

November 20, 2020

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

Re: October 2020 Devils Lake Outlets Monthly Discharge and Water Quality Report

Division of Water Quality:

The monthly discharge report for the Devils Lake Outlets for the month of October 2020 is enclosed. In October, the West and East Outlets operated at average rates of 205 and 52 cubic feet per second (cfs) respectively until the 21st. Both outlets were scheduled for shut down by the end of October but continued freezing temperatures forced a slightly earlier shut down than planned. The total outlet discharge in October was 10,705 acre-feet which brings the 2020 season total 82,087 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.

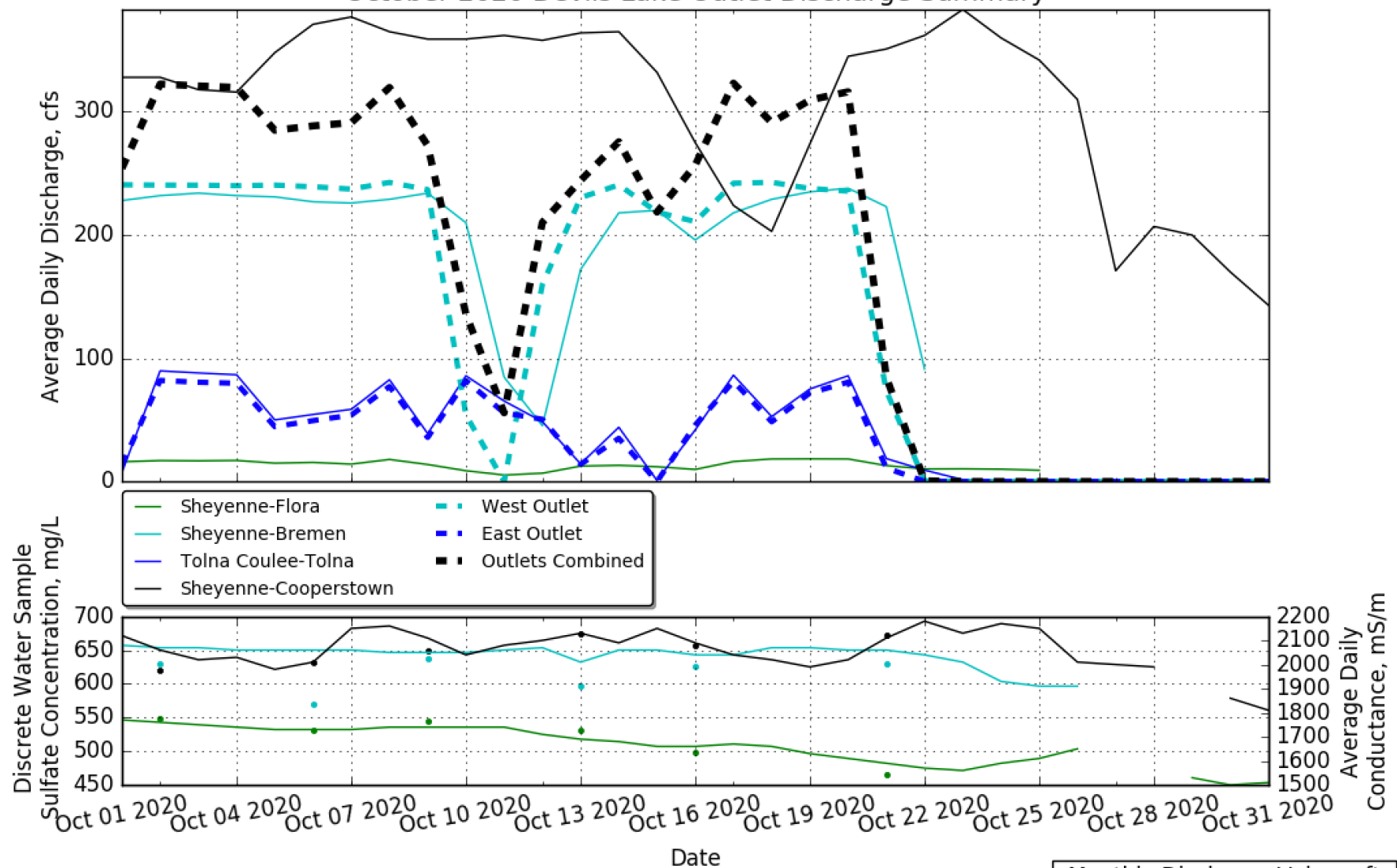
Sincerely,



Jonathan Kelsch P.E.
Director of Water Development

JK:TD/416-10
Enclosure

October 2020 Devils Lake Outlet Discharge Summary



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

	Monthly Discharge Vol., ac-ft
West End Outlet	8,539
East End Outlet	2,167
Combined Total	10,705

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
10/1/20	10/31/20

LOCATION: Benson Co, ND

Devils Lake West Outlet discharged 8,539 ac-ft over 21 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.60	8.85	8.68	SU	2 x Week	GRAB
SULFATE	626	643	633	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	627	642	634	mg/L	Average	GRAB
OUTLET DISCHARGE	0	243	205	cfs	Continuous	Recorder
SIGNATURE				11/20/20	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, DIRECTOR, WATER DEVELOPMENT DIVISION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

A summary of individual sample results and flow data for both outlets, and upstream & downstream monitoring locations is 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
10/1/20	10/31/20

Devils Lake East Outlet discharged 2,167 ac-ft over 21 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	7.82	8.82	8.46	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	2190	2980	2768	µS/cm	Continuous	Recorder
SULFATE	822	985	924	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	883	967	926	mg/L	Average	GRAB
OUTLET DISCHARGE	0	82	52	cfs	Continuous	Recorder
SIGNATURE				11/20/20	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, DIRECTOR, WATER DEVELOPMENT DIVISION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

A summary of individual sample results and flow data for both outlets, and upstream & downstream monitoring locations is attached.

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- 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
10/1/20	10/31/20

LOCATION: Benson Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.47	8.62	8.53	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,500	1,770	1,664	µS/cm	Continuous	Recorder
SULFATE	466	548	520	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	482	547	526	mg/L	Average	GRAB
FLOW, INSTREAM	5	18	13	cfs	Continuous	Recorder
SIGNATURE				11/20/20	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, DIRECTOR, WATER DEVELOPMENT DIVISION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

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- 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

LOCATION: Eddy Co, ND

MONITORING PERIOD	
START DATE	END DATE
10/1/20	10/31/20

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.56	8.77	8.67	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,910	2,080	2,039	µS/cm	Continuous	Recorder
SULFATE	569	638	615	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	599	636	616	mg/L	Average	GRAB
FLOW, INSTREAM	45	238	202	cfs	Continuous	Recorder
SIGNATURE				11/20/20	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, DIRECTOR, WATER DEVELOPMENT DIVISION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

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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
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OUTLET OPERATOR NAME/ADDRESS

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


MONTHLY DISCHARGE REPORT

LOCATION: DOWNSTREAM OF BOTH OUTLETS (PEKIN)

FACILITY: Devils Lake Outlet Project

LOCATION: Nelson Co, ND

MONITORING PERIOD	
START DATE	END DATE
10/1/20	10/31/20

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.44	8.72	8.59	SU	2 x Week	GRAB
SULFATE	621	675	651	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	626	666	647	mg/L	Average	GRAB
FLOW, INSTREAM	NA	NA	NA	cfs	Continuous	Recorder
SIGNATURE				11/20/20	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, DIRECTOR, WATER DEVELOPMENT DIVISION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

A summary of individual sample results and flow data for both outlets, and upstream & downstream monitoring locations is 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

OUTLET OPERATOR NAME/ADDRESS

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


MONTHLY DISCHARGE REPORT

LOCATION: DOWNSTREAM OF BOTH OUTLETS (COOPERSTOWN)

FACILITY: Devils Lake Outlet Project

LOCATION: Griggs Co, ND

MONITORING PERIOD	
START DATE	END DATE
10/1/20	10/31/20

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.46	8.55	8.49	SU	Weekly	GRAB
SPECIFIC CONDUCTANCE	1,810	2,180	2,060	µS/cm	Continuous	Recorder
SULFATE	581	638	612	mg/L	Weekly	GRAB
7 DAY AVERAGE OF SULFATE	581	638	612	mg/L	Average	GRAB
FLOW, INSTREAM	143	383	309	cfs	Continuous	Recorder
SIGNATURE				11/20/20	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, DIRECTOR, WATER DEVELOPMENT DIVISION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

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Notes:

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- 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)
10/1/20	16	1,770	241	20,805,000	228	2,080	13	1,151,000	7	2,800	328	2,120	254	21,956,000
10/2/20	17	1,760	241	20,782,000	232	2,070	82	7,086,000	90	2,960	328	2,060	323	27,868,000
10/3/20	17	1,750	240	20,775,000	234	2,070	81	6,959,000	88	2,930	318	2,020	321	27,734,000
10/4/20	17	1,740	240	20,738,000	232	2,060	80	6,889,000	87	2,860	316	2,030	320	27,627,000
10/5/20	15	1,730	240	20,779,000	231	2,060	45	3,847,000	50	2,860	348	1,980	285	24,626,000
10/6/20	16	1,730	239	20,665,000	227	2,060	49	4,268,000	54	2,890	371	2,010	289	24,933,000
10/7/20	14	1,730	237	20,503,000	226	2,060	54	4,653,000	59	2,720	377	2,150	291	25,156,000
10/8/20	18	1,740	243	20,968,000	229	2,050	77	6,661,000	83	2,850	365	2,160	320	27,629,000
10/9/20	14	1,740	237	20,467,000	234	2,050	36	3,091,000	39	2,750	359	2,110	273	23,558,000
10/10/20	9	1,740	54	4,663,000	210	2,050	82	7,067,000	86	2,820	359	2,040	136	11,730,000
10/11/20	5	1,740	0	0	85	2,060	56	4,816,000	65	2,950	362	2,080	56	4,816,000
10/12/20	7	1,710	160	13,805,000	45	2,070	50	4,360,000	49	2,870	358	2,100	210	18,165,000
10/13/20	13	1,690	230	19,905,000	172	2,010	14	1,204,000	14	2,680	364	2,130	244	21,109,000
10/14/20	13	1,680	241	20,794,000	218	2,060	35	3,028,000	44	2,660	365	2,090	276	23,822,000
10/15/20	12	1,660	219	18,890,000	220	2,060	0	0	1	2,490	332	2,150	219	18,890,000
10/16/20	10	1,660	211	18,220,000	196	2,040	46	3,960,000	42	2,380	275	2,090	257	22,180,000
10/17/20	16	1,670	242	20,911,000	218	2,040	81	7,020,000	86	2,620	224	2,040	323	27,931,000
10/18/20	18	1,660	243	20,974,000	229	2,070	48	4,189,000	53	2,730	203	2,020	291	25,163,000
10/19/20	18	1,630	238	20,541,000	235	2,070	72	6,208,000	75	2,920	274	1,990	310	26,749,000
10/20/20	18	1,610	236	20,361,000	238	2,060	81	6,965,000	86	2,950	345	2,020	316	27,326,000
10/21/20	13	1,590	74	6,358,000	223	2,060	11	943,000	19	-	351	2,110	85	7,301,000
10/22/20	10	1,570	0	36,000	91	2,040	0	10,000	9	-	362	2,180	1	46,000
10/23/20	10	1,560	0	0	-	2,010	0	0	1	-	383	2,130	0	0
10/24/20	10	1,590	0	0	-	1,930	0	0	1	-	360	2,170	0	0
10/25/20	9	1,610	0	0	-	1,910	0	0	1	-	342	2,150	0	0
10/26/20	-	1,650	0	0	-	1,910	0	0	1	-	310	2,010	0	0
10/27/20	-	-	0	0	-	-	0	0	1	-	171	2,000	0	0
10/28/20	-	-	0	0	-	-	0	0	1	-	207	1,990	0	0
10/29/20	-	1,530	0	0	-	-	0	0	1	-	200	-	0	0
10/30/20	-	1,500	0	0	-	-	0	0	1	-	170	1,860	0	0
10/31/20	-	1,510	0	0	-	-	0	0	-	-	143	1,810	0	0
Minimum	5	1,500	0	0	45	1,910	0	0	1	2,380	143	1,810	0	0
Maximum	18	1,770	243	20,974,000	238	2,080	82	7,086,000	90	2,960	383	2,180	323	27,931,000
Average	13	1,664	205	16,906,364	202	2,039	52	4,289,773	40	2,785	309	2,060	245	21,196,136
			Total (Mgal)	2,782			Total (Mgal)	706					Total (Mgal)	3,488
			Total (Ac-ft)	8,539			Total (Ac-ft)	2,167					Total (Ac-ft)	10,705

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
10/1/20	-	-	-	-	-	-	-
10/2/20	10:00	1,770	8.60	548	547	NA	2
10/3/20	-	-	-	-	-	-	-
10/4/20	-	-	-	-	-	-	-
10/5/20	-	-	-	-	-	-	-
10/6/20	8:00	1,730	8.49	532	540	NA	2
10/7/20	-	-	-	-	-	-	-
10/8/20	-	-	-	-	-	-	-
10/9/20	9:35	1,740	8.62	544	538	NA	2
10/10/20	-	-	-	-	-	-	-
10/11/20	-	-	-	-	-	-	-
10/12/20	-	-	-	-	-	-	-
10/13/20	8:15	1,690	8.52	531	538	13	2
10/14/20	-	-	-	-	-	-	-
10/15/20	-	-	-	-	-	-	-
10/16/20	9:55	1,660	8.47	498	515	NA	2
10/17/20	-	-	-	-	-	-	-
10/18/20	-	-	-	-	-	-	-
10/19/20	-	-	-	-	-	-	-
10/20/20	-	-	-	-	-	-	-
10/21/20	8:15	1,590	8.50	466	482	NA	2
10/22/20	-	-	-	-	-	-	-
10/23/20	-	-	-	-	-	-	-
10/24/20	-	-	-	-	-	-	-
10/25/20	-	-	-	-	-	-	-
10/26/20	-	-	-	-	-	-	-
10/27/20	-	-	-	-	-	-	-
10/28/20	-	-	-	-	-	-	-
10/29/20	-	-	-	-	-	-	-
10/30/20	-	-	-	-	-	-	-
10/31/20	-	-	-	-	-	-	-
Minimum		1,590	8.47	466	482	13	
Maximum		1,770	8.62	548	547	13	
Average		1,697	8.53	520	526	13	

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
10/1/20	-	-	-	-	-	-	-
10/2/20	10:10	-	8.77	632	634	NA	2
10/3/20	-	-	-	-	-	-	-
10/4/20	-	-	-	-	-	-	-
10/5/20	-	-	-	-	-	-	-
10/6/20	8:10	-	8.62	643	638	NA	2
10/7/20	-	-	-	-	-	-	-
10/8/20	-	-	-	-	-	-	-
10/9/20	9:50	-	8.85	640	642	NA	2
10/10/20	-	-	-	-	-	-	-
10/11/20	-	-	-	-	-	-	-
10/12/20	-	-	-	-	-	-	-
10/13/20	8:25	-	8.62	628	634	19	2
10/14/20	-	-	-	-	-	-	-
10/15/20	-	-	-	-	-	-	-
10/16/20	10:05	-	8.61	628	628	NA	2
10/17/20	-	-	-	-	-	-	-
10/18/20	-	-	-	-	-	-	-
10/19/20	-	-	-	-	-	-	-
10/20/20	-	-	-	-	-	-	-
10/21/20	8:25	-	8.60	626	627	NA	2
10/22/20	-	-	-	-	-	-	-
10/23/20	-	-	-	-	-	-	-
10/24/20	-	-	-	-	-	-	-
10/25/20	-	-	-	-	-	-	-
10/26/20	-	-	-	-	-	-	-
10/27/20	-	-	-	-	-	-	-
10/28/20	-	-	-	-	-	-	-
10/29/20	-	-	-	-	-	-	-
10/30/20	-	-	-	-	-	-	-
10/31/20	-	-	-	-	-	-	-
Minimum			8.60	626	627	19	
Maximum			8.85	643	642	19	
Average			8.68	633	634	19	

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 (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
10/1/20	-	-	-	-	-	-	-
10/2/20	9:30	2,070	8.77	629	636	NA	2
10/3/20	-	-	-	-	-	-	-
10/4/20	-	-	-	-	-	-	-
10/5/20	-	-	-	-	-	-	-
10/6/20	7:30	2,060	8.64	569	599	NA	2
10/7/20	-	-	-	-	-	-	-
10/8/20	-	-	-	-	-	-	-
10/9/20	9:10	2,060	8.76	638	604	NA	2
10/10/20	-	-	-	-	-	-	-
10/11/20	-	-	-	-	-	-	-
10/12/20	-	-	-	-	-	-	-
10/13/20	7:55	1,980	8.56	596	617	68	2
10/14/20	-	-	-	-	-	-	-
10/15/20	-	-	-	-	-	-	-
10/16/20	9:30	2,070	8.71	626	611	NA	2
10/17/20	-	-	-	-	-	-	-
10/18/20	-	-	-	-	-	-	-
10/19/20	-	-	-	-	-	-	-
10/20/20	-	-	-	-	-	-	-
10/21/20	7:50	2,070	8.60	629	628	NA	2
10/22/20	-	-	-	-	-	-	-
10/23/20	-	-	-	-	-	-	-
10/24/20	-	-	-	-	-	-	-
10/25/20	-	-	-	-	-	-	-
10/26/20	-	-	-	-	-	-	-
10/27/20	-	-	-	-	-	-	-
10/28/20	-	-	-	-	-	-	-
10/29/20	-	-	-	-	-	-	-
10/30/20	-	-	-	-	-	-	-
10/31/20	-	-	-	-	-	-	-
Minimum		1,980	8.56	569	599	68	
Maximum		2,070	8.77	638	636	68	
Average		2,052	8.67	615	616	68	

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 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
10/1/20	-	-	-	-	-	-	-
10/2/20	8:00	2980	8.18	822	901	NA	2
10/3/20	-	-	-	-	-	-	-
10/4/20	-	-	-	-	-	-	-
10/5/20	-	-	-	-	-	-	-
10/6/20	9:20	2960	8.69	943	883	NA	2
10/7/20	-	-	-	-	-	-	-
10/8/20	-	-	-	-	-	-	-
10/9/20	7:40	2770	8.82	985	964	NA	2
10/10/20	-	-	-	-	-	-	-
10/11/20	-	-	-	-	-	-	-
10/12/20	-	-	-	-	-	-	-
10/13/20	9:20	-	8.61	948	967	68	2
10/14/20	-	-	-	-	-	-	-
10/15/20	-	-	-	-	-	-	-
10/16/20	8:05	2190	7.82	887	918	NA	2
10/17/20	-	-	-	-	-	-	-
10/18/20	-	-	-	-	-	-	-
10/19/20	-	-	-	-	-	-	-
10/20/20	-	-	-	-	-	-	-
10/21/20	9:45	2940	8.65	961	924	NA	2
10/22/20	-	-	-	-	-	-	-
10/23/20	-	-	-	-	-	-	-
10/24/20	-	-	-	-	-	-	-
10/25/20	-	-	-	-	-	-	-
10/26/20	-	-	-	-	-	-	-
10/27/20	-	-	-	-	-	-	-
10/28/20	-	-	-	-	-	-	-
10/29/20	-	-	-	-	-	-	-
10/30/20	-	-	-	-	-	-	-
10/31/20	-	-	-	-	-	-	-
Minimum		2190	7.82	822	883	68	
Maximum		2980	8.82	985	967	68	
Average		2768	8.46	924	926	68	

Notes:

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

**Sheyenne River Downstream of Both Outlets 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
10/1/20	-	-	-	-	-	-	-
10/2/20	8:20	-	8.65	621	626	NA	2
10/3/20	-	-	-	-	-	-	-
10/4/20	-	-	-	-	-	-	-
10/5/20	-	-	-	-	-	-	-
10/6/20	9:40	-	8.56	632	627	NA	2
10/7/20	-	-	-	-	-	-	-
10/8/20	-	-	-	-	-	-	-
10/9/20	8:00	-	8.72	649	641	NA	2
10/10/20	-	-	-	-	-	-	-
10/11/20	-	-	-	-	-	-	-
10/12/20	-	-	-	-	-	-	-
10/13/20	9:40	-	8.58	675	662	41	2
10/14/20	-	-	-	-	-	-	-
10/15/20	-	-	-	-	-	-	-
10/16/20	8:25	-	8.44	656	666	NA	2
10/17/20	-	-	-	-	-	-	-
10/18/20	-	-	-	-	-	-	-
10/19/20	-	-	-	-	-	-	-
10/20/20	-	-	-	-	-	-	-
10/21/20	10:15	-	8.56	672	664	NA	2
10/22/20	-	-	-	-	-	-	-
10/23/20	-	-	-	-	-	-	-
10/24/20	-	-	-	-	-	-	-
10/25/20	-	-	-	-	-	-	-
10/26/20	-	-	-	-	-	-	-
10/27/20	-	-	-	-	-	-	-
10/28/20	-	-	-	-	-	-	-
10/29/20	-	-	-	-	-	-	-
10/30/20	-	-	-	-	-	-	-
10/31/20	-	-	-	-	-	-	-
Minimum			8.44	621	626	41	
Maximum			8.72	675	666	41	
Average			8.59	651	647	41	

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

**Sheyenne River Downstream of Both Outlets near Cooperstown
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)	Number of samples included in 7- day Average
10/1/20	-	-	-	-	-	-	-
10/2/20	-	-	-	-	-	-	-
10/3/20	-	-	-	-	-	-	-
10/4/20	-	-	-	-	-	-	-
10/5/20	-	-	-	-	-	-	-
10/6/20	10:30	1,910	8.46	581	581	NA	1
10/7/20	-	-	-	-	-	-	-
10/8/20	-	-	-	-	-	-	-
10/9/20	-	-	-	-	-	-	-
10/10/20	-	-	-	-	-	-	-
10/11/20	-	-	-	-	-	-	-
10/12/20	-	-	-	-	-	-	-
10/13/20	10:25	2,080	8.55	638	638	45	1
10/14/20	-	-	-	-	-	-	-
10/15/20	-	-	-	-	-	-	-
10/16/20	-	-	-	-	-	-	-
10/17/20	-	-	-	-	-	-	-
10/18/20	-	-	-	-	-	-	-
10/19/20	-	-	-	-	-	-	-
10/20/20	-	-	-	-	-	-	-
10/21/20	11:00	2,040	8.47	618	618	NA	1
10/22/20	-	-	-	-	-	-	-
10/23/20	-	-	-	-	-	-	-
10/24/20	-	-	-	-	-	-	-
10/25/20	-	-	-	-	-	-	-
10/26/20	-	-	-	-	-	-	-
10/27/20	-	-	-	-	-	-	-
10/28/20	-	-	-	-	-	-	-
10/29/20	-	-	-	-	-	-	-
10/30/20	-	-	-	-	-	-	-
10/31/20	-	-	-	-	-	-	-
Minimum		1,910	8.46	581	581	45	
Maximum		2,080	8.55	638	638	45	
Average		2,010	8.49	612	612	45	

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