Renewable World Energies

May 2, 2017

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

RE: Clam River Hydroelectric Project
FERC Project Number 9185
Flambeau Hydro LLC
Final Report 2016 Water Quality Monitoring Data

Dear Ms. Bose:

On behalf of Flambeau Hydro LLC, "Flambeau" (Licensee), Renewable World Energies, LLC (RWE) is re-submitting a copy of the *Final Report 2016 Water Quality Monitoring Data* for the Clam River Hydroelectric Project. The Federal Energy Regulatory Commission "FERC" issued a License to Flambeau on July 24, 2006. This report is submitted as a requirement of that License pursuant to License Article 401 WQC, Condition K. 2016 was the ninth year monitoring was conducted since the license was issued, but is the 5th year of submittal by RWE on the behalf of the Licensee. On February 21, 2017 we submitted this report with the incorrect report attached.

Monitoring was conducted on March 23, July 20, and August 17, 2016. Nothing out of the ordinary was experienced during the monitoring season except as noted in the report. All data has been entered into the SWIMS Data Base. The draft report was sent to the agencies by letter dated November 16, 2016 for review and comment. As of the date of this letter no comments have been received. The next scheduled monitoring event will be conducted in 2017.

If you have any questions concerning this submittal, please contact Brian Kreuscher at the Renewable World Energies, LLC offices @ 855-994-9376 Ext 230. He can also be reached by e-mail at bkreuscher@rwehydro.com.

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Sincerely,
Renewable World Energies, LLC
Agent for Licensee

For Mr. Jason Kreuscher
Vice President, Operations

Attachment: Final Report 2016 Water Quality Monitoring Data

Cc: Ms. Cheryl Laatsch, WDNR
Mr. Nick Utrup, USFWS
RWE, Corporate

Final Report

2016 Water Quality Monitoring Data
(Per License Article 401 WQC, Condition K)

for the

Clam River Hydroelectric Project

FERC Project #9185

Flambeau Hydro, LLC

Clam River,
Burnett County, Wisconsin

Respectfully Submitted by:

Angie Stine

WHITE WATER ASSOCIATES, INC.

429 River Lane, P.O. Box 27
Amasa, Michigan 49903

Phone: 906-822-7889

Summary Clam River Hydroelectric Project – FERC #9185

2016 marked the ninth year of water quality sampling under FERC License issued on July 24, 2006 to Flambeau Hydro, LLC for the Clam River Hydroelectric Project – FERC Project # 9185 and specifically Appendix A Section 401 K. Monitoring was conducted on March 23, July 20, and August 17, 2016. This document contains all of the associated records for the 2016 monitoring along with summary figures and tables in four appendices: (1) Appendix A (Figures 1-4), (2) Appendix B (Tables 1-3), (3) Appendix C (sampling logs by date), and (4) Appendix D (laboratory reports and chains of custody).

A map of the Clam River Hydroelectric Project is shown in Figure 1 indicating the water quality sampling location.

Monitoring results for 2016 are shown in Table 1. No unusual Temperature (Figure 2) or Dissolved Oxygen (Figure 3) readings were observed in March but in July and August the D.O. was below 5.0 mg/L at 13 and 12 feet respectfully. The Secchi depths are shown in Figure 4.

In general, the weather (temperature and rainfall) during 2016 monitoring season appeared slightly warmer in May, June, and July, & August, with lower than normal precipitation in April and May, and normal to high precipitation in the months of June, July and August (Table 2).

Ice-Out occurred on the Clam River sometime during the week beginning March 14th, 2016. The Ice-Out sampling event occurred on March 23, 2016. River flow, based on the Clam River Hydroelectric Project records, was approximately 439 cubic feet per second. Sampling occurred between 1236 and 1247. Samples were taken without incident. No unusual D.O. or Temperature readings were observed. Samples for laboratory analysis were delivered to White Water Associates, Inc. laboratory in Amasa, MI on March 24, 2016. White Water Associates, Inc. issued a laboratory report on May 9, 2016. No unusual levels of Chlorophyll *a*, True Color, or Total Phosphorus were noted in the laboratory reports.

River flow, based on the Clam River Hydroelectric Project records, was approximately 299 cubic feet per second during the July 20, 2016 sampling event. Sampling occurred between 1015 and 1055. Samples were taken without incident. No unusual Temperature readings were observed but the D.O. was below 5.0 mg/L at 13 feet so the D.O. was recorded at 1 foot intervals. Samples for laboratory analysis were delivered to White Water Associates, Inc. laboratory in Amasa, MI on July 21, 2016. White Water Associates, Inc. issued a laboratory report on August 10, 2016. No unusual levels of Chlorophyll *a*, True Color, or Total Phosphorus were noted in the laboratory reports.

River flow, based on the Clam River Hydroelectric Project records, was approximately 157 cubic feet per second during the August 17, 2016 sampling event. Sampling occurred between 1027 and 1047. Samples were taken without incident. No unusual Temperature readings were observed. The D.O. went below 5.00 mg/L at 12 feet (4.02 mg/L). The 0.5 ft above bottom D.O. was 0.016 mg/L. Samples for laboratory analysis were delivered to White Water Associates, Inc. laboratory in Amasa, MI on August 18, 2016. White Water Associates, Inc. issued a laboratory report on September 6, 2016. No unusual levels of Chlorophyll *a*, True Color, or Total Phosphorus were noted in the laboratory reports.

A summary of a comparison between the 2011 thru 2016 (Table 3) sampling results are as follows:

1. Water Clarity – Secchi Decreased Ice Out & July & Increased August
2. Chlorophyll a – Decreased Ice Out & August and Increased July
3. Color – Decreased Ice Out, July & August
4. Total Phosphorus – Decreased Ice Out, July & August
5. Overall, D.O. – Increased Ice Out & Decreased July & August
6. Water Temperatures – Decreased Ice Out, Increased July & August

The next scheduled Water Quality Monitoring at the Clam River Hydroelectric Project is set to take place in 2017 beginning with the Ice-Out sampling event.

Appendix A – Clam River Hydroelectric Project Figures

Figure 1. Clam River Hydroelectric Project Map showing water quality sample location.

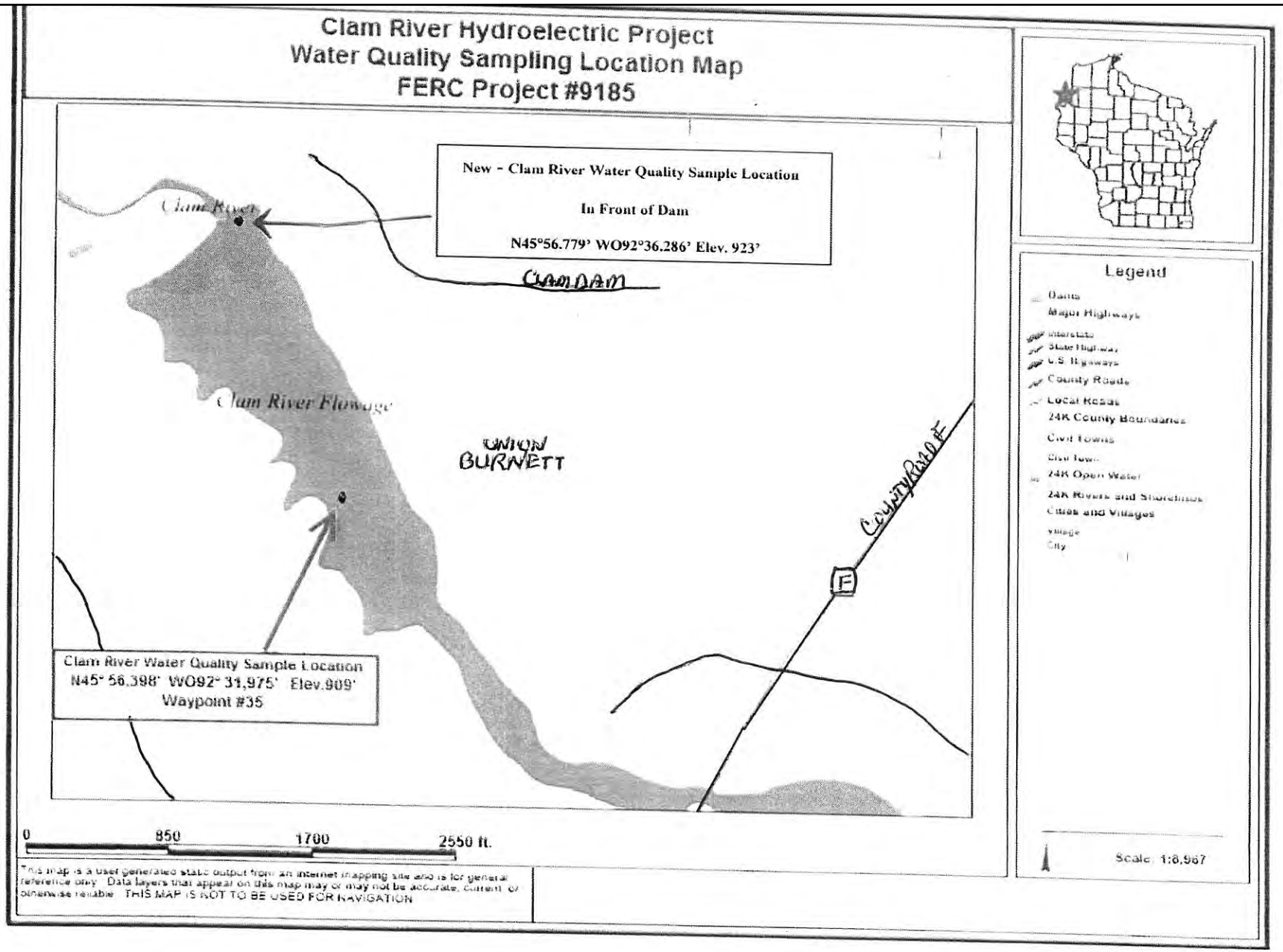


Figure 2. Clam River Impoundment - FERC #9185
2016 Temperature Samples

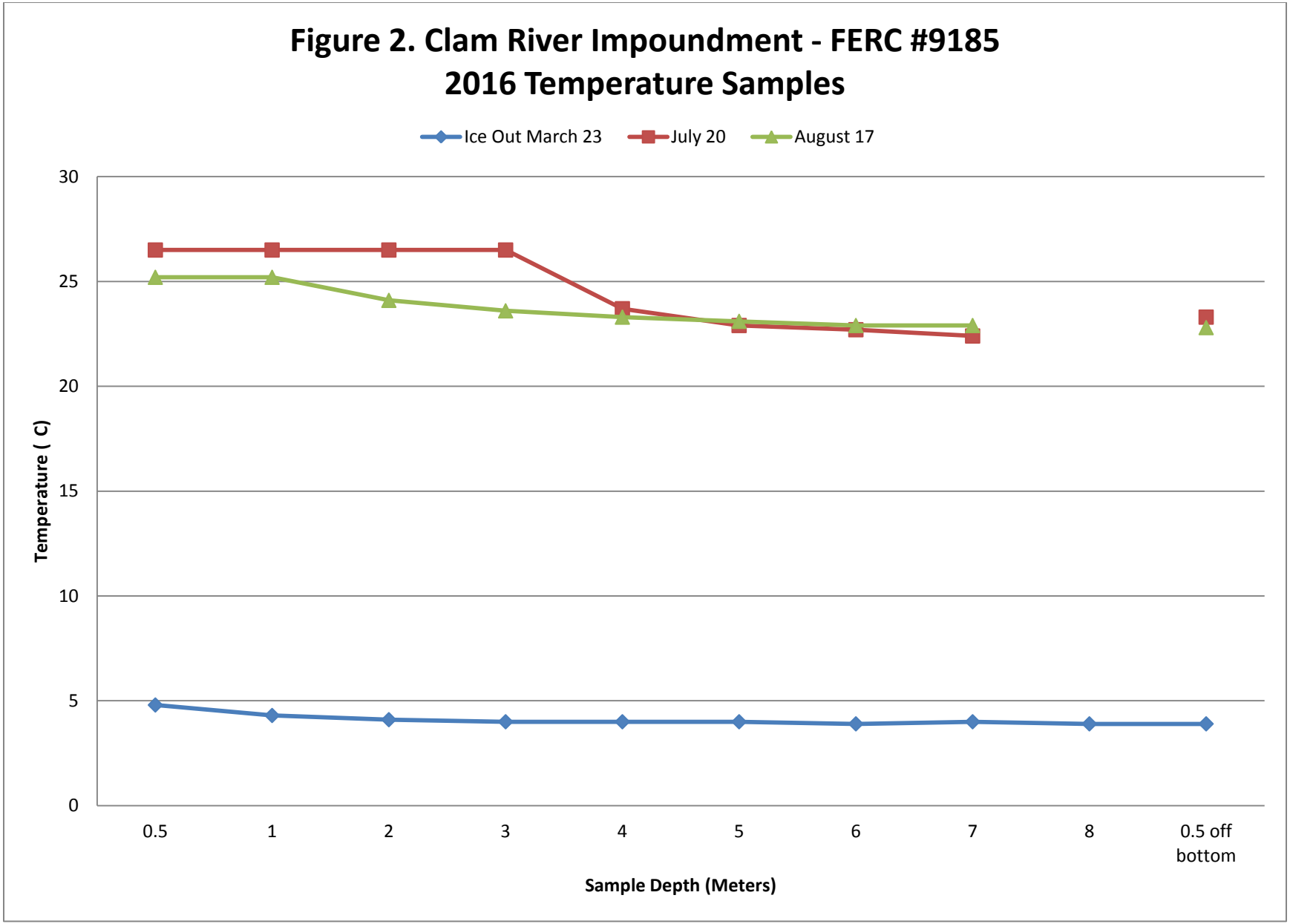
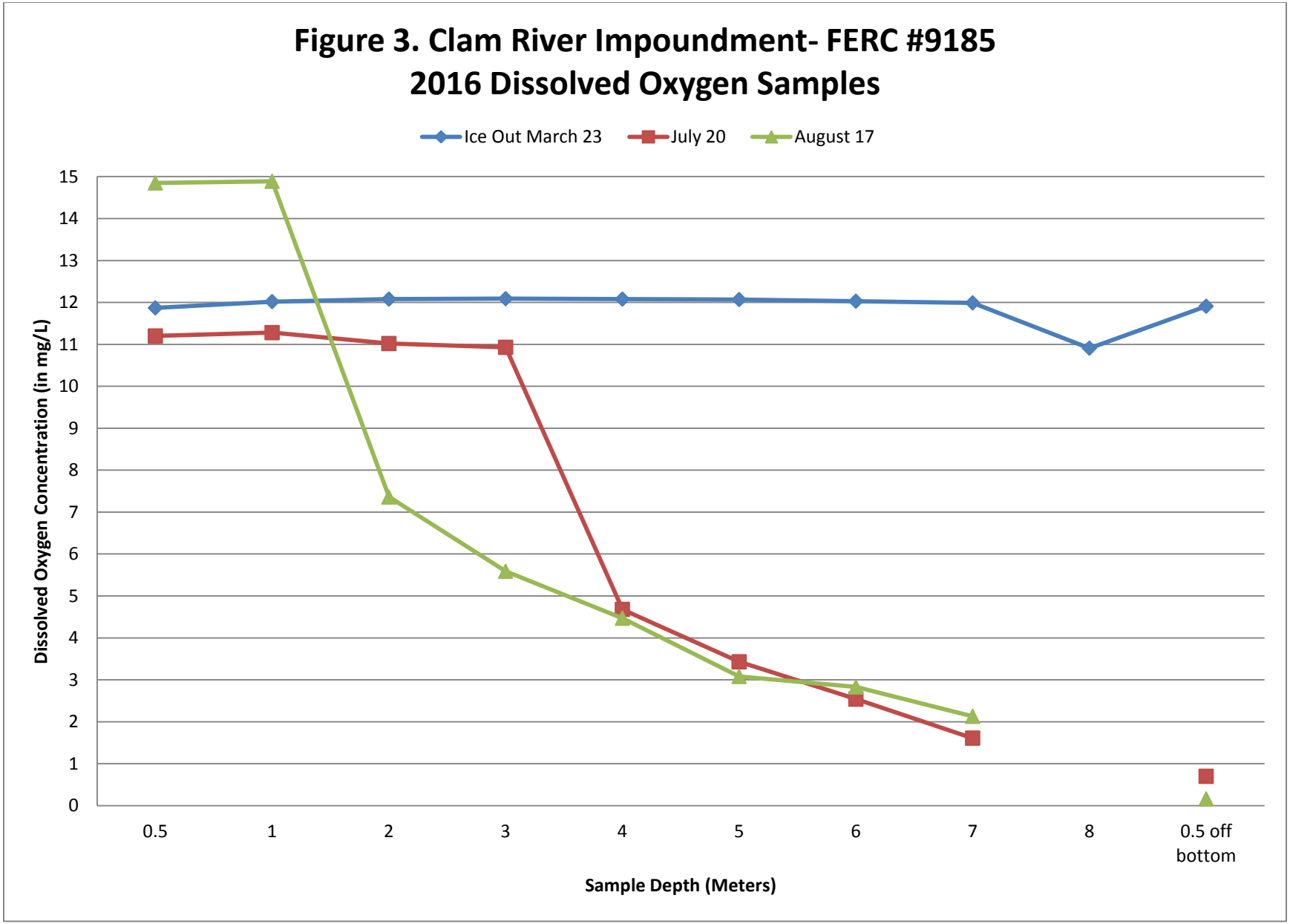


Figure 3. Clam River Impoundment- FERC #9185
2016 Dissolved Oxygen Samples



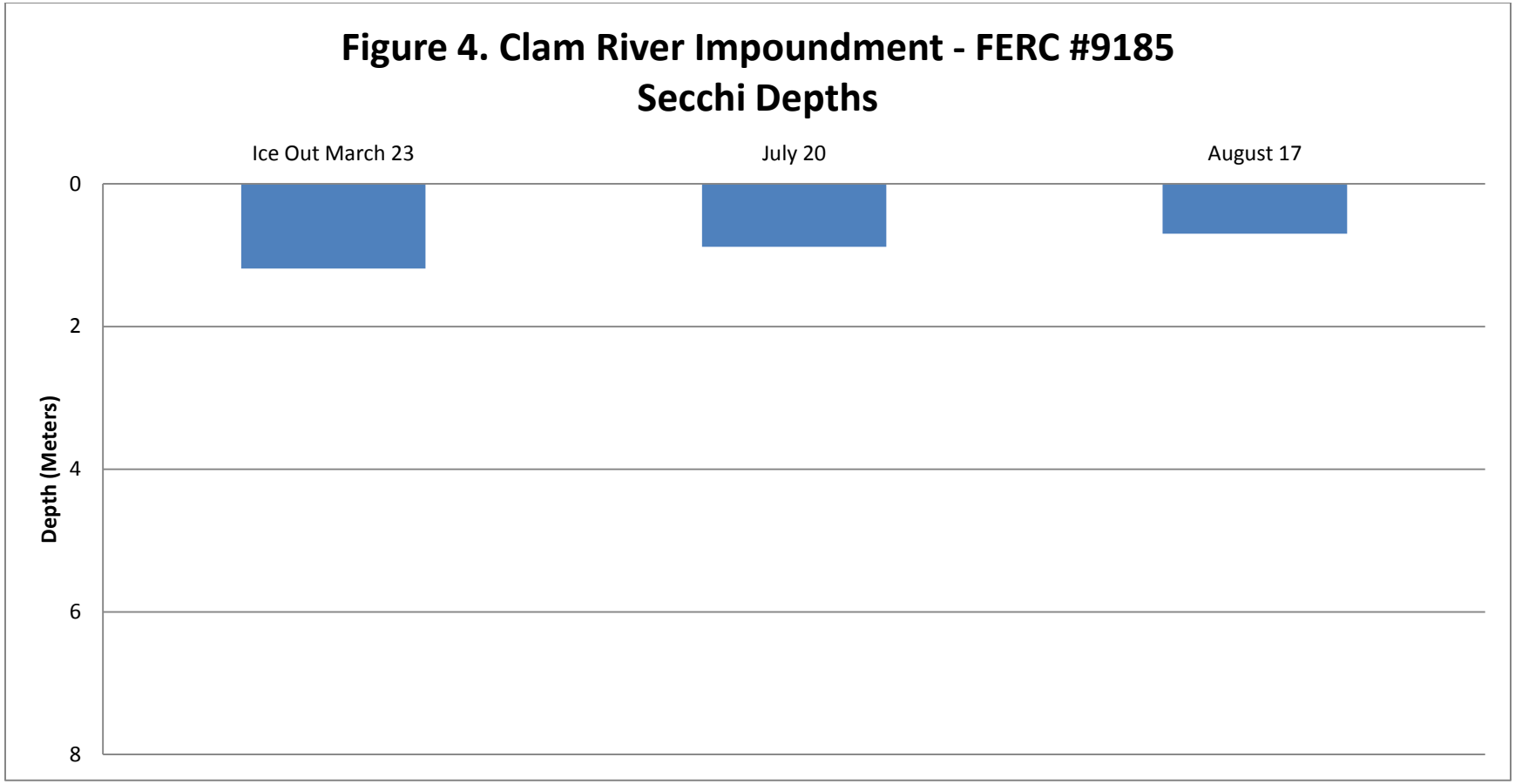


Figure 4. Clam River Impoundment - FERC #9185
Secchi Depths
Ice Out March 23
July 20
August 17
Depth (Meters)
0
2
4
6
8

Appendix B – Clam River Hydroelectric Project Tables

Table 1. Clam River Hydroelectric Project – FERC Project # 9185: 2016 Water Quality Sampling Data

	Ice Out March 23, 2016			July 20, 2016			August 17, 2016		
Project Flow (c.f.s)	439			299			157		
Dissolved Oxygen	**Time**	**D.O. (mg/L)**	**Water Temp. (°C)**	**Time**	**D.O. (mg/L)**	**Water Temp. (°C)**	**Time**	**D.O. (mg/L)**	**Water Temp. (°C)**
0.5 meter below surface	12:41:33	11.87	4.8	10:35:48	11.20	26.5	10:27:30	14.85	25.2
1 meter below surface	12:42:03	12.02	4.3	10:38:00	11.28	26.5	10:29:30	14.89	25.2
2 meter below surface	12:42:52	12.08	4.1	10:41:05	11.02	26.5	10:34:52	7.36	24.1
3 meter below surface	12:43:28	12.09	4.0	10:43:09	10.93	26.5	10:37:28	5.59	23.6
4 meter below surface	12:44:01	12.08	4.0	10:45:01	4.68	23.7	10:39:37	4.47	23.3
5 meter below surface	12:44:43	12.07	4.0	10:48:55	3.43	22.9	10:42:27	3.08	23.1
6 meter below surface	12:45:15	12.03	3.9	10:50:45	2.54	22.7	10:43:59	2.83	22.9
7 meter below surface	12:45:46	11.99	4.0	10:52:56	1.61	22.4	10:46:06	2.13	22.9
8 meter below surface	12:46:45	10.91	3.9	N/A	N/A	N/A	N/A	N/A	N/A
0.5 meter above bottom	12:47:47	11.91	3.9	10:55:20	0.70	23.3	10:46:59	0.16	22.8
Secchi Disk	**Time**	**Depth (m)**		**Time**	**Depth (m)**		**Time**	**Depth (m)**	
Meters below surface	12:40	1.2		10:15	0.88		10:33	0.70	
Chlorophyll *a*	**Time**	**µg/L**		**Time**	**µg/L**		**Time**	**µg/L**	
1 meter below surface	12:42	11		10:15	44		10:29	61	
Color (True)	**Time**	**C.P.U. Units**	**LOD**	**Time**	**C.P.U. Units**	**LOD**	**Time**	**C.P.U. Units**	**LOD**
1 meter below surface	12:44	15	5*	10:17	30	5*	10:27	25	5*
Total Phosphorus	**Time**	**mg/L**	**LOD**	**Time**	**mg/L**	**LOD**	**Time**	**mg/L**	**LOD**
1 meter below surface	12:44	0.04	0.01*	10:17	0.043	0.008*	10:27	0.050	0.008*
1 meter above bottom	12:46	0.04	0.01*	10:20	0.043	0.008*	10:31	0.053	0.008*
*Considered Method Detection Limit N/A = Not Applicable									

Table 2. 2015/16 Water Year Monthly Temperature and Precipitation for Danbury, Wisconsin

Month	Highest Temp.	Lowest Temp.	Average Temp.	Departure From Normal	Heating Degree Days	Normal Degree Days	Total Precip.	Total Snowfall	Normal Precip.	% of Normal Precipitation
October - 15	84	24	46.3	3.1	574	678	1.90	Trace	2.85	67
November - 15	64	10	36.7	7.9	844	1088	2.75	4.40	2.09	132
December - 15	43	2	26.4	11.6	1187	1556	3.70	24.60	1.21	306
January – 16	41	-21	12.8	2.6	1611	1699	1.05	13.00	0.96	109
February – 16	52	-17	17.3	2.2	1376	1399	0.83	12.20	0.81	102
March – 16	60	-2	31.6	5.7	1028	1210	3.96	17.30	1.49	266
April – 16	71	2	37.7	-1.9	809	762	2.40	9.80	2.43	99
May – 16	92	28	53.2	1.8	370	426	1.87	0.10	3.23	58
June – 16	89	37	61.5	1.4	142	179	4.46	0.00	4.23	105
July – 16	90	45	67.1	1.3	29	63	4.39	0.00	3.85	114
August – 16	85	50	67.5	3.2	25	86	4.96	0.00	3.70	134
September - 16	80	40	59.9	4.3	162	298	3.52	0.00	4.11	86

Source: NOAA/Duluth, MN

Table 3. Clam River Project Sampling Comparison Table: 2011 Thru Current Year										
Year	**Month**	**Secchi Depth**	**Chlorophyll *a***	**Color (True)**	**Total Phosphorus**	**Total Phosphorus**	**Low D.O.**	**High D.O.**	**Low Water Temp.**	**High Water Temp.**
		meters	**µg/L**	**C.P.U. Units**	**Below Surface mg/L**	**Above Bottom mg/L**	**mg/L**	**mg/L**	**° C**	**° C**
2011	April	0.87	17.00	40.00	0.073	0.066	11.58	11.88	9.30	9.40
2012	April	0.80	13.00	55.00	0.031	*	11.72	15.68	9.60	10.90
2013	May	1.00	17.00	70.00	0.069	0.069	10.91	12.16	10.10	14.20
2014	June	1.10	8.60	70.00	0.041	0.042	9.14	9.40	11.50	12.70
2015	April	1.50	13.00	25.00	0.049	0.039	8.45	11.93	9.90	14.40
2016	March	1.19	11.00	15.00	0.040	0.040	10.91	12.09	3.90	4.80
Minimum	March/April/June	0.80	8.60	15.00	0.031	0.039	8.45	9.40	3.90	4.80
Maximum	March/April/June	1.50	17.00	70.00	0.073	0.069	11.72	15.68	11.50	14.40
Average	March/April/June	1.08	13.27	45.83	0.051	0.051	10.45	12.19	9.05	11.07
2011	July	0.70	62.00	80.00	0.110	0.083	5.11	14.32	25.20	27.10
2012	July	1.10	13.00	50.00	0.042	0.050	0.04	12.33	24.80	28.70
2013	July	1.20	23.00	70.00	0.064	0.067	0.97	7.22	23.70	24.10
2014	July	0.80	18.00	50.00	0.056	0.055	7.06	12.44	20.40	22.50
2015	July	1.10	12.00	35.00	0.061	0.043	7.48	9.77	22.00	23.10
2016	July	0.88	44.00	30.00	0.043	0.043	0.70	11.31	24.40	26.60
Minimum	July	0.70	12.00	30.00	0.042	0.043	0.04	7.22	20.40	22.50
Maximum	July	1.20	62.00	80.00	0.110	0.083	7.48	14.32	25.20	28.70
Average	July	0.96	28.67	52.50	0.063	0.057	3.56	11.23	23.42	25.35
2011	August	0.90	34.00	100.00	0.061	0.066	2.13	10.35	21.60	22.90
2012	August	0.70	43.00	70.00	0.067	0.066	5.01	12.77	21.20	22.40
2013	August	0.50	48.00	100.00	0.110	0.098	3.78	12.47	20.40	21.90
2014	August	0.60	34.00	50.00	0.081	0.075	4.91	10.13	22.70	24.20
2015	August	0.50	120.00	40.00	0.076	0.043	5.50	16.91	22.60	24.70
2016	August	0.70	61.00	25.00	0.050	0.053	0.16	14.89	22.80	25.30
Minimum	August	0.50	34.00	25.00	0.050	0.043	0.16	10.13	20.40	21.90
Maximum	August	0.90	120.00	100.00	0.110	0.098	5.50	16.91	22.80	25.30
Average	August	0.65	56.67	64.17	0.074	0.067	3.58	12.92	21.88	23.57

*no sample taken

Appendix C – Clam River Impoundment Project Sampling Logs

IMPOUNDMENT SAMPLING LOG

Water Quality Study Location Clam River

Hydroelectric Project – FERC # 9185

Date: 3-23-2016

Pre-Sampling Data:

wwA ours

HWL 898.89 TWL 865.30 CFS 439

CLARIWQSP

N 45.94611 W 092.53804

Sample Location: N45° 56.766 W 092 32.282

Performed by: A Stine T Plummer

Time: 12:36 Barometer: 30.10

Air Temp: 32°F °C Wind Speed: ENE 6mph

Sky Conditions: 95% clouds

Precipitation within Last 24 Hours: 0

D.O. Meter Calibration:

Instrument Model Used: HQ40D

Were the batteries changed? ☐ Yes ☒ No

If yes, when were they changed: ______

Battery Status: 90 % Charge

Calibration Method: Factory

Sampling Depth Profile: Measured depth to bottom of impoundment: 8 ~~Feet~~ meters 26.5 ft

Secchi Depth (± 0.1)		
Time 12:40	3.9	Feet

Hwk

1.2 meters

2 mallards muskrat house By landing

Comments:

Chlorophyll *a* (3 feet below surface horizontal sampler)		
Lab Sample I.D. #:		
Time	Quantity (ml)	Filtered
12:42	1000	In Lab
Preservative	$MgCO_3$	

True Color (3 feet below surface horizontal sampler)
Lab Sample I.D. # :
Time: 12:44

Total Phosphorus (3 feet below surface horizontal sampler)	
Lab Sample I.D. # :	
Time 12:44	Preservative
	H_2SO_4

Total Phosphorus (3 feet above bottom horizontal sampler)	
Lab Sample I.D. # :	
Time 12:46	Preservative
	H_2SO_4

D.O. and Temperature Profile

Depth (Meters)	Time	D.O. (mg/L)	Temperature °C
0.5 below surface	12:41.33	11.87	4.8
1	12:42:03	12.02	4.3
2	12:42.52	12.08	4.1
3	12:43:28	12.09	4.0
4	12:44:01	12.08	4.0
5	12:44:43	12.07	4.0
6	12:45:15	12.03	3.9
7	12:45:46	11.99	4.0
8	12:46:45	10.91	3.9
0.5 above bottom	12:47:47	11.91	3.9

*If D.O. is below 5.0 mg/L notify agency and measure D.O. at 1.0 foot intervals if <5.0 mg/L.

Eagle - 2823 - 2 Eagles In tree

Total 6 Eagles

Large group Common mergansers By landing future Road

Hooded McGansers

Nest 11:00 past Bridge

2829 - 4th nest

2825 - Eagle

2826 - nest

Another current nest toward Dam

3 Total nests

Wood Ducks

WHITE WATER ASSOCIATES, INC.

IMPOUNDMENT SAMPLING LOG

Water Quality Study Location Clam River

Hydroelectric Project – FERC # 9185

Date: 7.20.2014

Pre-Sampling Data:

HWL 898.98 TWL 864.10 CFS 299

Sample Location: N 45° 56.779' W092° 36.286'

Performed by:
A. Stine, S. Haag

Time: 10:15 Barometer: 30.10

Air Temp: 77 °F Wind Speed: 5 8 mpH

Sky Conditions: Clear

Precipitation within Last 24 Hours: 0

D.O. Meter Calibration:

Instrument Model Used: HQ40D

Were the batteries changed? ☐ Yes ☒ No

If yes, when were they changed: _____

Battery Status: 90 % Charge

Calibration Method: Factory

Sampling Depth Profile: Measured depth to bottom of impoundment: 25 Feet

Secchi Depth (± 0.1)	
Time 10:15	2.9 Feet

Comments:

algae vegetation at boat landing.
Duck weed
saw C&P when entering the impoundment.
Also saw purple loosestrife.

Chlorophyll *a* (3 feet below surface horizontal sampler)		
Lab Sample I.D. #:		
Time 10:15	Quantity (ml)	Filtered
	1000	In Lab
Preservative	$MgCO_3$	

True Color (3 feet below surface horizontal sampler)
Lab Sample I.D. # :
Time: 10:17

Total Phosphorus (3 feet below surface horizontal sampler)	
Lab Sample I.D. # :	
Time 10:17	Preservative
	H_2SO_4

Total Phosphorus (3 feet above bottom horizontal sampler)	
Lab Sample I.D. # :	
Time 10:20	Preservative
	H_2SO_4

Clam River

D.O. and Temperature Profile			
Depth (Meters)	Time	D.O. (mg/L)	Temperature ° C
0.5 below surface	10:20:26	11.12	24.5
1	10:21:15	10.95	26.4
2	10:22:33	10.83	26.4
3	10:23:04	10.82	26.4
4	10:24:12	5.75	24.2
5	10:24:54	4.60	23.4
6	10:27:52	2.82	22.7
7	10:29:41	2.39	22.6
8			
0.5 above bottom			

*If D.O. is below 5.0 mg/L notify agency and measure D.O. at 1.0 foot intervals if <5.0 mg/L.

10-5.20 D.O
Site 1 11 feet - 4.86 D.O
Bottom 22 ft
Silt

WHITE WATER ASSOCIATES, INC.

Clam River 7-20-2016

*D.O. and Temperature Profile			
Depth (Feet)	Time	D.O. (mg/L)	Temperature ° C
0.5 below surface	10:35.48	11.20	26.5
1	10:36.33	11.31	26.6
2	10:37.10	11.25	26.5
3	10:38.00	11.28	26.5
4	10:38.48	11.24	26.5
5	10:39.17	11.24	26.5
6	10:40.33	11.03	26.5
7	10:41.05	11.02	26.5
8	10:41.3	11.0	26.5
9	10:41.57	10.95	26.5
10	10:42.9	10.93	26.5
11	10:43.17	7.93	25.3
12	10:44.26	5.22	25.0
13	10:45.01	4.68	23.7
14	10:45.55	4.48	23.4
15	10:47.05	4.35	23.2
16	10:48.09	3.64	23.0
17	10:48.55	3.43	22.9
18	10:49.36	3.17	22.9
19	10:50.18	2.78	22.7
20	10:50.45	2.54	22.7
21	10:51.28	2.27	22.6
22	10:52.50	1.87	22.5
23	10:52.56	1.61	22.4
24	10:53.41	1.40	22.4
25	10:55.20	0.70	23.3
0.5 above bottom	10:55.26	0.70	23.3

WHITE WATER ASSOCIATES, INC.

IMPOUNDMENT SAMPLING LOG

Water Quality Study Location Clam River

Hydroelectric Project – FERC # 9185

Date: 8-17-2016

Pre-Sampling Data:

HWL 898.61 TWL 863.30 CFS 157

Sample Location: N 45° 56.779 W092° 36.286

Performed by:
Steve Haag

Time: 10.27 Barometer: 30.10

Air Temp: 59 °F Wind Speed: SSW 1 mph

Sky Conditions: clear a few clouds

Precipitation within Last 24 Hours: None

D.O. Meter Calibration:

Instrument Model Used: HQ40D

Were the batteries changed? ☐ Yes ☒ No

If yes, when were they changed: _____

Battery Status: 90 % Charge

Calibration Method: Factory

Sampling Depth Profile: Measured depth to bottom of impoundment: 25 Feet

Secchi Depth (± 0.1)		
Time 10:33	28.3	Feet
10:50		(2.3)

Comments: Water has a lot of surface algae.

Chlorophyll *a* (3 feet below surface horizontal sampler)		
Lab Sample I.D. #:		
Time	Quantity (ml)	Filtered
10:29	1000	In Lab
Preservative	$MgCO_3$	

True Color (3 feet below surface horizontal sampler)
Lab Sample I.D. # :
Time: 10:27

Total Phosphorus (3 feet below surface horizontal sampler)	
Lab Sample I.D. # :	
Time 10:27	Preservative
	H_2SO_4

Total Phosphorus (3 feet above bottom horizontal sampler)	
Lab Sample I.D. # :	
Time 10:31	Preservative
	H_2SO_4

D.O. and Temperature Profile			
Depth (Meters)	Time	D.O. (mg/L)	Temperature °C
0.5 below surface			
1			
2			
3			
4			
5			
6			
7			
8			
0.5 above bottom			

*If D.O. is below 5.0 mg/L notify agency and measure D.O. at 1.0 foot intervals if <5.0 mg/L.

Photo 3523 Eagle resting tree with possible turtle

WHITE WATER ASSOCIATES, INC.

Saw osprey over Dam.

3525-29. Eagle in tree with 2 old nests and an other eagle flying.

8-17-2016 Clam River 3524 - photo DO.

*D.O. and Temperature Profile			
Depth (Feet)	Time	D.O. (mg/L)	Temperature ° C
0.5 below surface	10:27:30	14.85	25.2
1	10:28:27	14.77	25.3
2	10:29	14.85	25.3
3	10:29:30	14.89	25.2
4	10:30:23	14.19	24.8
5	10:31:13	13.93	24.7
6	10:34.17	7.81	24.1
7	10:34:52	7.36	24.1
8	10:35.53	6.14	23.9
9	10:36.34	6.07	23.8
10	10:37.28	5.59	23.6
11	10:38:06	5.01	23.5
12	10:38:43	4.02	23.4
13	10:39:37	4.47	23.3
14	10:40:10	4.38	23.3
15	10:41:20	3.39	23.2
16	10:42.04	3.14	23.1
17	10:42.27	3.08	23.1
18	10:42:53	3.09	23.0
19	10:43.19	3.12	23.0
20	10:43.54	2.83	22.9
21	10:44:53	2.57	22.9
22	10:45.28	2.42	22.9
23	10:46.04	2.13	22.9
24	10:46.34	2.01	22.8
25	10:46.59	0.16	22.8
0.5 above bottom	10:46.59	0.16	22.8

WHITE WATER ASSOCIATES, INC.

Appendix D – Clam River Hydroelectric Project Lab Reports and Chains of Custody

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Cover Page

Client: RWE **WWA Job #:** 62079

Project: Monitoring

Date Received: 3/24/2016 **Date Reported:** 5/9/2016

Sample Number	Client Sample ID	Date Sampled	Sample Matrix
62079-001	Upper Flambeau Surface	03/22/16	Water
62079-002	Upper Flambeau Bottom	03/22/16	Water
62079-003	Lower Flambeau Surface	03/22/16	Water
62079-004	Lower Flambeau Bottom	03/22/16	Water
62079-005	Pixley Surface	03/22/16	Water
62079-006	Pixley Bottom	03/22/16	Water
62079-007	Crowley Surface	03/22/16	Water
62079-008	Crowley Bottom	03/22/16	Water
62079-009	Winter Surface	03/22/16	Water
62079-010	Clam River Surface	03/23/16	Water
62079-011	Clam River Bottom	03/23/16	Water
62079-012	Danbury Surface	03/23/16	Water
62079-013	Danbury Bottom	03/23/16	Water

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Cover Page..continued

Client: RWE **WWA Job #:** 62079

Comments (if any):

Key to Laboratory Flags:

*: RPD exceeds limits.
B: The analyte was found in the associated blank as well as in the sample.
J: The quantitation is an estimated value because the result is less than the sample quantitation limit but greater than the detection limit.
M: A matrix effect was present.
Q: Batch QC data associated with the analysis does not meet the stated objectives
H: Indicates analytical holding time exceedance.
U: The analyte was analyzed for, but not detected.
P: A manual peak selection or manual integration was performed to correct an erroneous software selection.

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)
For coliform, Negative = No coliform bacteria detected, Positive = Coliform bacteria detected

Sample Types:
S = Solids, DW = Drinking water, D = Dissolved, T = Total, TC = TCLP extract, SP = SPLP extract

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without the written approval of this laboratory. The Chain of Custody is attached.

This report satisfies the requirements of your project but has not been prepared to comply with NELAP reporting requirements.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and White Water Associates Standard Operating Procedures. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this Final Report is authorized by White Water Associates management, as is verified by the following signature.

Approved By: Robert J. Preuss

WI DNR Lab Certification Number: 999971280
MI DEQ Certification Number: 9306
DoD-ELAP Accreditation Number: 65802
ISO/IEC 17025:2005 Accredited

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 62079

Project: Monitoring

Date Received: 3/24/2016 **Date Reported:** 5/9/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
62079-001 / Upper Flambeau Surface / Water							
General Chemistry Parameters							
chlorophyll a	ND		mg/m3	3/28/2016	10200H	NA	NA
Color	30		CU	3/25/2016	2120B	5	5
Total Phosphorus (t)	0.02	J	mg/L	3/25/2016	365.4	0.01	0.04
62079-002 / Upper Flambeau Bottom / Water							
General Chemistry Parameters							
Total Phosphorus (t)	0.01	J	mg/L	3/25/2016	365.4	0.01	0.04
62079-003 / Lower Flambeau Surface / Water							
General Chemistry Parameters							
chlorophyll a	ND		mg/m3	3/28/2016	10200H	NA	NA
Color	35		CU	3/25/2016	2120B	5	5
Total Phosphorus (t)	0.03	J	mg/L	3/25/2016	365.4	0.01	0.04
62079-004 / Lower Flambeau Bottom / Water							
General Chemistry Parameters							
Total Phosphorus (t)	0.03	J	mg/L	3/25/2016	365.4	0.01	0.04

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 62079

Project: Monitoring

Date Received: 3/24/2016 **Date Reported:** 5/9/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
62079-005 / Pixley Surface / Water							
General Chemistry Parameters							
chlorophyll a	0.40		mg/m3	3/28/2016	10200H	NA	NA
Color	35		CU	3/25/2016	2120B	5	5
Total Phosphorus (t)	0.03	J	mg/L	3/25/2016	365.4	0.01	0.04
62079-006 / Pixley Bottom / Water							
General Chemistry Parameters							
Total Phosphorus (t)	0.03	J	mg/L	3/25/2016	365.4	0.01	0.04
62079-007 / Crowley Surface / Water							
General Chemistry Parameters							
chlorophyll a	0.41		mg/m3	3/28/2016	10200H	NA	NA
Color	40		CU	3/25/2016	2120B	5	5
Total Phosphorus (t)	0.03	J	mg/L	3/25/2016	365.4	0.01	0.04
62079-008 / Crowley Bottom / Water							
General Chemistry Parameters							
Total Phosphorus (t)	0.03	J	mg/L	3/25/2016	365.4	0.01	0.04

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 62079

Project: Monitoring

Date Received: 3/24/2016 **Date Reported:** 5/9/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
62079-009 / Winter Surface / Water							
General Chemistry Parameters							
chlorophyll a	0.41		mg/m3	3/28/2016	10200H	NA	NA
Color	40		CU	3/25/2016	2120B	5	5
Total Phosphorus (t)	0.02	J	mg/L	3/25/2016	365.4	0.01	0.04
62079-010 / Clam River Surface / Water							
General Chemistry Parameters							
chlorophyll a	11		mg/m3	3/28/2016	10200H	NA	NA
Color	15		CU	3/25/2016	2120B	5	5
Total Phosphorus (t)	0.04		mg/L	3/25/2016	365.4	0.01	0.04
62079-011 / Clam River Bottom / Water							
General Chemistry Parameters							
Total Phosphorus (t)	0.04		mg/L	3/25/2016	365.4	0.01	0.04
62079-012 / Danbury Surface / Water							
General Chemistry Parameters							
chlorophyll a	9.5		mg/m3	3/28/2016	10200H	NA	NA
Color	15		CU	3/25/2016	2120B	5	5
Total Phosphorus (t)	0.02	J	mg/L	3/25/2016	365.4	0.01	0.04

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 62079

Project: Monitoring

Date Received: 3/24/2016 **Date Reported:** 5/9/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
62079-013 / Danbury Bottom / Water							
General Chemistry Parameters							
Total Phosphorus (t)	0.02	J	mg/L	3/25/2016	365.4	0.01	0.04

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

Job # (WWA office use): 62079

CHAIN-OF-CUSTODY RECORD

WHITE WATER ASSOCIATES, INC.

429 River Lane, P.O. Box 27
Amasa, Michigan 49903

Phone: (906) 822-7889, Fax -7977
Web: white-water-associates.com

CLIENT NAME / BILL TO	EMAIL ADDRESS
RWE	
ADDRESS	TELEPHONE
CITY / STATE / ZIP	CONTRACT / PO / PROJECT NAME / WSSN#
	Monitoring
SAMPLER NAME (print first/last name)	COUNTY OF LOCATION / PAGE
Angie Stein	PAGE 1 OF 2 — Indicate if more than one page of COC records used
SAMPLER'S SIGNATURE	

Check off preservatives for each bottle upon arrival and indicate total number of bottles. WWA database contains bottle preservation details.

ANALYSIS TYPE REQUESTED (Attach list if neeeded)

Instructions to White Water
Send my report by:
____ email
____ mail

Unless otherwise noted, drinking water report copies are sent to MDEQ and Health Dept.

REMARKS (Note any special instructions provided by client or conditions of receipt noted by WWA lab staff. Also note any residual chlorine.)

	SAMPLE ID AND LOCATION (Containers for each sample may be combined on one line.)	DATE	TIME	SAMPLE MATRIX: Drinking water	Aqueous	Sed.	Soil	Other:	CONTAINERS / PRESERVATIVES: None	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Na Thio	Total Number of Containers	Chloro phyll a	TP	Color	T
	Upper Flambeau Surface	3-22-16	8:16						X						(1)	3	X	X	X	
1																1				
2	Upper Flambeau Bottom		"													1		X		
3	lower Flambeau Surf		9:44													3	X	X	X	
4	lower Flambeau Bottom		"													1		X		
5	Pixley Surface		11:07													3	X	X	X	
6	Pixley Bottom		"													1		X		
7	Crowley Surface		12:30													3	X	X	X	
8	Crowley Bottom		"													1		X		
9	Winter Surface		14:21													(2)3	X	X	X	
10	Clam River Surface	3/23	12:44													3	X	X	X	
11	Clam River Bottom	"	"													1		X		

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Comments / Sample temperature on receipt:
Relinquished by:	Date: 3-24-16	Time: 9:14	Received by: (1)	Date: 3-24-16	Time: 950	1.4

WHITE - RETURN W/ REPORT CANARY - W/ SAMPLES PINK - CUSTOMER

Job # (WWA office use): 62079

CHAIN-OF-CUSTODY RECORD

WHITE WATER ASSOCIATES, INC.

429 River Lane, P.O. Box 27
Amasa, Michigan 49903

Phone: (906) 822-7889, Fax -7977
Web: white-water-associates.com

CLIENT NAME / BILL TO	EMAIL ADDRESS
RWE	
ADDRESS	TELEPHONE
CITY / STATE / ZIP	CONTRACT / PO / PROJECT NAME / WSSN#
	Monitoring
SAMPLER NAME (print first/last name)	COUNTY OF LOCATION / PAGE
Angie Stone	PAGE 2 OF 2 (Indicate if more than one page of COC records used)
SAMPLER'S SIGNATURE	Check off preservatives for each bottle upon arrival and indicate total number of bottles. WWA database contains bottle preservation details.

ANALYSIS TYPE REQUESTED (Attach list if neeeded)

Instructions to White Water
Send my report by:
____ email
____ mail

Unless otherwise noted, drinking water report copies are sent to MDEQ and Health Dept.

REMARKS (Note any special instructions provided by client or conditions of receipt noted by WWA lab staff. Also note any residual chlorine.)

	SAMPLE ID AND LOCATION (Containers for each sample may be combined on one line.)	DATE	TIME	SAMPLE MATRIX: Drinking water	Aqueous	Sed.	Soil	Other:	CONTAINERS / PRESERVATIVES: None	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Na Thio	Total Number of Containers	Chlorophyll a	TP	Color
12	Danbury Surface	3/23/16	14:45		X				X							3	X	X	X
13	Danbury Bottom	"	"		X				X							1		X	

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Comments / Sample temperature on receipt:
Relinquished by:	Date: 3-24-16	Time: 9:14	Received by:	Date: 3-24-16	Time: 950	

WHITE - RETURN W/ REPORT CANARY - W/ SAMPLES PINK - CUSTOMER

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Cover Page

Client: RWE **WWA Job #:** 64453

Project: Monitoring

Date Received: 7/21/2016 **Date Reported:** 8/10/2016

Sample Number	Client Sample ID	Date Sampled	Sample Matrix
64453-001	Upper Flambeau	07/19/16	Water
64453-002	Upper Flambeau	07/19/16	Water
64453-003	Lower Flambeau	07/19/16	Water
64453-004	Lower Flambeau	07/19/16	Water
64453-005	Pixley	07/19/16	Water
64453-006	Pixley	07/19/16	Water
64453-007	Crowley	07/19/16	Water
64453-008	Crowley	07/19/16	Water
64453-009	Winter	07/18/16	Water
64453-010	Clam River	07/20/16	Water
64453-011	Clam River	07/20/16	Water
64453-012	Danbury	07/20/16	Water
64453-013	Danbury	07/20/16	Water

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Cover Page..continued

Client: RWE **WWA Job #:** 64453

Comments (if any):

Key to Laboratory Flags:

*: RPD exceeds limits.
B: The analyte was found in the associated blank as well as in the sample.
J: The quantitation is an estimated value because the result is less than the sample quantitation limit but greater than the detection limit.
M: A matrix effect was present.
Q: Batch QC data associated with the analysis does not meet the stated objectives
H: Indicates analytical holding time exceedance.
U: The analyte was analyzed for, but not detected.
P: A manual peak selection or manual integration was performed to correct an erroneous software selection.

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)
For coliform, Negative = No coliform bacteria detected, Positive = Coliform bacteria detected

Sample Types:
S = Solids, DW = Drinking water, D = Dissolved, T = Total, TC = TCLP extract, SP = SPLP extract

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without the written approval of this laboratory. The Chain of Custody is attached.

This report satisfies the requirements of your project but has not been prepared to comply with NELAP reporting requirements.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and White Water Associates Standard Operating Procedures. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this Final Report is authorized by White Water Associates management, as is verified by the following signature.

Approved By: Betty J. Preuss

WI DNR Lab Certification Number: 999971280
MI DEQ Certification Number: 9306
DoD-ELAP Accreditation Number: 65802
ISO/IEC 17025:2005 Accredited

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 64453

Project: Monitoring

Date Received: 7/21/2016 **Date Reported:** 8/10/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
64453-001 / Upper Flambeau / Surface / Water							
General Chemistry Parameters							
chlorophyll a	6.3		mg/m3	7/21/2016	10200H	NA	NA
Color	40		CU	7/21/2016	2120B	5	5
Total Phosphorus LL (t)	0.022	J	mg/L	8/1/2016	365.4	0.008	0.050
64453-002 / Upper Flambeau / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.019	J	mg/L	8/1/2016	365.4	0.008	0.050
64453-003 / Lower Flambeau / Surface / Water							
General Chemistry Parameters							
chlorophyll a	6.7		mg/m3	7/21/2016	10200H	NA	NA
Color	45		CU	7/21/2016	2120B	5	5
Total Phosphorus LL (t)	0.021	J	mg/L	8/1/2016	365.4	0.008	0.050
64453-004 / Lower Flambeau / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.026	J	mg/L	8/1/2016	365.4	0.008	0.050

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 64453

Project: Monitoring

Date Received: 7/21/2016 **Date Reported:** 8/10/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
64453-005 / Pixley / Surface / Water							
General Chemistry Parameters							
chlorophyll a	8.1		mg/m3	7/21/2016	10200H	NA	NA
Color	45		CU	7/21/2016	2120B	5	5
Total Phosphorus LL (t)	0.033	J	mg/L	8/1/2016	365.4	0.008	0.050
64453-006 / Pixley / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.180		mg/L	8/1/2016	365.4	0.008	0.050
64453-007 / Crowley / Surface / Water							
General Chemistry Parameters							
chlorophyll a	6.5		mg/m3	7/21/2016	10200H	NA	NA
Color	55		CU	7/21/2016	2120B	5	5
Total Phosphorus LL (t)	0.036	J	mg/L	8/1/2016	365.4	0.008	0.050
64453-008 / Crowley / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.030	J	mg/L	8/1/2016	365.4	0.008	0.050

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 64453

Project: Monitoring

Date Received: 7/21/2016 **Date Reported:** 8/10/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
64453-009 / Winter / Surface / Water							
General Chemistry Parameters							
chlorophyll a	2.2		mg/m3	7/21/2016	10200H	NA	NA
Color	85		CU	7/21/2016	2120B	5	5
Total Phosphorus LL (t)	0.035	J	mg/L	8/1/2016	365.4	0.008	0.050
64453-010 / Clam River / Surface / Water							
General Chemistry Parameters							
chlorophyll a	44		mg/m3	7/21/2016	10200H	NA	NA
Color	30		CU	7/21/2016	2120B	5	5
Total Phosphorus LL (t)	0.043	J	mg/L	8/1/2016	365.4	0.008	0.050
64453-011 / Clam River / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.043	J	mg/L	8/1/2016	365.4	0.008	0.050
64453-012 / Danbury / Surface / Water							
General Chemistry Parameters							
chlorophyll a	10		mg/m3	7/21/2016	10200H	NA	NA
Color	20		CU	7/21/2016	2120B	5	5
Total Phosphorus LL (t)	0.022	J	mg/L	8/1/2016	365.4	0.008	0.050

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 64453

Project: Monitoring

Date Received: 7/21/2016 **Date Reported:** 8/10/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
64453-013 / Danbury / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.022	J	mg/L	8/1/2016	365.4	0.008	0.050

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

Job # (WWA office use): 64453

CHAIN-OF-CUSTODY RECORD

WHITE WATER ASSOCIATES, INC.

429 River Lane, P.O. Box 27
Amasa, Michigan 49903

Phone: (906) 822-7889, Fax -7977
Web: white-water-associates.com

CLIENT NAME / BILL TO	EMAIL ADDRESS
RWE	
ADDRESS	TELEPHONE
CITY / STATE / ZIP	CONTRACT / PO / PROJECT NAME / WSSN#
	Monitoring
SAMPLER NAME (print first/last name): Steve Haag	COUNTY OF LOCATION
SAMPLER'S SIGNATURE	PAGE 1 OF 1 (Indicate if more than one page of COC records used)

Check off preservatives for each bottle upon arrival and indicate total number of bottles. WWA database contains bottle preservation details.

ANALYSIS TYPE REQUESTED (Attach list if neeeded)

Instructions to White Water
Send my report by:
____ email
____ mail

Unless otherwise noted, drinking water report copies are sent to MDEQ and Health Dept.

REMARKS (Note any special instructions provided by client or conditions of receipt noted by WWA lab staff. Also note any residual chlorine.)

	SAMPLE ID AND LOCATION (Containers for each sample may be combined on one line.)	DATE	TIME	SAMPLE MATRIX: Drinking water	Aqueous	Sed.	Soil	Other:	CONTAINERS / PRESERVATIVES: None	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Na Thio	Total Number of Containers	Chlorophyll a	Total Phos	Color
1	Upper Flambeau Surface	7-19-16	8:06		X				X	X						3	X	X	X
2	Upper Flambeau Bottom	7-19-16	8:10		|					|					1		X	
3	Lower Flambeau Surface	7-19-16	9:04		|				X	|					3	X	X	X
4	Lower Flambeau Bottom	7-19-16	9:08		|					|					1		X	
5	Pixley Surface	7-19-16	11:26		|				X	|					3	X	X	X
6	Pixley Bottom	7-19-16	11:27		|					|					1		X	
7	Crowley Surface	7-19-16	13:25		|				X	|					3	X	X	X
8	Crowley Bottom	7-19-16	13:27		|					|					1		X	
9	Winter Surface	7-18-16	14:00		|				X	|					3	X	X	X
10	Clam River Surface	7-18-16	10:15		|				X	|					3	X	X	X
11	Clam River Bottom	7-20-16	10:20		|				X	⊙						1		X	
12	Danbury Surface	7-20-16	1234		|				X	|					3	X	X	X
13	Danbury Bottom	7-20-16	1236		|					|					1		X	

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Comments / Sample temperature on receipt:
	7/20/16	18:12				
Relinquished by:	Date:	Time:	Received by: ⊙	Date:	Time:	
				7-21-16	1150	1.3

WHITE - RETURN W/ REPORT CANARY - W/ SAMPLES PINK - CUSTOMER

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Cover Page

Client: RWE **WWA Job #:** 65014

Project: Monitoring

Date Received: 8/19/2016 **Date Reported:** 9/6/2016

Sample Number	Client Sample ID	Date Sampled	Sample Matrix
65014-001	Upper Flambeau	08/18/16	Water
65014-002	Upper Flambeau	08/18/16	Water
65014-003	Lower Flambeau	08/18/16	Water
65014-004	Lower Flambeau	08/18/16	Water
65014-005	Pixley	08/18/16	Water
65014-006	Pixley	08/18/16	Water
65014-007	Crowley	08/18/16	Water
65014-008	Crowley	08/18/16	Water
65014-009	Winter	08/18/16	Water
65014-010	Clam River	08/18/16	Water
65014-011	Clam River	08/18/16	Water
65014-012	Danbury	08/18/16	Water
65014-013	Danbury	08/18/16	Water

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
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Cover Page..continued

Client: RWE **WWA Job #:** 65014

Comments (if any):

Key to Laboratory Flags:

*: RPD exceeds limits.
B: The analyte was found in the associated blank as well as in the sample.
J: The quantitation is an estimated value because the result is less than the sample quantitation limit but greater than the detection limit.
M: A matrix effect was present.
Q: Batch QC data associated with the analysis does not meet the stated objectives
H: Indicates analytical holding time exceedance.
U: The analyte was analyzed for, but not detected.
P: A manual peak selection or manual integration was performed to correct an erroneous software selection.

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)
For coliform, Negative = No coliform bacteria detected, Positive = Coliform bacteria detected

Sample Types:
S = Solids, DW = Drinking water, D = Dissolved, T = Total, TC = TCLP extract, SP = SPLP extract

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without the written approval of this laboratory. The Chain of Custody is attached.

This report satisfies the requirements of your project but has not been prepared to comply with NELAP reporting requirements.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and White Water Associates Standard Operating Procedures. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this Final Report is authorized by White Water Associates management, as is verified by the following signature.

Approved By: _____

WI DNR Lab Certification Number: 999971280
MI DEQ Certification Number: 9306
DoD-ELAP Accreditation Number: 65802
ISO/IEC 17025:2005 Accredited

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 65014

Project: Monitoring

Date Received: 8/19/2016 **Date Reported:** 9/6/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
65014-001 / Upper Flambeau / Surface / Water							
General Chemistry Parameters							
chlorophyll a	8.5		mg/m3	8/24/2016	10200H	NA	NA
Color	35		CU	8/19/2016	2120B	5	5
Total Phosphorus LL (t)	0.022	J	mg/L	8/25/2016	365.4	0.008	0.050
65014-002 / Upper Flambeau / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.022	J	mg/L	8/25/2016	365.4	0.008	0.050
65014-003 / Lower Flambeau / Surface / Water							
General Chemistry Parameters							
chlorophyll a	7.2		mg/m3	8/24/2016	10200H	NA	NA
Color	30		CU	8/19/2016	2120B	5	5
Total Phosphorus LL (t)	0.026	J	mg/L	8/25/2016	365.4	0.008	0.050
65014-004 / Lower Flambeau / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.096		mg/L	8/25/2016	365.4	0.008	0.050

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
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Client: RWE **WWA Job #:** 65014

Project: Monitoring

Date Received: 8/19/2016 **Date Reported:** 9/6/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
65014-005 / Pixley / Surface / Water							
General Chemistry Parameters							
chlorophyll a	15		mg/m3	8/24/2016	10200H	NA	NA
Color	45		CU	8/19/2016	2120B	5	5
Total Phosphorus LL (t)	0.036	J	mg/L	8/25/2016	365.4	0.008	0.050
65014-006 / Pixley / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.048	J	mg/L	8/25/2016	365.4	0.008	0.050
65014-007 / Crowley / Surface / Water							
General Chemistry Parameters							
chlorophyll a	15		mg/m3	8/24/2016	10200H	NA	NA
Color	40		CU	8/19/2016	2120B	5	5
Total Phosphorus LL (t)	0.030	J	mg/L	8/25/2016	365.4	0.008	0.050
65014-008 / Crowley / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.030	J	mg/L	8/25/2016	365.4	0.008	0.050

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 65014

Project: Monitoring

Date Received: 8/19/2016 **Date Reported:** 9/6/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
65014-009 / Winter / Surface / Water							
General Chemistry Parameters							
chlorophyll a	1.5		mg/m3	8/24/2016	10200H	NA	NA
Color	60		CU	8/19/2016	2120B	5	5
Total Phosphorus LL (t)	0.038	J	mg/L	8/25/2016	365.4	0.008	0.050
65014-010 / Clam River / Surface / Water							
General Chemistry Parameters							
chlorophyll a	61		mg/m3	8/24/2016	10200H	NA	NA
Color	25		CU	8/19/2016	2120B	5	5
Total Phosphorus LL (t)	0.050		mg/L	8/25/2016	365.4	0.008	0.050
65014-011 / Clam River / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.053		mg/L	8/25/2016	365.4	0.008	0.050
65014-012 / Danbury / Surface / Water							
General Chemistry Parameters							
chlorophyll a	5.2		mg/m3	8/24/2016	10200H	NA	NA
Color	20		CU	8/19/2016	2120B	5	5
Total Phosphorus LL (t)	0.037	J	mg/L	8/25/2016	365.4	0.008	0.050

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

ANALYTICAL REPORT

WHITE WATER ASSOCIATES, INC.
429 River Lane • PO Box 27 Amasa, MI 49903 • Ph (906) 822-7889 • Fax -7977

Client: RWE **WWA Job #:** 65014

Project: Monitoring

Date Received: 8/19/2016 **Date Reported:** 9/6/2016

Sample Results

Sample No. / ID / Description / Matrix	Result	Flags	Units	Date	Method	MDL	MQL
65014-013 / Danbury / Bottom / Water							
General Chemistry Parameters							
Total Phosphorus LL (t)	0.040	J	mg/L	8/25/2016	365.4	0.008	0.050

ND = Not Detected, MDL = Method Detection Limit, MQL = Method Quantitation Limit,
ppm = mg/L (liquid) or mg/kg (solid), ppb = ug/L (liquid) or ug/kg (solid)

Job # (WWA office use): 65014

CHAIN-OF-CUSTODY RECORD

WHITE WATER ASSOCIATES, INC.

429 River Lane, P.O. Box 27
Amasa, Michigan 49903

Phone: (906) 822-7889, Fax -7977
Web: white-water-associates.com

CLIENT NAME / BILL TO	EMAIL ADDRESS
RWE	
ADDRESS	TELEPHONE
CITY / STATE / ZIP	CONTRACT / PO / PROJECT NAME / WSSN#
	Monitoring
SAMPLER NAME (print first/last name): Steve Haas	COUNTY OF LOCATION
SAMPLER'S SIGNATURE	PAGE 1 OF 1 — Indicate if more than one page of COC records used

Check off preservatives for each bottle upon arrival and indicate total number of bottles. WWA database contains bottle preservation details.

ANALYSIS TYPE REQUESTED (Attach list if needed)

Instructions to White Water
Send my report by:
____ email
____ mail

Unless otherwise noted, drinking water report copies are sent to MDEQ and Health Dept.

REMARKS (Note *any* special instructions provided by client or conditions of receipt noted by WWA lab staff. Also note any residual chlorine.)

	SAMPLE ID AND LOCATION (Containers for each sample may be combined on one line.)	DATE	TIME	SAMPLE MATRIX: Drinking water	Aqueous	Sed.	Soil	Other:	CONTAINERS / PRESERVATIVES: None	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Na Thio	Total Number of Containers	Chlorophyll a (mg/L)	Total PO_4 ($\mu g/L$)	Color							
1	Upper Flambeau Surface	8-18-16	7:58						X	X						3	X	X	X							
2	Upper Flambeau Bottom	8-18-16	7:59													1		X								
3	Lower Flambeau Surface	8-18-16	9:44													3	X	X	X							
4	Lower Flambeau Bottom	8-18-16	9:45													1		X								
5	Pixley Surface	8-18-16	11:10													3	X	X	X							
6	Pixley Bottom	8-18-16	11:12													1		X								
7	Crowley Surface	8-18-16	12:59													3	X	X	X							
8	Crowley Bottom	8-18-16	13:00													1		X								
9	Winter Surface	8-16-16	13:07													3	X	X	X							
10	Clam River Surface	8-17-16	10:28													3	X	X	X							
11	Clam River Bottom	8-17-16	10:29													1		X								
12	Dunbarton Surface	8-17-16	13:06													3	X	X	X							
13	Dunbarton Bottom	8-17-16	13:08													1		X								

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Comments / Sample temperature on receipt:
			Gail S	8-18-16	1615	
	8/18/16	1634	Login Gail W	8-19-16	1107	3.7

WHITE - RETURN W/ REPORT CANARY - W/ SAMPLES PINK - CUSTOMER

CORRESPONDENCE

Brian Kreuscher

From: Jason Kreuscher
Sent: Monday, February 20, 2017 11:11 AM
To: Brian Kreuscher
Subject: FW: Clam River (P-9185) 2016 Draft WQ Report
Attachments: RWE Monitoring Sample Data 2016.xlsx

Jason Kreuscher
Vice President
Renewable World Energies, LLC
100 State St.
PO Box 264
Neshkoro WI 54960
Phone: 855-99HYDRO ext 102
Cell 715-572-7602
jason@rwehydro.com

From: Angie Stine [mailto:angie.stine@white-water-associates.com]
Sent: Monday, November 28, 2016 11:51 AM
To: Jason Kreuscher <jason@rwehydro.com>
Subject: RE: Clam River (P-9185) 2016 Draft WQ Report

Jason,

I have attached the Excel Spreadsheet I created to write the 2016 report for the dams we worked on. I worked with Jennifer Filbert (WDNR) on entering the Arpin data into SWIMS last year. Let me know if you need anything in addition to what I provided.

Angie

From: Jason Kreuscher [mailto:jason@rwehydro.com]
Sent: Monday, November 28, 2016 11:12 AM
To: Angie Stine
Subject: FW: Clam River (P-9185) 2016 Draft WQ Report

Angie,
Do you have Excel Spreadsheets of the water quality data as WDNR asked?

If not, we don't need to do it.

Thanks,

Jason P Kreuscher
Vice President
Renewable World Energies, LLC

100 S. State St.
PO Box 264
Neshkoro, WI 54960
Phone 855-99HYDRO ext 102
Cell 715-572-7602
Jason@rwehydro.com

From: Laatsch, Cheryl - DNR [mailto:Cheryl.Laatsch@wisconsin.gov]
Sent: Tuesday, November 22, 2016 11:50 AM
To: Jason Kreuscher
Subject: RE: Clam River (P-9185) 2016 Draft WQ Report

Hi Jason – Do you have excel spreadsheets for all of the WQ reports for all of the dams you own? We are doing a big upload of all data available, and having the spreadsheets will save a lot of time instead of hand entering all the data. Thanks for the help.

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Cheryl Laatsch
Statewide FERC Coordinator – Watershed Bureau
Wisconsin Department of Natural Resources
N7225 Highway 28, Horicon WI 53032
Phone: 920-387-7869
Fax: 920-387-7888
Cheryl.laatsch@wisconsin.gov

dnr.wi.gov

From: Jason Kreuscher [mailto:jason@rwehydro.com]
Sent: Wednesday, November 16, 2016 4:12 PM
To: Laatsch, Cheryl - DNR; 'Nick_Utrup@fws.gov'
Subject: Clam River (P-9185) 2016 Draft WQ Report

Cheryl and Nick,
Attached is the 2016 Draft Water Quality Report for the Clam River (P-9185) Hydroelectric Project.

Thanks,

Jason P Kreuscher
Vice President
Renewable World Energies, LLC
100 S. State St.
PO Box 264
Neshkoro, WI 54960
Phone 855-99HYDRO ext 102
Cell 715-572-7602
Jason@rwehydro.com

Brian Kreuscher

From: Jason Kreuscher
Sent: Friday, April 28, 2017 4:29 PM
To: Brian Kreuscher
Subject: FW: Another error I found
Attachments: P-9185_WQreport_2016.pdf

Jason Kreuscher
Vice President
Renewable World Energies, LLC
100 State St.
PO Box 264
Neshkoro WI 54960
Phone: 855-99HYDRO ext 102
Cell 715-572-7602
jason@rwehydro.com

From: Laatsch, Cheryl - DNR [mailto:Cheryl.Laatsch@wisconsin.gov]
Sent: Friday, April 28, 2017 4:24 PM
To: Jason Kreuscher <jason@rwehydro.com>
Cc: May, Pearl A - DNR <Pearl.May@wisconsin.gov>
Subject: FW: Another error I found

Hi Jason – Please see the note below from Pearl. She is helping with data collection.

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

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

dnr.wi.gov

From: May, Pearl A - DNR
Sent: Friday, April 28, 2017 4:22 PM
To: Laatsch, Cheryl - DNR
Subject: Another error I found

Hey,

It seems that the Clam River Hydroelectric Project Water Quality Monitoring Data Report for 2016 was submitted to us/FERC with the correct cover letter, but the cover letter is attached to the Winter Hydroelectric Project Report. We may want to contact Renewable World Energies…

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Pearl May, EIT, PLA
Water Resource Monitoring and Database Support Specialist
Bureau of Water Quality
Wisconsin Department of Natural Resources
101 S. Webster St., Madison, WI 53715
Phone: (608) 267-7656
Pearl.May@wisconsin.gov


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