

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

July 31, 2015

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

RE: June 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 June 2015. Discharges from the West and East outlets were limited due to high streamflows. The East outlet was shutdown June 2nd to June 7th due to high streamflows in the Sheyenne River. Discharges from the West outlet gradually increased to full capacity by the end of the month. Discharges from the East outlet remained limited due to high streamflows. A graph of the outlet discharges, streamflows, 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:MW/416-10
Enclosure

June 2015 Devils Lake Outlet Discharge Summary

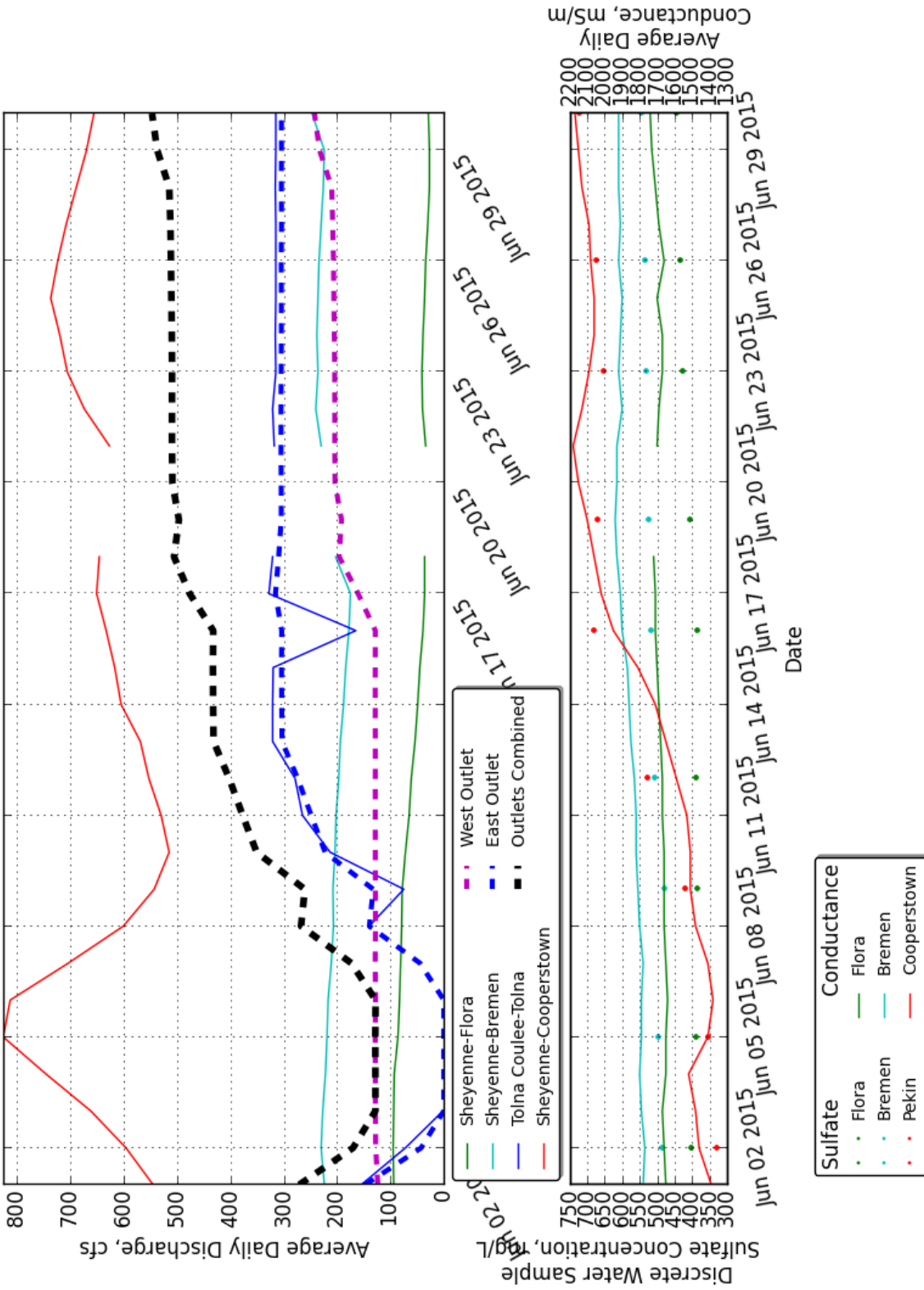


Figure 1: Devils Lake Outlet Discharge Summary

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
6/1/15	6/30/15

LOCATION: Benson Co, ND

Devils Lake West Outlet discharged 9,775 ac-ft over 30 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.57	8.78	8.64	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	548	579	565	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	552	577	565	mg/L	2 x Week	GRAB
OUTLET DISCHARGE	124	243	164	cfs	Continuous	Recorder
SIGNATURE				7/31/15	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

MONITORING PERIOD	
START DATE	END DATE
6/1/15	6/30/15

LOCATION: Ramsey, Benson, Nelson, ND

Devils Lake East Outlet discharged 13,388 ac-ft over 26 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.58	8.85	8.70	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	905	952	931	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	905	942	929	mg/L	2 x Week	GRAB
OUTLET DISCHARGE	0	316	225	cfs	Continuous	Recorder
SIGNATURE				7/31/15	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
6/1/15	6/30/15

LOCATION: Benson Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.36	8.55	8.44	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,640	1,740	1,681	µS/cm	Continuous	Recorder
SULFATE	386	446	408	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	388	441	405	mg/L	2 x Week	GRAB
FLOW, INSTREAM	27	95	56	cfs	Continuous	Recorder
SIGNATURE				7/31/15	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 WEST END OUTLET (BREMEN)
 UPSTREAM OF THE EAST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
6/1/15	6/30/15

LOCATION: Eddy Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.43	8.70	8.53	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,770	1,940	1,864	µS/cm	Continuous	Recorder
SULFATE	482	547	515	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	483	541	511	mg/L	2 x Week	GRAB
FLOW, INSTREAM	175	247	215	cfs	Continuous	Recorder
SIGNATURE				7/31/15	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

LOCATION: Nelson Co, ND

MONITORING PERIOD	
START DATE	END DATE
6/1/15	6/30/15

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.27	8.71	8.47	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	333	724	561	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	343	700	540	mg/L	2 x Week	GRAB
FLOW, INSTREAM	NA	NA	NA	cfs	Continuous	Recorder
SIGNATURE				7/31/15	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 (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)
6/1/15	94	1,650	124	10,698,000	224	1,780	147	12,742,000	155	2,780	545	1,390	271	23,440,000
6/2/15	95	1,660	128	11,035,000	230	1,770	42	3,670,000	72	-	596	1,460	170	14,705,000
6/3/15	94	1,670	128	11,079,000	227	1,790	0	0	1	-	662	1,480	128	11,079,000
6/4/15	93	1,650	128	11,092,000	222	1,800	0	0	-	-	746	1,520	128	11,092,000
6/5/15	86	1,650	129	11,109,000	219	1,790	0	0	-	-	826	1,410	129	11,109,000
6/6/15	83	1,640	128	11,054,000	217	1,790	0	0	-	-	813	1,380	128	11,054,000
6/7/15	81	1,650	129	11,117,000	211	1,780	45	3,864,000	-	-	704	1,410	173	14,981,000
6/8/15	79	1,660	128	11,063,000	207	1,800	140	12,066,000	140	2,790	601	1,480	268	23,129,000
6/9/15	78	1,660	128	11,081,000	208	1,810	132	11,436,000	75	-	543	1,510	261	22,517,000
6/10/15	72	1,660	128	11,097,000	204	1,820	223	19,228,000	213	2,810	515	1,510	351	30,325,000
6/11/15	65	1,670	129	11,106,000	202	1,820	249	21,485,000	265	2,810	530	1,530	377	32,591,000
6/12/15	61	1,670	128	11,099,000	197	1,830	274	23,671,000	279	2,820	553	1,590	402	34,770,000
6/13/15	54	1,680	128	11,097,000	194	1,850	303	26,210,000	321	2,800	569	1,650	432	37,307,000
6/14/15	49	1,690	129	11,111,000	188	1,860	304	26,262,000	321	2,820	605	1,710	433	37,373,000
6/15/15	45	1,700	129	11,109,000	184	1,870	304	26,294,000	320	2,840	617	1,810	433	37,403,000
6/16/15	39	1,710	128	11,095,000	178	1,900	304	26,262,000	165	2,850	633	1,950	432	37,357,000
6/17/15	36	1,710	161	13,890,000	175	1,910	316	27,276,000	328	2,850	651	2,020	476	41,166,000
6/18/15	36	1,720	196	16,960,000	203	1,930	310	26,754,000	321	2,840	646	2,060	506	43,714,000
6/19/15	-	-	192	16,579,000	-	1,940	305	26,333,000	-	2,850	-	2,100	497	42,912,000
6/20/15	-	-	204	17,626,000	-	1,930	305	26,342,000	-	2,850	-	2,150	509	43,968,000
6/21/15	34	1,700	205	17,671,000	230	1,930	305	26,370,000	318	2,850	627	2,180	510	44,041,000
6/22/15	40	1,690	205	17,670,000	240	1,900	305	26,371,000	321	2,830	674	2,130	510	44,041,000
6/23/15	41	1,670	205	17,681,000	236	1,920	305	26,345,000	315	2,830	706	2,090	510	44,026,000
6/24/15	39	1,670	205	17,750,000	238	1,910	305	26,317,000	316	2,810	720	2,060	510	44,067,000
6/25/15	36	1,700	206	17,816,000	236	1,900	305	26,320,000	315	2,870	737	2,060	511	44,136,000
6/26/15	34	1,660	207	17,865,000	234	1,920	305	26,344,000	315	2,880	724	2,080	512	44,209,000
6/27/15	30	1,690	208	17,994,000	230	1,910	304	26,291,000	315	2,890	708	2,090	513	44,285,000
6/28/15	27	1,710	210	18,166,000	226	1,920	305	26,315,000	316	2,900	689	2,130	515	44,481,000
6/29/15	27	1,730	233	20,127,000	224	1,920	304	26,300,000	315	2,890	670	2,150	537	46,427,000
6/30/15	29	1,740	243	20,960,000	247	1,920	305	26,311,000	315	2,930	656	2,170	547	47,271,000
Minimum	27	1,640	124	10,698,000	175	1,770	0	0	1	2,780	515	1,380	128	11,054,000
Maximum	95	1,740	243	20,960,000	247	1,940	316	27,276,000	328	2,930	826	2,180	547	47,271,000
Average	56	1,681	164	14,193,233	215	1,864	225	19,439,300	256	2,843	652	1,809	389	33,632,533
Notes:			Total (Mgal)	3,185				Total (Mgal)	4,362				Total (Mgal)	7,547
			Total (Ac-ft)	9,775				Total (Ac-ft)	13,388				Total (Ac-ft)	23,163

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 (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
6/1/15	-	-	-	-	-	-	-
6/2/15	8:15	1,600	8.44	403	399	96	7
6/3/15	-	-	-	-	-	-	-
6/4/15	-	-	-	-	-	-	-
6/5/15	10:00	1,610	8.36	390	397	NA	7
6/6/15	-	-	-	-	-	-	-
6/7/15	-	-	-	-	-	-	-
6/8/15	-	-	-	-	-	-	-
6/9/15	8:00	1,630	8.38	388	389	NA	7
6/10/15	-	-	-	-	-	-	-
6/11/15	-	-	-	-	-	-	-
6/12/15	8:40	1,640	8.36	389	389	NA	7
6/13/15	-	-	-	-	-	-	-
6/14/15	-	-	-	-	-	-	-
6/15/15	-	-	-	-	-	-	-
6/16/15	8:05	1,670	8.43	386	388	108	7
6/17/15	-	-	-	-	-	-	-
6/18/15	-	-	-	-	-	-	-
6/19/15	9:40	1,700	8.45	407	397	NA	-
6/20/15	-	-	-	-	-	-	-
6/21/15	-	-	-	-	-	-	-
6/22/15	-	-	-	-	-	-	-
6/23/15	10:25	1,680	8.49	429	418	NA	7
6/24/15	-	-	-	-	-	-	-
6/25/15	-	-	-	-	-	-	-
6/26/15	9:05	1,630	8.55	436	433	NA	7
6/27/15	-	-	-	-	-	-	-
6/28/15	-	-	-	-	-	-	-
6/29/15	-	-	-	-	-	-	-
6/30/15	8:00	1,740	8.51	446	441	54	7
Minimum		1,600	8.36	386	388	54	
Maximum		1,740	8.55	446	441	108	
Average		1,656	8.44	408	405	86	

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
6/1/15	-	-	-	-	-	-
6/2/15	8:25	8.61	558	558	44	7
6/3/15	-	-	-	-	-	-
6/4/15	-	-	-	-	-	-
6/5/15	10:20	8.63	555	557	NA	7
6/6/15	-	-	-	-	-	-
6/7/15	-	-	-	-	-	-
6/8/15	-	-	-	-	-	-
6/9/15	8:15	8.57	548	552	NA	7
6/10/15	-	-	-	-	-	-
6/11/15	-	-	-	-	-	-
6/12/15	8:50	8.61	579	564	NA	7
6/13/15	-	-	-	-	-	-
6/14/15	-	-	-	-	-	-
6/15/15	-	-	-	-	-	-
6/16/15	8:15	8.57	575	577	17	7
6/17/15	-	-	-	-	-	-
6/18/15	-	-	-	-	-	-
6/19/15	9:25	8.67	568	572	NA	7
6/20/15	-	-	-	-	-	-
6/21/15	-	-	-	-	-	-
6/22/15	-	-	-	-	-	-
6/23/15	10:10	8.62	568	568	NA	7
6/24/15	-	-	-	-	-	-
6/25/15	-	-	-	-	-	-
6/26/15	9:00	8.78	571	570	NA	7
6/27/15	-	-	-	-	-	-
6/28/15	-	-	-	-	-	-
6/29/15	-	-	-	-	-	-
6/30/15	8:15	8.69	566	569	16	7
Minimum		8.57	548	552	16	
Maximum		8.78	579	577	44	
Average		8.64	565	565	26	

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
6/1/15	-	-	-	-	-	-	-
6/2/15	7:45	1,700	8.43	489	483	80	7
6/3/15	-	-	-	-	-	-	-
6/4/15	-	-	-	-	-	-	-
6/5/15	9:30	1,750	8.47	499	494	NA	7
6/6/15	-	-	-	-	-	-	-
6/7/15	-	-	-	-	-	-	-
6/8/15	-	-	-	-	-	-	-
6/9/15	7:40	1,760	8.46	482	491	NA	7
6/10/15	-	-	-	-	-	-	-
6/11/15	-	-	-	-	-	-	-
6/12/15	8:15	1,780	8.43	510	496	NA	7
6/13/15	-	-	-	-	-	-	-
6/14/15	-	-	-	-	-	-	-
6/15/15	-	-	-	-	-	-	-
6/16/15	7:40	1,860	8.50	518	514	74	7
6/17/15	-	-	-	-	-	-	-
6/18/15	-	-	-	-	-	-	-
6/19/15	10:10	1,880	8.59	525	522	NA	7
6/20/15	-	-	-	-	-	-	-
6/21/15	-	-	-	-	-	-	-
6/22/15	-	-	-	-	-	-	-
6/23/15	10:40	1,920	8.58	533	529	NA	7
6/24/15	-	-	-	-	-	-	-
6/25/15	-	-	-	-	-	-	-
6/26/15	9:25	1,920	8.70	535	534	NA	7
6/27/15	-	-	-	-	-	-	-
6/28/15	-	-	-	-	-	-	-
6/29/15	-	-	-	-	-	-	-
6/30/15	7:35	1,920	8.62	547	541	80	7
Minimum		1,700	8.43	482	483	74	
Maximum		1,920	8.70	547	541	80	
Average		1,832	8.53	515	511	78	

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 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
6/1/15	-	-	-	-	-	-
6/2/15	-	-	-	-	-	-
6/3/15	-	-	-	-	-	-
6/4/15	-	-	-	-	-	-
6/5/15	-	-	-	-	-	-
6/6/15	-	-	-	-	-	-
6/7/15	-	-	-	-	-	-
6/8/15	-	-	-	-	-	-
6/9/15	9:30	8.58	905	905	NA	7
6/10/15	-	-	-	-	-	-
6/11/15	-	-	-	-	-	-
6/12/15	13:00	8.62	930	918	NA	7
6/13/15	-	-	-	-	-	-
6/14/15	-	-	-	-	-	-
6/15/15	-	-	-	-	-	-
6/16/15	9:20	8.66	952	941	26	7
6/17/15	-	-	-	-	-	-
6/18/15	-	-	-	-	-	-
6/19/15	13:25	8.71	932	942	NA	7
6/20/15	-	-	-	-	-	-
6/21/15	-	-	-	-	-	-
6/22/15	-	-	-	-	-	-
6/23/15	11:30	8.72	925	929	NA	7
6/24/15	-	-	-	-	-	-
6/25/15	-	-	-	-	-	-
6/26/15	11:45	8.85	940	933	NA	7
6/27/15	-	-	-	-	-	-
6/28/15	-	-	-	-	-	-
6/29/15	-	-	-	-	-	-
6/30/15	9:25	8.76	933	937	19	7
Minimum		8.58	905	905	19	
Maximum		8.85	952	942	26	
Average		8.70	931	929	23	

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
6/1/15	-	-	-	-	-	-
6/2/15	9:45	8.38	333	343	230	7
6/3/15	-	-	-	-	-	-
6/4/15	-	-	-	-	-	-
6/5/15	12:35	8.27	357	345	NA	7
6/6/15	-	-	-	-	-	-
6/7/15	-	-	-	-	-	-
6/8/15	-	-	-	-	-	-
6/9/15	9:50	8.39	421	389	NA	7
6/10/15	-	-	-	-	-	-
6/11/15	-	-	-	-	-	-
6/12/15	12:35	8.39	530	475.5	NA	7
6/13/15	-	-	-	-	-	-
6/14/15	-	-	-	-	-	-
6/15/15	-	-	-	-	-	-
6/16/15	9:47	8.50	683	607	72	7
6/17/15	-	-	-	-	-	-
6/18/15	-	-	-	-	-	-
6/19/15	13:00	8.53	673	678	NA	7
6/20/15	-	-	-	-	-	-
6/21/15	-	-	-	-	-	-
6/22/15	-	-	-	-	-	-
6/23/15	12:00	8.53	654	664	NA	7
6/24/15	-	-	-	-	-	-
6/25/15	-	-	-	-	-	-
6/26/15	12:15	8.71	675	665	NA	7
6/27/15	-	-	-	-	-	-
6/28/15	-	-	-	-	-	-
6/29/15	-	-	-	-	-	-
6/30/15	9:50	8.56	724	700	60	7
Minimum		8.27	333	343	60	
Maximum		8.71	724	700	230	
Average		8.47	561	540	121	

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