



2301 NORTH THIRD STREET WAUSAU, WISCONSIN 54403
715/848-2976 FAX: 715/842-0284
Web Site: www.wvic.com Email: staff@wvic.com

January 30, 2019
Submitted Electronically Via Email

Cheryl Laatsch
Wisconsin Dept. of Natural Resources
N7725 Hwy 28
Horicon, WI 53032
Cheryl.laatsch@wisconsin.gov

RE: FERC Project No. 2113, Article 411 Compliance

In compliance with Article 411 of WVIC's FERC license, we hereby submit the annual report summarizing the water quality data collected in 2018. The "Headwater/Tailwater (HWTW) Biweekly Monitoring at Man-Made Reservoirs Dissolved Oxygen and Water Temperature Report", included as an attachment to this submittal, contains the data collected for the "Biweekly Monitoring at Man-Made Reservoirs".

WVIC was unable to take headwater (HW) and tailwater (TW) readings at the following locations and dates for the reasons outlined below:

Rainbow Reservoir

- August (2 HWTW) – Safety concerns with grating on dam platform
- November (1 HWTW) – Equipment replacement
- December (1 HWTW) – Equipment replacement

Willow Reservoir

- August (2 HWTW) – Safety Concerns with grating on dam platform
- November (1 HWTW) – Equipment replacement
- December (1 HWTW) – Equipment replacement

Rice Reservoir

- August (2 HWTW) – Safety concerns with grating on dam platform
- November (1 HWTW) – Equipment replacement
- December (1 HWTW) – Equipment replacement

Spirit Reservoir

- January (1 TW) – Tailwater inaccessible
- April (1 HW) – High flows
- July (1 HWTW) – High flows
- August (2 HWTW) – Safety concerns with grating on dam platform
- October (2 HW, 1 TW) – High flows
- November (2 HW, 1 TW) – High flows/equipment replacement
- December (1 HWTW) – Equipment replacement

Eau Pleine Reservoir

- January (2 HW, 1 TW) – Ice
- February(1 HW) – Ice
- August (1 HWTW) – Safety concerns with grating on dam platform
- November (1 HWTW) – Equipment replacement
- December (1 HWTW) – Equipment replacement

If you have any questions or concerns please contact me at (715) 848-2976 Ext. 308 or email sblado@wvic.com.

Sincerely,

A handwritten signature in blue ink that reads "Scott J. Blado". The signature is written in a cursive style with a large initial 'S'.

Scott J. Blado
Environmental Specialist

Enclosure: 2018 Annual Water Quality Data Summary

WVIC *Headwater/Tailwater Biweekly (Twice Monthly) Monitoring at Man-Made Reservoirs Dissolved Oxygen and Water Temperature Report*

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Jan 29, 2018	Tailwater	0.5			
			0.4	12.0	3.3
Feb 14, 2018	Tailwater	0.9			
			0.8	12.8	3.1
Feb 27, 2018	Headwater	5.1			
			1.0	8.2	2.8
			2.0	8.1	2.8
			3.0	7.6	3.0
			4.1	7.4	3.1
			4.6	7.3	3.2
			5.0	7.4	3.2
	Tailwater	1.1			
			1.0	12.1	4.6
Mar 14, 2018	Headwater	5.0			
			1.0	9.2	2.5
			2.0	7.3	2.8
			3.0	6.4	3.0
			4.0	5.8	3.1
			4.5	5.7	3.1
			4.9	5.7	3.1
	Tailwater	0.5			
			0.4	12.0	3.3
Mar 28, 2018	Headwater	5.3			
			1.0	10.4	3.9
			2.0	5.7	4.5
			3.0	2.5	4.6
			4.3	1.3	4.6
			4.8	1.3	4.7
			5.2	1.3	4.7
	Tailwater	0.3			
			0.2	8.8	8.5
Apr 18, 2018	Headwater	9.4			
			1.0	5.3	1.4
			2.0	3.4	1.6
			3.0	3.6	1.9
			4.0	4.1	2.4
			5.0	3.9	2.9
			6.0	3.5	3.4
			7.0	3.1	3.5
			8.0	2.9	3.5
			8.4	2.8	3.6
			8.9	2.6	3.6
			9.3	2.5	3.6
	Tailwater	0.2			
			0.1	12.6	4.2

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Apr 25, 2018	Headwater	9.2			
			1.0	7.0	2.1
			2.0	7.2	2.1
			3.0	6.9	2.1
			4.0	6.9	2.1
			5.0	6.9	2.1
			6.0	6.9	2.1
			7.0	6.9	2.1
			8.2	6.8	2.2
			8.7	6.8	2.2
			9.1	6.9	2.2
	Tailwater	0.2			
			0.1	11.8	5.4
May 7, 2018	Headwater	8.9			
			1.0	14.0	13.3
			2.0	12.7	12.5
			3.0	11.0	10.7
			4.0	10.3	10.2
			5.0	8.0	8.4
			6.0	7.8	7.8
			7.0	7.0	7.2
			7.9	6.3	7.0
			8.4	6.0	7.0
			8.8	5.3	7.2
	Tailwater	0.3			
			0.2	10.9	12.2
May 22, 2018	Headwater	10.8			
			1.0	11.9	18.8
			2.0	11.4	14.6
			3.0	9.9	14.2
			4.0	9.6	14.1
			5.0	8.6	13.9
			6.0	7.9	13.4
			7.0	6.0	11.4
			8.0	4.5	10.0
			9.0	4.1	9.4
			9.8	4.0	9.3
			10.3	4.0	9.3
			10.7	4.0	9.3
	Tailwater	0.3			
			0.2	11.7	15.0

WVIC *Headwater/Tailwater Biweekly (Twice Monthly) Monitoring at Man-Made Reservoirs Dissolved Oxygen and Water Temperature Report*

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Jun 5, 2018	Headwater	9.2			
			1.0	7.8	18.2
			2.0	7.2	18.0
			3.0	6.6	17.7
			4.0	6.4	17.7
			5.0	6.1	17.5
			6.0	5.7	17.3
			7.0	5.1	16.6
			8.2	3.9	15.8
			8.7	1.7	14.3
			9.1	0.6	13.4
	Tailwater	0.2			
			0.1	8.9	22.3
Jun 13, 2018	Headwater	10.7			
			1.0	8.3	20.8
			2.0	8.2	20.7
			3.0	8.2	20.7
			4.0	7.8	20.3
			5.0	5.9	19.4
			6.0	5.4	19.1
			7.0	4.8	18.8
			8.0	3.6	18.0
			9.0	3.3	17.9
			9.7	2.8	17.8
			10.2	1.1	16.6
			10.6	0.9	16.6
	Tailwater	0.3			
			0.2	9.0	20.4
Jul 12, 2018	Headwater	8.6			
			1.0	10.3	24.9
			2.0	10.1	24.8
			3.0	10.1	24.8
			4.0	8.9	24.5
			5.0	0.9	23.1
			6.0	0.3	22.9
			7.0	0.2	22.6
			7.6	0.3	22.2
			8.1	0.3	21.6
			8.5	0.4	21.1
	Tailwater	0.2			
			0.1	8.3	23.4

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Jul 31, 2018	Headwater	8.5			
			1.0	8.6	24.6
			2.0	7.4	23.9
			3.0	6.7	23.5
			4.0	4.9	22.8
			5.0	4.4	22.7
			6.0	4.3	22.7
			7.0	4.2	22.7
			7.5	4.1	22.7
			8.0	4.1	22.7
			8.4	4.0	22.7
	Tailwater	0.2			
			0.1	8.4	24.0
Aug 13, 2018	Headwater	8.4			
			1.0	9.2	26.9
			2.0	6.3	24.5
			3.0	6.0	24.3
			4.0	5.6	24.2
			5.0	2.8	23.6
			6.0	2.4	23.5
			7.0	2.4	23.5
			7.4	2.3	23.4
			7.9	2.0	23.2
			8.3	0.6	21.9
	Tailwater	0.2			
			0.1	8.2	24.6
Sep 18, 2018	Headwater	8.5			
			1.0	13.9	22.9
			2.0	10.1	21.9
			3.0	6.7	20.8
			4.0	6.4	20.7
			5.0	5.7	20.5
			6.0	4.1	20.2
			7.0	3.1	20.2
			7.5	3.0	20.1
			8.0	3.0	20.1
			8.4	3.0	20.1
	Tailwater	0.2			
			0.1	7.2	21.2

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Sep 26, 2018					
	Headwater	9.1			
			1.0	9.4	18.1
			2.0	9.4	18.1
			3.0	9.3	18.1
			4.0	9.3	18.1
			5.0	9.3	18.1
			6.0	9.3	18.1
			7.0	9.3	18.1
			8.1	9.3	18.1
			8.6	9.2	18.1
			9.0	9.2	18.2
	Tailwater	0.2			
			0.1	9.5	17.6
Oct 2, 2018					
	Headwater	8.6			
			1.0	9.2	14.5
			2.0	9.2	14.4
			3.0	9.1	14.4
			4.0	9.1	14.4
			5.0	9.1	14.4
			6.0	9.1	14.4
			7.0	9.1	14.4
			7.6	9.0	14.4
			8.1	9.0	14.4
			8.5	9.0	14.4
	Tailwater	0.2			
			0.1	10.4	14.9
Oct 12, 2018					
	Headwater	9.1			
			1.0	9.3	11.3
			2.0	9.3	11.2
			3.0	9.3	11.3
			4.0	9.3	11.3
			5.0	9.3	11.3
			6.0	9.3	11.3
			7.0	9.3	11.3
			8.1	9.3	11.3
			8.6	9.3	11.3
			9.0	9.3	11.3
	Tailwater	0.2			
			0.1	10.6	10.6

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Oct 24, 2018					
	Headwater	9.1			
			1.0	11.1	8.6
			2.0	10.8	7.9
			3.0	10.7	7.9
			4.0	10.7	7.9
			5.0	10.7	7.9
			6.0	10.7	7.9
			7.0	10.6	7.9
			8.1	10.6	7.9
			8.6	10.6	8.0
			9.0	10.6	8.0
	Tailwater	0.2			
			0.1	11.6	9.2
Nov 9, 2018					
	Headwater	9.0			
			1.0	11.4	4.9
			2.0	11.4	4.9
			3.0	11.3	5.0
			4.0	11.3	5.0
			5.0	11.3	5.0
			6.0	11.3	5.0
			7.0	11.3	5.0
			8.0	11.2	5.0
			8.5	11.2	5.1
			8.9	11.0	5.4
	Tailwater	0.2			
			0.1	12.6	3.3
Dec 27, 2018					
	Headwater	8.5			
			1.0	8.6	3.0
			2.0	8.6	3.0
			3.0	8.6	3.0
			4.0	8.5	3.1
			5.0	8.4	3.1
			6.0	8.3	3.2
			7.0	8.3	3.2
			7.5	8.3	3.2
			8.0	8.3	3.2
			8.4	8.3	3.3
	Tailwater	0.9			
			0.8	13.3	1.7

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
Jan 25, 2018	Headwater	6.8			
			1.0	7.4	0.1
			2.0	7.4	0.1
			3.0	7.5	0.1
			4.0	7.5	0.2
			5.0	7.5	0.3
			5.8	7.5	0.5
			6.3	6.3	1.0
			6.7	5.6	1.2
	Tailwater	0.8			
			0.7	11.5	0.7
Jan 30, 2018	Headwater	6.6			
			1.0	7.4	0.3
			2.0	7.4	0.3
			3.0	7.2	0.5
			4.0	7.4	0.4
			5.0	7.0	0.7
			5.6	7.2	0.6
			6.1	7.3	0.6
			6.5	7.3	0.8
	Tailwater	1.0			
			0.9	10.9	1.3
Feb 13, 2018	Headwater	6.1			
			1.0	7.0	0.3
			2.0	7.0	0.3
			3.0	6.9	0.3
			4.0	6.9	0.4
			5.1	7.0	0.4
			5.6	7.0	0.4
			6.0	7.0	0.5
	Tailwater	1.6			
			1.5	11.3	0.5
Feb 26, 2018	Headwater	5.7			
			1.0	5.7	0.7
			2.0	5.7	0.7
			3.0	5.7	0.7
			4.0	5.7	0.8
			4.7	5.8	0.8
			5.2	5.9	0.8
			5.6	10.0	1.1
	Tailwater	1.0			
			0.9	6.3	0.8

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
Mar 16, 2018	Headwater	5.2			
			1.0	6.6	0.5
			2.0	6.6	0.5
			3.0	6.7	0.5
			4.2	6.6	0.5
			4.7	6.6	0.5
			5.1	6.7	0.6
	Tailwater	1.1			
			1.0	10.4	0.7
Mar 26, 2018	Headwater	5.2			
			1.0	9.4	0.5
			2.0	9.4	0.5
			3.0	9.4	0.6
			4.2	9.4	0.6
			4.7	9.4	0.9
			5.1	9.3	1.2
	Tailwater	0.9			
			0.8	12.0	0.7
Apr 19, 2018	Headwater	6.5			
			1.0	10.2	0.5
			2.0	10.1	0.5
			3.0	9.2	1.5
			4.0	9.1	1.6
			5.0	9.1	1.6
			5.5	9.1	1.7
			6.0	9.0	1.7
			6.4	9.0	1.8
	Tailwater	1.1			
			1.0	12.2	1.3
Apr 30, 2018	Headwater	7.5			
			1.0	10.0	2.7
			2.0	10.0	2.8
			3.0	10.0	2.7
			4.0	10.0	2.7
			5.0	9.9	2.8
			6.0	9.9	2.9
			6.5	9.9	2.9
			7.0	9.8	3.1
			7.4	9.6	3.7
	Tailwater	0.9			
			0.8	12.3	3.0

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
May 14, 2018					
	Headwater	8.3			
			1.0	11.3	12.9
			2.0	11.0	12.5
			3.0	10.0	10.2
			4.0	9.9	10.2
			5.0	9.8	10.1
			6.0	9.5	10.0
			7.3	8.6	8.8
			7.8	8.4	8.4
			8.2	8.3	8.5
	Tailwater	0.3			
			0.2	10.8	10.9
May 29, 2018					
	Headwater	8.4			
			1.0	8.2	22.4
			2.0	8.2	22.0
			3.0	7.4	18.0
			4.0	7.2	17.9
			5.0	6.4	16.2
			6.0	6.3	15.8
			7.0	6.3	15.9
			7.4	6.3	15.9
			7.9	6.3	16.0
			8.3	6.3	16.1
	Tailwater	1.3			
			1.2	8.8	18.9
Jun 20, 2018					
	Headwater	8.3			
			1.0	7.9	21.6
			2.0	7.9	21.5
			3.0	7.8	21.5
			4.0	7.9	21.6
			5.0	7.9	21.5
			6.0	7.7	21.4
			7.3	7.6	21.3
			7.8	7.6	21.3
			8.2	7.6	21.3
	Tailwater	1.1			
			1.0	8.7	22.6
Jun 27, 2018					
	Headwater	8.3			
			1.0	8.1	24.4
			2.0	7.5	22.4
			3.0	7.5	22.4
			4.0	7.4	22.3
			5.0	7.4	22.3
			6.0	5.6	21.4
			7.3	4.6	21.1
			7.8	4.5	21.1
			8.2	4.4	21.1
	Tailwater	1.1			
			1.0	8.4	22.6

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
Jul 11, 2018					
	Headwater	7.8			
			1.0	8.6	25.6
			2.0	8.3	25.2
			3.0	6.9	24.5
			4.0	6.5	24.2
			5.0	6.5	24.2
			6.0	6.3	24.1
			6.8	6.0	23.9
			7.3	6.0	23.9
			7.7	6.0	23.9
	Tailwater	0.9			
			0.8	8.2	24.5
Jul 23, 2018					
	Headwater	7.8			
			1.0	9.2	24.6
			2.0	9.2	24.4
			3.0	9.0	23.9
			4.0	8.6	23.6
			5.0	7.1	22.2
			6.0	7.1	22.2
			6.8	7.1	22.2
			7.3	6.9	22.2
			7.7	6.9	22.2
	Tailwater	1.0			
			0.9	8.5	23.6
Sep 17, 2018					
	Headwater	7.8			
			1.0	7.3	19.9
			2.0	7.4	19.9
			3.0	7.2	19.9
			4.0	7.1	19.9
			5.0	7.1	19.8
			6.0	7.1	19.8
			6.8	7.0	19.8
			7.3	7.0	19.8
			7.7	7.0	19.9
	Tailwater	1.0			
			0.9	8.8	20.1
Sep 27, 2018					
	Headwater	7.6			
			1.0	8.3	16.0
			2.0	8.3	16.0
			3.0	8.3	16.0
			4.0	8.3	16.0
			5.0	8.3	16.0
			6.0	8.3	16.0
			6.6	8.2	16.0
			7.1	8.3	16.0
			7.5	8.2	16.1
	Tailwater	0.2			
			0.1	9.6	16.0

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
Oct 15, 2018	Headwater	8.5			
			1.0	10.0	7.5
			2.0	10.0	7.5
			3.0	10.0	7.5
			4.0	10.0	7.5
			5.0	10.0	7.5
			6.0	10.0	7.5
			7.0	9.9	7.5
			7.5	9.9	7.5
			8.0	9.9	7.5
			8.4	10.0	7.4
	Tailwater	0.2			
			0.1	11.4	7.5
Oct 31, 2018	Headwater	8.3			
			1.0	10.7	5.7
			2.0	10.6	5.7
			3.0	10.6	5.8
			4.0	10.6	5.8
			5.0	10.6	5.8
			6.0	10.6	5.8
			7.3	10.5	5.8
			7.8	10.5	5.8
			8.2	10.4	6.1
	Tailwater	0.2			
			0.1	12.0	5.8
Nov 8, 2018	Headwater	8.6			
			1.0	11.1	4.3
			2.0	11.1	4.3
			3.0	11.1	4.3
			4.0	11.1	4.3
			5.0	11.1	4.3
			6.0	11.0	4.3
			7.0	11.0	4.4
			7.6	11.0	4.4
			8.1	11.0	4.4
			8.5	11.0	4.5
	Tailwater	0.2			
			0.1	12.6	4.3
Dec 28, 2018	Headwater	7.6			
			1.0	10.3	0.6
			2.0	10.1	1.0
			3.0	10.1	1.1
			4.0	10.1	1.2
			5.0	10.1	1.2
			6.0	9.9	1.3
			6.6	9.9	1.3
			7.1	9.9	1.4
			7.5	9.9	1.4
	Tailwater	1.0			
			0.9	12.6	1.3

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RICE RESERVOIR					
Jan 25, 2018	Headwater	4.0			
			1.0	11.2	0.3
			2.0	11.1	0.4
			3.0	11.0	0.4
			3.5	11.0	0.4
			3.9	11.0	0.4
	Tailwater	0.5			
			0.4	12.3	0.7
Jan 30, 2018	Headwater	3.6			
			1.0	11.3	0.3
			2.0	11.2	0.4
			2.6	11.2	0.4
			3.1	11.1	0.4
			3.5	11.2	0.4
	Tailwater	0.4			
			0.3	12.2	0.6
Feb 15, 2018	Headwater	2.9			
			1.0	10.7	0.4
			1.9	10.7	0.4
			2.4	10.7	0.4
			2.8	10.7	0.4
	Tailwater	0.4			
			0.3	11.6	0.9
Feb 26, 2018	Headwater	2.7			
			1.0	10.8	0.6
			1.7	10.8	0.7
			2.2	10.8	0.8
			2.6	10.9	1.0
	Tailwater	0.4			
			0.3	12.1	0.8
Mar 16, 2018	Headwater	2.5			
			1.0	10.7	0.9
			1.5	10.8	0.9
			2.0	10.9	1.0
			2.4	10.8	0.9
	Tailwater	1.0			
			0.9	11.9	1.0
Mar 26, 2018	Headwater	1.0			
			0.9	10.3	1.7
	Tailwater	0.3			
			0.2	11.1	2.1

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RICE RESERVOIR					
Apr 19, 2018					
	Headwater	3.0			
			1.0	10.3	1.0
			2.0	10.2	1.1
			2.5	10.1	1.1
			2.9	10.1	1.2
	Tailwater	0.2			
			0.1	11.3	2.7
Apr 30, 2018					
	Headwater	3.5			
			1.0	10.2	4.2
			2.0	10.2	4.3
			2.5	10.2	4.3
			3.0	10.2	4.3
			3.4	10.2	4.3
	Tailwater	0.5			
			0.4	11.1	4.7
May 14, 2018					
	Headwater	3.0			
			1.0	11.0	13.8
			2.0	10.6	13.5
			2.5	10.5	13.5
			2.9	10.3	13.7
	Tailwater	0.7			
			0.6	10.0	13.6
May 24, 2018					
	Headwater	2.3			
			1.3	8.1	16.9
			1.8	7.9	17.0
			2.2	8.0	17.0
	Tailwater	1.1			
			1.0	8.7	17.0
Jun 20, 2018					
	Headwater	2.2			
			1.2	7.9	23.1
			1.7	7.8	22.9
			2.1	7.8	22.9
	Tailwater	0.6			
			0.5	8.0	22.3
Jun 28, 2018					
	Headwater	4.2			
			1.0	7.7	23.4
			2.0	6.5	22.4
			3.2	6.7	22.5
			3.7	6.4	22.2
			4.1	6.4	22.2
	Tailwater	0.3			
			0.2	7.7	22.5
Jul 9, 2018					
	Headwater	1.5			
			1.0	8.6	26.3
			1.4	8.6	26.3
	Tailwater	1.1			
			1.0	8.1	25.5

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RICE RESERVOIR					
Jul 23, 2018					
	Headwater	3.5			
			1.0	9.2	23.9
			2.0	9.1	23.7
			2.5	8.9	23.4
			3.0	8.7	23.2
			3.4	8.6	23.0
	Tailwater	0.4			
			0.3	8.6	23.3
Sep 17, 2018					
	Headwater	3.7			
			1.0	9.1	23.3
			2.0	9.1	23.3
			2.7	9.1	23.3
			3.2	9.0	23.3
			3.6	9.0	23.3
	Tailwater	0.2			
			0.1	7.8	22.3
Sep 27, 2018					
	Headwater	1.4			
			1.3	8.3	15.3
	Tailwater	0.2			
			0.1	8.8	15.2
Oct 15, 2018					
	Headwater	4.3			
			1.0	9.9	7.2
			2.0	9.9	7.3
			3.3	9.9	7.3
			3.8	9.9	7.3
			4.2	9.9	7.2
	Tailwater	0.2			
			0.1	10.7	7.1
Oct 31, 2018					
	Headwater	1.7			
			1.2	10.4	5.8
			1.6	10.5	5.8
	Tailwater	0.2			
			0.1	10.6	5.9
Nov 8, 2018					
	Headwater	1.8			
			1.3	11.2	4.1
			1.7	11.1	4.2
	Tailwater	0.2			
			0.1	12.1	3.9
Dec 28, 2018					
	Headwater	1.5			
			1.0	12.7	0.8
			1.4	12.7	0.8
	Tailwater	0.2			
			0.1	12.5	1.4

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
SPIRIT RESERVOIR					
Jan 25, 2018	Headwater	3.7			
			1.0	11.6	1.0
			2.0	7.4	2.5
			2.7	5.8	2.8
			3.2	5.2	4.0
			3.6	5.3	4.1
Jan 30, 2018	Headwater	3.7			
			1.0	9.2	1.4
			2.0	6.7	2.8
			2.7	5.6	3.5
			3.2	5.1	3.6
			3.6	5.5	3.4
	Tailwater	1.0			
			0.9	7.4	2.6
Feb 15, 2018	Headwater	3.6			
			1.0	8.9	1.3
			2.0	8.7	1.4
			2.6	8.2	1.7
			3.1	7.4	2.2
			3.5	7.1	2.4
	Tailwater	1.0			
			0.9	7.4	2.8
Feb 26, 2018	Headwater	3.4			
			1.0	7.7	1.3
			2.0	7.5	1.5
			2.4	7.4	1.6
			2.9	7.1	1.9
			3.3	5.0	3.5
	Tailwater	0.9			
			0.8	9.3	2.4
Mar 16, 2018	Headwater	3.2			
			1.0	8.2	0.8
			2.2	6.9	1.1
			2.7	5.4	2.5
			3.1	5.0	2.7
	Tailwater	1.2			
			1.1	8.8	1.7
Mar 26, 2018	Headwater	3.3			
			1.0	8.1	1.3
			2.3	7.3	1.6
			2.9	6.5	2.1
			3.2	5.2	3.7
	Tailwater	0.5			
			0.4	10.5	3.0

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
SPIRIT RESERVOIR					
Apr 19, 2018	Headwater	3.4			
			1.0	10.2	0.3
			2.0	10.2	0.3
			2.4	10.2	0.3
			2.9	10.2	0.4
			3.3	10.1	0.5
	Tailwater	1.0			
			0.9	11.2	1.0
Apr 30, 2018	Tailwater	1.4			
			1.3	12.0	3.1
May 14, 2018	Headwater	5.0			
			1.0	9.6	16.0
			2.0	9.1	15.0
			3.0	7.6	14.2
			4.0	7.0	13.6
			4.5	6.3	13.3
			4.9	5.7	13.0
	Tailwater	0.6			
			0.5	8.7	14.4
May 24, 2018	Headwater	5.0			
			1.0	8.6	21.8
			2.0	7.4	17.3
			3.0	6.8	16.7
			4.0	5.0	16.3
			4.5	4.4	15.7
			4.9	2.3	15.1
	Tailwater	0.3			
			0.2	8.7	19.1
Jun 20, 2018	Headwater	5.8			
			1.0	7.8	22.0
			2.0	7.6	22.0
			3.0	7.3	21.9
			4.0	7.3	21.9
			4.8	7.3	22.0
			5.3	7.3	21.9
			5.7	7.2	21.9
	Tailwater	1.0			
			0.9	7.0	21.8
Jun 28, 2018	Headwater	5.3			
			1.0	7.0	23.5
			2.0	5.8	22.6
			3.0	4.9	22.1
			4.3	1.8	20.8
			4.8	0.8	20.5
			5.2	0.9	20.5
	Tailwater	0.3			
			0.2	3.5	20.9

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
SPIRIT RESERVOIR					
Jul 23, 2018					
	Headwater	5.1			
			1.0	6.3	22.9
			2.0	6.2	22.9
			3.0	6.2	22.9
			4.1	5.7	22.6
			4.6	4.9	22.3
			5.0	4.8	22.2
	Tailwater	0.5			
			0.4	5.9	22.3
Sep 17, 2018					
	Headwater	5.0			
			1.0	9.4	24.3
			2.0	8.7	23.7
			3.0	4.4	20.5
			4.0	4.0	20.3
			4.5	3.8	20.3
			4.9	3.3	20.4
	Tailwater	0.3			
			0.2	7.9	23.0
Sep 27, 2018					
	Headwater	4.7			
			1.0	7.9	16.0
			2.0	7.9	16.0
			3.0	7.9	16.0
			3.7	7.9	16.0
			4.2	7.9	15.9
			4.6	7.9	15.9
	Tailwater	0.2			
			0.1	9.0	15.8
Oct 31, 2018					
	Tailwater	0.2			
			0.1	10.4	6.8
Nov 8, 2018					
	Tailwater	0.2			
			0.1	11.5	4.7
Dec 28, 2018					
	Headwater	5.0			
			1.0	8.9	2.2
			2.0	8.5	2.4
			3.0	6.7	3.1
			4.0	5.8	3.5
			4.5	5.7	3.6
			4.9	5.5	3.7
	Tailwater	0.5			
			0.4	10.6	3.2

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Jan 25, 2018					
	Headwater	5.9			
			1.0	7.4	2.2
			2.0	7.0	2.4
			3.0	7.0	2.4
			4.0	7.2	2.4
			4.9	6.9	2.4
			5.4	6.9	2.5
			5.8	7.0	2.4
	Tailwater	0.2			
			0.1	12.7	1.9
Jan 30, 2018					
	Headwater	5.7			
			1.0	6.8	2.2
			2.0	6.8	2.2
			3.0	6.7	2.2
			4.0	6.6	2.4
			4.7	6.6	2.4
			5.2	6.6	2.5
			5.6	6.4	2.5
	Tailwater	0.2			
			0.1	12.0	2.2
Feb 15, 2018					
	Headwater	5.4			
			1.0	6.4	2.0
			2.0	6.1	2.1
			3.0	6.0	2.5
			4.0	6.3	2.2
			4.4	6.4	2.1
			4.9	6.3	2.1
			5.3	6.3	2.3
	Tailwater	0.2			
			0.1	13.2	2.4
Feb 26, 2018					
	Headwater	5.1			
			1.0	10.8	0.6
			2.0	10.8	0.7
			3.0	10.8	0.8
			4.1	10.9	1.0
			4.6	6.4	1.5
			5.0	6.0	1.6
	Tailwater	0.2			
			0.1	12.1	0.8
Mar 16, 2018					
	Headwater	4.8			
			1.0	6.9	1.0
			2.0	6.3	1.3
			3.0	6.6	1.1
			3.8	6.8	1.1
			4.3	6.8	1.1
			4.7	6.8	1.1
	Tailwater	0.2			
			0.1	10.6	1.6

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Mar 26, 2018					
	Headwater	4.6			
			1.0	7.6	0.9
			2.0	7.5	1.1
			3.0	7.6	1.2
			3.6	7.6	1.2
			4.1	7.7	1.2
			4.5	7.9	1.2
	Tailwater	0.2			
			0.1	11.6	1.9
Apr 19, 2018					
	Headwater	6.1			
			1.0	7.3	1.0
			2.0	6.7	1.4
			3.0	6.7	1.4
			4.0	6.6	1.4
			5.1	6.8	1.4
			5.6	7.0	1.4
			6.0	6.9	1.6
	Tailwater	0.3			
			0.2	10.9	1.9
Apr 30, 2018					
	Headwater	6.0			
			1.0	8.3	2.8
			2.0	8.3	2.8
			3.0	8.3	2.8
			4.0	8.3	2.8
			5.0	8.3	2.9
			5.5	8.2	3.0
			5.9	8.2	3.1
	Tailwater	0.2			
			0.1	12.4	3.5
May 14, 2018					
	Headwater	6.6			
			1.0	12.1	15.4
			2.0	11.8	14.5
			3.0	10.8	10.8
			4.0	9.7	9.2
			5.0	9.4	8.9
			5.6	9.2	8.9
			6.1	8.8	8.7
			6.5	8.0	8.6
	Tailwater	0.3			
			0.2	10.1	13.3

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
May 29, 2018					
	Headwater	6.6			
			1.0	9.1	23.1
			2.0	9.1	22.7
			3.0	8.7	21.1
			4.0	6.3	15.8
			5.0	5.2	13.1
			5.6	4.0	11.9
			6.1	3.3	10.9
			6.5	3.2	11.2
	Tailwater	0.2			
			0.1	8.4	22.0
Jun 20, 2018					
	Headwater	7.2			
			1.0	7.6	21.8
			2.0	7.2	21.4
			3.0	7.0	21.2
			4.0	6.8	21.1
			5.0	7.0	21.2
			6.2	6.8	21.0
			6.7	6.7	21.0
			7.1	6.7	21.1
	Tailwater	0.3			
			0.2	8.3	22.0
Jun 27, 2018					
	Headwater	7.0			
			1.0	7.0	22.4
			2.0	7.0	22.4
			3.0	5.9	22.0
			4.0	5.4	21.7
			5.0	5.3	21.8
			6.0	5.3	21.7
			6.4	4.9	21.7
			6.9	3.8	20.4
	Tailwater	0.2			
			0.1	8.1	22.4
Jul 9, 2018					
	Headwater	6.8			
			1.0	7.6	25.2
			2.0	7.5	25.2
			3.0	7.4	25.1
			4.0	7.3	25.0
			5.0	6.7	24.7
			5.8	6.3	24.6
			6.3	5.9	24.5
			6.7	4.9	24.3
	Tailwater	0.2			
			0.1	7.9	25.9

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Jul 23, 2018	Headwater	6.5			
			1.0	6.4	22.2
			2.0	6.5	22.3
			3.0	6.4	22.2
			4.0	6.4	22.2
			5.0	6.3	22.2
			5.5	6.3	22.2
			6.0	6.3	22.2
			6.4	6.3	22.2
	Tailwater	0.2			
			0.1	8.2	23.0
Sep 17, 2018	Headwater	5.8			
			1.0	8.8	23.6
			2.0	8.7	23.4
			3.0	8.5	23.0
			4.0	7.2	22.1
			4.8	5.6	20.7
			5.3	5.4	20.5
			5.7	5.1	20.6
	Tailwater	0.2			
			0.1	8.4	23.4
Sep 27, 2018	Headwater	5.9			
			1.0	8.3	15.9
			2.0	8.3	15.9
			3.0	8.3	15.8
			4.0	8.3	15.8
			4.9	8.3	15.8
			5.4	8.3	15.8
			5.8	8.3	15.8
	Tailwater	0.2			
			0.1	9.5	15.7
Oct 15, 2018	Headwater	6.7			
			1.0	10.3	7.5
			2.0	10.3	7.5
			3.0	10.2	7.5
			4.0	10.2	7.5
			5.0	10.2	7.5
			5.7	10.2	7.5
			6.2	10.2	7.6
			6.6	10.2	7.6
	Tailwater	0.2			
			0.1	11.5	7.4

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Oct 31, 2018	Headwater	7.1			
			1.0	10.8	6.0
			2.0	10.7	6.0
			3.0	10.7	6.1
			4.0	10.7	6.1
			5.0	10.7	6.1
			6.1	10.7	6.1
			6.6	10.7	6.1
			7.0	10.7	6.2
	Tailwater	0.2			
			0.1	11.6	5.8
Nov 8, 2018	Headwater	7.1			
			1.0	11.4	4.0
			2.0	11.4	4.1
			3.0	11.3	4.1
			4.0	11.3	4.1
			5.0	11.3	4.1
			6.1	11.3	4.1
			6.6	11.3	4.1
			7.0	11.3	4.1
	Tailwater	0.2			
			0.1	12.7	4.1
Dec 28, 2018	Headwater	6.1			
			1.0	9.2	2.5
			2.0	8.8	2.8
			3.0	8.7	2.8
			4.0	8.5	2.9
			5.1	8.5	2.9
			5.6	8.5	2.9
			6.0	8.3	3.0
	Tailwater	0.2			
			0.1	13.0	2.1