

STATEMENT OF BASIS

FOR THE ISSUANCE OF A NPDES PERMIT

U.S. Environmental Protection Agency
Region 5, NPDES Programs Branch - WN-15J
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Public Notice No.: 18-08-03-A

Public Notice Issued On: August 8, 2018

Comment Period Ends: September 7, 2018

Permit No.: MN-0059404-5 (REISSUANCE)

Application No.: MN-0059404-5

Name and Address of Applicant:

**Name and Address of Facility
Where Discharge Occurs:**

White Earth Department of Public Works
White Earth Nation
P.O. Box 418
White Earth, Minnesota 56591

Chippewa Ranch Wastewater
Stabilization Lagoon
White Earth Indian Reservation
Mahnomen, Minnesota
Mahnomen County
(Section 2, T144N, R40W)

Receiving Water: drainage ditch which flows to an unnamed wetland in the Wild Rice River watershed

DESCRIPTION OF APPLICANT'S FACILITY AND DISCHARGE

The above facility is located within the exterior boundaries of the White Earth Indian Reservation. The EPA has retained the authority to issue NPDES permits to facilities with discharges to waters of the United States within the exterior boundaries of Indian Reservations. The EPA is issuing this NPDES permit under the authorities of the Clean Water Act.

The treatment system consists of a single cell 0.95- acre stabilization lagoon measured at the 4-foot level, which is the midpoint of the 4-foot operating range. Volume of the cell over this 4-foot operating range is 1,238,040 gallons. At a 180-day storage period, this is approximately 6900 gallons per day (gpd). The facility has a controlled discharge (Outfall 001) to a drainage ditch (Latitude: 47.3233361, Longitude: -95.7046556). Wastewater is from domestic sources only.

It should be noted that the above cell was built as part of a larger construction project to replace

the existing 1.65-acre single cell stabilization lagoon. A second 1.15-acre cell was built to make a new two cell system. This second cell was never put into operation as high groundwater at the site caused the PVC liner to bubble. The permittee is in the process of deciding what to do with this cell. There is no projected growth in the area and it is believed the 0.95-acre cell can handle the existing flows and provide adequate treatment. The new cell has discharged once and the effluent met the existing permit limits.

The draft permit requires the applicant to meet the following effluent limitations:

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			
	Concentration (Specified Units)			
Parameter	Daily Minimum	Monthly Average	Weekly Average	Daily Maximum
Flow (MG)	-	Report calendar month total	-	-
Flow (mgd)	-	-	-	-
Dissolved Oxygen (mg/L)	Report	-	-	-
pH (SU)	6.0	-	-	9.0
Total Suspended Solids (TSS) (mg/L)	-	45	65	-
Carbonaceous Biochemical Oxygen Demand (CBOD ₅) (mg/L)	-	25	40	-
E. coli (#/100ml) (April 1 – October 31)	-	126 (geometric mean)	-	410
Phosphorus, Total (mg/L)	-	Report	-	-
Sulfates, Total (mg/L)	-	Report	-	-
Ammonia Nitrogen, Total (as N) (mg/L)	-	Report	-	-
Nitrite Plus Nitrate, Total (as N) (mg/L)	-	Report	-	-
Nitrogen, Kjeldahl, Total	-	Report	-	-
Nitrogen, Total (as N) (mg/L)	-	Report	-	-
CBOD ₅ percent removal (%)	≥85	-	-	-
TSS percent removal (%)	≥65	-	-	-
Outfall observation (yes/no)	-	-	-	-

Discharge is limited to a maximum 6 inches per day. Discharge flow was calculated as follows:

$$0.95 \text{ acres} \times 0.5 \text{ feet/day (6 inches/day)} \times 325,900 \text{ gallons per acre-ft} \approx 0.15 \text{ million gallons/day}$$

Loading limits in the permit were calculated using the following formula:

$$(0.15 \text{ mgd} * \text{limit (mg/L)} * 3.785) = \text{Loading (kg/d)}.$$

Section 401 Water Quality Certification

EPA is the appropriate authority for purposes of certifying the proposed discharge under Section 401 of the Clean Water Act. Section 401 certification is not needed from the state nor the White Earth Nation as neither has federally approved water quality standards applicable to the receiving water at the point of discharge.

ESA and NHPA Compliance

EPA believes it has satisfied its requirements under the Endangered Species Act and is in the process of satisfying the National Historical Preservation Act. There is one endangered species (Poweshiek skipperling) and two threatened species (Gray wolf and Northern long-eared bat) within the county. Using the website <https://www.fws.gov/midwest/endangered/insects/posk/fCHmaps/poskchMN.pdf>, the Poweshiek skipperling is not found in the area of the facility or the discharge. Also, the site has been previously disturbed and is void of the critical habitat.

As this is an existing discharge, with no planned construction during the permit term, EPA believes that the issuance of the permit and the continued operation of the facility will have no effect on endangered or threatened species or their critical habitat and will have no impact to historical, archeological, or cultural resources.

Basis for Permit Requirements

The limits were developed to ensure compliance with 40 CFR Parts 131 and 133, EPA's water quality criteria and protection of Minnesota's water quality standards where they are applicable. The permittee's past performance has shown that it is in substantial compliance with the existing limits.

pH

The limits for pH are based on secondary treatment requirements pursuant to 40 CFR Part 133.

5-day Carbonaceous Biochemical Oxygen Demand (CBOD₅)

The limits for CBOD₅ are based on secondary treatment requirements pursuant to 40 CFR Part 133. A 7-day average limit of 40 mg/L and a 30-day average limit of 25 mg/L are carried from the previous permit. The permittee has been in substantial compliance with these limits. The 7-day average and the 30-day average are the arithmetic mean of pollutant parameter values for samples collected in a period of 7 and 30 consecutive days, respectively.

Total Suspended Solids (TSS)

The limits for TSS are based on equivalent to secondary treatment requirements pursuant to 40 CFR Part 133. A 7-day average limit of 65 mg/L and a 30-day average limit of 45 mg/L are carried from the previous permit. The permittee has been in substantial compliance with these limits. The 7-day average and the 30-day average are the arithmetic mean of pollutant parameter values for samples collected in a period of 7 and 30 consecutive days, respectively.

E. coli

The limits for E. coli are based on the EPA's water quality criteria. The previous permit had the following limits: the geometric mean of samples collected over a 30-day period shall not exceed 126 E. coli per 100 milliliters (ml) and any single sample shall not exceed 410 E. coli per 100 ml. New water quality criteria were published in 2012 (EPA's 2012 Recreational Water Quality

Criteria). The geometric mean of samples collected over a 30-day period shall not exceed 126 E. coli per 100 milliliters (ml) and shall remain in the permit. The statistical threshold value of 410 E. coli per 100 ml is set as the daily maximum and shall replace the previous limit of 235 E. coli per 100 ml. This change is being made because we have no data from the 1.65-acre lagoon as it was reported that there was no discharge. We have one data point from a discharge from the 0.95-acre lagoon and it did comply with the existing daily maximum limit of 235 E. coli per 100 ml. However, since the 0.95-acre lagoon could be considered a new discharge, it would be acceptable to include a limit based on the criteria that is in effect now which would be 410 E. coli per 100 ml as a daily maximum limit. We believe this is consistent with 40 CFR 122.44(l) (anti-backsliding).

Phosphorus

Phosphorus is a common constituent in many wastewater discharges and a pollutant that has the potential to negatively impact the quality of Minnesota's lakes, wetlands, rivers, and streams. Phosphorus promotes algae and aquatic plant growth often resulting in decreased water clarity and oxygen levels. In addition to creating general aesthetic problems, these conditions can also impact a water body's ability to support healthy fish and other aquatic species. Therefore, phosphorus discharges are being carefully evaluated throughout the state.

The Chippewa Ranch WWSL does not have RP to cause or contribute to a River Eutrophication Standard (RES) impairment in the Wild Rice Watershed, under permitted effluent conditions. As such, existing monitoring are sufficient for the immediate receiving waters. An overview of all appropriate TP limits and respective time frames is summarized in Table 3 of the Wild Rice Watershed Phosphorus Memo which can be found in the administrative record.

Under the Boundary Waters Treaty of 1909 signed by the United States and Canada, "waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other." Lake Winnipeg in Manitoba exceeds the province's water quality standards. The discharge from this facility will eventually enter the Red River which discharges to Lake Winnipeg. Looking at existing effluent quality, the discharge is an insignificant source of phosphorus to Lake Winnipeg. However, the permit requires the permittee to prepare an Enhanced Phosphorus Management Plan (PMP) and submit it to the EPA within 180 days of permit issuance. While the PMP does not require specific reductions at this time, the EPA strongly encourages the permittee to identify and eliminate/reduce sources of phosphorus to, and improve phosphorus management within, the wastewater treatment facility.

Nitrogen

Nitrogen is a pollutant that can negatively impact the quality of Minnesota's water resources, including water used for drinking. Studies have shown that nitrogen in lakes and streams has a toxic effect on aquatic life such as fish. Like phosphorus, nitrogen is a nutrient that promotes algae and aquatic plant growth often resulting in decreased water clarity and oxygen levels. In September 2014, the MPCA completed the final draft of the [Statewide Nutrient Reduction Strategy](http://www.pca.state.mn.us/zihy1146) (<http://www.pca.state.mn.us/zihy1146>) which identifies goals and milestones for nitrogen reductions for both point and non-point nitrogen sources within Minnesota. To gain a better understanding of the current nitrogen concentrations and loadings received by and discharged from the facility additional effluent nitrogen monitoring has been added to the Permit. This monitoring has been added in accordance with Section 308 of the Clean Water Act.

The draft Permit includes effluent monitoring for ammonia (as N), Nitrite plus Nitrate-Nitrogen, Total Kjeldahl Nitrogen and Total Nitrogen at a frequency of one time per half year for the five-year term of the Permit. There is no nitrogen limit in the Permit.

This additional monitoring will provide the data necessary to develop a better understanding of the total nitrogen concentrations and loadings that is currently being received and discharged from municipal and industrial wastewater treatment plants within Minnesota and Indian Country. Once a more extensive total nitrogen data set is established nitrogen reduction work can begin to achieve the necessary reductions to meet the goal of a 20% reduction in total nitrogen loads from point source dischargers by 2025 as outlined in the Statewide Nutrient Reduction Strategy. It is our hope that the Minnesota Tribes will participate in this reduction effort.

Total Sulfates

Monitoring is required to provide information related to sulfate levels being discharged from wastewater treatment ponds and the possible impacts to wild rice waters. If the White Earth Nation decides to develop water quality standards to protect wild rice waters, the data can be used in the development of a sulfate standard. Sampling is required at a frequency of two times per year during periods of discharge. There is no sulfate limit in the permit. This monitoring has been added in accordance with Section 308 of the Clean Water Act.

Asset Management – Operation & Maintenance Plan

Regulations regarding proper operation and maintenance are found at 40 CFR § 122.41(e). These regulations require, “that the permittee shall at all times operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.” The treatment plant and the collection system are included in the definition of “facilities and systems of treatment and control” and are therefore subject to the proper operation and maintenance requirements of 40 CFR § 122.41(e).

Similarly, a permittee has a “duty to mitigate” pursuant to 40 CFR §122.41(d), which requires the permittee to “take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment.”

The draft permit requirements are the first steps of an asset management program which contains goals of effective performance, adequate funding, adequate operator staffing and training. Asset management is a planning process that ensures that you get the most value from each of your assets and have the financial resources to rehabilitate and replace them when necessary, and typically includes five core elements which identify: 1) the current state of the asset; 2) the desired level of service (e.g., per the permit, or for the customer); 3) the most critical asset(s) to sustain performance; 4) the best life cycle cost; and 5) the long term funding strategy to sustain service and performance.

EPA believes that requiring a certified wastewater operator and adequate staffing is also essential to ensure that the treatment facilities will be properly operated and maintained. Mapping the collection system with the service area will help the operator better identify the assets that he/she is responsible for and consider the resources needed to properly operate and maintain them. This will help in the development of a budget and a user rate structure that is necessary to sustain the

operation. The development and implementation of a proactive preventive maintenance program is one reasonable step that the permittee can take to demonstrate that it is at all times, operating and maintaining all the equipment necessary to meet the effluent limitations of the permit.

Special Conditions

- The permit requires electronic reporting.
- Dikes must be maintained and vegetation cut.
- The permit requires the continued implementation of an Operation & Maintenance Plan. The plan covers the use of a certified operator to oversee the facility, having adequate staff to help ensure compliance with the permit, mapping the treatment system, developing a preventive maintenance program, reporting and other items.
- The permit contains Industrial Waste Pretreatment Program requirements in accordance with 40 CFR Parts 122 and 403.
- Compliance with 40 CFR Part 503 (sludge use and disposal regulations) if sludge is used or disposed within the Reservation. EPA is to be contacted prior to sewage sludge being removed from the pond system.
- The permit requires that if sewage sludge is to be land applied, the permittee must submit the following information to EPA prior to application:
 - i. certification that the application contractor has received all necessary information to comply with applicable provisions of 40 CFR Part 503;
 - ii. site location by latitude and longitude, and code number to identify field or field portion.
 - 1) Plat map showing location of the site relative to local landmarks.
 - 2) Proximity to surface waters of the United States.
 - 3) Potential presence of endangered species.
 - 4) Soil fertility test with fertilizer recommendations.
 - 5) Previous crop and future crop with yield goal.
 - 6) Participation Agreement signed by the landowner or operator, if different, of the site to receive sludge.
 - 7) Determination whether the site has previously been used for sewage applications.
 - 8) If previously used, determination of cumulative pollutant loading rate since July 19, 1993;
 - iii. certification that the local township supervisor has been notified that a site has been identified and is intended for use;
 - iv. certification that the County Health Department has been notified that hauling is scheduled to take place; and
 - v. certification that notice has been provided to landowners and occupants adjacent to, or abutting the proposed land application site. Such notice shall be accomplished by one of the following: written notice through the regular mail;

public notice in the local newspaper; public reading of notice at open public meeting

- The permit contains a reopener clause to include additional requirements resulting from TMDL studies.
- The permit requires the development and implementation of an Enhanced Phosphorus Management Plan.

Significant Changes From The Last Permit

Following are the significant changes in the draft permit:

- Added 'Summary of Regular Reporting'. (Page I-2)
- The daily maximum E. coli limit has been revised. (Part I.B)
- The permit requires monitoring of the influent and effluent for various nitrogen compounds. (Part I.B and Part I.C)
- The Reporting requirement has been changed to require electronic submittal of DMRs. (Part I.E.2)
- Additional requirements related to Asset Management have been added. (Part I.E.5)
- The 'Sludge Disposal Requirements' language has been updated. (Part I.E.7)
- The permit contains a reopener clause to include additional requirements resulting from TMDL studies. (Part I.E.8)
- The permit requires the development and implementation of an Enhanced Phosphorus Management Plan. (Part I.E.9)

The permit is based on an application dated May 12, 2017 and additional supporting documents found in the administrative record.

The permit will be effective for approximately five years from the date of reissuance as allowed by 40 CFR § 122.46.

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