.9	69.9	70.0	69.6	69.0	68.9

Monthly average temp (F): 69.9
License Monthly Maximum Average: 81F

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McClure Powerhouse Tailrace - August 2012 Temperature Monitoring Data

Time HHMMSS	8/18/2012	8/19/2012	8/20/2012	8/21/2012	8/22/2012	8/23/2012	8/24/2012	8/25/2012	8/26/2012	8/27/2012	8/28/2012	8/29/2012	8/30/2012	8/31/2012
0	68.8	65.5	66.8	66.7	66.8	67.7	66.8	68.1	69.3	69.2	68.9	68.0	69.0	69.7
10000	68.5	66.6	66.6	66.9	66.7	67.4	67.0	68.2	69.2	69.0	68.4	68.0	68.9	69.6
20000	68.4	65.9	66.5	66.8	66.3	67.3	66.9	68.2	69.0	69.0	68.4	68.2	69.2	69.6
30000	68.3	65.7	66.5	66.5	66.3	67.3	66.8	68.1	69.2	68.8	68.6	67.9	69.1	69.6
40000	68.3	66.1	66.9	66.3	66.4	67.5	67.0	68.0	68.9	68.7	68.5	68.3	69.4	69.6
50000	68.2	66.7	66.4	66.2	66.6	67.3	66.9	68.0	69.0	68.9	68.4	68.0	69.5	69.7
60000	67.8	66.1	66.2	65.8	66.6	67.5	67.0	67.9	68.8	69.0	68.5	68.1	69.2	69.8
70000	68.1	65.9	66.0	65.9	66.6	67.9	67.1	67.7	69.0	68.9	68.4	67.9	69.1	69.7
80000	67.7	66.2	66.0	65.9	66.1	67.9	67.2	68.0	68.8	68.8	68.7	67.8	69.1	69.5
90000	67.9	66.2	66.1	66.1	66.7	68.2	67.2	67.9	68.9	68.8	68.6	67.9	69.1	69.4
100000	68.1	66.3	66.2	66.1	66.4	67.7	67.1	67.9	69.1	68.7	68.5	68.0	69.2	69.3
110000	68.0	66.3	65.8	66.1	66.5	68.1	67.5	67.9	69.2	68.7	68.6	67.9	69.3	69.5
120000	68.2	66.5	66.3	66.3	66.8	68.0	67.1	68.0	69.2	69.0	68.6	68.4	69.6	69.6
130000	68.1	66.4	66.3	66.5	67.3	68.1	67.4	68.5	69.0	69.4	68.8	68.6	69.6	70.1
140000	68.5	66.8	66.8	66.8	67.7	68.1	67.8	68.9	68.9	69.4	68.8	68.8	69.9	70.3
150000	68.6	67.1	66.8	67.0	68.5	67.9	68.2	69.4	68.6	69.7	68.8	69.5	70.5	71.0
160000	68.6	66.9	67.1	67.8	68.9	67.7	67.9	69.3	68.8	69.6	68.6	69.4	70.7	71.1
170000	67.0	66.9	66.9	67.9	68.8	67.5	67.9	69.1	69.0	70.0	68.6	69.5	70.7	71.2
180000	64.2	67.1	67.4	67.9	69.2	67.7	67.9	69.3	68.9	70.1	68.6	69.5	70.7	71.3
190000	65.6	66.8	67.4	67.6	69.0	67.5	67.9	69.1	69.0	70.2	68.5	69.1	70.7	71.2
200000	65.2	66.9	67.6	67.4	69.2	67.4	67.9	69.3	69.4	70.3	68.3	69.1	70.5	71.3
210000	64.5	67.0	67.4	67.2	68.6	67.3	67.8	69.2	69.4	69.9	68.2	69.2	70.1	71.0
220000	65.4	66.8	67.0	66.9	68.4	67.1	67.8	69.0	69.4	69.5	68.1	68.5	70.1	70.6
230000	65.9	67.0	66.9	66.9	68.1	66.9	67.9	69.2	69.1	69.1	68.1	68.8	69.9	70.2
Daily Max	68.8	67.1	67.6	67.9	69.2	68.2	68.2	69.4	69.4	70.3	68.9	69.5	70.7	71.3
Daily Min	64.2	65.5	65.8	65.8	66.1	66.9	66.8	67.7	68.6	68.7	68.1	67.8	68.9	69.3
Average	67.4	66.5	66.7	66.7	67.4	67.6	67.4	68.5	69.0	69.3	68.5	68.5	69.7	70.2

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McClure Powerhouse Tailrace - September 2012 Temperature Monitoring Data

Time HHMMSS	9/1/2012	9/2/2012	9/3/2012	9/4/2012	9/5/2012	9/6/2012	9/7/2012	9/8/2012	9/9/2012	9/10/2012	9/11/2012	9/12/2012	9/13/2012	9/14/2012	9/15/2012	9/16/2012
0	69.8	68.8	68.7	69.1	68.8	67.6	68.6	66.7	66.5	66.1	65.5	66.5	65.5	64.5	64.0	63.2
10000	69.8	68.7	68.7	69.2	68.9	67.4	68.3	66.9	66.3	65.9	65.3	66.6	65.4	64.3	63.7	63.0
20000	69.6	68.7	68.7	69.0	69.4	67.5	68.3	66.9	66.2	65.7	65.2	66.3	65.4	64.3	63.6	63.0
30000	69.4	68.6	68.7	69.0	69.3	67.5	68.0	66.8	66.0	65.7	65.2	66.4	65.3	64.1	63.6	63.0
40000	69.3	68.8	68.8	69.0	69.4	67.7	68.1	66.4	65.9	65.5	65.3	66.3	65.1	64.2	63.5	62.7
50000	69.3	68.6	68.8	68.9	69.4	67.6	67.6	66.1	65.9	65.5	65.1	66.1	65.2	64.1	63.3	62.7
60000	69.2	68.6	68.9	69.1	69.4	67.5	67.6	65.8	65.9	65.1	65.0	66.0	65.0	64.0	63.1	62.7
70000	69.3	68.2	68.8	68.9	69.0	67.4	67.5	65.8	65.9	65.2	65.0	66.0	65.0	64.0	62.9	62.5
80000	69.0	68.2	69.0	69.0	69.1	67.5	67.3	65.7	66.0	65.0	64.9	65.9	64.8	63.8	63.2	62.5
90000	69.0	68.2	68.9	69.1	69.1	67.7	67.0	65.7	65.8	64.9	64.8	66.0	64.8	63.8	62.8	62.4
100000	69.1	68.2	68.7	69.0	69.2	67.6	66.9	65.9	65.7	65.0	64.7	65.9	64.7	63.9	62.9	62.5
110000	69.0	68.6	68.6	69.0	69.1	67.5	67.4	66.2	66.0	65.2	65.0	65.8	64.7	63.9	63.1	62.4
120000	69.2	68.4	68.7	69.0	69.0	67.7	67.2	66.2	65.9	65.3	65.2	66.2	64.7	63.7	63.1	62.7
130000	69.4	68.6	68.8	69.4	68.8	68.2	67.4	66.3	66.3	65.4	65.5	66.0	64.7	64.0	63.1	62.7
140000	69.4	68.7	68.9	69.1	68.7	68.5	67.3	66.4	66.1	65.6	65.8	66.1	65.0	64.0	63.6	63.1
150000	69.5	68.8	69.3	69.3	68.6	69.0	67.7	66.6	66.3	65.9	66.0	66.3	65.1	64.3	63.6	63.6
160000	69.5	68.7	69.3	69.1	68.3	69.0	67.9	66.8	66.3	65.9	66.1	66.3	65.1	64.4	63.7	64.2
170000	69.1	68.7	69.5	69.1	68.5	68.9	67.3	66.7	66.2	65.9	66.2	66.2	64.8	64.3	63.8	64.4
180000	69.0	68.7	69.5	69.1	68.2	69.3	67.0	66.7	66.2	65.8	66.2	66.2	65.0	64.5	63.7	64.4
190000	68.9	68.6	69.3	69.0	67.6	69.2	67.2	66.6	66.4	65.9	66.3	66.2	64.9	64.4	63.6	64.7
200000	68.8	68.7	69.2	69.0	67.7	69.4	67.1	66.9	66.3	65.6	66.4	66.1	64.9	64.3	63.2	64.6
210000	68.7	68.6	69.2	68.9	67.5	68.9	67.0	66.7	66.5	65.6	66.3	65.9	64.9	64.2	63.2	64.6
220000	68.7	68.6	69.1	68.9	67.9	68.9	67.2	66.7	66.3	65.5	66.4	65.8	64.7	64.0	63.0	64.4
230000	68.7	68.4	69.2	68.8	68.0	68.9	66.8	66.6	66.3	65.4	66.5	65.6	64.7	63.7	63.1	64.4
Daily Max	69.8	68.8	69.5	69.4	69.4	69.4	68.6	66.9	66.5	66.1	66.5	66.6	65.5	64.5	64.0	64.7
Daily Min	68.7	68.2	68.6	68.8	67.5	67.4	66.8	65.7	65.7	64.9	64.7	65.6	64.7	63.7	62.8	62.4
Average	69.2	68.6	69.0	69.0	68.7	68.2	67.5	66.4	66.1	65.5	65.6	66.1	65.0	64.1	63.3	63.3

Monthly average temp (F): 61.3
License Monthly Maximum Average: 74 F

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McClure Powerhouse Tailrace - September 2012 Temperature Monitoring Data

Time HHMMSS	9/17/2012	9/18/2012	9/19/2012	9/20/2012	9/21/2012	9/22/2012	9/23/2012	9/24/2012	9/25/2012	9/26/2012	9/27/2012	9/28/2012	9/29/2012	9/30/2012
0	64.2	57.4	58.3	58.1	58.7	57.7	53.7	54.3	55.2	54.9	54.6	54.0	54.7	54.9
10000	64.1	57.8	59.5	58.3	58.3	57.8	54.0	54.4	55.2	54.9	54.4	54.1	54.6	54.9
20000	63.9	58.0	58.2	58.6	58.4	57.3	54.3	54.2	55.1	54.7	54.6	54.0	54.7	54.8
30000	63.9	56.8	58.0	58.5	58.2	57.3	53.8	54.2	54.8	54.7	54.2	54.0	54.4	54.6
40000	63.7	56.8	58.6	58.2	58.2	57.4	54.0	55.0	54.9	54.4	54.3	54.0	54.4	54.6
50000	63.6	56.8	58.8	58.2	58.0	57.2	53.6	54.2	54.8	54.4	54.3	54.1	54.4	54.3
60000	63.7	56.9	58.0	58.6	58.0	57.1	54.2	54.2	54.9	54.2	54.1	53.7	54.2	54.5
70000	63.6	57.0	58.0	58.6	57.9	57.4	53.8	54.0	54.5	54.7	54.0	53.9	54.2	54.6
80000	63.8	57.8	58.7	58.5	57.8	57.0	53.8	54.2	54.5	54.2	54.0	53.7	54.1	54.3
90000	63.7	58.1	58.1	58.6	58.0	56.8	53.9	54.6	54.5	54.5	53.9	53.5	53.9	54.3
100000	63.6	58.7	58.5	58.4	57.9	56.0	53.9	54.2	54.5	54.2	53.8	53.7	54.2	54.2
110000	63.5	59.1	58.5	58.4	58.1	54.8	54.3	54.7	54.6	54.3	53.8	54.1	54.2	54.2
120000	63.2	59.1	58.3	58.5	57.9	51.0	54.0	54.7	54.6	54.4	54.1	54.0	54.4	54.4
130000	63.1	59.2	58.2	58.7	58.0	50.7	54.1	54.6	54.7	54.9	54.1	54.0	54.5	54.6
140000	63.0	59.2	58.9	58.4	57.9	52.1	54.6	54.7	55.0	54.5	54.5	54.6	54.5	54.6
150000	62.6	59.5	59.0	58.8	58.2	52.9	54.6	55.0	54.9	54.9	54.6	54.8	54.8	54.7
160000	62.1	59.6	58.8	58.7	58.3	53.3	54.7	55.1	55.3	55.0	55.0	55.0	55.0	54.6
170000	61.2	59.8	58.9	58.8	58.2	53.7	55.0	55.2	55.0	55.0	54.8	55.2	55.2	54.6
180000	60.3	59.5	58.9	58.8	58.2	53.8	54.8	55.5	55.2	54.9	54.7	55.1	55.5	54.6
190000	58.3	59.5	58.9	58.9	58.2	54.0	54.6	55.4	55.3	55.0	54.5	55.1	55.3	54.5
200000	57.3	59.6	58.7	59.0	58.2	54.2	54.5	55.4	55.0	55.0	54.5	54.8	55.4	54.5
210000	57.3	59.2	58.6	58.7	58.1	53.8	54.4	55.3	55.0	54.8	54.2	54.8	55.4	54.2
220000	57.3	58.9	58.6	58.8	57.9	53.9	54.4	55.3	55.0	54.8	54.2	54.7	55.2	54.3
230000	57.4	59.1	58.6	58.5	57.7	53.8	54.9	55.2	54.9	54.7	54.2	54.7	55.0	54.1
Daily Max	64.2	59.8	59.5	59.0	58.7	57.8	55.0	55.5	55.3	55.0	55.0	55.2	55.5	54.9
Daily Min	57.3	56.8	58.0	58.1	57.7	50.7	53.6	54.0	54.5	54.2	53.8	53.5	53.9	54.1
Average	62.0	58.5	58.6	58.6	58.1	55.0	54.3	54.7	54.9	54.7	54.3	54.3	54.7	54.5

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McClure Powerhouse Tailrace - October 2012 Temperature Monitoring Data

Time HHMMSS	10/1/2012	10/2/2012	10/3/2012	10/4/2012	10/5/2012	10/6/2012	10/7/2012	10/8/2012	10/9/2012	10/10/2012	10/11/2012	10/12/2012	10/13/2012	10/14/2012	10/15/2012	10/16/2012	10/17/2012
0	54.1	56.0	54.6	55.0	55.4	53.8	52.2	51.7	51.3	50.8	49.6	48.9	48.7	48.6	47.5	46.9	47.5
10000	54.1	55.7	54.6	55.0	55.3	53.6	51.9	51.5	51.2	50.7	49.4	48.9	48.7	48.6	47.0	46.9	47.5
20000	53.9	55.6	54.5	54.9	55.2	53.5	51.8	51.5	51.2	50.6	49.6	48.9	48.9	48.5	46.7	46.7	47.6
30000	54.0	55.5	54.4	54.9	55.0	53.5	52.1	51.4	50.9	50.4	49.5	48.8	48.8	48.6	46.6	46.8	47.5
40000	54.0	55.6	54.4	54.9	55.0	53.3	51.7	51.3	51.0	50.3	49.2	48.8	48.6	48.5	46.5	46.7	47.6
50000	54.1	55.7	54.4	54.8	54.9	53.4	51.9	51.2	51.0	50.3	49.4	48.7	48.5	48.7	46.5	46.6	47.6
60000	53.8	55.6	54.3	54.8	54.9	53.3	51.8	51.1	49.5	50.0	49.2	48.5	48.3	48.5	46.6	46.7	47.6
70000	53.7	55.3	54.4	54.8	54.8	53.2	51.8	51.0	49.6	50.1	49.3	48.5	48.5	48.5	46.9	46.7	47.4
80000	53.9	55.3	54.3	54.6	54.7	53.0	51.6	51.0	49.6	50.2	49.2	48.4	48.3	48.6	46.8	46.8	47.4
90000	53.9	55.3	54.5	54.8	54.6	53.0	51.5	51.0	49.2	49.7	49.2	48.6	48.4	48.5	46.7	46.7	47.3
100000	53.9	55.3	54.5	54.9	54.4	52.7	51.6	51.0	51.0	49.8	49.1	48.4	48.3	48.4	46.8	46.9	47.3
110000	54.1	55.4	54.5	55.0	54.4	52.8	51.5	50.9	50.9	49.7	49.2	48.3	48.3	48.5	46.8	46.8	47.4
120000	54.3	55.2	54.6	55.1	54.5	52.8	51.5	50.8	51.1	49.8	49.1	48.6	48.5	48.5	46.9	46.8	47.5
130000	54.5	55.2	54.8	55.1	54.5	52.5	51.7	51.2	51.2	50.1	49.2	48.7	48.6	48.6	47.0	47.0	47.6
140000	54.7	55.4	54.8	55.4	54.3	52.6	51.6	51.2	51.2	50.0	49.3	48.6	48.4	48.6	47.1	46.9	48.0
150000	55.2	55.5	55.5	55.6	54.3	52.8	51.8	51.5	51.3	49.9	49.4	48.8	48.5	48.5	47.2	47.1	48.1
160000	55.4	55.7	55.6	55.6	54.3	52.5	52.0	51.7	51.3	49.9	49.4	49.1	48.7	48.4	47.2	47.2	48.2
170000	55.5	55.4	55.8	55.6	54.2	52.5	52.0	51.6	51.4	50.1	49.6	49.2	48.6	48.5	47.4	47.3	48.2
180000	55.4	55.5	55.6	55.4	54.1	52.5	52.2	51.6	51.3	49.9	49.6	49.2	48.7	48.4	47.5	47.4	48.2
190000	55.8	55.2	55.8	55.3	54.1	52.5	52.4	51.6	51.2	50.0	49.6	49.3	48.6	48.4	47.4	47.4	48.1
200000	55.8	55.2	55.4	55.4	54.0	52.4	52.1	51.6	51.2	49.7	49.5	49.2	48.6	48.4	47.4	47.4	48.0
210000	55.9	54.9	55.3	55.7	54.1	52.5	52.0	51.6	51.1	49.8	49.3	49.3	48.8	48.3	47.3	47.5	48.0
220000	55.9	54.8	55.1	55.5	53.9	52.2	51.8	51.5	50.9	49.7	49.1	49.1	48.7	48.2	47.2	47.5	47.9
230000	56.0	54.7	55.0	55.4	53.9	52.2	51.5	51.4	50.9	49.6	49.0	48.9	48.7	47.9	47.0	47.5	47.9
Daily Max	56.0	56.0	55.8	55.7	55.4	53.8	52.4	51.7	51.4	50.8	49.6	49.3	48.9	48.7	47.5	47.5	48.2
Daily Min	53.7	54.7	54.3	54.6	53.9	52.2	51.5	50.8	49.2	49.6	49.0	48.3	48.3	47.9	46.5	46.6	47.3
Average	54.7	55.4	54.9	55.1	54.5	52.9	51.8	51.3	50.8	50.1	49.3	48.8	48.6	48.5	47.0	47.0	47.7

Monthly average temp (F): 49.5
License Maximum Monthly Average: 64 F

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McClure Powerhouse Tailrace - October 2012 Temperature Monitoring Data

Time HHMMSS	10/18/2012	10/19/2012	10/20/2012	10/21/2012	10/22/2012	10/23/2012	10/24/2012	10/25/2012	10/26/2012	10/27/2012	10/28/2012	10/29/2012	10/30/2012	10/31/2012
0	47.9	47.9	48.2	48.5	48.3	49.3	48.6	49.8	50.0	46.8	46.0	45.5	45.8	44.7
10000	47.9	47.9	48.2	48.5	48.4	49.2	48.7	49.7	49.7	46.8	45.6	45.3	45.6	44.6
20000	47.9	47.8	48.1	48.3	48.4	49.2	48.7	49.7	49.4	46.9	46.1	45.2	45.5	44.5
30000	48.0	47.8	48.1	48.2	48.2	49.1	48.7	49.8	49.2	46.3	45.8	45.2	45.5	44.7
40000	48.0	47.8	48.2	48.2	48.3	49.1	48.7	49.7	49.0	46.2	45.5	44.7	45.4	44.5
50000	47.9	47.7	48.2	48.1	48.3	49.0	48.7	49.9	48.7	46.6	45.8	45.3	45.6	44.6
60000	48.0	47.7	48.2	48.0	48.4	48.9	48.7	50.0	48.6	46.1	45.6	45.0	45.3	44.6
70000	48.0	47.7	48.2	48.0	48.3	48.8	48.8	50.2	48.3	45.9	45.7	44.9	45.1	44.6
80000	48.0	47.7	48.1	47.8	48.2	48.7	48.9	50.6	48.0	45.9	45.5	44.7	45.2	44.6
90000	48.0	47.7	48.2	47.7	48.2	48.6	49.0	50.8	48.0	45.7	45.3	44.8	45.0	44.4
100000	48.0	47.7	48.2	47.8	48.2	48.5	49.1	51.6	47.4	45.3	45.4	44.3	44.9	44.4
110000	48.0	47.8	48.3	47.8	48.3	48.5	49.3	51.9	47.4	45.9	45.2	45.1	45.1	44.4
120000	47.9	47.8	48.4	47.9	48.4	48.5	49.4	51.9	47.6	45.7	45.4	44.9	45.1	44.3
130000	48.0	48.0	48.5	48.1	48.6	48.5	49.6	51.7	47.6	46.5	45.7	45.1	45.1	44.2
140000	48.1	48.0	48.7	48.4	48.7	48.5	49.9	51.8	47.5	46.6	46.1	45.4	45.4	44.2
150000	48.2	48.1	48.9	48.7	49.0	48.5	50.1	51.9	47.6	46.4	46.1	45.4	45.1	44.2
160000	48.2	48.1	49.1	48.8	49.1	48.5	50.2	52.6	47.4	46.7	45.9	45.4	45.1	44.4
170000	48.3	48.1	49.0	48.9	49.3	48.5	50.3	53.0	47.6	46.3	46.0	45.6	45.2	44.3
180000	48.3	48.1	49.0	48.8	49.5	48.4	50.2	53.1	47.4	46.4	46.1	45.7	45.2	44.2
190000	48.3	48.1	49.0	48.7	49.4	48.4	50.1	52.7	47.3	46.5	45.9	45.4	45.2	44.1
200000	48.2	48.1	49.0	48.6	49.4	48.4	49.9	52.0	47.1	46.0	45.8	45.4	45.0	44.0
210000	48.1	48.1	48.8	48.4	49.3	48.5	49.9	51.5	47.1	46.2	45.8	45.4	45.0	44.0
220000	48.1	48.2	48.8	48.4	49.3	48.5	49.8	51.0	47.2	45.9	45.4	45.6	44.8	43.7
230000	48.0	48.2	48.7	48.4	49.3	48.6	49.8	50.5	46.9	45.9	45.6	45.4	44.6	43.7
Daily Max	48.3	48.2	49.1	48.9	49.5	49.3	50.3	53.1	50.0	46.9	46.1	45.7	45.8	44.7
Daily Min	47.9	47.7	48.1	47.7	48.2	48.4	48.6	49.7	46.9	45.3	45.2	44.3	44.6	43.7
Average	48.0	47.9	48.5	48.3	48.7	48.7	49.4	51.1	48.0	46.2	45.7	45.2	45.2	44.3

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Appendix B

Dead River Hydroelectric Project

FERC Project No. 10855

2012 Dissolved Oxygen and Temperature Profile Data

Dead River (Hoist) Storage Basin
2012 Dissolved Oxygen and Temperature Profile Data

6/5/2012
Time: 17:15 EDT
Weather: Partly Cloudy,

Secchi Disk - 7' 6"

Depth (meters)	DO mg/l	Temp °C	Temp °F
0.5	8.72	18.1	64.6
1.0	8.66	18	64.4
1.5	8.57	17.9	64.2
2.0	8.46	17.5	63.5
2.5	8.46	17.3	63.1
3.0	8.37	17.2	63.0
3.5	8.31	17.1	62.8
4.0	8.28	16.9	62.4
4.5	8.26	16.8	62.2
5.0	8.24	16.8	62.2
5.5	8.19	16.7	62.1
6.0	8.07	16.7	62.1
6.5	8.08	16.4	61.5
7.0	7.84	16.2	61.2
7.5	7.79	16.1	61.0
8.0	7.15	15.4	59.7
8.5	6.62	13.9	57.0

Comparison Readings - 2nd meter

0.5 m	8.72	18.2	64.8
10.5 m	6.76	14.1	57.4

6/19/2012
Time: 14:50 EST
Weather:Cloudy, 75°F, light winds
Secchi Disk - 7' 4"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.5	22.3	72.1
1.0	8.51	22.2	72.0
1.5	8.49	22.0	71.6
2.0	8.33	21.1	70.0
2.5	8.36	20.8	69.4
3.0	8.36	20.7	69.3
3.5	8.35	20.6	69.1
4.0	8.38	20.4	68.7
4.5	8.38	20.4	68.7
5.0	8.39	20.4	68.7
5.5	8.38	20.3	68.5
6.0	8.39	20.3	68.5
6.5	7.87	19.6	67.3
7.0	7.76	19.5	67.1
7.5	7.02	18.4	65.1
8.0	6.69	17.9	64.2
8.5	6.63	17.6	63.7
9.0	6.43	17.1	62.8
9.5	6.12	16.8	62.2
10.0	6.03	16.2	61.2
10.5	5.61	15.2	59.4

Comparison Readings - 2nd meter

0.5 m	8.5	22.7	72.9
10.5 m	5.44	16.1	61.0

7/2/2012
Time: 17:05 EDT
Weather: Partly Cloudy, 85 F, 5-10 mph winds
Secchi Disk - 7' 6"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.59	26.1	79.0
1.0	8.60	25.9	78.6
1.5	8.59	25.8	78.4
2.0	8.61	25.4	77.7
2.5	8.41	24.2	75.6
3.0	8.40	23.9	75.0
3.5	8.06	23.4	74.1
4.0	7.63	22.9	73.2
4.5	7.17	22.2	72.0
5.0	7.11	22.2	72.0
5.5	7.16	22.1	71.8
6.0	7.13	21.9	71.4
6.5	6.26	20.9	69.6
7.0	6.16	20.7	69.3
7.5	6.11	20.6	69.1
8.0	5.34	19.5	67.1
8.5	5.25	19.1	66.4
9.0	5.21	19.1	66.4
9.5	4.42	17.8	64.0

Comparison Readings - 2nd meter

0.5 m	8.37	26.8	80.2
9.5 m	4.42	17.7	63.9

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Dead River (Hoist) Storage Basin
2012 Dissolved Oxygen and Temperature Profile Data

7/17/2012
Time: 16:15 EDT
Weather: Cloudy, light rain, 70 F
Secchi Disk - 8' 0"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.27	24.8	76.6
1.0	8.23	25.0	77.0
1.5	8.17	25.2	77.4
2.0	8.07	25.4	77.7
2.5	8.02	25.6	78.1
3.0	7.97	25.7	78.3
3.5	7.89	25.7	78.3
4.0	7.81	25.7	78.3
4.5	7.52	25.6	78.1
5.0	7.40	25.5	77.9
5.5	6.25	24.6	76.3
6.0	5.31	23.6	74.5
6.5	4.88	23.0	73.4
7.0	4.56	22.4	72.3
7.5	4.40	22.0	71.6
8.0	3.59	20.9	69.6
8.5	3.15	20.1	68.2
9.0	2.55	19.4	66.9
9.5	2.41	18.9	66.0

Comparison Readings - 2nd meter

0.5 m	8.20	25.0	77.0
9.5 m	2.60	18.6	65.5

7/31/2012
Time: 16:40 EDT
Weather: Sunny
Secchi Disk - 8' 0"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	7.94	25.3	77.5
1.0	7.89	25.4	77.7
1.5	7.88	25.4	77.7
2.0	7.87	25.4	77.7
2.5	7.77	25.2	77.4
3.0	7.54	24.6	76.3
3.5	7.52	24.4	75.9
4.0	7.51	24.4	75.9
4.5	7.49	24.4	75.9
5.0	7.48	24.3	75.7
5.5	7.47	24.3	75.7
6.0	7.46	24.3	75.7
6.5	7.45	24.3	75.7
7.0	7.44	24.2	75.6
7.5	6.72	23.7	74.7
8.0	6.72	23.6	74.5
8.5	6.67	23.6	74.5
9.0	0.96	20.8	69.4
9.5	0.71	20.1	68.2
10.0	0.69	19.7	67.5

Comparison Readings - 2nd meter

0.5 m	7.80	26.1	79.0
9.5 m	0.91	20.1	68.2

8/14/2012
Time: 16:40 EDT
Weather: Mostly cloudy, 73F, NW winds 5-10
Secchi Disk - 8' 0"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.00	23.2	73.8
1.0	7.95	23.3	73.9
1.5	7.80	22.7	72.9
2.0	7.72	22.3	72.1
2.5	7.69	22.1	71.8
3.0	7.64	22.0	71.6
3.5	7.49	21.8	71.2
4.0	7.49	21.8	71.2
4.5	7.48	21.7	71.1
5.0	7.50	21.7	71.1
5.5	7.50	21.7	71.1
6.0	7.51	21.7	71.1
6.5	7.51	21.7	71.1
7.0	7.43	21.6	70.9
7.5	7.36	21.6	70.9
8.0	7.33	21.6	70.9
8.5	7.42	21.6	70.9
9.0	7.25	21.5	70.7
9.5	4.25	20.3	68.5
10.0	0.21	17.7	63.9
10.5	0.15	17.1	62.8

Comparison Readings - 2nd meter

0.5 m	7.93	23.2	73.8
9.5 m	0.24	17.2	63.0

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Dead River (Hoist) Storage Basin
2012 Dissolved Oxygen and Temperature Profile Data

8/28/2012
Time: 15:30 EDT
Weather: Clear, light wind
Secchi Disk - 7' 6"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.53	23.0	73.4
1.0	8.44	22.8	73.0
1.5	8.48	22.1	71.8
2.0	8.43	21.9	71.4
2.5	8.36	21.8	71.2
3.0	8.31	21.7	71.1
3.5	8.29	21.7	71.1
4.0	8.27	21.7	71.1
4.5	8.25	21.6	70.9
5.0	6.65	20.8	69.4
5.5	6.66	20.6	69.1
6.0	6.46	20.4	68.7
6.5	6.45	20.2	68.4
7.0	6.44	20.1	68.2
7.5	6.44	20.1	68.2
8.0	6.35	20.1	68.2
8.5	6.30	20.0	68.0
9.0	6.07	19.8	67.6
9.5	6.03	19.7	67.5

Comparison Readings - 2nd meter

0.5 m	8.53	23.0	73.4
9.5 m	6.22	20.2	68.4

9/11/2012
Time: 16:35 EDT
Weather: Partly Cloudy, moderate wind
Secchi Disk - 7' 0"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.32	20.8	69.4
1.0	8.25	20.4	68.7
1.5	8.20	20.1	68.2
2.0	8.18	20.1	68.2
2.5	8.17	20.1	68.2
3.0	8.15	20.0	68.0
3.5	8.13	20.0	68.0
4.0	8.11	20.0	68.0
4.5	8.07	20.0	68.0
5.0	8.02	19.9	67.8
5.5	8.00	19.9	67.8
6.0	7.98	19.9	67.8
6.5	7.95	19.9	67.8
7.0	7.94	19.9	67.8
7.5	7.84	19.7	67.5
8.0	7.80	19.7	67.5
8.5	7.79	19.6	67.3
9.0	7.77	19.6	67.3

Comparison Readings - 2nd meter

0.5 m	8.30	20.8	69.4
9.5 m	7.71	19.8	67.6

9/25/2012
Time: 13:20 EDT
Weather: Cloudy, ~50F, 5-10 mph wind
Secchi Disk - 7' 0"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.82	14.0	57.2
1.0	8.76	14.0	57.2
1.5	8.72	14.0	57.2
2.0	8.68	13.9	57.0
2.5	8.63	13.9	57.0
3.0	8.56	13.8	56.8
3.5	8.54	13.8	56.8
4.0	8.54	13.9	57.0
4.5	8.53	13.8	56.8
5.0	8.53	13.9	57.0
5.5	8.51	13.9	57.0
6.0	8.50	13.9	57.0
6.5	8.49	13.8	56.8
7.0	8.48	13.9	57.0
7.5	8.47	13.8	56.8
8.0	8.46	13.9	57.0
8.5	8.45	13.8	56.8
9.0	8.45	13.8	56.8
9.5	8.43	13.9	57.0
10.0	8.42	13.8	56.8
10.5	8.40	13.8	56.8

Comparison Readings - 2nd meter

0.5 m	8.80	14.0	
9.5 m	8.35	13.8	

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McClure Storage Basin
2012 Dissolved Oxygen and Temperature Profile Data

6/5/2012
Time: 16:35 EDT
Weather: Overcast, 62°F, moderate winds
Secchi Disk - 6' 6"

Depth (meters)	DO mg/l	Temp °C	Temp °F
0.5	8.37	18.7	65.7
1.0	8.18	17.5	63.5
1.5	8.16	17.2	63.0
2.0	8.09	16.9	62.4
2.5	7.97	16.8	62.2
3.0	7.87	16.7	62.1
3.5	7.89	16.5	61.7
4.0	7.84	16.4	61.5
4.5	7.82	16.3	61.3
5.0	7.71	16.2	61.2
5.5	7.61	16.1	61.0
6.0	7.38	15.9	60.6
6.5	6.53	14.8	58.6
7.0	5.85	13.9	57.0
7.5	5.88	12.5	54.5
8.0	6.48	11.2	52.2
8.5	7.03	10.1	50.2
9.0	6.76	9.4	48.9

Comparison Readings - 2nd meter

Surface	8.29	18.9	66.0
9.0 m	6.8	10.3	50.5

6/19/2012
Time: 17:30 EDT
Weather: Cloudy, 65°F, light wind
Secchi Disk - 7.0 ft

Depth (meters)	DO mg/l	Temp °C	Temp °F
0.5	8.55	22.9	73.2
1.0	8.52	22.0	71.6
1.5	8.50	21.5	70.7
2.0	8.52	21.4	70.5
2.5	7.79	20.2	68.4
3.0	7.71	19.7	67.5
3.5	7.58	19.4	66.9
4.0	7.43	19.1	66.4
4.5	7.35	18.9	66.0
5.0	7.13	18.6	65.5
5.5	6.78	18.1	64.6
6.0	6.50	17.7	63.9
6.5	6.12	17.0	62.6
7.0	5.45	16.0	60.8
7.5	4.18	14.7	58.5
8.0	4.31	12.8	55.0
8.5	4.36	11.3	52.3

Comparison Readings - 2nd meter

0.5 m	8.58	21.7	71.1
8.5 m	4.73	10.7	51.3

7/2/2012
Time: 16:10 EDT
Weather: Partly sunny, 85°F, light winds
Secchi Disk - 6' 6"

Depth (meters)	DO mg/l	Temp °C	Temp °F
0.5	8.61	24.8	76.6
1.0	8.46	24.3	75.7
1.5	8.08	23.0	73.4
2.0	7.70	22.3	72.1
2.5	7.36	22.1	71.8
3.0	7.21	21.8	71.2
3.5	7.08	21.6	70.9
4.0	6.71	21.1	70.0
4.5	6.64	20.8	69.4
5.0	6.16	20.1	68.2
5.5	5.95	19.7	67.5
6.0	5.21	18.9	66.0
6.5	4.52	18.0	64.4
7.0	3.65	16.5	61.7
7.5	2.56	15.1	59.2
8.0	2.40	13.1	55.6
8.5	3.35	11.6	52.9

Comparison Readings - 2nd meter

0.5 m	8.53	24.9	76.8
8.5 m	3.32	11.7	53.1

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McClure Storage Basin
2012 Dissolved Oxygen and Temperature Profile Data

7/17/2012
Time: 15:15 EDT
Weather: Light rain, 75°F, light winds
Secchi Disk - 8' 0"

Depth (meters)	DO mg/l	Temp °C	Temp °F
0.5	8.14	25.1	77.2
1.0	8.11	25.2	77.4
1.5	7.98	25.2	77.4
2.0	7.93	25.2	77.4
2.5	7.77	25.3	77.5
3.0	6.02	23.4	74.1
3.5	5.72	22.8	73.0
4.0	5.47	22.5	72.5
4.5	5.28	22.3	72.1
5.0	5.06	22.1	71.8
5.5	4.71	21.2	70.2
6.0	4.16	21.2	70.2
6.5	3.16	20.0	68.0
7.0	1.33	16.6	61.9
7.5	1.58	15.0	59.0
8.0	2.62	13.4	56.1
8.5	3.14	12.2	54.0

Comparison Readings - 2nd meter

0.5 m	8.14	25.2	77.4
8.5 m	3.07	12.2	54.0

7/31/2012
Time: 16:00 EDT
Weather: Sunny
Secchi Disk - 8' 0"

Depth (meters)	DO mg/l	Temp °C	Temp °F
0.5	7.94	24.6	76.3
1.0	7.90	24.6	76.3
1.5	7.78	24.4	75.9
2.0	7.77	24.4	75.9
2.5	7.76	24.3	75.7
3.0	7.53	23.9	75.0
3.5	7.49	23.9	75.0
4.0	5.67	22.7	72.9
4.5	5.08	22.2	72.0
5.0	4.81	21.9	71.4
5.5	4.09	21.4	70.5
6.0	2.05	20.4	68.7
6.5	0.41	18.7	65.7
7.0	0.13	17.4	63.3
7.5	0.10	16.9	62.4

Comparison Readings - 2nd meter

0.5 m	7.97	24.7	76.5
8.5 m	0.09	16.9	62.4

8/14/2012
Time: 15:45 EDT
Weather: Mostly Cloudy, 73F, West winds 5-10
Secchi Disk - 7' 0"

Depth (meters)	DO mg/l	Temp °C	Temp °F
0.5	8.09	22.7	72.9
1.0	8.06	22.5	72.5
1.5	8.02	22.3	72.1
2.0	7.97	22.0	71.6
2.5	7.94	22.0	71.6
3.0	7.88	21.9	71.4
3.5	7.69	21.8	71.2
4.0	7.66	21.8	71.2
4.5	7.62	21.8	71.2
5.0	6.70	21.6	70.9
5.5	6.48	21.3	70.3
6.0	6.39	21.2	70.2
6.5	4.78	20.7	69.3
7.0	0.41	19.3	66.7
7.5	0.11	17.0	62.6
8.0	1.12	14.6	58.3
8.5	2.55	12.3	54.1

Comparison Readings - 2nd meter

0.5 m	8.08	23.0	73.4
8.5 m	2.59	12.3	54.1

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McClure Storage Basin
2012 Dissolved Oxygen and Temperature Profile Data

8/28/2012
Time: 15:00 EDT
Weather: Clear, light wind
Secchi Disk - 8' 0"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.51	22.5	72.5
1.0	8.52	22.4	72.3
1.5	8.48	22.0	71.6
2.0	8.34	21.8	71.2
2.5	8.22	21.7	71.1
3.0	7.75	21.3	70.3
3.5	7.67	21.2	70.2
4.0	7.50	20.9	69.6
4.5	7.10	20.4	68.7
5.0	7.03	20.2	68.4
5.5	7.02	20.2	68.4
6.0	6.76	19.9	67.8
6.5	6.54	19.8	67.6
7.0	6.21	19.5	67.1
7.5	5.84	19.2	66.6
8.0	4.42	18.5	65.3
8.5	0.86	17.0	62.6

Comparison Readings - 2nd meter

0.5 m	8.51	22.5	72.5
8.5 m	0.87	17.1	62.8

9/11/2012
Time: 16:05 EDT
Weather: Partly Cloudy, moderate wind
Secchi Disk - 8' 6"

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	7.9	20.9	69.6
1.0	7.8	20.6	69.1
1.5	7.7	20.1	68.2
2.0	7.6	19.8	67.6
2.5	7.5	19.7	67.5
3.0	7.5	19.4	66.9
3.5	7.5	19.4	66.9
4.0	7.4	19.3	66.7
4.5	7.4	19.3	66.7
5.0	7.2	19.2	66.6
5.5	7.1	19.1	66.4
6.0	7.1	19.1	66.4
6.5	7.0	19.0	66.2
7.0	2.9	18.5	65.3
7.5	0.3	16.8	62.2

Comparison Readings - 2nd meter

0.5 m	7.84	21.6	70.9
8.5 m	0.17	16.3	61.3

9/25/2012
Time: 12:22 EDT
Weather: Cloudy, ~50F, light wind
Secchi Disk - 7'

Depth (m)	DO mg/l	Temp °C	Temp °F
0.5	8.28	13.7	56.7
1.0	8.17	13.7	56.7
1.5	8.12	13.6	56.5
2.0	8.10	13.7	56.7
2.5	8.07	13.7	56.7
3.0	8.05	13.7	56.7
3.5	8.03	13.7	56.7
4.0	8.02	13.7	56.7
4.5	8.01	13.7	56.7
5.0	7.99	13.7	56.7
5.5	7.98	13.7	56.7
6.0	7.96	13.7	56.7
6.5	7.95	13.7	56.7
7.0	7.94	13.7	56.7
7.5	7.93	13.7	56.7
8.0	7.90	13.7	56.7
8.5	7.41	13.6	56.5

Comparison Readings - 2nd meter

0.5 m	8.3	13.7	
8.5 m	7.3	13.4	

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Appendix C

Dead River Hydroelectric Project

FERC Project No. 10855

2012 Water Quality Monitoring Quality Assurance Data

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: April 24, 2012 11:50 EST Analyst: MWH

Location: AAO Bridge Datasonde Serial #: 60580

Calibration Information Datasonde Battery [volts]: 11.4

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

N/A - Temp only

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
_____ Std			Before_____ After_____

Barometric Pressure (mm Hg)_____

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____

Test Program Readings

	Datasonde	YSI Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 4/30/12 @ 12:00 File End 05/04/12 23:59

Battery Life % @ Start: 82% Battery Life % @ End: 60%

Notes: Set up for temperature Monitoring only

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 5/8/12 9:08 EST Analyst: MWM

Location: Silver Lake Datasonde Serial #: 47166

Calibration Information Datasonde Battery [volts]: 12.5

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

Temperature only

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
_____ Std			Before _____ After _____

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____

Test Program Readings

	Datasonde	YSI Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 5/8/12 @ 10:00 File End 5/22/12

Battery Life % @ Start: 100 Battery Life % @ End: 65

Notes: Temperature only

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 5/8/12 9:15 Analyst: MWM

Location: AAO Bridge Datasonde Serial #: 60580

Ending Datasonde Battery [volts]: 10.8

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temperature data only - File OK

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Field Notes for Datasonde Deployment

Date/Time: 5/22/12 8:00 EST Analyst: MWM

Location: AAO Bridge Datasonde Serial #: 60580

Calibration Information Datasonde Battery [volts]: 12.5

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	~	~
10.00 Std	~	~

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.305	Std	0.311	0.305	Before 0.0004 After 0.0000

Barometric Pressure (mm Hg) 731

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	100.3	~99.3
mg/L D.O.	11.21	10.99
Temp – °C	9.20	9.03

DO Handheld Meter Calibration - DO Meter Model Hach HQ 30D

Calibrated in lab on 5/21/12

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = 99.4 %

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	(Must be within 0.5 mg/L D.O.)
% Saturation	90.4	90.6	8:13 - 8:23
mg/L D.O.	9.21	9.15	
Temp – °C	12.74	12.7	OK - Deploy

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 5/22/12 File End 6/5/12

Battery Life % @ Start: 100 % Battery Life % @ End: 63 %

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 5/22/12 8:36 Analyst: MWH

Location: AAo Bridge Datasonde Serial #: 47166

Ending Datasonde Battery [volts]: _____

Calibration Information

pH (s.u.):	Observed
7.00 Std.	—
10.00 Std.	—

Conductivity (mS/cm) : — Std. Conc. — Observed

Barometric Pressure (mm Hg) —

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temperature only - All Data OK

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: June 5, 2012 11:45 EDT Analyst: LP

Location: AAO Bridge Datasonde Serial #: 42482

Calibration Information Datasonde Battery [volts]: 12.3V

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	7.08	7.00 @ 23.1°C
10.00 Std	10.04	10.00

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.274 Std	0.267	0.274	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 726.1 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	111.6%	100.0%
mg/L D.O.	8.03 mg/L	8.33 mg/L
Temp – °C	22.07°C	22.10°C

DO Handheld Meter Calibration - DO Meter Model HQ30d #1

	Before Calibration	After Calibration
% Saturation	101.2%	~~100.0%~~ 100.0%
mg/L D.O.	8.09 mg/L	~~8.33~~ 7.98
Temp – °C	24.1°C	24.3°C

Post Calibration Slope = 95.4%

Create File for Test Program ✓ 5:12:00 E: 12:18

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	101.5%	100.3%	
mg/L D.O.	9.44 mg/L	9.28 mg/L	
Temp – °C	16.60°C	16.8°C	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	YSI
% Saturation	Dep 104			
mg/L D.O.				
Temp – °C				

Check File Status

File Start 6/5/12 1400 File End 6/19/12 1700

Battery Life % @ Start: No Info Battery Life % @ End: No Info

Notes:

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Field Notes for Datasonde Post Calibration

Date/Time: June 5, 2012 1310 Analyst: TR

Location: AAO Bridge Datasonde Serial #: 60580

Ending Datasonde Battery [volts]: 10.74

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.16	@ 23.3°C
10.00 Std.	10.20	

Conductivity (mS/cm) : 0.274 Std. Conc. 0.265 Observed

Barometric Pressure (mm Hg) 727.2 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	103.1%	100.0%
mg/L D.O.	9.09 mg/L	8.75 mg/L
Temp – °C	19.66 °C	19.72 °C

Notes:

All DO readings above eight

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Field Notes for Datasonde Deployment

Date/Time: 6/19/12 12:15 EST Analyst: MWM

Location: AAO Bridge Datasonde Serial #: 97160

Calibration Information Datasonde Battery [volts]: 12.2

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

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.293	Std	0.290	0.293	Before 0.0005 After 0.0000

Barometric Pressure (mm Hg) 734.0

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	99.1	100.2
mg/L D.O.	8.22	8.31
Temp – °C	22.91	22.89

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ 12:24 - 12:34

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	90.1	90.4	
mg/L D.O.	7.96	7.98 7.98	
Temp – °C	19.65	19.8	OK - Deploy

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 6/19 @ 14:00 File End 7/3 @ 2359

Battery Life % @ Start: 98 Battery Life % @ End: 47

Notes: Calibrated @ McClure Powerhouse. Deployed @ 17:05 EST

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 6/19/12 17:15:10 EST Analyst: MWH

Location: AAO Bridge Datasonde Serial #: 42482

Ending Datasonde Battery [volts]: 11.0

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	–

Conductivity (mS/cm) : 0.293 Std. Conc. 0.288 Observed

Barometric Pressure (mm Hg) 721.5

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	99.6	100.2
mg/L D.O.	8.12	8.08
Temp – °C	23.19	23.29

Notes:

lowest D.O. 7.39 mg/L - several hours.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 7/3/12 8:25 Analyst: MWH

Location: Ano Bridge Datasonde Serial #: 42484

Calibration Information Datasonde Battery [volts]: 12.4

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	—	—
10.00 Std	—	—

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.305 Std	0.298	0.305	Before 0.0000 After 0.0000

Barometric Pressure (mm Hg) 718

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	100.0	100.0
mg/L D.O.	8.92	8.45
Temp – °C	20.78	20.75

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	83.8	86.0	8:32 - 8:42 OK. Deploy
mg/L D.O.	7.21	7.39	
Temp – °C	19.87	20.0	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 0709 @ 9:00 File End 07/17/12 23:59

Battery Life % @ Start: OK Battery Life % @ End: OK

Notes: Deployed @ 8:50 A.M.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 7/3/12 09:02 Analyst: MWA

Location: AAO Bridge Datasonde Serial #: 47160

Ending Datasonde Battery [volts]: 10.8

Calibration Information

pH (s.u.):	Observed
7.00 Std.	~
10.00 Std.	~

Conductivity (mS/cm) : 0.305 Std. Conc. 0.300 Observed

Barometric Pressure (mm Hg) 719.5

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	98.4	98.9
mg/L D.O.	8.69	8.71
Temp – °C	19.80	19.81

Notes:

River flow is low.

low DO. - 6.50 mg/L 7/2/12 @ 00:00

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Field Notes for Datasonde Deployment

Date/Time: 7/17/12 11:20 EST Analyst: MWM

Location: AAo Bridge Datasonde Serial #: 42482

Calibration Information Datasonde Battery [volts]: 12.3

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	–	–
10.00 Std	–	

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.294	Std	0.286	0.294	Before 0.014 After 0.000

Barometric Pressure (mm Hg) 720

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	108.7	101.8
mg/L D.O.	8.52	7.99
Temp – °C	24.86	24.80

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ 11:33 - 11:43

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	96.9	93.5	
mg/L D.O.	7.89	8.03	OK. Dup 64
Temp – °C	25.04	20.2	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 7/17 @ 13:00 File End 7/31 @ 23:59

Battery Life % @ Start: N/A Battery Life % @ End: NA

Notes: _____

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 9/17/12 12:16 Analyst: MWM

Location: AAO Bridge Datasonde Serial #: 42484

Ending Datasonde Battery [volts]: 10.8

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	–

Conductivity (mS/cm) : 0.294 Std. Conc. 0.288 Observed

Barometric Pressure (mm Hg) 721

Dissolved Oxygen	Before Calibrate	After Calibrate	
% Saturation	101.3	100.4	No D.O. correction
mg/L D.O.	8.60	8.55	
Temp – °C	20.55	20.57	

Notes:

Several D.O. readings ↓ 7 mg/L

water temps ↑ 20°C

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: July 31, 2012 11:15 EDT Analyst: TR

Location: AA+O Bridge Datasonde Serial #: 47607

Calibration Information

Datasonde Battery [volts]: 12.5 x

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	7.01	7.00
10.00 Std	9.96	10.00

pH Cal. Temp.: 24.6°C

Conductivity (mS/cm)	Before Cal.	After Cal.
0.303 Std	0.299	0.303

Zero Conductivity Calibration: Before 0.000 After 0.000

Barometric Pressure (mm Hg) 724.8 mm Hg

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	100.1%	100.0%
mg/L D.O.	7.93	7.93
Temp – °C	24.57°C	24.58°C

DO Handheld Meter Calibration - DO Meter Model HQ30d -15 Meter Cable

	Before Calibration	After Calibration
% Saturation	100.5	100.0%
mg/L D.O.	8.08	8.05
Temp – °C	23.8°C	23.8°C

Post Calibration Slope = 93.7%

Create File for Test Program ✓ **Start Test:** 11:31 **End Test:** 11:43

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation	97.7%	98.3
mg/L D.O.	8.28	8.30
Temp – °C	21.14	21.3

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** X

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation	Deploy			
mg/L D.O.				
Temp – °C				

Check File Status

File Start 7/31/12 @ 1400 File End 8/14/12 1700

Battery Life % @ Start: 100 Battery Life % @ End: 56

Notes:

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Field Notes for Datasonde Post Calibration

Date/Time: July 31, 2012 12:45 EDT Analyst: IA

Location: AAO Bridge Datasonde Serial #: 42482

Ending Datasonde Battery [volts]: 10.6V

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.08	@ 25.6
10.00 Std.	9.95	

Conductivity (mS/cm) : 0.303 Std. Conc. 0.293 Observed

Barometric Pressure (mm Hg) 724.2

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	87.1	99.7
mg/L D.O.	7.01	8.10
Temp – °C	23.45	23.47

Notes:

Large ~~plug~~ plug of fine silt/ mud on DO Cap. Rinse before post calibration

* River @ 12:00 EST reading 8.36 mg/L (see McClure Tailwater calibration log)

42482 read 7.97 @ 12:00 - Correct for data drift of 0.39 mg/L instead of 1.09 mg/L. Using 1.09 mg/L would result in D.O. levels of 9 mg/L, which is too high. KLWM 7/31/12

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 8/14/12 11:41 EST Analyst: MWM

Location: AMO Bridge Datasonde Serial #: 42482

Calibration Information Datasonde Battery [volts]: 12.5

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

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.303	Std	0.321	0.303	Before 0.0000 After 0.0000

Barometric Pressure (mm Hg) 722

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	115.2	100.2
mg/L D.O.	9.77	8.48
Temp – °C	20.99	20.99

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	96.0	97.1	11:61 to 12:01
mg/L D.O.	8.71	8.81	
Temp – °C	17.48	17.6	ok. Deploy

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 8/14/12 @ 13:00 File End 8/28/12 @ 23:59

Battery Life % @ Start: N/A Battery Life % @ End: N/A

Notes: _____

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 8/14/12 12:15 EST Analyst: MWH

Location: AAO Bridge Datasonde Serial #: 47167

Ending Datasonde Battery [volts]: 11.1

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	~

Conductivity (mS/cm) : 0.303 Std. Conc. 0.292 Observed

Barometric Pressure (mm Hg) 722.5

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	161.3	100.0
mg/L D.O.	9.06	8.92
Temp – °C	18.33	18.38

Notes:

Heavy biofouling on probe

Some readings ↓ 7 mg/L – definite diurnal pattern.

Lows D.O. during overnight hours, ↑ during day

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: Aug. 28, 2012 11:30 EDT Analyst: HR

Location: AAO Bridge Datasonde Serial #: 47162

Calibration Information Datasonde Battery [volts]: 12.2V

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	7.40	7.00 @ 22.0
10.00 Std	9.87	10.00

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.304	Std	0.301	0.304	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 730.1 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	101.1%	100.0%
mg/L D.O.	8.69 mg/L	8.55 mg/L
Temp – °C	21.02°C	21.06°C

DO Handheld Meter Calibration - DO Meter Model #1 HQ30d

	Before Calibration	After Calibration
% Saturation	101.1%	100.0%
mg/L D.O.	8.54	8.44 mg/L
Temp – °C	22.9	22.9°C

Post Calibration Slope = 93.4%

Create File for Test Program ✓ S: 11:40 E: 11:52

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	95.7	94.5	
mg/L D.O.	8.69	8.54	
Temp – °C	18.07	18.2	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Deploy

Check File Status

File Start 8/28/12 1300 File End 9/11/12 1700

Battery Life % @ Start: 100 % Battery Life % @ End: 49%

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: Aug. 28, 2012 12:40 EDT Analyst: TR

Location: AAO Bridge Datasonde Serial #: 42482

Ending Datasonde Battery [volts]: 10.2v

Calibration Information

pH (s.u.):	Observed
7.00 Std.	7.11
10.00 Std.	9.92

@ 22.05°C

Conductivity (mS/cm): 0.304 Std. Conc. 0.279 Observed

0.000 Zero Observed, In Air

Barometric Pressure (mm Hg) 728.3 mmHg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	103.4	100.0%
mg/L D.O.	8.75	8.54
Temp – °C	21.05	21.07

Notes:

~~low~~ DO reading 0.14 mg/L 2000 8/26/10

fine silt on all probes, clean D.O. probe before post Cal.

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Field Notes for Datasonde Deployment

Date/Time: 9/11/12 11:20 EDT Analyst: HA

Location: AAO Bridge Datasonde Serial #: 60580

Calibration Information Datasonde Battery [volts]: 12.1V

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	6.84	7.02 @ 21.4°C
10.00 Std	10.05	10.05

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.2305 Std	0.295	0.305	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 723 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	93.9%	100.0%
mg/L D.O.	8.12 mg/L	8.43 mg/L
Temp – °C	21.18°C	21.20°C

DO Handheld Meter Calibration - DO Meter Model Hach HQ30d #1 - 15 meter

	Before Calibration	After Calibration
% Saturation	99.4%	100.0%
mg/L D.O.	8.27 mg/L	8.32 mg/L
Temp – °C	21.9°C	21.9°C

Post Calibration Slope = 94.0

Create File for Test Program ✓ S: 11:38 E: 11:50

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	95.9%	95.1%	
mg/L D.O.	8.94 mg/L	8.80 mg/L	
Temp – °C	16.27°C	16.3°C	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 9/11/12 1300 File End 9/25/12 1700

Battery Life % @ Start: 94% Battery Life % @ End: 44%

Notes:

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Field Notes for Datasonde Post Calibration

Date/Time: 9/11/12 12:35 Analyst: TA

Location: AAO Bridge Datasonde Serial #: 47162

Ending Datasonde Battery [volts]: 11.2V

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.24	@ 22.36°C
10.00 Std.	10.25	

Conductivity (mS/cm): 0.305 Std. Conc. 0.295 Observed

0.0000 Zero Observed, In Air

Barometric Pressure (mm Hg) 723 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.6 %	100.0 %
mg/L D.O.	8.50 mg/L	8.40 mg/L
Temp – °C	21.62°C	21.66°C

Notes:

All D.O. readings are above 6.88 mg/L

All probes high degree sand/silt

Field Notes for Datasonde Deployment

Date/Time: 9/25/12 8:40 EST Analyst: MWM

Location: AAO Bridge Datasonde Serial #: ~~43720~~ ~~47160~~ 42484

Calibration Information

Datasonde Battery [volts]: 12.3

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: ______

Conductivity (mS/cm)	Before Cal.	After Cal.
0.305 Std	0.329	0.305

Zero Conductivity Calibration: Before 0.0017 After 0.0000

Barometric Pressure (mm Hg) 725

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	95.4	99.9
mg/L D.O.	11.40	11.78
Temp – °C	6.32	6.24

DO Handheld Meter Calibration - DO Meter Model HQ30D

	Before Calibration	After Calibration
% Saturation	100.4	100.0
mg/L D.O.	12.16	12.65
Temp – °C	4.8	3.2

Post Calibration Slope = 97.6

Create File for Test Program ✓ **Start Test:** 0857 **End Test:** 0907

Test Program Readings

	Datasonde	Hach HQ30d Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	88.6	88.8	
mg/L D.O.	10.04	10.04	OK - Deploy
Temp – °C	7.80	7.5	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start 9/25 10:00 File End 10/9 23:59

Battery Life % @ Start: NA Battery Life % @ End: NA

Notes: ______

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 9/25/12 9:25 Analyst: MWM

Location: AAo Bridge Datasonde Serial #: 60580

Ending Datasonde Battery [volts]: 10.8

Calibration Information

pH (s.u.):	Observed
7.00 Std.	~
10.00 Std.	~

Conductivity (mS/cm) : 0.305 Std. Conc. 0.294 Observed

Barometric Pressure (mm Hg) 726

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	99.3	100.2
mg/L D.O.	12.29	12.50
Temp – °C	4.28	4.14

Notes:

All D.O. ↑ 7 mg/L

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Field Notes for Datasonde Deployment

Date/Time: 10/9/12 7:30 EST Analyst: AWM

Location: AAO Bridge Datasonde Serial #: 42482

Calibration Information Datasonde Battery [volts]: 12.5

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: _____

Conductivity (mS/cm)	Before Cal.	After Cal.
_____ Std		

Zero Conductivity Calibration

Before _____ After _____

Barometric Pressure (mm Hg) _____

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Temp only!

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____ **Start Test:** _____ **End Test:** _____

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start 10/9/12 8:00 File End 10/26/12 16:00

Battery Life % @ Start: NA Battery Life % @ End: NA

Notes: 1 minute sensor warm up.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 10/9/12 07:40 est Analyst: MWH

Location: AAO Bridge Datasonde Serial #: 42484

Ending Datasonde Battery [volts]: 10.5

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	–

Conductivity (mS/cm) : 0.305 Std. Conc. 0.346 Observed

Barometric Pressure (mm Hg) 719

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	101.0	99.9
mg/L D.O.	11.72	11.52
Temp – °C	6.87	6.81

Notes:

All D.O. over 9 mg/L

~ lots of biofouling on probes.

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Field Notes for Datasonde Deployment

Date/Time: Oct. 25, 2012 12:05 EST Analyst: TR

Location: AAO - Temp Only Datasonde Serial #: 47162

Calibration Information Datasonde Battery [volts]: 12.1

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: _____

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
_____ Std			Before _____ After _____

Barometric Pressure (mm Hg) _____

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Temp Only

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____ **Start Test:** _____ **End Test:** _____

Test Program Readings

	Datasonde	Hach HQ30d Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation			
mg/L D.O.			
Temp – °C			

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start _____ File End _____

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

Notes: _____

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Field Notes for Datasonde Post Calibration

Date/Time: 11/1/12 11:13 EST Analyst: MWM

Location: AAS Bridge Datasonde Serial #: 47/62

Ending Datasonde Battery [volts]: 10.4

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temp only - All Data OK.

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Field Notes for Datasonde Deployment

Date/Time: April 24, 2012 1325 ~~EST~~ Analyst: MWM

Location: Hoist Tailrace Datasonde Serial #: 43729

Calibration Information Datasonde Battery [volts]: 11.4

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

N/A - Temp only

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
_____ Std			Before _____ After _____

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____

Test Program Readings

	Datasonde	YSI Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 4/30/12 @ 12:00 File End 5/9/12 1359

Battery Life % @ Start: 97 Battery Life % @ End: 65

Notes: Set up for temperature only.

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Field Notes for Datasonde Deployment

Date/Time: 5/8/12 9:20 EST Analyst: MWM

Location: Haist Datasonde Serial #: 600575

Calibration Information Datasonde Battery [volts]: 12.3

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

Temperature only

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
_____ Std			Before _____ After _____

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____

Test Program Readings

	Datasonde	YSI Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 5/8/12 @ 10:00 File End 5/22/12 @ 2359

Battery Life % @ Start: 100 Battery Life % @ End: 67%

Notes: Deployed @ 10:30

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Field Notes for Datasonde Post Calibration

Date/Time: 5/8/12 10:48 EST Analyst: MWH

Location: Hoist Tailrace Datasonde Serial #: 43728

Ending Datasonde Battery [volts]: 11.1

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temperature only - Data OK

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Field Notes for Datasonde Deployment

Date/Time: 5/22/13 8:50 Analyst: MWH

Location: Haist Tailrace Datasonde Serial #: 60582

Calibration Information Datasonde Battery [volts]: 12.4

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	—	—
10.00 Std	—	—

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.305	Std	0.307	0.305	Before 0.0000 After 0.0000

Barometric Pressure (mm Hg) 731

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	99.5	97.1
mg/L D.O.	10.62	10.30
Temp – °C	11.07	10.97

DO Handheld Meter Calibration - DO Meter Model HQ30D

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Calibrated in lab on 5/21/12

Post Calibration Slope = 99.4%

Create File for Test Program ✓ 8:57-9:07

Test Program Readings

	Datasonde	YSI Meter	(Must be within 0.5 mg/L D.O.)
% Saturation	92.4	92.2	
mg/L D.O.	9.37	9.25	ok - Deploy
Temp – °C	12.96	13.0	

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 5/22 @ 10:00 File End 6/5/12

Battery Life % @ Start: 100 Battery Life % @ End: 57

Notes: Calibrated @ AAO Bridge. Deployed @ 11:15 EST

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Field Notes for Datasonde Post Calibration

Date/Time: 5/22/12 12:52 Analyst: KWM

Location: Hoist Datasonde Serial #: 60593

Ending Datasonde Battery [volts]: 11.1

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temperature only. Data OK.

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Field Notes for Datasonde Deployment

Date/Time: June 5, 2012 12:30 EDT Analyst: HA

Location: Hoist Tailwater Datasonde Serial #: 47167

Calibration Information Datasonde Battery [volts]: 10.5 V

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	6.72	7.00 @ 23.5°C
10.00 Std	10.04	10.00

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.274 Std	0.287	0.274	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 727.1 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	111.3%	100.0%
mg/L D.O.	9.42 mg/L	8.12 mg/L
Temp – °C	23.51°C	23.53°C

DO Handheld Meter Calibration - DO Meter Model HQ30D #4

	Before Calibration	After Calibration
% Saturation	101.2%	100.0%
mg/L D.O.	8.09	7.98
Temp – °C	24.1	24.3

Post Calibration Slope = 95.4 %

Create File for Test Program ✓ 5:12:44 E:12:56

Test Program Readings

	Datasonde	YSI Meter
% Saturation	101.7%	101.2%
mg/L D.O.	9.35 mg/L	9.26 mg/L
Temp – °C	17.24°C	17.3°C

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 6/5/12 1600 File End 6/19/12 1700

Battery Life % @ Start: 100 % Battery Life % @ End: 50 %

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: June 5, 2012 15:45 Analyst: HR

Location: Hoist Tailwater Datasonde Serial #: 60582

Ending Datasonde Battery [volts]: 11.1 V

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	6.45	@ 23.5°C
10.00 Std.	~~12~~ 9.52	

Conductivity (mS/cm) : 0.274 Std. Conc. 0.272 Observed

Barometric Pressure (mm Hg) 733.2 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	98.8%	100.0%
mg/L D.O.	8.32 mg/L	8.48 mg/L
Temp – °C	21.76°C	21.68°C

Notes:

All D.O. readings are above eight

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Field Notes for Datasonde Deployment

Date/Time: 6/19/12 12:00 Analyst: MWM

Location: Hoist Datasonde Serial #: 97162

Calibration Information Datasonde Battery [volts]: 12.1

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	–	–
10.00 Std	–	–

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.293	Std	0.300	0.293	Before 0.0000 After 0.0000

Barometric Pressure (mm Hg) 734.5

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	100.8	99.9
mg/L D.O.	8.50	8.34
Temp – °C	22.58	22.58

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	88.4	90.2	
mg/L D.O.	7.82	7.96	12:10 - 12:20
Temp – °C	19.63	19.7	or - Deploy

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 6/12 @ 13:00 File End 7/5 @ 2359

Battery Life % @ Start: 96 Battery Life % @ End: 45

Notes: Calibrated @ McClure - Deployed @ 13:35

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Field Notes for Datasonde Post Calibration

Date/Time: 6/19/12 13:43 EST Analyst: MWM

Location: Hoist Datasonde Serial #: 47167

Ending Datasonde Battery [volts]: _____

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	–

Conductivity (mS/cm) : 0.293 Std. Conc. 0.290 Observed

Barometric Pressure (mm Hg) 722.0

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	108.1	97.0
mg/L D.O.	8.46	8.21
Temp – °C	21.43	21.54

Notes:

lowest D.O 6.96 on 6/19 @ 11:00

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 7/3/12 08:40 Analyst: MWH

Location: Hoist Datasonde Serial #: 47167

Calibration Information Datasonde Battery [volts]: 12.5

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

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.305	Std	0.299	0.305	Before 0.007 After 0.000

Barometric Pressure (mm Hg) 719.5

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	99.3	100.4
mg/L D.O.	8.60	8.65
Temp – °C	19.84	19.88

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	84.5	86.3	08:47-08:57
mg/L D.O.	7.28	7.43	
Temp – °C	19.89	20.0	OK - Deploy

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 7/3/12 @ 10:00 File End 7/17/12 23:59

Battery Life % @ Start: 100 Battery Life % @ End: 48

Notes: Calibrated @ AAO bridge - Deployed @ 11:10 A.M.

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Field Notes for Datasonde Post Calibration

Date/Time: 7/3/12 11:16 EST Analyst: MWH

Location: Hoist Datasonde Serial #: 47162

Ending Datasonde Battery [volts]: 10.8

Calibration Information

pH (s.u.):	Observed
7.00 Std.	-
10.00 Std.	-

Conductivity (mS/cm) : 0.305 Std. Conc. 0.308 Observed

Barometric Pressure (mm Hg) 721

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.6	101.6
mg/L D.O.	8.30	8.21
Temp – °C	23.16	23.30

Notes:

Data OK

low D.O - 6.49 mg/L 7/3/12 @ 02:00

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Field Notes for Datasonde Deployment

Date/Time: 7/17/12 11:47 Analyst: mark

Location: Hoist Datasonde Serial #: 47160

Calibration Information Datasonde Battery [volts]: 12.4

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

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.294	Std	0.295	0.294	Before 0.013 After 0.0000

Barometric Pressure (mm Hg) 720

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	97.3	99.8
mg/L D.O.	7.93	7.98
Temp – °C	23.81	23.80

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ 11:57 - 12:07

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	92.7	95.0	
mg/L D.O.	7.94	8.15	ok - Deploy
Temp – °C	20.22	20.3	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 7/17 @ 15:00 File End 7/31 @ 23:59

Battery Life % @ Start: 100 Battery Life % @ End: 32

Notes: _____

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 7/17/12 14:16 Analyst: MWM

Location: Hoist Datasonde Serial #: 4716 7

Ending Datasonde Battery [volts]: 10.4

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	–

Conductivity (mS/cm) : 0.294 Std. Conc. 0.292 Observed

Barometric Pressure (mm Hg) 724

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.4	100.5
mg/L D.O.	8.36	8.42
Temp – °C	21.62	21.64

NO D.O. correction

Notes:

Several readings ↓ ~~5.9~~ 7.0 mg/L, as low as 5.9 mg/L

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: July 31, 2012 11:55 EDT Analyst: HR

Location: Hoist Tailwater Datasonde Serial #: 47165

Calibration Information

Datasonde Battery [volts]: 12.34

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	7.05	7.00
10.00 Std	9.98	10.00

pH Cal. Temp.: 24.4°C

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.303 Std	0.329	0.303	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 724.3 mm Hg

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	97.7	100.0
mg/L D.O.	8.21	8.16
Temp – °C	22.90	23.01

DO Handheld Meter Calibration - DO Meter Model HQ30d - 15 meter

	Before Calibration	After Calibration
% Saturation	100.5	100.0
mg/L D.O.	8.08	8.05
Temp – °C	23.8	23.8

Post Calibration Slope = 93.7

Create File for Test Program ✓ **Start Test:** 12:06 **End Test:** 12:18

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation	101.0	100.4
mg/L D.O.	8.46	8.40
Temp – °C	21.65	21.8

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde X **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.	Dep 04			
Temp – °C				

Check File Status

File Start 7/31/12 1500 File End 8/14/12 1700

Battery Life % @ Start: 100 Battery Life % @ End: 50

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: July 31, 2012 15:25 EDT Analyst: AR

Location: Hoist Tailwater Datasonde Serial #: 47160

Ending Datasonde Battery [volts]: 10.2v

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.29	@ 25.3
10.00 Std.	10.24	

Conductivity (mS/cm) : 0.303 Std. Conc. 0.295 Observed

Barometric Pressure (mm Hg) 729.9 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	98.8	100.1
mg/L D.O.	7.79	8.02
Temp – °C	24.48	24.39

Notes:

High degree of mud/silt on all probes. Rinse off before post calibration

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 8/14/12 11:53 Analyst: MWM

Location: Hoist Datasonde Serial #: 47168

Calibration Information Datasonde Battery [volts]: 12.2

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	–	–
10.00 Std	–	–

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.303	Std	0.289	0.303	Before 0.0005 After 0.0000

Barometric Pressure (mm Hg) 723

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	99.0	99.5
mg/L D.O.	8.56	8.43
Temp – °C	20.96	20.94

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ 12:05 - 12:15

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	96.4	17.9	
mg/L D.O.	8.72	8.80	ok. Deploy
Temp – °C	17.73	17.9	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 8/14 @ 15:00 File End 8/28/12 @ 23:59

Battery Life % @ Start: 100 Battery Life % @ End: 32

Notes: Calibrated @ AAO Bridge

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 8/14/12 14:23 Analyst: MWH

Location: Hoist Datasonde Serial #: 47165

Ending Datasonde Battery [volts]: 11.0

Calibration Information

pH (s.u.):	Observed
7.00 Std.	—
10.00 Std.	—

Conductivity (mS/cm) : 0.303 Std. Conc. 0.278 Observed

Barometric Pressure (mm Hg) 724

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.3	99.6
mg/L D.O.	8.56	8.46
Temp – °C	20.72	20.75

Notes:

Very low D.O. levels - btwn 8/2 & 8/8. Some in 3's

lots of bio accumulation on probes.

* Took readings w/ hand held meter in tailrace by fishing pier

@ 7:50 pm EST. D.O ranging btwn 7.5 & 7.6 @ 21.7 to 21.8°C, consistent

w/ D.O. readings @ 8-9 M in reservoir from profiles.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: Aug. 28, 2012 12:00 EDT Analyst: HD

Location: Hoist Tailwater Datasonde Serial #: 471688

Calibration Information Datasonde Battery [volts]: 12.2V

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	7.17	7.00
10.00 Std	9.92	10.00

@ 22.30°C

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.304 Std	0.300	0.304	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 729.2 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	100.3%	100.0%
mg/L D.O.	8.52 mg/L	8.45 mg/L
Temp – °C	21.51°C	21.59°C

DO Handheld Meter Calibration - DO Meter Model HQ30d #1

	Before Calibration	After Calibration
% Saturation	101.1%	100.0%
mg/L D.O.	8.54 mg/L	8.44 mg/L
Temp – °C	22.9°C	22.9°C

Post Calibration Slope = 93.4%

Create File for Test Program L 5: 12:10 12:22

Test Program Readings

	Datasonde	YSI Meter
% Saturation	96.6%	95.0%
mg/L D.O.	8.71 mg/L	8.56 mg/L
Temp – °C	18.3°C	18.4°C

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde L **Remove calibration cup, Replace with weight** L

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 8/28/12 1500 File End 9/11/12

Battery Life % @ Start: 98% Battery Life % @ End: 48%

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: Aug. 28, 2012 15:15 EDT Analyst: JA

Location: Hoist Tailwater Datasonde Serial #: 471168

Ending Datasonde Battery [volts]: 10.7x

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.12	@ 22.8(°C
10.00 Std.	10.09	

Conductivity (mS/cm): 0.304 Std. Conc. 0.298 Observed

0.0000 Zero Observed, In Air

Barometric Pressure (mm Hg) 735.5 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	101.1%	100.2%
mg/L D.O.	8.44 mg/L	8.51 mg/L
Temp – °C	21.78°C	21.76°C

Notes:

D.O. readings all above seven.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 9/11/12 12:00 EDT Analyst: HP

Location: Hoist Tailwater Datasonde Serial #: 43732

Calibration Information Datasonde Battery [volts]: 10.3v

pH (s.u.)	Before Cal.	After Cal. (New pH Frit)
7.00 Std	5.15	7.02
10.00 Std	10.09	10.05 @ 21.7

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.305	Std	0.310	0.305	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 723 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	95.5%	100.0%
mg/L D.O.	8.26 mg/L	8.47 mg/L
Temp – °C	20.93°C	20.97°C

DO Handheld Meter Calibration - DO Meter Model Hach 30d #1 - 15 meter

	Before Calibration	After Calibration
% Saturation	99.4%	100.0%
mg/L D.O.	8.27 mg/L	8.32 mg/L
Temp – °C	21.9 °C	21.9°C

Post Calibration Slope = 94%

Create File for Test Program ✓ 5:12:08 E: 12:20

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	96.2%	96.9%	
mg/L D.O.	8.90 mg/L	8.92 mg/L	
Temp – °C	16.63°C	16.9°C	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 9/11/12 14:00 File End 9/25/12 1700

Battery Life % @ Start: 100% Battery Life % @ End: 50%

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 9/11/12 1530 EDT Analyst: TA

Location: Hoist Tailwater Datasonde Serial #: 47160

Ending Datasonde Battery [volts]: 10.6 v

Calibration Information

pH (s.u.):	Observed
7.00 Std.	7.19
10.00 Std.	10.20

@ 24.39°C

Conductivity (mS/cm): 0.305 Std. Conc. 0.291 Observed

0.0000 Zero Observed, In Air

Barometric Pressure (mm Hg) 727 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	99.5%	100.0%
mg/L D.O.	7.92 mg/L	7.91 mg/L
Temp – °C	24.78°C	24.80°C

Notes:

D.O. readings all above Seven.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 9/25/12 9:30 EST Analyst: MWM

Location: Hoist Datasonde Serial #: 43730

Calibration Information Datasonde Battery [volts]: 12.5

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

pH Cal. Temp.: -

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.305	Std	0.287	0.305	Before 0.0022 After

Barometric Pressure (mm Hg) 726

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	101.6	99.5
mg/L D.O.	13.45	12.86
Temp – °C	2.86	2.86

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ **Start Test:** 9:43 **End Test:** 9:53

Test Program Readings

	Datasonde	Hach HQ30d Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	89.0	89.1	
mg/L D.O.	10.01	9.96	OK - Deploy
Temp – °C	7.87	8.0	

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start 9/25 @ 12:00 File End 10/9/12 23:59

Battery Life % @ Start: 98 Battery Life % @ End: 24

Notes: Calibrated @ AAO Bridge

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 9/25/12 11:54 EST Analyst: MWM

Location: Hoist Datasonde Serial #: 43732

Ending Datasonde Battery [volts]: 11.0

Calibration Information

pH (s.u.):	Observed
7.00 Std.	—
10.00 Std.	—

Conductivity (mS/cm) : 0.305 Std. Conc. 0.303 Observed

Barometric Pressure (mm Hg) 727

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	97.0	100.1
mg/L D.O.	10.17	10.57
Temp – °C	10.96	10.93

Notes:

All D.O. ↑ 7.5 mg/L

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 10/9/12 8:40 EST Analyst: KWM

Location: Hoist tailrace Datasonde Serial #: 43732

Calibration Information Datasonde Battery [volts]: 12.5

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: _____

Conductivity (mS/cm)	Before Cal.	After Cal.
_____ Std		

Zero Conductivity Calibration: Before _____ After _____

Barometric Pressure (mm Hg) _____

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Temp only

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____ **Start Test:** _____ **End Test:** _____

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start 10/9 @ 9:00 File End 10/26 @ 16:00

Battery Life % @ Start: 100 Battery Life % @ End: 59

Notes: _____

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Field Notes for Datasonde Post Calibration

Date/Time: 10/9/12 9:00 EST Analyst: MWH

Location: Hoist Datasonde Serial #: 43730

Ending Datasonde Battery [volts]: 10.1

Calibration Information

pH (s.u.):	Observed
7.00 Std.	—
10.00 Std.	—

Conductivity (mS/cm) : 0.305 Std. Conc. 6.382 Observed

Barometric Pressure (mm Hg) 722

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.8	99.9
mg/L D.O.	11.35	11.19
Temp – °C	8.16	8.17

Notes:

All D.O. over 8 mg/L

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: Oct. 25, 2012 12:00 EDT Analyst: HP

Location: Haist - Temp Only Datasonde Serial #: 47160

Calibration Information Datasonde Battery [volts]: 12.34

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: _____

Conductivity (mS/cm)	Before Cal.	After Cal.
_____ Std		

Zero Conductivity Calibration: Before _____ After _____

Barometric Pressure (mm Hg) _____

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Temp only

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____ **Start Test:** _____ **End Test:** _____

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start _____ File End _____

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

Notes: _____

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 12/6/12 Analyst: MWM

Location: Hoist Datasonde Serial #: 47161

Ending Datasonde Battery [volts]: 10.9

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temp only

- All Data OK

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Field Notes for Datasonde Deployment

Date/Time: April 24, 2012 1355 EST Analyst: MWM

Location: LSH Trestle Datasonde Serial #: 6059

Calibration Information Datasonde Battery [volts]: 12.3

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

N/A Temp only

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

Barometric Pressure (mm Hg)

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

DO Handheld Meter Calibration - DO Meter Model

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope =

Create File for Test Program

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation			
mg/L D.O.			
Temp – °C			

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 4/30/12 @ 12:00 File End 5/9/12 23:59

Battery Life % @ Start: 100 Battery Life % @ End: 77

Notes:

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Field Notes for Datasonde Deployment

Date/Time: 5/8/12 9:25 Analyst: MWM

Location: LS+I Trestle Datasonde Serial #: 42482

Calibration Information Datasonde Battery [volts]: 12.5

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

Temperature only

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

Barometric Pressure (mm Hg)

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

DO Handheld Meter Calibration - DO Meter Model

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope =

Create File for Test Program

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation			
mg/L D.O.			
Temp – °C			

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 5/8/12 @ 10:20 File End 5/22/12

Battery Life % @ Start: N/A Battery Life % @ End: N/A

Notes: Deployed @ 11:47 EST

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 5/8/12 12:00 EST Analyst: MWM

Location: LSTI trestle Datasonde Serial #: 60591

Ending Datasonde Battery [volts]: 11.3

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temp only. Data OK.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 5/22/12 9:35 Analyst: MWM

Location: LSFI Datasonde Serial #: 47162

Calibration Information Datasonde Battery [volts]: 12.3

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

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.305 Std	0.283		Before .0000 After .0000

Barometric Pressure (mm Hg) 731

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.0	99.9
mg/L D.O.	10.40	10.53
Temp – °C	11.33	11.27

DO Handheld Meter Calibration - DO Meter Model HQ 30d

Cal'd in lab on 5/21/12

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = 99.4 %

Create File for Test Program _____

Test Program Readings

	Datasonde	YSI Meter	(Must be within 0.5 mg/L D.O.)
% Saturation	94.2	93.9	9:47 - 9:57
mg/L D.O.	9.47	9.34	
Temp – °C	13.34	13.4	OK - Deploy

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 5/22/12 @ 11:00 File End 6/5/12

Battery Life % @ Start: 98 Battery Life % @ End: 55

Notes: Calibrated at AAO Bridge.

Deployed @ 11:53 EST

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 5/22/12 12:48 Analyst: MWM

Location: L547 Datasonde Serial #: 42482

Ending Datasonde Battery [volts]: 11.1

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temp only - Data OK

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: June 5, 2012 12:48 EDT Analyst: HR

Location: L5 + I Trestle Datasonde Serial #: 47166

Calibration Information Datasonde Battery [volts]: 12.44

pH (s.u.)	Before Cal.	After Cal.	
7.00 Std	6.66	7.00	24.1 °C
10.00 Std	10.02	10.00	

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.274	Std	0.279	0.274	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 727.3 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	96.6%	100.0%
mg/L D.O.	8.25 mg/L	8.34 mg/L
Temp – °C	22.22 °C	22.20 °C

DO Handheld Meter Calibration - DO Meter Model HQ30d #1

	Before Calibration	After Calibration
% Saturation	101.2%	100.0%
mg/L D.O.	8.09 mg/L	7.98 mg/L
Temp – °C	24.1 °C	24.3 °C

Post Calibration Slope = 95.4%

Create File for Test Program ✓ S: 1300 E: 1312

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	108.0%	101.1%	
mg/L D.O.	9.36 mg/L	9.21 mg/L	
Temp – °C	17.31 °C	17.5 °C	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 6/5/12 1600 File End 6/19/12 1700

Battery Life % @ Start: 100 % Battery Life % @ End: 50 %

Notes:

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Field Notes for Datasonde Post Calibration

Date/Time: June 5, 2012 16:00 Analyst: TR

Location: L5+I Trestle Datasonde Serial #: 47162

Ending Datasonde Battery [volts]: 10.8 v

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.04	@ 22.5°C
10.00 Std.	10.01	

Conductivity (mS/cm) : 0.274 Std. Conc. 0.278 Observed

Barometric Pressure (mm Hg) 733.2 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.3%	100.0%
mg/L D.O.	8.57 mg/L	8.57 mg/L
Temp – °C	21.10°C	21.07°C

Notes:

All DO reading are above nine

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Field Notes for Datasonde Deployment

Date/Time: 6/19/12 11:40 EST Analyst: MWM

Location: L&I Datasonde Serial #: 60591

Calibration Information Datasonde Battery [volts]: 12.3 V

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	–	–
10.00 Std	–	–

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.293	Std	0.290	0.293	Before 0.0000 After 0.0000

Barometric Pressure (mm Hg) 736

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	101.1	100.0
mg/L D.O.	8.37	8.32
Temp – °C	22.83	22.81

DO Handheld Meter Calibration - DO Meter Model HQ30 D - Calibrated in lab on 6/18 6/18/12

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	89.1	90.3	11:50 - 12:00
mg/L D.O.	7.90	7.97	
Temp – °C	19.63	19.7	OK - Deploy

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 6/19 @ 13:00 File End 7/3 @ 2359

Battery Life % @ Start: 100 Battery Life % @ End: 48

Notes: Calibrated @ McClure Hydro Deployed @ 14:40

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 6/19/12 14:27 EST Analyst: MWH

Location: LSTI Datasonde Serial #: 47166

Ending Datasonde Battery [volts]: 10.9

Calibration Information

pH (s.u.):	Observed
7.00 Std.	-
10.00 Std.	-

Conductivity (mS/cm) : 0.293 Std. Conc. 0.295 Observed

Barometric Pressure (mm Hg) 727

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	102.4	100.3
mg/L D.O.	8.53	8.33
Temp – °C	22.23	22.33

Notes:

All D.O. ↑ 9.0 mg/L - OK

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 7/3/12 9:15 Analyst: MWH

Location: LS+I Datasonde Serial #: 47166

Calibration Information Datasonde Battery [volts]: 12.4

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	-	-
10.00 Std	-	✓

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.305 Std	0.300	0.305	Before 0.0016 After 0.0001

Barometric Pressure (mm Hg) 719.5

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	95.2	100.0
mg/L D.O.	8.30	8.61
Temp – °C	19.84	19.90

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	90.2	91.2	9:20 - 9:30 OK - Deploy
mg/L D.O.	7.75	7.81	
Temp – °C	20.6	20.2	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 7/3/12 @ 10:00 File End 7/13/12 23:59

Battery Life % @ Start: 100 Battery Life % @ End: 48

Notes: Calibrated @ AAO Bridge. Deployed @ 11:45 EST

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 7/3/12 11:55 EST Analyst: MWH

Location: LS+I Datasonde Serial #: 60591

Ending Datasonde Battery [volts]: 10.8

Calibration Information

pH (s.u.):	Observed
7.00 Std.	^
10.00 Std.	^

Conductivity (mS/cm) : 0.305 Std. Conc. 0.308 Observed

Barometric Pressure (mm Hg) 725.0

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	97.3	99.9
mg/L D.O.	8.01	8.04
Temp – °C	23.48	23.86

Notes:

Data OK. All D.O. ↑ 8.5 mg/L

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 7/17/12 12:03 EST Analyst: MWH

Location: L54I Trestle Datasonde Serial #: 43703

Calibration Information Datasonde Battery [volts]: 12.5

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

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.294 Std	0.300	0.294	Before 0.0030 After 0.0000

Barometric Pressure (mm Hg) 721

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	99.9	99.9
mg/L D.O.	8.07	8.10
Temp – °C	23.10	23.14

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation	-	
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ 12:10 - 12:20

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	95.6	96.4	
mg/L D.O.	8.18	8.25	Ok. Deploy
Temp – °C	20.31	20.5	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 7/17 @ 15:00 File End 7/31/12 23:59

Battery Life % @ Start: 100 Battery Life % @ End: 49

Notes: _____

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 7/17/12 14:55 Analyst: AWM

Location: LSFI Trestle Datasonde Serial #: 47/66

Ending Datasonde Battery [volts]: _____

Calibration Information

pH (s.u.):	Observed
7.00 Std.	-
10.00 Std.	-

Conductivity (mS/cm) : 0.294 Std. Conc. 0.293 Observed

Barometric Pressure (mm Hg) 729

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	101.6	100.0
mg/L D.O.	8.63	8.60
Temp – °C	20.59	20.64

Notes:

All D.O. ↑ 7.0 mg/L

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Field Notes for Datasonde Deployment

Date/Time: July 31, 2012 12:10 EDT Analyst: HR

Location: L5 & I Trestle Datasonde Serial #: 43730

Calibration Information Datasonde Battery [volts]: 12.5

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	6.72	7.00
10.00 Std	10.14	10.00

pH Cal. Temp.: 23.8

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.303 Std	0.294	0.303	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 724.2 mm Hg

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	96.9	100.0
mg/L D.O.	8.16	8.14
Temp – °C	23.05	23.16

DO Handheld Meter Calibration - DO Meter Model HQ30d -15 meter

	Before Calibration	After Calibration
% Saturation	100.5	100.0
mg/L D.O.	8.08	8.05
Temp – °C	23.8	23.8

Post Calibration Slope = 93.7%

Create File for Test Program X **Start Test:** 12:20 **End Test:** 12:35

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation	101.1	101.3
mg/L D.O.	8.45	8.43
Temp – °C	21.74	22.0

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde X **Remove calibration cup, Replace with weight** X

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.		Dept of		
Temp – °C				

Check File Status

File Start 7/31/12 1500 File End 8/14/12 1700

Battery Life % @ Start: 100 Battery Life % @ End: 50

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: July 31, 2012 15:15 EDT Analyst: AR

Location: L5+I Trestle Datasonde Serial #: 43703

Ending Datasonde Battery [volts]: 10.1v

Calibration Information

pH (s.u.):	Observed
7.00 Std.	5.33
10.00 Std.	8.35

> change pH frit

Conductivity (mS/cm) : 0.303 Std. Conc. 0.284 Observed

Barometric Pressure (mm Hg) 729.6 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	99.2	100.0
mg/L D.O.	7.99	8.14
Temp – °C	23.55	23.58

Notes:

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Field Notes for Datasonde Deployment

Date/Time: 8/14/12 12:33 EST Analyst: MWM

Location: LS+I Datasonde Serial #: 42484

Calibration Information Datasonde Battery [volts]: 12.1

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	~	~
10.00 Std	-	-

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.303	Std	0.283	0.303	Before 0.0000 After 0.0000

Barometric Pressure (mm Hg) 722

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.9	100.0
mg/L D.O.	8.49	8.60
Temp – °C	20.17	20.16

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ 12:41 - 12:51

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	95.7	97.2	
mg/L D.O.	8.61	8.74	ok - Deploy
Temp – °C	17.92	18.1	

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 8/14/12 @ 16:00 File End 8/28/12 @ 23:59

Battery Life % @ Start: N/A Battery Life % @ End: N/A

Notes: Calibrated @ AAO Bridge

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Field Notes for Datasonde Post Calibration

Date/Time: 8/14/12 15:20 Analyst: MWM

Location: LSII Datasonde Serial #: 43730

Ending Datasonde Battery [volts]: 11.1

Calibration Information

pH (s.u.):	Observed
7.00 Std.	—
10.00 Std.	—

Conductivity (mS/cm) : 0.303 Std. Conc. 0.297 Observed

Barometric Pressure (mm Hg) 728

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	105.0	104.1
mg/L D.O.	9.02	8.64
Temp – °C	20.34	20.38

Notes:

All D.O. above 8 mg/L

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: Aug. 28, 2012 1215 EDT Analyst: HA

Location: Lb + I Trestle Datasonde Serial #: 47166

Calibration Information Datasonde Battery [volts]: 12.5V

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	7.05	7.00
10.00 Std	9.98	10.00

@ 22.21°C

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.304	Std	0.303	0.304	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 729.4 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	102.4%	100.0%
mg/L D.O.	8.76 mg/L	8.43 mg/L
Temp – °C	21.74°C	21.72°C

DO Handheld Meter Calibration - DO Meter Model HQ30d #1

	Before Calibration	After Calibration
% Saturation	101.1%	100.0%
mg/L D.O.	8.54 mg/L	8.44 mg/L
Temp – °C	22.9°C	22.8°C

Post Calibration Slope = 93.4%

Create File for Test Program ✓ S: 12:28 E: 12:40

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	96.8%	97.1%	
mg/L D.O.	8.67 mg/L	8.62 mg/L	
Temp – °C	18.67°C	19.1°C	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 8/28/12 1500 File End 9/11/12 1700

Battery Life % @ Start: 100% Battery Life % @ End: 50%

Notes:

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Field Notes for Datasonde Post Calibration

Date/Time: Aug. 28, 2012 Analyst: HP

Location: LS+I Trestle Datasonde Serial #: 42484

Ending Datasonde Battery [volts]: 10.7v

Calibration Information

pH (s.u.):	Observed
7.00 Std.	9.66
10.00 Std.	12.72

→ change pH Reference solution @ 23.03 and fit

Conductivity (mS/cm): 0.304 Std. Conc. 0.313 Observed

0.0000 Zero Observed, In Air

Barometric Pressure (mm Hg) 735.5 mmHg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	101.7%	100.0%
mg/L D.O.	8.60 mg/L	8.58 mg/L
Temp – °C	21.11°C	21.12°C

Notes:

all D.O. readings above eight

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Field Notes for Datasonde Deployment

Date/Time: 9/11/12 12:15 EDT Analyst: TH

Location: L5+I Trestle Datasonde Serial #: 42482

Calibration Information Datasonde Battery [volts]: 12.3 V

pH (s.u.)	Before Cal.	After Cal.	
7.00 Std	6.94	7.02	21.9°C
10.00 Std	10.00	10.05	

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.305	Std	0.277	0.305	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 723 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.5%	100.0%
mg/L D.O.	8.30 mg/L	8.34 mg/L
Temp – °C	21.75°C	21.80°C

DO Handheld Meter Calibration - DO Meter Model Hach HQ30d #1 - 15 meter

	Before Calibration	After Calibration	
% Saturation	99.4%	100.0%	Post Calibration Slope = 94.0%
mg/L D.O.	8.27 mg/L	8.32 mg/L	
Temp – °C	21.9°C	21.9°C	

Create File for Test Program ✓ S: 12:30 E: 12:45

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	97.0%	97.8%	
mg/L D.O.	8.92 mg/L	8.94 mg/L	
Temp – °C	16.95°C	17.20°C	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 9/11/12 1500 File End 9/25/12 1700

Battery Life % @ Start: 100% Battery Life % @ End: 50%

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 9/11/12 1540 Analyst: AP

Location: L5+I Trestle Datasonde Serial #: 47166

Ending Datasonde Battery [volts]: 10.8V

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.15	@ 24.82°C
10.00 Std.	10.08	

Conductivity (mS/cm): 0.305 Std. Conc. 0.301 Observed

0.0000 Zero Observed, In Air

Barometric Pressure (mm Hg) 727 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.9%	100.0%
mg/L D.O.	7.90 mg/L	7.78 mg/L
Temp – °C	25.78°C	25.89°C

Notes:

D.O. readings all above eight

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Field Notes for Datasonde Deployment

Date/Time: 9/25/12 9:00 Analyst: MWH

Location: L S + T Datasonde Serial #: 43705

Calibration Information Datasonde Battery [volts]: 12.1

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.:

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.305 Std	0.303	0.305	Before 0.0015 After 0.0050

Barometric Pressure (mm Hg) 725 724

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.2	99.5
mg/L D.O.	11.68	11.81
Temp – °C	6.01	5.92

DO Handheld Meter Calibration - DO Meter Model

	Before Calibration	After Calibration
% Saturation	~~98.2~~	
mg/L D.O.		
Temp – °C		

Post Calibration Slope =

Create File for Test Program ✓ **Start Test:** 9:10 **End Test:** 9:20

Test Program Readings

	Datasonde	Hach HQ30d Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	88.0	90.6	
mg/L D.O.	9.88	10.29	OK. Deploy
Temp – °C	7.9	7.20	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start 9/25 @ ~~12:00~~ 13:00 File End 10/9/12 23:59

Battery Life % @ Start: 98 Battery Life % @ End: 29

Notes: Calibrated @ ABs Bridge

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 9/25/12 12:38 EST Analyst: MWM

Location: LS+I Datasonde Serial #: 42482

Ending Datasonde Battery [volts]: 11.0

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	–

Conductivity (mS/cm) : 0.305 Std. Conc. 0.309 Observed

Barometric Pressure (mm Hg) 730

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.9	100.4
mg/L D.O.	10.47	10.51
Temp – °C	11.45	11.52

Notes:

All D.O. ↑ 8 mg/L

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 10/9/12 9:55 Analyst: MWH

Location: LS+I Datasonde Serial #: 47168

Calibration Information Datasonde Battery [volts]: 12.3

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: _____

Conductivity (mS/cm)	Before Cal.	After Cal.
_____ Std		

Zero Conductivity Calibration: Before _____ After _____

Barometric Pressure (mm Hg) _____

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Temp Only

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____ **Start Test:** _____ **End Test:** _____

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start 10/9/12 11:00 File End 10/26/12 16:00

Battery Life % @ Start: 100 Battery Life % @ End: 59

Notes: _____

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Field Notes for Datasonde Post Calibration

Date/Time: 10/9/12 10:13 EST Analyst: MWM

Location: LS+I Datasonde Serial #: 43705

Ending Datasonde Battery [volts]: 10.4

Calibration Information

pH (s.u.):	Observed
7.00 Std.	~
10.00 Std.	~

Conductivity (mS/cm) : 0.305 Std. Conc. 0.360 Observed

Barometric Pressure (mm Hg) 725.5

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	106.1	100.0
mg/L D.O.	11.66	10.99
Temp – °C	9.07	9.12

Notes:

All D.O. ↑ 10 mg/L

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: Oct. 25, 2012 12:00 EDT Analyst: HP

Location: LSI - Temp Only Datasonde Serial #: 47170

Calibration Information Datasonde Battery [volts]: 12.3V

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: _____

Conductivity (mS/cm)	Before Cal.	After Cal.
_____ Std		

Zero Conductivity Calibration: Before _____ After _____

Barometric Pressure (mm Hg) _____

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Temp Only

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____ **Start Test:** _____ **End Test:** _____

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start _____ File End _____

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

Notes: _____

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Field Notes for Datasonde Post Calibration

Date/Time: 10/2/12 13:20 EST Analyst: MWM

Location: CS+I Datasonde Serial #: 47170

Ending Datasonde Battery [volts]: 10.8

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Temp only

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Data OK

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Field Notes for Datasonde Deployment

Date/Time: 4/24/12 14:55 EST Analyst: MWM

Location: Mc Clure Tailrace Datasonde Serial #: 47160

Calibration Information Datasonde Battery [volts]: 11.5

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

N/A - Temperature only

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

Barometric Pressure (mm Hg)

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

DO Handheld Meter Calibration - DO Meter Model

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope =

Create File for Test Program

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation			
mg/L D.O.			
Temp – °C			

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 4/30/12 @ 12:00 File End 5/9/12 @ 23:59

Battery Life % @ Start: 87 Battery Life % @ End: 65

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 5/8/12 9:30 Analyst: MWM

Location: McClure Tailrace Datasonde Serial #: 60581

Calibration Information Datasonde Battery [volts]: 12.2

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

Temperature only

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

Barometric Pressure (mm Hg)

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

DO Handheld Meter Calibration - DO Meter Model

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope =

Create File for Test Program

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation			
mg/L D.O.			
Temp – °C			

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 5/8/12 10:00 File End 5/22/12

Battery Life % @ Start: 100 Battery Life % @ End: 65

Notes: Deployed @ 12:33

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 5/8/12 12:38 Analyst: KWM

Location: McClure Tailrace Datasonde Serial #: 47160

Ending Datasonde Battery [volts]: 11.1

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temperature only - Data OK.

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Field Notes for Datasonde Deployment

Date/Time: 5/22/12 9:16 EST Analyst: MWM

Location: McClure Datasonde Serial #: 60591

Calibration Information Datasonde Battery [volts]: 12.4

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.305	Std	0.306	0.305	Before 0.0014 After 0.0000

Barometric Pressure (mm Hg) 731

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	103.0	100.2
mg/L D.O.	10.09	11.14
Temp – °C	8.94	8.99

DO Handheld Meter Calibration - DO Meter Model HQ30d

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Calibrated in lab on 5/21/12

Post Calibration Slope = 99.4%

Create File for Test Program ✓ 9:30-9:40

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	86.1	93.4	
mg/L D.O.	8.67	9.32	Recal
Temp – °C	13.24	13.3	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit 9:55-10:05

	Before Cal.	After Cal.	Datasonde	YSI	
% Saturation	94.0	100.5	92.4	94.1	
mg/L D.O.	9.63	10.28	9.28	9.33	OK - Deploy
Temp – °C	12.53	12.55	13.7	13.5	

Check File Status

File Start 5/22 @ 11 File End 6/5/12

Battery Life % @ Start: 96 Battery Life % @ End: 53

Notes: Water under LDO cap - Dried + Recalibrated.

Deployed @ 12:40

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 5/22/12 12:43 Analyst: RWM

Location: McClure Datasonde Serial #: 60581

Ending Datasonde Battery [volts]: 11.0

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Temperature only. All data OK.

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Field Notes for Datasonde Deployment

Date/Time: June 5, 2012 12:05 EDT Analyst: JD

Location: McClure Tailwater Datasonde Serial #: 60581 - Erratic 400

Calibration Information Datasonde Battery [volts]: 12.2V 47168

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	6.68	7.00
10.00 Std	10.07	10.00

@ 23.3°C

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.274	Std	0.278	0.274	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 727.0 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.0%	100.0%
mg/L D.O.	8.31 mg/L	8.25 mg/L
Temp – °C	22.66°C	22.73°C

DO Handheld Meter Calibration - DO Meter Model HQ30D # 1

	Before Calibration	After Calibration
% Saturation	101.2%	100.0%
mg/L D.O.	8.09 mg/L	7.98 mg/L
Temp – °C	24.1°C	24.3°C

Post Calibration Slope = 95.4%

Create File for Test Program ✓ S: ~~12:18~~ 12:20 E: ~~12:30~~ 12:32

Test Program Readings

	Datasonde	YSI Meter
% Saturation	102.1%	101.2
mg/L D.O.	9.45	9.30
Temp – °C	16.92	17.1

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	YSI
% Saturation				
mg/L D.O.	Dep	04		
Temp – °C				

Check File Status

File Start 6/5/12 1500 File End 6/19/12 17:00

Battery Life % @ Start: 100 % Battery Life % @ End: 58 %

Notes:

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Field Notes for Datasonde Post Calibration

Date/Time: June 5, 2012 15:30 EDT Analyst: HP

Location: McClane Tailwater Datasonde Serial #: 60591

Ending Datasonde Battery [volts]: 10.8 V (10.2 V)

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	6.55	@ 23.8
10.00 Std.	9.58	

Conductivity (mS/cm) : 0.274 Std. Conc. 0.269 Observed

Barometric Pressure (mm Hg) 733.2 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	98.1 %	100.1 %
mg/L D.O.	8.04 mg/L	8.25 mg/L
Temp – °C	23.26 °C	23.21 °C

Notes:

All D.O. readings are above eight.

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Field Notes for Datasonde Deployment

Date/Time: 6/19/12 11:33 EST Analyst: HWM

Location: McClure Powerhouse Datasonde Serial #: 60582

Calibration Information Datasonde Battery [volts]: 12.3

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	—	—
10.00 Std	—	—

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.293 Std	0.288		Before 0.0000 After 0.0000

Barometric Pressure (mm Hg) 735.5

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.9	100.0
mg/L D.O.	8.24	8.36
Temp – °C	22.56	22.55

DO Handheld Meter Calibration - DO Meter Model HQ30

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	~~90.1~~ 91.6	90.1	10:40 - 11:50
mg/L D.O.	8.12	7.93	
Temp – °C	19.57	19.9	OK - Deploy

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 6/19 @ 13:00 File End 7/3 @ 2359

Battery Life % @ Start: 100 Battery Life % @ End: 48

Notes: Deployed @ 12:37

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Field Notes for Datasonde Post Calibration

Date/Time: 6/19/12 12:47 Analyst: MWM

Location: McClure Tail Datasonde Serial #: 47168

Ending Datasonde Battery [volts]: 10.9

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	–

Conductivity (mS/cm) : 0.293 Std. Conc. 0.283 Observed

Barometric Pressure (mm Hg) 735

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	103.4	100.2
mg/L D.O.	8.84	8.65
Temp – °C	20.82	20.87

Notes:

All D.O ↑ 7.8 mg/L

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Field Notes for Datasonde Deployment

Date/Time: 7/3/12 9:25 Analyst: MWM

Location: McClure Datasonde Serial #: 47668

Calibration Information Datasonde Battery [volts]: 12.3

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

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.305	Std	0.300	0.305	Before 0.0014 After 0.0000

Barometric Pressure (mm Hg) 719.5

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	100.6	100.0
mg/L D.O.	8.75	8.50
Temp – °C	20.52	20.57

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	89.1	93.7	09:43-09:53 OK - Deploy
mg/L D.O.	7.63	8.01	
Temp – °C	20.18	20.3	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 7/3/12 11:00 File End 7/17/12 23:59

Battery Life % @ Start: 98 Battery Life % @ End: 46

Notes: Calibrated @ AAO bridge. Deployed @ 12:35 EST

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 7/3/12 12:40 EST Analyst: MWM

Location: McClure Datasonde Serial #: 60582

Ending Datasonde Battery [volts]: _____

Calibration Information

pH (s.u.):	Observed
7.00 Std.	~
10.00 Std.	~

Conductivity (mS/cm) : 0.305 Std. Conc. 0.310 Observed

Barometric Pressure (mm Hg) 732.0

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	106.5	101.1
mg/L D.O.	8.50	7.95
Temp – °C	25.21	25.65

Notes:

Data OK - All D.O. > 7.8 mg/L

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Field Notes for Datasonde Deployment

Date/Time: 7/17/12 12:39 Analyst: MWH

Location: McClure Datasonde Serial #: 47162

Calibration Information Datasonde Battery [volts]: 12.1

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

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.294	Std	0.292	0.294	Before 0.0028 After 0.0000

Barometric Pressure (mm Hg) 721

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	95.0	99.5
mg/L D.O.	7.99	8.16
Temp – °C	22.56	22.57

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ 12:50 - 13:00

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	95.3	97.5	
mg/L D.O.	8.13	8.33	OK Deploy
Temp – °C	20.51	20.6	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 7/17 @ 13:00 File End 7/31 @ 23:59

Battery Life % @ Start: 96 Battery Life % @ End: 45

Notes: _____

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Field Notes for Datasonde Post Calibration

Date/Time: 7/17/12 17:23 EST Analyst: MWM

Location: McClure Datasonde Serial #: 4/7/68

Ending Datasonde Battery [volts]: _____

Calibration Information

pH (s.u.):	Observed
7.00 Std.	-
10.00 Std.	-

Conductivity (mS/cm) : 0.294 Std. Conc. 0.301 Observed

Barometric Pressure (mm Hg) 737

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	97.1	100.1
mg/L D.O.	8.11	8.57
Temp – °C	21.49	21.50

Notes:

All D.O. ↑ 5 mg/L

Unusually low reading on 7/6 @ 20:00 - sudden ↓ to 5.57 mg/L

hours before and after above 7.0

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Field Notes for Datasonde Deployment

Date/Time: July 31, 2012 11:35 EDT Analyst: TR

Location: McClure Tailwater Datasonde Serial #: 47164

Calibration Information Datasonde Battery [volts]: 12.4v

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	8.45	7.00
10.00 Std	9.88	10.00

pH Cal. Temp.: 24.6 °C

Conductivity (mS/cm)	Before Cal.	After Cal.
0.303 Std	0.281	0.303

Zero Conductivity Calibration: Before 0.000 After 0.000

Barometric Pressure (mm Hg) 724.5 mm Hg

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	99.1%	100.0%
mg/L D.O.	8.36	8.09 mg/L
Temp – °C	23.40 °C	23.48 °C

DO Handheld Meter Calibration - DO Meter Model HQ30d - 15 meter

	Before Calibration	After Calibration
% Saturation	100.5	100.0
mg/L D.O.	8.08	8.05
Temp – °C	23.8	23.8

Post Calibration Slope = 93.7%

Create File for Test Program ✓ **Start Test:** 11:48 **End Test:** 12:00

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation	100.7	99.6
mg/L D.O.	8.48	8.36
Temp – °C	21.38	21.6

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde X **Remove calibration cup, Replace with weight**_____

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.	Deploy			
Temp – °C				

Check File Status

File Start 7/31/12 1400 File End 8/14/12 1700

Battery Life % @ Start: 100 Battery Life % @ End: 52

Notes:

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Field Notes for Datasonde Post Calibration

Date/Time: 7/31/12 13:45 EDT Analyst: HR

Location: McClure Datasonde Serial #: 47162

Ending Datasonde Battery [volts]: 10.4 v

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.20	@ 25.2
10.00 Std.	10.12	

Conductivity (mS/cm) : 0.303 Std. Conc. 0.297 Observed

Barometric Pressure (mm Hg) 729.9 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	96.7	100.0
mg/L D.O.	7.67	8.04
Temp – °C	24.22	24.23

Notes:

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Field Notes for Datasonde Deployment

Date/Time: 8/14/12 12:40 Analyst: MWH

Location: McClure Datasonde Serial #: 43732

Calibration Information Datasonde Battery [volts]: 12.5

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

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.303	Std	0.270	0.303	Before 0.0000 After 0.0000

Barometric Pressure (mm Hg) 723

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.1	100.0
mg/L D.O.	8.66	8.68
Temp – °C	19.75	19.73

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ 12:50 - 13:00

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	95.5	98.1	
mg/L D.O.	8.59	8.72	ok - Deploy
Temp – °C	17.97	97.1	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 8/14 @ 18:00 File End 8/28

Battery Life % @ Start: 100 Battery Life % @ End: 49

Notes: Calibrated @ 4MO Bridge

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 8/14/12 18:00 EST Analyst: MWM

Location: McClure Datasonde Serial #: 47164

Ending Datasonde Battery [volts]: 11.1

Calibration Information

pH (s.u.):	Observed
7.00 Std.	~
10.00 Std.	-

Conductivity (mS/cm) : 0.303 Std. Conc. 0.303 Observed

Barometric Pressure (mm Hg) 737

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	104.0	108.0
mg/L D.O.	8.84	8.65
Temp – °C	20.87	20.94

Notes:

All D.O. above 7 mg/L

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Field Notes for Datasonde Deployment

Date/Time: Aug. 28, 2012 11:42 Analyst: HD

Location: McClure Tailwater Datasonde Serial #: 43705

Calibration Information Datasonde Battery [volts]: 12.2 v

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	7.16	7.00
10.00 Std	10.08	10.00

@ 22.27°C

Conductivity (mS/cm)		Before Cal.	After Cal.	Zero Conductivity Calibration
0.304	Std	0.302	0.304	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 729.2 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.3%	100.0%
mg/L D.O.	8.28 mg/L	8.30 mg/L
Temp – °C	22.40°C	22.44°C

DO Handheld Meter Calibration - DO Meter Model HQ30d - #1

	Before Calibration	After Calibration
% Saturation	101.1%	100.0%
mg/L D.O.	8.54 mg/L	8.44 mg/L
Temp – °C	22.9°C	22.9°C

Post Calibration Slope = 93.4%

Create File for Test Program ✓ S: 11:55 E: 12:07

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	95.2%	95.0%	
mg/L D.O.	8.60 mg/L	8.57 mg/L	
Temp – °C	18.1°C	18.4°C	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Check File Status

File Start 8/28/12 1400 File End 9/11/12 1700

Battery Life % @ Start: 98% Battery Life % @ End: 48%

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: Aug. 28, 2012 15:25 Analyst: HP

Location: McClure Tailwater Datasonde Serial #: 43732

Ending Datasonde Battery [volts]: 11.1

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.56	@ 22.82
10.00 Std.	10.50	

Conductivity (mS/cm): 0.304 Std. Conc. 0.303 Observed

0.0000 Zero Observed, In Air

Barometric Pressure (mm Hg) 734.8

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	104.6%	100.0%
mg/L D.O.	8.80 mg/L	8.55 mg/L
Temp – °C	21.39°C	21.41°C

Notes:

D.O. readings all above Seven.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 9/11/12 11:40 Analyst: HR

Location: McCloud Datasonde Serial #: 47168

Calibration Information Datasonde Battery [volts]: 12.2

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	7.10	7.02
10.00 Std	10.02	10.05

21.7°C

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.305 Std	0.308	0.305	Before 0.000 After 0.000

Barometric Pressure (mm Hg) 723 mm Hg

Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	98.6%	100.0%
mg/L D.O.	8.43 mg/L	8.39 mg/L
Temp – °C	21.46°C	21.49°C

DO Handheld Meter Calibration - DO Meter Model Hach HQ30d #1 - 15 meter

	Before Calibration	After Calibration
% Saturation	99.4%	100.0%
mg/L D.O.	8.27 mg/L	8.30 mg/L
Temp – °C	21.9°C	21.9°C

Post Calibration Slope = 94%

Create File for Test Program ✓ S: 11:53 E: 12:10:04

Test Program Readings

	Datasonde	YSI Meter	**(Must be within 0.5 mg/L D.O.)**
% Saturation	96.0%	96.0%	
mg/L D.O.	8.91 mg/L	8.89 mg/L	
Temp – °C	16.45°C	16.6°C	

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

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

Deployed

Check File Status

File Start 9/11/12 1400 File End 9/25/12 1700

Battery Life % @ Start: 98% Battery Life % @ End: 48%

Notes:

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 9/11/12 1520 Analyst: HR

Location: McClure Tailwater Datasonde Serial #: 43705

Ending Datasonde Battery [volts]: 10.4v

Calibration Information

pH (s.u.):	Observed	
7.00 Std.	7.14	@ 24.10°C
10.00 Std.	10.22	

Conductivity (mS/cm): 0.305 Std. Conc. 0.303 Observed

0.0000 Zero Observed, In Air

Barometric Pressure (mm Hg) 727 mm Hg

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.1%	100.0%
mg/L D.O.	8.09 mg/L	8.03 mg/L
Temp – °C	23.98°C	24.03°C

Notes:

D.O. readings all above seven.

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Field Notes for Datasonde Deployment

Date/Time: 9/25/12 09:50 Analyst: MWM

Location: McClure Datasonde Serial #: 4766

Calibration Information Datasonde Battery [volts]: 12.5

pH (s.u.)	Before Cal.	After Cal.
7.00 Std	~	~
10.00 Std	-	-

pH Cal. Temp.: ~

Conductivity (mS/cm)	Before Cal.	After Cal.	Zero Conductivity Calibration
0.305 Std	0.300	0.305	Before 0.0014 After 0.0000

Barometric Pressure (mm Hg) 726

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation	97.4	100.3
mg/L D.O.	12.30	12.66
Temp – °C	3.71	3.69

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program ✓ **Start Test:** 10:00 **End Test:** 10:10

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation	85.8	88.9
mg/L D.O.	9.70	9.96
Temp – °C	8.01	8.0

(Must be within 0.5 mg/L D.O.)

OK - Deploy

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start 9/25 @ 16:05 File End 10/9/12 23:59

Battery Life % @ Start: 100 Battery Life % @ End: 49

Notes: _____

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 9/25 18:12 EST Analyst: MWM

Location: McClure Datasonde Serial #: 4768

Ending Datasonde Battery [volts]: _____

Calibration Information

pH (s.u.):	Observed
7.00 Std.	–
10.00 Std.	–

Conductivity (mS/cm) : 0.305 Std. Conc. 0.303 Observed

Barometric Pressure (mm Hg) 737

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	100.8	100.1
mg/L D.O.	10.13	10.25
Temp – °C	12.84	12.85

Notes:

All D.O. ↑ 7 mg/L

Equip. Malfunction on 9/23 @ 21:00 · D.O = 0.0

9/23 @ 23:00 looks unusual too.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Deployment

Date/Time: 10/9/12 Analyst: MWM

Location: McClure tailrace Datasonde Serial #: 60580

Calibration Information Datasonde Battery [volts]: 12.4

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: _____

Conductivity (mS/cm)	Before Cal.	After Cal.
_____ Std		

Zero Conductivity Calibration: Before _____ After _____

Barometric Pressure (mm Hg) _____

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Temp only

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____ **Start Test:** _____ **End Test:** _____

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde ✓ **Remove calibration cup, Replace with weight** ✓

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start 10/9 @ 11 File End 10/26 @ 16:00

Battery Life % @ Start: 100 Battery Life % @ End: 59

Notes: _____

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 10/9/12 10:55 Analyst: MWM

Location: McClure Datasonde Serial #: 47166

Ending Datasonde Battery [volts]: 10.4

Calibration Information

pH (s.u.):	Observed
7.00 Std.	—
10.00 Std.	—

Conductivity (mS/cm) : 0.305 Std. Conc. 0.402 Observed

Barometric Pressure (mm Hg) 735

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation	98.6	100.0
mg/L D.O.	10.45	10.71
Temp – °C	10.71	10.78

Notes:

All D.O. ↑ 8 mg/L

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Field Notes for Datasonde Deployment

Date/Time: Oct. 25, 2012 11:50 EDT Analyst: TR

Location: McClure Tailwater Datasonde Serial #: 47171

Calibration Information Datasonde Battery [volts]: 12.3

pH (s.u.)	Before Cal.	After Cal.
7.00 Std		
10.00 Std		

pH Cal. Temp.: _____

Conductivity (mS/cm)	Before Cal.	After Cal.
_____ Std		

Zero Conductivity Calibration: Before _____ After _____

Barometric Pressure (mm Hg) _____

Datasonde Dissolved Oxygen	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

temp only

DO Handheld Meter Calibration - DO Meter Model _____

	Before Calibration	After Calibration
% Saturation		
mg/L D.O.		
Temp – °C		

Post Calibration Slope = _____

Create File for Test Program _____ **Start Test:** _____ **End Test:** _____

Test Program Readings

	Datasonde	Hach HQ30d Meter
% Saturation		
mg/L D.O.		
Temp – °C		

(Must be within 0.5 mg/L D.O.)

Create File for Datasonde _____ **Remove calibration cup, Replace with weight** _____

Re-calibration required if outside 0.5 mg/l limit

	Before Cal.	After Cal.	Datasonde	Hach HQ30d Meter
% Saturation				
mg/L D.O.				
Temp – °C				

Check File Status

File Start _____ File End _____

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

Notes: _____

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Field Notes for Datasonde Post Calibration

Date/Time: 11/1/12 14:00 Est Analyst: MWM

Location: Mc Clure Datasonde Serial #: 47171

Ending Datasonde Battery [volts]: 10.8

Calibration Information

pH (s.u.):	Observed
7.00 Std.	
10.00 Std.	

Temp Only

Conductivity (mS/cm) : _____ Std. Conc. _____ Observed

Barometric Pressure (mm Hg) _____

Dissolved Oxygen	Before Calibrate	After Calibrate
% Saturation		
mg/L D.O.		
Temp – °C		

Notes:

Data OK

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Appendix D

Dead River Hydroelectric Project

FERC Project No. 10855

Documentation of Agency Consultation

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Upper Peninsula Power Corporation – Dead River Hydroelectric Projects

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

Date of Notice to MDEQ, MDNR and US Fish and Wildlife	Date of Notice to FERC
June 20, 2012	June 27, 2012
July 5, 2012	July 11, 2012
July 18, 2012	July 23, 2012
August 1, 2012	August 6, 2012
August 15, 2012	August 22, 2012
August 30, 2012	September 6, 2012
September 14, 2012	September 19, 2012

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Metcalf, Mark W

From: Metcalf, Mark W
Sent: Wednesday, June 20, 2012 1:10 PM
To: Kruger, Kyle; Koetje, Mitch ; Taft, Bill ; Burr Fisher
Cc: Meyers, Robert J; Schlorke, Virgil E; Puzen, Shawn C
Subject: Dead River Water Quality Monitoring
Attachments: Hoist downstream DO Summary thru 06 19 2012.pdf; Hoist downstream DO graph thru 06 19 2012.pdf

Good afternoon:

Pursuant to Article 408 of the Project License and the water quality monitoring plan for the Dead River Hydroelectric Project, UPPCO is monitoring dissolved oxygen and temperature in the Dead River downstream of the Hoist Powerhouse. Dissolved oxygen and temperature monitoring is being conducted in the natural river channel in the SE ¼ of the NE ¼, Section 16, T48N, R26W (Township of Negaunee). The monitoring location is approximately 1,250 yards downstream of the hydroelectric plant. The dissolved oxygen water quality standard at this monitoring location is 7.0 mg/l.

Per the monitoring plan, temperature data is collected on an hourly basis from May 1st through October 31st. Dissolved oxygen data is collected hourly from June 1st through September 30th.
On June 19th at 11:00 EST, the dissolved oxygen level observed downstream of the Hoist powerhouse was 6.7 mg/l. The likely cause of the low dissolved oxygen level was due to a trip of the hydroelectric plant. At 09:52 EST, power was lost to the Hoist plant due to a tree falling on a power line during a storm. This caused the facility to trip offline, which resulted in flow from the facility being reduced to zero cfs. A local operator was contacted and dispatched to the plant. At 10:40 the lower level outlet was opened to achieve a flow of 100 cfs.

Due to the distance between the hydroelectric facility and the monitoring location and the time it takes for water to travel between the two locations, a decrease in dissolved oxygen levels was not observed when monitoring data was collected at 10:00. Prior to and after the 11:00 reading, dissolved oxygen levels in the Dead River were 7.3 mg/l. Power was restored to the plant at 13:18 EST. Generation resumed at 13:41 and a flow of approximately 104 cfs was then reestablished through the generator. The lower level outlet was closed at 14:25.

Attached for your review is a table and a graph of the dissolved oxygen monitoring data collected between June 1st and June 19th. If you have any questions about the monitoring data, please feel free to contact me.

Thanks,
Mark

Mark Metcalf
Environmental Consultant - Air & Water | Integrys Business Support, LLC
920-433-1833 (Green Bay)
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www.integrysgroup.com

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

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20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Metcalf, Mark W

From: Metcalf, Mark W
Sent: Thursday, July 05, 2012 12:57 PM
To: 'Kruger, Kyle'; 'Koetje, Mitch '; 'Taft, Bill '; 'Burr Fisher '
Cc: Meyers, Robert J; Schlorke, Virgil E; Puzen, Shawn C
Subject: Dead River Water Quality Monitoring - June 19 through July 3, 2012
Attachments: Dead River WQM data 070512.pdf

Good afternoon:

Pursuant to Article 408 of the Project License and the water quality monitoring plan for the Dead River Hydroelectric Project, UPPCO is monitoring dissolved oxygen and temperature in the Dead River downstream of the Silver Lake Storage Basin and downstream of the Hoist Powerhouse. Per the monitoring plan, temperature data is collected on an hourly basis from May 1st through October 31st. Dissolved oxygen data is collected hourly from June 1st through September 30th. Dissolved oxygen and temperature monitoring is being conducted at the following locations:

- Where County Road AAO crosses the Dead River, SE ¼ of the NE ¼, Section 17, T48N, R 25W, in the Township of Champion;
- In the natural river channel in the SE ¼ of the NE ¼, Section 16, T48N, R26W, in the Township of Negaunee. The monitoring location is approximately 1,250 yards downstream of the hydroelectric plant.

The dissolved oxygen water quality standard at these locations is 7.0 mg/l. The License monthly average water temperature standard is 68°F during the months of June through August. Please note that the water quality monitoring equipment used has an accuracy of +/- 0.1 mg/l, per the manufacturer.

Deviations from the dissolved oxygen standard were observed at the above monitoring locations between June 19th and July 3rd. At the County Road AAO monitoring location, dissolved oxygen levels below the water quality standard were observed between July 1st and July 3rd. The lowest dissolved oxygen reading observed was 6.4 mg/l. The likely cause of the low readings is warm water temperature. The average daily water temperature of the Dead River at this monitoring location was above 70°F when the deviations were observed. Daily maximum temperatures approached 80°F during this time.

Downstream of the Hoist Powerhouse, dissolved oxygen levels have been observed below the water quality standard between June 26th and July 3rd. The lowest dissolved oxygen reading observed during this time period was 6.6 mg/l. Between June 26th and July 3rd, the daily average water temperature at this monitoring location was at or above 68°F. Due to low water levels, UPPCO has been releasing minimum flow in order to maintain the water level in the reservoir. Dissolved oxygen profiles conducted at the Hoist Powerhouse intake on June 19th and July 3rd shows that the Dead River Storage Basin is beginning to stratify. Temperature data from a profile conducted on July 2nd shows that the reservoir is above 64°F at all depths. Dissolved oxygen levels from 6.5 meters and below have decreased to less than the water quality standard.

Please note that the Hoist Powerhouse intake is located on the bottom of the reservoir. As a result, UPPCO is releasing the coldest water available into the downstream reach to mitigate downstream temperature issues. However, when the reservoir is stratified this also results in the release of low D.O. water downstream of the facility. Water quality monitoring conducted in 2007 demonstrated that dissolved oxygen levels do improve with distance from the hydroelectric facility due to aeration in the river. At the same time, water temperatures also increase with distance from the facility which inhibits the amount of aeration that occurs in the river, likely due to atmospheric conditions. The combination of warm water temperatures, low water flow, and the onset of stratification of the Dead River Storage Basin is the likely cause of the low dissolved oxygen levels observed at the monitoring location.

Attached for your review is monitoring data for the periods when deviations from the dissolved oxygen standard were observed. If you have any questions about the monitoring data, please feel free to contact me.

Thanks,
Mark

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

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

From: Metcalf, Mark W
Sent: Wednesday, June 20, 2012 1:10 PM
To: Kruger, Kyle; Koetje, Mitch ; Taft, Bill ; Burr Fisher
Cc: Meyers, Robert J; Schlorke, Virgil E; Puzen, Shawn C
Subject: Dead River Water Quality Monitoring

Good afternoon:

Pursuant to Article 408 of the Project License and the water quality monitoring plan for the Dead River Hydroelectric Project, UPPCO is monitoring dissolved oxygen and temperature in the Dead River downstream of the Hoist Powerhouse. Dissolved oxygen and temperature monitoring is being conducted in the natural river channel in the SE ¼ of the NE ¼, Section 16, T48N, R26W (Township of Negaunee). The monitoring location is approximately 1,250 yards downstream of the hydroelectric plant. The dissolved oxygen water quality standard at this monitoring location is 7.0 mg/l.

Per the monitoring plan, temperature data is collected on an hourly basis from May 1st through October 31st. Dissolved oxygen data is collected hourly from June 1st through September 30th.
On June 19th at 11:00 EST, the dissolved oxygen level observed downstream of the Hoist powerhouse was 6.7 mg/l. The likely cause of the low dissolved oxygen level was due to a trip of the hydroelectric plant. At 09:52 EST, power was lost to the Hoist plant due to a tree falling on a power line during a storm. This caused the facility to trip offline, which resulted in flow from the facility being reduced to zero cfs. A local operator was contacted and dispatched to the plant. At 10:40 the lower level outlet was opened to achieve a flow of 100 cfs.

Due to the distance between the hydroelectric facility and the monitoring location and the time it takes for water to travel between the two locations, a decrease in dissolved oxygen levels was not observed when monitoring data was collected at 10:00. Prior to and after the 11:00 reading, dissolved oxygen levels in the Dead River were 7.3 mg/l. Power was restored to the plant at 13:18 EST. Generation resumed at 13:41 and a flow of approximately 104 cfs was then reestablished through the generator. The lower level outlet was closed at 14:25.

Attached for your review is a table and a graph of the dissolved oxygen monitoring data collected between June 1st and June 19th. If you have any questions about the monitoring data, please feel free to contact me.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Thanks,
Mark

Mark Metcalf
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20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Metcalf, Mark W

From: Metcalf, Mark W
Sent: Wednesday, July 18, 2012 5:10 PM
To: 'Kruger, Kyle'; 'Koetje, Mitch '; 'Taft, Bill '; 'Burr Fisher '
Cc: Meyers, Robert J; Schlorke, Virgil E; Puzen, Shawn C
Subject: Dead River Water Quality Monitoring - July 3 through July 17, 2012
Attachments: 20120718 WQM data thru 0717.pdf

Good afternoon:

Pursuant to Article 408 of the Project License and the water quality monitoring plan for the Dead River Hydroelectric Project, UPPCO is monitoring dissolved oxygen and temperature in the Dead River downstream of the Silver Lake Storage Basin and downstream of the Hoist Powerhouse. Per the monitoring plan, temperature data is collected on an hourly basis from May 1st through October 31st. Dissolved oxygen data is collected hourly from June 1st through September 30th. Dissolved oxygen and temperature monitoring is being conducted at the following locations:

- Where County Road AAO crosses the Dead River, SE ¼ of the NE ¼, Section 17, T48N, R 25W, in the Township of Champion;
- In the natural river channel in the SE ¼ of the NE ¼, Section 16, T48N, R26W, in the Township of Negaunee. The monitoring location is approximately 1,250 yards downstream of the hydroelectric plant.

The dissolved oxygen water quality standard at these locations is 7.0 mg/l. The License monthly average water temperature standard is 68°F during the months of June through August.

Deviations from the dissolved oxygen standard were observed at the above monitoring locations between July 3rd and July 17th. At the County Road AAO monitoring location, dissolved oxygen levels below the water quality standard were observed daily except between July 7th through July 10th. The lowest dissolved oxygen reading observed was 6.3 mg/l on July 4th. Low river flow and warm water temperatures are likely contributing to the low D.O. levels observed. As the Silver Lake Reservoir is still being refilled, UPPCO is only able to release minimum flow from the reservoir (10 CFS). The average daily water temperature of the Dead River at this monitoring location has been above the monthly maximum average temperature of 68°F every day during the month of July.

Downstream of the Hoist Powerhouse, dissolved oxygen levels have been observed below the water quality standard daily between July 3rd and July 17th. The lowest dissolved oxygen reading observed during this time period was 5.9 mg/l. Low river flow and warm water temperatures are likely contributing to the low D.O. levels observed. As previously agreed to with the agencies, UPPCO has reduced the minimum flow from the Hoist Powerhouse from 100 CFS to approximately 90 cfs in order to maintain the water elevation in the Dead River Storage Basin. Dissolved oxygen profiles conducted at the Hoist Powerhouse intake on July 17th shows that the Dead River Storage Basin has stratified between 5 and 6 meters below the surface of the reservoir. Dissolved oxygen levels below 3 mg/l were recorded near the bottom of the reservoir. Temperature data from a profile conducted on July 17th shows that the reservoir is above 66°F at all depths. All hourly water temperature readings at the monitoring location were above the license maximum monthly average water temperature of 68°F. The combination of warm water temperatures, low water flow, and a natural stratification of the Dead River Storage Basin are the likely causes of the low dissolved oxygen levels observed at the monitoring location.

Attached for your review is monitoring data for the month of July at the County Road AAO and Hoist Powerhouse monitoring locations, along with dissolved oxygen and temperature profile data obtained near the Hoist Powerhouse intake. If you have any questions about the monitoring data, please feel free to contact me.

Thanks,
Mark

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

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20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Metcalf, Mark W

From: Metcalf, Mark W
Sent: Wednesday, August 01, 2012 5:48 PM
To: 'Kruger, Kyle'; 'Koetje, Mitch '; 'Taft, Bill '; 'Burr Fisher '
Cc: Meyers, Robert J; Schlorke, Virgil E; Puzen, Shawn C
Subject: RE: Dead River Water Quality Monitoring - July 17 through July 31, 2012
Attachments: 20120801 WQM data thru 0731.pdf; image001.png

Good afternoon:

Pursuant to Article 408 of the Project License and the water quality monitoring plan for the Dead River Hydroelectric Project, UPPCO is monitoring dissolved oxygen and temperature in the Dead River downstream of the Silver Lake Storage Basin and downstream of the Hoist Powerhouse at the following locations:

- Where County Road AAO crosses the Dead River, SE ¼ of the NE ¼, Section 17, T48N, R 25W, in the Township of Champion;
- In the natural river channel in the SE ¼ of the NE ¼, Section 16, T48N, R26W, in the Township of Negaunee. The monitoring location is approximately 1,250 yards downstream of the hydroelectric plant.

The dissolved oxygen water quality standard at these locations is 7.0 mg/l. The License monthly average water temperature standard is 68°F during the months of June through August. Deviations from the dissolved oxygen standard and the monthly maximum average water temperature have been observed at the above monitoring locations.

At the County Road AAO monitoring location, dissolved oxygen levels below the water quality standard were observed daily between July 17th and July 25th. The lowest dissolved oxygen reading observed was 5.9 mg/l on July 23rd. Warm water temperatures and low river flow are the likely cause of the low D.O. levels observed. The average daily water temperature of the Dead River at this monitoring location has been above the License monthly maximum average temperature of 68°F every day except on July 25th and July 26th during the month. Due to the water temperatures observed, an exceedance of the monthly average temperature limitation in the project License has occurred at the County Road AAO monitoring location. The average monthly water temperature at this location through 12:00 on July 31st is 71°F. As the Silver Lake Reservoir is still being refilled, UPPCO is only able to release minimum flow from the reservoir (10 CFS). Consequently, less cold water is available to be released from the reservoir to mitigate high water temperatures and low dissolved oxygen levels downstream of the facility.

Downstream of the Hoist Powerhouse, dissolved oxygen levels have been observed below the water quality standard daily between July 17th and July 31st. The lowest dissolved oxygen reading observed during this time period was 5.4 mg/l on July 27th. Low river flow and warm water temperatures are likely contributing to the low D.O. levels observed. As previously agreed to with the agencies, UPPCO has reduced the minimum flow from the Hoist Powerhouse to less than 100 CFS in order to maintain the water elevation in the Dead River Storage Basin. A dissolved oxygen and temperature profile conducted at the Hoist Powerhouse intake on July 31st shows that the Dead River Storage Basin is stratified with dissolved oxygen levels of less than 1 mg/l in the bottom 1.5 meters of water column. Temperature data from the profile shows that the reservoir is at or above 68°F at all depths. All hourly water temperature readings at the monitoring location were above the License maximum monthly average water temperature of 68°F. As a result, an exceedance of the monthly average temperature limitation in the project License has occurred at this monitoring location. The average monthly water temperature at this location through 14:00 on July 31st is 72°F. The combination of warm water temperatures, low water flow, and a natural stratification of the Dead River Storage Basin are the likely causes of the low dissolved oxygen levels observed at the monitoring location.

Attached for your review is monitoring data for the month of July at the County Road AAO and Hoist Powerhouse monitoring locations, along with dissolved oxygen and temperature profile data obtained near the Hoist Powerhouse intake. If you have any questions about the monitoring data, please feel free to contact me.

20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Mark

Mark Metcalf
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20130108-5027 FERC PDF (Unofficial) 1/8/2013 10:59:08 AM

Metcalf, Mark W

From: Metcalf, Mark W
Sent: Wednesday, August 15, 2012 6:26 PM
To: 'Kruger, Kyle'; 'Koetje, Mitch '; 'Taft, Bill '; 'Burr Fisher '
Cc: Meyers, Robert J; Schlorke, Virgil E; Puzen, Shawn C
Subject: RE: Dead River Water Quality Monitoring - July 31 through August 14, 2012
Attachments: 20120815 WQM data through 0814.pdf; image002.png

Good afternoon:

Pursuant to Article 408 of the Project License and the water quality monitoring plan for the Dead River Hydroelectric Project, UPPCO is monitoring dissolved oxygen and temperature in the Dead River downstream of the Silver Lake Storage Basin and downstream of the Hoist Powerhouse at the following locations:

- Where County Road AAO crosses the Dead River, SE ¼ of the NE ¼, Section 17, T48N, R 25W, in the Township of Champion;
- In the natural river channel in the SE ¼ of the NE ¼, Section 16, T48N, R26W, in the Township of Negaunee. The monitoring location is approximately 1,250 yards downstream of the hydroelectric plant.

The dissolved oxygen water quality standard at these locations is 7.0 mg/l. The License monthly average water temperature standard is 68°F during the months of June through August. Deviations from the dissolved oxygen standard and the monthly maximum average water temperature have been observed at the above monitoring locations.

At the County Road AAO monitoring location, dissolved oxygen levels below the water quality standard were observed daily between July 31st and August 14th. The lowest dissolved oxygen reading observed was 6.2 mg/l on August 6th. Warm water temperatures and low river flow are the likely cause of the low D.O. levels observed. The average daily water temperature of the Dead River at this monitoring location during the monitoring period was above the License monthly maximum average temperature of 68°F from July 31st through August 7th. As reported on August 1st, an exceedance of the monthly average temperature limitation in the project License has occurred at the County Road AAO monitoring location. The average monthly water temperature at this location for the month of July was 71.1°F. As the Silver Lake Reservoir is still being refilled, UPPCO is only able to release minimum flow from the reservoir (10 CFS). Consequently, less cold water is available to be released from the reservoir to mitigate high water temperatures and low dissolved oxygen levels downstream of the facility. Please note that there is a clear pattern to the low DO readings. DO levels are decreasing during the overnight hours and increasing during the day.

Downstream of the Hoist Powerhouse, dissolved oxygen levels have been observed below the water quality standard daily between July 31st and August 14th. Unusually low DO levels were recorded between August 2nd and August 8th, with readings dropping to 3.5 mg/l. I do not believe these readings are representative of actual river conditions. During the monitoring period, there were no operational changes that could have caused or contributed to the low DO readings. When I retrieved the monitor yesterday, there was significant amounts of bioaccumulation on the monitor. A post-deployment calibration of the probe showed that the monitor had not drifted. I took a DO reading in the river immediately below the Hoist Powerhouse with a hand held DO meter at 7:50 pm EST and the river was varying between 7.5 and 7.6 mg/l. The last DO reading recorded on the 14th was 7.5 mg/l. Consequently, I do not believe the monitor malfunctioned and suspect that the low readings were due to biofouling or debris buildup around the probe.

The likely cause of the low DO readings is warm water temperatures and a natural stratification of the Dead River Storage Basin. All hourly water temperature readings at the monitoring location were above the License maximum monthly average water temperature of 68°F. As a result, an exceedance of the monthly average temperature limitation in the project License has occurred at this monitoring location. The average monthly water temperature at this location in July was 72°F. A dissolved oxygen and temperature profile conducted at the Hoist Powerhouse intake on August 14th shows that the Dead River Storage Basin is stratified with dissolved oxygen levels of less than 1 mg/l in the bottom 1.5

meters of water column. A comparison of temperature data from the profile shows that the reservoir is cooling. Just two weeks ago, water temperatures were above 74 degrees to a depth of 8.5 meters. The DO profile conducted yesterday shows the surface water temperature is less than 74 degrees. With the cooler water temperatures, DO levels have increased slightly at the lower depths.

Attached for your review is monitoring data for the month of July and beginning of August at the County Road AAO and Hoist Powerhouse monitoring locations, along with dissolved oxygen and temperature profile data obtained near the Hoist Powerhouse intake. If you have any questions about the monitoring data, please feel free to contact me.

Mark

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Metcalf, Mark W

From: Metcalf, Mark W
Sent: Thursday, August 30, 2012 1:31 PM
To: 'Kruger, Kyle'; 'Koetje, Mitch '; 'Taft, Bill '; 'Burr Fisher '
Cc: Meyers, Robert J; Schlorke, Virgil E; Puzen, Shawn C
Subject: RE: Dead River Water Quality Monitoring - August 14 through August 28, 2012
Attachments: 20120830 AAO Data.pdf

Good afternoon:

Pursuant to Article 408 of the Project License and the water quality monitoring plan for the Dead River Hydroelectric Project, UPPCO is monitoring dissolved oxygen and temperature in the Dead River downstream of the Silver Lake Storage Basin where County Road AAO crosses the Dead River, SE ¼ of the NE ¼, Section 17, T48N, R 25W, in the Township of Champion. The dissolved oxygen water quality standard at this locations is 7.0 mg/l. Deviations from the dissolved oxygen standard have been observed between August 14th and August 28th.

Dissolved oxygen levels below the water quality standard were observed daily between August 24th and August 27th. The lowest dissolved oxygen reading observed was 6.0 mg/l on August 6th. Warm water temperatures and low river flow are the likely cause of the low D.O. levels observed. The daily maximum water temperature was above 70°F each day a deviation was observed. As the Silver Lake Reservoir is still being refilled, UPPCO is only able to release minimum flow from the reservoir (10 CFS). Consequently, less cold water is available to be released from the reservoir to mitigate high water temperatures and low dissolved oxygen levels downstream of the facility. Please note that there is a clear pattern to the low DO readings. DO levels are decreasing during the overnight hours and increasing during the day.

Attached for your review is the monitoring data from County Road AAO collected through August 28th. Please feel free to contact me if you have any questions.

Mark

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Metcalf, Mark W

From: Metcalf, Mark W
Sent: Friday, September 14, 2012 9:40 AM
To: 'Kruger, Kyle'; 'Koetje, Mitch '; 'Taft, Bill '; 'Burr Fisher '
Cc: Meyers, Robert J; Schlorke, Virgil E; Puzen, Shawn C
Subject: Dead River Water Quality Monitoring - August 28 through September 11, 2012
Attachments: 20120914 DR WQM data.pdf

Good morning:

Pursuant to Article 408 of the Project License and the water quality monitoring plan for the Dead River Hydroelectric Project, UPPCO is monitoring dissolved oxygen and temperature in the Dead River downstream of the Silver Lake Storage Basin and downstream of the Hoist Powerhouse at the following locations:

- Where County Road AAO crosses the Dead River, SE ¼ of the NE ¼, Section 17, T48N, R 25W, in the Township of Champion;
- In the natural river channel in the SE ¼ of the NE ¼, Section 16, T48N, R26W, in the Township of Negaunee. The monitoring location is approximately 1,250 yards downstream of the hydroelectric plant.

The dissolved oxygen water quality standard at these locations is 7.0 mg/l. The License monthly average water temperature standard is 68°F during the months of June through August. Deviations from the dissolved oxygen standard and the monthly maximum average water temperature have been observed at the above monitoring locations. Please note that the water quality monitoring equipment used has an accuracy of +/- 0.1 mg/l, per the manufacturer. Therefore, readings below 6.9 mg/l are potential deviations from the water quality standard.

At the County Road AAO monitoring location, dissolved oxygen levels below the water quality standard were observed between 22:00 on September 4th and 01:00 on September 5th. The lowest dissolved oxygen reading observed was 6.9 mg/l. Warm water temperatures and low river flow are the likely cause of the low D.O. levels observed. At the time of the low DO readings, the water temperature of the Dead River at the monitoring location was above 70°F. As the Silver Lake Reservoir is still being refilled, UPPCO is only able to release minimum flow from the reservoir (10 CFS). Consequently, less cold water is available to be released from the reservoir to mitigate high water temperatures and low dissolved oxygen levels downstream of the facility.

Downstream of the Hoist Powerhouse, a deviation from the monthly maximum average temperature occurred during the month of August. The monthly average water temperature in the Dead River as measured at the monitoring location was 70°F. The likely cause of the low DO readings is warm water temperatures in the Dead River Storage Basin. Dissolved oxygen and temperature profiles conducted at the powerhouse intake in August has shown that water temperatures in the reservoir were at or above the downstream temperature standard at all depths except for the bottom 0.5 to 1.0 meters.

Attached for your review is the dissolved oxygen and temperature monitoring data from the County Road AAO for the month of August and beginning of September. Also included is temperature monitoring data for the Hoist Powerhouse monitoring location for the month of August along with dissolved oxygen and temperature profile data obtained near the Hoist Powerhouse intake. If you have any questions about the monitoring data, please feel free to contact me.

Mark

Mark Metcalf
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Metcalf, Mark W

From: Metcalf, Mark W
Sent: Monday, November 26, 2012 10:40 AM
To: 'Taft, Bill '; 'Kruger, Kyle'; 'Burr Fisher '
Cc: 'Koetje, Mitch '; Schlorke, Virgil E; Meyers, Robert J; Puzen, Shawn C
Subject: Dead River 2012 water quality monitoring report
Attachments: 20121126 DR 2012 WQM report.pdf; DR 2012 Appx A.pdf; DR 2012 Appx B.pdf; DR 2012 Appx C.pdf

Good morning,

Attached for your review and comment is the 2012 water quality monitoring report for the Dead River Hydroelectric Project. Please feel free to contact me if you have any questions.

Thanks,
Mark

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

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November 26, 2012 FERC Project No. 10855

Mr. Bill Taft
Water Resources Division
Michigan Dept. of Environmental Quality
P. O. Box 30273
Lansing, MI 48909

Mr. Kyle Kruger
Michigan Dept. of Natural Resources
Mio Field Office
191 South Mt. Tom Rd
Mio, MI 48647

Mr. Burr Fisher
U.S Fish & Wildlife Service
2561 Coolidge Road, Suite 101
East Lansing, MI 48823-6316

Dear Mr. Taft, Mr. Kruger, and Mr. Fisher:

Re: Dead River Hydroelectric Project – 2012 Water Quality Monitoring Report

Per the Order Modifying and Approving Water Quality Monitoring Plan Under Article 408, dated April 17, 2003, and the Order Approving Modification to Approved Water Quality Monitoring Plan Under Article 408, dated March 3, 2005, Upper Peninsula Power Company (UPPCO) is pleased to submit water quality monitoring data collected at the Dead River Hydroelectric Project in 2012 for your review and comment.

During the 2012 monitoring period, water quality monitoring was conducted at the following locations:

- In the Dead River where County Road AAO crosses the Dead River (SE ¼ of the NE ¼, Section 22, T49N, R28W, Township of Champion).
- Downstream of the Hoist Powerhouse in the natural river channel (SE ¼ of the NE ¼, Section 16, T48N, R26W, Township of Negaunee).
- Downstream of the McClure Dam in the Dead River, east of where the LS&I railroad crosses the Dead River (SW ¼ of the NE ¼, Section 16, T48N, R26W, Township of Negaunee).
- In the tailrace of the McClure Powerhouse, upstream of the confluence of the tailrace and the Forestville Basin (SW ¼ of the NE ¼, Section 7, T48N, R25W, Township of Marquette).

Per the water quality monitoring plan, water temperature was monitored at each of the above locations on an hourly basis from May 1st through October 31st, while dissolved oxygen (D.O.) was

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monitored from June 1st through September 30th. Monitoring data for each location can be found in Appendix A. In addition to the hourly monitoring, D.O. and temperature profiles were taken at the intake structures of the Dead River Storage Basin and the McClure Storage Basin powerhouses every two weeks during the months of June through September. Profile data can be found in Appendix B. All equipment quality assurance data can be found in Appendix C.

Please note that the D.O. water quality monitoring equipment has an accuracy of +/- 0.1 mg/l, per the manufacturer. The water quality monitoring equipment was cleaned and calibrated every other week during the monitoring period. Equipment calibration information was used to determine calibration drift that occurred since the previous calibration event. In the event that the meter calibration had drifted by more than 0.1 mg/l between calibration events, the raw monitoring data is corrected assuming a linear degradation of calibration. Therefore, dissolved oxygen concentrations less than 6.9 mg/l are potential deviations from the water quality standard.

AAO Bridge Monitoring Location

At the County Road AAO monitoring location, deviations from the D.O. water quality standard were observed intermittently between July 1st and September 5th. Please note that there were significant diel fluctuations in the D.O. and temperature readings. Both D.O. and temperature decreased during the overnight hours and increased during the day. All of the readings below the D.O. water quality standard occurred during the evening or early morning hours. Daily fluctuations of more than 2 mg/l and 10 °F were observed during the monitoring period. During the monitoring season, there were 168 hourly readings of 6.8 mg/l or less (7.8% of all readings). The majority (128 readings) occurred during the month of July when water temperatures were the highest. At this location, a deviation from the License monthly maximum average temperature of 68°F occurred in July. The average monthly water temperature at this location for the month of July was 71.1°F. A maximum daily average water temperature of 75°F was observed on July 4th and 5th, with hourly maximum temperature 82°F observed on 3 separate days during the month.

The combination of low water flows and warm water temperatures likely caused the dissolved oxygen deviations observed. Due to low water levels in the Silver Lake Storage Basin, UPPCO released minimum flow (15 cfs in June, 10 cfs July - September) in an attempt to maintain the reservoir elevation. As the Silver Lake Reservoir is still being refilled and UPPCO is only able to release minimum flow from the reservoir, less cold water is available to be released from the reservoir to mitigate high water temperatures and low dissolved oxygen levels downstream of the facility.

Hoist Powerhouse Monitoring Location

At the Hoist Powerhouse monitoring location, deviations from the dissolved oxygen water quality standard were observed between June 26th and August 13th. During the monitoring season, there were 796 hourly readings of 6.8 mg/l or less (27.2% of all readings). The majority (526 readings) occurred during the month of July when water temperatures were the highest. Unusually low DO levels were recorded between August 2nd and August 8th, with readings dropping to 3.5 mg/l. UPPCO does not believe these readings between the 2nd and 8th are representative of actual river

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conditions. During the monitoring period, there were no operational changes that could have caused or contributed to the low DO readings. When the water quality monitor was retrieved on August 14th, there was a significant amount of bioaccumulation on the monitor. A post-deployment calibration of the probe showed that the monitor had not drifted. The last DO reading recorded at the downstream monitoring location on the 14th was 7.5 mg/l. To assess the monitor accuracy, a comparison DO reading was taken in the river immediately below the Hoist Powerhouse with a hand held DO meter. DO levels immediately below the powerhouse was varying between 7.5 and 7.6 mg/l. Consequently, it does not appear that the monitor malfunctioned. UPPCO suspects that the low readings were due to bio-fouling or debris buildup around the probe.

The likely cause of the low DO readings is low flow levels, warm water temperatures, and a natural stratification of the Dead River Storage Basin. As agreed to with the resource agencies, UPPCO released less than the License minimum flow of 100 cfs from the Hoist Powerhouse in order to maintain the water elevation in the Dead River Storage Basin during the monitoring season. All hourly water temperature readings between June 29th and August 17th were above the License maximum monthly average water temperature of 68°F. As a result, a deviation from the License monthly maximum average temperature of 68°F occurred in July and August. The average monthly water temperature at this location was 71.7°F and 70.2°F, respectively. A maximum daily average water temperature of 74°F was observed on July 23rd, July 21st, and August 2nd. The maximum hourly temperature observed during the monitoring period was 77°F on July 23rd.

D.O. and temperature profiles conducted at the Hoist Powerhouse intake showed that the Dead River Storage Basin was stratified from early July through the end of August/early September, with low levels of dissolved oxygen in the bottom 1.5 meters of water column. Between July 17th and August 28th, water temperatures were above the downstream license maximum monthly average water temperature of 68°F degrees to a depth of 8.5 to 9.5 meters. As a result, water released through the powerhouse was near or above the License downstream water temperature limitation. Water quality monitoring conducted in 2007 determined that water temperature does increase with distance from the powerhouse due to atmospheric conditions. With elevated water temperatures in the reservoir and a warming of the Dead River due to atmospheric conditions, this resulted in low D.O readings and deviations from the temperature standard at the monitoring location.

<u>Downstream of the McClure Dam</u>

Downstream of the McClure Dam at the LS&I Railroad Bridge monitoring location, there were no deviations from the dissolved oxygen or temperature standards during the monitoring season. Dissolved oxygen levels were above 8.0 mg/l all season. The water temperature at this location was significantly lower than the temperature at the Hoist Powerhouse monitoring location (Table 1). This is expected due to groundwater seepage and springs feeding into this section of river and the deep-water draw at the McClure Dam, located approximately 18’ below the spillway crest, which is releasing 20 cfs of cold water from the hypolimnion of the McClure Storage Basin into the bypassed reach of the Dead River.

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Table 1: Monthly Average Temperature Data (°F)

	AAO Bridge	Hoist Powerhouse	McClure Powerhouse	Dead River @ LS&I Railroad Bridge
May	57.7	55.5	56.0	51.6
June	65.2	65.1	65.0	60.4
July	71.1	71.9	72.5	65.7
August	66.6	70.2	69.9	65.4
September	57.1	62.9	61.3	59.2
October	46.2	49.4	49.5	48.8

Downstream of the McClure Powerhouse

Downstream of the McClure Powerhouse, there were no deviations from the dissolved oxygen or temperature standards during the monitoring season. Dissolved oxygen levels were above the water quality standard of 5.0 mg/l all season. The water temperature observed at this location was consistent with the temperature observed at the Hoist Powerhouse monitoring location. Dissolved oxygen concentrations at this location were above 7 mg/l throughout June, August and September, and were above 6 mg/l in July. DO levels were slightly higher at this monitoring location compared to the monitoring location downstream of the Hoist Powerhouse.

Enclosed for your review is the DO and temperature monitoring data, profile monitoring data from the Hoist and McClure developments, and all quality assurance documentation. Please review the enclosed information and provide 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.

Sincerely,

Mark Metcalf

Mark W. Metcalf
Environmental Consultant - Air & Water
Integrys Business Support, LLC
Telephone: (920) 433-1833

Attach: Water Quality Monitoring Results

cc: Mr. Mitch Koetje - MDNR
Mr. Robert Meyers - UPPCO
Mr. Virgil Schlorke - UPPCO
Mr. Shawn Puzen - Integrys Business Support

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Response to Comments from the Resource Agencies on the

2012 Dead River Hydroelectric Project Water Quality Monitoring Report

The Michigan Department of Natural Resources, Michigan Department of Environmental Quality, and U.S. Fish & Wildlife Service did not respond with comments on the Dead River Hydroelectric Project 2012 water quality monitoring report dated November 26, 2012.

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Document Content(s)