



**Upper Peninsula Power Company**

(a subsidiary of WPS Resources Corporation)

600 E. Lakeshore Drive

P.O. Box 130

Houghton, MI 49931-0130

ORIGINAL

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OFFICE OF THE  
SECRETARY

2005 SEP 22 P 3:47

FEDERAL ENERGY  
REGULATORY COMMISSION

FERC Project No. 1864

September 21, 2005

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

Dear Secretary Salas:

Bond Falls Hydroelectric Project Water Quality Monitoring Data

As per the Order Modifying and Approving Water Quality Monitoring Plan Under Article 409, dated February 16, 2005, Upper Peninsula Power Company (UPPCO) is submitting a notice of deviations observed from the water quality standards.

Per the water quality-monitoring plan for the Bond Falls Hydroelectric Project, dissolved oxygen (D.O.) and temperature are being monitored below the Cisco Dam on the Cisco Branch of the Ontonagon River. The water quality standard in the Ontonagon River below the Cisco Dam is 5.0 mg/l D.O. Between August 31<sup>st</sup> and September 14<sup>th</sup>, 2005, hourly readings have been observed below the water quality standard. UPPCO believes the deviations observed at the Cisco Dam monitoring location are due to low water flow and warm temperatures that have been observed throughout the Upper Peninsula of Michigan.

Copies of the D.O. and temperature data from the Cisco Dam monitoring location during the periods when deviations have been observed are included in Appendix A. USGS gauge height information from a station near the Cisco Dam is also included. Dissolved oxygen data has been corrected for any loss of instrument calibration greater than 0.10 mg/l.

Upper Peninsula Power Company (UPPCO) has consulted with the Bond Falls Implementation Team about the water quality monitoring data. Documentation of Agency Consultation is included in Appendix B.

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

Sincerely,

Terry P. Jensky  
Assistant Vice President - Energy Supply Operations  
for Wisconsin Public Service Corporation  
Telephone: (715) 355-2047

Enc.

- cc: Mr. Gil Snyder, WPSC - D2
- Mr. Shawn Puzen, WPSC - D2
- Ms. Peggy Harding, FERC - Chicago
- Ms. Joan Johaneck, WPSC - D2 (file)
- Mr. Bob Meyers, UPPCO - UIS (cover only)
- Bond Falls Implementation Team (cover only)

## **Appendix A**

# **Water Quality Monitoring Data: Below Cisco Dam**

Cisco Branch of Ontonogan River 08/31/05 - 09/14/05

Date	Time	Temp	pH	SpCond	DO%	Corrected	USGS
MMDDYY	HHMMSS	°C	Units	mS/cm	Sat	DO mg/l	Gauge Height
8/31/2005	14:00:00	16.33	9.37	0.205	53.9	4.95	3.88
8/31/2005	15:00:00	17.05	9.37	0.224	56	5.07	3.88
8/31/2005	16:00:00	18.23	9.42	0.207	63	5.56	3.88
8/31/2005	17:00:00	17.29	9.27	0.207	50	4.51	3.87
8/31/2005	18:00:00	16.17	9.09	0.214	38.6	3.57	3.87
8/31/2005	19:00:00	15.53	9.1	0.211	37.5	3.51	3.88
8/31/2005	20:00:00	15.63	9.08	0.201	37.7	3.52	3.88
8/31/2005	21:00:00	14.12	9.1	0.225	24.4	2.36	3.88
8/31/2005	22:00:00	13.5	9.2	0.232	19.1	1.88	3.88
8/31/2005	23:00:00	13.13	9.32	0.236	16	1.61	3.88
9/1/2005	0:00:00	12.41	9.42	0.244	12.7	1.28	3.88
9/1/2005	1:00:00	12.55	9.52	0.235	15.6	1.56	3.88
9/1/2005	2:00:00	12.69	9.6	0.232	16.1	1.62	3.88
9/1/2005	3:00:00	12.42	9.61	0.235	14.6	1.48	3.88
9/1/2005	4:00:00	12.22	9.66	0.234	14.2	1.44	3.88
9/1/2005	5:00:00	12.48	9.66	0.229	14.9	1.51	3.88
9/1/2005	6:00:00	12.9	9.69	0.209	21.4	2.14	3.88
9/1/2005	7:00:00	13.02	9.65	0.212	21.4	2.13	3.88
9/1/2005	8:00:00	13.08	9.67	0.1999	25.8	2.57	3.88
9/1/2005	9:00:00	12.54	9.66	0.207	22	2.22	3.89
9/1/2005	10:00:00	12.64	9.68	0.1995	24.1	2.42	3.89
9/1/2005	11:00:00	12.67	9.6	0.202	25.9	2.60	3.89
9/1/2005	12:00:00	13.39	9.46	0.1973	31.7	3.14	3.89
9/1/2005	13:00:00	13.26	9.38	0.224	29.6	2.94	3.89
9/1/2005	14:00:00	14.06	9.5	0.229	31.8	3.09	3.89
9/1/2005	15:00:00	14.89	9.6	0.242	35.7	3.41	3.88
9/1/2005	16:00:00	15.45	9.71	0.239	44.3	4.18	3.88
9/1/2005	17:00:00	14.84	9.55	0.234	39.8	3.81	3.88
9/1/2005	18:00:00	14.77	9.58	0.227	33.3	3.19	3.88
9/1/2005	19:00:00	13.76	9.79	0.234	25.4	2.50	3.88
9/1/2005	20:00:00	13.58	9.64	0.227	25.2	2.49	3.88
9/1/2005	21:00:00	12.23	9.67	0.252	12.2	1.26	3.88
9/1/2005	22:00:00	11.21	9.79	0.262	6.6	0.72	3.88
9/1/2005	23:00:00	11.28	9.83	0.255	9.4	1.01	3.89
9/2/2005	0:00:00	11.28	9.82	0.252	10.8	1.15	3.89
9/2/2005	1:00:00	10.98	9.81	0.253	9.1	0.98	3.88
9/2/2005	2:00:00	10.73	9.82	0.253	9.8	1.06	3.88
9/2/2005	3:00:00	10.7	9.8	0.248	10.7	1.15	3.88
9/2/2005	4:00:00	10.54	9.84	0.254	8.8	0.97	3.88
9/2/2005	5:00:00	10.81	9.78	0.248	10.5	1.14	3.89
9/2/2005	6:00:00	11.09	9.78	0.232	14.5	1.54	3.89
9/2/2005	7:00:00	11.03	9.79	0.235	13.6	1.46	3.89
9/2/2005	8:00:00	10.96	9.75	0.239	13.9	1.48	3.89
9/2/2005	9:00:00	10.99	9.78	0.241	14.5	1.55	3.89
9/2/2005	10:00:00	11.32	9.74	0.238	21.1	2.21	3.89
9/2/2005	11:00:00	11.36	9.63	0.238	23.2	2.43	3.88
9/2/2005	12:00:00	12.11	9.48	0.232	33	3.37	3.86

## Cisco Branch of Ontonogan River 08/31/05 - 09/14/05

Date MMDDYY	Time HHMMSS	Temp °C	pH Units	SpCond mS/cm	DO% Sat	Corrected	USGS
						DO mg/l	Gauge Height
9/2/2005	13:00:00	11.89	9.45	0.239	33	3.40	3.86
9/2/2005	14:00:00	12.3	9.55	0.23	41.6	4.23	3.85
9/2/2005	15:00:00	12.86	9.66	0.249	39.9	4.01	3.86
9/2/2005	16:00:00	14.12	9.67	0.232	48	4.68	3.86
9/2/2005	17:00:00	13.68	9.52	0.23	38	3.76	3.86
9/2/2005	18:00:00	13.03	9.49	0.236	30.4	3.06	3.85
9/2/2005	19:00:00	12.33	9.4	0.244	21.8	2.24	3.85
9/2/2005	20:00:00	12.06	9.4	0.236	20.8	2.16	3.85
9/2/2005	21:00:00	11.47	9.64	0.246	14.7	1.57	3.86
9/2/2005	22:00:00	10.97	9.8	0.254	11.7	1.28	3.86
9/2/2005	23:00:00	10.86	9.85	0.252	11.2	1.23	3.85
9/3/2005	0:00:00	10.99	9.86	0.247	13.8	1.49	3.83
9/3/2005	1:00:00	10.81	9.85	0.246	12.1	1.32	3.83
9/3/2005	2:00:00	11.45	9.85	0.222	21.3	2.25	3.84
9/3/2005	3:00:00	10.87	9.8	0.242	14.7	1.60	3.85
9/3/2005	4:00:00	10.83	9.81	0.237	15.4	1.67	3.84
9/3/2005	5:00:00	10.79	9.79	0.232	17	1.84	3.84
9/3/2005	6:00:00	10.77	9.78	0.223	20.6	2.22	3.84
9/3/2005	7:00:00	10.67	9.74	0.222	20.9	2.26	3.84
9/3/2005	8:00:00	10.53	9.76	0.222	21.5	2.32	3.85
9/3/2005	9:00:00	10.35	9.76	0.23	18.8	2.05	3.84
9/3/2005	10:00:00	11.07	9.71	0.2	30.1	3.19	3.84
9/3/2005	11:00:00	11.79	9.69	0.1819	40.5	4.19	3.84
9/3/2005	12:00:00	11.19	9.7	0.215	29.3	3.10	3.84
9/3/2005	13:00:00	11.5	9.67	0.23	27	2.84	3.84
9/3/2005	14:00:00	11.73	9.54	0.248	25.5	2.67	3.84
9/3/2005	15:00:00	12.57	9.64	0.254	30	3.08	3.84
9/3/2005	16:00:00	13.46	9.6	0.252	38.2	3.82	3.83
9/3/2005	17:00:00	12.76	9.5	0.251	34.9	3.55	3.84
9/3/2005	18:00:00	12.06	9.4	0.255	27.6	2.88	3.84
9/3/2005	19:00:00	12.05	9.4	0.252	21.9	2.30	3.84
9/3/2005	20:00:00	12.23	9.88	0.241	20.8	2.18	3.85
9/3/2005	21:00:00	11.2	9.68	0.257	11.4	1.26	3.85
9/3/2005	22:00:00	10.91	9.88	0.256	10.8	1.21	3.85
9/3/2005	23:00:00	10.36	9.91	0.259	9.3	1.07	3.85
9/4/2005	0:00:00	10.26	9.93	0.261	6.9	0.82	3.85
9/4/2005	1:00:00	10.17	9.95	0.258	7.1	0.85	3.85
9/4/2005	2:00:00	9.88	9.95	0.258	7.6	0.90	3.85
9/4/2005	3:00:00	9.75	9.91	0.26	6.7	0.82	3.85
9/4/2005	4:00:00	9.87	9.92	0.257	6.8	0.82	3.85
9/4/2005	5:00:00	9.96	10	0.254	9	1.05	3.85
9/4/2005	6:00:00	11.29	9.86	0.215	20.7	2.22	3.85
9/4/2005	7:00:00	12.16	9.87	0.1873	30.7	3.20	3.85
9/4/2005	8:00:00	12.57	9.79	0.175	37.6	3.86	3.85
9/4/2005	9:00:00	13.08	9.58	0.1618	44.6	4.51	3.85
9/4/2005	10:00:00	13.46	9.33	0.1559	49.3	4.93	3.85
9/4/2005	11:00:00	13.41	9.37	0.1635	49.7	4.98	3.85
9/4/2005	12:00:00	13.79	9.37	0.1753	50.5	5.01	3.85
9/4/2005	13:00:00	13.32	9.22	0.214	35.5	3.59	3.85

Cisco Branch of Ontonogan River 08/31/05 - 09/14/05

Date	Time	Temp	pH	SpCond	DO%	Corrected DO	USGS Gauge Height
MMDDYY	HHMMSS	°C	Units	mS/cm	Sat	mg/l	Height
9/4/2005	14:00:00	13.74	9.29	0.232	30.5	3.07	3.85
9/4/2005	15:00:00	14.75	9.66	0.243	40.1	3.91	3.85
9/4/2005	16:00:00	16.19	9.66	0.227	52.5	4.96	3.85
9/4/2005	17:00:00	15.53	9.39	0.228	41.8	4.02	3.85
9/4/2005	18:00:00	14.32	9.26	0.232	33.9	3.37	3.85
9/4/2005	19:00:00	14.05	9.2	0.225	32.7	3.28	3.85
9/4/2005	20:00:00	13.79	9.19	0.223	28.3	2.86	3.85
9/4/2005	21:00:00	12.72	9.35	0.236	19.3	2.03	3.85
9/4/2005	22:00:00	12.13	9.58	0.243	14.1	1.54	3.85
9/4/2005	23:00:00	11.56	9.86	0.245	14	1.54	3.85
9/5/2005	0:00:00	11.15	9.91	0.248	11.4	1.29	3.86
9/5/2005	1:00:00	10.85	9.94	0.252	9.8	1.15	3.86
9/5/2005	2:00:00	10.62	9.92	0.253	8.2	0.99	3.86
9/5/2005	3:00:00	10.59	9.88	0.249	10	1.17	3.86
9/5/2005	4:00:00	10.83	9.88	0.243	11.8	1.35	3.86
9/5/2005	5:00:00	10.78	9.94	0.239	11.8	1.35	3.86
9/5/2005	6:00:00	11.09	9.85	0.23	15.3	1.71	3.86
9/5/2005	7:00:00	11.2	9.92	0.23	15.7	1.75	3.86
9/5/2005	8:00:00	11.07	9.91	0.229	14.7	1.65	3.87
9/5/2005	9:00:00	11.18	9.84	0.229	17.5	1.95	3.87
9/5/2005	10:00:00	11.35	9.7	0.224	21.6	2.36	3.88
9/5/2005	11:00:00	10.83	9.36	0.241	19.8	2.19	3.87
9/5/2005	12:00:00	11.34	9.21	0.241	26	2.80	3.87
9/5/2005	13:00:00	11.05	9.14	0.26	25.4	2.76	3.87
9/5/2005	14:00:00	11.52	9.16	0.264	31.3	3.34	3.87
9/5/2005	15:00:00	12.44	9.29	0.263	37.5	3.90	3.87
9/5/2005	16:00:00	12.66	9.22	0.262	41.8	4.30	3.88
9/5/2005	17:00:00	12.51	9.09	0.261	37.3	3.86	3.87
9/5/2005	18:00:00	11.96	8.96	0.26	29.4	3.12	3.89
9/5/2005	19:00:00	11.68	8.81	0.26	19.6	2.15	3.88
9/5/2005	20:00:00	11.87	9.32	0.256	13	1.47	3.87
9/5/2005	21:00:00	11.1	9.85	0.262	7.5	0.92	3.87
9/5/2005	22:00:00	10.45	9.96	0.264	5.4	0.71	3.87
9/5/2005	23:00:00	10.07	9.99	0.265	4.9	0.66	3.87
9/6/2005	0:00:00	10.09	9.91	0.264	4.2	0.59	3.87
9/6/2005	1:00:00	9.88	10.03	0.263	4.8	0.66	3.87
9/6/2005	2:00:00	9.79	10.04	0.265	3.6	0.53	3.87
9/6/2005	3:00:00	9.67	10.01	0.265	3.4	0.52	3.87
9/6/2005	4:00:00	9.84	9.96	0.262	4.9	0.66	3.87
9/6/2005	5:00:00	9.58	10.03	0.265	3.4	0.52	3.87
9/6/2005	6:00:00	10.73	9.98	0.253	6.4	0.83	3.86
9/6/2005	7:00:00	10.04	9.97	0.258	6.3	0.82	3.86
9/6/2005	8:00:00	9.8	10	0.26	5.3	0.72	3.87
9/6/2005	9:00:00	9.88	9.98	0.258	5	0.69	3.86
9/6/2005	10:00:00	9.84	9.84	0.262	6.1	0.80	3.86
9/6/2005	11:00:00	9.97	9.85	0.258	8.1	1.03	3.87
9/6/2005	12:00:00	10.23	9.72	0.258	11.4	1.37	3.87
9/6/2005	13:00:00	10.49	9.36	0.26	14.8	1.72	3.88
9/6/2005	14:00:00	11.06	9.16	0.259	17.8	2.01	3.87

Cisco Branch of Ontonogan River 08/31/05 - 09/14/05

Date	Time	Temp	pH	SpCond	DO%	Corrected DO	USGS Gauge Height
MMDDYY	HHMMSS	°C	Units	mS/cm	Sat	mg/l	
9/6/2005	15:00:00	12.39	9.36	0.262	24.6	2.63	3.88
9/6/2005	16:00:00	13.74	9.21	0.259	33.8	3.45	3.88
9/6/2005	17:00:00	13.45	8.88	0.254	28.6	2.99	3.88
9/6/2005	18:00:00	12.91	8.94	0.255	21.2	2.27	3.88
9/6/2005	19:00:00	12.33	9.6	0.254	13.9	1.57	3.87
9/6/2005	20:00:00	12.16	9.75	0.254	10.5	1.24	3.86
9/6/2005	21:00:00	11.33	9.89	0.263	5.5	0.75	3.86
9/6/2005	22:00:00	10.84	10	0.266	3.6	0.56	3.87
9/6/2005	23:00:00	10.53	10.04	0.265	3.9	0.58	3.86
9/7/2005	0:00:00	10.41	10.02	0.264	4	0.60	3.86
9/7/2005	1:00:00	10.24	10.03	0.264	4.2	0.62	3.86
9/7/2005	2:00:00	10.16	10.04	0.266	3.3	0.53	3.86
9/7/2005	3:00:00	10.49	10.01	0.259	6.2	0.83	3.86
9/7/2005	4:00:00	10.71	9.98	0.253	7.4	0.96	3.86
9/7/2005	5:00:00	10.75	10.02	0.251	8.2	1.05	3.86
9/7/2005	6:00:00	10.35	10.07	0.252	7.5	0.98	3.85
9/7/2005	7:00:00	10.44	10.07	0.251	7.4	0.97	3.86
9/7/2005	8:00:00	10.57	9.96	0.245	10.6	1.30	3.86
9/7/2005	9:00:00	11.7	9.78	0.232	19.6	2.19	3.85
9/7/2005	10:00:00	12.47	9.6	0.226	28.5	3.04	3.85
9/7/2005	11:00:00	12.56	9.32	0.223	33.8	3.56	3.84
9/7/2005	12:00:00	13.21	8.91	0.219	40.9	4.21	3.84
9/7/2005	13:00:00	12.99	8.87	0.227	45.5	4.69	3.83
9/7/2005	14:00:00	13.13	8.96	0.229	47.4	4.86	3.83
9/7/2005	15:00:00	12.41	8.98	0.242	43.3	4.53	3.84
9/7/2005	16:00:00	12.25	8.94	0.246	36.7	3.88	3.83
9/7/2005	17:00:00	11.85	8.82	0.253	31.5	3.39	3.84
9/7/2005	18:00:00	11.58	8.76	0.254	27.2	2.97	3.84
9/7/2005	19:00:00	11.56	8.66	0.25	22.1	2.46	3.84
9/7/2005	20:00:00	11.23	8.69	0.249	17	1.95	3.84
9/7/2005	21:00:00	10.68	8.8	0.257	10.2	1.26	3.84
9/7/2005	22:00:00	10.49	9.4	0.255	11.6	1.42	3.84
9/7/2005	23:00:00	10.39	9.88	0.253	10.6	1.33	3.84
9/8/2005	0:00:00	10.25	9.89	0.253	10	1.26	3.84
9/8/2005	1:00:00	10.12	9.95	0.251	11.1	1.38	3.83
9/8/2005	2:00:00	10.06	9.94	0.25	10.8	1.35	3.83
9/8/2005	3:00:00	9.8	10	0.251	10.7	1.35	3.83
9/8/2005	4:00:00	9.72	9.98	0.252	9.9	1.26	3.83
9/8/2005	5:00:00	9.97	9.92	0.246	11.6	1.44	3.83
9/8/2005	6:00:00	10.1	9.86	0.236	15	1.80	3.84
9/8/2005	7:00:00	9.79	9.9	0.24	12.4	1.53	3.84
9/8/2005	8:00:00	9.7	9.82	0.243	12.5	1.55	3.84
9/8/2005	9:00:00	9.77	9.62	0.243	15.3	1.85	3.83
9/8/2005	10:00:00	9.9	9.45	0.244	19.2	2.25	3.83
9/8/2005	11:00:00	9.9	9.17	0.249	21.3	2.48	3.84
9/8/2005	12:00:00	10.41	8.93	0.246	28.1	3.16	3.83
9/8/2005	13:00:00	10.49	8.78	0.259	32.3	3.60	3.84
9/8/2005	14:00:00	10.96	8.92	0.255	29.4	3.26	3.84
9/8/2005	15:00:00	12.52	9.05	0.256	35.1	3.73	3.84

Cisco Branch of Ontonogan River 08/31/05 - 09/14/05

Date	Time	Temp	pH	SpCond	DO%	Corrected DO	USGS Gauge Height
MMDDYY	HHMMSS	°C	Units	mS/cm	Sat	mg/l	
9/8/2005	16:00:00	13.51	9.06	0.25	44.8	4.60	3.84
9/8/2005	17:00:00	13.06	8.78	0.241	34.2	3.61	3.84
9/8/2005	18:00:00	12.19	8.61	0.247	21.7	2.41	3.84
9/8/2005	19:00:00	11.72	8.71	0.251	16.7	1.92	3.84
9/8/2005	20:00:00	11.56	9.04	0.245	16.9	1.96	3.84
9/8/2005	21:00:00	10.49	9.62	0.261	8.5	1.12	3.83
9/8/2005	22:00:00	10.3	9.97	0.26	7.4	1.01	3.84
9/8/2005	23:00:00	10.03	9.97	0.259	6.7	0.95	3.83
9/9/2005	0:00:00	9.96	9.97	0.257	7.6	1.04	3.84
9/9/2005	1:00:00	9.66	9.98	0.249	14.5	1.78	3.84
9/9/2005	2:00:00	10.38	9.7	0.239	14.4	1.75	3.84
9/9/2005	3:00:00	9.69	9.76	0.252	8.8	1.18	3.83
9/9/2005	4:00:00	9.56	9.86	0.251	8.5	1.15	3.83
9/9/2005	5:00:00	9.42	9.96	0.255	6.4	0.93	3.83
9/9/2005	6:00:00	9.7	9.95	0.248	10	1.30	3.83
9/9/2005	7:00:00	9.44	9.97	0.249	9.3	1.23	3.84
9/9/2005	8:00:00	9.29	9.97	0.25	8.5	1.17	3.84
9/9/2005	9:00:00	9.38	9.85	0.249	10.4	1.36	3.84
9/9/2005	10:00:00	9.22	9.67	0.255	10.5	1.38	3.84
9/9/2005	11:00:00	9.91	9.43	0.246	15.1	1.84	3.84
9/9/2005	12:00:00	10	9.21	0.247	19.4	2.30	3.84
9/9/2005	13:00:00	10.12	8.99	0.257	18.9	2.24	3.84
9/9/2005	14:00:00	10.66	8.97	0.261	28.6	3.23	3.85
9/9/2005	15:00:00	11.72	9.08	0.259	35.5	3.85	3.84
9/9/2005	16:00:00	11.85	9.13	0.26	37.6	4.06	3.84
9/9/2005	17:00:00	11.63	9.01	0.26	36.9	4.02	3.84
9/9/2005	18:00:00	11.4	8.77	0.26	29.7	3.30	3.84
9/9/2005	19:00:00	11.26	8.55	0.258	21.5	2.46	3.84
9/9/2005	20:00:00	11.07	8.59	0.258	14.8	1.79	3.83
9/9/2005	21:00:00	10.87	8.71	0.252	12	1.50	3.83
9/9/2005	22:00:00	10.42	9.13	0.258	7.5	1.05	3.84
9/9/2005	23:00:00	9.91	9.68	0.262	5.8	0.88	3.84
9/10/2005	0:00:00	9.53	9.87	0.265	3.7	0.66	3.84
9/10/2005	1:00:00	9.15	10.01	0.264	4.5	0.75	3.84
9/10/2005	2:00:00	8.98	10.01	0.265	3	0.59	3.84
9/10/2005	3:00:00	8.9	10.02	0.265	3.3	0.63	3.84
9/10/2005	4:00:00	8.73	10.06	0.266	2.8	0.57	3.84
9/10/2005	5:00:00	8.98	10.05	0.265	3.5	0.65	3.83
9/10/2005	6:00:00	9.04	10.09	0.265	2.4	0.53	3.83
9/10/2005	7:00:00	9.35	10.1	0.261	4.6	0.76	3.84
9/10/2005	8:00:00	9.01	10.13	0.264	4.2	0.72	3.84
9/10/2005	9:00:00	9.3	9.86	0.261	6.9	1.01	3.85
9/10/2005	10:00:00	9.85	9.51	0.257	9.6	1.30	3.85
9/10/2005	11:00:00	10.06	9.2	0.257	14.9	1.85	3.85
9/10/2005	12:00:00	10.36	8.75	0.258	19.9	2.37	3.85
9/10/2005	13:00:00	10.7	8.89	0.26	23.2	2.70	3.86
9/10/2005	14:00:00	10.91	9.06	0.259	29	3.28	3.86
9/10/2005	15:00:00	11.53	9.16	0.263	35.8	3.93	3.86
9/10/2005	16:00:00	11.93	9.12	0.264	35.4	3.86	3.86

Cisco Branch of Ontonogan River 08/31/05 - 09/14/05

Date	Time	Temp	pH	SpCond	DO%	Corrected DO	USGS Gauge Height
MMDDYY	HHMMSS	°C	Units	mS/cm	Sat	mg/l	
9/10/2005	17:00:00	12.04	9.04	0.262	33.2	3.83	3.85
9/10/2005	18:00:00	11.38	8.85	0.261	28.1	3.17	3.85
9/10/2005	19:00:00	11.08	8.8	0.263	21.5	2.51	3.84
9/10/2005	20:00:00	10.78	8.59	0.264	15	1.84	3.81
9/10/2005	21:00:00	10.19	8.64	0.266	9.2	1.25	3.83
9/10/2005	22:00:00	9.8	8.83	0.267	5	0.82	3.85
9/10/2005	23:00:00	9.49	9.39	0.266	4.9	0.81	3.86
9/11/2005	0:00:00	9.31	10.02	0.266	4.2	0.74	3.86
9/11/2005	1:00:00	9.13	10.09	0.268	3.5	0.67	3.86
9/11/2005	2:00:00	9.06	10.11	0.268	2.5	0.58	3.86
9/11/2005	3:00:00	8.99	10.1	0.269	3	0.62	3.86
9/11/2005	4:00:00	9.09	10.11	0.268	2.3	0.55	3.86
9/11/2005	5:00:00	9.01	10.12	0.268	2.3	0.55	3.85
9/11/2005	6:00:00	8.82	10.16	0.269	2.1	0.53	3.85
9/11/2005	7:00:00	9	10.2	0.267	1.3	0.44	3.85
9/11/2005	8:00:00	9.07	10.21	0.27	2.2	0.54	3.86
9/11/2005	9:00:00	9.2	9.93	0.27	3.4	0.67	3.86
9/11/2005	10:00:00	9.56	9.49	0.266	7.4	1.09	3.85
9/11/2005	11:00:00	9.49	9.11	0.267	11.7	1.56	3.86
9/11/2005	12:00:00	9.71	8.68	0.265	16.8	2.10	3.86
9/11/2005	13:00:00	10	8.85	0.266	24.5	2.91	3.87
9/11/2005	14:00:00	10.32	9	0.265	26.8	3.12	3.87
9/11/2005	15:00:00	11.56	9.13	0.265	36.2	4.00	3.87
9/11/2005	16:00:00	12.27	9.08	0.266	36.1	3.93	3.88
9/11/2005	17:00:00	11.83	8.92	0.264	32.6	3.61	3.88
9/11/2005	18:00:00	12.17	8.75	0.262	31.5	3.48	3.87
9/11/2005	19:00:00	11.16	8.52	0.264	19.9	2.36	3.86
9/11/2005	20:00:00	10.83	8.52	0.264	11.5	1.52	3.86
9/11/2005	21:00:00	10.3	8.61	0.266	6.5	1.00	3.86
9/11/2005	22:00:00	9.89	8.94	0.267	4.4	0.79	3.86
9/11/2005	23:00:00	9.73	9.8	0.268	3.6	0.70	3.86
9/12/2005	0:00:00	9.57	10.08	0.269	3.5	0.69	3.86
9/12/2005	1:00:00	9.41	10.13	0.268	3.7	0.72	3.87
9/12/2005	2:00:00	9.32	10.15	0.268	2.5	0.59	3.87
9/12/2005	3:00:00	9.25	10.16	0.269	2.3	0.57	3.86
9/12/2005	4:00:00	9.21	10.18	0.269	2.2	0.56	3.86
9/12/2005	5:00:00	9.25	10.18	0.269	1.4	0.48	3.86
9/12/2005	6:00:00	9.28	10.2	0.269	1.7	0.52	3.86
9/12/2005	7:00:00	9.25	10.25	0.268	1.5	0.49	3.87
9/12/2005	8:00:00	9.3	10.02	0.267	2.1	0.55	3.87
9/12/2005	9:00:00	9.3	9.62	0.266	5.2	0.89	3.87
9/12/2005	10:00:00	9.62	9.28	0.264	9.2	1.32	3.86
9/12/2005	11:00:00	9.54	8.7	0.265	14	1.83	3.86
9/12/2005	12:00:00	9.81	8.8	0.264	21.8	2.64	3.86
9/12/2005	13:00:00	10.04	8.82	0.264	25.1	2.99	3.86
9/12/2005	14:00:00	10.13	9.01	0.264	27.8	3.28	3.87
9/12/2005	15:00:00	10.81	9.06	0.262	32.8	3.74	3.86
9/12/2005	16:00:00	10.95	8.79	0.261	29	3.34	3.86
9/12/2005	17:00:00	12.4	8.48	0.252	29.9	3.33	3.85



Cisco Branch of Ontonogan River 08/31/05 - 09/14/05

Date	Time	Temp	pH	SpCond	DO%	Corrected DO	USGS Gauge Height
MMDDYY	HHMMSS	°C	Units	mS/cm	Sat	mg/l	
9/12/2005	18:00:00	13.44	8.4	0.231	28.9	3.17	3.85
9/12/2005	19:00:00	16.25	8.53	0.1823	42.2	4.22	3.85
9/12/2005	20:00:00	17	8.55	0.1757	40.6	4.01	3.85
9/12/2005	21:00:00	20.27	8.19	0.1307	66.5	5.97	3.85
9/12/2005	22:00:00	21.52	8.38	0.1175	73.3	6.41	3.85
9/12/2005	23:00:00	21.64	8.32	0.1135	70	6.13	3.85
9/13/2005	0:00:00	21.35	7.95	0.1145	60.1	5.34	3.85
9/13/2005	1:00:00	20.77	7.83	0.1073	69	6.14	3.85
9/13/2005	2:00:00	20.78	7.74	0.1079	64.1	5.73	3.85
9/13/2005	3:00:00	20.96	7.84	0.1012	72.5	6.42	3.85
9/13/2005	4:00:00	21.16	7.83	0.1032	70.8	6.25	3.85
9/13/2005	5:00:00	21.08	7.83	0.1049	68.5	6.07	3.86
9/13/2005	6:00:00	20.85	7.83	0.107	66	5.89	3.86
9/13/2005	7:00:00	20.59	7.81	0.1074	64.8	5.82	3.86
9/13/2005	8:00:00	20.49	7.86	0.1073	66	5.93	3.86
9/13/2005	9:00:00	20.47	8	0.1071	72.5	6.48	3.86
9/13/2005	10:00:00	20.7	8.31	0.1065	84.4	7.46	3.86
9/13/2005	11:00:00	21.59	8.68	0.105	99.3	8.56	3.87
9/13/2005	12:00:00	21.75	9.07	0.1044	108	9.26	3.86
9/13/2005	13:00:00	22.8	9.22	0.1035	118.7	9.94	3.86
9/13/2005	14:00:00	23.75	9.35	0.1044	128.8	10.42	3.87
9/13/2005	15:00:00	24.09	9.46	0.1035	131.8	10.75	3.86
9/13/2005	16:00:00	24.42	9.48	0.1044	134.9	10.94	3.85
9/13/2005	17:00:00	24.14	9.42	0.105	130	10.61	3.87
9/13/2005	18:00:00	23.66	9.27	0.1057	119.9	9.89	3.87
9/13/2005	19:00:00	23.15	9.07	0.106	109	9.11	3.89
9/13/2005	20:00:00	22.54	8.76	0.1072	96.6	8.21	3.88
9/13/2005	21:00:00	21.86	8.3	0.11	82.4	7.14	3.91
9/13/2005	22:00:00	21.2	7.96	0.112	71.1	6.29	3.91
9/13/2005	23:00:00	20.69	7.78	0.1125	64.7	5.81	3.91
9/14/2005	0:00:00	20.19	7.69	0.1136	60.2	5.49	3.92
9/14/2005	1:00:00	19.78	7.64	0.1133	58.7	5.41	3.93
9/14/2005	2:00:00	19.34	7.6	0.1142	56.7	5.27	3.93
9/14/2005	3:00:00	18.86	7.59	0.1138	55.9	5.26	3.96
9/14/2005	4:00:00	18.32	7.56	0.1141	54.4	5.17	3.96
9/14/2005	5:00:00	17.82	7.55	0.1145	53.7	5.17	3.94
9/14/2005	6:00:00	17.35	7.53	0.1147	54	5.24	3.95
9/14/2005	7:00:00	16.88	7.55	0.114	53.9	5.27	3.95
9/14/2005	8:00:00	16.46	7.59	0.1137	55.4	5.47	3.93
9/14/2005	9:00:00	16.19	7.66	0.1141	59.7	5.90	3.94
9/14/2005	10:00:00	16.33	7.77	0.1136	65.8	6.43	3.94
9/14/2005	11:00:00	17.12	8.02	0.1124	79.1	7.54	3.94
9/14/2005	12:00:00	18.4	8.66	0.1118	94	8.67	3.94

## **Appendix B**

### **Documentation of Agency Consultation**

**From:** Mark Metcalf  
**To:** Bussiere, Donald; Deephouse, Bill; Deloria, Christie; Evans, Robert A; Fedora, Mark; Martini, Bob; Mensch, Gene; Meyers, Robert; Mistak, Jessica; Poissant, Kevin; Puzen, Shawn; Supnick, John  
**Date:** 9/16/2005 7:24:49 AM  
**Subject:** Water Quality Monitoring - Cisco Dam

Good Morning,

Water quality monitoring data collected between 8/31/05 and 9/14/05 below the Cisco Dam as part of the Bond Falls Water Quality Monitoring Plan has been reviewed and deviations from the water quality standard have been observed. The attached spreadsheet contains dissolved oxygen, temperature, and USGS gauge height information for Cisco Lake and the Cisco Branch of the Ontonogan River for your review.

If you have any questions about the data, feel free to contact me.

Thanks,

Mark

Mark Metcalf  
Environmental Consultant/Chemist  
Wisconsin Public Service Corp.  
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