

**North Dakota Department of Health Public Notice  
Modification of an NDPDES Permit**

Public Notice Date: 5/22/2017

Public Notice Number: ND-2017-013

**Purpose of Public Notice**

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

**Permit Information**

Application Date: 3/22/2017

Application Number: ND0022870

Applicant Name: Fargo City Of

Mailing Address: 200 3rd St N, Fargo, ND 58102

Telephone Number: 701.241.1525

Proposed Permit Expiration Date: 12/31/2018

**Facility Description**

The City of Fargo (covered under NDPDES permit #ND0022870) proposes to reduce its lower pH limit of 7.0 s.u to 6.5 s.u. for effluent discharged from only outfall 010 at the Waste Water Treatment Plant. The treatment plant is located at 3400 North Broadway, Fargo, ND. No other proposals were submitted and any discharge would be to the Red River of the North, a Class I stream.

**Tentative Determinations**

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

**Information Requests and Public Comments**

Copies of the application, draft permit, and related documents are available for review. Comments or requests should be directed to the ND Dept of Health, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by June 22, 2017 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.

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Application Number: ND0022870

Applicant Name: Fargo City Of

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Telephone Number: 701.241.8565

Proposed Permit Expiration Date: 12/31/2018

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**FACT SHEET MODIFICATION FOR NDPDES PERMIT**

**ND-0022870**

**CITY OF FARGO**

**DATE OF MODIFIED FACT SHEET – APRIL 2017**

**INTRODUCTION**

The current permit for the facility was issued by the North Dakota Department of Health (department) on January 1, 2014 and will expire December 31, 2018. At the request of the permittee, the department proposes to modify the current permit to change the effluent pH limit for the City of Fargo Waste Water Treatment Plant (WWTP).

The department may modify a North Dakota Pollutant Discharge Elimination System (NDPDES) permit when there are substantial changes to a facility or activity which occurred after the effective permit was issued that require the inclusion of conditions that are different or absent in the existing permit (NDAC chapter 33-16-01-25(2)). The department must prepare a draft permit with the proposed modifications, along with an accompanying fact sheet, and make it available for public review. In a permit modification, only those conditions to be modified will be reopened. All other aspects of the existing permit shall remain in effect for the duration of the existing permit (NDAC chapter 33-16-01-25(3)(c)). The department also must 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 modification may be sent (NDAC chapter 33-16-01-07). For more information regarding preparing and submitting comments about the fact sheet and permit modification, please see **Appendix A – Public Involvement**. Following the public comment period, the department may make changes to the permit modification. The department will summarize the responses to comments and changes to the permit modification in **Appendix D - Response to Comments**.

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**BACKGROUND INFORMATION**

General Facility Information

Applicant:	The City of Fargo, North Dakota
Address:	3400 North Broadway
Permit Number:	ND0022870
Permit Type:	Domestic – Major Municipal, Mechanical Wastewater Treatment System
Type of Treatment:	Secondary Treatment
Design Flow Rate	15.0 Million Gallons per Day (MGD)
SIC Code:	4952
Discharge Location:	Only Outfall 010
Population:	105,549



**Figure 1. Aerial Photograph of the Fargo Waste Water Treatment Plant – Fargo, ND (Google Earth 2012)**

## **FACILITY INFORMATION**

The City of Fargo owns and operates a major municipal wastewater treatment plant which treats all wastewater generated from residential, commercial, and industrial entities in Fargo. In addition, the plant treats wastewater from outside entities such as Reile's Acres, Highland Park, North River, Frontier, Prairie Rose, Briarwood, Oxbow, and the Southeast Cass Sewer District.

The mechanical wastewater plant is a trickling filter system with the capacity to treat an average daily flow of 15 million gallons per day (MGD) of domestic-strength sewage. The peak pumping capacity of the facility is 29 MGD. Treated wastewater from the plant is discharged continuously by gravity flow to the Red River. However, when the river stage reaches 20 feet or higher, the treated water is pumped from the plant to the city's six (6) 90-acre waste water stabilization ponds where it is stored until it can be discharged to the Red River. The lagoons are also used when the water quality does not meet discharge quality standards. Byproducts of the treatment process, primarily grit and biosolids, are hauled to the city landfill for disposal.

The current permit issued to this municipality expired September 30, 2012; however, the permit was administratively extended on September 2, 2012 due to an EPA inspection requiring additional permit information. The mechanical portion of the treatment system is located at 3400 North Broadway with a designed flow of 15 MGD. Any discharge from this facility would be to the Red River of the North, a Class I stream.

### **Treatment Process**

As wastewater is routed through the mechanical portion of the plant, it goes initially through mechanical bar screening, vortex grit removal, odor control, and pre-aeration. The wastewater is then diverted to one of seven primary clarifiers; three are 50-feet in diameter and four are 60-feet in diameter. The wastewater then goes to the biological trickling filters. One of the filters is a 150-foot diameter rock-media filter, and the other two are 125-foot diameter synthetic media filters. The wastewater then passes from one (1) of two (2) 110-foot diameter intermediate clarifiers to the two (2) 125-foot diameter nitrification trickling filters. From the nitrification filters, the wastewater passes through a 150-foot diameter final clarifier, then to the chlorination/dechlorination chamber, and it can either be routed directly to the Red River or pumped 2.5 miles north to the six 90-acre stabilization ponds. This water routing is dependent on river background conditions and the effluent quality from the mechanical plant.

Fargo has six (6) 90-acre waste stabilization ponds (located in Sections 10 and 11 of Township 140 North, Range 49 West) with the capability to discharge from Cell 3 or Cell 5. No permit modification is proposed for the outfalls (007 and 009) associated with the Fargo lagoons.

Fargo's wastewater treatment facility continues to produce a quality effluent discharged on a continual basis to the Red River. As mentioned above, wastewater treatment consists of pretreatment/odor control, primary clarification, trickling filters, nitrification filters, final clarification, and disinfection. The recent improvements to residual management (additional digesters, sludge drying beds, and belt presses) have given the city more flexibility in addressing the sludge and wastewater treatment. The city presently uses the processed solids as cover at the municipal landfill. To reduce burden and increase the life capacity of the landfill,

the city is exploring options to address the residuals management issue. The mechanical plant allows for a continual discharge with the exception of the times when the river is at an elevation that would cause back-flow or when the mechanical plant effluent does not meet discharge permit limitations.

**Outfall Description**

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

**Outfall 010:** Active. This continuous discharge originates from the mechanical treatment plant located at 3400 North Broadway with the end-of-pipe at latitude 46.925287 N and longitude -96.78585 W. If there is a plant upset that results in the effluent exceeding discharge permit limitations, the city can pump the wastewater to its stabilization ponds. During periods of extremely high-river flows (i.e., flood events greater than 22 feet), the plant effluent will be diverted from the primary gravity-fed conveyance to a forced conveyance (latitude 46.925462 N and longitude -96.78646 W) to compensate for the receiving stream’s back pressure from the elevated water levels. This direct discharge to the Red River of the North (Class I stream) enters the river upstream of Discharge Points 007 and 009.

**PROPOSED MODIFIED PERMIT LIMIT for EFFLUENT pH**

The city formally requested a permit modification for only outfall 010 and only the effluent pH limit at its WWTP in a letter received on March 22, 2017 by the department. The permit was issued with pH limits set at 7.0 s.u – 9.0 s. u. based on the Water Quality Standard for Class I and IA streams in North Dakota. The city has requested a reduction of only the lower pH limit from 7.0 s.u. to 6.5 s.u. at only outfall 010.

The city of Fargo’s WWTP has a difficult time meeting its lower effluent pH permit limitation of 7.0 s.u. This is due primarily to the fact that the WWTP is designed to remove ammonia nitrogen. This nitrification process consumes alkalinity which drives the effluent pH down below 7.0 s.u. Because of this, the city hired Apex Engineering Group (Apex) to review the lower pH limit at outfall 010. Apex developed the technical memorandum with the supporting information and data used by the department for this major modification to the Fargo NDPDES permit.

The department provided Apex with a pH model to predict the water quality in the Red River after discharging effluent from the WWTP. All sampling required for the model was conducted by the city and Apex analyzed the sample results. The following historical data were used in the pH model for analysis:

Parameter	Value	Source
Upstream Alkalinity	211 mg/l as CaCO <sub>3</sub>	May/June 2016 sampling data
Upstream pH	7.5 – 9.0 s.u.	2007 – 2016 Red River data

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<b>Upstream Temperature</b>	<b>0.0 – 29.2°C</b>	<b>2007 – 2016 Red River data</b>
<b>Stream Flow</b>	<b>93 – 27,000 cfs</b>	<b>2007 – 2016 Red River data</b>
<b>WWTP Alkalinity</b>	<b>160 mg/l as CaCO<sub>3</sub></b>	<b>May/June 2016 sampling data</b>
<b>WWTP Temperature</b>	<b>12 – 22°C</b>	<b>2011 – 2016 daily monitoring data</b>
<b>WWTP Flow</b>	<b>17.5 – 25 mgd</b>	<b>WWTP Design Flow</b>

The model was used to simulate allowable pH in the WWTP effluent while maintaining a minimum river pH of 7.0 s.u. under varying conditions. Three scenarios (listed below) were analyzed using the “worst case” lowest Red River daily flow in the past 10 years instead of the more common 10 year low flow 7-day average condition (7Q10).

1. Under low river flow conditions, the actual values for pH and temperature were used as well as average daily design flow for the WWTP.
2. Under low flow winter conditions, the winter values for pH and temperature were used with average daily design flow.
3. When a peak flow conditions at the WWTP is occurring, the historical minimum flow in the river is 2620 cfs.

Based on the three modeled scenarios, the minimum effluent pH from the WWTP required to maintain a river pH of 7.0 are shown in the table below.

Scenario	Red River Flow	WWTP Effluent Flow	Minimum WWTP pH
Worst Case Low River Flow	93 cfs	17.5 mgd	6.24 s.u.
Worst Case Winter	93 cfs	17.5 mgd	6.14 s.u.
Worst Case WWTP Peak Flows	2620 cfs	25 mgd	<6.00s.u.

The allowable WWTP effluent pH under the low flow conditions (93 cfs) and worst case scenario for all other parameters can be 6.24 s.u. to maintain a downstream pH of 7.0 s.u. The historical pH values of the WWTP effluent range from 6.5 to 9.0 s.u. The scenario model used above is conservative with a safety factor. The city proposes an effluent pH limit 6.5 – 9.0 s.u. from only its 010 outfall - please refer to Appendix C – Technical Calculations for each “worst case” scenario’s DESCON spread sheet provided by APEX to the department.

Based on the supporting documentation provided to the department for the proposed reduction to the lower pH limit from only outfall 010 of the Fargo WWTP, the department proposes to adopt the requested lower pH limit of 6.5 s.u. for the Fargo WWTP effluent from only outfall 010 based on Best Professional Judgment (BPJ) and effective 7/1/2017 after a 30-day public comment period.

## APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to modify only the lower effluent pH limit at only outfall 010 in the North Dakota Pollutant Discharge Elimination System (NDPDES) permit issued to the city of Fargo. The permit includes the modified wastewater discharge limits. This modified fact sheet describes the facility, provides the technical support information, and the reasons the department requires a permit modification.

The department will place a Public Notice of Modification on **May 22, 2017** in the **Fargo Forum** to inform the public and to invite comment on the proposed modification to the NDPDES permit and fact sheet.

The Notice –

- Indicates where copies of the modified permit and fact sheet are available for public evaluation.
- Offers to provide assistance to accommodate special needs.
- Urges individuals 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 Health  
Division of Water Quality  
918 East Divide Avenue, 4<sup>th</sup> Floor  
Bismarck, ND 58501

The primary author of this permit modification and fact sheet is Jeff Roerick.

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## 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 Health, 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.

**APPENIX C – DATA AND TECHNICAL CALCULATIONS**

**Fargo WWTF - Worst Case Low Flow**

Calculation of pH of a mixture of two flows. Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Based on Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT		
1. Flow in River (cfs)	93.00	Daily low flow October 2014
2. Effluent Flow (mgd)	17.50	Average daily design flow
3. DILUTION FACTOR AT MIXING ZONE BOUNDARY $(Q_e + Q_r)/Q_e$	4.435	
4. UPSTREAM/BACKGROUND CHARACTERISTICS		
Temperature (deg C):	14.00	Actual Data
pH:	8.30	
Alkalinity (mg CaCO <sub>3</sub> /L):	211.00	
5. EFFLUENT CHARACTERISTICS		
Temperature (deg C):	20.50	Actual Data
pH:	6.24	Allowable pH to meet 7.0 in river
Alkalinity (mg CaCO <sub>3</sub> /L):	160.00	
OUTPUT		
1. IONIZATION CONSTANTS		
Upstream/Background pKa:	6.43	
Effluent pKa:	6.38	
2. IONIZATION FRACTIONS		
Upstream/Background Ionization Fraction:	0.99	
Effluent Ionization Fraction:	0.42	
3. TOTAL INORGANIC CARBON		
Upstream/Background Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	213.84	
Effluent Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	380.12	
4. CONDITIONS AT MIXING ZONE BOUNDARY		
Temperature (deg C):	15.47	
Alkalinity (mg CaCO <sub>3</sub> /L):	199.50	
Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	251.33	
pKa:	6.42	
pH at Mixing Zone Boundary:	7.00	

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**Fargo WWTF - Worst Case Winter Low Flow**

Calculation of pH of a mixture of two flows. Based on the procedure in EPA's DESCONE program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Based on Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT		
1. Flow in River (cfs)	93.00	Low flow
2. Effluent Flow (mgd)	17.50	Average daily design flow
3. DILUTION FACTOR AT MIXING ZONE BOUNDARY $(Q_e + Q_r)/Q_e$	4.435	
4. UPSTREAM/BACKGROUND CHARACTERISTICS		
Temperature (deg C):	0.00	Worst case winter
pH:	7.60	
Alkalinity (mg CaCO <sub>3</sub> /L):	211.00	
5. EFFLUENT CHARACTERISTICS		
Temperature (deg C):	12.00	Worst case winter
pH:	6.16	Allowable pH to meet 7.0 in river
Alkalinity (mg CaCO <sub>3</sub> /L):	117.00	
OUTPUT		
1. IONIZATION CONSTANTS		
Upstream/Background pKa:	6.57	
Effluent pKa:	6.45	
2. IONIZATION FRACTIONS		
Upstream/Background Ionization Fraction:	0.91	
Effluent Ionization Fraction:	0.34	
3. TOTAL INORGANIC CARBON		
Upstream/Background Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	230.69	
Effluent Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	342.87	
4. CONDITIONS AT MIXING ZONE BOUNDARY		
Temperature (deg C):	2.71	
Alkalinity (mg CaCO <sub>3</sub> /L):	189.80	
Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	255.99	
pKa:	6.54	
pH at Mixing Zone Boundary:	7.00	

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**Fargo WWTF - Worst Case Peak Flows**

Calculation of pH of a mixture of two flows. Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Based on Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT		
1. Flow in River (cfs)	2620.00	Low flow during peak WWTF flow
2. Effluent Flow (mgd)	25.00	Peak hourly design flow
3. DILUTION FACTOR AT MIXING ZONE BOUNDARY $(Q_e + Q_r)/Q_e$	68.738	
4. UPSTREAM/BACKGROUND CHARACTERISTICS		
Temperature (deg C):	29.00	Worst case summer
pH:	7.50	
Alkalinity (mg CaCO <sub>3</sub> /L):	211.00	
5. EFFLUENT CHARACTERISTICS		
Temperature (deg C):	21.00	Worst case summer
pH:	6.00	At 6.0 the river pH is 7.39
Alkalinity (mg CaCO <sub>3</sub> /L):	117.00	
OUTPUT		
1. IONIZATION CONSTANTS		
Upstream/Background pKa:	6.33	
Effluent pKa:	6.38	
2. IONIZATION FRACTIONS		
Upstream/Background Ionization Fraction:	0.94	
Effluent Ionization Fraction:	0.30	
3. TOTAL INORGANIC CARBON		
Upstream/Background Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	225.22	
Effluent Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	394.53	
4. CONDITIONS AT MIXING ZONE BOUNDARY		
Temperature (deg C):	28.88	
Alkalinity (mg CaCO <sub>3</sub> /L):	209.63	
Total Inorganic Carbon (mg CaCO <sub>3</sub> /L):	227.69	
pKa:	6.33	
pH at Mixing Zone Boundary:	7.39	

**APPENDIX D – RESPONSE TO COMMENTS**

Comments to be place here.

DRAFT

## I. LIMITATIONS AND MONITORING REQUIREMENTS

### A. Discharge Authorization

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfall as specified to the following: **Red River of the North**.

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

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

Effluent Limitations and Monitoring Requirements <b>Outfall 010 – Mechanical Plant</b>					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Biochemical Oxygen Demand (BOD <sub>5</sub> )(effluent)	25 mg/l	45 mg/l	N/A	3/week	Composite
Biochemical Oxygen Demand (BOD <sub>5</sub> )(influent)	Monitor only (mg/l)			1/week	Composite
Carbonaceous Biochemical Oxygen Demand (CBOD <sub>5</sub> ) <sup>f</sup>	Monitor only (mg/l)			1/week	Composite
Temperature (°C)			Report	Daily	Grab
pH <sup>a</sup>	Shall remain between 6.5 to 9.0 s.u.			Daily	Grab
Total Suspended Solids (TSS) (effluent)	30 mg/l	45 mg/l	NA	3/week	Composite
TSS (influent)	N/A			1/week	Composite
Escherichia coli (E. coli) <sup>b</sup>	126/100 ml	*	409/100 ml	3/week	Grab
Oil & Grease <sup>c</sup>	*	*	10 mg/l	Daily	Visual
Total Residual Chlorine			0.10 mg/l	1/day	Grab
Effluent Flow, MGD	Report	*	Report Minimum and Max. Daily Value	1/day	Instantaneous

Effluent Limitations and Monitoring Requirements <b>Outfall 010 – Mechanical Plant</b>					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Nitrite Plus Nitrate, Total (as N)	Monitor only (mg/l)			1/month	Composite
Nitrogen, Kjeldahl, Total	Monitor only (mg/l)			1/month	Composite
Ammonia as N <sup>g</sup>	Refer to the Ammonia Table.			3/week	Composite
Phosphorus, Total (as P)	Average for the month	Monitor only (mg/l)	Monitor only (mg/l)	1/week	Composite
Phosphorus, Total (as P)	Average for the month	Monitor only (kg/day)	Monitor only (kg/day)	1/week	Calculated
Total Flow, mgal	Report	*	N/A	1/month	Calculated
Acute Whole Effluent Toxicity (WET) <sup>d</sup>	Refer to Part I.C.1 of permit			1/month	Grab
Chronic Whole Effluent Toxicity (WET) <sup>e</sup>	Refer to Part I.C.2 of permit			1/year	Grab
Metals, Total (App D; Table III) <sup>h</sup>	Influent and Effluent			1/quarter	Composite
Toxic Organics (App D; Table II)	Influent and Effluent			1/ every 2 years	Composite
<b>Red River of the North Parameters – Collect same days as effluent ammonia as N.</b>					
Flow (cfs)			Report	3/week	Usable data source
pH (s.u.)	Downstream		Report	3/week	Usable data source
Temperature (°C)	Downstream		Report	3/week	Usable data source
Ammonia as N (mg/l)	Upstream		Report	3/week	Grab
Notes: The Department may specify additional discharge conditions or restrictions at any time to maintain water quality standards. Refer to Section VI – Industrial Wastewater Management for additional sampling requirements					
* This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.					

**Effluent Limitations and Monitoring Requirements Outfall 010 – Mechanical Plant**

Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
a.	A pH limitation of 6.5 – 9.0 with the exception that up to 10% of the representative samples collected during any three-year period may exceed this range, provided that lethal conditions are avoided. The original permit limit of 7.0 s.u. was modified to 6.5 s.u. and effective 7/1/2017.				
b.	E. coli shall not exceed 126 organisms per 100 ml as a geometric mean of representative samples collected during any 30-day consecutive period, nor shall more than 10 percent of samples collected during any 30-day consecutive period individually exceed 409 organisms per 100 ml. This limit applies from April 1 through October 31.				
c.	If a visible sheen or floating oil is observed at the discharge point, an oil & grease sample shall be collected to determine compliance with the 10 mg/l concentration limit.				
d.	Acute static-renewal toxicity tests on both species shall be conducted on separate grab samples monthly from Outfall 010.				
e.	At a minimum, the permittee shall conduct one chronic short-term toxicity test on both species from Outfall 010 once per year.				
f.	The city expressed interest in substituting CBOD <sub>5</sub> for BOD <sub>5</sub> from outfall 010. The secondary standard provides limitations based on CBOD <sub>5</sub> as an alternative to BOD <sub>5</sub> as specified in 40 CFR 133.102 (a)(1), (a)(2) and (a)(3). Samples shall be collected and reported during this permit cycle to provide support information should the city elect to adopt CBOD <sub>5</sub> limits at a later date.				
g.	Permittee will use Red River of the North parameters to calculate (refer to formula below) the real-time water quality standard for ammonia. This calculated limit will be compared to facility effluent data on ammonia and if the effluent value is greater than the calculated limit, the permittee will report a violation.				
h.	A total hardness of the receiving stream needs to be determined every time metals are sampled and analyzed. The hardness is used to calculate parameter criteria according to the state water quality standards. This sample shall be collected upstream of the final discharge sites.				
<p><b>Stipulations:</b></p> <p>The discharge shall not contain, in sufficient amounts to be unsightly or deleterious, any floating debris, oil, scum, and other floating materials attributable to municipal wastewater operations.</p> <p>Samples taken in compliance with the monitoring requirements specified in this permit shall be taken prior to the discharge leaving city property or entering the receiving stream.</p>					