

January 23, 2019
Submitted Electronically Via Email

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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 2019. 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:

Willow Reservoir

- April (2 HW) – High flows

Spirit Reservoir

- January (1 HW) – High flows
- April (1 HW) – High flows
- May (1 HW) – High flows
- August (1 HW) – High flows
- October (1 HW) – Dam maintenance

Eau Pleine Reservoir

- February (1 TW) – Ice shelf
- March (1 TW) – Ice shelf
- December (1 HW) – Ice

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: 2019 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 3, 2019					
	Headwater	8.8			
			1.0	8.9	3.1
			2.0	8.7	3.1
			3.0	8.8	3.1
			4.0	8.7	3.1
			5.0	8.6	3.1
			6.0	8.4	3.2
			7.0	8.3	3.2
			7.8	8.3	3.3
			8.3	8.3	3.4
			8.7	8.3	3.5
	Tailwater	0.2			
			0.1	12.9	3.4
Jan 11, 2019					
	Headwater	8.6			
			1.0	6.9	3.6
			2.0	6.7	3.7
			3.0	6.7	3.7
			4.0	6.7	3.7
			5.0	6.7	3.7
			6.0	6.7	3.7
			7.0	6.6	3.7
			7.6	6.6	3.7
			8.1	6.6	3.7
			8.5	6.6	3.7
	Tailwater	0.2			
			0.1	13.3	2.4
Feb 15, 2019					
	Headwater	7.5			
			1.0	8.3	3.6
			2.0	8.1	3.6
			3.0	8.1	3.6
			4.0	8.0	3.6
			5.0	8.0	3.6
			6.0	8.0	3.6
			6.5	8.1	3.7
			7.0	8.0	3.8
			7.4	8.0	3.8
Feb 27, 2019					
	Headwater	6.1			
			1.0	6.9	2.3
			2.0	6.5	2.4
			3.0	5.7	3.0
			4.0	5.3	3.2
			5.1	5.4	3.2
			5.6	5.5	3.1
			6.0	5.5	3.0
	Tailwater	0.2			
			0.1	12.4	2.6

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (°C)
EAU PLEINE RESERVOIR					
Mar 11, 2019					
	Headwater	5.9			
			1.0	3.9	2.8
			2.0	4.0	2.8
			3.0	4.0	2.8
			4.0	4.0	2.9
			4.9	4.0	2.9
			5.4	4.0	2.9
			5.8	4.0	3.4
	Tailwater	0.3			
			0.2	12.0	3.2
Mar 28, 2019					
	Headwater	8.8			
			1.0	4.9	1.8
			2.0	5.0	1.6
			3.0	5.0	1.8
			4.0	5.0	1.7
			5.0	5.0	1.8
			6.0	5.1	1.8
			7.0	5.1	1.8
			7.8	5.1	1.8
			8.3	5.2	1.8
			8.7	5.2	2.0
Apr 8, 2019					
	Headwater	9.2			
			1.0	4.8	2.9
			2.0	4.8	3.0
			3.0	4.8	3.0
			4.0	4.8	2.9
			5.0	4.8	2.9
			6.0	4.8	2.9
			7.0	4.8	3.0
			8.2	4.8	3.0
			8.7	4.8	3.0
			9.1	4.8	3.1
	Tailwater	0.2			
			0.1	11.7	3.7
Apr 16, 2019					
	Headwater	8.4			
			1.0	9.8	3.4
			2.0	9.8	3.3
			3.0	9.8	3.4
			4.0	9.8	3.4
			5.0	9.8	3.5
			6.0	9.7	3.5
			7.0	9.7	3.6
			7.4	9.7	3.6
			7.9	9.7	3.6
			8.3	9.7	3.7
	Tailwater	0.2			
			0.1	12.4	7.6

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					
May 8, 2019	Headwater	8.2			
			1.0	9.4	8.2
			2.0	9.4	8.3
			3.0	9.3	8.3
			4.0	9.4	8.4
			5.0	9.3	8.4
			6.0	9.1	8.2
			7.2	9.0	8.2
			7.7	9.0	8.2
			8.1	9.0	8.2
	Tailwater	0.3			
			0.2	11.3	8.6
May 30, 2019	Headwater	9.1			
			1.0	12.7	15.9
			2.0	12.4	15.8
			3.0	11.8	15.5
			4.0	9.6	14.1
			5.0	9.6	14.0
			6.0	9.2	13.9
			7.0	9.2	13.9
			8.1	9.2	13.8
			8.6	9.2	13.8
			9.0	9.2	13.9
	Tailwater	0.2			
			0.1	10.2	14.9
Jun 12, 2019	Headwater	8.6			
			1.0	7.3	18.8
			2.0	7.2	18.8
			3.0	6.6	18.5
			4.0	5.8	18.2
			5.0	5.8	18.2
			6.0	5.8	18.1
			7.0	5.7	18.1
			7.6	5.7	18.1
			8.1	5.7	18.2
			8.5	5.7	18.2
	Tailwater	0.4			
			0.3	9.0	18.1

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (°C)
EAU PLEINE RESERVOIR					
Jun 26, 2019	Headwater	8.7			
			1.0	10.4	20.6
			2.0	10.3	20.5
			3.0	10.1	20.5
			4.0	9.8	20.4
			5.0	9.5	20.3
			6.0	8.4	19.9
			7.0	1.4	17.4
			7.7	1.2	17.3
			8.2	1.2	17.4
			8.6	1.2	17.5
	Tailwater	0.3			
			0.2	8.9	19.8
Jul 11, 2019	Headwater	9.0			
			1.0	7.1	24.0
			2.0	6.7	23.9
			3.0	6.7	23.9
			4.0	6.3	23.8
			5.0	3.5	22.7
			6.0	1.6	21.7
			7.0	0.1	19.6
			8.0	0.2	19.3
			8.5	0.2	19.1
			8.9	0.2	18.7
	Tailwater	0.3			
			0.2	8.4	21.5
Jul 22, 2019	Headwater	9.0			
			1.0	4.0	24.4
			2.0	4.0	24.4
			3.0	3.9	24.4
			4.0	3.9	24.4
			5.0	3.9	24.3
			6.0	3.9	24.3
			7.0	3.9	24.3
			8.0	3.9	24.3
			8.5	3.8	24.3
			8.9	3.8	24.3
	Tailwater	0.3			
			0.2	9.4	25.0

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Aug 12, 2019					
	Headwater	8.8			
			1.0	5.3	24.4
			2.0	3.9	24.3
			3.0	3.4	24.2
			4.0	3.3	24.2
			5.0	2.8	24.1
			6.0	2.4	24.0
			7.0	2.0	23.9
			7.8	0.3	23.3
			8.3	0.3	23.2
			8.7	0.3	23.1
	Tailwater	0.3			
			0.2	7.3	24.0
Aug 22, 2019					
	Headwater	8.8			
			1.0	7.0	23.1
			2.0	5.8	23.0
			3.0	5.4	23.0
			4.0	5.2	23.0
			5.0	5.0	22.9
			6.0	4.6	22.9
			7.0	3.8	22.9
			7.8	3.8	22.9
			8.3	3.7	22.9
			8.7	3.6	22.9
	Tailwater	0.3			
			0.2	8.3	23.0
Sep 6, 2019					
	Headwater	8.2			
			1.0	8.9	19.5
			2.0	8.9	19.5
			3.0	8.8	19.5
			4.0	8.8	19.5
			5.0	8.7	19.5
			6.0	8.6	19.5
			7.2	8.5	19.5
			7.7	8.4	19.5
			8.1	8.4	19.5
	Tailwater	0.3			
			0.2	9.4	19.5

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Sep 16, 2019					
	Headwater	8.8			
			1.0	11.6	18.2
			2.0	10.5	18.0
			3.0	6.7	17.7
			4.0	6.2	17.6
			5.0	6.2	17.6
			6.0	6.2	17.6
			7.0	6.2	17.6
			7.8	6.2	17.6
			8.3	6.2	17.7
			8.7	6.2	17.8
	Tailwater	0.2			
			0.1	8.0	18.0
Oct 8, 2019					
	Headwater	9.2			
			1.0	9.5	14.6
			2.0	9.5	14.6
			3.0	9.5	14.6
			4.0	9.4	14.6
			5.0	9.4	14.6
			6.0	9.4	14.6
			7.0	9.4	14.6
			8.2	9.3	14.6
			8.7	9.3	14.6
			9.1	9.3	14.6
	Tailwater	0.3			
			0.2	10.0	15.4
Oct 23, 2019					
	Headwater	9.4			
			1.0	11.4	9.2
			2.0	11.4	9.2
			3.0	11.4	9.2
			4.0	11.4	9.2
			5.0	11.4	9.1
			6.0	11.4	9.2
			7.0	11.3	9.2
			8.0	11.3	9.2
			8.4	11.3	9.2
			8.9	11.3	9.2
			9.3	11.2	9.2
	Tailwater	0.2			
			0.1	10.8	8.3

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
EAU PLEINE RESERVOIR					
Nov 5, 2019					
	Headwater	8.7			
			1.0	13.4	4.7
			2.0	13.4	4.7
			3.0	13.4	4.7
			4.0	13.3	4.7
			5.0	13.3	4.7
			6.0	13.3	4.6
			7.0	13.3	4.6
			7.7	13.2	4.6
			8.2	13.2	4.6
			8.6	13.1	4.7
	Tailwater	0.3			
			0.2	12.7	4.7
Nov 14, 2019					
	Headwater	10.4			
			1.0	14.4	0.7
			2.0	14.4	0.7
			3.0	14.3	0.7
			4.0	14.3	0.7
			5.0	14.3	0.7
			6.0	14.2	0.8
			7.0	14.1	0.8
			8.0	14.1	0.8
			9.0	14.0	0.9
			9.4	13.9	0.9
			9.9	13.8	1.1
			10.3	13.7	1.1
	Tailwater	0.3			
			0.2	14.4	0.8
Dec 5, 2019					
	Headwater	9.1			
			1.0	13.5	0.6
			2.0	13.4	0.6
			3.0	13.4	0.6
			4.0	13.3	0.7
			5.0	13.1	0.7
			6.0	13.0	0.8
			7.0	12.9	0.8
			8.1	12.5	1.0
			8.6	11.5	1.4
			9.0	10.6	2.1
	Tailwater	0.2			
			0.1	14.8	1.0
Dec 17, 2019					
	Tailwater	0.2			
			0.1	11.2	1.4

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
Jan 17, 2019					
	Headwater	7.2			
			1.0	10.0	0.2
			2.0	10.0	0.2
			3.0	10.0	0.3
			4.0	9.8	0.6
			5.0	9.7	0.9
			6.2	9.7	1.0
			6.7	9.7	1.0
			7.1	9.7	1.0
	Tailwater	0.8			
			0.7	12.5	0.9
Jan 31, 2019					
	Headwater	6.9			
			1.0	9.2	0.4
			2.0	9.1	0.3
			3.0	9.1	0.5
			4.0	9.0	0.6
			5.0	9.1	0.4
			5.9	9.0	0.6
			6.4	9.0	0.7
			6.8	9.0	0.7
	Tailwater	1.4			
			1.3	12.4	0.7
Feb 18, 2019					
	Headwater	6.0			
			1.0	7.3	0.3
			2.0	7.3	0.3
			3.0	7.3	0.3
			4.0	7.3	0.3
			5.0	7.3	0.3
			5.5	7.3	0.4
			5.9	7.3	0.3
	Tailwater	1.0			
			0.9	11.3	0.5
Feb 22, 2019					
	Headwater	6.0			
			1.0	6.6	0.4
			2.0	6.7	0.3
			3.0	6.6	0.4
			4.0	6.6	0.4
			5.0	6.6	0.5
			5.5	6.6	0.5
			5.9	6.6	0.5
	Tailwater	1.0			
			0.9	10.9	0.6

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
Mar 5, 2019					
	Headwater	5.6			
			1.0	6.0	0.4
			2.0	6.0	0.4
			3.0	5.9	0.4
			4.0	5.9	0.5
			4.6	5.9	0.5
			5.1	5.9	0.6
			5.5	5.9	0.6
	Tailwater	1.3			
			1.2	10.7	0.7
Mar 19, 2019					
	Headwater	5.9			
			1.0	5.6	0.2
			2.0	5.5	0.2
			3.0	5.3	0.3
			4.0	5.0	0.5
			4.9	4.9	0.6
			5.4	4.9	0.6
			5.8	4.9	0.7
	Tailwater	0.9			
			0.8	11.3	0.7
Apr 25, 2019					
	Headwater	8.4			
			1.0	10.8	4.2
			2.0	10.8	4.2
			3.0	10.8	4.2
			4.0	10.7	4.1
			5.0	10.7	4.2
			6.0	10.7	4.2
			7.0	10.6	4.2
			7.4	10.6	4.2
			7.9	10.6	4.2
			8.3	10.6	4.2
	Tailwater	0.2			
			0.1	12.1	4.1
Apr 30, 2019					
	Headwater	8.4			
			1.0	10.9	3.7
			2.0	10.8	3.7
			3.0	10.8	3.7
			4.0	10.8	3.7
			5.0	10.8	3.7
			6.0	10.8	3.7
			7.0	10.8	3.7
			7.4	10.8	3.7
			7.9	10.8	3.7
			8.3	10.7	3.8
	Tailwater	0.2			
			0.1	12.5	3.7

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
May 23, 2019					
	Headwater	8.5			
			1.0	9.6	11.7
			2.0	9.6	11.7
			3.0	9.5	11.7
			4.0	9.5	11.7
			5.0	9.5	11.7
			6.0	9.4	11.7
			7.1	9.4	11.7
			7.5	9.4	11.7
			8.0	9.4	11.7
			8.4	9.4	11.7
	Tailwater	0.2			
			0.1	10.7	11.7
May 31, 2019					
	Headwater	8.4			
			1.0	9.0	14.8
			2.0	8.7	13.8
			3.0	8.7	13.8
			4.0	8.6	13.7
			5.0	8.5	13.6
			6.0	8.5	13.6
			7.0	8.4	13.5
			7.4	8.3	13.4
			7.9	8.3	13.4
			8.3	8.3	13.5
	Tailwater	0.4			
			0.3	9.8	14.2
Jun 13, 2019					
	Headwater	8.2			
			1.0	7.8	18.3
			2.0	7.8	18.3
			3.0	7.8	18.3
			4.0	7.8	18.3
			5.0	7.8	18.3
			6.0	7.8	18.3
			7.2	7.8	18.3
			7.7	7.8	18.3
			8.1	7.8	18.3
	Tailwater	0.5			
			0.4	9.3	18.3
Jun 27, 2019					
	Headwater	8.0			
			1.0	8.2	20.5
			2.0	8.0	20.4
			3.0	7.9	20.4
			4.0	7.6	20.2
			5.0	7.2	19.9
			6.0	7.1	19.9
			7.0	7.1	19.9
			7.5	7.1	19.9
			7.9	7.1	20.0
	Tailwater	0.7			
			0.6	9.0	20.3

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (°C)
RAINBOW RESERVOIR					
Jul 12, 2019	Headwater	7.9			
			1.0	7.5	23.3
			2.0	7.5	23.2
			3.0	7.5	23.2
			4.0	7.4	23.2
			5.0	7.2	23.1
			6.0	6.0	22.7
			6.9	5.4	22.4
			7.4	5.0	22.3
			7.8	4.9	22.2
	Tailwater	0.9			
			0.8	8.3	22.9
Jul 29, 2019	Headwater	8.1			
			1.0	7.2	23.1
			2.0	7.2	23.1
			3.0	7.2	23.1
			4.0	7.2	23.1
			5.0	7.1	23.1
			6.0	7.1	23.1
			7.1	7.1	23.1
			7.6	7.1	23.1
			8.0	7.1	23.1
	Tailwater	0.4			
			0.3	8.5	23.4
Aug 6, 2019	Headwater	8.1			
			1.0	7.5	22.8
			2.0	7.4	22.8
			3.0	7.1	22.8
			4.0	6.7	22.8
			5.0	6.0	22.6
			6.0	5.3	22.5
			7.1	4.9	22.4
			7.6	4.8	22.4
			8.0	4.8	22.3
	Tailwater	0.2			
			0.1	8.3	22.8
Aug 29, 2019	Headwater	8.0			
			1.0	7.9	18.9
			2.0	7.9	18.9
			3.0	7.9	18.9
			4.0	7.9	18.8
			5.0	7.9	18.8
			6.0	7.9	18.8
			7.0	7.9	18.8
			7.5	7.9	18.8
			7.9	7.9	18.8
	Tailwater	0.8			
			0.7	9.1	18.8

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (°C)
RAINBOW RESERVOIR					
Sep 10, 2019	Headwater	8.3			
			1.0	8.3	16.6
			2.0	8.3	16.6
			3.0	8.3	16.6
			4.0	8.3	16.6
			5.0	8.3	16.6
			6.0	8.2	16.6
			7.3	8.2	16.6
			7.8	8.2	16.6
			8.2	8.2	16.7
	Tailwater	0.7			
			0.6	9.5	16.7
Sep 24, 2019	Headwater	8.3			
			1.0	8.8	18.2
			2.0	8.6	18.1
			3.0	8.5	18.1
			4.0	7.8	17.7
			5.0	7.6	17.6
			6.0	7.6	17.6
			7.3	7.3	17.6
			7.8	7.2	17.5
			8.2	7.0	17.4
	Tailwater	1.0			
			0.9	9.3	17.9
Oct 25, 2019	Headwater	8.4			
			1.0	10.2	7.2
			2.0	10.2	7.2
			3.0	10.2	7.2
			4.0	10.1	7.2
			5.0	10.1	7.2
			6.0	10.1	7.2
			7.0	10.1	7.2
			7.4	10.1	7.2
			7.9	10.1	7.2
			8.3	10.1	7.2
	Tailwater	0.3			
			0.2	11.6	7.1
Oct 29, 2019	Headwater	8.4			
			1.0	10.4	6.4
			2.0	10.4	6.4
			3.0	10.4	6.4
			4.0	10.3	6.5
			5.0	10.3	6.5
			6.0	10.3	6.5
			7.0	10.3	6.5
			7.4	10.3	6.5
			7.9	10.2	6.5
			8.3	10.2	6.5
	Tailwater	0.2			
			0.1	11.9	6.4

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RAINBOW RESERVOIR					
Nov 14, 2019					
	Headwater	6.3			
			1.0	11.9	1.1
			2.0	11.9	1.1
			3.0	11.9	1.1
			4.0	11.9	1.1
			5.3	11.9	1.1
			5.8	11.9	1.1
			6.2	11.8	1.1
	Tailwater	0.3			
			0.2	13.2	1.2
Nov 20, 2019					
	Headwater	7.9			
			1.0	11.5	1.2
			2.0	11.4	1.2
			3.0	11.4	1.2
			4.0	11.3	1.2
			5.0	11.3	1.3
			6.0	11.2	1.3
			7.0	11.2	1.5
			7.4	11.1	1.5
			7.8	11.1	1.6
	Tailwater	0.4			
			0.3	12.9	1.3
Dec 10, 2019					
	Headwater	6.4			
			1.0	11.0	0.5
			2.0	11.0	0.5
			3.0	10.9	0.5
			4.0	10.9	0.7
			5.0	10.8	0.9
			5.4	10.7	0.9
			5.9	10.7	1.1
			6.3	10.6	1.2
	Tailwater	0.3			
			0.2	13.4	0.7
Dec 30, 2019					
	Headwater	7.9			
			1.0	8.1	0.2
			2.0	8.1	0.2
			3.0	8.1	0.3
			4.0	8.1	0.5
			5.0	8.1	0.6
			6.0	8.0	0.8
			6.9	7.7	1.9
			7.4	7.7	2.0
			7.8	7.7	2.1
	Tailwater	0.4			
			0.3	12.6	0.6

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RICE RESERVOIR					
Jan 17, 2019					
	Headwater	1.3			
			1.2	12.6	0.9
	Tailwater	0.2			
			0.1	12.6	1.5
Jan 31, 2019					
	Headwater	4.0			
			1.0	12.0	0.4
			2.0	12.0	0.4
			3.0	12.0	0.4
			3.5	12.0	0.5
			3.9	12.0	0.4
	Tailwater	0.2			
			0.1	12.8	0.8
Feb 18, 2019					
	Headwater	2.9			
			1.0	10.6	0.6
			1.9	10.6	0.6
			2.4	10.6	0.6
			2.8	10.6	0.6
	Tailwater	0.2			
			0.1	12.3	0.8
Feb 22, 2019					
	Headwater	2.6			
			1.0	10.4	0.5
			1.6	10.5	0.5
			2.1	10.5	0.5
			2.5	10.5	0.5
	Tailwater	0.2			
			0.1	12.4	0.6
Mar 5, 2019					
	Headwater	2.5			
			1.0	9.9	0.5
			1.5	9.9	0.5
			2.0	9.9	0.5
			2.4	9.9	0.5
	Tailwater	0.4			
			0.3	10.9	0.1
Mar 28, 2019					
	Headwater	3.2			
			1.0	8.9	2.9
			2.2	9.3	3.0
			2.7	9.8	3.0
			3.1	9.6	3.4
	Tailwater	0.2			
			0.1	11.1	3.5
Apr 25, 2019					
	Headwater	1.4			
			1.3	10.1	4.9
	Tailwater	0.2			
			0.1	11.1	4.3

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RICE RESERVOIR					
Apr 30, 2019	Headwater	1.7	1.2	10.7	5.4
			1.6	10.7	5.4
			0.3	11.4	5.3
	Tailwater	0.4	0.3	11.4	5.3
			0.3	11.4	5.3
May 23, 2019	Headwater	1.5	1.0	9.3	11.9
			1.4	9.3	11.9
			0.5	9.8	11.9
	Tailwater	0.6	0.5	9.8	11.9
			0.5	9.8	11.9
May 31, 2019	Headwater	2.3	1.3	8.7	16.2
			1.8	8.7	16.2
			2.2	8.7	16.2
	Tailwater	0.3	0.2	9.2	15.4
			0.2	9.2	15.4
Jun 13, 2019	Headwater	2.2	1.2	8.0	18.6
			1.7	8.1	18.6
			2.1	8.1	18.6
	Tailwater	0.2	0.1	8.8	18.7
			0.1	8.8	18.7
Jun 17, 2019	Headwater	2.3	1.2	8.7	19.7
			1.7	8.7	19.7
			2.2	8.7	19.7
	Tailwater	0.5	0.4	8.6	18.8
			0.4	8.6	18.8
Jul 12, 2019	Headwater	2.0	1.0	7.4	23.7
			1.5	7.4	23.7
			1.9	7.4	23.7
	Tailwater	0.5	0.4	7.8	23.6
			0.4	7.8	23.6
Jul 29, 2019	Headwater	2.0	1.0	7.9	23.7
			1.5	7.9	23.7
			1.9	7.9	23.7
	Tailwater	0.2	0.1	8.0	23.4
			0.1	8.0	23.4
Aug 6, 2019	Headwater	1.8	1.2	8.8	25.0
			1.7	8.8	25.0
			0.1	8.0	24.2
	Tailwater	0.2	0.1	8.0	24.2
			0.1	8.0	24.2

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RICE RESERVOIR					
Aug 29, 2019	Headwater	2.2	1.2	7.6	18.3
			1.6	7.6	18.3
			2.1	7.6	18.3
	Tailwater	0.3	0.2	8.3	18.1
			0.2	8.3	18.1
Sep 10, 2019	Headwater	2.1	1.1	7.8	16.4
			1.6	7.9	16.4
			2.0	7.9	16.4
	Tailwater	0.3	0.2	8.7	16.5
			0.2	8.7	16.5
Sep 24, 2019	Headwater	2.2	1.2	8.0	18.9
			1.7	8.0	18.9
			2.1	8.0	18.9
	Tailwater	0.2	0.1	8.6	19.3
			0.1	8.6	19.3
Oct 25, 2019	Headwater	2.0	1.0	10.5	7.0
			1.5	10.5	7.0
			1.9	10.5	7.0
	Tailwater	0.2	0.1	11.2	6.9
			0.1	11.2	6.9
Oct 29, 2019	Headwater	4.5	1.0	10.7	6.2
			2.0	10.7	6.2
			3.0	10.7	6.2
	Tailwater	0.2	3.5	10.6	6.3
			4.0	10.6	6.3
Nov 20, 2019	Headwater	2.0	4.4	10.6	6.4
			0.1	11.5	6.3
			0.1	11.5	6.3
	Tailwater	0.3	1.0	12.4	0.7
			1.4	12.4	0.7
Nov 26, 2019	Headwater	1.7	1.9	12.4	0.7
			0.2	12.2	1.5
			0.2	12.2	1.5
	Tailwater	0.4	1.2	12.3	1.7
			1.6	12.2	1.9

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
RICE RESERVOIR					
Dec 30, 2019					
	Headwater	1.6			
			1.1	11.6	0.8
			1.5	11.5	0.8
	Tailwater	0.2			
			0.1	11.9	1.7
Dec 31, 2019					
	Headwater	1.6			
			1.1	11.4	1.0
			1.5	11.4	1.0
	Tailwater	0.2			
			0.1	11.6	1.7

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
SPIRIT RESERVOIR					
Jan 17, 2019					
	Tailwater	0.5			
			0.4	10.0	4.0
Jan 31, 2019					
	Headwater	4.4			
			1.0	8.7	1.6
			2.0	6.2	3.1
			3.0	6.0	3.4
			3.4	5.8	3.5
			3.9	5.7	3.6
			4.3	5.2	4.0
	Tailwater	1.4			
			1.3	10.3	2.4
Feb 18, 2019					
	Headwater	4.0			
			1.0	6.3	1.4
			2.0	4.4	2.4
			3.0	3.5	3.5
			3.5	3.5	3.5
			3.9	3.5	3.6
	Tailwater	1.0			
			0.9	9.8	2.4
Feb 22, 2019					
	Headwater	3.9			
			1.0	5.1	2.0
			2.0	5.2	2.6
			2.9	4.1	3.1
			3.4	3.2	3.3
			3.8	3.2	3.8
	Tailwater	0.2			
			0.1	9.6	2.3
Mar 5, 2019					
	Headwater	3.6			
			1.0	5.8	1.2
			2.0	5.1	1.6
			2.6	3.3	2.8
			3.1	3.0	3.0
			3.5	3.0	3.3
	Tailwater	0.3			
			0.2	8.2	2.0
Mar 28, 2019					
	Headwater	4.5			
			1.0	7.5	2.1
			2.0	7.5	2.1
			3.0	7.2	2.2
			3.5	7.0	2.3
			4.0	6.0	2.6
			4.4	5.3	3.5
	Tailwater	0.2			
			0.1	12.1	4.8
Apr 25, 2019					
	Tailwater	0.5			
			0.4	11.0	4.9

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (°C)
SPIRIT RESERVOIR					
Apr 30, 2019	Headwater	5.5			
			1.0	10.3	6.4
			2.0	10.2	6.4
			3.0	10.2	6.4
			4.0	10.2	6.4
			4.5	10.2	6.4
			5.0	10.2	6.4
			5.4	10.2	6.4
	Tailwater	1.4			
			1.3	11.1	6.6
May 23, 2019	Tailwater	0.5			
			0.4	9.7	11.1
May 31, 2019	Headwater	5.5			
			1.0	9.2	17.3
			2.0	7.6	14.2
			3.0	7.5	13.8
			4.0	7.3	13.1
			4.5	7.3	13.1
			5.0	7.3	13.1
			5.4	7.3	13.2
	Tailwater	1.0			
			0.9	8.6	15.4
Jun 13, 2019	Headwater	5.6			
			1.0	7.6	18.8
			2.0	7.6	18.8
			3.0	7.6	18.8
			4.0	7.5	18.8
			4.6	7.5	18.8
			5.1	7.5	18.8
			5.5	7.5	18.8
	Tailwater	0.5			
			0.4	7.0	18.1
Jun 27, 2019	Headwater	5.6			
			1.0	7.0	21.0
			2.0	6.6	20.9
			3.0	6.2	20.4
			4.0	5.6	19.9
			4.6	5.1	19.6
			5.1	4.0	19.0
			5.5	2.8	18.2
	Tailwater	1.0			
			0.9	7.4	19.6

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (°C)
SPIRIT RESERVOIR					
Jul 12, 2019	Headwater	5.4			
			1.0	6.5	23.8
			2.0	6.3	23.7
			3.0	4.2	23.0
			4.0	0.5	20.9
			4.4	0.4	20.1
			4.9	0.4	19.5
			5.3	0.4	18.8
	Tailwater	0.7			
			0.6	7.0	21.0
Jul 29, 2019	Headwater	5.3			
			1.0	6.6	24.4
			2.0	6.5	24.4
			3.0	6.5	24.4
			4.3	6.5	24.3
			4.8	6.5	24.3
			5.2	6.5	24.2
	Tailwater	0.4			
			0.3	7.3	23.8
Aug 6, 2019	Tailwater	1.0			
			0.9	7.0	24.3
Aug 29, 2019	Headwater	5.2			
			1.0	6.6	18.8
			2.0	6.6	18.7
			3.0	6.6	18.7
			4.2	6.5	18.7
			4.7	6.5	18.7
			5.1	6.5	18.8
	Tailwater	0.4			
			0.3	8.2	18.8
Sep 10, 2019	Headwater	5.5			
			1.0	7.2	17.3
			2.0	7.2	17.3
			3.0	7.2	17.3
			4.0	7.2	17.3
			4.5	7.2	17.3
			5.0	7.2	17.3
			5.4	7.2	17.3
	Tailwater	0.6			
			0.5	8.5	17.4

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
SPIRIT RESERVOIR					
Sep 24, 2019					
	Headwater	5.6			
			1.0	7.0	19.5
			2.0	6.6	19.1
			3.0	4.8	17.9
			4.0	4.6	17.8
			4.6	4.6	17.7
			5.1	4.6	17.7
			5.5	4.5	17.8
	Tailwater	0.6			
			0.5	7.4	18.8
Oct 25, 2019					
	Tailwater	0.8			
			0.7	10.9	7.2
Oct 29, 2019					
	Headwater	5.6			
			1.0	9.9	6.8
			2.0	9.8	6.8
			3.0	9.8	6.8
			4.0	9.8	6.8
			4.6	9.8	6.8
			5.1	9.8	6.9
			5.5	9.8	7.0
	Tailwater	0.2			
			0.1	11.1	6.7
Nov 20, 2019					
	Headwater	5.3			
			1.0	10.4	2.2
			2.0	10.3	2.4
			3.0	10.1	2.5
			4.3	10.0	2.6
			4.8	10.0	2.8
			5.2	10.0	3.1
	Tailwater	0.5			
			0.4	11.2	3.4
Nov 26, 2019					
	Headwater	5.4			
			1.0	10.7	2.9
			2.0	10.6	2.9
			3.0	10.4	2.9
			4.0	10.4	3.0
			4.4	10.4	3.0
			4.9	10.4	3.1
			5.3	10.3	3.3
	Tailwater	0.6			
			0.5	11.1	3.6

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
SPIRIT RESERVOIR					
Dec 30, 2019					
	Headwater	5.5			
			1.0	7.8	1.8
			2.0	7.4	2.1
			3.0	7.1	2.7
			4.0	6.8	3.1
			4.5	6.5	3.4
			4.9	6.5	3.7
			5.4	6.5	4.3
	Tailwater	0.6			
			0.5	11.0	2.9
Dec 31, 2019					
	Headwater	5.6			
			1.0	8.1	1.0
			2.0	5.9	3.5
			3.0	5.6	3.9
			4.0	5.6	4.0
			4.6	5.6	4.1
			5.1	5.6	4.1
			5.5	5.6	4.3
	Tailwater	0.7			
			0.6	10.7	2.3

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Jan 17, 2019					
	Headwater	6.0			
			1.0	8.8	2.6
			2.0	8.1	2.9
			3.0	7.7	3.1
			4.0	7.6	3.1
			5.0	7.5	3.3
			5.5	7.5	3.3
			5.9	7.5	3.4
	Tailwater	0.2			
			0.1	13.1	1.9
Jan 31, 2019					
	Headwater	5.6			
			1.0	8.4	2.6
			2.0	8.2	2.7
			3.0	8.1	2.8
			4.0	8.2	2.8
			4.6	8.3	2.8
			5.1	8.4	2.7
			5.5	8.6	2.7
	Tailwater	0.2			
			0.1	13.8	1.4
Feb 18, 2019					
	Headwater	5.4			
			1.0	8.4	2.2
			2.0	8.3	2.3
			3.0	8.3	2.3
			4.0	8.3	2.3
			4.4	8.3	2.3
			4.9	8.4	2.3
			5.3	8.5	2.4
	Tailwater	0.2			
			0.1	13.6	1.8
Feb 22, 2019					
	Headwater	5.4			
			1.0	8.5	2.1
			2.0	8.4	2.2
			3.0	8.3	2.2
			4.0	8.3	2.2
			4.4	8.3	2.2
			4.9	8.2	2.2
			5.3	8.2	2.4
	Tailwater	0.2			
			0.1	12.8	2.0
Mar 5, 2019					
	Headwater	5.1			
			1.0	7.4	2.1
			2.0	7.3	2.1
			3.0	7.3	2.2
			4.1	7.2	2.2
			4.6	7.2	2.3
			5.0	7.2	2.3
	Tailwater	0.2			
			0.1	10.2	1.7

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Mar 19, 2019					
	Headwater	4.9			
			1.0	7.7	0.8
			2.0	7.6	0.8
			3.0	7.6	0.9
			3.9	7.6	1.0
			4.4	7.6	1.1
			4.8	7.6	1.1
	Tailwater	0.2			
			0.1	12.3	2.3
Apr 25, 2019					
	Tailwater	0.2			
			0.1	11.7	4.4
Apr 30, 2019					
	Tailwater	0.2			
			0.1	11.4	4.5
May 23, 2019					
	Headwater	7.1			
			1.0	9.6	11.7
			2.0	9.5	11.7
			3.0	9.5	11.7
			4.0	9.5	11.7
			5.0	9.5	11.7
			6.1	9.5	11.7
			6.6	9.4	11.7
			7.0	9.4	11.8
	Tailwater	0.3			
			0.2	10.3	11.9
May 31, 2019					
	Headwater	7.0			
			1.0	9.4	15.0
			2.0	9.4	15.0
			3.0	9.3	14.8
			4.0	9.2	14.8
			5.0	9.1	14.7
			6.0	8.9	14.4
			6.5	8.9	14.3
			6.9	8.9	14.4
	Tailwater	0.3			
			0.2	9.8	15.4
Jun 13, 2019					
	Headwater	6.9			
			1.0	7.5	18.6
			2.0	7.5	18.6
			3.0	7.5	18.6
			4.0	7.4	18.6
			5.0	7.4	18.5
			5.9	7.4	18.5
			6.4	7.4	18.5
			6.8	7.4	18.6
	Tailwater	0.2			
			0.1	9.1	18.9

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Jun 27, 2019					
	Headwater	7.0			
			1.0	7.5	21.1
			2.0	7.3	20.7
			3.0	7.2	20.5
			4.0	7.2	20.4
			5.0	7.1	20.4
			6.0	6.9	20.3
			6.5	6.3	20.0
			6.9	5.4	19.7
	Tailwater	0.2			
			0.1	9.0	21.6
Jul 12, 2019					
	Headwater	6.6			
			1.0	6.7	23.4
			2.0	6.5	23.3
			3.0	5.6	22.9
			4.0	5.4	22.8
			5.0	5.3	22.6
			5.6	4.9	22.3
			6.1	1.5	19.6
			6.5	0.6	18.7
	Tailwater	0.3			
			0.2	9.2	22.8
Jul 29, 2019					
	Headwater	6.5			
			1.0	7.7	24.2
			2.0	7.7	24.2
			3.0	7.6	24.2
			4.0	7.5	24.2
			5.0	7.5	24.1
			5.5	7.4	24.1
			6.0	7.3	24.0
			6.4	7.3	24.0
	Tailwater	0.2			
			0.1	8.3	23.9
Aug 6, 2019					
	Headwater	6.6			
			1.0	8.3	25.1
			2.0	8.1	24.4
			3.0	5.8	23.9
			4.0	4.1	22.6
			5.0	3.9	22.4
			5.6	3.1	22.2
			6.1	3.4	22.1
			6.5	2.7	21.9
	Tailwater	0.2			
			0.1	8.1	24.0

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Aug 29, 2019					
	Headwater	6.5			
			1.0	7.5	18.8
			2.0	7.5	18.8
			3.0	7.5	18.8
			4.0	7.5	18.8
			5.0	7.5	18.8
			5.5	7.5	18.8
			6.0	7.5	18.8
			6.4	7.5	18.8
	Tailwater	0.2			
			0.1	8.4	18.7
Sep 10, 2019					
	Headwater	6.1			
			1.0	7.8	17.2
			2.0	7.7	17.1
			3.0	7.7	17.1
			4.0	7.6	17.0
			5.1	7.6	17.0
			5.6	7.6	17.0
			6.0	7.6	17.0
	Tailwater	0.3			
			0.2	8.9	17.2
Sep 24, 2019					
	Headwater	6.1			
			1.0	8.4	18.9
			2.0	8.3	18.9
			3.0	7.9	18.7
			4.0	7.7	18.5
			5.1	7.7	18.5
			5.6	7.6	18.5
			6.0	7.5	18.5
	Tailwater	0.3			
			0.2	8.9	19.3
Oct 25, 2019					
	Headwater	6.7			
			1.0	10.5	7.1
			2.0	10.5	7.1
			3.0	10.5	7.1
			4.0	10.4	7.1
			5.0	10.4	7.1
			5.7	10.4	7.1
			6.2	10.4	7.1
			6.6	10.4	7.2
	Tailwater	0.2			
			0.1	11.6	7.4

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Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Oct 29, 2019	Headwater	6.7			
			1.0	10.7	6.5
			2.0	10.7	6.5
			3.0	10.7	6.5
			4.0	10.7	6.5
			5.0	10.6	6.6
			5.7	10.6	6.5
			6.2	10.6	6.6
			6.6	10.6	6.6
	Tailwater	0.2			
			0.1	11.9	7.3
Nov 14, 2019	Headwater	6.5			
			1.0	12.4	0.6
			2.0	12.4	0.7
			3.0	12.3	0.8
			4.0	12.2	0.9
			5.0	12.2	1.0
			5.5	12.2	1.2
			6.0	12.1	1.3
			6.4	12.1	1.4
	Tailwater	0.2			
			0.1	13.3	1.0
Nov 20, 2019	Headwater	6.4			
			1.0	11.7	1.2
			2.0	11.6	1.3
			3.0	11.6	1.4
			4.0	11.4	1.5
			5.0	11.4	1.5
			5.4	11.4	1.5
			5.9	11.3	1.6
			6.3	11.2	1.7
	Tailwater	0.3			
			0.2	12.8	1.7
Dec 10, 2019	Headwater	6.0			
			1.0	10.0	2.5
			2.0	9.9	2.5
			3.0	9.9	2.6
			4.0	9.9	2.6
			5.0	9.9	2.6
			5.5	9.9	2.6
			5.9	9.9	2.6
	Tailwater	0.3			
			0.2	12.6	2.0

Date	Station	Total Depth (m)	Sample Depth (m)	DO (mg/L)	Temp (° C)
WILLOW RESERVOIR					
Dec 30, 2019	Headwater	5.9			
			1.0	8.3	1.9
			2.0	7.9	2.1
			3.0	7.7	2.4
			4.0	7.7	2.4
			4.9	7.0	3.0
			5.4	7.0	3.0
			5.8	7.0	3.0
	Tailwater	0.3			
			0.2	11.3	2.0