

# North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850  
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July 29, 2008

North Dakota Department of Health  
Division of Water Quality  
PO Box 5520  
Bismarck, ND – 58506-5520

U.S. Environmental Protection Agency  
Attn: Enforcement Office (ENF-PT)  
1595, Wynkoop Street  
Denver, CO 80202-1129

RE: North Dakota Pollutant Discharge Elimination System  
Permit Number: ND-0026247

Enclosed are the Discharge Monitoring Reports (DMR) for the Devils Lake Outlet Project, permit number ND-0026247, for the month of June 2008 and the summaries of the sample results and flow data.

The days the outlet discharged are highlighted in yellow in the summaries. Attached to the summaries are the tables showing average daily outlet discharge, target and measured sulfate concentration at Bremen, water quality results of the samples collected from the upstream location, downstream location and the outlet, the average daily stream flow data and the conductivity data obtained from the USGS gaging station at the upstream and the downstream location.

Total Suspended Solids (TSS) are analyzed weekly on the samples collected from the outlet, Flora and Bremen. TSS was measured once during the week of operation but was not measured on the days of discharge. The TSS measured on the samples collected on June 17<sup>th</sup> at Flora and Bremen and on 18<sup>th</sup> at the outlet is reported in the DMR, for discharge period between June 13<sup>th</sup> and 15<sup>th</sup>. For the discharge period between June 27<sup>th</sup> and June 30<sup>th</sup>, the samples collected on July 1<sup>st</sup> were analyzed for TSS. The results of the July 1<sup>st</sup> samples will be reported in the July DMR.

If you have any questions regarding these reports, please contact me at 701-328-4958.

Bruce Engelhardt P.E.  
Head, Investigations Section  
BE:SP:416-10  
Enclosure

NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM (NDPDES)  
**DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS  
 ND State Water Commission  
 Bismarck ND 58506

1 / Month  
 Outlet General Summary  
 F- FINAL  
 MINOR


ND-0026247  
 PERMIT NUMBER

001 A  
 OUTFALL NO.

MONITORING PERIOD  
 6/1/08 TO 6/30/08

FACILITY: Devils Lake Outlet Project  
 LOCATION: Benson Co, ND

**NO DISCHARGE:**

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	UNITS	MINIMUM			
pH	xxxxx	xxxxx	xxx	8.2		Daily	Grab
EFFLUENT GROSS VALUE				7.0 (see Perm) MINIMUM		Weekly	GRAB
SOLIDS, TOTAL SUSPENDED	xxxxx	xxxxx	xxx	7.0		Weekly	Grab
EFFLUENT GROSS VALUE				REPORT 30 DA AVG		Weekly	GRAB
SPECIFIC CONDUCTANCE	xxxxx	xxxxx	xxx	1777.59		Continuous	Recorder
EFFLUENT GROSS VALUE				REPORT MINIMUM		Continuous	Recorder
SULFATE	xxxxx	xxxxx	xxx	841		5 x Week	Grab
EFFLUENT GROSS VALUE				REPORT 30 DA AVG		5 x Week	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	4.31	12.79	cfs	xxxxx		Continuous	Recorder
EFFLUENT GROSS VALUE	REPORT 30 DA AVG	100 (see perm) DAILY MAX	cfs	xxxxx		Continuous	Recorder
FLOW, TOTAL	xxxxx	19.52	MGAL	xxxxx		Continuous	Calc
EFFLUENT GROSS VALUE	xxxxx	REPORT 30 DA TOTAL	MGAL	xxxxx		Monthly	CALC
DURATION OF DISCHARGE	xxxxx	xxxxx	xxxxx	7		Monthly	Calc
EFFLUENT GROSS VALUE				REPORT MAXIMUM		Monthly	CALC
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE		DATE	
Bruce Engelhardt Head, Investigations Section				701-328-4958		7/29/08	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		Number		Mo - Day - Year	

COMMENT AND EXPLANATION OF ANY VIOLATIONS  
 Attach summary individual sample results and flow data for outlet, upstream & downstream monitoring locations.  
 Provide process control monitoring information by attachment or through electronic media.

**Daily Outlet Discharge for the Month of June 2008**

Date June 2008	Average Daily Outlet Discharge (cfs)	Total Daily Volume (cu-ft)	
1	0.00	0	
2	0.00	0	
3	0.00	0	
4	0.00	0	
5	0.00	0	
6	0.00	0	
7	0.00	0	
8	0.00	0	
9	0.00	0	
10	0.00	0	
11	0.00	0	
12	0.00	0	
13	2.56	221184	
14	1.20	103680	
15	0.37	31968	
16	0.00	0	
17	0.00	0	
18	0.00	0	
19	0.00	0	
20	0.00	0	
21	0.00	0	
22	0.00	0	
23	0.00	0	
24	0.00	0	
25	0.00	0	
26	0.00	0	
27	2.35	203040	
28	1.06	91584	
29	12.79	1105056	
30	9.87	852768	
Total		2,609,280	cu-ft
Total		19.52	Mgal
Total		59.90	Ac-ft
Average Flow	4.31	cfs	



**Water Quality Results of the samples collected at the outlet  
Devils Lake Outlet**

Date	Time	Sampler	Average Daily EC from Outlet Telemetry( $\mu$ S/cm)	Lab pH	Lab Sulfate (mg/L)	7 Day Rolling Average of Sulfate for the operating period (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling average
6/1/2008								
6/2/2008								
6/3/2008								
6/4/2008								
6/5/2008								
6/6/2008								
6/7/2008								
6/8/2008								
6/9/2008								
6/10/2008								
6/11/2008								
6/12/2008			907.18					
6/13/2008	10:00	NDSWC	1,876.92	8.25	727	727.00		1
6/14/2008	7:15	NDSWC	1,921.44	8.7	721	724.00		2
6/15/2008			1,777.59			724.00		3
6/16/2008	11:45	NDSWC	1,765.84	8.8	670			
6/17/2008			1,804.97					
6/18/2008	12:00	NDSWC	1,832.56	8.66	704			7
6/19/2008	13:00	NDSWC	1,850.69	8.55	722			
6/20/2008	11:30	NDSWC	1,872.67	8.57	733			
6/21/2008			1,891.84					
6/22/2008			1,910.30					
6/23/2008	11:00	NDSWC	1,923.27	8.57	772			
6/24/2008	8:30	NDSWC	1,902.16	8.7	774			
6/25/2008	15:45	NDSWC	1,943.76	8.69	803			
6/26/2008	12:45	NDSWC	1,956.03	8.68	803			
6/27/2008	8:30	NDSWC	2,084.46	8.42	781	781.00		1
6/28/2008	12:00	NDSWC	2,372.30	8.15	1270	1025.50		2
6/29/2008			2,099.22			1025.50		3
6/30/2008	10:15	NDSWC	2,090.84	8.58	706	919.00		4



NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM (NDPDES)  
**DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS  
 ND State Water Commission  
 Bismarck ND 58506

1 / Month  
 Upstream General Summary  
 F- FINAL  
 MINOR

ND-0026247  
 PERMIT NUMBER

001 A  
 OUTFALL NO.

MONITORING PERIOD  
 6/1/08 TO 6/30/08

**NO DISCHARGE:**

FACILITY: Devils Lake Outlet Project  
 LOCATION: Benson Co, ND

PARAMETER	SAMPLE MEASUREMENT		PERMIT REQUIREMENT		QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	
	AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS	MINIMUM	MAXIMUM	UNITS				
pH	xxxxx	xxxxx	xxx	8.1	xxxxx	xxxxx	xxx	8.4	SU	Daily	Grab			
UPSTREAM	xxxxx	xxxxx	xxx	REPORT MINIMUM	*****	*****	REPORT MAXIMUM	SU	Weekly	GRAB				
SOLIDS, TOTAL SUSPENDED	xxxxx	xxxxx	xxx	20.0	mg/L	Weekly	Grab							
UPSTREAM	xxxxx	xxxxx	xxx	REPORT 30 DA AVG	MG/L	Weekly	GRAB							
SPECIFIC CONDUCTANCE	xxxxx	xxxxx	xxx	1580	umho/cm	Continuous	Recorder							
UPSTREAM	xxxxx	xxxxx	xxx	REPORT MINIMUM	umho/cm	Continuous	Recorder							
SULFATE	xxxxx	xxxxx	xxx	362	mg/L	5 x Week	Grab							
UPSTREAM	xxxxx	xxxxx	xxx	REPORT 30 DA AVG	MG/L	5 x Week	GRAB							
FLOW, INSTREAM	53.44	67.68	cfs	xxxxx	xxxxx	Continuous	Recorder							
UPSTREAM	REPORT 30 DA AVG	REPORT DAILY MAX	cfs	xxxxx	xxxxx	Continuous	Recorder							
SAMPLE MEASUREMENT														
PERMIT REQUIREMENT														
SAMPLE MEASUREMENT														
PERMIT REQUIREMENT														
SAMPLE MEASUREMENT														
PERMIT REQUIREMENT														
SAMPLE MEASUREMENT														
PERMIT REQUIREMENT														
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER Bruce Engelhardt Head, Investigations Section TYPED OR PRINTED													TELEPHONE	DATE
COMMENT AND EXPLANATION OF ANY VIOLATIONS Attach summary individual sample results and flow data for outlet, upstream & downstream monitoring locations. Provide process control monitoring information by attachment or through electronic media. Instream samples and measurements for this summary pertain only to time periods when outlet is actually operated. EPA FORM 3320-1 (REV. 9-88) TEMPLATE COPY													701-328-4958	7/29/08
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT													Number	Mo - Day - Year



**Water Quality Results of the samples collected from the upstream location near Flora  
Sheyenne River Above Devils Lake Outlet Near Flora**

Date	Time	Sampler	USGS EC ( $\mu$ S/cm)	Lab pH	Lab Sulfate (mg/L)	7 Day Rolling Average of Sulfate for the operating period (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling average
6/1/08	-	-	-	-	-	-	-	-
6/2/08	11:45	NDSWC	1810	8.46	514	-	-	-
6/3/08	7:40	NDSWC	1760	8.51	492	-	11.00	-
6/4/08	16:45	NDSWC	1700	7.84	459	-	-	-
6/5/08	14:50	NDSWC	1700	7.87	457	-	-	-
6/6/08	12:20	NDSWC	1750	7.48	547	-	-	-
6/7/08	-	-	-	-	-	-	-	-
6/8/08	-	-	-	-	-	-	-	-
6/9/08	11:00	NDSWC	1520	7.72	401	-	-	-
6/10/08	9:10	NDSWC	1570	8.44	407	-	11.00	-
6/11/08	10:00	NDSWC	1590	8.4	405	-	-	-
6/12/08	10:00	NDSWC	1560	8.36	403	-	-	-
6/13/08	9:50	NDSWC	1570	8.35	408	408.00	-	1
6/14/08	7:30	NDSWC	1580	8.33	414	411.00	-	2
6/15/08	-	-	-	-	-	411.00	-	3
6/16/08	11:30	NDSWC	1680	8.34	439	-	-	-
6/17/08	8:00	NDSWC	1680	8.31	431	-	20.00	-
6/18/08	11:45	NDSWC	1650	8.4	410	-	-	-
6/19/08	12:45	NDSWC	1620	8.35	393	-	-	-
6/20/08	11:00	NDSWC	1600	8.38	389	-	-	-
6/21/08	-	-	-	-	-	-	-	-
6/22/08	-	-	-	-	-	-	-	-
6/23/08	10:40	NDSWC	1620	8.38	385	-	-	-
6/24/08	8:45	NDSWC	1510	8.35	368	-	33.00	-
6/25/08	13:40	NDSWC	1350	8.19	331	-	-	-
6/26/08	12:30	NDSWC	1320	8.2	332	-	-	-
6/27/08	8:45	NDSWC	1220	8.1	313	313.00	-	1
6/28/08	11:50	NDSWC	1230	8.18	336	324.50	-	2
6/29/08	-	-	-	-	-	324.50	-	3
6/30/08	10:00	NDSWC	1310	8.26	339	329.33	-	4



Average daily streamflow and conductivity data at the upstream location near Flora

USGS Gaging Station Data		
Sheyenne River Above Devils Lake		
Date June 2008	Streamflow (cfs)	EC ( $\mu$ S/cm)
1	9.99	1751.35
2	7.51	1807.81
3	6.72	1746.98
4	6.59	1698.13
5	6.24	1699.79
6	9.73	1697.71
7	15.79	1769.69
8	21.95	1693.02
9	23.26	1532.29
10	23.50	1570.42
11	40.78	1585.81
12	61.31	1580.77
13	58.86	1561.04
14	54.01	1578.85
15	58.14	1619.27
16	58.85	1676.15
17	50.98	1685.21
18	42.09	1654.58
19	36.43	1624.38
20	32.09	1613.02
21	27.10	1604.69
22	23.38	1607.40
23	21.56	1654.48
24	51.81	1511.88
25	61.64	1401.35
26	50.69	1344.74
27	67.68	1249.15
28	48.16	1268.80
29	33.77	1282.92
30	-	1323.65
<b>Average</b>	53.44	1411.95
<b>Maximum</b>	67.68	1619.27
<b>Minimum</b>	33.77	1249.15





Target and measured sulfate at downstream location (Bremen)

Date	Average Daily Outlet Flow (cfs)	Gaged flow at Bremen	Sulfate at the Outlet (mg/L)	Sulfate at Bremen (mg/L)	Baseflow at Bremen (cfs)	Background Concentration (mg/L)	Target sulfate at Bremen based on the permit (mg/L)	7 Day Rolling Average of target sulfate at Bremen during the operating period (mg/L)	7 Day Rolling Average of actual measured sulfate at Bremen during the operating period (mg/L)	No. of days included in the 7 day Rolling average
6/1/2008	0.00	7.43	-	-	7.43	-	-	-	-	
6/2/2008	0.00	7.61	-	464	7.61	-	-	-	-	
6/3/2008	0.00	5.89	-	445	5.89	-	-	-	-	
6/4/2008	0.00	4.54	-	472	4.54	-	-	-	-	
6/5/2008	0.00	4.21	-	473	4.21	-	-	-	-	
6/6/2008	0.00	11.30	-	520	11.30	-	-	-	-	
6/7/2008	0.00	10.21	-	-	10.21	-	-	-	-	
6/8/2008	0.00	16.19	-	-	16.19	-	-	-	-	
6/9/2008	0.00	27.48	-	465	27.48	-	-	-	-	
6/10/2008	0.00	32.10	-	555	32.10	-	-	-	-	
6/11/2008	0.00	40.49	-	537	40.49	-	-	-	-	
6/12/2008	0.00	57.59	-	432	57.59	-	-	-	-	
6/13/2008	2.56	58.67	727	411	56.11	396.58	450.00	450.00	411	1
6/14/2008	1.20	57.57	721	445	56.37	439.12	450.00	450.00	428	2
6/15/2008	0.37	57.00	-	-	56.63	-	-	450.00	428	3
6/16/2008	0.00	57.00	670	441	57.00	441.00	450.00	-	-	
6/17/2008	0.00	56.33	-	441	56.33	441.00	450.00	-	-	
6/18/2008	0.00	53.14	704	439	53.14	439.00	450.00	-	-	
6/19/2008	0.00	50.19	722	450	50.19	450.00	450.00	-	-	
6/20/2008	0.00	46.17	733	444	46.17	444.00	450.00	-	-	
6/21/2008	0.00	41.98	-	-	41.98	-	-	-	-	
6/22/2008	0.00	38.32	-	-	38.32	-	-	-	-	
6/23/2008	0.00	34.77	772	413	34.77	413.00	450.00	-	-	
6/24/2008	0.00	40.44	774	411	40.44	411.00	450.00	-	-	
6/25/2008	0.00	59.36	803	383	59.36	383.00	440.45	-	-	
6/26/2008	0.00	74.73	803	383	74.73	383.00	440.45	-	-	
6/27/2008	2.35	84.57	781	376	82.22	364.42	419.09	419.09	376	1
6/28/2008	1.06	92.37	1270	340	91.31	329.20	378.58	398.84	358	2
6/29/2008	12.79	81.70	-	-	68.91	-	-	398.84	358	3
6/30/2008	9.87	77.02	706	343	67.15	289.65	333.09	376.92	353	4



**Water Quality Results of the samples collected from the downstream location near Bremen  
Sheyenne River Below Devils Lake Outlet Near Bremen**

Date	Time	Sampler	USGS EC (µS/cm)	Lab pH	Lab Sulfate (mg/L)	7 Day Rolling Average of Sulfate for the operating period (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling average
6/1/08	-	-	-	-	-	-	-	-
6/2/08	12:20	NDSWC	1770	8.47	464	-	-	-
6/3/08	8:20	NDSWC	1730	8.41	445	-	16	-
6/4/08	16:15	NDSWC	1730	8.02	472	-	-	-
6/5/08	14:20	NDSWC	1760	8.06	473	-	-	-
6/6/08	12:40	NDSWC	1720	7.8	520	-	-	-
6/7/08	-	-	-	-	-	-	-	-
6/8/08	-	-	-	-	-	-	-	-
6/9/08	10:30	NDSWC	1640	7.79	465	-	-	-
6/10/08	9:55	NDSWC	1770	8.36	555	-	17	-
6/11/08	11:30	NDSWC	1750	8.39	537	-	-	-
6/12/08	12:40	NDSWC	1530	8.41	432	-	-	-
6/13/08	9:15	NDSWC	1540	8.43	411	411	-	1
6/14/08	8:00	NDSWC	1620	8.37	445	428	-	2
6/15/08	-	-	-	-	-	428	-	3
6/16/08	11:00	NDSWC	1620	8.31	441	-	-	-
6/17/08	8:30	NDSWC	1630	8.3	441	-	25	-
6/18/08	11:20	NDSWC	1670	8.34	439	-	-	-
6/19/08	12:20	NDSWC	1710	8.35	450	-	-	-
6/20/08	10:30	NDSWC	1720	8.3	444	-	-	-
6/21/08	-	-	-	-	-	-	-	-
6/22/08	-	-	-	-	-	-	-	-
6/23/08	10:10	NDSWC	1680	8.37	413	-	-	-
6/24/08	9:20	NDSWC	1640	8.38	411	-	23	-
6/25/08	15:20	NDSWC	1620	8.44	383	-	-	-
6/26/08	12:00	NDSWC	1610	8.42	383	-	-	-
6/27/08	9:30	NDSWC	1520	8.34	376	376	-	1
6/28/08	11:30	NDSWC	1380	8.34	340	358	-	2
6/29/08	-	-	-	-	-	358	-	3
6/30/08	9:30	NDSWC	1320	8.3	343	353	-	4



**Average daily streamflow and conductivity data at the downstream location near Bremen**

<b>USGS Gaging Station Data</b>		
<b>Sheyenne River Below Devils Lake</b>		
<b>Date June 2008</b>	<b>Streamflow (cfs)</b>	<b>EC (<math>\mu</math>S/cm)</b>
1	7.43	1724.58
2	7.61	1766.25
3	5.89	1728.13
4	4.54	1735.52
5	4.21	1758.85
6	11.30	1690.10
7	10.21	1708.23
8	16.19	1697.79
9	27.48	1650.70
10	32.10	1761.25
11	40.49	1726.32
12	57.59	1571.25
13	58.67	1547.50
14	57.57	1618.33
15	57.00	1623.44
16	57.00	1622.29
17	56.33	1643.13
18	53.14	1671.15
19	50.19	1710.31
20	46.17	1719.48
21	41.98	1703.02
22	38.32	1693.05
23	34.77	1678.54
24	40.44	1638.68
25	59.36	1616.15
26	74.73	1600.42
27	84.57	1517.63
28	92.37	1389.89
29	81.70	1313.02
30	77.02	1325.27
<b>Average</b>	72.70	1476.44
<b>Maximum</b>	92.37	1623.44
<b>Minimum</b>	57.00	1313.02