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

Public Notice Date: 8/15/2019 Public Notice Number: ND-2019-019

## 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: 2/8/2019 Application Number: ND0020559

Applicant Name: Valley City City Of

Mailing Address: 254 2nd Ave NE, Valley City, ND 58072-0390

Telephone Number: 701.845.0380

Proposed Permit Expiration Date: 9/30/2024

## Facility Description

The reapplication is for three waste stabilization ponds which service the City of Valley City. The discharge facility is located in the SW1/4, Section 32, Township 140N, Range 58W in Barnes county. Any discharge would be to the Sheyenne river, a Class IA stream.

## Tentative Determinations

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

## Information Requests and Public Comments

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

All comments received by September 16, 2019 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice. If you require special facilities or assistance relating to a disability, call TDD at 1.800.366.6868.

**FACT SHEET FOR NDPDES PERMIT ND0020559**

**PERMIT REISSUANCE**

**VALLEY CITY PUBLICLY OWNED TREATMENT WORKS**

**DATE OF THIS FACT SHEET – JUNE 2019**

## INTRODUCTION

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

The following regulations apply to municipal NDPDES permits:

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

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

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

## TABLE OF CONTENTS

## BACKGROUND INFORMATION

**Table 1 – General Facility Information**

| | |
|---|---|
| Applicant: | City of Valley City |
| Facility Name and Address: | Valley City Publicly Owned Treatment Works<br>254 2nd Ave NE, Valley City, ND 58072 |
| Permit Number: | ND0020559 |
| Permit Type: | Major POTW – Renewal |
| Type of Treatment: | Waste Stabilization Pond |
| SIC Code: | 4952 |
| Discharge Location: | Sheyenne River, Class IA stream<br>Latitude: 46.8919836300<br>Longitude: -98.0313455000 |
| Hydrologic Code: | 09020204 – Lower Sheyenne |
| Population: | 6,300 |

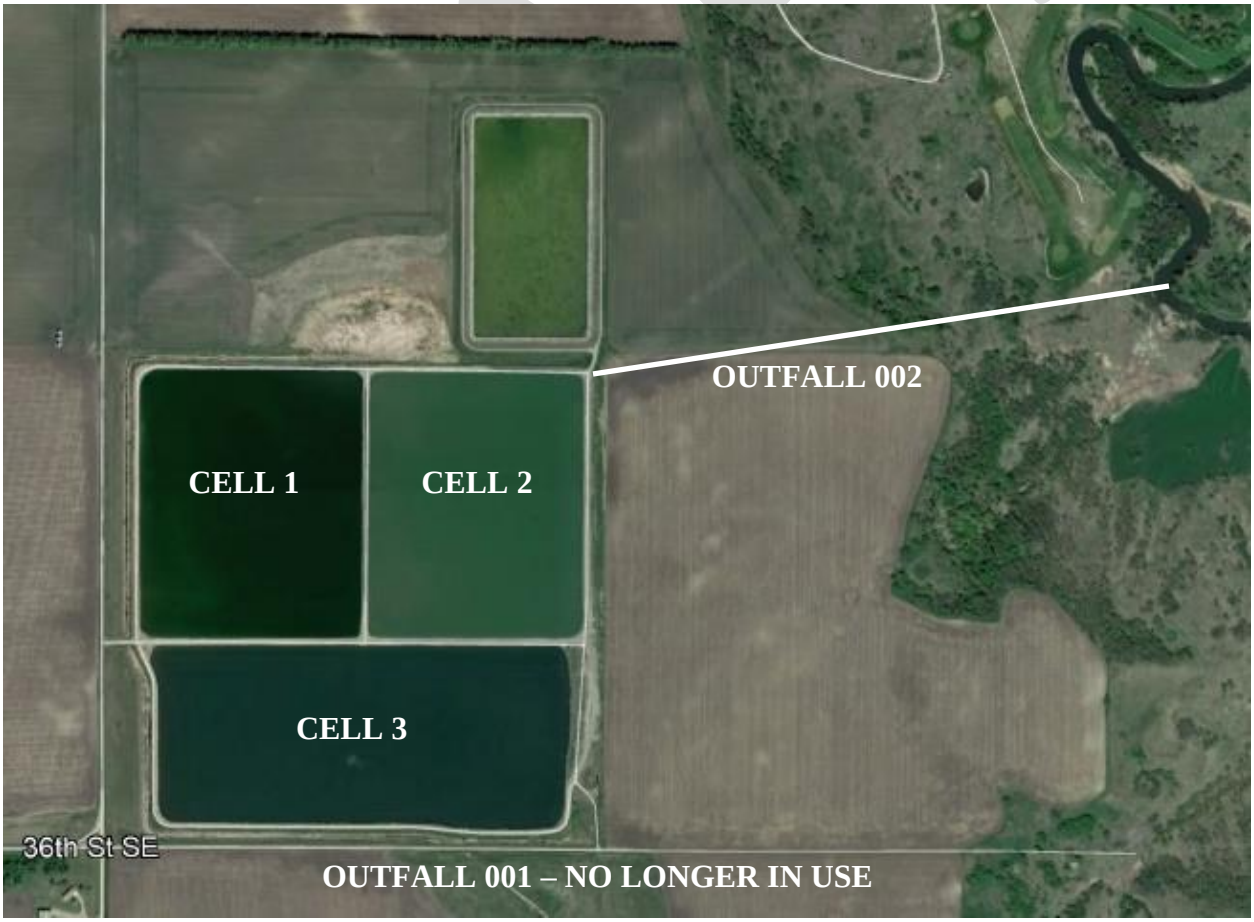


**Figure 1** - Valley City Wastewater Treatment Facility Overview (Google Earth 5/16/2016)

## FACILITY DESCRIPTION

### History

The City of Valley City owns and operates a major municipal treatment facility which treats domestic wastewater.

Over the past two decades, Valley City has greatly reduced the amount of inflow and infiltration (I&I) into the city's sewer system through both a violation and A Notice of Violation was issued to the city on September 26, 1996 in regard to I&I. A Consent Agreement was entered into on February 9, 1997 and expired on October 31, 2000. Since the consent agreement was still in effect, a compliance schedule was not included in the 2004 permit renewal.

The following improvements started in 1999 and continued into the construction season of 2004. The city replaced 36 manholes and rehabilitated 42 for a total of 78 manholes; relined 17,954 linear feet of mains and replaced 4,679 linear feet of clay tile mains with PVC pipe. The force main from the master lift station to the lagoon was replaced in 2003, covering 9,536 linear feet, with an increased size from 12 inches to 16 inches. The city cleaned and televised 49,958 linear feet of sanitary sewer mains from 1999 thru 2003, with an additional 29,820 linear feet completed in 2004, for a total of 79,778 linear feet. In 2003, the city rebuilt the pumps in the master lift station, with new impellers, wear plates, bearings and check valves. An extensive rip rap project of all three lagoon cells was completed in 2007.

Valley City was hit hard with a flood during the spring of 2009. The city had three different bypass locations. Two of these bypasses were able to be pump relayed to a manhole down the line and the third bypass ran about an hour. After the waters receded the city had some of the sewer system jetted and videoed. An assessment plan was put together and roughly twenty-five to thirty blocks of sewer pipe were relined, a number of manholes were replaced, and the old 46-inch brick laid sewer line was replaced with PVC pipe. A new lift station at Lake Shore was replaced by fall of 2009. The 2009 upgrades also included using an existing wet well system to eliminate the need for Outfall 001. Outfall 001 flows over land for a few miles before entering the Sheyenne River.

Valley City also developed a plan to buyout homes in a designated flood zone of the Sheyenne River. This project will allow more of a green-way to be available during flood times and by moving these homes off the river will help reduce the chances of inflow and infiltration into the sewer collection system. As the town becomes developed on the high ground a new satellite lift station will be added to the sewer collection system. Valley City replaced all three pumps in the master lift station with submersible pumps in the summer of 2013. During the summer of 2014 new check valves for each pump at the master lift station were replaced.

### Collection System Status

Valley City utilizes gravity and ten (10) satellite lift stations to transfer water to the main lift station. The main lift station pumps the wastewater to the lagoon system via a force main. The total population served is currently estimated to be 6,300.

### Treatment System

Valley City's Publicly Owned Treatment Works (POTW) treats wastewater with a three (3) cell waste stabilization pond system. Cell 1 is located in the northwest corner and has a surface area of thirty six (36) acres; Cell 2 is located in the northeast corner and has a surface area of thirty seven (37) acres; and Cell 3 is located south and has a surface area of forty five (45) acres.

Raw wastewater (sewage) is primarily sent to cell one to facilitate the breakdown of organic matter but can also be routed to Cell 2 if needed. From there the wastewater is transferred to a series of two facultative cells, where detention time is used to continue the wastewater treatment process.

**Outfall Description**

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

The previous permit had two (2) active Outfalls. Outfall 001 was deactivated with this permit renewal and removed from the permit. The facility has not discharged from Outfall 001 since 2009 and no longer uses it.

| **Outfall 001. Non-Active. Final Outfall** | | | |
|---|---|---|---|
| Latitude: 46.8985928000 | Longitude: -98.0288679000 | County: Barnes | |
| Township: 140 N | Range: 58 W | Section: 32 | Q: C |
| Receiving Stream: Sheyenne River | Classification: Class IA | | |
| Outfall Description: Valley City has abandoned the use of Outfall 001 to alleviate any issues with downstream landowners. Discharge from this Outfall flows over land for approximately two miles before entering the Sheyenne River. | | | |

| **Outfall 002. Active. Final Outfall** | | | |
|---|---|---|---|
| Latitude: 46.8919836300 | Longitude: -98.0313455000 | County: Barnes | |
| Township: 140 N | Range: 58 W | Section: 32 | Q: C |
| Receiving Stream: Sheyenne River | Classification: Class IA | | |
| Outfall Description: The treated effluent flows into the Sheyenne River. This Outfall can discharge water from both Cell 2 and Cell 3. The discharge is directly piped to the Sheyenne River through a submerged diffuser. This diffuser was added to facilitate the discharge from the holding pond of the water treatment plant. To keep cost down, both the Valley City Water Treatment Plant and the Valley City wastewater system utilize the same discharge line. The type of discharge from this system is called a "Controlled Discharge" and is deemed to be non-continuous. | | | |

## PERMIT STATUS

The department issued the previous permit for this facility on October 1, 2014. The previous permit placed effluent limits on Biochemical Oxygen Demand ($BOD_5$), Total Suspended Solids (TSS), pH, Ammonia as N, *E. coli*, Oil and Grease, and Whole Effluent Toxicity (WET). Due to the non-continuous nature of the discharge, WET is proposed to be sampled twice during the life of the permit with a minimum of one year between sampling frequencies.

Valley City submitted an application for permit renewal on February 8, 2019. Effluent sample data has been provided to the department through official laboratory reports, discharge monitoring reports (DMRs) and EPA Application Form 2A.

## SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED

The department's assessment of compliance is based on review of the facility's DMRs and inspection conducted by the department. Eight (8) inspections of the facility were conducted from October 1, 2014 though January 1, 2019.

### Past Discharge Data

The concentration of pollutants in the discharge was reported in DMR forms. No discharges occurred from Outfall 001, therefore all data below is from Outfall 002. The effluent is characterized as shown in Table 2.

**Table 2 – Valley City POTW (October 1, 2014 to July 1, 2019)**

| Parameter | Units | Range | Average | Permit Limit | Number of Exceedances |
|---|---|---|---|---|---|
| *Effluent – Outfall 002* | | | | | |
| BOD5 | mg/l | 2 – 18.25 | 5.9 | 25 – Avg.<br>45 – Weekly | 0 |
| TSS | mg/l | 2 – 41 | 12.2 | 30 – Avg.<br>45 – Weekly | 1 |
| *E. coli* | Colonies per 100 ml | 1 – 23.1 | 3.1 | 129 – Avg.<br>409 – Max. | 0 |
| pH | s.u. | 7.60 – 8.89 | NA | 7.0 to 9.0 | 0 |
| Ammonia as N | mg/l | 0.18 – 9 | 4.5 | WQS | 0 |
| Flow | MGD | 4 – 9.8 | 7.5 | NA | NA |
| Drain | MG | 29 – 91 | 55.4 | NA | NA |
| Discharge Duration | Days | 7 – 10 | 7.7 | NA | NA |
| WET | TUa | <1 | <1 | <1 | 0 |
| Antimony | µg/l | 1 – 2 | 1.25 | 5.6 | 0 |
| Arsenic | µg/l | 2 – 3.1 | 2.5 | 340 | 0 |

**Table 2 – Valley City POTW (October 1, 2014 to July 1, 2019)**

| Parameter | Units | Range | Average | Permit Limit | Number of Exceedances |
|---|---|---|---|---|---|
| Beryllium | µg/l | 0.5 – 0.5 | 0.5 | 4 | 0 |
| Cadmium | µg/l | 0.1 – 0.2 | 0.125 | 1.8 | 0 |
| Chromium | µg/l | 2 – 3.1 | 2.275 | 1800 | 0 |
| Copper | µg/l | 2.2 – 9 | 4.625 | 14 | 0 |
| Lead | µg/l | 0.5 – 1.8 | 0.825 | 82 | 0 |
| Mercury | µg/l | 0.2 – 0.2 | 0.2 | 1.7 | 0 |
| Nickel | µg/l | 3.8 – 8.6 | 5.525 | 470 | 0 |
| Selenium | µg/l | 2 – 10 | 4.75 | 20 | 0 |
| Silver | µg/l | 0.5 – 0.5 | 0.5 | 3.8 | 0 |
| Thallium | µg/l | 0.1 – 0.1 | 0.1 | 0.24 | 0 |
| Zinc | µg/l | 50 – 50 | 50 | 120 | 0 |
| Cyanide | mg/l | 0.005 – 0.03 | 0.118 | 0.022 | 0 |
| Phenols | mg/l | 0.01 – 0.0518 | 0.0205 | 0.3 | 0 |
| Hardness as CaCO3 | mg/l | 283 – 430 | 351.5 | NA | 0 |
| Notes: | | | | | |
| The Valley City POTW discharged nine (9) times from **Outfall 002** during the stated time frame.<br>• One discharge in the month of May;<br>• Two discharges in the month of June;<br>• One discharge in the month of July;<br>• Five discharges in the month of November. | | | | | |

**Sanitary Sewer Overflows**

Overflows of untreated or partially treated sewage from a sanitary sewer collection system have been termed Sanitary Sewer Overflow (SSOs) by the EPA. According to department records, there were two (2) SSOs from October 1, 2014 through July 1, 2019. The first took place on July 1, 2016 and occurred due to a crack in the forcemain. The second took place on December 9, 2016. When wastewater from the forcemain was leaving the master lift station due to a failed fitting.

## PROPOSED PERMIT LIMITS

### EFFLUENT LIMITATIONS

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

**Table 3: Proposed Effluent Limits**

| Effluent Parameter | Avg. Monthly Limit | Avg. Weekly Limit | Daily Maximum Limit | Basis [a] |
|---|---|---|---|---|
| $BOD_5$, mg/l | 25 | 45 | * | NDAC 33.1-16-01-14(3)(c)(1)<br>40 CFR 133.102(a)(2)<br>Previous Permit |
| Total Suspended Solids (TSS), mg/l | 30 | 45 | * | NDAC 33.1-16-01-14(3)<br>40 CFR 133.102(b)(1) & (2)<br>Previous Permit |
| pH, s.u. | Shall remain between 7.0 to 9.0 | | | WQS<br>40 CFR 133.102(c) |
| *E. coli*, #/ 100 ml [b] | 126 | * | 409 | WQS<br>Previous Permit |
| Ammonia as N, mg/l [c] | c | c | c | WQS<br>Previous Permit |
| Oil & Grease, visual [d] | * | * | * | WQS<br>Previous Permit |
| Oil & Grease, mg/l [d] | * | * | 10 | Previous Permit<br>BPJ |
| Whole Effluent Toxicity (WET), $TU_a$ | Refer to Whole Effluent Toxicity (WET) Requirements | | | 40 CFR 122.44(d)(1)(iv-v)<br>WQS<br>Previous Permit |
| There shall be no discharge of floating solids or visible foam in other than trace amounts, nor a discharge which causes a visible sheen in the receiving waters. | | | | 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:

"Previous Permit" refers to limitations in the previous permit. The NPDES regulations **40 CFR Part 122.44(1)(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**.

**Table 3: Proposed Effluent Limits**

| Effluent Parameter | Avg. Monthly Limit | Avg. Weekly Limit | Daily Maximum Limit | Basis [a] |
|---|---|---|---|---|
| | "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.<br><br>"BPJ" refers to best professional judgement. | | | |
| b. | *E.coli* shall not exceed 126 organisms per 100 ml as a geometric mean of representative samples collected during any 30-day consecutive period, nor shall samples exceed 409 organisms per 100 ml for any one day. This limit applies from April 1 through October 31. | | | |
| c. | The Valley City POTW shall review each discharge by evaluating the WQS ammonia criterion which is dependent on river flow, discharge rate, river pH, river temperature and the effluent ammonia concentration. This determination shall be in accordance to the formula specified in the latest revision of the state WQS.<br><br>The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:<br><br>$\left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \bullet CV;$<br><br>where CV = 4.63, when T$\leq$ 7 °C; or<br>CV = $1.45 * 10^{0.025*(25-T)}$, when T > 7 °C.<br><br>For acute toxicity, the one-hour average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula:<br><br>$0.411/1 + 10^{7.204 - pH} + 58.4/1 + 10^{pH - 7.204}$,<br><br>where salmonids are absent. | | | |
| d. | The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease. | | | |

**SELF-MONITORING REQUIREMENTS**

Sampling shall consist of one (1) grab sample to be taken and analyzed prior to any discharge for $BOD_5$, TSS, pH, *E.coli*, and Ammonia as N. This analysis shall be reported to the department. In addition, one (1) grab sample of the actual discharge shall be taken and

analyzed on a weekly basis for the duration of the discharge. All effluent is sampled at a point leaving Cell 2 and/or Cell 3 but prior to entering waters of the state.

**Table 4: Self-Monitoring Requirements**

| Effluent Parameter | Frequency | Sample Type [a] |
|---|---|---|
| $BOD_5$, mg/l | Weekly | Grab |
| TSS, mg/l | Weekly | Grab |
| pH, s.u. | Weekly | Instantaneous |
| *E. coli*, #/100 ml [b] | Conditional/Weekly | Grab |
| Ammonia as N, mg/l | Weekly | Grab |
| Oil & Grease, mg/l | Daily | Visual [c] |
| Nitrogen, Total mg/l | Monthly | Grab |
| Phosphorus, Total mg/l | Monthly | Grab |
| WET | Conditional | Grab |
| Flow, MGD | Daily | Instantaneous |
| Total Drain, MG | Monthly | Calculated |
| **Sheyenne River Parameter** | | |
| pH, s.u. – Upstream | 2/Week | Instantaneous |
| Temperature, °C - Upstream | 2/Week | Instantaneous |
| Sheyenne River, cfs | Daily | USGS gage 05058000 |
| **Notes:** | | |
| a. Refer to Appendix B for definitions. | | |
| b. This parameter shall be monitored for discharges from April 1 through October 31. | | |
| c. If a visible sheen of floating oil is observed in the discharge, a grab sample shall be collected, and the department shall be contacted. | | |

**TECHNOLOGY-BASED EFFLUENT LIMITS**

Federal and state regulations define technology-based effluent limits for municipal wastewater treatment plants. These effluent limits are given in 40 CFR Part 133 and in NDAC Chapter 33.1-16-01-30. These regulations are performance standards that constitute all known, available, and reasonable methods of prevention, control, and treatment for municipal wastewater.

NDAC Chapter 33.1-16-01-30 incorporates by reference 40 CFR 133 which list the following technology-based limits for BOD5, TSS, and pH:

**Table 5: Technology-based Limits**

| Parameter | 30 Day Average | 7 Day Average |
|---|---|---|
| BOD5 | 30 mg/l | 45 mg/l |
| TSS | 30 mg/l | 45 mg/l |
| pH | Remain between 6.0 to 9.0 | -- |
| Percent Removal | 85% BOD5 and TSS | -- |

NDAC 33.1-16-01-14(3)(c)(1) allows for adjustment of the secondary treatment criteria to reflect site specific considerations. A five-day biochemical oxygen demand limit of twenty-five (25) milligrams per liter (consecutive thirty-day average) may be applied in instances in which limits expressed in terms of secondary treatment standards would be impractical or deemed inappropriate to protect receiving waters.

## SURFACE WATER QUALITY-BASED EFFLUENT LIMITS

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

There is currently no TMDL along this stretch of the Sheyenne River.

The stream reach of the receiving water body that the facility discharges to (ND-09020204-034-S_00) is listed as impaired under the 2016 Integrated Section 303(d) List of Waters Needing TMDLs Report. The stream reach is listed as "Fully Supporting by Threatened" for the designated uses of "Fish and Other Aquatic Biota" due to an impairment by "sedimentation/siltation, benthic-macroinvertebrate bioassessments. The TMDL priority for this stream reach is low. The department is addressing the sedimentation impairment by continuing with a TSS permit limit.

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

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

### Numerical Criteria for the Protection of Human Health

The U.S. EPA has published numeric water quality criteria for the protection of human health that are applicable to dischargers. These criteria are designed to protect humans from exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters. The 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) limit concentrations of pollutants from exceeding applicable standards of the receiving waters. The department adopted a narrative biological goal solely to provide an additional assessment method that can be used to identify impaired surface waters.

**Antidegradation**

The purpose of North Dakota's Antidegradation Policy (NDAC Chapter 33.1-16-02(Appendix IV)) is to:

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

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

**Mixing Zones**

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

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

**$BOD_5$**

The department has reviewed the $BOD_5$ data and sampling frequency for the Valley City POTW. No exceedances occurred for this parameter. The department proposes to continue with the 25 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of weekly.

**TSS**

The department has reviewed the TSS data and sampling frequency for the Valley City POTW. One exceedance was found for the 30-day average, however this exceedance was not over the Technical Review Criteria (TRC). The TRC value for TSS was determined by the following equation:

TRC 1.4 * TSS 30 mg/l = TSS 42 mg/l

The department has determined that there is not sufficient data to proceed with the implementation of "Equivalent-to-Secondary Treatment Standards" or "Alternative State Requirements" (ASRs). The department proposes to continue with the 30 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of weekly.

**pH**

The department has reviewed the pH data and sampling frequency for the Valley City POTW. No exceedances occurred during the reviewed time frame. The department proposes to continue with the limitation of 7.0 to 9.0 with a sampling frequency of weekly to reflect the state's standards of water quality for class IA streams.

***E. coli***

The department has reviewed the *E. coli* data and sampling frequency for the Valley City POTW. No exceedances occurred during the reviewed time frame. The department proposes to continue with a limit of 126 organisms per 100 ml as a monthly geometric mean and 409 organisms per 100 ml as a daily maximum limitation with a sampling frequency of once per week. The WQS only applies during the recreation season from May 1 through September 30. The department shall extend the standard from April 1 through October 31. The department used BPJ to extend this period to ensure the entire recreation season is covered.

**Ammonia as Nitrogen**

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

Ammonia presents both acute and chronic toxicity to aquatic life at variable levels depending on pH and temperature. For discharges to small streams, ammonia can be a limiting factor for a discharge. This discharge would be required to meet toxicity at the end of pipe. The department conducted a Reasonable Potential (RP) analysis to determine whether effluent limits for ammonia would be required in this permit, using procedures given in "*Technical Support Document (TSD) For Water Quality-based Toxics Control*"; EPA/505/2-90-001; March 1991.

Federal regulations (40 CFR 122.44) require the department to place limits in NDPDES permits on toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria.

The department found reasonable potential (Appendix C) for the Valley City POTW to cause a violation of the Water Quality of Standards of the state for ammonia.

The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:

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

where CV = 4.63, when T≤ 7° C; or
$CV = 1.45 * 10^{0.025*(25-T)}$, when T > 7° C.

For acute toxicity, the one-hour average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula:

$$0.411/1 + 10^{7.204 - pH} + 58.4/1 + 10^{pH - 7.204},$$

where salmonids are absent.

North Dakota's aquatic life standards for ammonia are dependent upon the pH and the temperature of the receiving water body. To determine the applicable WQS, pH and temperature data from the Sheyenne River below Baldhill Dam was (USGS gage station 05058000) was used.

The Valley City POTW discharged for a total of 69 days during the previous permit cycle. The longest discharged lasted ten (10) days while the average discharge was 7.7 days. The department proposes that the 4-day chronic criterion is more appropriate than the 30-day average criterion. Table 6 summarizes some of the data used in calculating reasonable potential.

**Table 6: USGS gage station 05058000 (1999 – 2019)**

| Sheyenne River parameters | 90th Percentile |
|---|---|
| Temperature - °C | 24.5 |
| pH – s.u. | 8.8 |
| Ammonia as N – mg/l | 0.2019 |

The department proposes to use the assimilative capacity of the stream to derive an effluent discharge rate at the time of discharge. This allows the most flexibility for the discharger while following the WQS for ammonia as N. The reasoning for this is that ammonia is a non-persistent pollutant along with the ability to be variable in its toxicity as based on pH and temperature.

**Whole Effluent Toxicity (WET)**

40 CFR 122.21(j) specifies which POTWs must conduct whole effluent toxicity (WET) testing. WET testing is required for facilities with (1) a design influent flow greater than one million gallons per day; (2) an approved pretreatment program. The department may require other facilities to conduct WET testing based on the following considerations: (1) variability of the

pollutants or pollutant parameters in the POTW effluent; (2) ratio of effluent flow to receiving stream flow; (3) existing controls on point and nonpoint sources, including total maximum daily load calculations for the water body segment and the relative contribution of the POTW; (4) receiving stream characteristics.

Valley City did not have a WET failure during the current permit cycle.

The Valley City POTW will be required to perform two fathead minnow and two *Ceriodaphnia dubia* WET tests during the life of the proposed permit with a minimum of one year between tests. The department shall initiate the "Reopener Clause" if any WET test has been confirmed to show toxicity.

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

**Outfall 002**
WET tests shall be performed on the following schedule, two fathead minnow and two *Ceriodaphnia dubia* WET tests during the life of the proposed permit with a minimum of six months between tests. The initial test shall be performed on the first discharge of the new permit.

**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 002** | | | | | | |
|---|---|---|---|---|---|---|
| Effluent Dilution | 0%(Control) | 12.5% | 25% | 50% | 75% | 100% |
| Dilution Water | **Sheyenne River** | | | | | |
| Species and Test Type | *Ceriodaphnia dubia* - 48 Hour Acute - Static Renewal - 20°C | | | | | |
| | Fathead minnow - 96 Hour Acute - Static Renewal - 20°C | | | | | |
| Endpoint | Survival – reported as TUa | | | | | |
| Compliance Point | **End-of-pipe** | | | | | |

If toxicity occurs in a routine test, an additional test shall be conducted 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.

**Chronic Toxicity Testing**
The department proposes to continue with acute testing only in this permit renewal.

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**

**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.

**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.

**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.

**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:

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

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

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

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

**Phosphorus and Nitrogen (Nutrients)**

Nutrient monitoring was included in this permit. According to the North Dakota Nutrient Reduction Strategy for Surface Waters, Valley City POTW is classified as a Category I facility. The first step in implementing the nutrient reduction strategy for Category I facilities is to include effluent monitoring for nutrients (total nitrogen (TN) and total phosphorus (TP)) during the permit This monitoring information will be evaluated as part of the nutrient evaluation of the Sheyenne River.

**BIOSOLIDS**

Currently the department does not have the authority to regulate biosolids. The use and/or disposal of sewage sludge shall be done under the Direct Enforceability provisions of 40 CFR Part 503.3(b) to meet the applicable requirements of the regulation.

**HUMAN HEALTH**

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

## MONITORING REQUIREMENTS

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

### TEST PROCEDURES

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

## OTHER PERMIT CONDITIONS

### PRETREATMENT

#### Federal and State Pretreatment Program Requirements

Under the terms of the "Memorandum of Understanding between North Dakota Department of Environmental Quality and the United States Environmental Protection Agency, Region 8" (2005), NDDEQ has been delegated authority to administer the Pretreatment Program. Under this delegation of authority, the department issues wastewater discharge permits for significant industrial users discharging to POTWs which have not been delegated authority to issue their own wastewater discharge permits. The requirements for a Pretreatment Program are contained in Title 40, part 403 of the Code of Federal Regulations. Under the requirements of the Pretreatment Program (40 CFR 403.8(f)(1)(iii)), the department is required to approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) (40 CFR 403.8(f)(1)(i)).

### SPECIAL CONDITIONS

The Valley City POTW and the Valley City WTP (NDPDES Permit No. ND0026395) utilize the same discharge point which includes a submerged diffuser in the Sheyenne River. Each permittee shall coordinate a discharge independently from each other. If a situation arises that both facility's need to discharge at the same time, the department shall be notified to help facilitate a discharge plan.

### BENEFICIAL REUSE

**Irrigation**

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

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

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

**Table 7 - Beneficial Reuse-Irrigation Requirements**

| Parameter | Discharge Limitations | Monitoring Frequency | |
|---|---|---|---|
| | Daily Max | Measurement Frequency | Sample Type |
| $BOD_5$ (mg/l) | 30.0 | 1 per 14 days | Grab |
| TSS (mg/l) | 45.0 | 1 per 14 days | Grab |
| *E. Coli* (number/100 ml) | 126 | Weekly | Grab |

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

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

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

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

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

**Construction**

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

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

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

**Table 8 - Beneficial Reuse-Construction Requirements**

| Parameter | Limitations (Maximum) | Measurement Frequency | Sample Type |
|---|---|---|---|
| $BOD_5$ (mg/l) | 30 | Monthly | Grab |
| TSS (mg/l) | 100 | Monthly | Grab |
| *E. Coli* (number/100 ml) | 126 | Weekly | Grab |

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

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

1. Worker and public contact with treated wastewater should be minimized.

2. Where frequent worker contact is likely a higher level of disinfection should be provided, such as achieving *E. coli* counts less than 14/100 ml.

3. Work closely with the treatment system operator to ensure treated wastewater quality is suitable when it is drawn for construction purposes.

4. Apply the treated wastewater in a manner that does not result in runoff or ponding.

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

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

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

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

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

**Other Uses as Approved**

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

## PERMIT ISSUANCE PROCEDURES

### PERMIT MODIFICATIONS

The department may modify this permit to impose numerical limits, if necessary to comply with water quality standards for surface waters, with sediment quality standards, or with water quality standards for ground waters, based on new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The department may also modify this permit to comply with new or amended state or federal regulations.

### PROPOSED PERMIT ISSUANCE

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

## APPENDIX A – PUBLIC INVOVLEMENT INFORMATION

The department proposes to reissue a permit to the **City of Valley City WWTP**. 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 **August 15, 2019** in the **Valley City Times Record** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

- 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 Sarah Waldron Feld.

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

Public Notice Date: 8/15/2019 Public Notice Number: ND-2019-019

**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: 2/8/2019 Application Number: ND0020559

Applicant Name: Valley City City Of
Mailing Address: 254 2nd Ave NE, Valley City, ND 58072-0390
Telephone Number: 701.845.0380

Proposed Permit Expiration Date: 9/30/2024

**Facility Description**
The reapplication is for three waste stabilization ponds which service the City of Valley City. The discharge facility is located in the SW1/4, Section 32, Township 140N, Range 58W in Barnes county. Any discharge would be to the Sheyenne river, a Class IA stream.

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

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

All comments received by September 16, 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

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

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

3. "**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).

4. "**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.

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

## APPENDIX C – DATA AND TECHNICAL CALCULATIONS

### DFLOW

USGS gage station 05058000 on the Sheyenne River at Baldhill Dam was used to determine critical low flows using the DFLOW (3.1b) program. The season defined was 1999 to 2019.

| | | | | | |
|---|---|---|---|---|---|
| DFLOW 1B3 (ACUTE) | 18.9 | CFS | DFLOW 1Q10 (ACUTE) | 17.5 | CFS |
| DFLOW 4B3 (CHRONIC) | 19.1 | CFS | DFLOW 7Q10 (CHRONIC) | 17.9 | CFS |
| DFLOW 30B10 (AMMONIA) | 19.7 | CFS | | | |

**AMMONIA AS N**

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

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

| | | | | |
|---|---|---|---|---|
| Facility Name: | Valley City City of | Receiving Stream: | Sheyenne River | |
| NDPDES Permit: | ND0020559 | 1Q10 Acute | 17.5 | cfs |
| Daily Maximum Flow (mgd): | 9.80 | 1B3 Acute | 18.9 | cfs |
| Daily Average Flow (mgd): | 7.45 | 7Q10 Chronic | 17.9 | cfs |
| Stream Design Mixing: | 90.0% | 4B3 Chronic | 19.1 | cfs |
| Statistical Multiplier: | 0.6 | | | |
| Upstream Concentration: | 0.2019 | mg/l | **Parameter:** | |
| Effluent Concetration (max): | 9.0000 | mg/l | **Ammonia as N** | |

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

**Outfall: 002**

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

| | | | | | |
|---|---|---|---|---|---|
| Qe - Acute | 9.80 | mgd | Qs - 1Q10 | 11.31 | mgd |
| Qe - Chronic | 7.45 | mgd | Qs - 1B3 | 12.21 | mgd |
| Ce | 9.0000 | mg/l | Qs - 7Q10 | 11.56 | mgd |
| Cs | 0.2019 | mg/l | Qs - 4B3 | 12.34 | mgd |
| Stat | 0.60 | | | | |
| pmf | 90.0% | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Acute RP | | | Chronic RP | | |
| RWC - 1Q10 | 2.7522 | mg/l | RWC - 7Q10 | 2.3706 | mg/l |
| RWC - 1B3 | 2.6524 | mg/l | RWC - 4B3 | 2.2890 | mg/l |

| | | | | | |
|---|---|---|---|---|---|
| Criterion Maximum Concentration (CMC) | | | Criterion Continuous Concentration (CCC) | | |
| Acute Criterion | 1.84 | mg/l | Chronic Criterion | 0.8700 | mg/l |

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

| | | | |
|---|---|---|---|
| **CMC RP Present:** | | **CCC RP Present:** | |
| **1Q10 Acute OR** | **YES** | **7Q10 Chronic OR** | **YES** |
| **1B3 Acute** | **YES** | **4B3 Chronic** | **YES** |

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

## APPENDIX D – RESPONSE TO COMMENTS

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

Permit No: ND0020559
Effective Date: October 01, 2019
Expiration Date: September 30, 2024

# AUTHORIZATION TO DISCHARGE UNDER THE

# NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

the City of Valley City
Valley City Publicly Owned Treatment Works (POTW)
Valley City, ND

is authorized to discharge from its waste stabilization ponds

to the Sheyenne River, a Class IA stream

provided all the conditions of this permit are met.

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

September 30, 2024.

Signed this _____ day of _____, _____.

_____

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

BP 2019.05.21

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## TABLE OF CONTENTS

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

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

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

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

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

**DEFINITIONS Whole Effluent Toxicity (WET)** BP 2017.04.06

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

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

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

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

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

**OUTFALL DESCRIPTION**

| **Outfall 002. Active. Final Outfall** | | | |
|---|---|---|---|
| Latitude: 46.8919836300 | Longitude: -98.0313455000 | County: Barnes | |
| Township: 140 N | Range: 58 W | Section: 32 | Q: C |
| Receiving Stream: Sheyenne River | Classification: Class IA | | |
| Outfall Description: The treated effluent flows into the Sheyenne River. This Outfall can discharge water from both Cell 2 and Cell 3. The discharge is directly piped to the Sheyenne River through a submerged diffuser. This diffuser was added to facilitate the discharge from the holding pond of the water treatment plant. To keep cost down, both the Valley City Water Treatment Plant and the Valley City wastewater system utilize the same discharge line. The type of discharge from this system is called a “Controlled Discharge” and is deemed to be non-continuous. | | | |

**PERMIT SUBMITTALS SUMMARY**

| Coverage Point | Submittal | Frequency | First Submittal Date |
|---|---|---|---|
| 002A | Discharge Monitoring Report | Monthly | January 31, 2020 |
| 002W | Discharge Monitoring Report | Quarterly | January 31, 2020 |
| 002M | Discharge Monitoring Report | Yearly | October 31, 2020 |
| Application Renewal | NDPDES Application Renewal | 1/permit cycle | April 1, 2024 |

**SPECIAL CONDITIONS**

The Valley City POTW and the Valley City Water Treatment Plant (NDPDES Permit No. ND0026395) utilize the same discharge point which includes a submerged diffuser in the Sheyenne River. Each permittee shall coordinate a discharge independently from each other. If a situation should arise that both facility’s need to discharge at the same time, the department shall be notified to help facilitate a discharge plan.

# I. LIMITATIONS AND MONITORING REQUIREMENTS

## A. Discharge Authorization

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfall as specified to the following: **Sheyenne River, Class 1A**

No discharge shall occur from the lagoons until all pre-discharge parameters have been reviewed by the department. After the review process has been completed the permittee shall comply with the limitations of this permit and take one grab of the sample of the actual discharge on a weekly basis

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

## B. Effluent Limitations and Monitoring

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

| Table 1: Effluent Limitations and Monitoring Requirements **Outfall 002** | | | | | |
|---|---|---|---|---|---|
| Parameter | Effluent Limitations | | | Monitoring Requirements | |
| | Avg. Monthly Limit | Avg. Weekly Limit | Daily Maximum Limit | Sample Frequency | Sample Type |
| Biological Oxygen Demand ($BOD_5$) | 25 mg/l | 45 mg/l | * | Weekly | Grab |
| pH | Shall remain between 7.0 to 9.0 s.u. [a] | | | Weekly | Grab |
| Total Suspended Solids (TSS) | 30 mg/l | 45 mg/l | * | Weekly | Grab |
| Total Ammonia as N, mg/l [a] | [a] | * | [a] | Weekly | Grab |
| Escherichia coli (*E. coli*) [b] | 126/100 ml | * | 409/100 ml | Conditional/ weekly | Grab |
| Oil & Grease, Visual [c] | * | * | * | Daily | Visual |
| Oil & Grease [c] | * | * | 10 mg/l | Conditional/ Daily | Grab |
| Nitrogen, Total mg/l [d] | Monitor Only | | | Monthly | Grab |
| Phosphorus, Total mg/l | Monitor Only | | | Monthly | Grab |
| Whole Effluent Toxicity (WET) | Refer to Part 1(C) | | | Conditional/ Yearly | Grab |
| Metals, Total | Refer to Part V(F) | | | Yearly | Grab |
| Effluent Flow, MGD | Report Avg. Monthly Value | * | Report Max. Daily Value | Daily | Instantaneous |
| Total Drain, MGAL | * | * | Report Monthly Total | Monthly | Calculated |
| **Sheyenne River Parameters** | | | | | |
| River Flow, cfs [e] | Report | * | Report Max. Daily Value | Daily | Instantaneous |
| Temperature, °C – Upstream | Report | Report | Report | 2/Week | Instantaneous |
| pH – Upstream | Report Min. | * | Report Max. | 2/Week | Instantaneous |

Notes:

*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.

| Table 1: Effluent Limitations and Monitoring Requirements **Outfall 002** | | | | | |
|---|---|---|---|---|---|
| Parameter | Effluent Limitations | | | Monitoring Requirements | |
| | Avg. Monthly Limit | Avg. Weekly Limit | Daily Maximum Limit | Sample Frequency | Sample Type |

a. The Valley City POTW shall review each discharge by evaluating the WQS ammonia criterion which is dependent on river flow, upstream pH, upstream temperature, discharge rate, and the effluent ammonia concentration. This determination shall be in accordance to the formula specified in the latest revision of the WQS.

The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:

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

where CV = 4.63, when $T \leq 7$ °C; or
$CV = 1.45 * 10^{0.025*(25-T)}$, when $T > 7$ °C.

For acute toxicity, the one-hour average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula:

$$0.411/1 + 10^{7.204 - pH} + 58.4/1 + 10^{pH - 7.204},$$

where salmonids are absent.

b. *E.coli* shall not exceed 126 organisms perm 100 ml as a geometric mean of representative samples collected during any 30-day consecutive period, nor shall samples exceed 409 organisms permit 100 ml for any one day. This limit applies from April 1 through October 31.

c. The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, a grab sample shall be analyzed for oil and grease.

d. Total nitrogen is a combination of Nitrate, Nitrite, and Total Kjeldahl Nitrogen (TKN).

e. River flow shall be recorded according to United States Geological Survey (USGS) gage station 05058000.

Stipulations:

A pre-discharge sample must be taken prior to the start of any discharge. A grab sample from each lagoon cell to be discharged shall be tested for BOD5, TSS, pH, *E. coli*, and Ammonia as N. At the time of discharge the following shall be reported to the department: river flow, upstream pH, and upstream temperature.

The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce sheen on the surface of the receiving water.

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

**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 following schedule: two fathead minnow and two *Ceriodaphnia dubia* WET tests during the life of the proposed permit with a minimum of six months between tests. The initial test shall be performed on the first discharge of the new permit.

**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 **Outfall 002** | | | | | | |
|---|---|---|---|---|---|---|
| Effluent Dilution | 0%(Control) | 12.5% | 25% | 50% | 75% | 100% |
| Dilution Water | **Sheyenne River** | | | | | |
| 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** | | | | | |

If toxicity occurs in a routine test, an additional test shall be initiated within 14 days from the date of the initial toxicity findings. Should there be no discharge during a specified sampling time frame; sampling shall be performed as soon as there is a discharge. Should toxicity occur in the second test, testing shall be conducted at a frequency of once a month and the implementation of a 5.Toxicity Reduction Evaluation (TRE) shall be determined by the department. If no toxicity is found in the second test, testing shall occur as outlined in the permit.

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

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

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

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

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

**2. Chronic Toxicity Testing**

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

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

**3. Reduced Monitoring For Toxicity Testing**

a. Alternating Species

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

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

b. Monthly Testing

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

**4. Reporting Requirements**

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

**5. Toxicity Reduction Evaluation (TRE)**

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

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

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

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

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

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

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

## II. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 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:

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

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

3. the name of the laboratory;

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

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

6. the analytical techniques or methods used; and

7. the results of such analyses.

**D. Additional Monitoring**

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

**E. Reporting of Monitoring Results**

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

2. Prior to December 21, 2020, the permittee may elect to electronically submit the following compliance monitoring data and reports instead of mailing paper forms. Beginning December 21, 2020, the permittee must report the following using the electronic reporting system:

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

    b. Municipal separate storm sewer system program reports;

    c. Pretreatment program reports;

    d. Sewer overflow/bypass event reports; and

    e. Clean Water Act 316(b) annual reports

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

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

        1. No internet access,

        2. No computer access,

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

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

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

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

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

**F. Records Retention**

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

## III. COMPLIANCE RESPONSIBILITIES

**A. Duty to Comply**

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

**B. Proper Operation and Maintenance**

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

**C. Planned Changes**

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

**D. Duty to Provide Information**

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

**E. Signatory Requirements**

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

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

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

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

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

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

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

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

**F. Twenty-four Hour Notice of Noncompliance Reporting**

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

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

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

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

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

    a. A description of the noncompliance and its cause;

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

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

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

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

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

**G. Bypass of Treatment Facilities**

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

section.

2. Bypass exceeding limitations-notification requirements.

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

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

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

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

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

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

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

**H. Upset Conditions**

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

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

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

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

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

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

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

**I. Duty to Mitigate**

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

**J. Removed Materials**

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

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

## IV. GENERAL PROVISIONS

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

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

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

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

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

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

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

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

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

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

## V. INDUSTRIAL WASTE MANAGEMENT BP 2019.05.29
**Major POTWs-Non Approved Pretreatment Program Requirements**

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

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

1. Any other pollutant which may cause Pass Through or Interference;

2. Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, waste streams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in 40 CFR Section 261.21;

3. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with a pH of lower than 5.0 s.u., unless the treatment facilities are specifically designed to accommodate such discharges;

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

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

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

7. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through at the POTW;

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

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

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

**C. Approval Authority**

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

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

**D. Industrial Categories**

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

**E. Notification Requirements**

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

1. Any new introduction of pollutants into the POTW from an industrial user which would be subject to Sections, 301, 306, and 307 of the Act if it were directly discharging those pollutants; or

2. Any substantial change in the volume or character of pollutants being introduced into the POTW by any industrial user;

3. For the purposes of this section, adequate notice shall include information on:

    a. The identity of the industrial user;

    b. The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge to be introduced into the POTW; and

    c. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids produced at such POTW.

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

    a. Any discharger subject to Categorical Pretreatment Standards under Section 307 of the Act and 40 CFR chapter I, subchapter N;

    b. Any discharger which has a process wastewater flow of 25,000 gallons or more per day;

    c. Any discharger contributing five percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant;

    d. Any discharger who is designated by the Approval Authority as having a reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standards or requirements.

**F. Sampling and Reporting Requirements**

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

| 40 CFR 122 Appendix D Table III | | | | |
|---|---|---|---|---|
| Antimony, Total | Arsenic, Total | Beryllium, Total | Cadmium, Total | Chromium, Total |
| Copper, Total | Lead, Total | Mercury, Total | Nickel, Total | Selenium, Total |
| Silver, Total | Thallium, Total | Zinc, Total | Cyanide, Total | Phenols, Total |
| Hardness, Total a/ | | | | |

Notes:

a. A total hardness of the receiving stream needs to be determined every time the above parameters are tested. The hardness is used to calculate parameter criterion(s) according to the North Dakota State Water Quality Standards.

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

Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR Part 136. Where sampling methods are not specified the effluent samples collected shall be composite samples consisting of at least twelve (12) aliquots collected at approximately equal intervals over a representative 24 hour period and composited according to flow. Where a flow proportioned composite sample is not practical, the permittee shall collect at least three (3) grab samples, taken at equal intervals over a representative 24-hour period. Lagoon treatment systems may collect a single effluent grab sample.

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

**G. Approval Authority Options**

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

1. Amend the permittee's North Dakota Pollutant Discharge Elimination System (NDPDES) discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable Pretreatment Standards;

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

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

**H. Enforcement Authority**

The Approval Authority retains, at all times, the right to take legal action against any source of nondomestic discharge, whether directly or indirectly controlled by the permittee, for violations of a permit, order or similar enforceable mechanism issued by the permittee, violations of any Pretreatment Standard or requirement, or for failure to discharge at an acceptable level under national standards issued by EPA under 40 CFR, chapter I, subchapter N. In those cases where a North Dakota Pollutant Discharge Elimination System (NDPDES) permit violation has occurred because of requirements as necessary to protect the POTW, the North Dakota Department of Environmental Quality and/or Approval

Authority shall hold the permittee and/or industrial user responsible and may take legal action against the permittee as well as the industrial user(s) contributing to the permit violation.

## VI. BENEFICIAL REUSES BP 2015.09.03

### A. Irrigation

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

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

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

| Beneficial Reuse Parameters – Irrigation | | | |
|---|---|---|---|
| Parameter | Limitations (Maximum) | Monitoring Requirements | |
| | Daily Max | Sample Frequency | Sample Type |
| $BOD_5$ (mg/l) | 30 | 1 per 14 days | Grab |
| TSS (mg/l) | 45 | 1 per 14 days | Grab |
| *E. Coli* (number/100 mL) | 126 | Weekly | Grab |

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

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

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

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

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

### B. Construction

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

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

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

| Beneficial Reuse Parameters – Construction | | | |
|---|---|---|---|
| Parameter | Limitations (Maximum) | Monitoring Requirements | |
| | Daily Max | Sample Frequency | Sample Type |
| $BOD_5$ (mg/l) | 30 | Monthly | Grab |
| TSS (mg/l) | 100 | Monthly | Grab |
| *E. Coli* (number/100 mL) | 126 | Weekly | Grab |

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

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

1. Worker and public contact with treated wastewater should be minimized.

2. Where frequent worker contact is likely a higher level of disinfection should be provided, such as achieving *E. coli* counts less than 14/100 ml.

3. Work closely with the treatment system operator to ensure treated wastewater quality is suitable when it is drawn for construction purposes.

4. Apply the treated wastewater in a manner that does not result in runoff or ponding.

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

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

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

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

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

**D. Other Uses as Approved**

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