

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

Public Notice Date: 5/22/2019

Public Notice Number: ND-2019-007

**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: 10/22/2018

Application Number: ND0021202

Applicant Name: Grafton City Of

Mailing Address: PO Box 578, Grafton, ND 58237

Telephone Number: 701.352.1561

Proposed Permit Expiration Date: 6/30/2024

**Facility Description**

The reapplication is for four waste stabilization ponds which service the City of Grafton. The discharge facility is located in the NW1/4, NW1/4, Section 20, Township 157N, Range 52W. Any discharge would be to the Park River, a Class II 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. 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 June 23, 2019 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  
ND0021202**

**PERMIT REISSUANCE**

**GRAFTON PUBLICLY OWNED TREATMENT WORKS**

**FACT SHEET DATE – April 2019**

**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) has oversight authority. In 1975, the State of North Dakota was delegated primacy of the NPDES program by EPA. The North Dakota Department of Environmental Quality (NDDEQ) 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 hereby 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 North Dakota Administrative Code 33.1-16 (NDAC), promulgated pursuant to North Dakota Century Code Chapter 61-28 (NDCC). The department uses North Dakota Pollutant Discharge Elimination System (NDPDES) as its permitting title.

The following regulations apply to municipal 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 them 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 any changes to the permit in **Appendix D - Response to Comments**.

## TABLE OF CONTENTS

<b>BACKGROUND INFORMATION</b>	<b>4</b>
<b>FACILITY DESCRIPTION</b>	<b>5</b>
History	5
Collection System Status	5
Treatment Processes	5
Discharge Outfall	5
<b>PERMIT STATUS</b>	<b>6</b>
<b>SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED</b>	<b>6</b>
Past Discharge Data	6
<b>PROPOSED PERMIT LIMITS</b>	<b>8</b>
<b>EFFLUENT LIMITATIONS</b>	<b>8</b>
<b>SELF-MONITORING REQUIREMENTS</b>	<b>9</b>
<b>TECHNOLOGY-BASED EFFLUENT LIMITS</b>	<b>10</b>
<b>SURFACE WATER QUALITY-BASED EFFLUENT LIMITS</b>	<b>10</b>
Numerical Criteria for the Protection of Aquatic Life and Recreation	11
Numerical Criteria for the Protection of Human Health	11
Narrative Criteria	11
Antidegradation	11
Mixing Zones	11
<b>EVALUATION OF SURFACE WATER QUALITY-BASED EFFLUENT LIMITS FOR NUMERIC CRITERIA</b>	<b>12</b>
BOD <sub>5</sub>	12
TSS	12
pH	12
E. coli	12
Oil and Grease, Visual	12
Ammonia as Nitrogen	13
WHOLE EFFLUENT TOXICITY	15
METALS	16
Phosphorus and Nitrogen (Nutrients)	16
<b>BIOSOLIDS</b>	<b>16</b>
<b>HUMAN HEALTH</b>	<b>16</b>
<b>MONITORING REQUIREMENTS</b>	<b>16</b>
<b>TEST PROCEDURES</b>	<b>16</b>
<b>OTHER PERMIT CONDITIONS</b>	<b>17</b>
<b>PRETREATMENT</b>	<b>17</b>
Federal and State Pretreatment Program Requirements	17
<b>BENEFICIAL REUSE</b>	<b>17</b>
Irrigation	17
Construction	18
Oil and Gas Production (including Hydraulic Fracturing)	19
Other Uses as Approved	20
<b>PERMIT ISSUANCE PROCEDURES</b>	<b>20</b>
<b>PERMIT ACTIONS</b>	<b>20</b>
<b>PROPOSED PERMIT ISSUANCE</b>	<b>20</b>

<b>APPENDIX A – PUBLIC INVOLVEMENT INFORMATION.....</b>	<b>21</b>
<b>APPENDIX B – GLOSSARY .....</b>	<b>23</b>
<b>APPENDIX C – DATA AND TECHNICAL CALCULATIONS .....</b>	<b>26</b>
<b>APPENDIX D – RESPONSE TO COMMENTS.....</b>	<b>30</b>

DRAFT

**BACKGROUND INFORMATION****Table 1 – General Facility Information**

Applicant:	City of Grafton
Facility Name and Address:	Grafton Publicly Owned Treatment Works 5 East 4 <sup>th</sup> St. Grafton, ND 58237
Permit Number:	ND0021202
Permit Type:	Major POTW – Renewal
Type of Treatment:	Waste Stabilization Pond System with Primary Cell Aeration
SIC Code:	4952
Discharge Location:	Park River, Class II Stream 001: Latitude: 48.4220889000 Longitude: -97.3863528000
Hydrologic Code:	09020310 – Park
Population:	4,350

**Figure 1 – Grafton Wastewater Treatment Facility Overview (Google Earth 5/16/2016)**

## **FACILITY DESCRIPTION**

### **History**

The city of Grafton's publicly owned treatment work (POTW) treats wastewater with a four (4) cell waste stabilization pond system. The first cell is an aeration cell, which utilizes six (6) mechanical aerators, with a surface area of two acres. The second and third cells have a surface area of 70 acres and the fourth cell has a surface area of 26 acres.

In 1992, Grafton upgraded the POTW with the addition of the fourth cell. With this addition an irrigation system was installed to allow irrigation of the city's golf course. Only water from secondary or tertiary treatment shall be used on the golf course. The treated water must be applied at a rate which will allow complete infiltration and not result in standing water. Whenever possible, irrigation shall take place during hours when the public does not have access to the area being irrigated. Signs must be visibly posted during irrigation and two hours after completion of irrigation. The signs must advise people that the water could pose a health concern and to avoid the irrigated area(s).

### **Collection System Status**

Grafton has a gravity flow collection system which utilizes thirteen (13) lift stations. The total population served is currently estimated to be 4,350.

### **Treatment Processes**

Raw wastewater (sewage) is sent to an aeration basin to help facilitate the breakdown of organic matter. This aeration basin utilizes 6 surface aerators. All 6 aerators are utilized during the summer and four are utilized during the winter unless the temperature is warm enough to operate all 6 of them. From there the wastewater is transferred to a series of three facultative lagoon cells, where detention time is used to continue the wastewater treatment process.

### **Discharge Outfall**

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 and unauthorized discharge within the specified timeframe outlined in this permit could subject such person(s) to criminal penalties as provided under the CWA.

Outfall 001. Active. Final Outfall			
Latitude: 48.4220889	Longitude: -97.3863528	County: Walsh	
Township: 157 N	Range: 52 W	Section: 20	QQ: BB
Receiving Stream: Park River		Classification: Class II	
Outfall Description: The treated effluent flows into the Park River. Prior to the 1992 upgrade, the outfall discharged to an adjacent coulee which drains into the Park River. During the upgrade, a one mile long thirty (30) inch pipe was added to move the outfall to the river bank. This outfall is not submerged and has no diffuser. The type of discharge is called a “Controlled Discharge” and is deemed to be non-continuous.			

Outfall 002. Non-Active. Final Outfall			
Latitude: 48.4082300	Longitude: -97.3859614	County: Walsh	
Township: 157 N	Range: 52 W	Section: 20	QQ: BB
Receiving Stream: Park River		Classification: Class II	
Outfall Description: Grafton POTW submitted a request on February 25, 2009 to have outfall 002 deactivated. This outfall is located in Cell 3 and is silted in and has not been used since the upgrade in 1992. Outfall 002 was deactivated in 2009.			

### PERMIT STATUS

The department issued the previous permit for this facility on July 1, 2014. The previous permit placed effluent limits on Biochemical Oxygen Demand (BOD<sub>5</sub>), Total Suspended Solids (TSS), pH, Ammonia as N, *E. coli*, Oil and Grease, Whole Effluent Toxicity (WET), and metals.

The department has been in contact with the City of Grafton to obtain information to reissue the permit. The department received EPA application Form 1 and 2A on October 22, 2018. The application was accepted by the department on October 22, 2018. Effluent sample data has been provided to the department through official laboratory reports and discharge monitoring reports.

### SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED

The department's assessment of compliance is based on review of the facility's Discharge Monitoring Report (DMR) forms and inspections conducted by the department. Ten (10) inspections of the facility were conducted during the previous permit cycle. Department staff last conducted a non-sampling compliance inspection on July 17, 2018.

### Past Discharge Data

The concentration of pollutants in the discharge was reported in discharge monitoring report forms. The effluent is characterized as shown in Table 2.

<b>Table 2 – Grafton POTW DMR Data Summary (July 1, 2014 to May 8, 2019)</b>					
<b>Parameter</b>	<b>Units</b>	<b>Range</b>	<b>Average</b>	<b>Permit Limit</b>	<b>Number of Exceedances</b>
<i>Effluent</i>					
BOD5	mg/l	1.5 – 21.1	4.86	25 – Avg 45 – Max	0
TSS	mg/l	5 – 27.2	9.46	30 – Avg 45 – Max	0
<i>E. coli</i>	Colonies per 100 ml	1 – 578	49.6	126 – Avg 409 – Max	2
pH	SU	7.84 – 9.39	NA	6.0 to 9.0	2
Ammonia as N	mg/l	0.1 – 3.26	0.70	1.84 – Summer 8.41 – Winter	0 0
Whole Effluent Toxicity (WET)	TUa	< 1	< 1	< 1	0
Flow	MGD	1.2 – 12.43	6.67	NA	NA
Discharge Duration	Days	6 - 11	8.2	NA	NA
Arsenic	mg/l	0.002 – 0.003	0.0027	340 µg/l	0
Cadmium	mg/l	0.0004 – 0.0008	0.0007	12.9 µg/l	0
Chromium	mg/l	0.0004 – 0.004	0.0028	1800 µg/l	0
Copper	mg/l	0.0044 – 0.0067	0.0058	74 µg/l	0
Cyanide	mg/l	0.004 – 0.016	0.011	22 µg/l	0
Hardness as CaCO <sub>3</sub>	mg/l	587 - 1048	587	NA	NA
Lead	mg/l	0.0004 – 0.002	0.0015	777 µg/l	0
Mercury	mg/l	0.00004 – 0.0002	0.00015	1.7 µg/l	0
Molybdenum	mg/l	0.0039 – 0.0076	0.0052	NA	NA
Nickel	mg/l	0.0037 – 0.0069	0.0056	2097 µg/l	0
Phenols	mg/l	0.02 – 0.06	0.047	0.3 mg/l	0
Selenium	mg/l	0.0011 – 0.004	0.003	20 µg/l	0
Silver	mg/l	0.0004 – 0.0008	0.00067	79 µg/l	0
Zinc	mg/l	0.008 – 0.024	0.0187	537 µg/l	0

**Notes:**

The Grafton POTW discharged nine (9) times during the above time frame.

- Two discharges in the month of May;
- Two discharges in the month of June;
- One discharge in the month of September;
- Four discharges in the month of November.

**PROPOSED PERMIT LIMITS****EFFLUENT LIMITATIONS**

The effluent limitations become effective on the effective date of the permit except for any parameters in which a delayed time has been determined. The proposed effluent limitations and the basis for the limitations are listed in Table 3 below:

Table 3: Proposed Effluent Limits				
	Effluent Limitations			
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Basis <sup>a</sup>
BOD <sub>5</sub> , mg/l	25	45	*	40 CFR 133.102(a)(2) Chapter 33.1-16-01-14(3)(c)(1) Previous Permit
pH, SU	Shall remain between 6.0 to 9.0			40 CFR 133.102(c) WQS
Total Suspended Solids (TSS), mg/l	30	45	*	40 CFR 133.102(b)(1) & (2) NDAC 33.1-16-01-14(3) Previous Permit
Ammonia as N, mg/l	Refer to Ammonia Table (Table 8)			WQS Previous Permit
<i>E. coli</i> , cfu/ 100 ml <sup>b</sup>	126	*	409	WQS Previous Permit BPJ
Oil & Grease, mg/l <sup>c</sup>	*	*	10	Previous Permit BPJ
Whole Effluent Toxicity (WET), TU <sub>a</sub>				40 CFR 122.44(d)(1)(iv-v) WQS Previous Permit
Notes:				
*	This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.			
The basis of the effluent limitations is given below:				
a.	“Previous Permit” refers to limitations in the previous permit. The NPDES regulations <b>40 CFR Part 122.44(1)(1) Reissued permits</b> require that when a permit			

<b>Table 3: Proposed Effluent Limits</b>				
<b>Parameter</b>	<b>Effluent Limitations</b>			
	<b>Avg. Monthly Limit</b>	<b>Avg. Weekly Limit</b>	<b>Daily Maximum Limit</b>	<b>Basis <sup>a</sup></b>
	<p>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 <b>40 CFR Part 122.62</b>.</p> <p>“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.</p> <p>“BPJ” refers to best professional judgement.</p>			
b.	<p><i>E.coli</i> shall not exceed 126 organisms perm 100 ml as a geometric mean of representative samples collected during any 30-day consecutive period, nor shall samples exceed 409 organisms permit 100 ml for any one day. This limit applies from April 1 through October 31.</p>			
c.	<p>The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.</p>			

### SELF-MONITORING REQUIREMENTS

All effluent is sampled at a point leaving Cell 4 but prior to entering waters of the state. A pre-discharge sample must be taken prior to the start of any discharge. This analysis shall be reported to the department. A pre-discharge sample shall be tested for BOD<sub>5</sub>, TSS, pH, *E. coli*, and Ammonia as N. This pre-discharge sample shall represent the first week discharge sample. An additional sample of the actual discharge shall be taken and analyzed on a weekly basis for the duration of the discharge.

<b>Table 4: Self-Monitoring Requirements</b>		
<b>Effluent Parameter</b>	<b>Frequency</b>	<b>Sample Type <sup>a</sup></b>
BOD <sub>5</sub> , mg/l	Weekly	Grab
pH, SU	Weekly	Grab
TSS, mg/l	Weekly	Grab
Ammonia as N, mg/l	Weekly	Grab
<i>E. coli</i> , cfu/100 ml <sup>b</sup>	Conditional/Weekly	Grab
Oil & Grease, mg/l <sup>c</sup>	Daily	Visual <sup>c</sup>
Park River, cfs	Daily	USGS gage 05090000
Nitrogen, Total mg/l	Monthly	Grab
Phosphorus, Total mg/l	Monthly	Grab

Flow, MGD	Daily	Instantaneous
Total Drain, MG	Monthly	Calculated
WET, TU <sub>a</sub>	Conditional/Quarterly	Grab
Metals, mg/l <sup>d</sup>	Yearly	Grab
<b>Notes:</b>		
a.	Refer to Appendix B for definitions.	
b.	This parameter shall be monitored for discharges from April 1 through October 31.	
c.	If a visible sheen of floating oil is observed in the discharge, a grab sample shall be collected and the department shall be contacted.	
d.	Refer to Part V(F), Industrial Waste Management, Sampling and Reporting Requirements of the permit.	

### TECHNOLOGY-BASED EFFLUENT LIMITS

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 in NDAC Chapter 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.

NDAC Chapter 33.1-16-01-30 incorporates by reference 40 CFR 133 which list the following technology-based limits for BOD<sub>5</sub>, TSS, and pH:

<b>Table 5: Technology-based Limits</b>		
<b>Parameter</b>	<b>30 Day Average</b>	<b>7 Day Average</b>
BOD <sub>5</sub>	30 mg/l	45 mg/l
TSS	30 mg/l	45 mg/l
pH	Remain between 6.0 to 9.0	--
Percent Removal	85% BOD <sub>5</sub> 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 (25) 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.

### 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 waters. 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 on a waste load allocation developed during a basin wide total maximum daily load (TMDL) study. TMDLs result from a scientific study of the water body and are developed in order to reduce pollution from all sources.

The stream reach of the receiving water body that the facility discharges to (ND-0902310-013-S\_00) is listed as impaired under the 2016 Integrated Section 303(d) List of Waters Needing TMDLs Report. The stream reach is listed as fully supporting but threatened for the designated use of fish and other aquatic biota due to impairment by selenium. The TMDL priority for this stream reach is low.

The department proposes to continue with the permit requirement of yearly metals sampling, which includes selenium. All selenium sample results taken during the previous permit were below method detection level.

### **Numerical Criteria for the Protection of Aquatic Life and Recreation**

Numerical water quality criteria are listed in the WQS for surface waters (NDAC Chapter 33.1-16-02.1). They specify the maximum levels of pollutants allowed in 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 WQS also include radionuclide criteria to protect humans from the effects of radioactive substances.

### **Narrative Criteria**

Narrative water quality criteria (NDAC Chapter 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(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<sub>5</sub>**

The department has reviewed the BOD<sub>5</sub> data and sampling frequency for the Grafton POTW. No exceedances occurred for this parameter. The department proposes to continue with the 25 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of weekly.

### **TSS**

The department has reviewed the TSS data and sampling frequency for the Grafton POTW. No exceedances occurred for this parameter. The department proposes to continue with the 25 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of weekly.

### **pH**

The department has reviewed the pH data and sampling frequency for the Grafton POTW. Two (2) exceedances occurred for this parameter. The department proposes to continue with the limitation of remaining between 6.0 and 9.0 s.u. with a sampling frequency of weekly.

### ***E. coli***

The department has reviewed the *E. coli* data and sampling frequency for the Grafton POTW. Two (2) exceedances occurred for this parameter. Based on the WQS, the department proposes to continue with a 126 organisms per 100 ml as a monthly geometric mean and 409 organisms per 100 ml as a daily maximum limitation with a sampling frequency of once per week. The WQS only applies during the recreation season from May 1 through September 30. The department shall extend the standard from April 1 to October 31. The department used BPJ to extend this period to ensure the recreation season is covered.

### **Oil and Grease, Visual**

The department has reviewed the oil and grease, visual data and sampling frequency. No visual detections occurred for this parameter; therefore, no oil and grease samples were taken. The department proposes to continue visual checks for sheen with a sampling frequency of daily. Should a sheen occur, the department proposes to continue with a 10 mg/l (daily maximum) limitation.

**Ammonia as Nitrogen**

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.

Ammonia is a toxic pollutant present in the discharge. The department conducted a Reasonable Potential (RP) analysis (see Appendix C) to determine whether effluent limits for ammonia would be required in this permit, using procedures given in "Technical Support Document (TSD) For Water Quality-based Toxics Control"; EPA/505/2-90-001; March 1991.

The department found reasonable potential for the Grafton POTW to cause a violation of the state WQS for ammonia.

North Dakota's aquatic life standards for ammonia are dependent upon the pH and the temperature of the receiving water body. To determine the applicable WQS, pH and temperature data from the nearest surface water station, Park River (USGS gage station 05090000) was used.

**Table 6: Park River Data (May 2014 – May 2019)**

Date	Temperature °C	pH
5/2014	9.4	8
6/2014	20.6	8
7/2014	22.2	8.2
8/2014	22.1	8
10/2014	8.2	8.3
12/2014	0.7	7.5
4/2015	8.2	8.7
4/2015	9.5	8.6
5/2015	6.4	7.9
5/2015	15.6	7.7
6/2015	22.4	8
8/2015	18	8.2
10/2015	6.7	8.1
1/2016	0.6	7.6
4/2016	1.3	8.6
4/2016	7.1	8.2
5/2016	17.6	7.9
6/2016	19.8	7.9
7/2016	21.2	7.8
8/2016	23.7	7.9
10/2016	8.5	7.9
1/2017	0	-
4/2017	5.3	7.8
4/2017	9.7	7.9
5/2017	11.8	8.2
6/2017	18.7	7.9
7/2018	21.6	7.8

**Table 6: Park River Data (May 2014 – May 2019)**

Date	Temperature °C	pH
8/2017	21.8	7.9
10/2017	9.9	8.2
1/2018	0.1	7.8
4/2018	6.8	7.8
5/2018	16.1	8.7
5/2018	17.1	8.4
6/2018	21.5	7.9
7/2018	26	8.2
8/2018	18.8	8.1
10/2018	5.6	8.2
2/2019	0.1	7
4/2019	7.2	7.6
4/2019	11	7.7

Using the above data, the following table shows the applicable criterions for determining reasonable potential:

**Table 7: Ammonia WQS**

Condition	Period <sup>a</sup>	Salmonids Present	Early Life Stages Present	Ambient Condition		Water Quality Standard (mg/l)
				pH	Temperature °C	
Acute	Winter	No	NA	8.2 <sup>b</sup>	NA	5.73
Acute	Summer	No	NA	8.7 <sup>c</sup>	NA	2.20
Chronic	Winter	NA	Yes	7.8 <sup>d</sup>	0.475 <sup>d</sup>	9.94
Chronic	Summer	NA	Yes	8.2 <sup>d</sup>	21.2 <sup>d</sup>	2.91
Notes:						
a. Winter is defined as November 1 through March 31 and summer as April 1 through October 31.						
b. Was unable to calculate the 95 <sup>th</sup> percentile of the seasonal data. Using BPJ, the department determined that 8.2 for pH was an appropriate indicator of the ambient condition in the Park River.						
c. Based on the 95 <sup>th</sup> percentile of the seasonal data.						
d. Based on the 75 <sup>th</sup> percentile of the seasonal data.						

A discharge ammonia criterion will be dependent on river flow, discharge rate, river pH and the effluent ammonia concentration. This determination shall be in accordance to the formula specified in the latest revision of the state WQS and shown below:

**Table 8: Ammonia as N Effluent Limitations Calculations (Chapter 33.1-16-02.1)****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:

$$\frac{(0.0577}{(1+10^{7.688-\text{pH}})} + \frac{2.487}{1+10^{\text{pH}-7.688}}) \bullet \text{CV};$$

where CV = 2.85, when  $T \leq 14^{\circ}\text{C}$ ; or  
 $\text{CV} = 1.45 \cdot 10^{0.028 \cdot (25-T)}$ , when  $T > 14^{\circ}\text{C}$ .  
 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:

$$\frac{(0.411}{(1+10^{7.204-\text{pH}})} + \frac{58.4}{1+10^{\text{pH}-7.204}})$$

where salmonids are absent;

Note – For the above calculations, the permittee receives ten percent of stream flow for dilution at time of discharge based on the flow of the receiving stream. In-stream concentration will be calculated on a mass-balance basis using the following formula and percentile numbers for river pH and temperature from table 7:

In-stream concentration =  $(Q_u \cdot C_u + Q_e \cdot C_e) / (Q_u + Q_e)$  where

$Q_u$  = 10% of the receiving stream flow parameter

$C_u$  = Receiving stream ammonia parameter

$Q_e$  = Effluent flow parameter

$C_e$  = Ammonia as N parameter

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

#### **WHOLE EFFLUENT TOXICITY**

40 CFR 122.21(j) specifies which POTWs must conduct whole effluent toxicity (WET) testing. WET testing is required for facilities with (1) a design influent flow greater than one million gallons per day; (2) an approved pretreatment program. The Director may require other facilities to conduct WET testing based on the following considerations: (1) variability of the pollutants or pollutant parameters in the POTW effluent; (2) ratio of effluent flow to receiving stream flow; (3) existing controls on point and nonpoint sources, including total maximum daily load calculations for the water body segment and the relative contribution of the POTW; (4) receiving stream characteristics.

The department's analysis has determined that toxic effects caused by unidentified pollutants in the effluent are unlikely as no toxicity has been shown in the previous permit WET tests. An acute toxicity limit of  $< 1.0$  TU is proposed for this permit renewal.

The Grafton POTW will be required to perform a single species acute WET test on the first discharge made each calendar year of each of the following species; fathead minnow or *Ceriodaphnia dubia*. These tests shall be run one test per discharge season on an alternating species schedule.

## **METALS**

The department has reviewed the metals data and sampling frequency for Grafton POTW (Appendix C). Parameters that showed an exceedance of WQS reflected sample results that were below method detection level. The department proposes to continue monitoring for this parameter with a sampling frequency of annually.

## **Phosphorus and Nitrogen (Nutrients)**

Nutrient monitoring was included in this permit. According to the North Dakota Nutrient Reduction Strategy for Surface Waters, Grafton POTW 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 nutrients (total nitrogen (TN) and total phosphorus (TP)) during the permit. This monitoring information will be evaluated as part of the nutrient evaluation of the Park River.

## **BIOSOLIDS**

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

## **HUMAN HEALTH**

North Dakota's water quality standards include numeric human health-based criteria that the department must consider when writing NDPDES permits. 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 at the next permit reissuance.

## **MONITORING REQUIREMENTS**

The department requires monitoring, recording, and reporting (NDAC Chapter 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 the permit's limits.

## **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 10 percent of the actual amount.

## **OTHER PERMIT CONDITIONS**

### **PRETREATMENT**

#### **Federal and State Pretreatment Program Requirements**

Under the terms of the "Memorandum of Understanding between North Dakota Department of Environmental Quality and the United States Environmental Protection Agency, Region 8" (2005), NDDEQ has been delegated authority to administer the 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 requirements for a Pretreatment Program are contained in Title 40, part 403 of the Code of Federal Regulations. Under the requirements of the Pretreatment Program (40 CFR 403.8(f)(1)(iii)), the department is required to approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) (40 CFR 403.8(f)(1)(i)).

### **BENEFICIAL REUSE**

#### **Irrigation**

Only wastewater that has received secondary or tertiary treatment may be used for irrigation provided soil and water compatibility testing confirms the water is suitable for irrigation. Wastewater used for irrigation shall be applied at a rate which would allow complete infiltration and not result in ponding or runoff from the irrigated area.

Agricultural land may be irrigated provided the crop is not used for human consumption. Forage crops used for livestock consumption or pastures irrigated with wastewater shall not be harvested or grazed within 30 days of a wastewater application.

Public properties such as golf courses or parks may be irrigated provided the treated wastewater meets the following quality criteria.

**Table 9 - Beneficial Reuse-Irrigation Requirements**

Parameter	Discharge Limitations	Monitoring Frequency	
		Measurement Frequency	Sample Type
BOD <sub>5</sub> (mg/l)	30.0	1 per 14 days	Grab
TSS (mg/l)	45.0	1 per 14 days	Grab
<i>E. Coli</i> (number/100 ml)	126	Weekly	Grab

Whenever possible, irrigation shall take place during hours when the public does not have access to the area being irrigated. If the public has constant access to an area, signs must be posted in visible areas during irrigation and for two hours after irrigation is completed. The signs must advise people that the water could pose a health concern and to avoid the irrigated area.

Worker and public contact with treated wastewater should be minimized. Where frequent contact is likely, a higher level of disinfection should be provided such as achieving *E. coli* counts less than 14 colonies per 100 ml.

Avoid application within 100 feet of areas which have unlimited access (i.e., yards) or within 300 feet of potable water supply wells.

Runoff that occurs from irrigated areas shall be monitored at the frequencies and with the types of measurements described in Part I(B).

The permittee shall maintain monitoring records indicating the location and usage (e.g., park or agricultural) of the land being irrigated, the dates irrigation occurred, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

### **Construction**

Treated domestic wastewater may be used for construction purposes such as soil compaction, dust suppression and washing aggregate, provided the following conditions are met.

The wastewater intended for use in construction, must at a minimum, receive secondary treatment.

Prior to using treated wastewater, a sample from the prospective source must be tested and meet the criteria set below. In addition, the test results for *E. coli* must be provided to the department prior to use. Results from samples up to two (2) weeks old will be considered valid. The water quality limitations and minimum sampling frequencies recommended for wastewater used in construction are provided in the following table.

**Table 10 - Beneficial Reuse-Construction Requirements**

Parameter	Limitations (Maximum)	Measurement Frequency	Sample Type
BOD <sub>5</sub> (mg/l)	30	Monthly	Grab
TSS (mg/l)	100	Monthly	Grab
<i>E. Coli</i> (number/100 ml)	126	Weekly	Grab

In some systems chlorination is available. Chlorination is particularly desirable when frequent worker contact with the treated wastewater is likely or when the public may have constant access to areas where the wastewater is being used. Maintaining a chlorine residual of at least 0.1 mg/l is recommended.

While the conventional methods for treating domestic wastewater are generally effective in reducing infectious agents (bacteria, viruses, parasites) to acceptable levels, direct reuse of treated wastewater can pose a health concern. Additional precautions to consider are:

1. Worker and public contact with treated wastewater should be minimized.
2. Where frequent worker contact is likely a higher level of disinfection should be provided, such as achieving *E. coli* counts less than 14/100 ml.
3. Work closely with the treatment system operator to ensure treated wastewater quality is suitable when it is drawn for construction purposes.
4. Apply the treated wastewater in a manner that does not result in runoff or ponding.

Runoff that occurs from application areas shall be monitored at the frequencies and with the types of measurements described in Part I(B).

The permittee shall maintain monitoring records indicating the location and usage of the land where application occurs, the dates application occurred, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

### **Oil and Gas Production (including Hydraulic Fracturing)**

The specific user of the wastewater may determine the specific treatment requirements for receiving wastewater.

The permittee shall maintain monitoring records indicating the specific user, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

### **Other Uses as Approved**

The permittee must consult with the department before beneficially reusing wastewater for purposes not identified in this permit.

## **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 the WQS, 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.

### **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 and 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 permit to the **City of Grafton 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 will place a Public Notice of Draft on **May 22, 2019** in the **Walsh County Record** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

- Tells 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, 4<sup>th</sup> 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: 5/22/2019

Public Notice Number: ND-2019-007

**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: 10/22/2018

Application Number: ND0021202

Applicant Name: Grafton City Of

Mailing Address: PO Box 578, Grafton, ND 58237

Telephone Number: 701.352.1561

Proposed Permit Expiration Date: 6/30/2024

**Facility Description**

The reapplication is for four waste stabilization ponds which service the City of Grafton. The discharge facility is located in the NW 1/4, NW 1/4, Section 20, Township 157N, Range 52W. Any discharge would be to the Park River, a Class II 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. 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 June 23, 2019 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 – GLOSSARY

### DEFINITIONS Standard Permit BP 2013.12.31

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  $n^{\text{th}}$  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 2010.03.24**

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.,  $100/\text{LC50}$ ).
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.,  $100/\text{NOEC}$ ).
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).

DRAFT

## **APPENDIX C – DATA AND TECHNICAL CALCULATIONS**

### **Metals Analysis**

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.

DRAFT

## FACT SHEET FOR NDPDES PERMIT ND0021202

CITY OF GRAFTON

**EXPIRATION DATE: JUNE 30, 2024**

Page 27 of 30

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 or an \* indicate a parameter that needs further evaluation. Parameters listed above must be analyzed using an EPA approved method that has a detection limit at or below the limits as listed in the current version of the North Dakota Standards of Quality for Waters of the State, NDAC 33.1-16-02.

Facility Name		Grafton		Print Date:	5/8/2019
Location		001M		Below are the current or calculated acute and chronic standards based on the data entered.	
Enter Grains/Gallon or Hardness - Total (CaCO3) mg/l		0	587		
Multiplying Factor:					
Enter Concentration Values				µg/l	µg/l
Parameter	Detect	mg/l	µg/l	µg/l	µg/l
Antimony				0	
Arsenic		0.003		3	340
Beryllium				0	
Cadmium	HD	0.0008		0.8	12.9
Chromium - Total		0.004		4	
Chromium (III)	HD			0	7683
Chromium (VI)				0	16
Copper	HD	0.0067		6.7	74
Lead	HD	0.002		2	777
Mercury		0.0002		0.2	1.7
Molybdenum - Total		0.0076		7.6	
Nickel	HD	0.0069		6.9	2097
Selenium		0.004		4	20
Silver	HD	0.0008		0.8	79
Thallium				0	
Zinc	HD	0.024		24	537
Cyanide - Total		0.016		16	22
Phenols		0.06		60	

**Comments:**

The maximum values reported for each parameter from discharges that occurred from July 1, 2014 - May 8, 2019 were used. Non-detects were entered at the detection limit value.

**Cadmium:** All results were below method detection level.

**Chromium - Total:** All results were below method detection level.

**Cyanide:** All results were below method detection level.

**Lead:** All results were below method detection level.

**Mercury:** All results were below method detection level.

**Selenium:** All results were below method detection level.

**Silver:** All results were below method detection level.

**Phenols:** All results were below method detection level.

**Zinc:** All results were below method detection level.

## DFLOW

USGS gage station 05090000 on the Park River was used to determine critical low flows. The season defined was May 1999 to May 2019. Critical low flows were calculated by the DFLOW (3.1b) program in the following areas:

- |              |          |           |       |
|--------------|----------|-----------|-------|
| • DFLOW 1Q10 | 0 CFS    | DFLOW 1B3 | 0 CFS |
| • DFLOW 7Q10 | 0.02 CFS | DFLOW 4B3 | 0 CFS |
| • DFLOW 30Q5 | 0 CFS    |           |       |

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.

#### **APPENDIX D – RESPONSE TO COMMENTS**

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

DRAFT

Permit No: ND0021202  
Effective Date: July 01, 2019  
Expiration Date: June 30, 2024

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 Grafton  
Grafton Publicly Owned Treatment Works (POTW)  
Grafton, ND

is authorized to discharge from its waste stabilization ponds

to the Park River, a Class II stream

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,  
June 30, 2024.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

---

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

BP 2019.05.21

This page is intentionally left blank

## TABLE OF CONTENTS

DEFINITIONS Standard Permit BP 2019.05.21 .....	5
DEFINITIONS Whole Effluent Toxicity (WET) BP 2017.04.06 .....	6
PERMIT SUBMITTALS SUMMARY .....	7
I. LIMITATIONS AND MONITORING REQUIREMENTS .....	8
A. Discharge Authorization .....	8
B. Effluent Limitations and Monitoring .....	8
C. Whole Effluent Toxicity (WET) Requirements BP 2011.06.13 .....	11
II. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 2017.08.21 .....	13
A. Representative Sampling (Routine and Non-Routine Discharges).....	13
B. Test Procedures.....	13
C. Recording of Results.....	13
E. Reporting of Monitoring Results.....	14
F. Records Retention .....	15
III. COMPLIANCE RESPONSIBILITIES.....	15
A. Duty to Comply .....	15
B. Proper Operation and Maintenance.....	15
C. Planned Changes.....	15
D. Duty to Provide Information .....	15
E. Signatory Requirements.....	15
F. Twenty-four Hour Notice of Noncompliance Reporting .....	16
G. Bypass of Treatment Facilities.....	17
H. Upset Conditions .....	17
I. Duty to Mitigate .....	18
J. Removed Materials .....	18
K. Duty to Reapply.....	18
IV. GENERAL PROVISIONS .....	18
A. Inspection and Entry.....	18
B. Availability of Reports .....	18
C. Transfers .....	18
D. New Limitations or Prohibitions .....	18
E. Permit Actions.....	18
F. Need to Halt or Reduce Activity Not a Defense .....	19
G. State Laws .....	19
H. Oil and Hazardous Substance Liability .....	19
I. Property Rights .....	19
J. Severability.....	19
V. INDUSTRIAL WASTE MANAGEMENT BP 2013.01.10 .....	19
A. General Responsibilities .....	19
B. Pollutant Restrictions .....	19
C. Approval Authority.....	20
D. Industrial Categories .....	20
E. Notification Requirements.....	20
F. Sampling and Reporting Requirements .....	21
G. Approval Authority Options .....	21
H. Enforcement Authority .....	22
VI. BENEFICIAL REUSES BP 2015.09.03 .....	22

A. Irrigation .....	22
B. Construction.....	23
C. Oil and Gas Production (including Hydraulic Fracturing).....	24
D. Other Uses as Approved .....	24

DRAFT

**DEFINITIONS Standard Permit BP 2019.05.21**

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  $n^{\text{th}}$  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.,  $100/\text{LC}_{50}$ ).
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.,  $100/\text{IC}_{25}$ ).
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).

## OUTFALL DESCRIPTION

Outfall 001. Active. Final Outfall			
Latitude: 48.4220889	Longitude: -97.3863528	County: Walsh	
Township: 157 N	Range: 52 W	Section: 20	QQ: BB
Receiving Stream: Park River		Classification: Class II	
Outfall Description: The discharge runs from Cell Four through a 30-inch pipe for one mile to the bank of the Park River. The outfall is not submerged and has no diffuser.			

Outfall 002. Non-Active. Final Outfall			
Latitude: 48.4082300	Longitude: -97.3859614	County: Walsh	
Township: 157 N	Range: 52 W	Section: 20	QQ: BB
Receiving Stream: Park River		Classification: Class II	
Outfall Description: Discharge is from Cell Three and runs into an adjacent coulee which drains to the Park River. The outfall pipe at this point has been silted in, causing the point to be inactive.			

## PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Frequency	First Submittal Date
001A	Discharge Monitoring Report	Monthly	August 31, 2019
001W	Discharge Monitoring Report	Quarterly	October 31, 2019
001M	Discharge Monitoring Report	Yearly	July 31, 2020
Application Renewal	NDPDES Application Renewal	1/permit cycle	January 1, 2024

## SPECIAL CONDITIONS

No special conditions have been determined at this time.

## **I. LIMITATIONS AND MONITORING REQUIREMENTS**

### **A. Discharge Authorization**

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfalls as specified to the following: **Park River**

No discharge shall occur from the lagoons until all pre-discharge parameters have been reviewed by the department. After the review process has been completed the permittee shall comply with the limitations of this permit.

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

### **B. Effluent Limitations and Monitoring**

1. 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
Biological Oxygen Demand (BOD <sub>5</sub> )	25 mg/l	45 mg/l	*	Weekly	Grab
pH <sup>a</sup>	Shall remain between 6.0 to 9.0 s.u. <sup>a</sup>			Weekly	Grab
Total Suspended Solids (TSS)	30 mg/l	45 mg/l	*	Weekly	Grab
Total Ammonia as N, mg/l <sup>b</sup>	Refer to Ammonia Table (Table 2)			Weekly	Grab
Escherichia coli ( <i>E. coli</i> ) <sup>c</sup>	126/100 ml	*	409/100 ml	Conditional/weekly	Grab
Oil & Grease, Visual <sup>d</sup>	*	*	*	Daily	Visual
Oil & Grease <sup>d</sup>	*	*	10 mg/l	Conditional/Daily	Grab
River Flow, cfs <sup>e</sup>	Report	*	Report Max Daily Value	Daily	Instantaneous
Nitrogen, Total mg/l <sup>f</sup>	Monitor Only			Monthly	Grab
Phosphorus, Total mg/l	Monitor Only			Monthly	Grab
Effluent Flow, MGD	Report Avg. Monthly Value	*	Report Max. Daily Value	Daily	Instantaneous
Total Drain, MGAL	*	*	Report Monthly Total	Monthly	Calculated
Whole Effluent Toxicity (WET)	Refer to Part 1(C)(1) of this permit			Conditional/Quarterly	Grab
Metals, Total	Refer to Part V(F) of this permit			Yearly	Grab

Notes:

- \*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.
- a. The pH, an instantaneous limitation, shall be between 6.0 (s.u.) and 9.0 (s.u.).
- b. This parameter limit will be dependent on pH of the receiving stream and the effluent ammonia concentration in mg/l determined in accordance to the formula specified in the latest revision of the State Water Quality Standards.
- c. *E.coli* shall not exceed 126 organisms perm 100 ml as a geometric mean of representative samples collected during any 30-day consecutive period, nor shall samples exceed 409 organisms permit 100 ml for any one day. This limit applies from April 1 through October 31.

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
d. The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, a grab sample shall be analyzed for oil and grease.					
e. River flow shall be recorded according to United States Geological Survey (USGS) gage station 05090000.					
f. Total nitrogen is a combination of Nitrate, Nitrite, and Total Kjeldahl Nitrogen (TKN).					
Stipulations:					
A pre-discharge sample must be taken prior to the start of any discharge. A grab sample shall be tested for BOD5, TSS, pH, Fecal Coliform, <i>E. coli</i> , and Ammonia as N.					
The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce sheen on the surface of the receiving water.					
Samples taken in compliance with the monitoring requirements specified in this permit shall be taken prior to leaving facility property or entering the receiving stream.					

Table 2: Ammonia as N Effluent Limitations Calculations (NDAC 33.1-16-02.1)

**Chronic Standard (Average Monthly Limit)**

The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed 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:

$$\frac{(0.0577}{(1+10^{7.688-\text{pH}})} + \frac{2.487}{1+10^{\text{pH}-7.688}} \bullet \text{CV};$$

where CV = 2.85, when  $T \leq 14^{\circ}\text{C}$ ; or  
 $\text{CV} = 1.45 \cdot 10^{0.028 \cdot (25-T)}$ , when  $T > 14^{\circ}\text{C}$ .

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 the numerical value given by the following formula:

$$\frac{(0.411}{(1+10^{7.204-\text{pH}})} + \frac{58.4}{1+10^{\text{pH}-7.204}}$$

where salmonids are absent; or

$$\frac{(0.275}{(1+10^{7.204-\text{pH}})} + \frac{39.0}{1+10^{\text{pH}-7.204}}$$

Where salmonids are present.

Note – For the above calculations, the permittee receives ten percent of stream flow for dilution (refer to Option 1) at time of discharge based on the flow of the receiving stream. In- stream concentration will be calculated on a mass-balance basis using the following formula:

In-stream concentration=  $(Q_u \cdot C_u + Q_e \cdot C_e)/(Q_u + Q_e)$  where

$Q_u$  = 10% of the receiving stream flow parameter  
 $C_u$  = Receiving stream ammonia parameter  
 $Q_e$  = Effluent flow parameter  
 $C_e$  = Ammonia as N parameter

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

### C. Whole Effluent Toxicity (WET) Requirements BP 2011.06.13

#### 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*.

A single species WET test shall be performed on the first discharge made each calendar year, unless specifically waived by the department. Thereafter, WET tests shall be run one test per discharge season on an alternating species schedule.

#### Toxicity is defined as:

**Acute test failure is defined as lethality to 50% or more of the test organisms exposed to 100% effluent or >1.0 TUa for *Ceriodaphnia dubia* 48 hour and fathead minnow 96 hour test.** The 48 hour and 96 hour effluent value must be <1.0 TUa to indicate a passing test. Any 48 hour or 96 hour effluent value of >1.0 TUa will constitute a failure. Tests in which the control survival is less than 90% are invalid and must be repeated.

Acute WET requirements for <b>Outfall 001</b>						
Effluent Dilution	0%(Control)	12.5%	25%	50%	75%	100%
Dilution Water	<b>Park River</b>					
Species and Test Type	<i>Ceriodaphnia dubia</i> - 48 Hour Acute - Static Renewal - 20°C					
	Fathead minnow - 96 Hour Acute - Static Renewal - 20°C					
Endpoint	TUa					
Compliance Point	<b>End-of-pipe</b>					

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 5.Toxicity Reduction Evaluation (TRE) shall be determined by the department. If no toxicity is found in the second test, testing shall occur as outlined in the permit.

The permittee shall report the following results of each toxicity test on the DMR for that reporting period:

***Pimephales promelas* (Fathead Minnow)**

- a. Report the highest TUa for Fathead minnow, Parameter No. TSN6C.

***Ceriodaphnia dubia* (Water Flea)**

- a. Report the highest TUa for *Ceriodaphnia dubia*, Parameter No. TSM3B.

## 2. Chronic Toxicity Testing

No chronic toxicity limits are imposed on this permit. Therefore, the permittee is not required to monitor or test for chronic toxicity.

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*.

## 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.

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.

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:

1. Submit an alternative control program for compliance with the numerical requirements; or
2. 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 2017.08.21**

### **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, 2020, the permittee may elect to electronically submit the following compliance monitoring data and reports instead of mailing paper forms. Beginning December 21, 2020, 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.
  - 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.

**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:

1. The authorization is made in writing by a person described above and submitted to the department; and
2. 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:
  - a. Any lagoon cell overflow or any unanticipated bypass which exceeds any effluent limitation in the permit under G. Bypass of Treatment Facilities;
  - b. Any upset which exceeds any effluent limitation in the permit under H. Upset Conditions; or
  - c. 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.
  - a. 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.
  - d. 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.

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.

**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 WASTE MANAGEMENT BP 2013.01.10**

**Major POTWs-Non Approved Pretreatment Program Requirements**

**A. General Responsibilities**

The permittee has the responsibility to protect the Publicly-Owned Treatment Works (POTW) from pollutants which would inhibit, interfere, or otherwise be incompatible with operation of the treatment works including interference with the use or disposal of municipal sludge.

**B. Pollutant Restrictions**

Pretreatment Standards (40 CFR Section 403.5) developed pursuant to Section 307 of the Federal Clean Water Act (the Act) require that the permittee shall not allow, under any circumstances, the introduction of the following pollutants to the POTW from any source of nondomestic discharge:

1. Any other pollutant which may cause Pass Through or Interference;
2. Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, waste streams 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;
3. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with a pH of lower than 5.0 s.u., unless the treatment facilities are specifically designed to accommodate such discharges;
4. 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;
5. 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 any treatment process at the POTW;

6. 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;
7. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through at the POTW;
8. 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;
9. Any trucked or hauled pollutants, except at discharge points designated by the POTW; and
10. Any specific pollutant which exceeds a local limitation established by the permittee in accordance with the requirements of 40 CFR Section 403.5 (c) and (d).

**C. Approval Authority**

**North Dakota was delegated the Industrial Pretreatment Program in September of 2005. The North Dakota Department of Environmental Quality, Division of Water Quality shall be the Approval Authority and the mailing address for all reporting and notifications to the Approval Authority shall be:**

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

**D. Industrial Categories**

In addition to the general limitations expressed above, more specific Pretreatment Standards have been and will be promulgated for specific industrial categories under Section 307 of the Act (40 CFR Part 405 et. Seq.).

**E. Notification Requirements**

The permittee must notify the Approval Authority, of any new introductions by new or existing industrial users or any substantial change in pollutants from any industrial user within sixty (60) days following the introduction or change. Such notice must identify:

1. Any new introduction of pollutants into the POTW from an industrial user which would be subject to Sections, 301, 306, and 307 of the Act if it were directly discharging those pollutants; or
2. Any substantial change in the volume or character of pollutants being introduced into the POTW by any industrial user;
3. For the purposes of this section, adequate notice shall include information on:
  - a. The identity of the industrial user;
  - b. The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge to be introduced into the POTW; and
  - c. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids produced at such POTW.

4. For the purposes of this section, a significant industrial user shall include:

- a. Any discharger subject to Categorical Pretreatment Standards under Section 307 of the Act and 40 CFR chapter I, subchapter N;
- b. Any discharger which has a process wastewater flow of 25,000 gallons or more per day;
- c. Any discharger contributing five percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant;
- d. Any discharger who is designated by the Approval Authority as having a reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standards or requirements.

#### F. Sampling and Reporting Requirements

The permittee shall sample and analyze the effluent for the following pollutants:

40 CFR 122 Appendix D Table III				
Antimony, Total	Arsenic, Total	Beryllium, Total	Cadmium, Total	Chromium, Total
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.				

The sampling shall commence within thirty (30) days of the effective date of this permit and continue at a frequency of once per year.

Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR Part 136. Where sampling methods are not specified the 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 a flow proportioned composite sample is not practical, the permittee shall collect at least three (3) grab samples, taken at equal intervals over a representative 24-hour period. Lagoon treatment systems may collect a single effluent grab sample.

The results of all analyses shall be attached to and reported along with the Discharge Monitoring Report (DMR) submitted for the end of that reporting period.

#### G. Approval Authority Options

At such time as a specific pretreatment limitation becomes applicable to an industrial user of the permittee, the Approval Authority may, as appropriate:

1. Amend the permittee's North Dakota Pollutant Discharge Elimination System (NDPDES) discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable Pretreatment Standards;
2. Require the permittee to specify, by ordinance, order, or other enforceable means, the type of

pollutant(s) and the maximum amount which may be discharged to the permittee's POTW for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the General Pretreatment Regulations at 40 CFR Part 403; and/or,

3. Require the permittee to monitor its discharge for any pollutant which may likely be discharged from the permittee's POTW, should the industrial user fail to properly pre-treat its waste.

#### H. Enforcement Authority

The Approval Authority retains, at all times, the right to take legal action against any source of nondomestic discharge, whether directly or indirectly controlled by the permittee, for violations of a permit, order or similar enforceable mechanism 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 North Dakota Pollutant Discharge Elimination System (NDPDES) permit violation has occurred because of requirements as necessary to protect the POTW, the North Dakota Department of Environmental Quality and/or Approval Authority shall hold the permittee and/or industrial user responsible and may take legal action against the permittee as well as the industrial user(s) contributing to the permit violation.

### VI. BENEFICIAL REUSES BP 2015.09.03

#### A. Irrigation

Only wastewater that has received secondary or tertiary treatment may be used for irrigation provided soil and water compatibility testing confirms the water is suitable for irrigation. Wastewater used for irrigation shall be applied at a rate which would allow complete infiltration and not result in ponding or runoff from the irrigated area.

Agricultural land may be irrigated provided the crop is not used for human consumption. Forage crops used for livestock consumption or pastures irrigated with wastewater shall not be harvested or grazed within 30 days of a wastewater application.

Public properties such as golf courses or parks may be irrigated provided the treated wastewater meets the following quality criteria.

Beneficial Reuse Parameters – Irrigation			
Parameter	Limitations (Maximum)	Monitoring Requirements	
	Daily Max	Sample Frequency	Sample Type
BOD <sub>5</sub> (mg/l)	30	1 per 14 days	Grab
TSS (mg/l)	45	1 per 14 days	Grab
<i>E. Coli</i> (number/100 mL)	126	Weekly	Grab

Whenever possible, irrigation shall take place during hours when the public does not have access to the area being irrigated. If the public has constant access to an area, signs must be posted in visible areas during irrigation and for two hours after irrigation is completed. The signs must advise people that the water could pose a health concern and to avoid the irrigated area.

Worker and public contact with treated wastewater should be minimized. Where frequent contact is likely, a higher level of disinfection should be provided such as achieving *E. coli* counts less than 14 colonies per 100 ml.

Avoid application within 100 feet of areas which have unlimited access (i.e., yards) or within 300 feet of potable water supply wells.

Runoff that occurs from irrigated areas shall be monitored at the frequencies and with the types of measurements described in Part I(B).

The permittee shall maintain monitoring records indicating the location and usage (e.g., park or agricultural) of the land being irrigated, the dates irrigation occurred, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

## B. Construction

Treated domestic wastewater may be used for construction purposes such as soil compaction, dust suppression and washing aggregate, provided the following conditions are met.

The wastewater intended for use in construction, must at a minimum, receive secondary treatment.

Prior to using treated wastewater, a sample from the prospective source must be tested and meet the criteria set below. In addition, the test results for *E. coli* must be provided to the department prior to use. Results from samples up to two (2) weeks old will be considered valid. The water quality limitations and minimum sampling frequencies recommended for wastewater used in construction are provided in the following table.

Beneficial Reuse Parameters – Construction			
Parameter	Limitations (Maximum)	Monitoring Requirements	
	Daily Max	Sample Frequency	Sample Type
BOD <sub>5</sub> (mg/l)	30	Monthly	Grab
TSS (mg/l)	100	Monthly	Grab
<i>E. Coli</i> (number/100 mL)	126	Weekly	Grab

In some systems chlorination is available. Chlorination is particularly desirable when frequent worker contact with the treated wastewater is likely or when the public may have constant access to areas where the wastewater is being used. Maintaining a chlorine residual of at least 0.1 mg/l is recommended.

While the conventional methods for treating domestic wastewater are generally effective in reducing infectious agents (bacteria, viruses, parasites) to acceptable levels, direct reuse of treated wastewater can pose a health concern. Additional precautions to consider are:

1. Worker and public contact with treated wastewater should be minimized.
2. Where frequent worker contact is likely a higher level of disinfection should be provided, such as achieving *E. coli* counts less than 14/100 ml.
3. Work closely with the treatment system operator to ensure treated wastewater quality is suitable when it is drawn for construction purposes.
4. Apply the treated wastewater in a manner that does not result in runoff or ponding.

Runoff that occurs from application areas shall be monitored at the frequencies and with the types of

measurements described in Part I(B).

The permittee shall maintain monitoring records indicating the location and usage of the land where application occurs, the dates application occurred, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

**C. Oil and Gas Production (including Hydraulic Fracturing)**

The specific user of the wastewater may determine the specific treatment requirements for receiving wastewater.

The permittee shall maintain monitoring records indicating the specific user, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

**D. Other Uses as Approved**

The permittee must consult with the department before beneficially reusing wastewater for purposes not identified in this permit.