



North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TTY 800-366-6888 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

WATER DEVELOPMENT DIVISION
(701) 328-2752

December 16, 2015

North Dakota Department of Health
Division of Water Quality
918 East Divide Avenue
Bismarck, ND 58501-1947

RE: November 2015 Devils Lake Outlets Monthly Discharge and Water Quality Report

Dear Division of Water Quality:

Enclosed are the monthly discharge reports for the Devils Lake Outlets for the month of November 2015. Discharges from the East Outlet were reduced due to water quality constraints. The West and East Outlets were operated for nine days before they were shutdown for the season. A graph of the outlet discharges, stream flows, conductance, and preliminary sulfate sample results is shown in **Figure 1**.

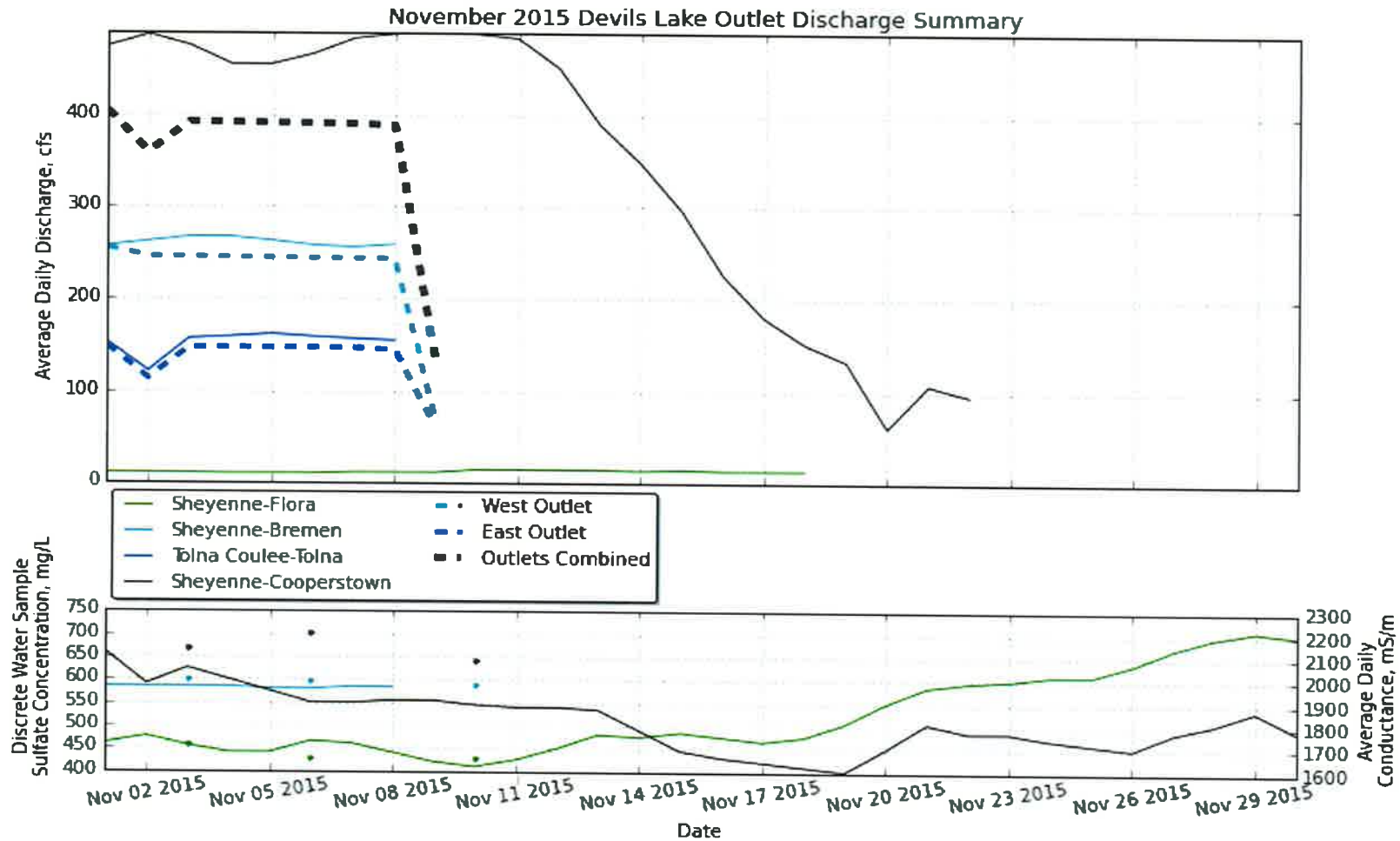
The attached tables contain average daily outlet discharges and water quality results from samples collected from the outlets and the corresponding upstream and downstream locations. Also included are average daily stream flow data and conductivity data obtained from the USGS gaging stations located upstream and downstream of the outlets.

If you have any questions, please contact me at (701) 328-4948.

Sincerely,

Jonathan Kelsch P.E.
Section Chief of Construction

JK:JL/416-10
Enclosure



Sulfate		Conductance	
• • Flora	— Flora	— Flora	— Flora
• • Bremen	— Bremen	— Bremen	— Bremen
• • Pekin	— Cooperstown	— Cooperstown	— Cooperstown

	Monthly Discharge Vol., ac-ft
West End Outlet	4,038
East End Outlet	2,387
Combined Total	6,425

Figure 1: Devils Lake Outlet Discharge Summary

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission
 ADDRESS: 900 E Boulevard Avenue,
 Bismarck ND 58505

MONTHLY DISCHARGE REPORT


LOCATION: WEST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
11/1/15	11/9/15

LOCATION: Benson Co, ND

Devils Lake West Outlet discharged 4,038 ac-ft over 9 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.62	8.79	8.71	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	584	598	591	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	591	599	595	mg/L	2 x Week	GRAB
OUTLET DISCHARGE	71	255	226	cfs	Continuous	Recorder
SIGNATURE				12/16/15	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.

Notes:

- ac-ft - Acre feet
- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- NA - Not available

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission
 ADDRESS: 900 E Boulevard Avenue,
 Bismarck ND 58505

MONTHLY DISCHARGE REPORT


LOCATION: EAST END OUTLET

FACILITY: Devils Lake Outlet Project

LOCATION: Ramsey, Benson, Nelson, ND

MONITORING PERIOD	
START DATE	END DATE
11/1/15	11/9/15

Devils Lake East Outlet discharged 2,387 ac-ft over 9 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.74	8.88	8.81	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	992	1010	1001	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	1001	1010	1006	mg/L	2 x Week	GRAB
OUTLET DISCHARGE	62	149	134	cfs	Continuous	Recorder
SIGNATURE				12/16/15	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.

Notes:

- ac-ft - Acre feet
- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- NA - Not available

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission
 ADDRESS: 900 E Boulevard Avenue,
 Bismarck ND 58505


MONTHLY DISCHARGE REPORT

LOCATION: UPSTREAM OF THE WEST END OUTLET (FLORA)

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
11/1/15	11/9/15

LOCATION: Benson Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.55	8.61	8.58	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,620	2,220	1,844	µS/cm	Continuous	Recorder
SULFATE	427	459	439	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	429	455	443	mg/L	2 x Week	GRAB
FLOW, INSTREAM	9	14	12	cfs	Continuous	Recorder
SIGNATURE				12/16/15	701-328-4948	
NAME AND TITLE				JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION		

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.

Notes:

- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- USGS streamflow and specific conductance data courtesy of the USGS
- USGS data are provisional and subject to revision

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission
 ADDRESS: 900 E Boulevard Avenue,
 Bismarck ND 58505


MONTHLY DISCHARGE REPORT

LOCATION: DOWNSTREAM OF THE WEST END OUTLET (BREMEN)
 UPSTREAM OF THE EAST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
11/1/15	11/9/15

LOCATION: Eddy Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.57	8.78	8.66	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,960	1,970	1,968	µS/cm	Continuous	Recorder
SULFATE	592	601	597	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	595	600	598	mg/L	2 x Week	GRAB
FLOW, INSTREAM	256	267	261	cfs	Continuous	Recorder
SIGNATURE				12/16/15	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.

Notes:

- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- USGS streamflow and specific conductance data courtesy of the USGS
- USGS data are provisional and subject to revision

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission
 ADDRESS: 900 E Boulevard Avenue,
 Bismarck ND 58505


MONTHLY DISCHARGE REPORT

LOCATION: DOWNSTREAM OF THE EAST END OUTLET (PEKIN)

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
11/1/15	11/9/15

LOCATION: Nelson Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.59	8.68	8.62	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	642	703	671	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	662	686	674	mg/L	2 x Week	GRAB
FLOW, INSTREAM	NA	NA	NA	cfs	Continuous	Recorder
SIGNATURE				12/16/15	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.

Notes:

- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- NA - Not available

**Daily Outlet Discharge and Upstream and Downstream Flows
Devils Lake Outlets**

Date	Above West End Outlet - Sheyenne River near Flora		West End Outlet		Below West End Outlet/Above East End Outlet - Sheyenne River near Bremen		East End Outlet		Below East End Outlet - Tolna Coulee near Tolna		Below East End Outlet - Sheyenne River near Cooperstown		Sum of Outlets	
	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)	Average Daily Outlet Discharge (cfs)	Total Daily Volume (ft³)	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)	Average Daily Outlet Discharge (cfs)	Total Daily Volume (ft³)	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)	Average Daily Outlet Discharge (cfs)	Total Daily Volume (ft³)
11/1/15	10	1,720	255	22,062,000	257	1,970	149	12,857,000	153	2,880	474	2,120	404	34,919,000
11/2/15	10	1,750	245	21,179,000	262	1,970	113	9,803,000	121	-	487	1,980	359	30,982,000
11/3/15	10	1,710	245	21,184,000	267	1,970	147	12,704,000	157	2,900	475	2,050	392	33,888,000
11/4/15	9	1,680	244	21,112,000	267	1,970	147	12,701,000	159	2,880	455	2,000	391	33,813,000
11/5/15	10	1,680	244	21,077,000	263	1,960	147	12,696,000	162	2,850	455	1,950	391	33,773,000
11/6/15	10	1,730	244	21,052,000	258	1,960	147	12,698,000	159	2,870	466	1,900	391	33,750,000
11/7/15	11	1,720	243	21,032,000	256	1,970	147	12,661,000	157	2,800	483	1,900	390	33,693,000
11/8/15	11	1,680	243	21,026,000	259	1,970	145	12,507,000	155	2,840	488	1,910	388	33,533,000
11/9/15	11	1,640	71	6,173,000	-	-	62	5,360,000	-	-	489	1,910	133	11,533,000
11/10/15	14	1,620	-	-	-	-	-	-	-	-	488	1,890	-	-
11/11/15	14	1,650	-	-	-	-	-	-	-	-	483	1,880	-	-
11/12/15	14	1,700	-	-	-	-	-	-	-	-	451	1,880	-	-
11/13/15	14	1,760	-	-	-	-	-	-	-	-	389	1,870	-	-
11/14/15	13	1,750	-	-	-	-	-	-	-	-	347	1,780	-	-
11/15/15	14	1,770	-	-	-	-	-	-	-	-	295	1,690	-	-
11/16/15	13	1,750	-	-	-	-	-	-	-	-	226	1,660	-	-
11/17/15	13	1,730	-	-	-	-	-	-	-	-	180	1,640	-	-
11/18/15	13	1,750	-	-	-	-	-	-	-	-	151	1,620	-	-
11/19/15	-	1,810	-	-	-	-	-	-	-	-	132	1,600	-	-
11/20/15	-	1,900	-	-	-	-	-	-	-	-	60	1,700	-	-
11/21/15	-	1,970	-	-	-	-	-	-	-	-	107	1,810	-	-
11/22/15	-	1,990	-	-	-	-	-	-	-	-	95	1,770	-	-
11/23/15	-	2,000	-	-	-	-	-	-	-	-	-	1,770	-	-
11/24/15	-	2,020	-	-	-	-	-	-	-	-	-	1,740	-	-
11/25/15	-	2,020	-	-	-	-	-	-	-	-	-	1,720	-	-
11/26/15	-	2,070	-	-	-	-	-	-	-	-	-	1,700	-	-
11/27/15	-	2,140	-	-	-	-	-	-	-	-	-	1,770	-	-
11/28/15	-	2,190	-	-	-	-	-	-	-	-	-	1,810	-	-
11/29/15	-	2,220	-	-	-	-	-	-	-	-	-	1,870	-	-
11/30/15	-	2,200	-	-	-	-	-	-	-	-	-	1,780	-	-
Minimum	9	1,620	71	6,173,000	256	1,960	62	5,360,000	121	2,800	60	1,600	133	11,533,000
Maximum	14	2,220	255	22,062,000	267	1,970	149	12,857,000	162	2,900	489	2,120	404	34,919,000
Average	12	1,844	226	19,544,111	261	1,968	134	11,554,111	153	2,860	349	1,822	360	31,098,222
Notes:			Total (Mgal)	1,316			Total (Mgal)	778					Total (Mgal)	2,094
			Total (Ac-ft)	4,038			Total (Ac-ft)	2,387					Total (Ac-ft)	6,425

cfs - cubic feet per second
µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
ft³ - cubic feet
Mgal - Millions of Gallons
Ac ft - Acre Feet
USGS streamflow and specific conductance data are preliminary and courtesy of the USGS
NC - Not calculated



**Sheyenne River Upstream of West End Outlet near Flora
Monthly Water Quality Summary
Devils Lake Outlet Discharge Report**

Date	Time	Specific Conductance USGS Gage (μ S/cm)	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
11/1/15	-	-	-	-	-	-	-
11/2/15	-	-	-	-	-	-	-
11/3/15	8:25	1,720	8.55	459	455	12	7
11/4/15	-	-	-	-	-	-	-
11/5/15	-	-	-	-	-	-	-
11/6/15	7:55	1,730	8.61	430	445	NA	7
11/7/15	-	-	-	-	-	-	-
11/8/15	-	-	-	-	-	-	-
11/9/15	-	-	-	-	-	-	-
11/10/15	8:20	1,620	8.57	427	429	NA	7
11/11/15	-	-	-	-	-	-	-
11/12/15	-	-	-	-	-	-	-
11/13/15	-	-	-	-	-	-	-
11/14/15	-	-	-	-	-	-	-
11/15/15	-	-	-	-	-	-	-
11/16/15	-	-	-	-	-	-	-
11/17/15	-	-	-	-	-	-	-
11/18/15	-	-	-	-	-	-	-
11/19/15	-	-	-	-	-	-	-
11/20/15	-	-	-	-	-	-	-
11/21/15	-	-	-	-	-	-	-
11/22/15	-	-	-	-	-	-	-
11/23/15	-	-	-	-	-	-	-
11/24/15	-	-	-	-	-	-	-
11/25/15	-	-	-	-	-	-	-
11/26/15	-	-	-	-	-	-	-
11/27/15	-	-	-	-	-	-	-
11/28/15	-	-	-	-	-	-	-
11/29/15	-	-	-	-	-	-	-
11/30/15	-	-	-	-	-	-	-
Minimum		1,620	8.55	427	429	12	
Maximum		1,730	8.61	459	455	12	
Average		1,690	8.58	439	443	12	

Notes:

μ S/cm - Microsiemens per Centimeter at 25 degrees Celsius
mg/L - Milligrams per liter or parts per million
NA - Not Analyzed
USGS specific conductance data courtesy of the USGS
USGS data are provisional and subject to revision
Italic font denotes preliminary result

**West End Outlet
Monthly Water Quality Summary
Devils Lake Outlet Discharge Report**

Date	Time	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
11/1/15	-	-	-	-	-	-
11/2/15	-	-	-	-	-	-
11/3/15	8:35	8.62	584	599	13	7
11/4/15	-	-	-	-	-	-
11/5/15	-	-	-	-	-	-
11/6/15	7:40	8.79	598	591	NA	7
11/7/15	-	-	-	-	-	-
11/8/15	-	-	-	-	-	-
11/9/15	-	-	-	-	-	-
11/10/15	-	-	-	-	-	-
11/11/15	-	-	-	-	-	-
11/12/15	-	-	-	-	-	-
11/13/15	-	-	-	-	-	-
11/14/15	-	-	-	-	-	-
11/15/15	-	-	-	-	-	-
11/16/15	-	-	-	-	-	-
11/17/15	-	-	-	-	-	-
11/18/15	-	-	-	-	-	-
11/19/15	-	-	-	-	-	-
11/20/15	-	-	-	-	-	-
11/21/15	-	-	-	-	-	-
11/22/15	-	-	-	-	-	-
11/23/15	-	-	-	-	-	-
11/24/15	-	-	-	-	-	-
11/25/15	-	-	-	-	-	-
11/26/15	-	-	-	-	-	-
11/27/15	-	-	-	-	-	-
11/28/15	-	-	-	-	-	-
11/29/15	-	-	-	-	-	-
11/30/15	-	-	-	-	-	-
Minimum		8.62	584	591	13	
Maximum		8.79	598	599	13	
Average		8.71	591	595	13	

Notes:

mg/L - Milligrams per liter or parts per million
 NA - Not Analyzed
 Italic font denotes preliminary result

**Sheyenne River Downstream of West End Outlet/Upstream of East End Outlet near Bremen
Monthly Water Quality Summary
Devils Lake Outlet Discharge Report**

Date	Time	Specific Conductance USGS Gage (µS/cm)	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
11/1/15	-	-	-	-	-	-	-
11/2/15	-	-	-	-	-	-	-
11/3/15	8:00	1,970	8.63	601	600	19	7
11/4/15	-	-	-	-	-	-	-
11/5/15	-	-	-	-	-	-	-
11/6/15	8:35	1,960	8.78	598	600	NA	7
11/7/15	-	-	-	-	-	-	-
11/8/15	-	-	-	-	-	-	-
11/9/15	-	-	-	-	-	-	-
11/10/15	7:55	-	8.57	592	595	NA	7
11/11/15	-	-	-	-	-	-	-
11/12/15	-	-	-	-	-	-	-
11/13/15	-	-	-	-	-	-	-
11/14/15	-	-	-	-	-	-	-
11/15/15	-	-	-	-	-	-	-
11/16/15	-	-	-	-	-	-	-
11/17/15	-	-	-	-	-	-	-
11/18/15	-	-	-	-	-	-	-
11/19/15	-	-	-	-	-	-	-
11/20/15	-	-	-	-	-	-	-
11/21/15	-	-	-	-	-	-	-
11/22/15	-	-	-	-	-	-	-
11/23/15	-	-	-	-	-	-	-
11/24/15	-	-	-	-	-	-	-
11/25/15	-	-	-	-	-	-	-
11/26/15	-	-	-	-	-	-	-
11/27/15	-	-	-	-	-	-	-
11/28/15	-	-	-	-	-	-	-
11/29/15	-	-	-	-	-	-	-
11/30/15	-	-	-	-	-	-	-
Minimum		1,960	8.57	592	595	19	
Maximum		1,970	8.78	601	600	19	
Average		1,965	8.66	597	598	19	

Notes:

µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
mg/L - Milligrams per liter or parts per million
NA - Not Analyzed
USGS specific conductance data courtesy of the USGS
USGS data are provisional and subject to revision
Italic font denotes preliminary result

**East End Outlet
Monthly Water Quality Summary
Devils Lake Outlet Discharge Report**

Date	Time	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
11/1/15	-	-	-	-	-	-
11/2/15	-	-	-	-	-	-
11/3/15	10:15	8.74	1010	1010	56	-
11/4/15	-	-	-	-	-	-
11/5/15	-	-	-	-	-	-
11/6/15	11:25	8.88	992	1001	NA	-
11/7/15	-	-	-	-	-	-
11/8/15	-	-	-	-	-	-
11/9/15	-	-	-	-	-	-
11/10/15	-	-	-	-	-	-
11/11/15	-	-	-	-	-	-
11/12/15	-	-	-	-	-	-
11/13/15	-	-	-	-	-	-
11/14/15	-	-	-	-	-	-
11/15/15	-	-	-	-	-	-
11/16/15	-	-	-	-	-	-
11/17/15	-	-	-	-	-	-
11/18/15	-	-	-	-	-	-
11/19/15	-	-	-	-	-	-
11/20/15	-	-	-	-	-	-
11/21/15	-	-	-	-	-	-
11/22/15	-	-	-	-	-	-
11/23/15	-	-	-	-	-	-
11/24/15	-	-	-	-	-	-
11/25/15	-	-	-	-	-	-
11/26/15	-	-	-	-	-	-
11/27/15	-	-	-	-	-	-
11/28/15	-	-	-	-	-	-
11/29/15	-	-	-	-	-	-
11/30/15	-	-	-	-	-	-
Minimum		8.74	992	1001	56	
Maximum		8.88	1010	1010	56	
Average		8.81	1001	1006	56	

Notes:

mg/L - Milligrams per liter or parts per million

NA - Not Analyzed due to operation constraints

Italic font denotes preliminary result

**Sheyenne River Downstream of East End Outlet near Pekin
Monthly Water Quality Summary
Devils Lake Outlet Discharge Report**

Date	Time	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
11/1/15	-	-	-	-	-	-
11/2/15	-	-	-	-	-	-
11/3/15	10:40	8.59	669	662	23	7
11/4/15	-	-	-	-	-	-
11/5/15	-	-	-	-	-	-
11/6/15	10:50	8.68	703	686	NA	7
11/7/15	-	-	-	-	-	-
11/8/15	-	-	-	-	-	-
11/9/15	-	-	-	-	-	-
11/10/15	9:48	8.59	642	673	NA	7
11/11/15	-	-	-	-	-	-
11/12/15	-	-	-	-	-	-
11/13/15	-	-	-	-	-	-
11/14/15	-	-	-	-	-	-
11/15/15	-	-	-	-	-	-
11/16/15	-	-	-	-	-	-
11/17/15	-	-	-	-	-	-
11/18/15	-	-	-	-	-	-
11/19/15	-	-	-	-	-	-
11/20/15	-	-	-	-	-	-
11/21/15	-	-	-	-	-	-
11/22/15	-	-	-	-	-	-
11/23/15	-	-	-	-	-	-
11/24/15	-	-	-	-	-	-
11/25/15	-	-	-	-	-	-
11/26/15	-	-	-	-	-	-
11/27/15	-	-	-	-	-	-
11/28/15	-	-	-	-	-	-
11/29/15	-	-	-	-	-	-
11/30/15	-	-	-	-	-	-
Minimum		8.59	642	662	23	
Maximum		8.68	703	686	23	
Average		8.62	671	674	23	

Notes:

mg/L - Milligrams per liter or parts per million

NA - Not Analyzed

Italic font denotes preliminary result

Bold font denotes sample sulfate concentration exceeds 750 mg/L