



October 31, 2013

Ms. Cheryl Laatsch
Statewide FERC Coordinator
Wisconsin Department of Natural Resources
Horicon Service Center
N7725 Highway 28
Horicon, WI 53032

Dear Ms. Laatsch:

SUBJECT: Dairyland Reservoir 2013 Water Quality Data

Please find the enclosed water quality data collected during the 2013 calendar year for Dairyland Power Cooperative's (DPC) Flambeau Hydroelectric Project (FERC Project No. 1960-002). The data set was collected from a fixed-point location in the lower portion of the Dairyland Reservoir and is submitted to the WDNR in order to comply with Article 401(R) of the Flambeau Hydroelectric Project License.

If you have any questions regarding the data, feel free to contact me at (608) 787-1486. I would be happy to discuss any concerns that you may have.

Sincerely,

A handwritten signature in black ink that reads "B. D. Campbell".

Benjamin D. Campbell
Environmental Biologist II

BCA:krm

Enclosure(s)

cc: Jeff Scheirer, WDNR

Brad Foss, DPC
Tony Mc Kimmy, DPC

Date (dd-mmm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
6-Feb-13	0.00	-0.07	5.69	169.5	0.1085	83.0	12.00					
6-Feb-13	4.00	0.30	6.02	158.5	0.1014	81.7	11.70	51			64	
6-Feb-13	8.10	0.12	6.11	158.3	0.1013	84.1	12.11					
6-Feb-13	12.30	0.39	6.28	155.2	0.0993	85.1	12.15					
6-Feb-13	16.00	0.53	6.39	153.2	0.0980	85.2	12.11					
6-Feb-13	19.70	0.58	6.46	152.2	0.0974	86.3	12.26					
6-Feb-13	23.90	0.77	6.57	147.1	0.0941	89.4	12.63					
6-Feb-13	27.90	0.77	6.63	147.3	0.0943	90.7	12.82					
6-Feb-13	31.90	0.87	6.69	144.9	0.0927	92.0	12.96					
6-Feb-13	35.90	1.01	6.73	146.4	0.0937	91.1	12.79					
6-Feb-13	39.70	1.15	6.77	147.3	0.0943	89.8	12.55					
6-Feb-13	44.00	1.27	6.78	147.6	0.0945	87.6	12.21					
6-Feb-13	47.80	1.34	6.90	149.5	0.0957	85.0	11.82					
6-Feb-13	51.90	1.42	6.84	150.2	0.0961	83.2	11.55					
6-Feb-13	55.80	1.50	6.86	151.3	0.0968	82.0	11.35					
6-Feb-13	59.90	1.76	6.84	151.9	0.0972	78.2	10.75					
6-Feb-13	63.80	2.28	6.81	157.9	0.1010	67.6	9.17					
6-Feb-13	67.70	3.39	6.77	157.5	0.1008	54.1	7.12					
Minimum	0.00	-0.07	5.69	144.9	0.0927	54.1	7.12	51			64	
Maximum	67.70	3.39	6.90	169.5	0.1085	92.0	12.96	51			64	
Mean	33.91	1.08	6.56	152.5	0.0976	83.1	11.67	51			64	

Date (dd-mmm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
8-May-13	0.00	13.56	7.51	57.5	0.0368	103.8	10.60					100
8-May-13	3.20	9.23	7.43	56.6	0.0362	91.2	10.28	116	0.027	6.15 *	26.3	
8-May-13	7.17	8.88	7.36	56.8	0.0364	93.7	10.65					
8-May-13	11.17	9.00	7.29	56.5	0.0362	93.3	10.58					
8-May-13	15.37	8.51	7.25	56.5	0.0362	92.3	10.58					
8-May-13	19.26	8.43	7.21	56.8	0.0364	92.4	10.62					
8-May-13	23.34	8.46	7.19	56.8	0.0364	92.5	10.63					
8-May-13	27.31	8.25	7.17	57.1	0.0366	92.6	10.69					
8-May-13	31.28	8.18	7.15	57.0	0.0365	93.4	10.80					
8-May-13	35.40	6.58	7.14	56.5	0.0361	92.8	11.16					
8-May-13	39.43	5.47	7.13	55.0	0.0352	91.8	11.35					
8-May-13	43.25	5.39	7.10	55.1	0.0353	91.9	11.40					
8-May-13	47.23	5.27	7.08	54.8	0.0350	91.7	11.41					
8-May-13	51.10	4.66	7.05	54.3	0.0347	91.7	11.59					
8-May-13	55.15	4.50	7.05	54.2	0.0347	91.2	11.57					
8-May-13	59.17	4.27	7.04	53.8	0.0344	90.9	11.59					
8-May-13	63.04	4.15	7.03	54.0	0.0346	90.9	11.64					
Minimum	0.00	4.15	7.03	53.8	0.0344	90.9	10.28	116	0.027	6.15	26.3	100
Maximum	63.04	13.56	7.51	57.5	0.0368	103.8	11.64	116	0.027	6.15	26.3	100
Mean	31.29	7.22	7.19	55.8	0.0357	92.8	11.01	116	0.027	6.15	26.3	100

* Chlorophyll a sample was analyzed past the hold time.

Date (dd-mmm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
11-Jun-13	0.06	23.36	6.97	68.1	0.0436	107.8	8.95					115
11-Jun-13	3.54	17.18	6.93	66.5	0.0426	91.1	8.55	169	0.033	< 0.79 *	26.7	
11-Jun-13	7.48	16.45	6.90	65.7	0.0421	88.6	8.44					
11-Jun-13	11.49	16.35	6.85	66.0	0.0422	86.8	8.29					
11-Jun-13	15.48	16.09	6.84	65.8	0.0421	89.2	8.57					
11-Jun-13	19.55	16.03	6.84	66.2	0.0424	88.3	8.49					
11-Jun-13	23.65	15.90	6.84	64.4	0.0412	89.5	8.62					
11-Jun-13	27.70	15.83	6.84	63.8	0.0408	92.0	8.88					
11-Jun-13	31.72	15.79	6.83	63.3	0.0405	92.4	8.93					
11-Jun-13	35.68	15.76	6.84	62.9	0.0403	90.1	8.71					
11-Jun-13	39.64	15.71	6.82	65.3	0.0418	87.6	8.48					
11-Jun-13	43.63	15.64	6.82	64.4	0.0412	89.8	8.71					
11-Jun-13	47.95	15.61	6.84	64.7	0.0414	89.3	8.66					
11-Jun-13	51.80	14.82	6.82	64.6	0.0414	90.4	8.92					
11-Jun-13	55.88	14.73	6.82	64.5	0.0413	90.1	8.91					
11-Jun-13	59.83	14.62	6.82	64.3	0.0411	91.3	9.04					
11-Jun-13	63.78	14.53	6.81	64.8	0.0415	89.4	8.87					
Minimum	0.06	14.53	6.81	62.9	0.0403	86.8	8.29	169	0.033	< 0.79	26.7	115
Maximum	63.78	23.36	6.97	68.1	0.0436	107.8	9.04	169	0.033	< 0.79	26.7	115
Mean	31.70	16.14	6.85	65.0	0.0416	90.8	8.71	169	0.033	< 0.79	26.7	115

* Chlorophyll a sample was analyzed past the hold time.

Date (dd-mmm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
23-Jul-13	0.00	25.56	7.28	89.3	0.0572	78.8	6.27					120
23-Jul-13	3.50	25.61	7.32	89.2	0.0571	78.3	6.22	158	0.047	< 0.78 *	36.1	
23-Jul-13	7.80	25.61	7.31	89.2	0.0571	78.3	6.22					
23-Jul-13	11.10	25.62	7.34	89.7	0.0574	77.9	6.18					
23-Jul-13	15.40	25.62	7.34	89.3	0.0572	77.9	6.19					
23-Jul-13	19.40	25.62	7.33	89.6	0.0573	78.0	6.20					
23-Jul-13	23.30	25.62	7.33	89.3	0.0572	78.0	6.20					
23-Jul-13	27.10	25.62	7.33	89.6	0.0573	77.8	6.18					
23-Jul-13	31.30	25.61	7.32	89.2	0.0571	77.3	6.14					
23-Jul-13	35.20	25.60	7.30	89.3	0.0572	77.3	6.14					
23-Jul-13	39.40	25.15	7.15	89.2	0.0571	67.0	5.37					
23-Jul-13	43.50	24.84	7.06	88.6	0.0567	59.1	4.76					
23-Jul-13	47.30	24.56	7.03	89.4	0.0572	56.0	4.54					
23-Jul-13	51.40	24.39	7.01	90.0	0.0576	53.5	4.36					
23-Jul-13	55.50	24.27	6.99	90.2	0.0577	51.3	4.18					
23-Jul-13	59.30	23.87	6.95	91.5	0.0585	42.0	3.45					
23-Jul-13	63.30	22.70	6.89	96.2	0.0616	17.5	1.47					
Minimum	0.00	22.70	6.89	88.6	0.0567	17.5	1.47	158	0.047	< 0.78	36.1	120
Maximum	63.30	25.62	7.34	96.2	0.0616	78.8	6.27	158	0.047	< 0.78	36.1	120
Mean	31.40	25.05	7.19	89.9	0.0576	66.2	5.30	158	0.047	< 0.78	36.1	120

* Chlorophyll a sample was analyzed past the hold time.

Date (dd-mmm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
13-Aug-13	0.00	22.42	7.48	95.5	0.0611	87.7	7.40					200
13-Aug-13	3.20	22.46	7.50	95.3	0.0610	86.9	7.32	125	0.041	9.1 *	39.4	
13-Aug-13	7.30	22.42	7.47	95.4	0.0610	84.5	7.13					
13-Aug-13	11.10	22.34	7.42	95.5	0.0611	79.5	6.71					
13-Aug-13	15.10	22.11	7.35	95.4	0.0610	74.3	6.31					
13-Aug-13	19.10	21.92	7.30	95.5	0.0611	70.9	6.03					
13-Aug-13	23.10	21.89	7.28	95.4	0.0610	69.9	5.95					
13-Aug-13	27.00	21.86	7.26	96.0	0.0614	68.4	5.83					
13-Aug-13	31.10	21.82	7.24	96.5	0.0617	66.3	5.65					
13-Aug-13	35.10	21.79	7.22	97.1	0.0621	64.7	5.52					
13-Aug-13	39.10	21.64	7.18	101.3	0.0648	59.0	5.05					
13-Aug-13	43.10	21.43	7.16	106.4	0.0681	53.9	4.64					
13-Aug-13	47.10	21.32	7.17	108.9	0.0697	54.9	4.73					
13-Aug-13	51.10	21.23	7.17	109.6	0.0701	55.5	4.79					
13-Aug-13	55.20	21.16	7.15	109.3	0.0699	51.9	4.48					
13-Aug-13	59.20	20.82	7.10	110.1	0.0705	41.6	3.62					
13-Aug-13	63.20	20.31	7.03	111.6	0.0714	24.1	2.12					
13-Aug-13	67.20	19.51	7.01	116.0	0.0742	7.8	0.70					
Minimum	0.00	19.51	7.01	95.3	0.0610	7.8	0.70	125	0.041	9.1	39.4	200
Maximum	67.20	22.46	7.50	116.0	0.0742	87.7	7.40	125	0.041	9.1	39.4	200
Mean	33.18	21.58	7.25	101.7	0.0651	61.2	5.22	125	0.041	9.1	39.4	200

* Chlorophyll a sample was analyzed past the hold time.

Date (dd-mmm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
9-Sep-13	0.00	23.06	7.64	109.8	0.0703	88.6	7.45					190
9-Sep-13	3.40	23.04	7.64	110.0	0.0704	88.2	7.42	86	0.033	7.69	46.7	
9-Sep-13	7.50	23.03	7.62	109.7	0.0702	87.0	7.32					
9-Sep-13	11.40	23.02	7.60	109.7	0.0702	86.7	7.29					
9-Sep-13	15.50	23.01	7.59	109.4	0.0700	86.5	7.28					
9-Sep-13	19.40	23.00	7.58	109.4	0.0700	85.9	7.23					
9-Sep-13	23.40	23.00	7.57	109.5	0.0701	85.6	7.21					
9-Sep-13	27.40	22.99	7.58	109.5	0.0701	86.4	7.27					
9-Sep-13	31.30	22.72	7.41	109.1	0.0698	74.9	6.34					
9-Sep-13	35.30	22.16	7.22	107.5	0.0688	59.7	5.11					
9-Sep-13	39.20	21.60	7.20	107.3	0.0687	64.5	5.58					
9-Sep-13	43.40	21.47	7.20	107.3	0.0686	66.1	5.73					
9-Sep-13	47.40	21.29	7.22	107.3	0.0687	69.4	6.04					
9-Sep-13	51.40	21.20	7.22	107.5	0.0688	69.3	6.04					
9-Sep-13	55.20	21.14	7.22	107.3	0.0687	69.2	6.03					
9-Sep-13	59.40	21.04	7.26	107.4	0.0688	68.0	5.95					
9-Sep-13	63.40	20.98	7.26	107.6	0.0689	67.5	5.90					
Minimum	0.00	20.98	7.20	107.3	0.0686	59.7	5.11	86	0.033	7.69	46.7	190
Maximum	63.40	23.06	7.64	110.0	0.0704	88.6	7.45	86	0.033	7.69	46.7	190
Mean	31.41	22.22	7.41	108.5	0.0695	76.7	6.54	86	0.033	7.69	46.7	190

Date (dd-mmm-yy)	Depth (ft.)	Temp. (°C)	pH (units)	Specific Conductance (µSiemens/cm)	TDS (g/L)	DO (% saturation)	DO (mg/L)	True Color (pcu)	Total Phosphorous (mg/L)	Chlorophyll a (µg/L)	Alkalinity (mg/L as CaCO3)	Secchi Disc Depth (cm)
9-Oct-13	0.00	16.29	7.39	111.8	0.0715	80.1	7.71					120
9-Oct-13	5.70	16.08	7.34	111.5	0.0714	78.9	7.63					
9-Oct-13	7.60	16.01	7.37	112.0	0.0717	79.1	7.67					
9-Oct-13	11.60	16.01	7.36	112.0	0.0717	78.9	7.64					
9-Oct-13	15.70	15.98	7.37	111.7	0.0715	79.4	7.70					
9-Oct-13	19.60	15.92	7.37	112.1	0.0717	79.9	7.76					
9-Oct-13	23.60	15.86	7.37	111.8	0.0716	80.1	7.79					
9-Oct-13	27.30	15.61	7.37	113.2	0.0724	80.0	7.82					
9-Oct-13	31.60	15.49	7.37	113.2	0.0724	80.1	7.85					
9-Oct-13	35.60	15.40	7.37	113.7	0.0727	80.0	7.87					
9-Oct-13	39.50	15.42	7.36	113.3	0.0725	80.0	7.85					
9-Oct-13	43.60	15.33	7.37	113.3	0.0725	80.1	7.88					
9-Oct-13	47.60	15.26	7.39	113.7	0.0727	80.7	7.95					
9-Oct-13	51.60	15.25	7.39	113.5	0.0727	80.2	7.90					
9-Oct-13	55.60	15.23	7.39	113.9	0.0729	80.2	7.90					
9-Oct-13	59.90	15.22	7.38	114.0	0.0730	80.3	7.91					
9-Oct-13	63.80	15.18	7.38	113.7	0.0727	80.3	7.92					
Minimum	0.00	15.18	7.34	111.5	0.0714	78.9	7.63					120
Maximum	63.80	16.29	7.39	114.0	0.0730	80.7	7.95					120
Mean	31.76	15.62	7.37	112.8	0.0722	79.9	7.81					120