

**STATEMENT OF BASIS FOR THE  
CITY OF WAGNER  
NPDES PERMIT SD-0020184**

PERMITTEE: City of Wagner

FACILITY NAME AND ADDRESS: City of Wagner  
60 South Main  
Wagner, South Dakota 57380-0040

PERMIT NUMBER: SD-0020184

RESPONSIBLE OFFICIAL: Larry Blaha, Street Supervisor  
City of Wagner  
P.O. Box 40  
Wagner, South Dakota 57380-0040

FACILITY CONTACT: Larry Blaha, Street Supervisor  
605-384-3741

PERMIT TYPE: Minor Municipal Wastewater Treatment  
Plant (Renewal)

TYPE OF TREATMENT: Lagoon – Settling, Infiltration and  
percolation

FACILITY LOCATION: Northeast ¼ of Section 34, Township 96  
North, Range 63 West.

DISCHARGE LOCATION(S): 001 Lat 43.091224° N, Long 98.274054° W

RECEIVING WATER: an unnamed tributary northeast of the  
treatment facility and flowing  
approximately 0.5 mile to Choteau Creek.

## **INTRODUCTION**

This statement of basis (SoB) is for the issuance of a NPDES permit to the City of Wagner, for the City of Wagner Wastewater Treatment Facility (WWTF). The permit establishes discharge limitations for any discharge of water from Outfall 001 to an unnamed tributary which flows to Choteau Creek. The SoB explains the nature of the discharges, and the EPA's decisions for limiting the pollutants in the wastewater, as well as the regulatory and technical basis for these decisions.

The EPA Region 8 is the permitting authority for facilities located in Indian country, as defined in 18 U.S.C. § 1151, located within Region 8 states and supports implementation of federal environmental laws consistent with the federal trust responsibility, the government-to-government relationship, and the EPA's 1984 Indian Policy.

## **BACKGROUND INFORMATION**

On April 5, 2016, the EPA received a complete application from the City of Wagner requesting a NPDES Permit for the City of Wagner WWTF. The previous Permit for the City of Wagner expired on September 30, 2016. This reissuance will be the third<sup>1</sup> National Pollutant Discharge Elimination System (NPDES) Permit issued to the City of Wagner WWTF.

The WWTF for the City of Wagner services residents located in the City of Wagner, Yankton Sioux tribal housing, and Tower Housing. The City has a small municipal airport, a community hospital and small clinics, dental care, a community school (pre-K thru 12), and multiple churches. The WWTF treats domestic sewage from these sources using a 3 cell lagoon system and infiltration and percolation (I/P) basins.

This facility is located within the exterior boundaries of the Yankton Sioux Reservation. The outfall for the WWTF discharges to an unnamed tributary and flows approximately 0.08 miles to Choteau Creek. The discharge pipe is located on tribally allotted lands.

### *Facility Description and Location*

The City of Wagner wastewater treatment facility services a total domestic population of 2,265, of which approximately 565 residences are part of the Yankton Sioux Tribal housing<sup>2</sup>. In addition to the domestic service, the lagoon services commercial and ranching activities. The design flow of the facility is 0.5 million gallons per day, with an average flow of 0.27 mgd.

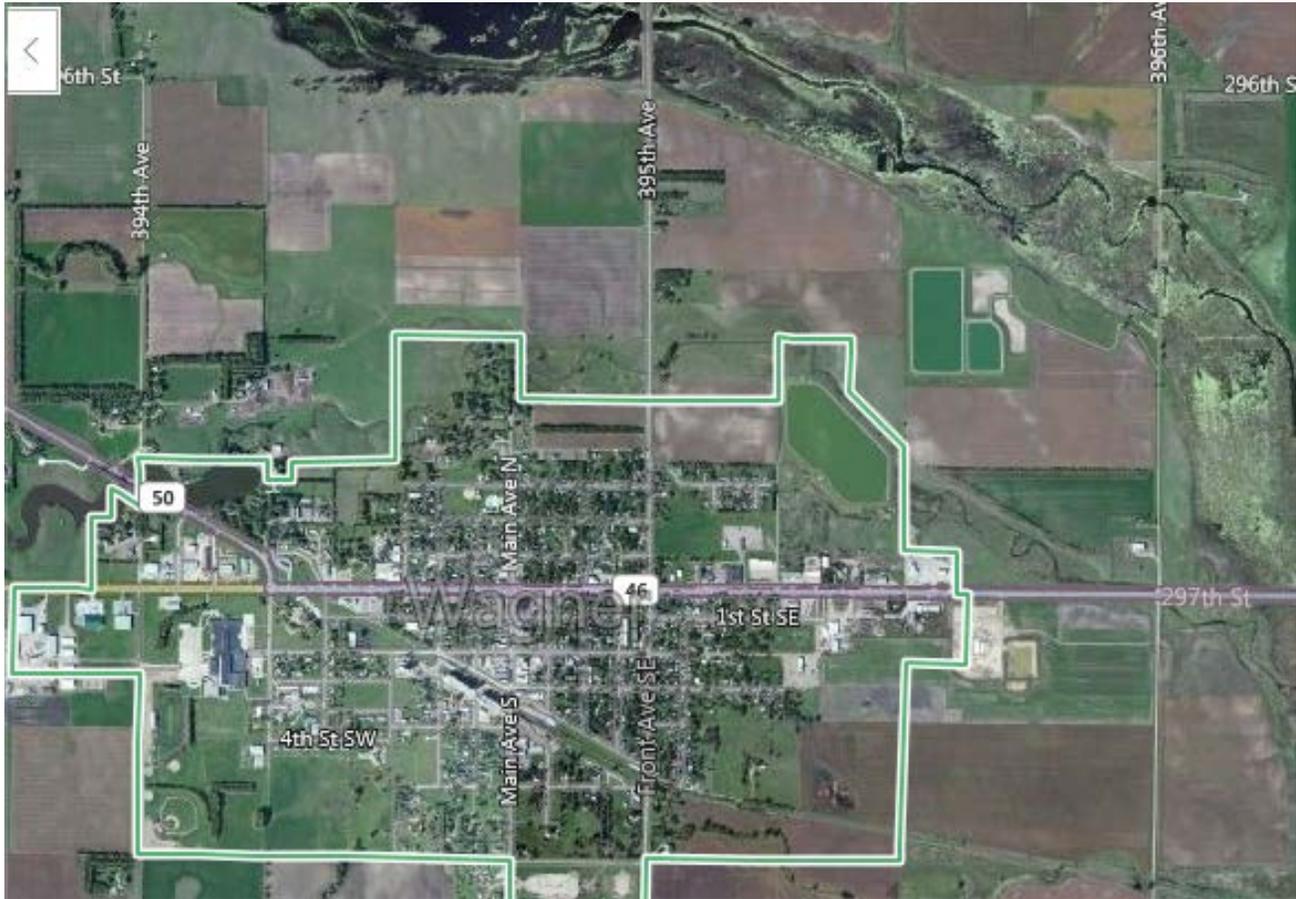
The facility is located in the northeast ¼ of Section 34, Township 96 north, Range 63 west, approximately ¼ mile northeast of the city in Charles Mix County, South Dakota. The facility discharge point is located at latitude 43.091111° N, longitude 98.273889° W. The facility is located within the exterior boundaries of the Yankton Sioux Reservation.

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<sup>1</sup> Integrated Compliance Information System (ICIS) database information, does not include Permit Compliance System (PCS) historical information.

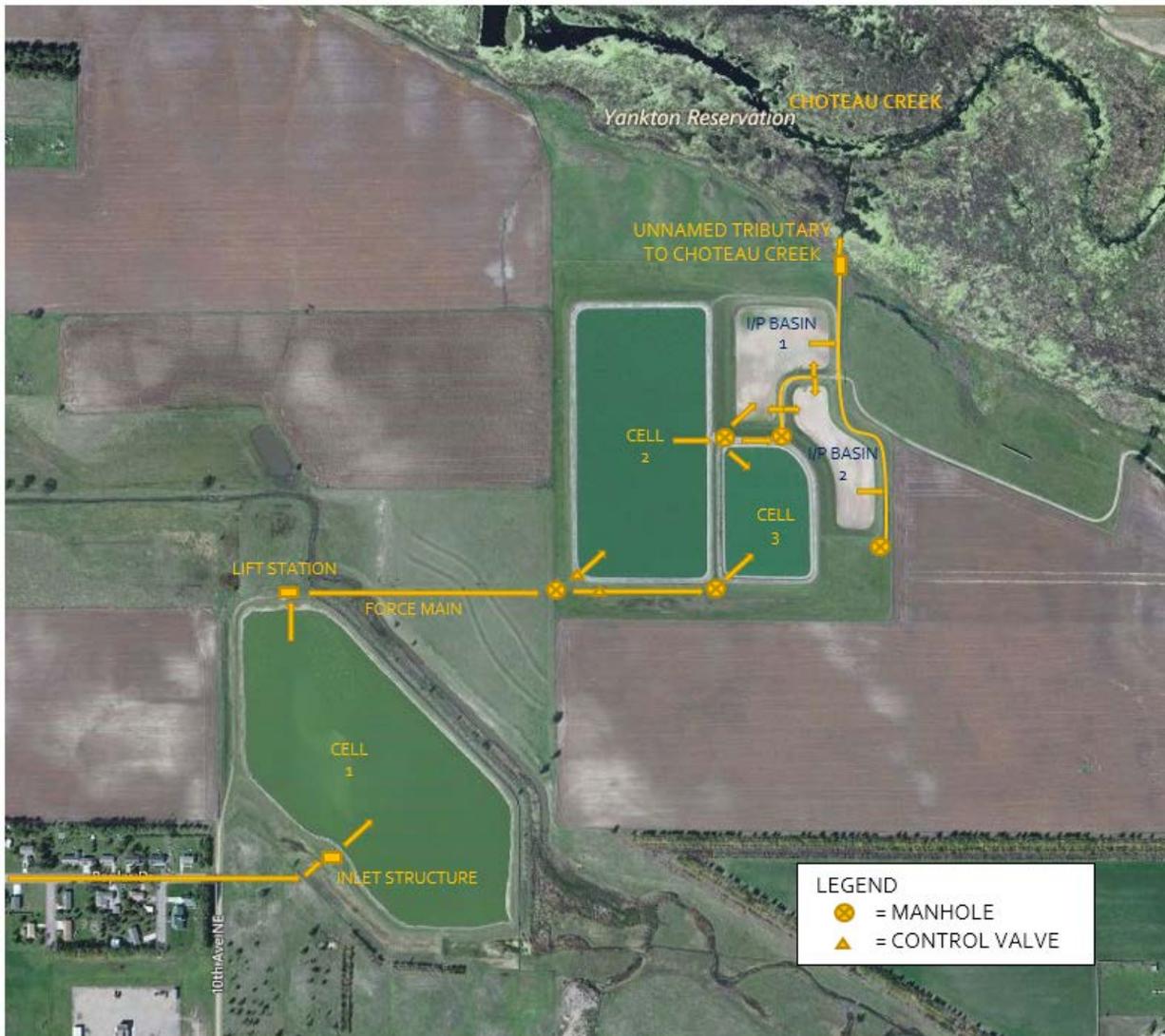
<sup>2</sup> Data taken from permittee application information. City of Wagner-1700, YST Housing N-215, YST Housing S-350.

*Aerial Image – City of Wagner WWTF*



The facility consists of three waste stabilization ponds and two infiltration/percolation (I/P) basins. Sewage flows by gravity to cell #1 (20.4 acres), then a lift station pumps the wastewater to cell #2 (13.2 acres) or cell #3 (4.4 acres). Cells #2 and #3 can be operated in series or parallel. Wastewater is then conveyed to either of the two I/P basins (2.9 and 2.05 acres). The cells have valve controlled interpond piping to the I/P basins which are underdrained with gravity flow to the discharge area located about 100 feet from the NE corner of the I/P basin 1. Flow measurements at the discharge point is accomplished with a v-notch weir. The last major upgrade to the City of Wagner WWTF was in 1989 and included cell #3 and the two I/P basins. The facility discharges continuously even when not using the I/P basins for wastewater treatment due to high groundwater being intercepted by the I/P basins piping collection system. There are no known industrial users to the system. Refer to the following site schematic line diagram for the treatment facility flow and full layout:

*Line diagram – City of Wagner WWTF*



*Treatment Process*

The City of Wagner operates a facultative lagoon and utilizes settling, biological process, and retention time to treat the wastewater effluent. The lagoons consist of a shallow basin in which suspended solids settle to the bottom to form a sludge layer that decomposes anaerobically. The lagoons are followed by two infiltration/percolation basins. The infiltration basins, utilized by the City of Wagner are used to manage stormwater runoff, prevent flooding and downstream erosion, and improve water quality in the adjacent Choteau Creek. Infiltration basins release water only by gravity from the underdrain system.

## **WATER QUALITY CONSIDERATIONS**

### *Description of Receiving Water*

The discharge from this facility enters an unnamed tributary northeast of the treatment facility and flows approximately 0.08 mile to Choteau Creek. Choteau Creek runs approximately 39.93 miles from Wagner, SD, joining numerous other creeks within the Missouri River Basin Watershed, until its confluence with the Missouri River/Lewis and Clark Lake at the South Dakota/Nebraska border. The majority of Choteau is within the reservation boundary and the downstream portion (approximately 10 miles) shares stream borders with the state of South Dakota.

Review of data indicates that a Total Maximum Daily Load (TMDL) for Choteau Creek was developed in accordance with Section 303(d) of the federal Clean Water Act and guidance developed by the EPA. The TMDL strictly addresses the non-tribal portions of the drainage, therefore, the NPDES Total Suspended Solids (TSS) TMDL allocation will not be applied to this facility. No impairment data has been reported to the EPA for this waterbody and the overall status of the waterbody is good.

In addition to reviewing the TMDL impairment, SDDENR Water Quality Standards (WQSs) for Choteau Creek from Wagner to its confluence with Lewis and Clark Lake were reviewed. The state has assigned Choteau Creek the beneficial uses of, warmwater semi-permanent fish life propagation, irrigation waters, limited contact recreation, and fish and wildlife propagation, recreation, and stock watering. While the state WQSs were reviewed, the majority of Choteau Creek resides within the Yankton Sioux Reservation and therefore the state WQS are not strictly applicable.

The SDDENR has never specifically applied for or been specifically approved to administer any portion of the Clean Water Act (CWA) programs in Indian country located within the State of South Dakota. Furthermore, the EPA cannot implicitly grant states authority to administer programs in Indian country. Because neither the state nor any of the tribes have been approved to administer any CWA programs on tribal lands located within the state of South Dakota, including the NPDES program, the EPA remains the permitting authority for the NPDES program and South Dakota Water Quality Standards do not apply within the reservation boundary.

## PERMIT HISTORY

### Wastewater Monitoring Data

Data Monitoring Report (DMR) information received from the permittee was compiled from the Integrated Compliance Information System (ICIS). The data covers the period of October 2011 through February 2017. Based on the data received from the facility, the available maximum and minimum values over the last 5 years are reported below:

| Parameter                                 | Minimum     | Maximum   | Violation |
|---|-------------|-----------|-----------|
| Flow, mgd (daily max)                     | 0.040       | 1.64      |           |
| BOD <sub>5</sub> , mg/L (monthly average) | <2          | 22.3      |           |
| TSS, mg/L                                 | <3          | <b>55</b> | 1         |
| Ammonia - N, mg/L                         | <0.05       | 19.7      |           |
| pH  | <b>5.91</b> | 8.15      | 1         |
| <i>Escherichia coli</i>                   | <1          | 292       |           |

The data provided includes monitoring data for discharges when no treated wastewater was released into the I/P basins. These discharges consisted solely of groundwater being collected and released through the I/P basins underground drain system.

Based on information provided by the operator, the following procedure is performed to drawdown the lagoons and load the I/P basins:

- Drawdown volume of Cell #3 into the I/P basins = 20-25 ac-ft
- Cell #3 valve open for approximately 48 hours then closed
- Complete discharge from I/P basins takes about 7 days from initial I/P basin loading
- Approximately 28 gpm of groundwater is continuously collected and discharged from the I/P basin drain tile system.
- Typical frequency of effluent discharge is once a month (average) except December through February when zero discharge occurs.

## MAJOR CHANGES FROM PREVIOUS PERMIT

Due to limited data supplied during the previous cycle, with this permit issuance, the in-stream ammonia data sampling location is being relocated with monitoring requirements more clearly specified in order to calculate ammonia limits. *E. coli* limitations are being modified to reflect updated recommended criteria based on 2012 EPA Recreational Water Quality Criteria, and the requirement to submit data via the NetDMR electronic system is being implemented.

## PROPOSED PERMIT LIMITS

### *Water Quality Considerations*

The Yankton Sioux Tribe does not have treatment as state (TAS) nor Tribally-adopted or EPA-approved WQS. In the absence of water quality standards on the reservation, the EPA needs to consider protecting beneficial uses of the receiving waters. Section 101(a)(2) of the Clean Water Act states “it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983”. In lieu of approved WQS for Choteau Creek, the beneficial uses of the receiving waters will be considered to include aquatic life and recreation.

Pollutants of concern from this wastewater discharge that may affect water quality include pH, Ammonia-N, and bacteria including *E. coli*.

## EFFLUENT LIMITATIONS

The EPA establishes secondary treatment standards for publicly owned treatment works (POTWs), which are minimum, technology-based requirements for municipal wastewater treatment plants. These standards are reflected in terms of five-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS) removal, and pH.

Effluent Limitations - Outfalls 001. The following effluent limitations will be required for this facility at the Outfall 001 discharge:

| Parameter                                      | 30-Day Average                 | 7-Day Average | Daily Maximum | Basis for Limits <u>d/</u> |
|--|--------------------------------|---------------|---------------|----------------------------|
| Total Flow, MGD                                | Report                         |               |               | PJ                         |
| BOD <sub>5</sub> , mg/L <u>a/</u>              | 30                             | 45            | N/A           | Tech                       |
| Total Suspended Solids, mg/L <u>a/</u>         | 30                             | 45            | N/A           | Tech                       |
| <i>Escherichia coli</i> , no./100 mL <u>b/</u> | 126                            |               | 410           | WQ criteria                |
| Oil and Grease, mg/L                           |                                |               | 10            | PJ                         |
| Ammonia, as N, mg/L                            | Monthly Requirements Specified |               |               | PP                         |
| January  | 1.6                            | N/A           | 3.2           |                            |
| February                                       | 1.7                            | N/A           | 3.0           |                            |
| March  | 1.1                            | N/A           | 3.0           |                            |
| April  | 1.1                            | N/A           | 3.2           |                            |
| May  | 1.1                            | N/A           | 3.2           |                            |
| June   | 0.7                            | N/A           | 3.2           |                            |
| July   | 0.7                            | N/A           | 3.2           |                            |
| August   | 0.7                            | N/A           | 3.2           |                            |
| September                                      | 0.8                            | N/A           | 3.2           |                            |
| October  | 1.1                            | N/A           | 3.2           |                            |
| November                                       | 1.4                            | N/A           | 3.2           |                            |
| December                                       | 1.6                            | N/A           | 3.2           |                            |

The pH of the effluent shall not be less than 6.0 nor greater than 9.0 in any single sample or analysis. The basis for limits are water quality considerations for protecting warm water aquatic life.

The concentration of oil and grease in any single sample shall not exceed 10 mg/l. c/

- a/ The limits for BOD<sub>5</sub> and total suspended solids are based on National Secondary treatment standards (40 CFR Part 133.102).
- b/ 2012 EPA Recreational Water Quality Criteria is being implemented.
- c/ The limit for oil and grease is based on a combination of professional judgement and protecting the receiving waters from a visible sheen or floating oil.
- d/ Tech = technology based limits, WQ Criteria = EPA recommended water quality criteria, PJ = professional judgement, PP = previous permit.

#### *Escherichia coli limits*

The previous permit required analysis of *E. coli* with the 5-day geometric mean not exceeding 630 colonies/100 mL. With this permit issuance, the 2012 EPA Recreational Water Quality Criteria<sup>3</sup> is being implemented. The facility has demonstrated reasonable potential to exceed the recommended criteria, therefore a limit will remain in place and will include updated criteria limitations of culturable *E. coli* at a geometric mean of 126 cfu per 100 mL and a statistical threshold value of 410 cfu per 100 mL measured using EPA Method 1603, or any other equivalent method that measures culturable *E. coli*.

#### *Ammonia limits*

Ammonia limitations from the previous permit are continuing with this permit issuance. The previous permit ammonia calculations utilized water quality data from Turtle Creek (representative stream WQM 148, Turtle Creek, Storet # 460148) to calculate ammonia data using the AMMTOX Model, version 2. Supplied data from the permittee, necessary to update AMMTOX calculations, did not include adequate data points for each month for: pH, temperature, date and time of sampling. Therefore, the previous limits will remain in effect with clarity provided on the Choteau Creek sampling location where receiving stream temperature and pH measurements must be gathered.

The receiving stream sampling location will be upstream of the facility in Choteau Creek on 395<sup>th</sup> Avenue at the pedestrian bridge. Sampling data will be reported on the DMR, and will include the data points necessary to run AMMTOX calculations, these include: date of sample, the time, temperature and pH.

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<sup>3</sup> EPA Office of Water, EPA-820-F-12-061, 2012 Recreational Water Quality Criteria

Highway 395<sup>th</sup> and Choteau Creek sampling location.



The location at 395<sup>th</sup> Avenue at the pedestrian bridge was chosen as a representative stream point based on accessibility and the need to have data that is representative of Choteau Creek. The sampling point for this site will be listed as Outfall 001R. AMMTOX inputs for the Recurrence Model typically utilize downstream data after mixing with the effluent, however due to accessibility issues and drainage concerns, the upstream data point was chosen.

**EFFLUENT SELF-MONITORING REQUIREMENTS**

The following self-monitoring requirements are included in this permit Outfall 001:

| Parameter                                      | Frequency | Sample/Monitoring Type <u>a/</u> |
|--|-----------|----------------------------------|
| Total Flow, MGD <u>b/</u>                      | Monthly   | Instantaneous                    |
| BOD <sub>5</sub> , mg/L                        | Monthly   | Grab                             |
| Total Suspended Solids, mg/L                   | Monthly   | Grab                             |
| <i>Escherichia coli</i> , no./100 mL <u>c/</u> | Monthly   | Grab                             |
| pH, standard units <u>d/</u>                   | Monthly   | Grab                             |
| Oil and Grease, mg/L                           | Weekly    | Grab                             |
| Oil and Grease Sheen <u>e/</u>                 | Weekly    | Visual                           |
| Ammonia, as N, mg/L                            | Monthly   | Grab                             |
| Temperature, °C <u>d/</u>                      | Monthly   | Instantaneous                    |

a/ See Permit Definitions, Part 1.1, for definition of terms.

b/ Flow monitoring will be done out the outfall and will include all discharge from the I/P basins that reach the unnamed creek reaching Choteau Creek.

c/ Monitoring for *Escherichia coli* is required during the months of May to September only. Acceptable analytical methods for *Escherichia coli* testing are referenced in 40 CFR Part 136.

d/ Measurement must be taken within fifteen (15) minutes of sampling.

e/ Visual observations for oil and grease shall be made on a weekly basis. In the event that an oil sheen or floating oil is observed in the discharge, a grab sample shall be immediately taken, analyzed and reported. The sample shall not exceed 10 mg/L. Acceptable analytical methods for Oil and Grease testing are referenced in 40 CFR Part 136.

The following self-monitoring requirements are included in this permit Outfall 001R (receiving stream):

| Parameter                    | Frequency | Sample/Monitoring Type <u>a/</u> |
|------------------------------|-----------|----------------------------------|
| Time of Sample <u>b/</u>     | Monthly   | N/A                              |
| Date of Sample <u>b/</u>     | Monthly   | N/A                              |
| pH, standard units <u>c/</u> | Monthly   | Grab                             |
| Temperature, °C              | Monthly   | Instantaneous                    |

a/ See Permit Definitions, Part 1.1, for definition of terms.

b/ Sample date and time must be recorded at time of sampling

c/ Measurement must be taken within fifteen (15) minutes of sampling.

## MONITORING REQUIREMENTS

Self-Monitoring Requirements - Outfalls 001 and 001R.

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136.

## REPORTING REQUIREMENTS

With the effective date of this Permit, the Permittee must electronically report all data at the frequencies listed in table 10 with monthly discharge monitoring report (DMR) submittal required, using NetDMR. Electronic submissions by permittees must be sent to the EPA Region 8 no later than the 28th of the month following the completed reporting period. The Permittee must sign and certify all electronic submissions in accordance with the signatory requirements of the Permit. NetDMR is accessed from the internet at <https://netdmr.zendesk.com/home>.

In addition, the Permittee must submit a copy of the DMR to the Yankton Sioux Tribe. Currently, the Permittee may submit a copy to the Yankton Sioux Tribe by one of three ways: 1. a paper copy may be mailed. 2. The email address for Yankton Sioux Tribe may be added to the electronic submittal through NetDMR, or, 3. The Permittee may provide Yankton Sioux Tribe viewing rights through NetDMR.

The DMRs are due monthly and are due by the dates listed below and shall not be submitted until the reporting period is complete.

| <b>Compliance Monitoring Period</b> | <b>Due Date</b>            |
|-------------------------------------|----------------------------|
| January                             | February 28 <sup>th</sup>  |
| February                            | March 28 <sup>th</sup>     |
| March                               | April 28 <sup>th</sup>     |
| April                               | May 28 <sup>th</sup>       |
| May                                 | June 28 <sup>th</sup>      |
| June                                | July 28 <sup>th</sup>      |
| July                                | August 28 <sup>th</sup>    |
| August                              | September 28 <sup>th</sup> |
| September                           | October 28 <sup>th</sup>   |
| October                             | November 28 <sup>th</sup>  |
| November                            | December 28 <sup>th</sup>  |
| December                            | January 28 <sup>th</sup>   |

The permittee must sign and certify all electronic submissions in accordance with the requirements of Part 4.7 of the permit (“Signatory Requirements”).

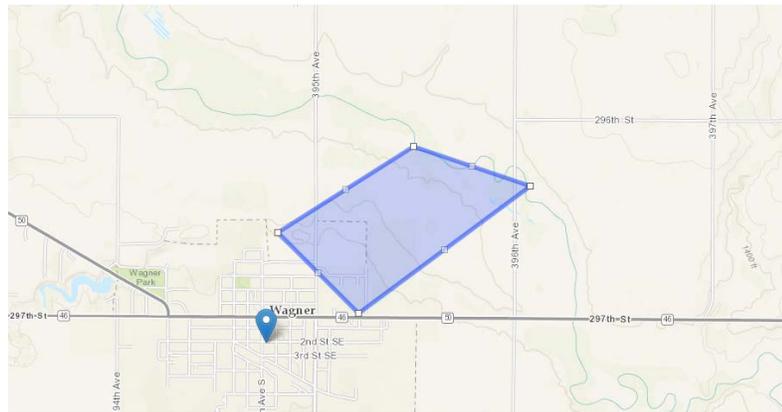
## INSPECTION REQUIREMENTS

The permittee is required to inspect its wastewater treatment facility on at least a **weekly** basis. The inspection shall be conducted as outlined in Part 1.3.4. of the permit.

## ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act (ESA) of 1973 requires all Federal Agencies to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any Federal action carried out by the Agency is not likely to jeopardize the continued existence of any endangered species or threatened species (together, “listed” species), or result in the adverse modification or destruction of habitat of such species that is designated by the FWS as critical (“critical habitat”). See 16 U.S.C. § 1536(a)(2), 50 C.F.R. Part 402. When a Federal agency’s action “may affect” a protected species, that agency is required to consult with the FWS, depending upon the endangered species, threatened species, or designated critical habitat that may be affected by the action (50 C.F.R. § 402.14(a)).

The U. S. Fish and Wildlife Information for Planning and Conservation (IPaC) website program was utilized to determine Federally-Listed Endangered, Threatened, Proposed and Candidate Species for Charles Mix County. The IPaC Information Planning and Consultation findings are provided below for the City of Wagner site.



| SPECIES   | SCIENTIFIC NAME               | STATUS     |
|---|-------------------------------|------------|
| <b>Birds</b>                                    |                               |            |
| Least Tern                                      | <i>Sterna antillarum</i>      | Endangered |
| Piping Plover                                   | <i>Charadrius melodus</i>     | Threatened |
| Red Knot  | <i>Calidris canutus rufa</i>  | Threatened |
| Whooping Crane                                  | <i>Grus americana</i>         | Endangered |
| <b>Fishes</b>                                   |                               |            |
| Pallid Sturgeon                                 | <i>Scaphirhynchus albus</i>   | Endangered |
| <b>Mammals</b>                                  |                               |            |
| Northern Long-eared Bat                         | <i>Myotis septentrionalis</i> | Threatened |
| <b>Critical Habitats</b>                        |                               |            |
| There are no critical habitats at this location |                               |            |

### Biological Evaluation

Species lists for Charles Mix County provided by the U.S. FWS IPaC system were utilized to determine a “not likely to adversely affect” determination. This determination is based on the status of the facility, no new disturbance to the facility outfall, and the limitations on the effluent which are in place to protect

aquatic warmwater species in Choteau Creek. The South Dakota FWS area office was consulted on this permit action and concurred with the EPA's determination on May 22, 2017.

### **NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS**

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The State Historic Preservation Office Cultural Resource Geographic Research Information Display (CRGRID), was utilized to determine historic places. Two bridges near the City of Wagner facility were surveyed in 2004 and were determined to be 'Not Eligible' for listing. The National Register of Historic Places digital archive lists the Wagner House; the City of Wagner discharge will not affect this location.

Based upon the information provided by the National Register of Historic Places, the EPA does not anticipate any impacts on listed/eligible historic properties or cultural resources due to this permit reissuance and discharge related activities from Outfall 001. The Tribal Historic Preservation Office (THPO) was notified during the public notice period as well as provided notification of the offer of consultation, no comments were received.

### **MISCELLANEOUS**

The offer of consultation and coordination with respect to the development and issuance of the City of Wagner permit was sent to Chairman Flying Hawk on May 22, 2016. No response was received regarding the facility from Chairman Flying Hawk or the THPO.

The effective date of the permit and the permit expiration date will be determined upon issuance of the permit. This NPDES Permit shall be effective for a fixed term not to exceed 5 years.

Permit drafted by: VelRey Lozano, Environmental Scientist, 8WP-CWW. April 2017.

Permit Finalized by: VelRey Lozano, Environmental Scientist, 8WP-CWW. August 2017.

**ADDENDUM**

**PUBLIC NOTICE AND RESPONSE TO COMMENTS**

The permit and statement of basis were public noticed in the Wagner Post and Announcer on July 26, 2017. No comments were received during the comment period.