

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

Public Notice Date: 11/21/2019

Public Notice Number: ND-2019-024

Purpose of Public Notice

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

Permit Information

Application Date: 6/25/2019

Application Number: ND0020486

Applicant Name: United States Air Force Minot

Mailing Address: 5 CES/CEIE, Minot AFB, ND 58705-5006

Telephone Number: 701.723.1964

Proposed Permit Expiration Date: 12/31/2024

Facility Description

The reapplication is for six wastewater stabilization ponds servicing the Minot Air Force Base. The discharge structures are located in the SW1/4, NW1/4, Section 7, Township 157N, Range 82W, and the SE1/4, SW1/4, Section 11, Township 157N, Range 83W. Any discharge would be to an unnamed drainage of Egg Creek.

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 FWPCA 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 December 21, 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.

Permit No: ND0020486
Effective Date: January 1, 2020
Expiration Date: December 31, 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 United States Air Force
Minot Air Force Base

is authorized to discharge from its wastewater stabilization ponds to

unnamed drainage way of Egg Creek

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,
December 31, 2024.

Signed this _____ day of _____, _____.

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

BP 2019.05.29

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DEFINITIONS Standard Permit BP 2019.05.29

1. **"Act"** means the Clean Water Act.
2. **"Average monthly discharge limitation"** means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.
3. **"Average weekly discharge limitation"** means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.
4. **"Best management practices"** (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
5. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **"Composite"** sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24-hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.
7. **"Daily discharge"** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.
8. **"Department"** means the North Dakota Department of Environmental Quality, Division of Water Quality.
9. **"DMR"** means discharge monitoring report.
10. **"EPA"** means the United States Environmental Protection Agency.
11. **"Geometric mean"** means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.
12. **"Grab"** for monitoring requirements, means a single "dip and take" sample collected at a representative point in the discharge stream.
13. **"Instantaneous"** for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.
14. **"Maximum daily discharge limitation"** means the highest allowable "daily discharge."

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”** (“TU_a”) is a measure of acute toxicity. TU_a is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end on the acute exposure period (i.e., 100/“LC50”).
21. **“Chronic toxic unit”** (“TU_c”) is a measure of chronic toxicity. TU_c is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (i.e., 100/“IC25”).
22. **“Inhibition concentration”**, (“IC”), is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., Interpolation Method).
23. **“LC50”** means the concentration of toxicant (e.g., effluent) which is lethal to 50 percent of the organisms exposed in the time period prescribed by the test.
24. **“No observed effect concentration”**, (“NOEC”), is the highest concentration of toxicant (e.g., effluent) to which organisms are exposed in a chronic toxicity test [full life-cycle or partial life-cycle (short term) test], that causes no observable adverse effects on the test organisms (i.e., the highest concentration of effluent in which the values for the observed responses are not statistically significantly different from the controls).

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 North Dakota Pollution Discharge Elimination System (NDPDES) permit is a violation of the Clean Water Act and could subject the person(s) responsible for such discharge to penalties under Section 309 of the Act. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within a reasonable time from first learning of an unauthorized discharge could subject such person(s) to criminal penalties as provided under the Clean Water Act.

System 1. Outfall 003. Active. Final.			
Latitude: 48.438413	Longitude: -101.308546	County: Ward	
Township: 157N	Range: 82W	Section: 7	QQ: AC
Receiving Stream: Unnamed Tributary of Egg Creek		Classification: Class III	
Outfall Description: 003 discharges from cell number 3, located at the center of the east side of cell number 3. Any discharge will be to an unnamed tributary of Egg Creek, a Class III stream.			

System 2. Outfall 001. Active. Final.			
Latitude: 48.432737	Longitude: -101.355881	County: Ward	
Township: 157N	Range: 83W	Section: 11	QQ: CD
Receiving Stream: Unnamed Tributary of Egg Creek		Classification: Class III	
Outfall Description: 001 discharges from the southeast corner of cell number 5. Any discharge will be to an unnamed tributary of Egg Creek, a Class III stream.			

System 2. Outfall 011. Active. Final.			
Latitude: 48.432501	Longitude: -101.360473	County: Ward	
Township: 157N	Range: 83W	Section: 11	QQ: CC
Receiving Stream: Unnamed Tributary of Egg Creek		Classification: Class III	
Outfall Description: 011 discharges from lagoon cell number 6, located at the northeast corner of lagoon cell number 6. Any discharge will be to an unnamed tributary of Egg Creek, a Class III stream.			

PERMIT SUBMITTALS SUMMARY

Coverage Point *	Submittal	Frequency	First Submittal Date
001A	Discharge Monitoring Report	Quarterly	April 30, 2020
003A	Discharge Monitoring Report	Quarterly	April 30, 2020
011A	Discharge Monitoring Report	Quarterly	April 30, 2020
001W	Discharge Monitoring Report	Quarterly	April 30, 2020
003W	Discharge Monitoring Report	Quarterly	April 30, 2019
011W	Discharge Monitoring Report	Quarterly	April 30, 2019
001M	Discharge Monitoring Report	Yearly	January 31, 2021
003M	Discharge Monitoring Report	Yearly	January 31, 2021
011M	Discharge Monitoring Report	Yearly	January 31, 2021
Mercury Management	Mercury Pollutant Minimization Plan	1/permit cycle	June 29, 2020
Application Renewal	NPDES Application Renewal	1/permit cycle	July 1, 2023
* The A, W, and M letters are report designators - A is the general outfall testing designation, W is the WET testing designation, and M is the metals testing designation. Specific details on testing requirements are below.			

I. SPECIAL CONDITIONS

Mercury Pollutant Minimization Plan

The permittee is required to complete and submit a Mercury Pollutant Minimization Plan (MPMP) to the North Dakota Department of Environmental Quality (department) as detailed in this section. If it has previously submitted a MPMP, the permittee must update the MPMP and submit it to the department. The purpose of the MPMP is to evaluate collection and treatment systems to determine possible sources of mercury as well as potential mercury reduction options. Guidelines for developing an MPMP are detailed in this section.

The permittee shall submit a Mercury Pollutant Minimization Plan within 180 days of permit issuance. At a minimum, the MPMP must include the following:

- i. A summary of mercury influent and effluent concentrations and biosolids monitoring data using the most recent five years of monitoring data, if available.
- ii. Identification of existing and potential sources of mercury concentrations and/or loading to the facility. As appropriate for your facility, you should consider residential, institutional, municipal, and commercial sources (such as dental clinics, hospitals, medical clinics, nursing homes, schools, and industries with potential for mercury contributions). You should also consider other influent mercury sources, such as stormwater inputs, ground water inflow and infiltration (I/I) inputs, and waste streams or sewer tributaries to the wastewater treatment facility.

- iii. An evaluation of past and present Wastewater Treatment Facilities Feasibility (WWTF) operations to determine those operating procedures that maximize mercury removal.
- iv. A summary of any mercury reduction activities implemented during the last five years.
- v. A plan to implement mercury management and reduction measures during the next five years.

In addition to the sampling required in this permit, the permittee shall sample effluent from the total facility discharge station for dissolved mercury annually throughout the life of this permit. The sampling method is a concurrent grab sample. Dissolved mercury shall be analyzed using an EPA approved mercury analysis method. Samples shall be taken at any time during the calendar year and reported to the department. A trip blank shall be analyzed for each sampling event.

Reporting, Record Keeping, and Public Notification for Unauthorized Sanitary Sewer Overflows (SSOs)

All unauthorized Sewage Overflows are subject to reporting, record keeping, and public notification as outlined below.

1. Immediate Reporting

A. The following locations have been identified as potential SSO sources:

- Outfall 004: Emergency overflow from lift station number 1096, located northwest of the Alternate Parking Apron.
- Outfall 005: Emergency overflow from lift station number 499, located at west center of Weapons Area.
- Outfall 006: Emergency overflow from lift station number 180, located at the intersection of Sirroco Drive and Arrowhead Drive.
- Outfall 007: Emergency overflow from lift station number 2112, located on Rocket Road at Memorial Junior High.
- Outfall 008: Emergency overflow from lift station number 297, located 200 feet south of the southeast corner of cell number 2.
- Outfall 009: Emergency overflow from lift station number 189, located at Missile Avenue and Ditch A, near the northwest corner of the golf course.

Discharges from outfalls 004, 005, 006, 007, 008, and 009 are prohibited except where unavoidable to prevent loss of life or severe property damage.

B. The permittee shall report to the department any sanitary sewer overflow or any unauthorized sanitary sewer overflow that the permittee owns and/or operates. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. At a minimum, the report shall identify the:

- i. Location of the overflow.
- ii. Receiving water (if there is one).
- iii. Duration of the overflow.
- iv. Estimated volume of the overflow.

C. An overflow is any spill, release, or diversion of municipal sewage, including:

- i. An overflow that results in a discharge to waters of the state; and
- ii. An overflow of wastewater, including wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately-owned sewer or building lateral), even if that overflow does not reach waters of the state.

2. Written Reports

A. The permittee shall provide a written report to the department for any overflow identified in section one (1) above within five (5) days from the time the permittee becomes aware of the circumstances. The written report shall contain a description of:

- i. The location of the overflow.
- ii. The receiving water body (if there is one).
- iii. An estimate of the overflow volume.
- iv. A description of the sewer-system component that caused the release (e.g. manhole, constructed overflow pipe, pipe break, etc.).
- v. The estimated date and time when the overflow began and stopped or will be stopped.
- vi. The cause or suspected cause of the overflow.
- vii. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps.
- viii. If possible, the number of persons who came into contact with wastewater from the overflow.
- ix. Steps taken or planned to mitigate the impact(s) from the overflow and a schedule of major milestones for those steps.

B. The department may waive the written report on a case-by-case basis for reports under paragraph A. of this section if the verbal report required under Part II paragraph 1, has been received within 24 hours.

3. Record Keeping

The permittee must maintain a record of the following information for a period of at least three years from the date of the reported overflow event:

- A.** Any report submitted under paragraph 2 above.
- B.** Any report, including work orders that are associated with investigation of system problems related to an overflow that (1) describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow, or (2) documents system performance.

4. Notice

The department (under 40 CFR 122.41(m)(3)) requires that the permittee shall notify specified parties about overflows that may endanger health. Where the permittee is required to make such notification, the following guidelines can be followed:

- A.** The permittee is to develop a plan describing how, under various scenarios, to notify the public and other entities of overflows (and unanticipated bypass and upset) that may endanger health.
- B.** This plan should identify all reportable overflows and the specific information reported to each entity receiving notification.
- C.** The permittee must immediately notify the public, health agencies, and other affected entities (e.g., public water systems) of any sanitary sewer overflow that the permittee controls.
- D.** The permittee shall sample at the SSO location(s) and at any receiving water to identify any potential impacts on the receiving stream. These data must be reported to any downstream users.

5. Proper Operation and Maintenance

The permittee is to implement proper operation and maintenance of the collection system according to 40 CFR 122.41(d) and (e). At the request of the department, this may include the development and implementation of capacity, management, operation, and management programs (CMOM).

II. LIMITATIONS AND MONITORING REQUIREMENTS

A. Discharge Authorization

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

Unnamed drainage way of Egg Creek

2. No discharge shall occur from the lagoons until all pre-discharge parameters have been reviewed by the department. After the review process, the permittee shall comply with the limitations of this permit.
3. 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:

Effluent Limitations and Monitoring Requirements Outfalls 001, 003, and 011 – Lagoons					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Biochemical Oxygen Demand (BOD ₅)	25 mg/l	45 mg/l	N/A	a	Grab
Temperature (°C)	-	-	Report	a	Grab
pH	Shall remain between 6.0 to 9.0 s.u.			a	Grab
Total Suspended Solids (TSS)	30 mg/l	45 mg/l	*	a	Grab
Escherichia coli (<i>E. coli</i>)	126/100 ml	*	409/100 ml	a, b	Grab
Oil & Grease ^c	*	*	10 mg/l	Daily	Visual
Nitrogen, Total	Monitor only (mg/l)			1/month during discharge	Grab
Ammonia as N ^e	Refer to the Ammonia table below.			1/week during discharge	Grab
Phosphorus, Total (as P)	Average for the month	Monitor only (mg/l)	Monitor only (mg/l)	1/month during discharge	Grab
Phosphorus, Total (as P)	Average for the month	Monitor only (lbs/day)	Monitor only (lbs/day)	1/month during discharge	Calculated

Effluent Limitations and Monitoring Requirements Outfalls 001, 003, and 011 – Lagoons					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Effluent Flow, MGD	*	*	Report Max Daily Values	1/day	Instantaneous
Total Flow, mgal	*	*	Report Monthly Total	1/month	Calculated
Whole Effluent Toxicity (WET) ^d	Part I.C			1/quarter	Grab
Trace Elements (40 CFR 122 - App D; Table III) ^f	Influent and Effluent			1/year	Grab
Egg Creek Parameters - Collect same days as effluent ammonia as N.					
Flow (cfs) ^{a, g}	-		Report	1/week	Grab
pH (s.u.) ^a	Upstream		Report	1/week	Grab
Temperature (°C) ^a	Upstream		Report	1/week	Usable data source
Ammonia as N (mg/l) ^a	Upstream		Report	1/week	Grab
Notes: 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.					
a. 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 BOD5, TSS, pH, temperature, <i>E. coli</i> , 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 as specified above for the duration of the discharge.					
b. <i>E. coli</i> shall not exceed 126 organisms per 100 milliliters (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 milligrams per liter (mg/l) concentration limit.					
d. Acute static-renewal toxicity tests shall be conducted on separate grab samples quarterly from Outfalls 001, 003, 011 during discharge.					
e. When there is stream flow, the permittee will use in-stream parameters to calculate (refer to formula below) the real-time water quality standard for ammonia as N. 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 an ammonia as N exceedance.					

Effluent Limitations and Monitoring Requirements Outfalls 001, 003, and 011 – Lagoons					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
<p>f. 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> <p>g. The metal sampling events shall be flow proportioned and follow the definition as stated in this permit.</p> <p>h. River flow shall be recorded from a reliable data source. If there is no flow in Egg Creek, ammonia as N must meet the state water quality standard at end-of-pipe.</p> <p>Stipulations:</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 leaving company property or entering the receiving stream.</p>					

Ammonia Effluent Limitations – Outfalls 001, 003, and 011
<p>Average Monthly Ammonia as N Limitation</p> <p>The highest four-day average concentration of total ammonia within the 30-day averaging period does not exceed the numerical value given by the following formula:</p> $(2.5) \left((CV) \left(\frac{0.0577}{1 + 10^{7.688 - pH}} \right) + \left(\frac{2.487}{1 + 10^{pH - 7.688}} \right) \right)$ <p>where CV = 2.85, when $T \leq 14^{\circ}\text{C}$; or $CV = 1.45 * 10^{0.028 * (25 - T)}$, when $T > 14^{\circ}\text{C}$. Receiving stream pH is used for the calculation</p> <p>Daily Maximum Limitation</p> <p>The concentration of total ammonia (expressed as N in mg/l) does not exceed the numerical value given by the following formula:</p> $\frac{0.411}{1 + 10^{7.204 - pH}} + \frac{58.4}{1 + 10^{pH - 7.204}}$ <p>Receiving stream pH is used for the calculation</p>

Note:

During periods when the receiving stream is flowing, permittee may receive ten percent of stream flow for dilution at time of discharge based on the flow of the receiving stream. During periods of no flow in the receiving stream, permittee must meet ammonia as N state water quality standards at the end-of-pipe. During periods of stream flow, in-stream concentrations will be calculated on a mass balance basis using the following formula:

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

Q_u = 10% of the Egg Creek Flow parameter

C_u = Egg Creek ammonia parameter

Q_e = Effluent flow parameter

C_e = Ammonia as N parameter

All discharges from 001, 003, and 011 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 2015.08.26

1. Acute Toxicity Testing

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

WET tests shall be performed on the first discharge made each calendar year, unless specifically waived by the department. Thereafter, tests shall be performed at least once every calendar quarter in which there is a discharge.

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 Outfalls 001, 003, 011						
Effluent Dilution	0%(Control)	12.5%	25%	50%	75%	100%
Dilution Water	Receiving stream or lab synthetic water					
Species and Test Type	Ceriodaphnia dubia - 48 Hour Acute - Static Renewal - 20°C					
	Fathead minnow - 96 Hour Acute - Static Renewal - 20°C					
Endpoint	TUa					
Compliance Point	End-of-pipe or In-stream					

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*.

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.

3. 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.

4. 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.

III. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 2019.05.29

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:

- i. the date, exact place and time of sampling or measurements;
- ii. the name(s) of the individual(s) who performed the sampling or measurements;
- iii. the name of the laboratory;
- iv. the date(s) and time(s) analyses were performed;
- v. the name(s) of the individual(s) who performed the analyses;
- vi. the analytical techniques or methods used; and
- vii. 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

- i. 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.
- ii. 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:
 - i. General permit reports [e.g., notices of intent (NOI); notices of termination (NOT); no exposure certifications (NOE)];
 - ii. Municipal separate storm sewer system program reports;
 - iii. Pretreatment program reports;
 - iv. Sewer overflow/bypass event reports; and
 - v. Clean Water Act 316(b) annual reports
- iii. 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.
 - i. 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.

IV. 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:

- The authorization is made in writing by a person described above and submitted to the department; and
- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

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

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

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

F. Twenty-four Hour Notice of Noncompliance Reporting

- i. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The following occurrences of noncompliance shall be included in the oral report to the department at 701.328.5210:
 1. Any lagoon cell overflow or any unanticipated bypass which exceeds any effluent limitation in the permit under G. Bypass of Treatment Facilities;
 2. Any upset which exceeds any effluent limitation in the permit under H. Upset Conditions; or
 3. Violation of any daily maximum effluent or instantaneous discharge limitation for any of the pollutants listed in the permit.
- ii. 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.
 - H. 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.
 - I. 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.

J. 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.

K. 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.

L. 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.

M. Duty to Reapply

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

V. 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.

VI. INDUSTRIAL WASTE MANAGEMENT BP 2019.05.29

Major non-POTWs Non-Approved Pretreatment Program Requirements

A. General Responsibilities

The permittee has the responsibility to protect the non-Publicly Owned Treatment Works (non-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 non-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 non-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 non-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 non-POTW, or other interference with the operation of the non-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 non-POTW;
6. Heat in amounts which will inhibit biological activity in the non-POTW resulting in Interference, but in no case heat in such quantities that the temperature at the non-POTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit) unless the Approval Authority, upon request of the non-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 non-POTW;
8. Pollutants which result in the presence of toxic gases, vapors, or fumes within the non-POTW in a quantity that may cause acute worker health and safety problems; and
9. Any trucked or hauled pollutants, except at discharge points designated by the non-POTW

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 non-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 non-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 non-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 non-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 non-POTW treatment plant;
 - d. Any discharger who is designated by the Approval Authority as having a reasonable potential for adversely affecting the non-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				
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.

**DRAFT FACT SHEET FOR NDPDES PERMIT
ND-0020486**

UNITED STATES AIR FORCE

MINOT AIR FORCE BASE

DATE OF THIS FACT SHEET – November 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) oversees. In 1975, the State of North Dakota was delegated primacy of the NPDES program by EPA. The North Dakota Department of Environmental Quality, hereafter referred to as “department”, has been designated the state water pollution control agency for all purposes of the Federal Water Pollution Control Act, as amended [33 U.S.C. 1251, et seq.], and is 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 the North Dakota Administrative Code (NDAC) 33.1-16 which was promulgated pursuant to North Dakota Century Code (NDCC) chapter 61-28. In North Dakota, these permits are referred to as North Dakota Pollutant Discharge Elimination System (NDPDES) permits.

The following rules or regulations apply to NDPDES permits:

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

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

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

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

Permittee:	United States Air Force
Facility Name and Address:	Minot Air Force Base 5 CES/CEIE 445 Peacekeeper Place Minot, ND 58705
Permit Number:	ND-0020486
Permit Type:	Major Federal Facility, Permit Reissuance
Type of Treatment:	Waste Stabilization Ponds - Tertiary Treatment
SIC Code:	4952
Discharge Location:	<i>Outfall 001:</i> Unnamed tributary to Egg Creek, Class III Latitude: 48.432737 Longitude: -101.355881 <i>Outfall 003:</i> Unnamed tributary to Egg Creek, Class III Latitude: 48.438413 Longitude: -101.308546 <i>Outfall 011:</i> Unnamed tributary to Egg Creek, Class III Latitude: 48.432501 Longitude: -101.360473
Hydrologic Code:	09010005 – Deep River
Population:	12,461

Figure 1 – Aerial Photograph of the Minot Air Force Base, Minot, ND (Submitted in June 2019 Minot Air Force Base permit application)



Minot Air Force Base

FACILITY DESCRIPTION

Minot Air Force Base (AFB) is located 13 miles North of Minot via US-83 in Ward county, North Dakota. Two unnamed tributaries flow Northeast from the base and enter Egg Creek East of the base. Egg Creek flows Southeast from the Minot AFB for approximately 31 river miles before entering North Lake and Buffalo Lodge Lake. This permit covers the non-publicly owned treatment works (non-POTW) on the AFB. Stormwater runoff from industrial activities is covered under a separate industrial stormwater permit held with the department.

The Minot AFB is home to two major Air Force units: the 5th Bomb Wing and the 91st Missile Wing. The 5th Bomb Wing and 91st Missile Wing are Air Force Global Strike Command units. The 5th Bomb Wing is the host wing. The 5th Bomb Wing and its fleet of B-52H Stratofortress bombers serve as part of the Air Force's conventional and strategic combat force as air and space expeditionary force (AEF) warriors. They provide full-spectrum deterrence and support for the 91st Missile Wing; and if deterrence fails, B-52 firepower on demand. The 91st Missile Wing is one of the Air Force's three operational intercontinental ballistic missile units and is responsible for strategic deterrence by operating, maintaining and securing a fleet of 150 Minuteman III missiles located in underground launch facilities positioned in a 8,500 square mile missile complex located in the northwest part of the state. These missile facilities are covered under a separate permit with the department. The 91st Missile Wing's mission is to defend the United States with safe, secure and effective intercontinental ballistic missiles in support of the President and commanders of combatant commands.

The Minot Air Force Base utilizes stabilization pond systems for wastewater treatment. A primary flow pipe leads to the central lift station (building 297), and from there the supervisory control and data acquisition (SCADA) system routes a programmed percentage of the flow to either cell one in the East lagoon system or to cell four in the West lagoon system. Should the pump station fail, a 10-inch gravity main ensures that sewage flows into the lagoons. The East lagoon system has wastewater enter through cell one, after some time it is transferred to cell two, and then finally to cell three where it will eventually be discharged from outfall 003. The West lagoon has wastewater entering cell four, over time transferring into cell five, and discharging from cell five through outfall 001. Cell six is used for additional storage, detention, and polishing as necessary.

The lagoon system can support a population of 13,350 and the current system holding capacities are detailed in Table 1. As per the Minot Air Force Base's 2019 permit application, the system is currently servicing a population of 12,461 and is at 93% capacity with a designed flow rate of 0.9 million gallons a day (mgd). The Air Force Base has sufficient contiguous land available for expansion.

Table 1
Lagoon System Detail
Minot AFB, ND

Cell	Top Elev.	Bottom Elev.	Max. Water Surface Elev.	Min Water Surface Elev.	Water Surface Area (Ac)	Max Water Depth (Ft)	Total Vol. (MG)*	Effective Depth (Ft)	Effective Volume (MG)*	Water Depth (Gal/Inch)
1	1628	1620	1625	1622	50	5	82	3	49	1,358,000
2	1627	1619	1624	1621	46	5	75	3	45	1,250,000
3	1628	1619	1625	1621	41	6	80	4	53	1,100,000
4	1651	1643	1648	1645	110	5	179	3	108	3,000,000
5	1650	1641	1647	1643	50	6	98	4	65	1,350,000
6	1639	1639	1646	1641	14	7	32	5	25	300,000
*million gallons										

Notes: All cells designed for 2' sludge retention at bottom and 3' free board at top

Total Surface Area = 311 Acres

Total Effective volume = 345 MG

Total Maximum Holding Capacity = 546 MG

Average Winter Storage Capacity = 288 MG

Discharge Outfalls

There are three active discharge outfalls associated with the facility – 001, 003, and 011. In June 2019 discharge point 010 was deactivated. Descriptions of the active and inactive outfalls is provided below.

Figure 2 – Arial photo of East Lagoon System/System One (1) associated with outfall 003
 (photo submitted June 2019 in Minot Air Force Base permit application)



East Lagoon System, Minot AFB

The East Lagoon System/System One (1) contains three cells:

- Cell 1 - surface area of 50.0 acres;
- Cell 2 - surface area of 46.0 acres;
- Cell 3 - surface area of 41.0 acres.

System 1. Outfall 003. Active. Final.			
Latitude: 48.438413	Longitude: -101.308546	County: Ward	
Township: 157N	Range: 82W	Section: 7	QQ: AC
Receiving Stream: Unnamed Tributary of Egg Creek		Classification: Class III	
Outfall Description: 003 discharges from cell number 3, located at the center of the east side of cell number 3. Any discharge of treated effluent will be to an unnamed tributary of Egg Creek, a Class III stream.			

Figure 3 – Arial photo of West Lagoon System/System Two (2) and associated outfalls 001 and 011 (photo submitted June 2019 in Minot Air Force Base permit application)



West Lagoon System, Minot AFB

The West Lagoon System/System Two (2) contains three cells:

- Cell 4 with a surface area of 110.0 acres,
- Cell 5 with a surface area of 50.0 acres,
- Cell 6 with a surface area of 14.0 acres.

System 2. Outfall 001. Active. Final.			
Latitude: 48.432737	Longitude: -101.355881	County: Ward	
Township: 157N	Range: 83W	Section: 11	QQ: CD
Receiving Stream: Unnamed Tributary of Egg Creek		Classification: Class III	
Outfall Description: 001 discharges from the southeast corner of cell number 5. Any discharge of treated effluent will be to an unnamed tributary of Egg Creek, a Class III stream.			

System 2. Outfall 011. Active. Final.			
Latitude: 48.432501	Longitude: -101.360473	County: Ward	
Township: 157N	Range: 83W	Section: 11	QQ: CC
Receiving Stream: Unnamed Tributary of Egg Creek		Classification: Class III	
Outfall Description: 011 discharges from lagoon cell number 6, located at the northeast corner of lagoon cell number 6. Any discharge of treated effluent will be to an unnamed tributary of Egg Creek, a Class III stream.			

Description of Inactive Outfalls:

- 002: Located in the northeast corner of cell number 2. This outfall is no longer active.
- 004: Emergency overflow from lift station number 1096, located northwest of the Alternate Parking Apron.
- 005: Emergency overflow from lift station number 499, located at west center of Weapons Area.
- 006: Emergency overflow from lift station number 180, located at the intersection of Sirroco Drive and Arrowhead Drive.
- 007: Emergency overflow from lift station number 2112, located on Rocket Road at Memorial Junior High.
- 008: Emergency overflow from lift station number 297, located 200 feet south of the southeast corner of cell number 2.
- 009: Emergency overflow from lift station number 189, located at Missile Avenue and Ditch A, near the northwest corner of the golf course.
- 010: Interceptor drain/leach line along the northern boundary of the northeast lagoon system. The outfall is located east of the northeast corner of cell number 3. The outfall was capped in June 2019 and is no longer active.

Outfalls 004, 005, 006, 007, 008, and 009 require mandatory reporting, record keeping, and public notification for unauthorized sewage overflows.

REPORTING, RECORD KEEPING, AND PUBLIC NOTIFICATION FOR UNAUTHORIZED SANITARY SEWER OVERFLOWS (SSOs)

Immediate Reporting

Reporting, Record keeping, and Public Notification for Unauthorized Sewage Overflows. This includes but is not limited to outfalls 004, 005, 006, 007, 008, and 009. The following location(s) have been identified as potential SSO sources:

- Outfall 004: Emergency overflow from lift station number 1096, located northwest of the Alternate Parking Apron.
- Outfall 005: Emergency overflow from lift station number 499, located at west center of Weapons Area.
- Outfall 006: Emergency overflow from lift station number 180, located at the intersection of Sirroco Drive and Arrowhead Drive.
- Outfall 007: Emergency overflow from lift station number 2112, located on

Rocket Road at Memorial Junior High.

- Outfall 008: Emergency overflow from lift station number 297, located 200 feet south of the southeast corner of cell number 2.
- Outfall 009: Emergency overflow from lift station number 189, located at Missile Avenue and Ditch A, near the northwest corner of the golf course.

Discharges from outfalls 004, 005, 006, 007, 008, and 009 are prohibited except where unavoidable to prevent loss of life or severe property damage and the permittee shall provide a written report to the department for any overflow identified within five (5) days from the time the permittee becomes aware of the circumstances.

MINOT AIRFORCE BASE INDUSTRIAL ACTIVITIES

The Minot AFB is an air transportation facility with standard industrial classification (SIC) code 4952. Industrial activities for transportation facilities include vehicle maintenance, equipment cleaning, and deicing operations. Vehicle maintenance includes the following activities: vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication. An Industrial Wastewater Pretreatment Study was conducted in 1996 and it concluded no operations on the base are subject to Categorical Pretreatment Standards. There have been no changes in base operations during the past permit cycle, and none are expected during the renewed permit cycle. The Minot AFB conducts all these activities as outlined below.

- **Vehicle Maintenance**
The Minot AFB conducts numerous vehicle maintenance activities including aircraft maintenance, maintenance of aerospace ground equipment (AGE), heavy equipment maintenance, fueling equipment maintenance, and vehicle maintenance. Prior to any painting operations, metal surfaces are prepped using a wipe. No metal prepping operations on the AFB discharges to the sanitary sewer system.
- **Vehicle Fueling**
Fueling operations at the Minot AFB include railcar unloading, petroleum, oils, and lubricants (POL) bulk storage, tank truck loading/unloading, aircraft fueling from tank trucks and fueling hydrants in aircraft parking areas, and vehicle fueling from fuel islands.
- **Cleaning Operations**
The AFB has several wash racks for cleaning aircraft, vehicles, and maintenance equipment.
- **Aircraft Deicing**
Propylene glycol is sprayed on aircraft in parking areas to remove ice/snow as needed. Deicer is applied only while the engine is off and the plane is parked on the apron; taxiways and runways are not expected to be subject to aircraft deicing activity. No aircraft deicing fluid is discharged to the sanitary sewer system.
- **Runway/Taxiway Deicing**
The AFB applies a 50/50 potassium acetate/water mixture to these areas. No runway/taxiway deicing fluid is discharged to the sanitary sewer system.

- **Generated Hazardous Wastes**
The AFB generates hazardous waste associated with maintenance activities. No hazardous wastes are treated or disposed of at the Minot AFB. Each maintenance area has a satellite hazardous waste accumulation point. These points are small enclosed structures designed to isolate the wastes from any contact with water. Wastes generated include used oil, paint thinner, cleaning solvents, jet fuel, and oil spill clean-up residues. These wastes are sent to Defense Logistics Agency (DLA) Disposition Services periodically for pick up by a disposal contractor.
- **Fire Training Area**
All water from this operation is contained and reused. No water is discharged to the sanitary sewer.

WASTEWATER FROM AFB INDUSTRIAL AREAS

The Minot AFB has a separate industrial stormwater permit for stormwater discharges, along with a stormwater pollution prevention plan (SWPPP) and separate sampling requirements for that permit. There are two ditches conveying industrial storm water (discussed in the Minot Airforce Base Industrial Activities Section above) from a variety of individual storm water outlets on the AFB. The ditches are man-made and discharge at the property boundary. Listed below are areas that cannot discharge stormwater and must connect to the sanitary sewer system.

- An oil/water separator downgradient of the Petroleum-Oils-Lubricants Bulk Storage Area is connected to the sanitary sewer system.
- Vehicle and equipment wash racks/areas drain to the sanitary sewer system via oil-water separators.
- The AFB contains three active oil/water separators that connect to the sanitary sewer system.
- Floor drains are used in industrial areas on the AFB. Most of these drains are connected to the sanitary sewer system. Each building and base activity that utilizes floor drains is responsible to ensure nothing except water vehicle runoff is discharged down the drains.

PREVIOUS PERMIT STATUS

The department issued the current permit for this facility on December 31, 2014. The permit has effluent limitations and monitoring requirements for:

- Five-day biochemical oxygen demand (BOD₅)
- pH
- Total suspended solids (TSS)
- Ammonia as nitrogen
- *Escherichia coli* (*E. coli*)
- Oil and Grease
- Temperature
- Whole effluent toxicity (WET)
- Total Flow, mgal
- Effluent Flow, MGD
- Arsenic, Total
- Beryllium, Total
- Cadmium, Total
- Chromium, Total
- Copper, Total
- Hardness
- Lead, Total
- Mercury, Total
- Nickel, Total
- Selenium, Total
- Silver, Total
- Thallium, Total
- Zinc, Total
- Cyanide, Total
- Phenols, Total

Total Metals (40 CFR 122 - App D; Table III)

- Antimony, Total

The permit will expire December 31, 2019

SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT

The department conducted a non-sampling compliance inspection every year of the permit cycle (2015-2019). The last inspection was conducted on July 30, 2019. The department's compliance assessment is based on review of the facility's Discharge Monitoring Reports (DMRs) and inspection of the facility's systems.

Bypasses

There have been no reported bypasses during the current permit cycle 2015 - 2019.

Past Discharge Data

The concentration of pollutants in the discharge was reported in DMRs. The effluent from the facility's permitted outfalls is characterized in Table 2a, 2b, 2c, and 2d. Table 2c contains results from outfall 010 which was a continuously discharging leach line with drain tiles. Outfall 010 is no longer active as of September 30th, 2019.

Table 2a – Minot AFB Effluent Data for Outfall 001 (2015-2019 Permit Cycle)

Parameter	Units	Range	Average	Permit Limit	Excursions
BOD ₅	mg/l	6.0-6.5	6.25	25	0
TSS	mg/l	13-14	13.5	30	0
E. coli	#/100ml	2-3	2.5	126	0
pH	SU	8.5-8.6	NA	6 – 9	0
Ammonia as N	mg/l	0.13-0.32	0.22	WQS	NA
TKN	mg/l	5	5	NA	NA
Antimony**	ug/l	2	2	NA	NA
Arsenic**	ug/l	5	5	NA	NA
Beryllium**	ug/l	0.5	0.5	NA	NA
†Cadmium**	ug/l	0.1	0.1	NA	NA
†Chromium**	ug/l	4.7	4.7	NA	NA
†Copper**	ug/l	13.8	13.8	NA	NA
Cyanide**	mg/l	0.005	0.005	NA	NA
†Lead**	ug/l	1	1	NA	NA
Mercury**	ug/l	0.2	0.2	NA	NA
†Nickel**	ug/l	11.1	11.1	NA	NA
Phenols	mg/l	0.01	0.01	NA	NA
Selenium**	ug/l	10	10	NA	NA
†Silver**	ug/l	0.5	0.5	NA	NA
Thallium**	ug/l	0.1	0.1	NA	NA
†Zinc**	ug/l	50	50	NA	NA
Whole Effluent Tox. (WET)	NA	<1	NA	Pass/fail	0
Flow*	MGD	3.306-4.084	3.306	NA	NA
Total Drain	MG	23.141	23.141	NA	NA
Discharge Duration	Days	7	7	NA	NA

* These data are the daily maximums for the discharge events

** These data fall under the testing requirements for Total metals

† These values have a hardness dependent water quality standard

Notes:

There was one discharge from this outfall (May 2015).

Table 2b– Minot AFB Effluent Data for Outfall 003 (2015-2019 Permit Cycle)

Parameter	Units	Range	Average	Permit Limit	Excursions
BOD ₅ (30-day avg)	mg/l	N/A	N/A	25	0
TSS (30-day avg)	mg/l	N/A	N/A	30	0
E. coli	#/100ml	5.03-28.1	5.06	126	0
pH	SU	7.35-8.94	NA	6 – 9	0
Ammonia as N	mg/l	0.26-7.75	4.00	WQS	NA
TKN	mg/l	4.9-11.9	10.85	Monitor only	NA
Antimony**	ug/l	0-2	1	NA	0
Arsenic**	ug/l	0-6.7	2.23	NA	0
Beryllium**	ug/l	0-0.5	0.17	NA	0
†Cadmium**	ug/l	0-0.1	0.03	NA	0
†Chromium**	ug/l	0-2.0	0.67	NA	0
†Copper**	ug/l	0-10.8	3.6	NA	0
Cyanide**	mg/l	0-0.005	0.0017	NA	0
†Lead**	ug/l	0-1.0	0.33	NA	0
Mercury**	ug/l	0-0.2	0.067	NA	0
†Nickel**	ug/l	2.2-8.5	4.3	NA	0
Phenols	mg/l	0-0.154	0.0051	NA	0
Selenium**	ug/l	0-2	0.67	NA	0
†Silver**	ug/l	0-0.5	0.17	NA	0
Thallium**	ug/l	0-0.2	0.17	NA	0
†Zinc**	ug/l	0-50	16.7	NA	0
Whole Effluent Tox. (WET)	NA	<1	NA	Pass/fail	0
Flow*	MGD	5.6-12.3	8.93	NA	NA
Total Drain	MG	39.1-49.1	44.1	NA	NA
Discharge Duration	Days	7	7	NA	NA

* These data are the daily maximums for the discharge events

** These data fall under the testing requirements for Total metals

† These values have a hardness dependent water quality standard

Notes:

There were 2 discharges from this outfall (June 2015 and May 2017).

Table 2c – Minot AFB Effluent Data for Outfall 010 (2015 - 2019 Permit Cycle)

Parameter	Units	Range	Average	Permit Limit	Excursions
BOD ₅ (30 day-avg)	mg/l	5.5-6.2	5.94	25	0
TSS (30 day-avg)	mg/l	4.9-12	7.11	30	0
E. coli	#/100ml	0-1	0.75	126	0
pH	SU	7.48-8.15	NA	6 – 9	0
Ammonia as N	mg/l	0.1-6.95	4.12	WQS	0
TKN	mg/l	5-7	6.06	NA	0
Antimony**	ug/l	0-2	1	NA	0
Arsenic**	ug/l	0-4.5	1.12	NA	0
Beryllium**	ug/l	0-0.5	0.25	NA	0
†Cadmium**	ug/l	0-0.4	0.1	NA	0
†Chromium**	ug/l	0-2.0	0.5	NA	0
†Copper**	ug/l	0-14.0	3.5	NA	0
Cyanide**	ug/l	0-0.005	0.0012	NA	0
†Lead**	ug/l	0-1	0.25	NA	0
Mercury**	ug/l	0-0.2	0.05	NA	0
†Nickel**	ug/l	32.9-47.1	39.0	NA	0
Phenols	mg/l	0-0.01	0.0025	NA	0
Selenium**	ug/l	0-21.8	6.45	NA	0
†Silver**	ug/l	0-0.5	0.13	NA	0
Thallium**	ug/l	0-0.4	0.1	NA	0
†Zinc**	ug/l	0-50	12.5	NA	0
Whole Effluent Tox. (WET)	NA	<1-1.97	NA	pass/fail	3
Flow*	MGD	0.00 – 0.009	0.0043	NA	NA
Total Drain	MG	0.003 - 0.354	0.120	NA	NA
Discharge Duration	Days	28-31	30	NA	NA
* These data are the daily maximums for the discharge events ** These data fall under the testing requirements for Total metals † These values have a hardness dependent water quality standard					
Notes: Outfall 010 is a leachline and was monitored monthly for quantity and biannually for all other parameters listed in the permit. It was capped in June 2019 and no longer discharges. Outfall 010 will be inactive on the 2020-2024 permit cycle.					

Table 2d – Minot AFB Effluent Data for Outfall 011 (2015 – 2019 Permit Cycle)

Parameter	Units	Range	Average	Permit Limit	Excursions
BOD ₅	mg/l	-	-	25	-
TSS	mg/l	-	-	30	-
E. coli	#/100ml	-	-	126	-
pH	SU	-	-	6 – 9	-
Ammonia as N	mg/l	-	-	WQS	-
Flow	MGD	-	-	NA	-
Total Drain	MG	-	-	NA	-
Discharge Duration	Days	-	-	NA	-
Notes: There were 0 discharges from this outfall during the 2015-2019 permit cycle.					

LIMITATIONS AND MONITORING REQUIREMENTS

Discharge Authorization

The discharges of wastewater from these non-POTW waste stabilization pond systems are not regulated by national effluent guidelines. In the absence of a federal standard, limitations may be generated using Best Professional Judgment (BPJ) to ensure reasonable control technologies are used to prevent potential harmful effects of the discharge. In addition, the department must consider and include limitations necessary to protect water quality standards applicable to the receiving waters.

Using BPJ, the department determined that an average monthly limitation of 25 mg/L and a seven-day average limitation of 45 mg/L for BOD₅ is appropriate for this type of facility. In addition, using BPJ the department determined that an average monthly limitation of 30 mg/L and a seven-day average limitation of 45 mg/L for TSS is appropriate for this type of facility. Other major facilities with similar treatment systems in the state have similar limitations.

The department also determined that effluent limitations for pH, ammonia as nitrogen, *E. coli*, oil and grease, and acute Whole Effluent Toxicity (WET), are appropriate for this type of facility. Other major facilities in the state have similar requirements.

During the effective period of this permit, the permittee is authorized to discharge pollutants to an unnamed tributary of Egg Creek (a Class III stream). No discharge shall occur from the lagoons until all pre-discharge parameters have been reviewed by the department. After the review process, 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. The effluent limitations and the basis for the limitations are provided in Table 3.

Table 3: Permit Effluent Limits – Outfalls 001, 003, and 011

Effluent Parameter	30-Day Average	7-Day Average	Daily Maximum	Basis ^a
BOD ₅ , mg/L ^b	25	45	N/A	BPJ, Previous Permit
Total Suspended Solids (TSS), mg/L ^c	30	45	N/A	BPJ, Previous Permit
<i>E. coli</i> , #/100 mL ^d	126	N/A	409	WQS
Ammonia as N, mg/L	Refer to the Ammonia Table below (Table 4) for each Outfall			WQS
pH, SU ^e	Shall remain between 6.0 to 9.0			BPJ, Previous Permit WQS
Oil & Grease, Visual ^f	N/A	N/A	N/A	WQS
Oil & Grease, mg/L ^f	*	*	10	BPJ, Previous Permit
Whole Effluent Toxicity (WET)	No Acute Toxicity			BPJ, Previous Permit
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.				Previous Permit
Notes:				
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.				
a. The basis of the effluent limitations is given below: “BPJ” refers to best professional judgment. “Previous Permit” refers to limitations in the previous permit. NPDES regulations 40 CFR Part 122.44(l)(1) Reissued permits require that when a permit is renewed or reissued, interim limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit was issued have materially and substantially changed since the previous permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR Part 122.62. “WQS” refers to effluent limitations based on the State of North Dakota’s “Standards of Quality for Waters of the State”, NDAC Chapter 33.1-16-02.1.				

Table 3: Permit Effluent Limits – Outfalls 001, 003, and 011

b.	The limits for BOD ₅ are based on 40 CFR 133.102(a). “Secondary Treatment Standards” and NDAC Chapter 33.1-16-01-14(3)(c)(1) and are the same as the previous permit.
c.	The limits for TSS are based on 40 CFR 133.102(b) “Secondary Treatment Standards” and are the same as the previous permit.
d.	The limit for <i>E. coli</i> shall apply only during the recreational season, April 1 to October 31. Monitoring for <i>E. coli</i> shall be in effect only during the recreational season. The department reserves the right to change the parameters, monitoring, and/or limit for <i>E. coli</i> . Averages for <i>E. coli</i> shall be determined as a geometric mean.
e.	The limits for pH are based on the WQS for a class III stream.
f.	There shall be no floating oil or visible sheen present in the discharge. If floating oil or a visible sheen is detected in the discharge, the department shall be contacted, and a grab sample analyzed to ensure compliance with the concentration limitation. Any single analysis and/or measurement beyond this limitation shall be considered a violation of the conditions of the permit.

Table 4: Ammonia Effluent Limitations – Outfalls 001, 003, and 011**Average Monthly Ammonia as N Limitation**

The highest four-day average concentration of total ammonia within the 30-day averaging period does not exceed the numerical value given by the following formula:

$$(2.5) \left((CV) \left(\frac{0.0577}{1 + 10^{7.688 - pH}} \right) + \left(\frac{2.487}{1 + 10^{pH - 7.688}} \right) \right)$$

where CV = 2.85, when $T \leq 14^{\circ}\text{C}$; or
 $CV = 1.45 * 10^{0.028 * (25 - T)}$, when $T > 14^{\circ}\text{C}$.
 Receiving stream pH is used for the calculation

Daily Maximum Limitation

The concentration of total ammonia (expressed as N in mg/l) does not exceed the numerical value given by the following formula:

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

Receiving stream pH is used for the calculation

Note – During periods when the receiving stream is flowing, permittee may receive ten percent of stream flow for dilution at time of discharge based on the flow of the receiving stream. During periods of no flow in the receiving stream, permittee must meet ammonia as N state water quality standards at the end-of-pipe. During periods of stream flow, in-stream concentrations will be calculated on a mass balance basis using the following formula:

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

Q_u = 10% of the Egg Creek Flow parameter

C_u = Egg Creek ammonia parameter

Q_e = Effluent flow parameter

C_e = Ammonia as N parameter

All discharges from 001, 003, and 011 will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge period.

SELF-MONITORING REQUIREMENTS

All effluent is sampled at a point leaving the discharging cell at outfalls 001, 003, 011 but prior to entering waters of the state. Pre-discharge samples are collected from the associated outfall's cell prior to discharging. The pre-discharge sample shall be considered the first week's compliance sample. The results of the analysis shall be reported to the department prior to the start of the discharge. Sampling parameters required during the discharge shall be collected and analyzed once per week for the duration of the discharge. See table 4 below for monitoring requirements for effluent and receiving waters.

Effluent Limitations and Monitoring Requirements

The department reviewed sampling requirements for effluent sampling of ammonia as N and for Egg Creek sampling requirements on flow, pH, temperature, and ammonia. The department has reduced the sampling frequency from 3/week to 1/week for these parameters. Facilities with similar systems sample 1/week, and the department made the change to be consistent with testing requirements.

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

Table 5 - Effluent Limitations and Monitoring Requirements for all active outfalls with Pre-Discharge Sampling Requirements for Egg Creek

Parameter	Sample Frequency	Sample Type
Biochemical Oxygen Demand (BOD ₅)	1/week ^a	Grab
Temperature (°C)	1/week ^a	Grab
pH	1/week	Grab
Total Suspended Solids (TSS)	1/week ^a	Grab
Escherichia coli (E. coli)	1/week ^a	Grab
Oil & Grease	1/day ^c	Visual
Nitrogen, Total	1/month during discharge	Grab
Ammonia as N	1/week during discharge ^d	Grab
Phosphorus mg/l, Total (as P)	1/month during discharge	Grab
Effluent Flow, MGD	1/day	Instantaneous
Total Flow, mgal	1/month	Calculated
Whole Effluent Toxicity (WET)	1/quarter ^e	Grab
Trace elements [*] (40 CFR 122 - App D; Table III)	1/year ^f	Grab
Egg Creek Parameters - Collect same days as effluent ammonia as N.		
Flow (cfs)	1/week ^a	Grab
pH (s.u.)	1/week ^a	Grab
Temperature (°C)	1/week ^a	Grab
Ammonia as N (mg/l)	1/week ^a	Grab
Note: Refer to appendix B for definitions.		
[*] Influent and effluent to be tested		

Table 5 - Effluent Limitations and Monitoring Requirements for all active outfalls with Pre-Discharge Sampling Requirements for Egg Creek

Parameter	Sample Frequency	Sample Type
<p>a. 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 BOD5, TSS, pH, temperature, <i>E. coli</i>, 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.</p> <p>b. <i>E. coli</i> shall not exceed 126 organisms per 100 milliliters (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.</p> <p>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 milligrams per liter (mg/l) concentration limit.</p> <p>d. When there is stream flow, the permittee will use in-stream parameters to calculate (refer to formula below) the real-time water quality standard for ammonia as N. 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 an ammonia as N exceedance.</p> <p>e. Acute static-renewal toxicity tests shall be conducted on separate grab samples quarterly from Outfalls 001, 003, 011 during discharge.</p> <p>f. 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> <p>The metal sampling events shall be flow proportioned and follow the definition as stated in the permit.</p> <p>g. River flow shall be recorded from a reliable data source. If there is no flow in Egg Creek, ammonia as N must meet the state water quality standard at end-of-pipe.</p> <p>Stipulations:</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 leaving company property or entering the receiving stream.</p>		

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.

These water quality standards (WQS) were used to guide the limits for this Minot AFB non-POTW permit. Wastewater discharge permits must include conditions that ensure the discharge will meet the surface water quality standards. The unnamed tributary of Egg Creek is not specifically mentioned in the Standards of Quality for Waters of the State and is considered a class III stream. The quality of water in class III streams must be suitable for agricultural and industrial uses. Streams in this class generally have low average flows with prolonged periods of no flow. During periods of no flow, they are of limited value for recreation, and fish and aquatic biota. The quality of these waters must be maintained to protect secondary contact recreation uses (e.g., wading), fish and aquatic biota, and wildlife uses.

The unnamed tributary of Egg Creek is not listed as impaired in the 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads (303(d) List). There currently are no TMDLs for this unnamed tributary.

Numerical Criteria for the Protection of Aquatic Life and Recreation

Numerical water quality criteria are listed in the water quality standards for surface waters (NDAC Chapter 33.1-16-02.1). These specify the maximum 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 Water Quality Standards 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) applies to all surface waters of the state and limits concentrations of pollutants from exceeding applicable standards of the receiving waters. The department adopted a narrative biological goal solely to provide an additional assessment method that can be used to identify impaired surface waters.

Antidegradation

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

- Provide all waters of the state one of three levels of antidegradation protection.

- Determine whether authorizing the proposed regulated activity is consistent with antidegradation requirements.

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

Mixing Zones

The department's WQS contain a Mixing Zone and Dilution Policy and Implementation Procedure, NDAC Chapter 33.1-16-02.1 (Appendix III). This policy addresses how mixing and dilution of point source discharges with receiving waters will be addressed in developing chemical-specific and whole effluent toxicity discharge limitations for point source discharges. Depending upon site-specific mixing patterns and environmental concerns, some pollutants/criteria may be allowed in 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

Water quality-based limitations are derived to ensure the water quality standards for the water body are maintained. Regarding water quality standards, the first step is to review water characteristics of the water body receiving the discharge. The unnamed tributary of Egg Creek is identified as a Class III stream in the State's standard of water quality.

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

Approval to discharge shall be cell specific and shall be based on the test results of pre-discharge samples for each cell. Sampling shall be performed weekly during discharge, and the discharge flow rate shall be monitored daily. Ammonia toxicity concerns shall be addressed on a case-by-case basis for each discharge. When any discharge occurs from the facility, the permittee shall comply with the effluent limitations and self-monitoring requirements as outlined in the permit.

pH

Discharges to class III streams shall have an instantaneous limitation between 6.0 (s.u.) and 9.0 (s.u.).

Oil & Grease

The WQS state that waters of the state must be free from oil or grease attributable to wastewater which causes a visible sheen or film upon the water. Using BPJ the department has determined that a daily maximum limitation of 10 mg/l is appropriate for this type of facility if a visible sheen is detected. Other treatment systems in the state have similar limitations.

Ammonia as Nitrogen

Ammonia, a nonconventional pollutant present in cell discharges and could potentially be present in toxic amounts. Ammonia toxicity, both acute and chronic, is variable and is dependent on pH levels and temperature. As temperatures rise or pH levels increase, ammonia toxicity increases. North Dakota's aquatic life standards for ammonia also are dependent upon pH and temperature of the receiving water body. Federal regulations (40 CFR 122.44) require the department to place limits in NDPDES permits on pollutants in an effluent (whether conventional, nonconventional, or toxic) whenever there is a reasonable potential for those pollutants to exceed the surface water quality criteria.

E. coli

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

Total Nitrogen

Based on nutrient reduction strategies for nitrogen levels in waterways and previous permit parameters, the department has determined that total nitrogen testing and monitoring will be done in place of total kjeldahl nitrogen (TKN). Total nitrogen is the sum of total kjeldahl nitrogen (ammonia, organic and reduced nitrogen) and nitrate-nitrite, and is a more comprehensive test for nitrogen.

WHOLE EFFLUENT TOXICITY

The permittee must conduct *Ceriodaphnia dubia* (Water Flea) and *Pimephales promelas* (Fathead Minnow) WET tests. Acute toxicity testing shall occur once each calendar quarter. Acute test failure (LC₅₀) is defined as lethality of 50% or more of each test organism at any effluent concentration. No chronic toxicity testing will be required in the proposed permit.

If an acute toxicity test failure occurs, an additional test must be conducted within fourteen days of the initial toxicity findings. If the additional test fails, the department will determine whether a Toxicity Reduction Evaluation (TRE) is necessary.

BIOSOLIDS

Currently the department does not have the authority to regulate biosolids. Therefore, the permittee is required under the Direct Enforceability provision of 40 CFR §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.

OTHER PERMIT CONDITIONS

Mercury Pollutant Minimization Plan

The permittee is required to complete and submit an updated Mercury Pollutant Minimization Plan (MPMP) to the department within 180 days of permit issuance. The purpose of the MPMP is to evaluate collection and treatment systems to determine possible sources of mercury as well as potential mercury reduction options. In addition to the sampling required in this permit, the permittee shall sample effluent from the total facility discharge station for dissolved mercury annually throughout the life of this permit. Dissolved mercury shall be analyzed using an EPA approved mercury analysis method. Samples shall be taken at any time during the calendar year and reported to the department. A trip blank shall be analyzed for each sampling event.

Industrial Waste Management

The proposed permit contains general pretreatment language and requirements. The general requirements include protection from any source of non-domestic wastewater which causes Pass Through or Interference; creates a fire or explosion hazard; causes corrosive structural damage; causes obstruction; interferes with the treatment process; includes excessive heat; contains petroleum oil and other products which causes Interference or Pass Through; results in the presence of toxic gases, vapors or fumes in the facility; and is any trucked or hauled pollutant except at designated discharge points.

Using BPJ's and previous permit requirements, it was decided that in addition to the general limitations and requirements the facility must sample and analyze the effluent from discharge points 001, 003, and 011 for those parameters listed in 40 CFR 122, Appendix D, Table III (Table 6). Samples must be collected annually for these outfalls.

Table 6 – non-POTW Influent and Outfalls 001, 003, and 011 Total Metals Testing			
Information from Table III – Metals – 40 CFR 122 – Appendix D			
Testing performed annually – Outfalls 001, 003, and 011			
Antimony, Total	Chromium, Total	Nickel, Total	Zinc, Total
Arsenic, Total	Copper, Total	Selenium, Total	Cyanide, Total
Beryllium, Total	Lead, Total	Silver, Total	Phenols, total
Cadmium, Total	Mercury, Total	Thallium, Total	
Hardness as Calcium Carbonate *			
* A total hardness of the receiving stream needs to be determined every time the above parameters are sampled and analyzed. The hardness is used to calculate parameter criteria according to the North Dakota water quality standards. This sample shall be collected upstream of the final discharge sites.			

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 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 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.

PERMIT ISSUANCE PROCEDURES

Permit Actions

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

PROPOSED PERMIT ISSUANCE

This proposed permit meets all statutory requirements for the department to authorize a wastewater discharge. The permit includes limits and conditions to protect human health 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 years.

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APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to reissue a permit to the **United States Air Force – MINOT AFB**. 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 **November 21, 2019** in the **Minot Daily News** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

- Indicates where copies of the draft Permit and Fact Sheet are available for public evaluation.
- Offers to provide assistance to accommodate special needs.
- Urges 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 Environmental Quality
Division of Water Quality
918 East Divide Avenue, 4th Floor
Bismarck, ND 58501

The primary author of this permit and fact sheet is Allison Lightfoot.

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

Public Notice Date: 11/21/2019

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

Public Notice Number: ND-2019-024

Application Date: 6/25/2019 Application Number: ND0020486

Applicant Name: United States Air Force Minot

Mailing Address: 5 CES/CEIE, Minot AFB, ND 58705-5006

Telephone Number: 701.723.1964

Proposed Permit Expiration Date: 12/31/2024

Facility Description

The reapplication is for six wastewater stabilization ponds servicing the Minot Air Force Base. The discharge structures are located in the SW1/4, NW1/4, Section 7, Township 157N, Range 82W, and the SE1/4, SW1/4, Section 11, Township 157N, Range 83W. Any discharge would be to an unnamed drainage of Egg Creek.

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 FWPCA 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 December 21, 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 2019.05.29

1. **“Act”** means the Clean Water Act.
2. **“Average monthly discharge limitation”** means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.
3. **“Average weekly discharge limitation”** means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.
4. **“Best management practices”** (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
5. **“Bypass”** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **“Composite”** sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24-hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.
7. **“Daily discharge”** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
8. **“Department”** means the North Dakota Department of Environmental Quality, Division of Water Quality.
9. **“DMR”** means discharge monitoring report.
10. **“EPA”** means the United States Environmental Protection Agency.
11. **“Geometric mean”** means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.

12. **"Grab"** for monitoring requirements, means a single "dip and take" sample collected at a representative point in the discharge stream.
13. **"Instantaneous"** for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.
14. **"Maximum daily discharge limitation"** means the highest allowable "daily discharge."
15. **"Salmonid"** means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.
16. **"Sanitary Sewer Overflows (SSO)"** means untreated or partially treated sewage overflows from a sanitary sewer collection system.
17. **"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
18. **"Total drain"** means the total volume of effluent discharged.
19. **"Upset"** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

DEFINITIONS Whole Effluent Toxicity (WET) BP 2017.04.06

20. **"Acute toxic unit" ("TUa")** is a measure of acute toxicity. TUa is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end on the acute exposure period (i.e., $100/\text{"LC50"}$).
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., $100/\text{"IC25"}$).
22. **"Inhibition concentration", ("IC")**, is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., Interpolation Method).
23. **"LC50"** means the concentration of toxicant (e.g., effluent) which is lethal to 50 percent of the organisms exposed in the time period prescribed by the test.

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

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APPENDIX C – DATA AND TECHNICAL CALCULATIONS

The development of the permit did not require technical calculations by the North Dakota Department of Environmental Quality. The department reviewed DMR information and applicable water quality standards for class III streams to determine the appropriate requirements to be placed in the permit. In addition, the department reviewed Total Maximum Daily Load information for the unnamed tributary of Egg Creek and the department's 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads (303(d) List).

APPENDIX D – RESPONSE TO COMMENTS

Comments received during the public comment period will be addressed and placed here.

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