North Dakota Department of Environmental Quality Public Notice
Reissue of an NDPDES Permit

Public Notice Date: 8/13/2021 Public Notice Number: ND-2021-024

Purpose of Public Notice

The Department intends to reissue the following North Dakota Pollutant Discharge Elimination System (NDPDES) Discharge Permit under the authority of Section 61-28-04 of the North Dakota Century Code.

Permit Information

Application Date: 3/19/2021 Application Number: ND0022861

Applicant Name: Mandan City Of

Mailing Address: 205 2nd Ave NW, Mandan, ND 58554

Telephone Number: 701.667.3278

Proposed Permit Expiration Date: 9/30/2026

Facility Description

The reapplication is for an Extended Aeration Activated Sludge wastewater treatment plant with UltraViolet disinfection that services the City of Mandan. The outfall is located in section 7, Township 138N, Range 80W. Discharges would be to the Missouri River, a Class I Stream.

Tentative Determinations

Proposed effluent limitations and other permit conditions have been made by the Department. They assure that State Water Quality Standards and applicable provisions of the FWPCAA will be protected.

Information Requests and Public Comments

Copies of the application, draft permit, and related documents are available for review. For further information on making public comments/public comment tips please visit: https://deq.nd.gov/PublicCommentTips.aspx. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by September 13, 2021 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice. If you require special facilities or assistance relating to a disability, call TDD at 1.800.366.6868.

FACT SHEET FOR NDPDES PERMIT
ND0022861

CITY OF MANDAN, NORTH DAKOTA
Publicly Owned Treatment Works (Domestic, Major Municipal – Mechanical Plant)

DATE OF THIS FACT SHEET – July 1, 2021

INTRODUCTION

The Federal Clean Water Act (CWA, 1972, and later amendments in 1977, 1981, and 1987, etc.) established water quality goals for the navigable (surface) waters of the United States. One mechanism for achieving the goals of the CWA is the National Pollutant Discharge Elimination System (NPDES), which the US Environmental Protection Agency (EPA) oversees. In 1975, the State of North Dakota was delegated primacy of the NPDES program by EPA. The North Dakota Department of Environmental Quality, hereafter referred to as "department", has been designated the state water pollution control agency for all purposes of the Federal Water Pollution Control Act, as amended [33 U.S.C. 1251, et seq.], and is authorized to take all action necessary or appropriate to secure to this state the benefits of the act and similar federal acts. The department's authority and obligations for the wastewater discharge permit program is in the North Dakota Administrative Code (NDAC) 33.1-16 which was adopted under North Dakota Century Code (NDCC) chapter 61-28. In North Dakota, these permits are referred to as North Dakota Pollutant Discharge Elimination System (NDPDES) permits.

The following rules or regulations apply to NDPDES permits:

- Procedures the department follows for issuing NDPDES permits (NDAC chapter 33.1-16-01),
- Standards of Quality for Waters of the State (NDAC chapter 33.1-16-02.1).

These rules require any treatment facility operator to obtain an NDPDES permit before discharging wastewater to state waters. They also define the basis for limits on each discharge and for other requirements imposed by the permit.

According to NDAC section 33.1-16-01-08, the department must prepare a draft permit and accompanying fact sheet and make it available for public review. The department must also publish an announcement (public notice) during a period of thirty days, informing the public where a draft permit may be obtained and where comments regarding the draft permit may be sent (NDAC section 33.1-16-01-07). For more information regarding preparing and submitting comments about the fact sheet and permit, please see **Appendix A – Public Involvement**. Following the public comment period, the department may make changes to the draft NDPDES permit. The department will summarize the responses to comments and changes to the permit in **Appendix D – Response to Comments.**

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BACKGROUND INFORMATION

Table 1 - General Facility Information

Applicant:	The City of Mandan, North Dakota
Address:	205 2nd Ave NW Mandan, ND 58554
Permit Number:	ND0022861
Permit Type:	Domestic – Major Municipal
Type of Treatment:	Mechanical Wastewater Treatment System with Ultraviolet (UV) disinfection
SIC Code:	4952 – Sewerage Systems
NAICS Code:	221320 – Sewage Treatment Facilities
Discharge Location:	Outfall 001: Missouri River – Class I Stream Latitude: 46.790278 Longitude: -100.823333
Hydrologic Code	10130101 – Painted Woods – Square Butte
Population Served:	22,752 – Per permit application

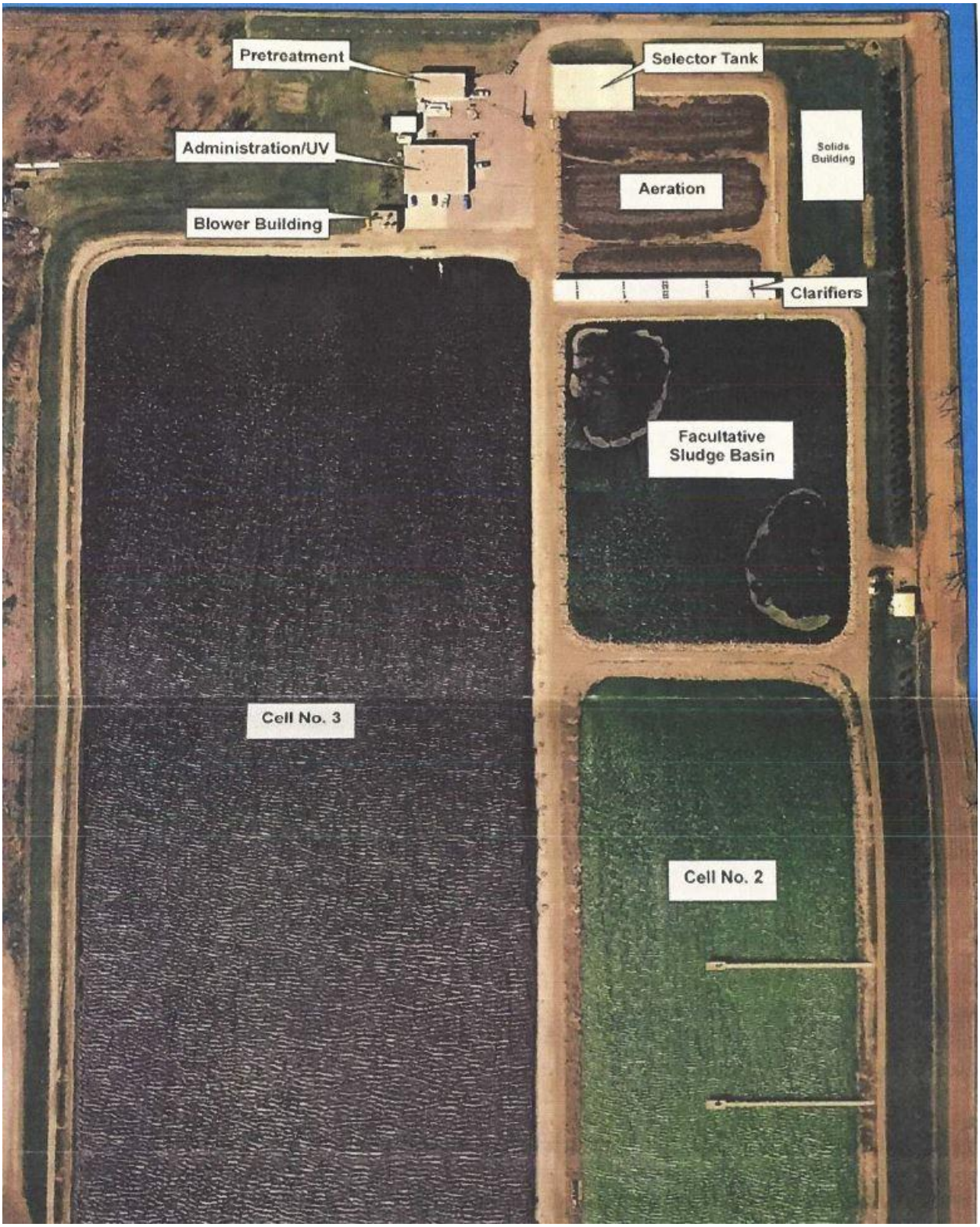

Figure 1 - Mandan Wastewater Treatment Facility - Mandan, ND (Permit Application Package 3/19/2021)

FACILITY DESCRIPTION

The city of Mandan's Publicly Owned Treatment Works (POTW) treats wastewater with an Extended Aeration Activated Sludge Treatment System with Ultraviolet Disinfection. The facility treats an average of 1.5 million gallons per day (MGD) and has a design capacity of 2.2 MGD. According to the facility's application, the City of Mandan services a population of 22,752 people. The discharge structure is located at latitude: 46.790278 and longitude: -100.823333 in the NE ¼, Section 7, Township 138 North, Range 80 West - Morton County, North Dakota. Treated effluent is continuously discharged with no diffuser from this system at an average rate of 1.51 MGD to the Missouri River – a Class I Stream.

Treatment Process

The wastewater treatment plant for the City of Mandan uses a BioLac system to treat domestic wastewater. The wastewater flows into the pretreatment building where wastewater is screened and routed to a vortex grit chamber. After grit removal is complete, an influent sample is taken for required influent parameters, and then wastewater passes through to a selector basin where returned activated sludge from the clarifiers is mixed with the influent water. During the current permit cycle, the pretreatment system was updated to include an odor control process. The odor control process pumps air from the pretreatment building into a large tank where water is pumped down through the air. The air is then pumped to a tank that has Haydite rock and moist wood chips. The microbes that breed in this atmosphere consume the hydrogen sulfide (H_2S). The water byproduct is routed to the headworks and the air is vented to the outside atmosphere. The mixed water flows from the selector basin to the aeration basin which is equipped with a WaveOx Process that consists of polyethylene floating-lateral pipes that diffuse oxygen in an oscillating pattern through diffuser sheets. These diffuser sheaths hang one foot off of the bottom of the basin. The diffuser sheets are replaced every six years. From the aeration basin, wastewater flows into the clarifiers where waste activated sludge is pumped to the facultative sludge basis (FSB) and returned activated sludge is pumped back to the selector basin. The FSB is dredged once a year and solids are land applied through injection. The FSB decants to Cell 2 and then Cell 3. From the clarifiers, wastewater is routed to the ultraviolet (UV) disinfection. Upon entering the UV disinfection, wastewater travels through submerged UV light banks. The effluent sample is taken after disinfection occurs, and effluent flow is measured with a Parshall flume located immediately after UV disinfection. In the case of an upset, wastewater can be routed to Cell 3 for containment.

The city currently has two (2) significant industrial users (SIU). The City of Mandan is the Control Authority for these SIU's and manages these SIU's according to the regulations set forth in the NDCC Chapter 33.1-16-01.1, 40 CFR 403, and applicable city regulations.

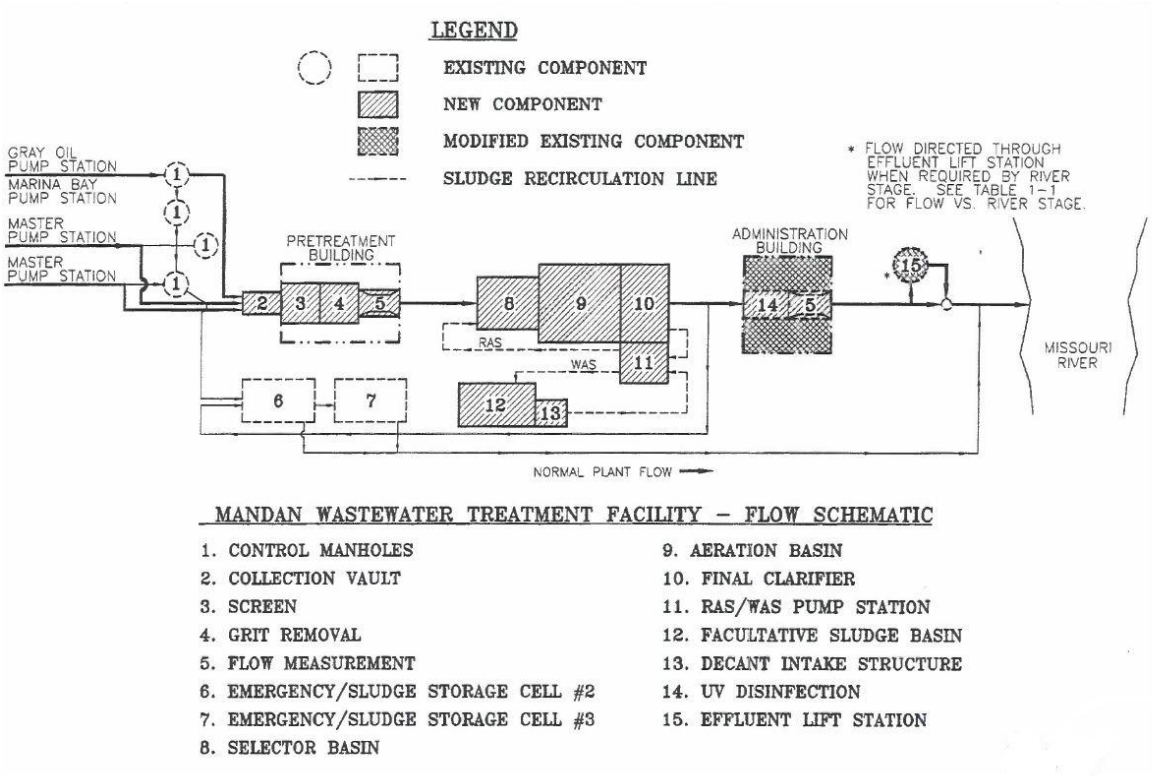

Figure 2 - Facility Flow Diagram

Outfall Description

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a NDPDES permit is a violation of the CWA and could subject the person(s) responsible for such discharge to penalties under Section 309 of the CWA. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within the specified timeframe outlined in this permit could subject such person(s) to penalties as provided under the CWA.

There is one active outfall for this facility.

Outfall 001. Active. Final Outfall.			
Latitude: 46.790278	Longitude: -100.823333	County: Morton	
Township: 138 North	Range: 80 West	Section: 7	Q: A
Receiving Stream: Missouri River		Classification: Class I Stream	
Outfall Description: This is the final outfall for treated domestic and industrial wastewater from the mechanical wastewater treatment system. The compliance point is where the effluent leaves the UV disinfection chamber.			

PERMIT STATUS

The department issued the current permit to this municipality on October 1, 2016. This permit placed limits on Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS), pH, Ammonia as N, *E. coli*, Oil and Grease, and Whole Effluent Toxicity (WET).

The department has been in contact with the City of Mandan to obtain information to reissue this permit. The department received EPA application Form 2A on March 19, 2021. The application was accepted by the department on April 9, 2021. Effluent sample data has been provided to the department through official laboratory reports, discharge monitoring reports, and the permit application.

SUMMARY OF COMMPLIANCE WITH PREVIOUSLY ISSUED PERMIT

The last non-sampling compliance inspection was conducted on June 23, 2020. The department's compliance assessment is based on review of the facility's Discharge Monitoring Reports (DMRs) and departmental inspections. During the last inspection, no instances of non-compliance were noted.

Past Discharge Data
The concentration of pollutants from Outfall 001 and associated stream data were reported on DMRs. The data are characterized as shown in the below table:

Table 2 - DMR Data for Outfall 001 (October 1, 2016 through July 13, 2021)

Parameter	Range	Average	Permit Limit	Number of Exceedances
BOD_5 (mg/l) – Influent	153 – 405	233.20	N/A	N/A
BOD_5 (mg/l) – Effluent	6 – 21	6.66	25 Monthly avg 45 Weekly avg	0 0
Temperature (°C)	6.8 – 22.9	14.72	N/A	N/A
pH (s.u.)	6.9 – 8.5	N/A	7.0-9.0	3
TSS (mg/l) – Influent	164 – 583	271.17	N/A	N/A
TSS (mg/l) – Effluent	5 – 23	6.55	30 Monthly avg 45 Weekly avg	0 0
E. coli (#/100 ml)	1 – 2420	6.43	126 Monthly avg 409 Daily max	0 6
Oil & Grease (mg/l)	No Visible Sheen	No Visible Sheen	10 Daily max	0
Nitrite Plus Nitrate, Total as N (mg/l)	1.46 – 20.90	16.35	N/A	N/A
Nitrogen, Kjeldahl, Total (mg/l)	5.00 – 6.10	5.02	N/A	N/A
Ammonia as N (mg/l)	0.1 – 6.9	0.31	Calculated	0

Phosphorus, Total as P (mg/l)	1.14 – 8.01	4.66	N/A	N/A
Whole Effluent Toxicity (TUa)	<1	<1	<1	0
Antimony Total (mg/l) – Influent	<0.001	<0.001	N/A	N/A
Antimony Total (mg/l) – Effluent	<0.001	<0.001	WQS	0
Arsenic Total (mg/l) – Influent	<0.002	<0.002	N/A	N/A
Arsenic Total (mg/l) – Effluent	<0.002	<0.002	WQS	0
Beryllium Total (mg/l) – Influent	<0.0005	<0.0005	N/A	N/A
Beryllium Total (mg/l) – Effluent	<0.0005	<0.0005	WQS	0
Cadmium Total (mg/l) – Influent	<0.0001	<0.0001	N/A	N/A
Cadmium Total (mg/l) – Effluent	<0.0001	<0.0001	Calculated	0
Chromium Total (mg/l) – Influent	<0.002 – 0.004	0.0028	N/A	N/A
Chromium Total (mg/l) – Effluent	<0.002	<0.002	WQS	0
Copper Total (mg/l) – Influent	0.029 – 0.122	0.0573	N/A	N/A
Copper Total (mg/l) – Effluent	<0.002 – 0.004	0.0025	Calculated	0
Cyanide (mg/l) – Influent	<0.007 – 0.008	0.0073	N/A	N/A
Cyanide (mg/l) – Effluent	<0.007	<0.007	WQS	2
Lead Total (mg/l) – Influent	0.001 – 0.005	0.0025	N/A	N/A
Lead Total (mg/l) – Effluent	<0.0005	<0.0005	Calculated	0
Mercury Total (mg/l) – Influent	<0.0002	<0.0002	N/A	N/A
Mercury Total (mg/l) – Effluent	<0.0002	<0.0002	WQS	0
Nickel Total (mg/l) – Influent	0.004 – 0.01	0.0063	N/A	N/A
Nickel Total (mg/l) – Effluent	<0.002 – 0.003	0.0023	Calculated	0
Phenols Total (µg/l) – Influent	0.065 – 0.195	0.11	N/A	N/A

Phenols Total (µg/l) – Effluent	<0.01	<0.01	WQS	0
Selenium Total (mg/l) – Influent	<0.005	<0.005	N/A	N/A
Selenium Total (mg/l) – Effluent	<0.005	<0.005	WQS	0
Silver (mg/l) – Influent	<0.0005	<0.0005	N/A	N/A
Silver (mg/l) – Effluent	<0.0005	<0.0005	WQS	0
Thallium Total (mg/l) – Influent	<0.0001	<0.0001	N/A	N/A
Thallium Total (mg/l) – Effluent	<0.0001	<0.0001	WQS	0
Zinc Total (mg/l) – Influent	0.13 – 0.16	0.15	N/A	N/A
Zinc Total (mg/l) – Effluent	<0.05 – 0.09	0.065	WQS	0
Stream Flow (cfs)	13257 – 62900	26703.16	N/A	N/A
pH (s.u.) – Upstream	8.03 – 8.57	N/A	N/A	N/A
Temperature (°C) – Upstream	0.8 – 19.1	7.89	N/A	N/A
Effluent Flow (MGD)	1.38 – 3.07	1.56	N/A	N/A
Total Flow (MG)	40.01 – 62.85	47.46	N/A	N/A
Notes:				
The City of Mandan discharged from Outfall 001 for a total of 1978 days between October 2016 and July 2021. The facility averaged 97.03% BOD5 removal and 97.28% TSS removal.				

Sanitary Sewer Overflows

Overflows of untreated or partially treated sewage from a sanitary sewer collection system have been termed Sanitary Sewer Overflows (SSOs) by EPA. According to department records there have not been any SSOs during the current permit cycle.

PROPOSED PERMIT LIMITS

Technology-Based Effluent Limits

The City of Mandan is subject to the secondary treatment standards. Federal and state regulations define technology-based effluent limits for municipal wastewater treatment plants. These effluent limits are given in 40 CFR part 133 and NDAC 33.1-16-01-30. These regulations are performance standards that constitute all known, available, and reasonable methods of prevention, control, and treatment for municipal wastewater.

Table 3 - 40 CFR 133 Technology-Based Effluent Limits

Parameter	30-Day Average	7-Day Average
BOD_5	30 mg/l	45 mg/l
TSS	30 mg/l	45 mg/l
pH	Remain between 6.0 – 9.0 s.u.	
Percent Removal	85% BOD_5 and TSS	

NDAC 33.1-16-01-14(3)(c)(1) allows for adjustment of the secondary treatment criteria to reflect site specific considerations. A five-day biochemical oxygen demand limit of twenty-five milligrams per liter (consecutive thirty-day average) may be applied in instances in which limits expressed in terms of secondary treatment standards would be impractical or deemed inappropriate to protect receiving waters.

Effluent Limitations

The department proposed the following effluent limitations for Outfall 001:

Table 4 - Effluent Limitations for Outfall 001

Effluent Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Basis [a]
BOD_5, mg/l	25	45	*	40 CFR 133.102(a)(2); NDAC 33.1-16-01-14(3); Previous Permit
BOD_5 (Removal Efficiency)	Shall not be less than 85%	*	*	40 CFR 133.102(a)(3)
TSS, mg/l	30	45	*	40 CFR 133.102(b); NDAC 33.1-16-01-14(3); Previous Permit
TSS (Removal Efficiency)	Shall not be less than 85%	*	*	40 CFR 133.102(b)(3)
Escherichia coli (E. coli), #/100 ml [b]	126	*	409	WQS; Previous Permit
Ammonia as N, mg/l [c]	Refer to Ammonia Table (**Table 5**)			WQS
pH, s.u.[d]	Shall Remain Between 6.5 – 9.0			WQS
Oil & Grease – Visual [e]	*	*	*	WQS; Previous Permit
Oil & Grease, mg/l [e]	*	*	10	Previous Permit; BPJ
Whole Effluent Toxicity (WET), TU_a	Refer to Whole Effluent Toxicity (WET) Requirements			40 CFR 122.44(d)(1)(iv-v); WQS; Previous Permit
Whole Effluent	Refer to Whole Effluent Toxicity			40 CFR 122.44(d)(1)(iv-v);

Toxicity (WET), TU_c	(WET) Requirements	BPJ
Notes:		
*	This parameter is not limited. However, the department may impose limitations based on sample history and to protect receiving waters.	
a.	The basis for the effluent limitations is given below: "Previous Permit" refers to limitations in the previous permit. The NDPDES regulations **40 CFR Part 122.44(l)(1) Reissued Permits** require that when a permit is renewed or reissued, interim limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit was issued have materially and substantially changed since the previous permit was issued and would constitute cause for permit modification or revocation and reissuance under **40 CFR Part 122.62.** "WQS" refers to effluent limitations based on the State of North Dakota's "Standards of Quality for Waters of the State", NDAC Chapter 33.1-16-02.1. "BPJ" refers to best professional judgment.	
b.	*E. coli* limits shall be effective from April 1 through October 31. Averages for *E. coli* shall be determined as a geometric mean.	
c.	A discharge ammonia as N criterion will be dependent on temperature, river flow, discharge rate, river pH, and the effluent ammonia as N concentration. This determination shall be in accordance with the formula specified in the latest version of the state WQS. Permittee will use Missouri River parameters to calculate the real-time water quality standard for ammonia as N. This calculated limit will be compared to the facility effluent ammonia as N data, and if the effluent value is greater than the calculated limit, the permittee will report an exceedance on the DMR for that reporting period.	
d.	The pH, an instantaneous limitation, shall be between 6.5 s.u. and 9.0 s.u. Any single analysis and/or measurement outside this limitation shall be considered a violation of the conditions of this permit.	
e.	A daily visual check shall be performed. There shall be no discharge of oily wastes that produce a visible sheen on the surface of the receiving water. If present, a grab sample shall be analyzed for oil and grease to ensure compliance with the concentration limitation.	
Stipulations:		
Best Management Practices (BMPs) are to be utilized so that there shall be no discharge of floating debris, oil, scum and other floating materials in sufficient amounts to be unsightly or deleterious, or oil wastes that produce a visible sheen on the surface of the receiving water.		

Table 5 - Ammonia Effluent Limitation Requirements for Outfall 001

	Effluent Limitations		
Parameters	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
Ammonia as N, mg/l [a]	†	*	‡

Missouri River Parameters			
Stream Flow, upstream (cfs) [b]	*	*	*
pH (s.u.), upstream [b, c]	*	*	*
Temperature (°C), Upstream [b, c]	*	*	*

*	This parameter is not limited. However, the department may impose limitations based on sample history to protect the receiving waters.
a.	Calculations must be performed for each discharge sample. If an exceedance is detected on any single sample, the exceedance must be reported on the DMR.
b.	Sample must be collected/recorded the same day as the ammonia sample. The upstream flow and temperature may be obtained from the USGS gauging station 06342500 or can be collected by the facility.
c.	When dangerous conditions exist for personnel (i.e. thin ice, melting ice, flooding, etc.) the permittee may utilize the following minimum values based on the 90th percentile upstream reported data during the previous permit cycle: pH 8.52 s.u. and temperature 18.0°C. If the upstream flow is not available, then 30B10 critical low flow of 11300cfs shall be used. The maximum mixing factor is 10.0%.
†	Chronic Standard (Average Monthly Limit):
	The 30-day average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula: $$0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \times \left(2.126 \times 10^{0.028\times(20-MAX(T,7))}\right)$$ Receiving stream pH is used for the calculation
‡	Acute Standard (Daily Maximum Limit):
	The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula: $$MIN\left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}\right),$$ $$\left(0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times \left(23.12 \times 10^{0.036\times(20-T)}\right)\right)$$ where *Oncorhynchus* are present.

Notes:

Effluent from Outfall 001 will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge period.

SELF-MONITORING REQUIREMENTS

Monitoring Requirements

The department requires monitoring, recording, and reporting (NDAC 33.1-16-01(21-23) and 40 CFR 122.41) to verify that the treatment process is functioning correctly and that the discharge complies with permit limits.

All effluent samples shall be collected at a point following the treatment system and prior to entering the Missouri River.

Table 6 - Self-Monitoring Requirements for Outfall 001

Effluent Parameter	Frequency	Sample Type [a]
BOD_5, mg/l (Effluent)	2/week	Grab
BOD_5, mg/l (Influent)	Weekly	Grab
BOD_5 (Removal Efficiency)	Monthly	Calculated
TSS, mg/l (Effluent)	2/week	Grab
TSS, mg/l (Influent)	Weekly	Grab
TSS (Removal Efficiency)	Monthly	Calculated
E. coli, #/100 ml [b]	2/week	Grab
Ammonia as N, mg/l	Weekly	Grab
pH, s.u.	Daily	Grab
Oil and Grease – Visual	Daily	Visual
Oil and Grease, mg/l [c]	Conditional	Grab
Temperature, °C	Daily	Grab
Nitrogen Total, mg/l [d]	Monthly	Grab
Phosphorus Total, mg/l	Monthly	Grab
Effluent Flow, MGD	Daily	Instantaneous
Drain, MG	Monthly	Calculated
WET, TU_a	Quarterly	Grab
WET, TU_c	1/permit	Grab
Metals (Influent and Effluent) [e]	Yearly	Composite
Toxic Organics (App D; Table II) [e]	2/permit	Composite
Missouri River Parameters – collect same days as effluent Ammonia as N		
Flow, cfs	Daily	Usable Data Source
pH, s.u. – Upstream	Weekly	Usable Data Source
Temperature, °C – Upstream	Weekly	Usable Data Source

Notes:

a.	Refer to Appendix B for definitions
b.	Monitoring for *E. coli* shall be in effect only during the recreational season (April 1 through October 31).
c.	If a visible sheen is observed in the discharge, a grab sample shall be collected, and the department shall be contacted.
d.	Total nitrogen is a combination of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN).
e.	Refer to **Part V(C)** Industrial Pretreatment Program, Sampling, and Reporting Requirements of the permit.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITS

The North Dakota State Water Quality Standards (NDAC Chapter 33.1-16-02.1) are designed to protect existing water quality and preserve the beneficial uses of North Dakota's surface water. Wastewater discharge permits must include conditions that ensure the discharge will meet the surface water quality standards. Water quality-based effluent limits may be based on an individual waste load allocation or a waste load allocation developed during a basin-wide total maximum daily load (TMDL) study. TMDLs result from the scientific study of the water body and are developed in order to reduce pollution from all sources.

The Missouri River is classified as a Class I stream. The quality of the waters in this class shall be suitable for the propagation or protection, or both, of resident fish species and other aquatic biota and for swimming, boating, and other water recreation. The quality of the waters shall be suitable for irrigation, stock watering, and wildlife without injurious effects. After treatment consisting of coagulation, settling, filtration, and chlorination, or equivalent treatment processes, the water quality shall meet the bacteriological, physical, and chemical requirements of the department for municipal or domestic use.

The Missouri River segment receiving the POTW effluent is not listed in the 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads.

Numerical Criteria for the Protection of Aquatic Life and Recreation

Numerical water quality criteria are listed in the water quality standards for surface waters (NDAC Chapter 33.1-16-02.1). They specify the maximum pollutants allowed in the receiving water to protect aquatic life and recreation in and on the water. The department uses numerical criteria along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limits, the discharge must meet the water quality-based limits.

Numerical Criteria for the Protection of Human Health

The U.S. EPA has published numeric water quality criteria for the protection of human health that are applicable to dischargers. These criteria are designed to protect humans from exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters. The water quality standards also include radionuclide criteria to protect humans from the effects of radioactive substances.

Narrative Criteria

Narrative water quality criteria (NDAC 33.1-16-02.1-08) limit concentrations of pollutants from exceeding applicable standards of the receiving waters. The department adopted a narrative biological goal solely to provide an additional assessment method that can be used to identify impaired surface waters.

Antidegradation

The purpose of North Dakota's Antidegradation Policy (NDAC Chapter 33.1-16-02.1, (Appendix IV)) is to:

- Provide all waters of the state one of three levels of antidegradation protection.
- Determine whether authorizing the proposed regulated activity is consistent with antidegradation requirements.

The department's fact sheet demonstrates that the existing and designated uses of the receiving water will be protected under the conditions of the proposed permit.

Mixing Zones

The department's WQS contain a Mixing Zone and Dilution Policy and Implementation Procedure, NDAC Chapter 33.1-16-02.1 (Appendix III). This policy addresses how mixing and dilution of point source discharges with receiving waters will be addressed in developing chemical-specific and whole effluent toxicity discharge limitations for point source discharges. Depending upon site-specific mixing patterns and environmental concerns, some pollutants/criteria may be allowed a mixing zone or dilution, while others may not. In all cases, mixing zone and dilution allowances shall be limited, as necessary, to protect the integrity of the receiving water's ecosystem and designated uses.

EVALUATION OF SURFACE WATER QUALITY-BASED EFFLUENT LIMITS FOR NUMERIC CRITERIA

BOD_5

The department has reviewed the BOD_5 data and sampling frequency, and no exceedances have occurred for this parameter during the current permit. The department proposes to continue with weekly influent BOD_5 monitoring, and twice weekly effluent BOD_5 monitoring with a 25 mg/l average monthly limit and a 45 mg/l average weekly limit.

TSS

The department has reviewed the TSS data and sampling frequency, and no exceedances have occurred for this parameter during the current permit. The department proposes to continue with weekly influent TSS monitoring, and twice weekly effluent TSS monitoring with a 30 mg/l average monthly limit and a 45 mg/l average weekly limit.

pH

The department proposes to update the previous permit limit range of 7.0 s.u. to 9.0 s.u. to 6.5 s.u. to 9.0 s.u. as stated in the WQS for Class I and Class IA Streams.

The department reviewed the pH data and sampling frequency, and three (3) exceedances occurred for this parameter during the current permit. However, with the new proposed limit, these exceedances would fall into the proposed range. Therefore, the department proposes a permit limit range of 6.5 s.u. to 9.0 s.u. with a sampling frequency of daily.

E. coli

Based on the WQS, the department has determined that an *E. coli* limitation of 126 organisms per 100 ml as a monthly geometric mean and 409 organisms per 100 ml as a daily maximum is appropriate for this type of facility. The standard only applies during the recreation season from May 1 through September 30. The limitation in the permit is meant to cover the period one month before to one month after the recreation season, from April 1 through October 31.

The department has reviewed the *E. coli* data and sampling frequency, and six (6) exceedances of the daily max limit occurred for this parameter during the current permit, however the monthly geometric mean was not exceeded. After each individual exceedance, the facility adjusted how the UV disinfection, and corrected the problem. The department proposes to continue with a limit of 126 organisms per 100 ml as a monthly geometric mean and 409 organisms per 100 ml as a daily maximum limit with a sampling frequency of twice per week.

Ammonia as Nitrogen

The department considers the potential for contaminants (ammonia, metals, and organic chemicals) commonly associated with domestic waste facilities to compromise a water quality standard. The most prominent parameter of concern with domestic-waste discharges and the treatment of other organic-type waste is ammonia. Ammonia is generated during the decay or the process of stabilizing organic materials that commonly occur during domestic wastewater treatment.

Ammonia presents both acute and chronic toxicity to aquatic life at variable levels depending on receiving stream conditions (pH, temperature, and ambient ammonia). Federal Regulations (40 CFR 122.44) require the department to place limits in NDPDES permits on toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. According to the department, *Oncorhynchus* are present in the Missouri River, therefore all acute ammonia calculations will be performed using the equation located in the water quality standards for *Oncorhynchus* present.

Outfall 001: The department has conducted a reasonable potential analysis for ammonia as N. Based upon this analysis it was determined that there is not a reasonable potential to exceed the WQS for ammonia as N (**Appendix C**). The department reviewed the ammonia as N data and sampling frequency and no WQS exceedances occurred during the current permit. The department has determined to include effluent limitations for ammonia as N with a sampling frequency of twice per week based upon the calculations in the WQS for ammonia. A numeric ammonia as N limit will not be established for this permit issuance, however, ammonia as N limits will be calculated during discharge in compliance with the WQS to provide the POTW with real-time ammonia limitations. The department and the facility will verify compliance with the acute and chronic standards through the use of an ammonia spreadsheet based on the WQS for ammonia as N. Receiving stream parameters of pH (s.u.) and temperature (°C) shall be tested two times per week with receiving stream ammonia as N (mg/l) tested weekly, with the receiving stream flow being recorded daily.

The department proposes the following requirements for ammonia as N:

Table 7 - Ammonia Effluent Limitations and Monitoring Requirements for Outfall 001

	Effluent Limitations		
Parameters	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
Ammonia as N, mg/l [a]	†	*	‡
Missouri River Parameters			
Stream Flow, upstream (cfs) [b]	*	*	*
pH (s.u.), upstream [b, c]	*	*	*
Temperature (°C), Upstream [b, c]	*	*	*

*	This parameter is not limited. However, the department may impose limitations based on sample history to protect the receiving waters.
a.	Calculations must be performed for each discharge sample. If an exceedance is detected on any single sample, the exceedance must be reported on the DMR.
b.	Sample must be collected/recorded the same day as the ammonia sample. The upstream flow and temperature may be obtained from the USGS gauging station 06342500 or can be collected by the facility.
c.	When dangerous conditions exist for personnel (i.e. thin ice, melting ice, flooding, etc.) the permittee may utilize the following minimum values based on the 90th percentile upstream reported data during the previous permit cycle: pH 8.52 s.u. and temperature 18.0°C. If the upstream flow is not available, then 30B10 critical low flow of 11300cfs shall be used. The maximum mixing factor is 10.0%.
†	Chronic Standard (Average Monthly Limit):
	The 30-day average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula: $$0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \times \left(2.126 \times 10^{0.028\times(20-MAX(T,7))}\right)$$ Receiving stream pH is used for the calculation
‡	Acute Standard (Daily Maximum Limit):
	The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula: $$MIN\left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}\right),$$ $$\left(0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times \left(23.12 \times 10^{0.036\times(20-T)}\right)\right)$$

	where *Oncorhynchus* are present.
Notes:	
Effluent from Outfall 001 will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge period.	

Phosphorus and Nitrogen (Nutrients)

According to the North Dakota Nutrient Reduction Strategy for Surface Waters, Mandan City of is classified as a Category I facility. The first step in implementing the nutrient reduction strategy for Category I facilities is to include effluent monitoring for Total Nitrogen and Total Phosphorus. The current permit included monitoring for Nitrite plus Nitrate, Total Nitrogen and Total Phosphorus. Total nitrogen is a combination of Nitrite, Nitrate, and Total Kjeldahl Nitrogen. Therefore, this permit renewal will only include monitoring for Total Nitrogen and Total Phosphorus to be consistent with other Category I facilities under the Nutrient Reduction Strategy.

Metals

Outfall 001: The department reviewed the metals data and sample frequency for the City of Mandan and performed a metals analysis (**Appendix C**) to compare the effluent results to the limits listed in the WQS. The analysis showed the following:

Mercury: Mercury exceeded the Human Health criteria for Class I, IA, II and III streams. All results were below the method detection level.

Selenium: Selenium exceeded the chronic aquatic life criteria. All results were below the method detection level.

Thallium: Thallium exceeded the Human Health criteria for Class I, IA, and II streams. All results were below the method detection level.

Cyanide: Cyanide exceed the chronic aquatic life criteria as well as the Human Health criteria for Class I, IA, and II streams.

All samples for mercury, selenium, thallium, and cyanide were below the method detection level. All other metals included in the metal's analysis met the limits in the WQS. Therefore, the department proposes to continue monitoring influent and effluent metals with a sampling frequency of annually.

Whole Effluent Toxicity (WET)

Outfall 001: The department has reviewed the WET testing data and sampling frequency for acute WET tests. The dataset consisted of 21 tests and indicated no occurrences of toxicity to *Ceriodaphnia dubia* (Water Flea) nor *Pimephales promelas* (Fathead Minnow).

Acute Toxicity Testing

The department is proposing to continue with TU_a of less than 1 (<1) in order to meet the requirements of NDAC 33.1-16-02.1-08(a)(4), which states that "[a]ll waters of the state shall be: Free from substances attributable to municipal, industrial, or other discharges or agricultural practices in concentrations or combinations which are toxic or harmful to humans, animals, plants, or resident aquatic biota. For surface water, this standard will be enforced in part through appropriate whole effluent toxicity requirements in North Dakota pollutant discharge elimination system permits." The Mandan POTW must meet the WET limits at the end-of-pipe.

The department is proposing the following requirements for acute WET testing:

Table 8 - Acute WET Requirements for Outfall 001

Outfall 001 WET tests on both species shall be performed at least once per calendar quarter on both species. This requirement may be reduced upon the city requesting a toxicity testing reduction – refer to the "**Reduced Monitoring For Toxicity Testing"** section in the permit**.** This reduction would be done by using an alternating species schedule.						
Acute WET Requirements for **Outfalls 001**						
Implementation	Limitations Imposed					
Effluent Dilution	0%(Control)	12.5%	25%	50%	75%	100%
Dilution Water	**Missouri River** [a]					
Testing Type	Acute Toxicity					
Species and Test Type	*Ceriodaphnia dubia* – 48 Hour Acute – Static Renewal – 20ºC					
	Pimephales promelas – 96 Hour Acute – Static Renewal – 20°C					
Endpoint	Survival reported as TU_a					
Compliance Point	End-of-pipe					
Sample Frequency	Quarterly					
Sample Type	Grab					
Maximum Daily Limit (MDL)	<1 TU_a					
Average Monthly Limit (AML)	<1 TU_a					
Test Failure	Acute test failure (LC_{50}) is defined as lethality to 50% or more of the test organisms exposed to 100% effluent for *Ceriodaphnia dubia* 48-hour and *Pimephales promelas* 96-hour test. *The* 48-hour and 96-hour LC_{50} effluent value must be <1 TU_a to indicate a passing test. Any 48-hour or 96-hour LC_{50} effluent value >1 TU_a will constitute a failure. Tests in which the control survival is less than 90% are invalid and must be repeated.					
Reporting Requirements	The permittee shall report the following results of each toxicity test on the DMR for that reporting period: Report the highest TU_a for *Ceriodaphnia dubia*, Parameter No.					

	TSM3B. Report the highest TU_a for *Pimephales promelas*, Parameter No. TSN6C.
If toxicity occurs in a routine test, an additional test shall be initiated within 14 days from the date of the initial toxicity findings. Should there be no discharge during a specified sampling time frame; sampling shall be performed as soon as there is a discharge. Should toxicity occur in the second test, testing shall be conducted at a frequency of once a month and the implementation of a Toxicity Reduction Evaluation (TRE) (see permit) shall be determined by the department. If no toxicity is found in the second test, testing shall occur as outlined in the permit. a. When dangerous conditions exist for personnel (i.e. thin ice, melting ice, flooding, etc.) the permittee may utilize moderately hard reconstituted water upon request and approval by the department.	

Acute toxicity test requirements are set out in the latest revision of *"Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organism,*" EPA-821-R-02-012 (Fifth Ed., October 2002).

Chronic Toxicity Testing

The department does not have enough data to conduct a reasonable potential analysis for TU_c. The department is proposing monitoring for chronic toxicity with a sampling frequency of once (1) per permit cycle. This is based on BPJ and other like permits.

The department proposes the following requirements for chronic WET testing:

Table 9 - Chronic WET Requirements for Outfall 001

Chronic WET requirements for **Outfall 001**						
Implementation	Monitoring Only					
Effluent Dilution	0%(Control)	6.25%	12.5%	25%	50%	100%
Dilution Water	**Missouri River**					
Species and Test Type	*Ceriodaphnia dubia* – 7-Day Chronic – Static Renewal – 25ºC					
	Fathead Minnow – 7-Day Chronic – Static Renewal – 25ºC					
Endpoint	Survival and Reproduction (*Ceriodaphnia dubia)* – IC25 reported as TUc					
	Larval Growth and Survival (Fathead Minnow) – IC25 reported as TUc					
Compliance Point	Monitoring Only at End-of-Pipe					
Sample Type	Grab					
Sample Frequency	Once per permit cycle					
Test Acceptability	Test acceptability for *Ceriodaphnia dubia* chronic must have an 80% or greater survival of all control organisms and an average of 15 or more young per surviving female in the control solutions, and 60% of surviving control females must produce three broods. If this					

	condition is not satisfied, the test must be repeated. Test acceptability for *Pimephales promelas* chronic must have 80% or greater survival in controls and an average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg. If this condition is not satisfied, the test must be repeated.
Reporting Requirements	The permittee shall report the following results of each toxicity test on the DMR for that reporting period: ***Pimephales promelas* (Fathead Minnow)** Report the highest TU_c for Fathead minnow, Parameter No. TTP3B ***Ceriodaphnia dubia* (Water Flea)** Report the highest TU_c for *Ceriodaphnia dubia*, Parameter No. TTB6C. The facility shall request their WET testing providers to report a TU_a for a 48-hour survival *Ceriodaphnia dubia* and for *Pimephales promelas* which can be derived from the chronic test. The reason for this is to develop a representative Acute-to-Chronic ratio (ACR) which is used for determining reasonable potential and/or permit limitations.

The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of "*Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,*" EPA-821-R-02-013 (Fourth Ed., October 2002) . Test species shall consist of freshwater fleas, *Ceriodaphnia dubia* and fathead minnows, *Pimephales promelas*.

Biosolids

Currently, the department does not have the authority to regulate biosolids. Therefore, the facility is required under the Direct Enforceability provisions of 40 CFR 503.3(b) to meet the applicable requirements of the regulations.

Human Health

North Dakota's water quality standards include numeric human health-base criteria that department must consider when writing NDPDES permit. These criteria were established in 1992 by the U.S. EPA in its National Toxics Rule (40 CFR 131.36). The National Toxics Rule allows states to use mixing zones to evaluate whether discharges comply with human health criteria. The department determined the applicant's discharge is unlikely to contain chemicals regulated to protect human health. The department will re-evaluate this discharge for impacts to human health during the next permit reissuance.

Test Procedures

The collection and transportation of all samples shall conform to EPA preservation techniques and holding times. All laboratory tests shall be performed by a North Dakota certified laboratory in conformance with test procedures pursuant to 40 CFR 136, unless other test procedures have been specified or approved by EPA as an alternate test procedure under 40 CFR 136.5. The method of determining the total amount of water discharged shall provide results within ten (10) percent of the actual amount.

OTHER PERMIT CONDITIONS

Industrial Pretreatment Requirements

Under the terms of the "Memorandum of Understanding between North Dakota Department of Health and the United States Environmental Protection Agency, Region 8" (2005), the department has been delegated authority to administer the Industrial Pretreatment Program. Under this delegation of authority, the department issues wastewater discharge permits for significant industrial users discharging to POTWs which have not been delegated authority to issue their own wastewater discharge permits. The Mandan POTW has pretreatment authority issued by EPA. The pretreatment program regulations are contained in NDAC 33.1-16-01.1, 40 CFR part 403, and applicable city ordinances.

In accordance with the Region VIII EPA policy, the permit contains general pretreatment language and requirements for major municipalities with an approved pretreatment program. The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D. The results of the metal analyses shall be reporting in the Annual Industrial Pretreatment Report and on DMR forms (001M - annually). All other sampling requirements specified below shall be reported in the Annual Industrial Pretreatment Report submitted to the department by March 28 each year.

Table 10 – Industrial Pretreatment Monitoring and Reporting Requirements

			Minimum Frequency of Monitoring	
Table II Priority Pollutants 40 CFR 122 Appendix D			2/Permit Cycle (5-year period)	
Table III – Other Toxic Pollutants (Metals and Cyanide) and Total Phenols (40 CFR 122 Appendix D) (see below)			1/Year	
40 CFR 122 Appendix D Table III				
Antimony, Total	Arsenic, Total	Beryllium, Total	Cadmium, Total	Chromium,
Copper, Total	Lead, Total	Mercury, Total	Nickel, Total	Selenium, Total
Silver, Total	Thallium, Total	Zinc, Total	Cyanide, Total	Phenols, Total
Hardness, Total [a]				
Notes: a. A total hardness of the receiving stream needs to be determined every time the above parameters are tested. The hardness is used to calculate parameter criterion(s) according to the North Dakota State Water Quality Standards.				

If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in Table V, or any other pollutant in a quantity or concentration known or suspected to adversely affect POTW operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed on both the influent and the effluent as follows:

	Minimum Frequency of Monitoring
Table V Other Toxics	1/Year

Along with the permittee's pretreatment annual report, the permittee will submit a list of compounds included in Table V that are suspected or known to be present in its influent wastewater. This determination shall be based on a review of the permittee's pretreatment program records. The state permitting authority and/or approval authority may review and comment on the list and the list may be revised if, in the opinion of the state permitting authority and/or approval authority, the list is incomplete. The permittee will perform the analysis on the influent for the revised list of compounds for which there are acceptable testing procedures as follows:

	Minimum Frequency of Monitoring
Revised List of Compounds	1/Year if permittee samples for Table V

Where the pollutants monitored in accordance with this section are reported as being above the method detection limit, the results for these pollutants shall be reported in the permittee's pretreatment annual report, if required.

PERMIT ISSUANCE PROCEDURES

Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans, changes in sewage sludge practices, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or sewage sludge. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Proposed Permit Issuance

This proposed permit meets all statutory requirements for the department to authorize a wastewater discharge. The permit includes limits and conditions to protect human health, aquatic life, and the beneficial uses of waters of the State of North Dakota. The department proposes to issue this permit for a term of five (5) years.

APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to reissue a NDPDES permit to the **Mandan POTW**. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and the department's reasons for requiring permit conditions.

The department placed a Public Notice of Draft on **August 13, 2021** in the **Bismarck Tribune** and the **Mandan News** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

- Indicates where copies of the draft Permit and Fact Sheet are available for public evaluation.
- Offers to provide assistance to accommodate special needs.
- Urges people to submit their comments before the end of the comment period.
- Informs the public that if there is significant interest, a public hearing will be scheduled.

You may obtain further information from the department by telephone, 701.328.5210 or by writing to the address listed below.

North Dakota Department of Environmental Quality
Division of Water Quality
918 East Divide Avenue, 4th Floor
Bismarck, ND 58501

The primary author of this permit and fact sheet is Sarah Waldron Feld.

North Dakota Department of Environmental Quality Public Notice
Reissue of an NDPDES Permit

Public Notice Date: 8/13/2021 Public Notice Number: ND-2021-024

Purpose of Public Notice
The Department intends to reissue the following North Dakota Pollutant Discharge Elimination System (NDPDES) Discharge Permit under the authority of Section 61-28-04 of the North Dakota Century Code.

Permit Information
Application Date: 3/19/2021 Application Number: ND0022861

Applicant Name: Mandan City Of
Mailing Address: 205 2nd Ave NW, Mandan, ND 58554
Telephone Number: 701.667.3278

Proposed Permit Expiration Date: 9/30/2026

Facility Description
The reapplication is for an Extended Aeration Activated Sludge wastewater treatment plant with UltraViolet disinfection that services the City of Mandan. The outfall is located in section 7, Township 138N, Range 80W. Discharges would be to the Missouri River, a Class I Stream.

Tentative Determinations
Proposed effluent limitations and other permit conditions have been made by the Department. They assure that State Water Quality Standards and applicable provisions of the FWPCAA will be protected.

Information Requests and Public Comments
Copies of the application, draft permit, and related documents are available for review. For further information on making public comments/public comment tips please visit: https://deq.nd.gov/PublicCommentTips.aspx. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by September 13, 2021 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice. If you require special facilities or assistance relating to a disability, call TDD at 1.800.366.6868.

APPENDIX B – DEFINITIONS

DEFINITIONS Standard Permit BP 2019.05.29

1. "**Act**" means the Clean Water Act.

2. "**Average monthly discharge limitation**" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

3. "**Average weekly discharge limitation**" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

4. "**Best management practices**" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.

5. "**Bypass**" means the intentional diversion of waste streams from any portion of a treatment facility.

6. "**Composite**" sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24 hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.

7. "**Daily discharge**" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

8. "**Department**" means the North Dakota Department of Environmental Quality, Division of Water Quality.

9. "**DMR**" means discharge monitoring report.

10. "**EPA**" means the United States Environmental Protection Agency.

11. "**Geometric mean**" means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.

12. "**Grab**" for monitoring requirements, means a single "dip and take" sample collected at a representative point in the discharge stream.

13. "**Instantaneous**" for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.

14. "**Maximum daily discharge limitation**" means the highest allowable "daily discharge."

15. "**Salmonid**" means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.

16. "**Sanitary Sewer Overflows (SSO)**" means untreated or partially treated sewage overflows from a sanitary sewer collection system.

17. "**Severe property damage**" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

18. "**Total drain**" means the total volume of effluent discharged.

19. "**Upset**" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

DEFINITIONS Whole Effluent Toxicity (WET) BP 2017.04.06

20. "**Acute toxic unit**" ("TUa") is a measure of acute toxicity. TUa is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end on the acute exposure period (i.e., 100/"LC50").

21. "**Chronic toxic unit**" ("TUc") is a measure of chronic toxicity. TUc is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (i.e., 100/"IC25").

22. "**Inhibition concentration**", ("IC"), is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., Interpolation Method).

23. "**LC50**" means the concentration of toxicant (e.g., effluent) which is lethal to 50 percent of the organisms exposed in the time period prescribed by the test.

24. “**No observed effect concentration**”, (“NOEC”), is the highest concentration of toxicant (e.g., effluent) to which organisms are exposed in a chronic toxicity test [full life-cycle or partial life-cycle (short term) test], that causes no observable adverse effects on the test organisms (i.e., the highest concentration of effluent in which the values for the observed responses are not statistically significantly different from the controls).

APPENDIX C – DATA AND TECHNICAL CALCULATIONS

DFLOW

USGS gage station 06342500 on the Missouri River at Bismarck, ND was used to determine critical low flows using the DFLOW (3.1b) program. Data used for these calculations ranged from years 2001 through 2021.

DFLOW 1B3 (ACUTE)	9780	CFS	DFLOW 1Q10 (ACUTE)	9760	CFS
DFLOW 4B3 (CHRONIC)	10100	CFS	DFLOW 7Q10 (CHRONIC)	10100	CFS
DFLOW 30B10 (AMMONIA)	11300	CFS			

REASONABLE POTENTIAL

Ammonia

Outfall 001: The reasonable potential determination for ammonia is provided below. The determination was conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was 1.85.

Receiving Water Concentration (RWC)
Reasonable Potential (RP)
Determination

Technical Support Document (TSD) For Water Quality-based Toxics Control
EPA/505/2-90-001; March 1991

Facility Name:	Mandan City of	Receiving Stream:	Missouri River	
NDPDES Permit:	ND0022861	1Q10 Acute	9760	cfs
Daily Maximum Flow (mgd):	3.07	1B3 Acute	9780	cfs
Daily Average Flow (mgd):	1.56	7Q10 Chronic	10100	cfs
Stream Design Mixing:	10.0%	4B3 Chronic	10100	cfs
Statistical Multiplier:	2.0			
Upstream Concentration:		mg/l	**Parameter:**	
Effluent Concetration (max):	6.9000	mg/l	**Ammonia as N**	

$$RWC = \frac{(StatQeCe)+(Cs(pmf)Qs)}{Qe+(pmf)Qs}$$

Outfall: 001

RWC = Receiving water concentration, the resultant magnitude of concentration in the receiving water after effluent discharge concentration (also known as the in-stream waste concentration)
Stat = Statistical multiplier for effluent parameter (Table 3-1 and 3-2; page 57 of the TSD)
Qe = Effluent Design Flow
Ce = Highest effluent concentration reported.
pmf = Partial mix factor, percent of Qs allowed for mixing by State authority.
Qs = Receiving Water Flow (1Q10 or 1B3 for acute and 7Q10 or 4B3 for chronic)
Cs = Background concentration of the receiving water.

Qe - Acute	3.07	mgd	Qs - 1Q10	6304.96	mgd
Qe - Chronic	1.56	mgd	Qs - 1B3	6317.88	mgd
Ce	6.9000	mg/l	Qs - 7Q10	6524.60	mgd
Cs	0.0000	mg/l	Qs - 4B3	6524.60	mgd
Stat	2.00				
pmf	10.0%				

Acute RP			Chronic RP		
RWC - 1Q10	0.0669	mg/l	RWC - 7Q10	0.0329	mg/l
RWC - 1B3	0.0667	mg/l	RWC - 4B3	0.0329	mg/l

Criterion Maximum Concentration (CMC)			Criterion Continuous Concentration (CCC)		
Acute Criterion	60.34	mg/l	Chronic Criterion	104.9900	mg/l

If the calculated RWC is greater than its respective criterion then there is RP and if RWC is less than the criterion then there is no RP.

CMC RP Present:		**CCC RP Present:**	
1Q10 Acute OR	**NO**	**7Q10 Chronic OR**	**NO**
1B3 Acute	**NO**	**4B3 Chronic**	**NO**

The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design and harmonic mean flows to determine Water Quality Based Effluent Limits (WQBELs) and Whole Effluent Toxicity (WET) limits.

The department used the following criteria to determine the acute and chronic ammonia criterion for the reasonable potential analysis for Outfall 001:

Flow Variable Calculated Effluent Ammonia Concentrations in mg/l					Estimated	
Discharger:	Mandan City of		Enter the upstream ammonia in mg/l:		No	
Stream:	Missouri River		Enter the receiving stream pH:		90th %	8.53
Enter receiving stream flow (CFS):		13,257	Enter the receiving stream temperature in Deg C:	64 F	90th %	18.00
Mixing Zone Percentage/CFS:	10%	1325.7	Enter the effluent drain rate (MGD):		Yes	3.07
Enter increments to calculate stream flow:			Enter increments to calculate drain rate:			0.1
				Mixing Zone Dilution Rate:		280.1
				Overall Dilution Rate:		2791.9

Maximum allowable ammonia in mg/l

	Water Quality Standard:	1.6520			Water Quality Standard:	0.2154			Water Quality Standard:	0.9369			Water Quality Standard:	0.3748		
	Intermittent 1hr Acute				Intermittent 1 hr Acute *Oncorhynchus* Preser				Intermittent 4 Day Chronic				Continuous 30 Day Chronic			
DRAIN MGD →	2.97	3.07	3.17	3.27	2.97	3.07	3.17	3.27	2.97	3.07	3.17	3.27	2.97	3.07	3.17	3.27
STREAM FLOW in CFS																
1325.70	478.32	462.80	448.25	434.59	62.37	60.34	58.44	56.66	271.28	262.48	254.23	246.48	108.51	#####	#####	98.59
1325.70	478.32	462.80	448.25	434.59	62.37	60.34	58.44	56.66	271.28	262.48	254.23	246.48	108.51	#####	#####	98.59
1325.70	478.32	462.80	448.25	434.59	62.37	60.34	58.44	56.66	271.28	262.48	254.23	246.48	108.51	#####	#####	98.59
1325.70	478.32	462.80	448.25	434.59	62.37	60.34	58.44	56.66	271.28	262.48	254.23	246.48	108.51	#####	#####	98.59
1325.70	478.32	**462.80**	448.25	434.59	62.37	**60.34**	58.44	56.66	271.28	**262.48**	254.23	246.48	108.51	#####	#####	98.59
1325.70	478.32	462.80	448.25	434.59	62.37	60.34	58.44	56.66	271.28	262.48	254.23	246.48	108.51	#####	#####	98.59
1325.70	478.32	462.80	448.25	434.59	62.37	60.34	58.44	56.66	271.28	262.48	254.23	246.48	108.51	#####	#####	98.59
1325.70	478.32	462.80	448.25	434.59	62.37	60.34	58.44	56.66	271.28	262.48	254.23	246.48	108.51	#####	#####	98.59
1325.70	478.32	462.80	448.25	434.59	62.37	60.34	58.44	56.66	271.28	262.48	254.23	246.48	108.51	#####	#####	98.59

Metals

Outfall 001: The department conducted a metals analysis utilizing the maximum concentration for the identified metals and compared them to the WQS. Parameters which were below method detection level were entered at the detection limit value.

The NDDEQ has developed the following tool to evaluate a single sample result to the North Dakota Standards of Quality for Waters of the State. A detailed explanation of the calculations and limits for the parameters listed can be found in ch 33.1-16-02.1-9, Table 1.

Parameters indicated as "HD-Hardness Dependent" are less toxic as the calcium carbonate hardness of the receiving stream increases. The calcium carbonate hardness of the effluent or the receiving stream is entered above. A hardness value in grains per gallon can also be entered.

Items in bold italic and underline indicate a parameter that needs further evaluation. Parameters listed above must be analyzed using an EPA approved method (40 CFR 136) that has a detection limit at or below the limits listed in 40 CFR 136 or the current version of the North Dakota Standards of Quality for Waters of

Facility Name			Mandan City of				Print Date:	7/22/2021		
Location			Outfall 001				Below are the current or calculated acute, chronic and human health standards based on the data entered.			
Enter Grains/Gallon or					0					
Hardness - Total (CaCO3) mg/l					501					
Safety Factor(multiplier):					2.6					
Enter Concentration Values							µg/l	µg/l	µg/l	µg/l
Parameter		Detect	MDL/DL /RL	mg/l	µg/l	µg/l	Acute	Chronic	Human Health Class I ,IA,II	Human Health Class III
Antimony		<	0.001	0.001		**2.6**			5.6	640
Arsenic		<	0.002	0.002		**5.2**	340	150	10	
Beryllium		<	0.0005	0.0005		**1.3**			4	
Cadmium	HD	<	0.0001	0.0001		**0.26**	9.2	2.86	5.00	
Chromium - Total		<	0.002	0.002		**5.2**			100	
Chromium (III)	HD					0	6748	323		
Chromium (VI)						0	16	11		
Copper	HD		0.002	0.004		**10.4**	64	37.0	1000.0	
Lead	HD	<	0.0005	0.0005		**1.3**	635	24.7	15.0	
Mercury		<	0.0002	0.0002		0.52	1.7	0.88	**0.05**	***0.051***
Molybdenum - Total						0				
Nickel	HD	<	0.002	0.002		**5.2**	1834	203.9	100.0	4200
Selenium		<	0.005	0.005		**13**	20	5	50	
Silver	HD	<	0.0005	0.0005		**1.3**	60			
Thallium		<	0.0001	0.0001		**0.26**			***0.24***	0.47
Zinc	HD		0.05	0.09		**234**	469	469.3	7400.0	26000
Cyanide - Total		<	0.007	0.005		**13**	22	5.2	4	400
Phenols		<	0.01	0.01		**26**		300	4000	300000

Comments:
The maximum values reported for each parameter from the four (4) discharges that occurred from October 2016 - June 2021 were used. Non-detects were entered at the detection limit value.

Mercury: All results were below the method detection level.
Selenium: All results were below the method detection level.
Thallium: All results were below the method detection level.
Cyanide: All results were below the method detection level.

APPENDIX D – RESPONSE TO COMMENTS

Any comments received during the public comment period will be addressed here.

Permit No: ND0022861
Effective Date: October 1, 2021
Expiration Date: September 30, 2026

AUTHORIZATION TO DISCHARGE UNDER THE

NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with Chapter 33.1-16-01 of the North Dakota Department of Environmental Quality rules as promulgated under Chapter 61-28 (North Dakota Water Pollution Control Act) of the North Dakota Century Code,

The City of Mandan
Mandan Publicly Owned Treatment Works (POTW)

is authorized to discharge from its wastewater treatment system at Outfall 001

to the Missouri River, a Class I stream

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,

September 30, 2026.

Signed this _____ day of _____, _____.

_____
Karl H. Rockeman, P.E.
Director
Division of Water Quality

BP 2019.05.29

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DEFINITIONS Standard Permit BP 2019.05.29

1. "**Act**" means the Clean Water Act.

2. "**Average monthly discharge limitation**" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

3. "**Average weekly discharge limitation**" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

4. "**Best management practices**" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.

5. "**Bypass**" means the intentional diversion of waste streams from any portion of a treatment facility.

6. "**Composite**" sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24 hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.

7. "**Daily discharge**" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

8. "**Department**" means the North Dakota Department of Environmental Quality, Division of Water Quality.

9. "**DMR**" means discharge monitoring report.

10. "**EPA**" means the United States Environmental Protection Agency.

11. "**Geometric mean**" means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.

12. "**Grab**" for monitoring requirements, means a single "dip and take" sample collected at a representative point in the discharge stream.

13. "**Instantaneous**" for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.

14. "**Maximum daily discharge limitation**" means the highest allowable "daily discharge."

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15. "**Salmonid**" means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.

16. "**Sanitary Sewer Overflows (SSO)**" means untreated or partially treated sewage overflows from a sanitary sewer collection system.

17. "**Severe property damage**" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

18. "**Total drain**" means the total volume of effluent discharged.

19. "**Upset**" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

DEFINITIONS Whole Effluent Toxicity (WET) BP 2017.04.06

20. "**Acute toxic unit**" ("TUa") is a measure of acute toxicity. TUa is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end on the acute exposure period (i.e., 100/"LC50").

21. "**Chronic toxic unit**" ("TUc") is a measure of chronic toxicity. TUc is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (i.e., 100/"IC25").

22. "**Inhibition concentration**", ("IC"), is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., Interpolation Method).

23. "**LC50**" means the concentration of toxicant (e.g., effluent) which is lethal to 50 percent of the organisms exposed in the time period prescribed by the test.

24. "**No observed effect concentration**", ("NOEC"), is the highest concentration of toxicant (e.g., effluent) to which organisms are exposed in a chronic toxicity test [full life-cycle or partial life-cycle (short term) test], that causes no observable adverse effects on the test organisms (i.e., the highest concentration of effluent in which the values for the observed responses are not statistically significantly different from the controls).

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OUTFALL DESCRIPTION

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a NDPDES permit is a violation of the Act and could subject the person(s) responsible for such discharge to penalties under Section 309 of the Act. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within the specified timeframe outlined in this permit could subject such person(s) to penalties as provided under the Act.

Outfall 001. Active. Final Outfall.			
Latitude: 46.790278	Longitude: -100.823333	County: Morton	
Township: 138 North	Range: 80 West	Section: 7	Q: A
Receiving Stream: Missouri River		Classification: Class I Stream	
Outfall Description: This is the final outfall for treated domestic and industrial wastewater from the mechanical wastewater treatment system. The compliance point is where the effluent leaves the UV disinfection chamber.			

PERMIT SUBMITTALS SUMMARY

Coverage Point *	Submittal	Frequency	First Submittal Date
001A	Discharge Monitoring Report	Monthly	November 30, 2021
001W	Discharge Monitoring Report	Quarterly	January 31, 2022
001M	Discharge Monitoring Report	Annually	October 31, 2022
Industrial Pretreatment	Annual Report	Yearly	March 28, 2022
Application Renewal	NPDES Application Renewal	1/permit cycle	March 31, 2026

* A, W, and M are report designators: “A” is the conventional designation, “W” is the WET designation, and “M” is the metals designation.

SPECIAL CONDITIONS

No special conditions have been determined at this time.

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I. LIMITATIONS AND MONITORING REQUIREMENTS

A. Discharge Authorization

During the effective period of this permit, the permittee is authorized to discharge pollutants from Outfall 001 as specified to the following: **Missouri River, a Class I stream**.

This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations clearly identified in the permit application process.

B. Effluent Limitations and Monitoring

The permittee must limit and monitor all discharges as specified below:

Table 1: Effluent Limitations and Monitoring Requirements Outfall 001

Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Biochemical Oxygen Demand (BOD_5) (Influent)	Monitor only (mg/l)			Weekly	Grab
Biochemical Oxygen Demand (BOD_5) (Effluent)	25 mg/l	45 mg/l	*	2/week	Grab
BOD_5 (Removal Efficiency)	Shall not be less than 85%	*	*	Monthly	Calculated
Total Suspended Solids (TSS) (Influent)	Monitor Only (mg/l)			Weekly	Grab
Total Suspended Solids (TSS) (Effluent)	30 mg/l	45 mg/l	*	2/week	Grab
TSS (Removal Efficiency)	Shall not be less than 85%	*	*	Monthly	Calculated
pH [a]	Shall remain between 6.5 to 9.0 s.u.			Daily	Grab
Escherichia coli (*E. coli)* [b]	126/100 ml	*	409/100 ml	2/week	Grab
Ammonia as N	Refer to Ammonia Table (**Table 2**)			Weekly	Grab
Oil and Grease – Visual [c]	*	*	*	Daily	Visual
Oil and Grease [c]	*	*	10 mg/l	Conditional/ Daily	Grab
Temperature, (°C)	Report	*	Report	Daily	Grab
Nitrogen, Total [d]	Monitor Only (mg/l)			Monthly	Grab
Phosphorus, Total	Monitor Only (mg/l)			Monthly	Grab
Effluent Flow, mgd	Report	*	Report Max. Daily Value	Daily	Instantaneous

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Table 1: Effluent Limitations and Monitoring Requirements Outfall 001					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Drain, MG	Report Monthly Total			Monthly	Calculated
Whole Effluent Toxicity (WET), TU_a	Refer to Part I.C			Quarterly	Grab
Whole Effluent Toxicity (WET), TU_c	Refer to Part I.C			1/permit	Grab
Metals, Total (Influent and Effluent) (Appendix A; Table 3) [e]	Refer to Part V(C)			Yearly	Composite
Toxic Organics (App D; Table II)	Refer to Part V(C)			2/permit	Composite

Notes:

*	This parameter is not limited. However, the department may impose limitations based on sample history and to protect receiving waters.
a	The pH, an instantaneous limit, shall be between 6.5 s.u. and 9.0 s.u. Any single analysis and/or measurement outside this limitation shall be considered a violation of the conditions of this permit.
b	The limitations for *E. coli* shall be in effect only during the recreational season (April 1 through October 31.) Averages for *E. coli* shall be determined as a geometric mean.
c	A daily visual check shall be performed. There shall be no discharge of oily wastes that produce a visible sheen on the surface of the receiving water. If present, a grab sample shall be analyzed for oil and grease to ensure compliance with the concentration limitation.
d	Total nitrogen is a combination of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN).
e	A total hardness of the receiving stream needs to be determined every time metals are sampled and analyzed. The hardness is used to calculate parameter criterion(s) according to the WQS. This sample shall be collected upstream of the final discharge site.

Stipulations

Best Management Practices (BMPs) are to be utilized so that there shall be no discharge of floating debris, oil, scum, and other floating materials in sufficient amounts to be unsightly or deleterious, or oil wastes that produce a visible sheen on the surface of the receiving water.

Dates of discharge and number of exceedances shall be included on the Discharge Monitoring Reports.

Samples taken in compliance with the monitoring requirements specified in this permit shall be taken prior to leaving company property or entering the receiving stream.

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Table 2: Ammonia Effluent Limitation Requirements Outfall 001					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Outfall 001					
Ammonia as N, mg/l [a]	†	*	‡	Weekly	Grab
Missouri River Parameters – collect same days as effluent Ammonia as N					
Stream Flow, Upstream (cfs) [b]	*	*	*	Daily	Usable Data Source
pH (s.u.), Upstream [b, c]	*	*	*	Weekly	Usable Data source
Temperature (°C), Upstream [b, c]	*	*	*	Weekly	Usable Data Source

Notes:

*	This parameter is not limited. However, the department may impose limitations based on sample history and to protect receiving waters.
a	Calculations must be performed for each discharge sample. If an exceedance is detected on any single sample, the exceedance must be reported on the DMR.
b	Sample must be collected/recorded the same day as the ammonia sample. The upstream flow and temperature may be obtained from the USGS gauging station 0634500 or can be collected by the facility.
c	When dangerous conditions exist for personnel (i.e. thin ice, melting ice, flooding, etc.) the permittee may utilize the following minimum values based on the 90th percentile upstream reported data during the previous permit cycle: pH 8.89 S.U., Temperature 22.94°C, and ammonia 0.79 mg/l. If the upstream flow is not available, then 30B10 critical low flow of 1.89 cfs shall be used. The maximum mixing factor is 10.0%.
†	Chronic Standard (Average Monthly Limit)
	The 30-day average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula: $$0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \times \left(2.126 \times 10^{0.028\times(20-MAX(T,7))}\right)$$ Receiving stream pH is used for the calculation
‡	Acute Standard (Daily Maximum Limit)

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Table 2: Ammonia Effluent Limitation Requirements Outfall 001						
Parameter		Effluent Limitations			Monitoring Requirements	
		Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
	The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula: $$MIN\left(\frac{0.275}{1+10^{7.204-pH}}+\frac{39.0}{1+10^{pH-7.204}}\right),\left(0.7249\times\left(\frac{0.0114}{1+10^{7.204-pH}}+\frac{1.6181}{1+10^{pH-7.204}}\right)\times\left(23.12\times10^{0.036\times(20-T)}\right)\right)$$ where *Oncorhynchus* are present.					
Stipulations						
Effluent from Outfall 001 will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge period.						

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C. Whole Effluent Toxicity (WET) Requirements BP 2021.01.26

1. Acute Toxicity Testing

Acute toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *"Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms,"* EPA-821-R-02-012 (Fifth Ed., October 2002). The permittee shall conduct an acute 48-hour static renewal toxicity test using freshwater fleas, *Ceriodaphnia dubia* and an acute 96-hour static renewal toxicity test using fathead minnows, *Pimephales promelas*.

Outfall 001 WET tests on both species shall be performed at least once per calendar quarter on both species.						
Acute WET Requirements for **Outfalls 001**						
Implementation	Limitations Imposed					
Effluent Dilution	0%(Control)	12.5%	25%	50%	75%	100%
Dilution Water	**Missouri River** [a]					
Testing Type	Acute Toxicity					
Species and Test Type	*Ceriodaphnia dubia* – 48 Hour Acute – Static Renewal – 20ºC					
	Pimephales promelas – 96 Hour Acute – Static Renewal – 20°C					
Endpoint	Survival reported as TU_a					
Compliance Point	End-of-pipe					
Sample Frequency	Quarterly					
Sample Type	Grab					
Maximum Daily Limit (MDL)	<1 TU_a					
Average Monthly Limit (AML)	<1 TU_a					
Test Failure	Acute test failure (LC_{50}) is defined as lethality to 50% or more of the test organisms exposed to 100% effluent for *Ceriodaphnia dubia* 48-hour and *Pimephales promelas* 96-hour test. *The* 48-hour and 96-hour LC_{50} effluent value must be <1 TU_a to indicate a passing test. Any 48-hour or 96-hour LC_{50} effluent value >1 TU_a will constitute a failure. Tests in which the control survival is less than 90% are invalid and must be repeated.					
Reporting Requirements	The permittee shall report the following results of each toxicity test on the DMR for that reporting period: Report the highest TU_a for *Ceriodaphnia dubia*, Parameter No. TSM3B. Report the highest TU_a for *Pimephales promelas*, Parameter No. TSN6C.					

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If toxicity occurs in a routine test, an additional test shall be initiated within 14 days from the date of the initial toxicity findings. Should there be no discharge during a specified sampling time frame; sampling shall be performed as soon as there is a discharge. Should toxicity occur in the second test, testing shall be conducted at a frequency of once a month and the implementation of a Toxicity Reduction Evaluation (TRE) (see permit) shall be determined by the department. If no toxicity is found in the second test, testing shall occur as outlined in the permit.

a. When dangerous conditions exist for personnel (i.e. thin ice, melting ice, flooding, etc.) the permittee may utilize moderately hard reconstituted water upon request and approval by the department.

2. Chronic Toxicity Testing

The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of "*Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,*" EPA-821-R-02-013 (Fourth Ed., October 2002). Test species shall consist of freshwater fleas, *Ceriodaphnia dubia* and fathead minnows, *Pimephales promelas*.

Chronic WET requirements for **Outfall 001**						
Implementation	Monitoring Only					
Effluent Dilution	0%(Control)	6.25%	12.5%	25%	50%	100%
Dilution Water	**Missouri River**					
Species and Test Type	*Ceriodaphnia dubia* – 7-Day Chronic – Static Renewal – 25ºC					
	Fathead Minnow – 7-Day Chronic – Static Renewal – 25ºC					
Endpoint	Survival and Reproduction (*Ceriodaphnia dubia)* – IC25 reported as TUc					
	Larval Growth and Survival (Fathead Minnow) – IC25 reported as TUc					
Compliance Point	Monitoring Only at End-of-Pipe					
Sample Type	Grab					
Sample Frequency	Once per permit cycle					
Test Acceptability	Test acceptability for *Ceriodaphnia dubia* chronic must have an 80% or greater survival of all control organisms and an average of 15 or more young per surviving female in the control solutions, and 60% of surviving control females must produce three broods. If this condition is not satisfied, the test must be repeated. Test acceptability for *Pimephales promelas* chronic must have 80% or greater survival in controls and an average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg. If this condition is not satisfied, the test must be repeated.					
Reporting Requirements	The permittee shall report the following results of each toxicity test on the DMR for that reporting period: ***Pimephales promelas* (Fathead Minnow)** Report the highest TU_c for Fathead minnow, Parameter No. TTP3B ***Ceriodaphnia dubia* (Water Flea)**					

	Report the highest TU_c for *Ceriodaphnia dubia*, Parameter No. TTB6C. The facility shall request their WET testing providers to report a TU_a for a 48-hour survival *Ceriodaphnia dubia* and for *Pimephales promelas* which can be derived from the chronic test. The reason for this is to develop a representative Acute-to-Chronic ratio (ACR) which is used for determining reasonable potential and/or permit limitations.

3. Reduced Monitoring for Toxicity Testing

a. Alternating Species
If the results of a minimum of four consecutive samples taken over at least a 12-month period indicate no toxicity, the permittee may request the Department for a test reduction. This reduction would only be testing one species per sampling frequency. If fathead minnows are used first then the next test would be *C. dubia* or vice versa and continue alternating. The department may approve or deny the request, based on the biomonitoring results and other available information. If the request is approved, the test procedures are to be the same as outlined in 1. Acute Toxicity Testing and/or 2. Chronic Toxicity Testing.

This provision is revoked at the time of permit reissuance/renewal. Permittees may request alternating species after the conditions of this section are met under the reissued permit.

If toxicity occurs in any single species test the provision for alternating species shall be immediately revoked and 1. Acute Toxicity Testing and/or 2. Chronic Toxicity Testing shall be followed in whole.

b. Monthly Testing
If the results of 5. Toxicity Reduction Evaluation (TRE) have been accepted by the department or a period of time has indicated no toxicity, the permittee may request the department to allow a reduction from monthly to quarterly toxicity testing for both species. The department may approve or deny the request, based on the bio-monitoring results and other available information. If the request is approved, the test procedures are to be the same as outlined in 1. Acute Toxicity Testing and/or 2. Chronic Toxicity Testing.

4. Reporting Requirements
Test results shall be submitted with the Discharge Monitoring Report (DMR) form for each reporting period. The format for the report shall be consistent with the above reference manual(s) as outlined in the section “Report Preparation and Test Review.” Each lab generated report shall document the findings for each species reference toxicity testing chart.

5. Toxicity Reduction Evaluation (TRE)
If toxicity is detected, and it is determined by the department that a TRE is necessary, the permittee shall be so notified and shall initiate a TRE immediately thereafter. A TRE shall reference the latest revision of “*Technical Support Document for Water Quality-based Toxics Control,*” EPA/505/2-90-001 – PB91-127415 (March 1991). The purpose of the TRE will be to establish the cause of the toxicity, locate the source(s) of the toxicity, and control or provide treatment for the toxicity.

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If the TRE establishes that the toxicity cannot be eliminated by the current treatment system, the permittee shall submit a proposed compliance plan to the department. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the department, this permit may be reopened and modified.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations or proper discharge management as approved by the department, the permittee may:

Submit an alternative control program for compliance with the numerical requirements; or

If necessary, provide a modified biomonitoring protocol which compensates for the pollutant(s) being controlled numerically.

If acceptable to the department, this permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the department, and/or a modified biomonitoring protocol.

Failure to conduct an adequate TRE, or failure to submit a plan or program as described above, or the submittal of a plan or program judged inadequate by the department, shall in no way relieve the permittee from maintaining compliance with the whole effluent toxicity requirements of this permit.

II. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 2020.10.19

A. Representative Sampling (Routine and Non-Routine Discharges)

All samples and measurements taken shall be representative of the monitored discharge.

In order to ensure that the effluent limits set forth in this permit are not violated at times other than when routine samples are taken, the permittee must collect additional samples at the appropriate outfall whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample. The permittee must analyze the additional samples for those parameters limited under **Part I Effluent Limitations and Monitoring** requirements of this permit that are likely to be affected by the discharge.

The permittee must collect such additional samples as soon as the spill, discharge, or bypassed effluent reaches the outfall. The samples must be analyzed in accordance with B. Test Procedures. The permittee must report all additional monitoring in accordance with D. Additional Monitoring.

B. Test Procedures

The collection and transportation of all samples shall conform with EPA preservation techniques and holding times found in 40 CFR 136. All laboratory tests shall be performed by a North Dakota certified laboratory in conformance with test procedures pursuant to 40 CFR 136, unless other test procedures have been specified in this permit or approved by EPA as an alternate test procedure under 40 CFR 136.5. The method of determining the total amount of water discharged shall provide results within 10 percent of the actual amount.

C. Recording of Results

Records of monitoring information shall include:

1. the date, exact place and time of sampling or measurements;

2. the name(s) of the individual(s) who performed the sampling or measurements;

3. the name of the laboratory;

4. the date(s) and time(s) analyses were performed;

5. the name(s) of the individual(s) who performed the analyses;

6. the analytical techniques or methods used; and

7. the results of such analyses.

D. Additional Monitoring

If the discharge is monitored more frequently than this permit requires, all additional results, if in compliance with B. Test Procedures, shall be included in the summary on the Discharge Monitoring Report.

E. Reporting of Monitoring Results

1. Monitoring results shall be summarized and reported to the department using Discharge Monitoring Reports (DMRs). If no discharge occurs during a reporting period, "No Discharge" shall be reported. The permittee must submit DMRs electronically using the electronic information reporting system unless requirements in subsection 3 are met.

2. Prior to December 21, 2025, the permittee may elect to electronically submit the following compliance monitoring data and reports instead of mailing paper forms. Beginning December 21, 2025, the permittee must report the following using the electronic reporting system:

   a. General permit reports [e.g., notices of intent (NOI); notices of termination (NOT); no exposure certifications (NOE)];

   b. Municipal separate storm sewer system program reports;

   c. Pretreatment program reports;

   d. Sewer overflow/bypass event reports; and

   e. Clean Water Act 316(b) annual reports

3. The permittee may seek a waiver from electronic reporting. To obtain a waiver, the permittee must complete and submit an Application for Temporary Electronic Reporting Waiver form (SFN 60992) to the department. The department will have 120 days to approve or deny the waiver request. Once the waiver is approved, the permittee may submit paper versions of monitoring data and reports to the department.

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a. One of the following criteria must be met in order to obtain a waiver. The department reserves the right to deny any waiver request, even if they meet one of the criteria below.

1. No internet access,

2. No computer access,

3. Annual DMRs (upon approval of the department),

4. Employee turnover (3-month periods only), or

5. Short duration permits (upon approval of the department)

All reports must be postmarked by the last day of the month following the end of each reporting period. All original documents and reports required herein shall be signed and submitted to the department at the following address:

ND Department of Environmental Quality
Division of Water Quality
918 East Divide Ave
Bismarck ND 58501-1947

F. Records Retention

All records and information (including calibration and maintenance) required by this permit shall be kept for at least three years or longer if requested by the department or EPA.

III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

B. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. If necessary to achieve compliance with the conditions of this permit, this shall include the operation and maintenance of backup or auxiliary systems.

C. Planned Changes

The department shall be given advance notice of any planned changes at the permitted facility or of an activity which may result in permit noncompliance. Any anticipated facility expansions, production increase, or process modifications which might result in new, different, or increased discharges of pollutants shall be reported to the department as soon as possible. Changes which may result in a facility being designated a "new source" as determined in 40 CFR 122.29(b) shall also be reported.

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D. Duty to Provide Information

The permittee shall furnish to the department, within a reasonable time, any information which the department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the department, upon request, copies of records required to be kept by this permit. When a permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in a permit application or any report, it shall promptly submit such facts or information.

E. Signatory Requirements

All applications, reports, or information submitted to the department shall be signed and certified.

All permit applications shall be signed by a responsible corporate officer, a general partner, or a principal executive officer or ranking elected official.

All reports required by the permit and other information requested by the department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

The authorization is made in writing by a person described above and submitted to the department; and

The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

If an authorization under E. Signatory Requirements is no longer accurate for any reason, a new authorization satisfying the above requirements must be submitted to the department prior to or together with any reports, information, or applications to be signed by an authorized representative.

Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

F. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The following occurrences of noncompliance shall be included in the oral report to the department at 701.328.5210:

    1. Any lagoon cell overflow or any unanticipated bypass which exceeds any effluent limitation in the permit under G. Bypass of Treatment Facilities;

    2. Any upset which exceeds any effluent limitation in the permit under H. Upset Conditions; or

3. Violation of any daily maximum effluent or instantaneous discharge limitation for any of the pollutants listed in the permit.

2. A written submission shall also be provided within five days of the time that the permittee became aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected; and

   d. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

Reports shall be submitted to the address in **Part II.E. Reporting of Monitoring Results**. The department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the department at 701.328.5210 as identified above.

All other instances of noncompliance shall be reported no later than at the time of the next Discharge Monitoring Report submittal. The report shall include the four items listed in this subsection.

G. Bypass of Treatment Facilities

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to any of the following provisions in this section.

2. Bypass exceeding limitations-notification requirements.

   1. Anticipated Bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of bypass.

   2. Unanticipated Bypass. The permittee shall submit notice of an unanticipated bypass as required under F. Twenty-four Hour Notice of Noncompliance Reporting.

3. Prohibition of Bypass. Bypass is prohibited, and the department may take enforcement action against a permittee for bypass, unless:

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

   c. The permittee submitted notices as required under the 1. Anticipated Bypass subsection of this section.

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The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three (3) conditions listed above.

H. Upset Conditions

An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of the following paragraph are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and the permittee can identify its cause(s);

2. The permitted facility was, at the time being, properly operated;

3. The permittee submitted notice of the upset as required under F. Twenty-four Hour Notice of Noncompliance Reporting and

4. The permittee complied with any remedial measures required under I. Duty to Mitigate.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. The permittee, at the department's request, shall provide accelerated or additional monitoring as necessary to determine the nature and impact of any discharge.

J. Removed Materials

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not be directly blended with or enter either the final plant discharge and/or waters of the state. The permit issuing authority shall be contacted prior to the disposal of any sewage sludges. At that time, concentration limitations and/or self-monitoring requirements may be established.

K. Duty to Reapply

Any request to have this permit renewed should be made six months prior to its expiration date.

IV. GENERAL PROVISIONS

A. Inspection and Entry

The permittee shall allow department and EPA representatives, at reasonable times and upon the presentation of credentials if requested, to enter the permittee's premises to inspect the wastewater treatment facilities and monitoring equipment, to sample any discharges, and to have access to and copy any records required to be kept by this permit.

B. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the department and EPA. As required by the Act, permit applications, permits, and effluent data shall not be considered confidential.

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C. Transfers
This permit is not transferable except upon the filing of a Statement of Acceptance by the new party and subsequent department approval. The current permit holder should inform the new controller, operator, or owner of the existence of this permit and also notify the department of the possible change.

D. New Limitations or Prohibitions
The permittee shall comply with any effluent standards or prohibitions established under Section 306(a), Section 307(a), or Section 405 of the Act for any pollutant (toxic or conventional) present in the discharge or removed substances within the time identified in the regulations even if the permit has not yet been modified to incorporate the requirements.

E. Permit Actions
This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans, changes in sewage sludge practices, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or sewage sludges. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

F. Need to Halt or Reduce Activity Not a Defense
It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

G. State Laws
Nothing in this permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation preserved under Section 510 of the Act.

H. Oil and Hazardous Substance Liability
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

I. Property Rights
The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

J. Severability
The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

V. INDUSTRIAL PRETREATMENT PROGRAM
Contributing Industries and Pretreatment Program Requirements

A. Standard Requirements
Permittee shall operate an industrial pretreatment program in accordance with the following permit requirements developed pursuant to Section 402(b)(8) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403), and the approved pretreatment program

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submitted by the permittee. The pretreatment program was approved on June 30, 2004. The approved pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

1. Industrial user information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all Industrial Users are properly permitted and/or controlled. The records shall be maintained and updated as necessary;

2. The permittee shall sample and inspect each Significant Industrial User (SIU) at least once per calendar year (40 CFR Section 403.8(f)(2)(v)). This is in addition to any industrial self-monitoring activities. If the permittee performs sampling for any SIU, then the permittee shall perform any repeat sampling and analysis within 30 days of becoming aware of the violation (40 CFR Section 403.12(g)(2));

3. The permittee shall evaluate whether each SIU needs a plan to control sludge. SIUs must be evaluated within 1 year of being designated an SIU. Where needed, the permittee shall require the SIU to prepare or update, and then implement the plan. Where a slug prevention plan is required, the permittee shall ensure that the plan contains at least the minimum elements required in 40 CFR Section 403.8(f)(2)(vi). If required, the permittee shall incorporate slug control requirements into the control mechanism for the SIU (40 CFR, Section 403.8(f)(1)(iii)(B)(6)).;

4. The permittee shall investigate instances of non-compliance with pretreatment standards and requirements indicated in reports and notices required under 40 CFR 403.12, or indicated by analysis, inspection, and surveillance activities.

5. The permittee shall enforce all applicable pretreatment standards and requirements and obtain remedies for noncompliance by any industrial user.

6. The permittee shall control, through the legal authority in the approved pretreatment program, the contribution to the POTW by each industrial user to ensure compliance with applicable pretreatment standards and requirements. In the case of industrial users identified as significant under 40 CFR Section 403.3(v), this control shall be achieved through permit, order, or similar means and shall contain, at a minimum, the following conditions:

    a. Statement of duration (in no case more than five (5) years);

    b. Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator.

    c. Effluent limits based on applicable pretreatment standards, categorical pretreatment standards, local limits, and state and local law.

    d. Self-monitoring, sampling, reporting, notification and record keeping requirements, including an identification of the pollutants to be monitored, sampling location, sampling frequency, and sample type, based on the applicable general pretreatment standards in 40 CFR 403, categorical pretreatment standards, local limits, and state and local law.

    e. Statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond deadlines mandated by federal statute or

regulation.

f. Requirements to control slug discharges, if determined by the POTW to be necessary.

7. The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program as required by 40 CFR Section 403.8(f)(3);

8. The approved program shall not be substantially modified by the permittee without the approval of the approval authority. Substantial and non-substantial modifications shall follow the procedures outlined in 40 CFR Section 403.18.

9. The permittee shall develop, implement, and maintain an enforcement response plan as required by 40 CFR Section 403.8(f)(5); and

10. The permittee shall notify all industrial users of the users' obligations to comply with applicable requirements under Subtitles C and D of the Resource Conservation and Recovery Act (RCRA) as required by 40 CFR Section 403.8(f)(2)(iii).

B. Local Limits

The permittee shall establish and enforce specific local limits to implement the provisions of 40 CFR sections 403.5(a) and (b), as required by 40 CFR Section 403.5(c). The permittee shall continue to develop these limits as necessary and effectively enforce such limits.

In accordance with EPA policy and with the requirements of 40 CFR sections 403.8(f)(4) and 403.5(c), the permittee shall determine if technically based local limits are necessary to implement the general and specific prohibitions of 40 CFR sections 403.5(a) and (b).

This evaluation should be conducted in accordance with the latest revision of the *"EPA Region VIII Strategy for Developing Technically Based Local Limits"*, and after review of EPA's *"Local Limits Development Guidance"* **July 2004**. Where the permittee determines that revised or new local limits are necessary, the permittee shall submit the proposed local limits to the approval authority in an approvable form in accordance with 40 CFR Section 403.18.

C. Toxic Pollutants Sampling and Reporting Requirements

The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D. The results of the metal analyses shall be reporting in the Annual Industrial Pretreatment Report and on DMR forms (001Y – annually). All other sampling requirements specified below shall be reported in the Annual Industrial Pretreatment Report submitted to the department by March 28.

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Table 4 – Industrial Pretreatment Monitoring and Reporting

Outfall 001				**Minimum Frequency of Monitoring**
Table II Priority Pollutants 40 CFR 122 Appendix D				2/Permit Cycle (5 year period)
Table III – Other Toxic Pollutants (Metals and Cyanide) and Total Phenols (40 CFR 122 Appendix D) (see below)				1/Year
40 CFR 122 Appendix D Table III				
Antimony, Total	Arsenic, Total	Beryllium, Total	Cadmium, Total	Chromium,
Copper, Total	Lead, Total	Mercury, Total	Nickel, Total	Selenium, Total
Silver, Total	Thallium, Total	Zinc, Total	Cyanide, Total	Phenols, Total
Hardness, Total a/				
Notes: a. A total hardness of the receiving stream needs to be determined every time the above parameters are tested. The hardness is used to calculate parameter criterion(s) according to the North Dakota State Water Quality Standards.				

If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in Table V, or any other pollutant in a quantity or concentration known or suspected to adversely affect POTW operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed on both the influent and the effluent as follows:

	Minimum Frequency of Monitoring
Table V Other Toxics	1/Year

Along with the permittee's pretreatment annual report, the permittee will submit a list of compounds included in Table V that are suspected or known to be present in its influent wastewater. This determination shall be based on a review of the permittee's pretreatment program records. The state permitting authority and/or approval authority may review and comment on the list and the list may be revised if, in the opinion of the state permitting authority and/or approval authority, the list is incomplete. The permittee will perform the analysis on the influent for the revised list of compounds for which there are acceptable testing procedures as follows:

	Minimum Frequency of Monitoring
Revised List of Compounds	1/Year if permittee samples for Table V

Where the pollutants monitored in accordance with this section are reported as being above the method detection limit, the results for these pollutants shall be reported in the permittee's pretreatment annual report, if required.

D. Sludge Sampling and Reporting Requirements

The permittee shall analyze the treatment facility sludge (biosolids) prior to disposal, for the presence of toxic pollutants listed in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table III at least once per year. If the permittee does not dispose of biosolids during the calendar year, the permittee shall certify to that in the Pretreatment Annual Report and the monitoring requirements in this paragraph shall be suspended for that calendar year.

1. The permittee shall review the pollutants in 40 CFR Part 122, Appendix D, Tables II and V.

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If any of the pollutants in these tables were above detection in the influent samples during the previous 2 years or the last two analyses, whichever is greater, the permittee shall sample and analyze its sewage sludge for these pollutants. The permittee shall perform this evaluation and analysis at least once per year.

2. The permittee shall use sample collection and analysis procedures as approved for use under 40 CFR Part 503 or specified by EPA..

3. The permittee shall report the results for these pollutants in the permittee's pretreatment annual report, if required by department.

E. Sample Analysis and Sampling Procedure

All analyses shall be in accordance with procedures established in 40 CFR Part 136. Where sampling methods are not specified, the influent and effluent samples collected shall be composite samples consisting of at least twelve (12) aliquots collected at approximately equal intervals over a representative 24-hour period and composited according to flow. Where automated composite sampling is inappropriate, at least four (4) grab samples shall be manually taken at equal intervals over a representative 24-hour period, and composited prior to analysis using approved methods; alternatively, the individual grab samples may be analyzed separately and the results from the respective grab samples mathematically combined based on flow (i.e., flow weighted) for the final result.

1. Additional Sampling Requirements
   In addition, the following are identified as pollutants of concern by sampling and analysis of your influent, effluent and/or sludge during local limits development, other chemical monitoring, or through activities associated with or as a result of whole effluent toxicity testing. The following pollutants of concern shall be sampled and analyzed in the influent and effluent as follows:

Parameters	**Minimum Frequency of Monitoring**
No additional parameters have been identified at this time.	

F. Annual Reporting Requirements

The permittee shall prepare annually a list of industrial users, which during the preceding twelve (12) months have significantly violated pretreatment standards or requirements. This list is to be published annually in a newspaper of general circulation in the permittee's service area as required by 40 CFR Section 403.8(f)(2)(viii).

In addition, on or before March 28, the permittee shall submit a pretreatment program annual report to the department (approval authority) permitting authority that contains the information requested by the department, or at a minimum the following information:

1. An updated list of all SIUs as defined at 40 CFR Section 403.3(v). For each SIU listed the following information shall be included:

   a. All applicable Standard Industrial Classification (SIC) codes and categorical determinations, as appropriate. In addition, a brief description of the industry and general activities;

   b. Permit status. Whether each SIU has an unexpired control mechanism and an explanation as to why any SIUs are operating without a current, unexpired control mechanism (e.g. permit);

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c. A summary of all monitoring activities performed within the previous twelve (12) months. The following information shall be reported.

   i. Total number of SIUs inspected; and
   ii. Total number of SIUs sampled.

2. For all industrial users that were in Significant Non-Compliance (SNC) during the previous twelve (12) months, provide the name of the violating industrial user; indicate the nature of the violations, the type and number of actions taken (administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. Indicate if the company returned to compliance and the date compliance was attained. Determination of SNC shall be performed as defined at 40 CFR Section 403.8(f)(2)(viii)(A-H).

3. A summary of all enforcement actions not covered by the paragraph above conducted in accordance with the approved Enforcement Response Plan, as required in 40 CFR Section 403.8(f)(5).

4. A list of all SIUs whose authorization to discharge was terminated or revoked during the preceding twelve (12) month period and the reason for termination;

5. A report on any Interference, pass through, upset or NPDES permit violations known or suspected to be caused by non-domestic discharges of pollutant and actions taken by the permittee in response;

6. Verification of publication of industrial users in SNC;

7. Identification of the specific locations, if any, designated by the permittee for receipt (discharge) of trucked or hauled waste, if modified;

8. Information as required by the approval authority or state permitting authority on the discharge to the POTW from the following activities:

   a. Ground water clean-up from underground storage tanks;
   b. Trucked or hauled waste; and,
   c. Ground water clean-up from RCRA or Superfund sites.

9. A description of all changes made during the previous calendar year to the permittee's pretreatment program that were not submitted as substantial or non substantial modifications to the department.

10. The permittee shall evaluate actual pollutants loadings against the approved Maximum Allowable Headworks Loadings (MAHLs). Where the actual loading exceeds the MAHL, the permittee shall immediately begin a program to either revise the existing local limit and/or undertake such other studies as necessary to evaluate the cause(s) of the excursion. The permittee shall provide a summary of its intended action.

11. Other information that may be deemed necessary by the department.

G. Pollutant Restrictions

The permittee shall prohibit the introduction of the following pollutants into the POTW:

1. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limit to, wastestreams with a closed cup flashpoint of less than

sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in 40 CFR Section 261.21;

2. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works are specifically designed to accommodate such discharges;

3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;

4. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

5. Heat in amounts which will inhibit biological activity in the POTW resulting in Interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit) unless the approval authority, upon request of the POTW, approves alternate temperature limits;

6. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

8. Any trucked or hauled pollutants, except at discharge points designated by the POTW; and,

9. Any specific pollutant that exceeds a local limitation established by the POTW in accordance with the requirements of 40 CFR Section 403.5(c) and (d).

10. Any other pollutant which may cause pass through or interference.

H. Notification Requirements

The permittee shall provide the department with adequate notice of any substantial change in the volume or character of pollutants being introduced into the treatment works by any SIU introducing pollutants into the treatment works at the time of application for the discharge permit. For the purposes of this section, “substantial change” shall mean a level of change which has a reasonable probability of affecting the permittee’s ability to comply with its permit conditions or to cause a violation of stream standards applied to the receiving water.

Adequate notice shall include information on: (1) the quality and quantity of effluent to be introduced into the treatment works, and (2) any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

I. Enforcement Actions

Section 309(f) of the Act provides that EPA may issue a notice to the POTW stating that a determination has been made that appropriate enforcement action must be taken against an industrial user for noncompliance with any pretreatment standards and requirements. The notice provides the POTW with thirty (30) days to commence such action. The issuance of such permit notice shall not be construed to limit the authority of the permit issuing authority or approval authority.

J. Enforcement Authority

The state permitting authority and/or the EPA retains, at all times, the right to take legal action against the industrial contributor for violations of a permit issued by the permittee, violations of any pretreatment standard or requirement, or for failure to discharge at an acceptable level under national standards issued by EPA under 40 CFR, chapter I, subchapter N. In those cases where a NDPDES permit violation has occurred because of the failure of the permittee to properly develop and enforce pretreatment standards and requirements as necessary to protect the POTW, the state permitting/approval authority shall hold the permittee responsible and may take legal action against the permittee as well as the indirect discharger(s) contributing to the permit violation.

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