

October 13, 2023

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

RE: September 2023 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 September 2023 is enclosed. The Devils Lake West End Outlet was operated at a design capacity of 200 cfs. The average rate of discharge from the West End Outlet was 195 cfs with a total discharge volume of 11,581 acre-feet in September. The East End Outlet operation fluctuated between the design capacities of 75 cfs and 50 cfs from September 1st to September 14th, and was shut off on September 15th due to the downstream water quality constraint. The East End Outlet operated at an average rate of 31.5 cfs with a total discharge volume of 1,873 acre-feet in September. The combined total discharge volume from both West and East End Outlet was 13,454 acre-feet in September.

The attached tables contain daily outlet discharges measured from the flow meters 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.

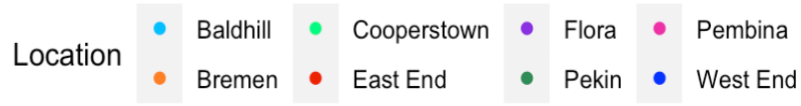
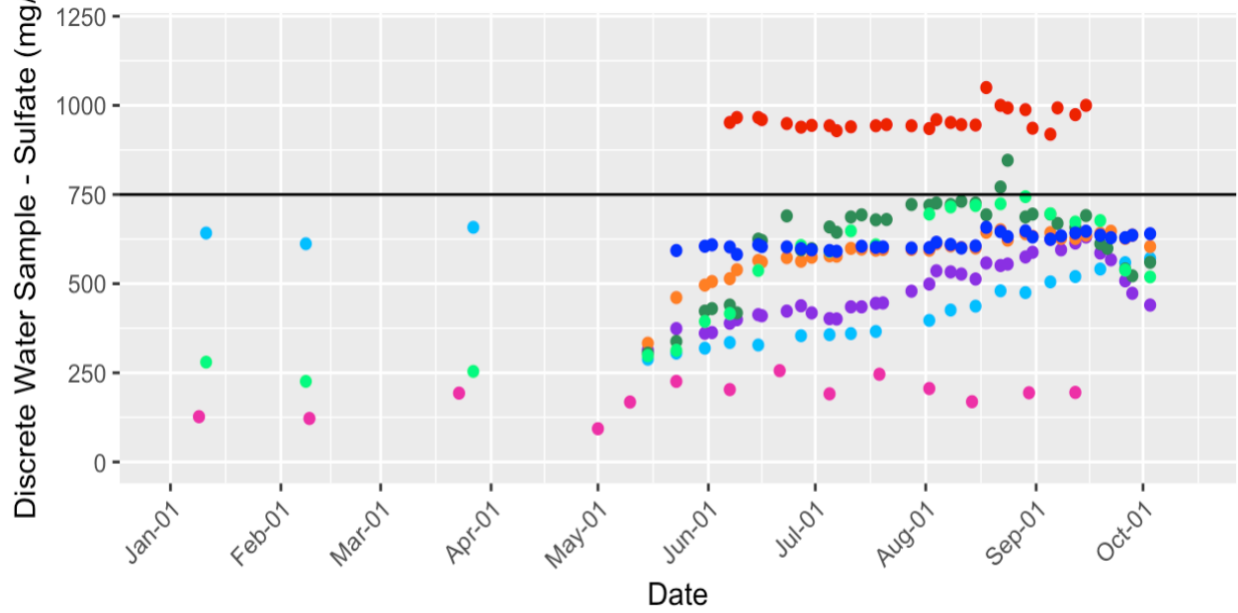
If you have any questions, please contact me at (701) 328-9049.

Sincerely,

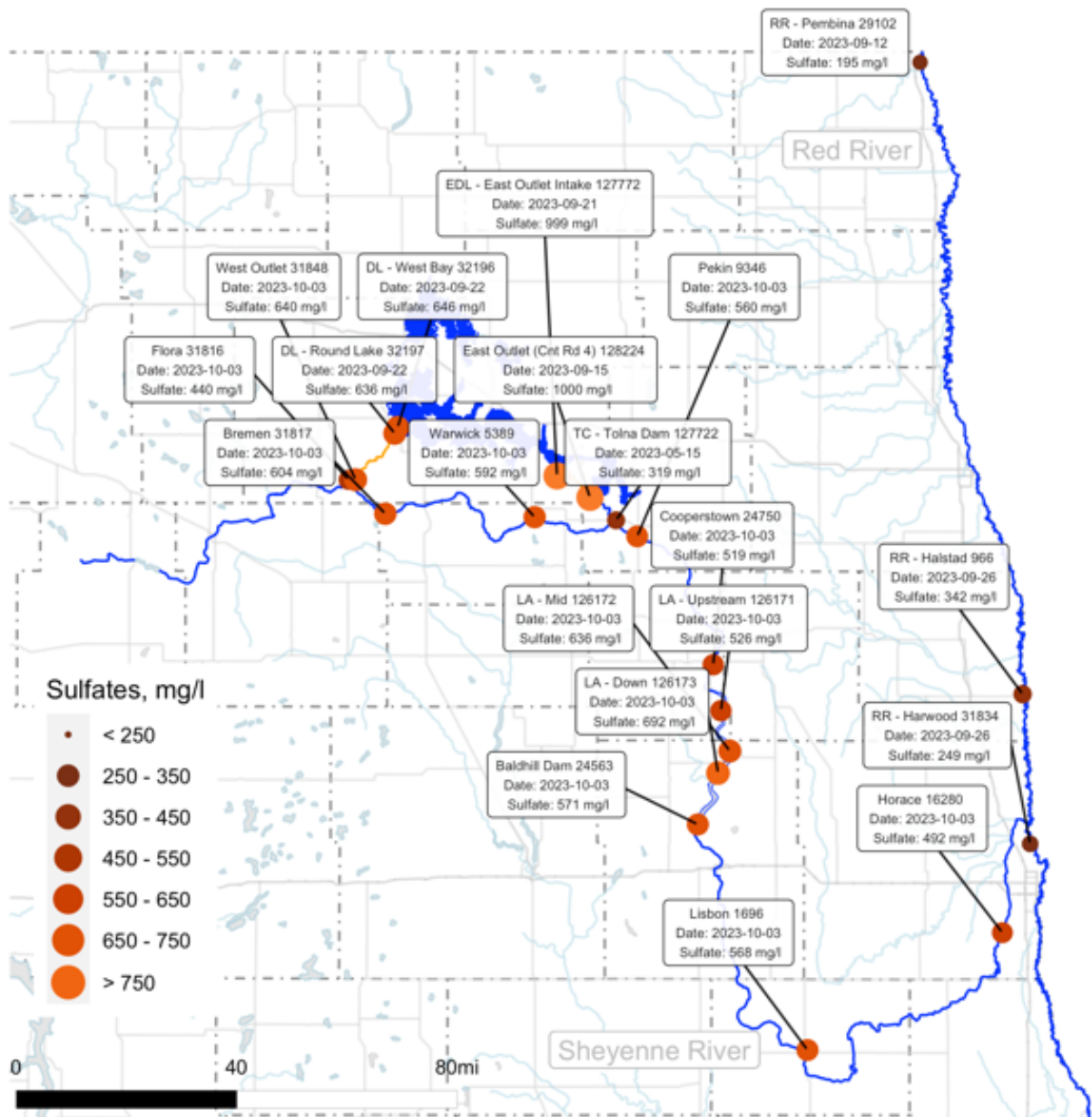


Yaping Chi, P.E.
Water Resource Engineer, Water Development
YC:/416-10
Enclosure

2023 Devils Lake Outlet Sulfate Trends



Devils Lake Outlet Operations Preliminary Sulfate Concentrations 10/13/2023



OUTLET OPERATOR NAME/ADDRESS
 NAME: ND Dept. of Water Resources
 ADDRESS: 1200 Memorial Highway,
 Bismarck ND 58504

MONTHLY DISCHARGE REPORT


LOCATION: WEST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
9/1/23	9/30/23

LOCATION: Benson Co, ND

Devils Lake West Outlet 11581 ac-ft over 30 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.58	8.76	8.65	SU	2 X Week	GRAB
SULFATE	625	647	635	mg/l	2 X Week	GRAB
7 DAY AVERAGE OF SULFATE	625	645	634	mg/L	Average	GRAB
OUTLET DISCHARGE	165	201	195	cfs	Continuous	Recorder
SIGNATURE				10/13/23	701-328-9049	
NAME AND TITLE	YAPING CHI, WATER RESOURCES ENGINEER, 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 location 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

OUTLET OPERATOR NAME/ADDRESS
 NAME: ND Dept. of Water Resources
 ADDRESS: 1200 Memorial Highway,
 Bismarck ND 58504

MONTHLY DISCHARGE REPORT


LOCATION: EAST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
9/1/23	9/30/23

LOCATION: Ramsey, Benson, Nelson Co, ND

Devils Lake East Outlet 1873 ac-ft over 30 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.49	8.79	8.63	SU	2 X Week	GRAB
SPECIFIC CONDUCTANCE	2800	2980	2905	µS/cm	Continuous	Recorder
SULFATE	919	1000	972	mg/L	2 X Week	GRAB
7 DAY AVERAGE OF SULFATE	919	987	962	mg/l	Average	GRAB
OUTLET DISCHARGE	0	81.1	31.5	cfs	Continuous	Recorder
SIGNATURE				10/13/23	701-328-9049	
NAME AND TITLE	YAPING CHI, WATER RESOURCES ENGINEER, WATER DEVELOPMENT DIVISION			DATE	TELEPHONE NUMBER	
COMMENT AND EXPLANATION OF ANY VIOLATIONS						

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

OUTLET OPERATOR NAME/ADDRESS
 NAME: ND Dept. of Water Resources
 ADDRESS: 1200 Memorial Highway,
 Bismarck ND 58504


MONTHLY DISCHARGE REPORT

LOCATION: UPSTREAM OF THE WEST END OUTLET (FLORA)

FACILITY: Devils Lake Outlet Project

LOCATION: Benson, ND

MONITORING PERIOD	
START DATE	END DATE
9/1/23	9/30/23

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.25	8.4	8.32	SU	2 X Week	GRAB
SPECIFIC CONDUCTANCE	1600	1910	1794	µS/cm	Continuous	Recorder
SULFATE	473	631	575	mg/L	2 X Week	GRAB
7 DAY AVERAGE OF SULFATE	491	624	585	mg/l	Average	GRAB
FLOW, INSTREAM	0.98	18	5.5	cfs	Continuous	Recorder
SIGNATURE				10/13/23	701-328-9049	
NAME AND TITLE	YAPING CHI, WATER RESOURCES ENGINEER, 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 location 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

OUTLET OPERATOR NAME/ADDRESS
 NAME: ND Dept. of Water Resources
 ADDRESS: 1200 Memorial Highway,
 Bismarck ND 58504


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
9/1/23	9/30/23

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.51	8.8	8.65	SU	2 X Week	GRAB
SPECIFIC CONDUCTANCE	1990	2060	2037.5	µS/cm	Continuous	Recorder
SULFATE	627	647	636	mg/L	2 X Week	GRAB
7 DAY AVERAGE OF SULFATE	627	644	636	mg/l	Average	GRAB
FLOW, INSTREAM	166	223	190	cfs	Continuous	Recorder
SIGNATURE				10/13/23	701-328-9049	
NAME AND TITLE	YAPING CHI, WATER RESOURCES ENGINEER, 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 location 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

OUTLET OPERATOR NAME/ADDRESS
 NAME: ND Dept. of Water Resources
 ADDRESS: 1200 Memorial Highway,
 Bismarck ND 58504


MONTHLY DISCHARGE REPORT

LOCATION: DOWNSTREAM OF BOTH OUTLETS (PEKIN)

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
9/1/23	9/30/23

LOCATION: Nelson Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.45	8.68	8.58	SU	2 X Week	GRAB
SULFATE	522	695	623	mg/L	2 X Week	GRAB
7 DAY AVERAGE OF SULFATE	532	695	635	mg/L	Average	GRAB
FLOW, INSTREAM	NA	NA	NA	cfs	Continuous	Recorder
SIGNATURE				10/13/23	701-328-9049	
NAME AND TITLE	YAPING CHI, WATER RESOURCES ENGINEER, 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 location 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 Dept. of Water Resources
 ADDRESS: 1200 Memorial Highway,
 Bismarck ND 58504


MONTHLY DISCHARGE REPORT

LOCATION: DOWNSTREAM OF BOTH OUTLETS (COOPERSTOWN)

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
9/1/23	9/30/23

LOCATION: Griggs Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.45	8.53	8.51	SU	2 X Week	GRAB
SPECIFIC CONDUCTANCE	1810	2230	2088	µS/cm	Continuous	Recorder
SULFATE	538	696	646	mg/L	2 X Week	GRAB
7 DAY AVERAGE OF SULFATE	538	696	646	mg/l	Average	GRAB
FLOW, INSTREAM	248	333	289	cfs	Continuous	Recorder
SIGNATURE				10/13/23	701-328-9049	
NAME AND TITLE	YAPING CHI, WATER RESOURCES ENGINEER, 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 location 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

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)
9/1/2023	1.76	1930	186	16066000	180	2070	76.5	6606000	79.6	2830	279	2220	262	22672000
9/2/2023	1.28	1950	165	14225000	172	2070	61	5268000	61.6	2820	288	2200	226	19493000
9/3/2023	1.05	1950	165	14242000	166	2070	59.7	5154000	58.7	2820	303	2180	224	19396000
9/4/2023	0.98	1960	165	14215000	167	2080	58.1	5018000	58.1	2780	302	2250	223	19233000
9/5/2023	1.7	1910	188	16234000	187	2010	27.6	2383000	38.2	2800	308	2230	215	18617000
9/6/2023	2.39	1900	200	17252000	187	2040	74.3	6418000	62.7	2880	304	2180	274	23670000
9/7/2023	3.79	1900	199	17229000	189	2050	80.3	6938000	81.2	2900	311	2160	280	24167000
9/8/2023	3.57	1900	195	16809000	189	2050	79.4	6859000	79.6	2920	295	2140	274	23668000
9/9/2023	3.94	1900	200	17312000	188	2050	81.1	7005000	83	2930	297	2140	281	24317000
9/10/2023	3.38	1900	200	17290000	190	2040	79	6823000	79.6	2920	318	2120	279	24113000
9/11/2023	-	-	200	17243000	195	2050	50.1	4328000	59.2	3000	320	2160	250	21571000
9/12/2023	-	-	199	17199000	195	2050	71.1	6139000	67.1	2980	320	2170	270	23338000
9/13/2023	-	-	195	16824000	192	2050	62	5353000	62.6	2940	318	2160	257	22177000
9/14/2023	-	-	200	17291000	195	2060	60.5	5229000	62.1	2940	307	2150	261	22520000
9/15/2023	7.63	1900	195	16847000	192	2050	24	2070000	41	2940	303	2150	219	18917000
9/16/2023	-	-	200	17300000	197	2060	0	0	2.7	2920	305	2140	200	17300000
9/17/2023	6.46	1860	201	17390000	202	2060	0	0	1.21	2910	303	2130	201	17390000
9/18/2023	4.71	1840	198	17085000	199	2060	0	0	1	2820	285	2150	198	17085000
9/19/2023	3.74	1820	201	17369000	196	2060	0	0	0.87	2630	263	2140	201	17369000
9/20/2023	3.2	1810	200	17278000	197	2070	0	0	0.79	2410	251	2140	200	17278000
9/21/2023	2.85	1790	200	17268000	200	2060	0	0	2.88	2290	248	2050	200	17268000
9/22/2023	2.6	1780	197	17053000	203	2060	0	0	2.91	-	253	1970	197	17053000
9/23/2023	3.03	1750	200	17249000	206	2050	0	0	5.95	1840	276	1940	200	17249000
9/24/2023	4.34	1710	199	17221000	214	2020	0	0	3.49	-	300	1860	199	17221000
9/25/2023	6.44	1680	196	16912000	205	2030	0	0	1.74	1650	322	1850	196	16912000
9/26/2023	8.95	1650	200	17300000	202	2030	0	0	1.39	-	333	1810	200	17300000
9/27/2023	18	1630	200	17290000	216	2020	0	0	1.21	1790	328	1810	200	17290000
9/28/2023	15.7	1600	197	17051000	223	1990	0	0	1.04	1790	321	1820	197	17051000
9/29/2023	15.5	1600	199	17189000	217	1980	0	0	0.94	1840	311	1800	199	17189000
9/30/2023	16.2	1560	199	17228000	221	1990	0	0	0.93	1810	296	1800	199	17228000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum	0.98	1560	165	14215000	166	1980	0	0	0.79	1650	248	1800	165	14215000
Maximum	18	1960	201	17390000	223	2080	81.1	7005000	83	3000	333	2250	282	24395000
Average	5.5	1738	195	16815367	190	1978	31.5	2719700	32.4	2504	289	2001	226	19535067
			Total (Mgal)	3773			Total (Mgal)	610				Total (Mgal)	4384	
			Total (Ac-ft)	11581			Total (Ac-ft)	1873				Total (Ac-ft)	13454	

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

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
9/1/23	-	-	-	-	-	-	-
9/2/23	-	-	-	-	-	-	-
9/3/23	-	-	-	-	-	-	-
9/4/23	-	-	-	-	-	-	-
9/5/23	8:20:00 AM	1910	8.4	624	624	NA	1
9/6/23	-	-	-	-	-	-	-
9/7/23	-	-	-	-	-	-	-
9/8/23	9:40:00 AM	1900	8.29	595	610	NA	2
9/9/23	-	-	-	-	-	-	-
9/10/23	-	-	-	-	-	-	-
9/11/23	-	-	-	-	-	-	-
9/12/23	8:24:00 AM	-	8.37	614	605	44	2
9/13/23	-	-	-	-	-	-	-
9/14/23	-	-	-	-	-	-	-
9/15/23	8:45:00 AM	1900	8.31	631	623	NA	2
9/16/23	-	-	-	-	-	-	-
9/17/23	-	-	-	-	-	-	-
9/18/23	-	-	-	-	-	-	-
9/19/23	8:00:00 AM	1820	8.31	586	609	NA	2
9/20/23	-	-	-	-	-	-	-
9/21/23	-	-	-	-	-	-	-
9/22/23	9:15:00 AM	1780	8.39	567	577	NA	2
9/23/23	-	-	-	-	-	-	-
9/24/23	-	-	-	-	-	-	-
9/25/23	-	-	-	-	-	-	-
9/26/23	8:05:00 AM	1650	8.25	508	538	NA	2
9/27/23	-	-	-	-	-	-	-
9/28/23	9:15:00 AM	1600	8.27	473	491	NA	2
9/29/23	-	-	-	-	-	-	-
9/30/23	-	-	-	-	-	-	-
Minimum		1600	8.25	473	491	44	
Maximum		1910	8.4	631	624	44	
Average		1794	8.32	575	585	44	

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

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

Date	Time	Specific Conductance from Telemetry System ($\mu\text{S}/\text{cm}$)	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
9/1/23	-	-	-	-	-	-	-
9/2/23	-	-	-	-	-	-	-
9/3/23	-	-	-	-	-	-	-
9/4/23	-	-	-	-	-	-	-
9/5/23	8:35:00 AM	-	8.64	625	625	NA	1
9/6/23	-	-	-	-	-	-	-
9/7/23	-	-	-	-	-	-	-
9/8/23	9:25:00 AM	-	8.76	634	630	NA	2
9/9/23	-	-	-	-	-	-	-
9/10/23	-	-	-	-	-	-	-
9/11/23	-	-	-	-	-	-	-
9/12/23	8:40:00 AM	-	8.63	642	638	17	2
9/13/23	-	-	-	-	-	-	-
9/14/23	-	-	-	-	-	-	-
9/15/23	8:35:00 AM	-	8.71	647	645	NA	2
9/16/23	-	-	-	-	-	-	-
9/17/23	-	-	-	-	-	-	-
9/18/23	-	-	-	-	-	-	-
9/19/23	8:10:00 AM	-	8.59	636	642	NA	2
9/20/23	-	-	-	-	-	-	-
9/21/23	-	-	-	-	-	-	-
9/22/23	9:00:00 AM	-	8.7	629	633	NA	2
9/23/23	-	-	-	-	-	-	-
9/24/23	-	-	-	-	-	-	-
9/25/23	-	-	-	-	-	-	-
9/26/23	8:15:00 AM	-	8.58	629	629	NA	2
9/27/23	-	-	-	-	-	-	-
9/28/23	9:00:00 AM	-	8.61	636	633	NA	2
9/29/23	-	-	-	-	-	-	-
9/30/23	-	-	-	-	-	-	-
Minimum			8.58	625	625	17	
Maximum			8.76	647	645	17	
Average			8.65	635	634	17	

Notes:

$\mu\text{S}/\text{cm}$ - microsiemens per Centimeter at 25 degrees Celsius

mg/L - milligrams per liter or parts per million

NA - Not analyzed

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
9/1/23	-	-	-	-	-	-	-
9/2/23	-	-	-	-	-	-	-
9/3/23	-	-	-	-	-	-	-
9/4/23	-	-	-	-	-	-	-
9/5/23	7:50:00 AM	2010	8.66	643	643	NA	1
9/6/23	-	-	-	-	-	-	-
9/7/23	-	-	-	-	-	-	-
9/8/23	10:05:00 AM	2050	8.8	627	635	NA	2
9/9/23	-	-	-	-	-	-	-
9/10/23	-	-	-	-	-	-	-
9/11/23	-	-	-	-	-	-	-
9/12/23	7:50:00 AM	2050	8.59	627	627	37	2
9/13/23	-	-	-	-	-	-	-
9/14/23	-	-	-	-	-	-	-
9/15/23	9:05:00 AM	2050	8.73	636	632	NA	2
9/16/23	-	-	-	-	-	-	-
9/17/23	-	-	-	-	-	-	-
9/18/23	-	-	-	-	-	-	-
9/19/23	7:30:00 AM	2060	8.6	641	639	NA	2
9/20/23	-	-	-	-	-	-	-
9/21/23	-	-	-	-	-	-	-
9/22/23	10:00:00 AM	2060	8.7	647	644	NA	2
9/23/23	-	-	-	-	-	-	-
9/24/23	-	-	-	-	-	-	-
9/25/23	-	-	-	-	-	-	-
9/26/23	7:35:00 AM	2030	8.51	627	637	NA	2
9/27/23	-	-	-	-	-	-	-
9/28/23	9:45:00 AM	1990	8.64	636	632	NA	2
9/29/23	-	-	-	-	-	-	-
9/30/23	-	-	-	-	-	-	-
Minimum		1990	8.51	627	627	37	
Maximum		2060	8.8	647	644	37	
Average		2038	8.65	636	636	37	

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

**East End Outlet
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
9/1/23	-	-	-	-	-	-	-
9/2/23	-	-	-	-	-	-	-
9/3/23	-	-	-	-	-	-	-
9/4/23	-	-	-	-	-	-	-
9/5/23	9:50:00 AM	2800	8.58	919	919	NA	1
9/6/23	-	-	-	-	-	-	-
9/7/23	10:15:00 AM	2900	8.79	993	956	NA	2
9/8/23	-	-	-	-	-	-	-
9/9/23	-	-	-	-	-	-	-
9/10/23	-	-	-	-	-	-	-
9/11/23	-	-	-	-	-	-	-
9/12/23	10:00:00 AM	2980	8.49	974	984	39	2
9/13/23	-	-	-	-	-	-	-
9/14/23	-	-	-	-	-	-	-
9/15/23	10:30:00 AM	2940	8.64	1000	987	NA	2
9/16/23	-	-	-	-	-	-	-
9/17/23	-	-	-	-	-	-	-
9/18/23	-	-	-	-	-	-	-
9/19/23	-	-	-	-	-	-	-
9/20/23	-	-	-	-	-	-	-
9/21/23	-	-	-	-	-	-	-
9/22/23	-	-	-	-	-	-	-
9/23/23	-	-	-	-	-	-	-
9/24/23	-	-	-	-	-	-	-
9/25/23	-	-	-	-	-	-	-
9/26/23	-	-	-	-	-	-	-
9/27/23	-	-	-	-	-	-	-
9/28/23	-	-	-	-	-	-	-
9/29/23	-	-	-	-	-	-	-
9/30/23	-	-	-	-	-	-	-
Minimum		2800	8.49	919	919	39	
Maximum		2980	8.79	1000	987	39	
Average		2905	8.63	972	962	39	

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

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
9/1/23	-	-	-	-	-	-	-
9/2/23	-	-	-	-	-	-	-
9/3/23	-	-	-	-	-	-	-
9/4/23	-	-	-	-	-	-	-
9/5/23	10:25:00 AM	-	8.6	695	695	NA	1
9/6/23	-	-	-	-	-	-	-
9/7/23	10:45:00 AM	-	8.65	669	682	NA	2
9/8/23	-	-	-	-	-	-	-
9/9/23	-	-	-	-	-	-	-
9/10/23	-	-	-	-	-	-	-
9/11/23	-	-	-	-	-	-	-
9/12/23	10:31:00 AM	-	8.55	658	664	53	2
9/13/23	-	-	-	-	-	-	-
9/14/23	-	-	-	-	-	-	-
9/15/23	10:10:00 AM	-	8.68	691	675	NA	2
9/16/23	-	-	-	-	-	-	-
9/17/23	-	-	-	-	-	-	-
9/18/23	-	-	-	-	-	-	-
9/19/23	9:35:00 AM	-	8.56	612	652	NA	2
9/20/23	-	-	-	-	-	-	-
9/21/23	11:00:00 AM	-	8.6	599	606	NA	2
9/22/23	-	-	-	-	-	-	-
9/23/23	-	-	-	-	-	-	-
9/24/23	-	-	-	-	-	-	-
9/25/23	-	-	-	-	-	-	-
9/26/23	9:45:00 AM	-	8.45	541	570	NA	2
9/27/23	-	-	-	-	-	-	-
9/28/23	11:00:00 AM	-	8.56	522	532	NA	2
9/29/23	-	-	-	-	-	-	-
9/30/23	-	-	-	-	-	-	-
Minimum			8.45	522	532	53	
Maximum			8.68	695	695	53	
Average			8.58	623	635	53	

Notes:

µS/cm - microsiemens per Centimeter at 25 degrees Celsius

mg/L - milligrams per liter or parts per million

NA - Not analyzed

Sheyenne River Downstream of Both Outlets Near Cooperstown
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
9/1/23	-	-	-	-	-	-	-
9/2/23	-	-	-	-	-	-	-
9/3/23	-	-	-	-	-	-	-
9/4/23	-	-	-	-	-	-	-
9/5/23	11:15:00 AM	2230	8.53	696	696	NA	1
9/6/23	-	-	-	-	-	-	-
9/7/23	-	-	-	-	-	-	-
9/8/23	-	-	-	-	-	-	-
9/9/23	-	-	-	-	-	-	-
9/10/23	-	-	-	-	-	-	-
9/11/23	-	-	-	-	-	-	-
9/12/23	11:20:00 AM	2170	8.53	673	673	96	1
9/13/23	-	-	-	-	-	-	-
9/14/23	-	-	-	-	-	-	-
9/15/23	-	-	-	-	-	-	-
9/16/23	-	-	-	-	-	-	-
9/17/23	-	-	-	-	-	-	-
9/18/23	-	-	-	-	-	-	-
9/19/23	10:25:00 AM	2140	8.52	677	677	NA	1
9/20/23	-	-	-	-	-	-	-
9/21/23	-	-	-	-	-	-	-
9/22/23	-	-	-	-	-	-	-
9/23/23	-	-	-	-	-	-	-
9/24/23	-	-	-	-	-	-	-
9/25/23	-	-	-	-	-	-	-
9/26/23	10:35:00 AM	1810	8.45	538	538	NA	1
9/27/23	-	-	-	-	-	-	-
9/28/23	-	-	-	-	-	-	-
9/29/23	-	-	-	-	-	-	-
9/30/23	-	-	-	-	-	-	-
Minimum		1810	8.45	538	538	96	
Maximum		2230	8.53	696	696	96	
Average		2088	8.51	646	646	96	

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