# STATEMENT OF BASIS

**FOR THE REISSUANCE OF**
**A NPDES PERMIT**

U.S. Environmental Protection Agency
Region 5, NPDES Programs Branch - WN-15J
77 West Jackson Boulevard
Chicago, Illinois 60604
(312) 886-6106

**Public Notice No.:** 18-06-01-A

**Public Notice Issued On:** June 27, 2018

**Comment Period Ends:** July 27, 2018

**Permit No.: WI-0071307-3 (REISSUANCE)**

**Application No.: WI-0071307-3**

**Name and Address of Applicant:**

Menominee Indian Tribe of Wisconsin
Menominee Tribal Utilities
N700 Go Around Road
Keshena, Wisconsin 54135

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

Wolf River Ranch WWTF
N3229 State Highway 47
Middle Village, Wisconsin
Shawano County
(Section 2, T28N, R14E)

Receiving Water: Unnamed wetland downstream of Mud Lake

## DESCRIPTION OF APPLICANT'S FACILITY AND DISCHARGE

The above named applicant has applied for an NPDES Permit to discharge into the designated receiving water. The facility and discharge are located within the Menominee Indian Reservation. The permit will be issued by the U.S. Environmental Protection Agency.

The application and plans indicate that the permittee operates a 0.065 mgd Sequencing Batch Reactor (SBR) system designed with biological phosphorus removal followed by ultraviolet disinfection. However, the facility has not been able to achieve biological phosphorus removal. The permittee is in the process of looking at alternatives for chemical phosphorus removal or changing the discharge to a subsurface discharge. The sludge from the facility is aerobically digested on site. When needed the digested sludge is then hauled to the old Keshena lagoon's primary cells for additional treatment. The facility does not plan to land apply the sludge from this facility during this permit term.

The facility has a continuous discharge to an unnamed wetland through Outfall 001 (Lat: 44° 56' 13", Long: 88° 45' 36") downstream of Mud Lake.

**Receiving Water**

The surface waters of the Menominee Reservation are protected under the Menominee Tribal Surface Water Quality Regulations, within the exterior boundaries of the Menominee Indian Reservation, to protect aquatic life, public health, safety or welfare and serve the purposes of CWA. These regulations have not been federally approved, however, and are used as guidance in the development of permit limits.

**Proposed Effluent Limitations:**

**Monitoring Point 001A-** the permittee is authorized to discharge of treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to an unnamed wetland downstream of Mud Lake.

| Parameter | Maximum Limits for Quantity or Loading | | | | Maximum Limits for Quality or Concentration | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|
| | 30-Day | 7-Day | Daily | Units | 30-Day | 7-Day | Daily | Units | |
| Flow | Report | --- | Report | MGD | --- | --- | --- | --- | PWJ |
| Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) | | | | | | | | | |
| | 11 | 16 | --- | lbs/day | 20 | 30 | --- | mg/L | STS/PWJ |
| Total Suspended Solids (TSS) | | | | | | | | | |
| | 11 | 16 | --- | lbs/day | 20 | 30 | --- | mg/L | STS/PWJ |
| Ammonia (asN) | | | | | | | | | |
| May-October | 5.35 | --- | 5.35 | lbs/day | 9.87 | --- | 9.87 | mg/L | |
| Nov-April | --- | --- | 5.35 | lbs/day | --- | --- | 9.87 | mg/L | WQS |
| Total Phosphorus (as P) | | | | | | | | | |
| Effective 8/31/20 | 0.54 | 1.1 | --- | lbs/day | 1.0 | 2.0 | --- | mg/L | WQC/PWJ |
| E. coli | --- | --- | --- | --- | 126* | --- | 235 | E. coli/100 ml | WQS |
| | | | | | Minimum Daily | | Maximum Daily | | STS/WQS |
| pH | --- | --- | --- | --- | 6.0 | --- | 8.5 | S.U. | |
| Dissolved Oxygen | --- | --- | --- | --- | 5.0 | --- | --- | mg/l | WQS |
| Temperature | --- | --- | --- | --- | Report | Report | Report | °F | WQC |

* Geometric Mean

**Comment Key**

WQS – Water Quality Standards
WQC – Water Quality Concern
STS – Secondary Treatment Standards (40 CFR part 133)
PWJ – Permit Writer's Judgment

Loading limits in the permit were calculated using the following formula:
0.065 mgd x limit (mg/L) x 8.34 = Loading (lbs/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 Menominee Indian Tribe of Wisconsin 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 the National Historical Preservation Act. There are two endangered species (Gray wolf and Karner blue butterfly) and one threatened species (Northern long-eared bat) within the county. The permittee is in the process of upgrading its existing facility within the existing footprint of the existing facility. Since the facility will be upgraded on the existing site and due to the highly disturbed nature of the project location, the site does not have the critical habitat needed for the identified species. Therefore, it is believed that the reissuance of the permit and the continued operation of the facility and associated discharge will have no effect on endangered or threatened species or their critical habitat.

Also, due to the highly disturbed nature of the project location, it is highly unlikely that cultural resources and historical properties exist, and therefore the project, discharge and issuance of the permit will have no effect on cultural resources and historical properties.

**Basis for Permit Requirements**

The limits were developed to ensure compliance with 40 CFR Parts 131 and 133 and protection of Menominee's Tribal Surface Water Quality Regulations and Wisconsin's water quality standards where they are applicable. We also looked at compliance with EPA's water quality criteria. The limits were calculated using WDNR procedures to be protective of a "Limited Aquatic Life" (LAL) designated use as the discharge is to a wetland. Though the state's water quality standards are not applicable at the point of discharge, EPA believes that the limits will also be protective of Menominee's water quality regulations at the point of discharge. EPA believes the LAL designation is still appropriate for the receiving water because of the size of the wetland complex and that the effluent is diffused over a large area so as not to cause channelization through the wetland resulting in a long detention time.

**pH**

The limits for pH are based on secondary treatment requirements pursuant to 40 CFR Part 133 and permit writer's judgment to ensure the daily maximum ammonia limit will not be toxic at higher pH levels. The minimum and maximum limits are carried over from previous permit. Data indicate that the permittee has been in substantial compliance with the limits.

**Chemical Biochemical Oxygen Demand ($CBOD_5$)**

The limits in the previous permit were meant to be protective of a LAL designated use. The limits for $CBOD_5$ are 30 mg/L as a 7-day average and 20 mg/L as a 30-day average. These limits are still appropriate for this permit term. 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. The permit does not require percent removal calculations as 85% reduction is assured due to the stringency of the concentration limits.

**Total Suspended Solids (TSS)**
The limits in the previous permit were meant to be protective of a LAL designated use. The limits for TSS are 30 mg/L as a 7-day average and 20 mg/L as a 30-day average. These limits are still appropriate for this permit term. 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. The permit does not require percent removal calculations as 85% reduction is assured due to the stringency of the concentration limits.

**E.coli**
The limits for E. coli are based on the Menominee Tribe's water quality criteria, EPA's water quality criteria at the time the permit was issued and continuation of the limit from the existing permit. The limit is applicable from May 1 through September 30. The geometric mean of samples collected over a 30-day period shall not exceed an E. coli count of 126 Colony Forming Units (CFU) per 100 milliliters (ml). Any single sample shall not exceed an E. coli count of 235 CFU 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). The statistical threshold value of 410 E. coli per 100 ml is set as the daily maximum. Since the permittee has been in substantial compliance with the existing permit limits, in accordance with 40 CFR 122.44(l) (anti-backsliding), the limits from the previous permit have been carried over into the draft permit.

**Ammonia**
The limits in the previous permit were meant to be protective of a LAL designated use. We used WDNR procedures and standards that were appropriate at the time the last permit was issued. WDNR has since revised its procedures and standards for calculating ammonia limits. Using this new information, we calculated new ammonia limits. The daily maximum limit of 9.87 mg/L remained unchanged, however, the 30-day average limits became much less stringent. The ammonia worksheet is included in the administrative record. Since the permittee has been unable to meet the previous 30-day average limit and based on the calculations a 30-day average limit would not be needed, the previous 30-day average limit has been removed. Instead, for May through October, the daily maximum limit will also be the 30-day average limit. It should be noted that we also calculated limits based on EPA's 2013 water quality criteria for ammonia. Again, the calculated limits were much less stringent that the previous permit limits. These calculations are also in the administrative record.

**Temperature**
Monitoring for temperature has been included to ensure the state's thermal water quality standards are met.

**Phosphorus**
Phosphorus is a common constituent in many wastewater discharges and a pollutant that has the potential to negatively impact the quality of Wisconsin'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.

According to Menominee Environmental staff, the receiving waters are not impaired for phosphorus at the point of discharge, however, WDNR is working on a TMDL which would include the watershed (see further below). In addition, the Menominee Tribe's water quality regulations and Wisconsin's water quality standards for phosphorus are not applicable in wetlands. However, there is still concern related to excessive phosphorus loads being discharged to waters of the U.S. and its effects in downstream waters. Therefore, EPA still believes phosphorus limits are needed. The previous permit contained limits for phosphorus. It is EPA's understanding that the existing facility was designed for biological phosphorus removal, however, the facility was not able to achieve sufficient removal to meet the limits in the previous permit. Therefore, in accordance with 40 CFR 122.44(l) (anti-backsliding) we are able to revise the limits as appropriate A compliance schedule, in accordance with 40 CFR 122.47, has been included in the permit requiring a monthly average limit of 1.0 mg/L and a weekly average limit of 2.0 mg/L. The schedule requires the submittal of an operational evaluation report and a study of feasible alternatives. Compliance is required by August 31, 2020. The permittee is in the process of looking at alternatives for phosphorus removal, including chemical phosphorus removal. As stated above the WDNR is working on a TMDL that would include this facility's discharge. Compliance with the TMDL would be voluntary for the permittee since the TMDL is not applicable to reservation waters. The draft voluntary TMDL limit would be 0.17 mg/L. Though voluntary, the permittee will also be looking at alternatives to comply with that limit.

**Dissolved Oxygen**

A minimum dissolved oxygen discharge limit of 5.0 mg/L is included in the permit based on the Menominee Tribe's water quality regulations if they were applicable and is a continuation from the previous permit.

**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**

- Electronic reporting is required.
- 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 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. Other than sludge taken to the Keshena WWTP for further treatment, it is not expected that sewage sludge will be used or disposed of during the permit term. The permit does require annual reporting of sludge taken to the Keshena WWTP and a one-time sampling event for metals and PCBs.
- Schedule of compliance for phosphorus.

**Significant Changes from the Last Permit**

Following are the significant changes in the draft permit:

- Added ‘Summary of Regular Reporting’.
- Added temperature monitoring of the effluent. (Part I.A.1)
- Removed the previous 30-day average ammonia and included a new limit. (Part I.A.1)
- The existing phosphorus limits have been removed and a compliance schedule to meet new phosphorus limits have been added. (Part I.A.1 and Part I.B.6)
- The Reporting requirement has been changed to require electronic submittal of DMRs. (Part I.B.2)
- Additional requirements related to Asset Management have been added. (Part I.B.3)
- The ‘Sludge Disposal Requirements’ have been updated including metals and PCBs monitoring. (Part I.B.5)
- Part III has been added.

The permit is based on applications received on February 10, 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.

Written By: John Colletti June 2018
U.S. EPA, Region 5, WN-15J
77 West Jackson Blvd.
Chicago, IL 60604
(312) 886-6106