



North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
(701)-328-2750 • TTY 1-800-366-6888 • FAX (701)-328-3696 • <http://swc.nd.gov>

WATER DEVELOPMENT DIVISION
(701) 328-2752

December 15, 2016

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

RE: November 2016 Devils Lake Outlets Monthly Discharge and Water Quality Report

Division of Water Quality:

Enclosed is the monthly discharge report for the Devils Lake Outlets for the month of November 2016. Both outlets discharged at steady rates for the first half of the month and were shut down for the year on November 17th. The West and East Outlets discharged at average rates of 192 and 190 cfs respectively (**Figure 1**). A total of 12,905 acre-feet were discharged in November which brings the 2016 season total to 136,096 acre-feet.

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:TD/416-10
Enclosure

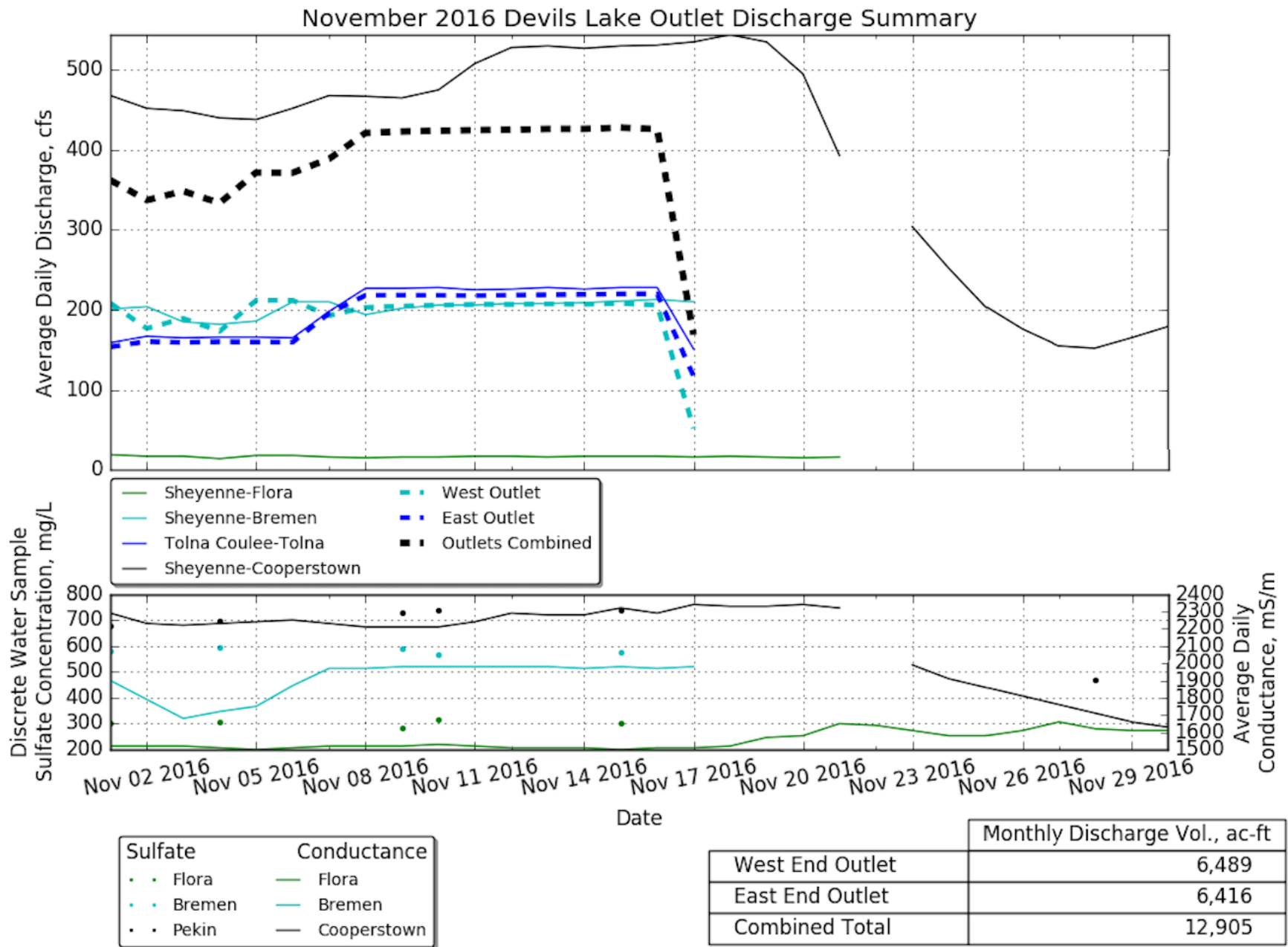


Figure 1: Devils Lake Outlet Discharge Summary

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
11/1/16	11/30/16

LOCATION: Benson Co, ND

Devils Lake West Outlet discharged 6,489 ac-ft over 17 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.85	8.95	8.89	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	592	610	601	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	597	607	603	mg/L	2 x Week	GRAB
OUTLET DISCHARGE	52	212	192	cfs	Continuous	Recorder
SIGNATURE				12/15/16	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

MONITORING PERIOD	
START DATE	END DATE
11/1/16	11/30/16

LOCATION: Ramsey, Benson, Nelson, ND

Devils Lake East Outlet discharged 6,416 ac-ft over 17 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.53	8.62	8.56	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	969	1010	995	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	982	998	989	mg/L	2 x Week	GRAB
OUTLET DISCHARGE	117	220	190	cfs	Continuous	Recorder
SIGNATURE				12/15/16	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

LOCATION: Benson Co, ND

MONITORING PERIOD	
START DATE	END DATE
11/1/16	11/30/16

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.54	8.60	8.58	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,500	1,660	1,554	µS/cm	Continuous	Recorder
SULFATE	282	316	301	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	294	304	299	mg/L	2 x Week	GRAB
FLOW, INSTREAM	14	19	17	cfs	Continuous	Recorder
SIGNATURE				12/15/16	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 WEST END OUTLET (BREMEN)
 UPSTREAM OF THE EAST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
11/1/16	11/30/16

LOCATION: Eddy Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.80	8.87	8.84	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,680	1,980	1,909	µS/cm	Continuous	Recorder
SULFATE	568	593	581	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	575	592	583	mg/L	2 x Week	GRAB
FLOW, INSTREAM	182	213	203	cfs	Continuous	Recorder
SIGNATURE				12/15/16	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

LOCATION: Nelson Co, ND

MONITORING PERIOD	
START DATE	END DATE
11/1/16	11/30/16

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.46	8.66	8.58	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	471	740	676	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	471	736	668	mg/L	2 x Week	GRAB
FLOW, INSTREAM	NA	NA	NA	cfs	Continuous	Recorder
SIGNATURE				12/15/16	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 - Toina 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 (ft ³)	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)	Average Daily Outlet Discharge (cfs)	Total Daily Volume (ft ³)	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 (ft ³)
11/1/16	19	1,530	208	18,005,000	201	1,900	154	13,286,000	159	-	468	2,290	362	31,291,000
11/2/16	17	1,520	177	15,267,000	204	1,790	160	13,864,000	167	-	452	2,230	337	29,131,000
11/3/16	17	1,520	189	16,354,000	185	1,680	159	13,757,000	165	-	449	2,220	349	30,111,000
11/4/16	14	1,520	173	14,972,000	182	1,720	160	13,846,000	166	-	440	2,230	334	28,818,000
11/5/16	18	1,510	212	18,312,000	186	1,750	160	13,809,000	166	2,790	438	2,240	372	32,121,000
11/6/16	18	1,510	212	18,305,000	210	1,870	160	13,788,000	165	2,840	452	2,250	371	32,093,000
11/7/16	16	1,520	193	16,663,000	210	1,970	196	16,924,000	198	3,000	468	2,230	389	33,587,000
11/8/16	15	1,520	203	17,546,000	194	1,970	218	18,853,000	227	2,970	467	2,210	421	36,399,000
11/9/16	16	1,520	205	17,682,000	202	1,980	218	18,863,000	227	2,990	465	2,210	423	36,545,000
11/10/16	16	1,530	206	17,775,000	206	1,980	218	18,849,000	228	2,940	475	2,210	424	36,624,000
11/11/16	17	1,520	207	17,873,000	206	1,980	218	18,820,000	225	2,960	508	2,240	425	36,693,000
11/12/16	17	1,510	207	17,868,000	208	1,980	218	18,868,000	226	2,990	528	2,290	425	36,736,000
11/13/16	16	1,510	207	17,919,000	208	1,980	219	18,905,000	228	2,990	530	2,280	426	36,824,000
11/14/16	17	1,510	207	17,887,000	209	1,970	219	18,939,000	226	2,960	527	2,280	426	36,826,000
11/15/16	17	1,500	208	17,973,000	211	1,980	220	18,994,000	228	2,990	530	2,320	428	36,967,000
11/16/16	17	1,510	206	17,790,000	213	1,970	220	19,009,000	228	2,910	531	2,290	426	36,799,000
11/17/16	16	1,510	52	4,482,000	210	1,980	117	10,105,000	151	2,950	535	2,340	169	14,587,000
11/18/16	17	1,520	-	-	-	-	-	-	-	-	544	2,330	-	-
11/19/16	16	1,570	-	-	-	-	-	-	-	-	535	2,330	-	-
11/20/16	15	1,580	-	-	-	-	-	-	-	-	495	2,340	-	-
11/21/16	16	1,650	-	-	-	-	-	-	-	-	393	2,320	-	-
11/22/16	-	1,640	-	-	-	-	-	-	-	-	-	-	-	-
11/23/16	-	1,610	-	-	-	-	-	-	-	-	304	1,990	-	-
11/24/16	-	1,580	-	-	-	-	-	-	-	-	252	1,910	-	-
11/25/16	-	1,580	-	-	-	-	-	-	-	-	204	1,860	-	-
11/26/16	-	1,610	-	-	-	-	-	-	-	-	176	1,810	-	-
11/27/16	-	1,660	-	-	-	-	-	-	-	-	155	1,760	-	-
11/28/16	-	1,620	-	-	-	-	-	-	-	-	152	1,710	-	-
11/29/16	-	1,610	-	-	-	-	-	-	-	-	165	1,660	-	-
11/30/16	-	1,610	-	-	-	-	-	-	-	-	179	1,630	-	-
Minimum	14	1,500	52	4,482,000	182	1,680	117	10,105,000	151	2,790	152	1,630	169	14,587,000
Maximum	19	1,660	212	18,312,000	213	1,980	220	19,009,000	228	3,000	544	2,340	428	36,967,000
Average	17	1,554	192	16,627,824	203	1,909	190	16,439,941	199	2,945	407	2,138	383	33,067,765
			Total (Mgal)	2,114			Total (Mgal)	2,091					Total (Mgal)	4,205
			Total (Ac-ft)	6,489			Total (Ac-ft)	6,416					Total (Ac-ft)	12,905

Notes:

- 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)	Number of Samples included in 7- day Average
11/1/16	11:00	1,540	8.57	302	296	6	2
11/2/16	-	-	-	-	-	-	-
11/3/16	-	-	-	-	-	-	-
11/4/16	10:10	1,530	8.54	306	304	NA	2
11/5/16	-	-	-	-	-	-	-
11/6/16	-	-	-	-	-	-	-
11/7/16	-	-	-	-	-	-	-
11/8/16	-	-	-	-	-	-	-
11/9/16	8:15	1,530	8.60	282	294	NA	2
11/10/16	8:48	1,540	8.58	316	301	NA	3
11/11/16	-	-	-	-	-	-	-
11/12/16	-	-	-	-	-	-	-
11/13/16	-	-	-	-	-	-	-
11/14/16	-	-	-	-	-	-	-
11/15/16	8:25	1,500	8.60	300	299	9	3
11/16/16	-	-	-	-	-	-	-
11/17/16	-	-	-	-	-	-	-
11/18/16	-	-	-	-	-	-	-
11/19/16	-	-	-	-	-	-	-
11/20/16	-	-	-	-	-	-	-
11/21/16	-	-	-	-	-	-	-
11/22/16	-	-	-	-	-	-	-
11/23/16	-	-	-	-	-	-	-
11/24/16	-	-	-	-	-	-	-
11/25/16	-	-	-	-	-	-	-
11/26/16	-	-	-	-	-	-	-
11/27/16	-	-	-	-	-	-	-
11/28/16	-	-	-	-	-	-	-
11/29/16	-	-	-	-	-	-	-
11/30/16	-	-	-	-	-	-	-
Minimum		1,500	8.54	282	294	6	
Maximum		1,540	8.60	316	304	9	
Average		1,528	8.58	301	299	8	

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	Specific Conductance from Telemetry System (µS/cm)	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	Number of Samples included in 7- day Average
11/1/16	11:15	-	8.87	604	603	13	2
11/2/16	-	-	-	-	-	-	-
11/3/16	-	-	-	-	-	-	-
11/4/16	10:20	-	8.91	610	607	NA	2
11/5/16	-	-	-	-	-	-	-
11/6/16	-	-	-	-	-	-	-
11/7/16	-	-	-	-	-	-	-
11/8/16	-	-	-	-	-	-	-
11/9/16	8:30	-	8.86	595	603	NA	2
11/10/16	8:35	-	8.95	605	603	NA	3
11/11/16	-	-	-	-	-	-	-
11/12/16	-	-	-	-	-	-	-
11/13/16	-	-	-	-	-	-	-
11/14/16	-	-	-	-	-	-	-
11/15/16	8:40	-	8.85	592	597	8	3
11/16/16	-	-	-	-	-	-	-
11/17/16	-	-	-	-	-	-	-
11/18/16	-	-	-	-	-	-	-
11/19/16	-	-	-	-	-	-	-
11/20/16	-	-	-	-	-	-	-
11/21/16	-	-	-	-	-	-	-
11/22/16	-	-	-	-	-	-	-
11/23/16	-	-	-	-	-	-	-
11/24/16	-	-	-	-	-	-	-
11/25/16	-	-	-	-	-	-	-
11/26/16	-	-	-	-	-	-	-
11/27/16	-	-	-	-	-	-	-
11/28/16	-	-	-	-	-	-	-
11/29/16	-	-	-	-	-	-	-
11/30/16	-	-	-	-	-	-	-
Minimum		NA	8.85	592	597	8	
Maximum		NA	8.95	610	607	13	
Average		NA	8.89	601	603	11	

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 (Bremen)
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)	Number of samples included in 7- day Average
11/1/16	11:40	1,900	8.84	580	575	19	2
11/2/16	-	-	-	-	-	-	-
11/3/16	-	-	-	-	-	-	-
11/4/16	9:50	1,720	8.87	593	587	NA	2
11/5/16	-	-	-	-	-	-	-
11/6/16	-	-	-	-	-	-	-
11/7/16	-	-	-	-	-	-	-
11/8/16	-	-	-	-	-	-	-
11/9/16	7:55	1,980	8.84	591	592	NA	2
11/10/16	9:20	1,980	8.85	568	584	NA	3
11/11/16	-	-	-	-	-	-	-
11/12/16	-	-	-	-	-	-	-
11/13/16	-	-	-	-	-	-	-
11/14/16	-	-	-	-	-	-	-
11/15/16	8:00	1,980	8.80	575	578	12	3
11/16/16	-	-	-	-	-	-	-
11/17/16	-	-	-	-	-	-	-
11/18/16	-	-	-	-	-	-	-
11/19/16	-	-	-	-	-	-	-
11/20/16	-	-	-	-	-	-	-
11/21/16	-	-	-	-	-	-	-
11/22/16	-	-	-	-	-	-	-
11/23/16	-	-	-	-	-	-	-
11/24/16	-	-	-	-	-	-	-
11/25/16	-	-	-	-	-	-	-
11/26/16	-	-	-	-	-	-	-
11/27/16	-	-	-	-	-	-	-
11/28/16	-	-	-	-	-	-	-
11/29/16	-	-	-	-	-	-	-
11/30/16	-	-	-	-	-	-	-
Minimum		1,720	8.80	568	575	12	
Maximum		1,980	8.87	593	592	19	
Average		1,912	8.84	581	583	16	

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

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

Date	Time	Specific Conductance from Telemetry System (µS/cm)	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	Number of samples included in 7- day average
11/1/16	9:50	-	8.57	<i>1000</i>	984	56	2
11/2/16	-	-	-	-	-	-	-
11/3/16	-	-	-	-	-	-	-
11/4/16	8:35	-	8.54	995	998	NA	2
11/5/16	-	-	-	-	-	-	-
11/6/16	-	-	-	-	-	-	-
11/7/16	-	-	-	-	-	-	-
11/8/16	-	-	-	-	-	-	-
11/9/16	9:37	-	8.55	969	982	NA	2
11/10/16	11:25	-	8.62	999	988	NA	3
11/11/16	-	-	-	-	-	-	-
11/12/16	-	-	-	-	-	-	-
11/13/16	-	-	-	-	-	-	-
11/14/16	-	-	-	-	-	-	-
11/15/16	9:50	-	8.53	<i>1010</i>	993	14	3
11/16/16	-	-	-	-	-	-	-
11/17/16	-	-	-	-	-	-	-
11/18/16	-	-	-	-	-	-	-
11/19/16	-	-	-	-	-	-	-
11/20/16	-	-	-	-	-	-	-
11/21/16	-	-	-	-	-	-	-
11/22/16	-	-	-	-	-	-	-
11/23/16	-	-	-	-	-	-	-
11/24/16	-	-	-	-	-	-	-
11/25/16	-	-	-	-	-	-	-
11/26/16	-	-	-	-	-	-	-
11/27/16	-	-	-	-	-	-	-
11/28/16	-	-	-	-	-	-	-
11/29/16	-	-	-	-	-	-	-
11/30/16	-	-	-	-	-	-	-
Minimum		NA	8.53	969	982	14	
Maximum		NA	8.62	1010	998	56	
Average		NA	8.56	995	989	35	

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	Specific Conductance Laboratory Analysis (µS/cm)	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	Number of samples included in 7- day Average
11/1/16	9:30	0	8.60	679	676	26	2
11/2/16	-	-	-	-	-	-	-
11/3/16	-	-	-	-	-	-	-
11/4/16	8:15	0	8.60	696	688	NA	2
11/5/16	-	-	-	-	-	-	-
11/6/16	-	-	-	-	-	-	-
11/7/16	-	-	-	-	-	-	-
11/8/16	-	-	-	-	-	-	-
11/9/16	10:05	0	8.57	730	713	NA	2
11/10/16	11:50	-	8.66	739	722	NA	3
11/11/16	-	-	-	-	-	-	-
11/12/16	-	-	-	-	-	-	-
11/13/16	-	-	-	-	-	-	-
11/14/16	-	-	-	-	-	-	-
11/15/16	10:15	0	8.61	740	736	18	3
11/16/16	-	-	-	-	-	-	-
11/17/16	-	-	-	-	-	-	-
11/18/16	-	-	-	-	-	-	-
11/19/16	-	-	-	-	-	-	-
11/20/16	-	-	-	-	-	-	-
11/21/16	-	-	-	-	-	-	-
11/22/16	-	-	-	-	-	-	-
11/23/16	-	-	-	-	-	-	-
11/24/16	-	-	-	-	-	-	-
11/25/16	-	-	-	-	-	-	-
11/26/16	-	-	-	-	-	-	-
11/27/16	-	-	-	-	-	-	-
11/28/16	9:55	0	8.46	471	471	NA	1
11/29/16	-	-	-	-	-	-	-
11/30/16	-	-	-	-	-	-	-
Minimum			8.46	471	471	18	
Maximum			8.66	740	736	26	
Average			8.58	676	668	22	

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