

# Briefing Memorandum

## STATEMENT OF BASIS FOR THE ISSUANCE OF A NPDES PERMIT

Name and Address of Applicant:

Menominee Indian Tribe of Wisconsin  
Menominee Tribal Utilities  
P.O. Box 910  
Keshena, Wisconsin 54135

Name and Address of Facility Where  
Discharge Occurs:

Keshena WWTP  
N 700 Go Around Road  
Menominee County, WI  
(T28N, R15E, Section 25)

Permit No.: WI-0071315-2

Receiving Water: Unnamed Wetland.

### **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 permit will be issued by the U.S. Environmental Protection Agency .

The application and plans indicate that the permittee owns and operates a 0.335 mgd extended oxidation ditch system with phosphorus removal followed by ultraviolet disinfection.

In addition, the permittee has for use its original lagoon treatment system. The previous system consisted of two primary cells and three secondary cells and was designed to remove phosphorus. During the summer months, some of the influent flow is diverted away from the oxidation ditch to the old lagoons so that they do not dry out. The lagoons still have a discharge control structure. Normally, there will be no discharge from these cells, however, if one is needed, the effluent must meet the limits required for the oxidation ditch.

The discharge goes east about 1700 feet through a pipe where it hits a splash pad, then the discharge flows about 900 feet through manmade trench constructed of riprap to a diversion structure where the flow spreads out and spills over a weir into an unnamed wetland through Outfall 001 (Lat: 44° 52' 40", Long: 88° 37' 05"). The discharge is continuous.

The sludge from the facility is aerobically digested on site. As needed the sludge is then put into the lagoon's primary cells for additional treatment. The facility does not plan to use or dispose of sludge from this facility during the permit term.

Wastewater is from domestic sources only, including a casino and a hotel.

### **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 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.

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 <sub>5</sub> )									
	56	84	---	lbs/day	20	30	---	mg/L	STS/PWJ
Total Suspended Solids (TSS)									
	56	84	---	lbs/day	20	30	---	mg/L	STS/PWJ
Ammonia (asN)									
May-October	15.6	---	27.6	lbs/day	5.59	---	9.87	mg/L	WQS
Nov-April	---	---	27.6	lbs/day	---	---	9.87	mg/L	
Total Phosphorus (as P)									
	2.8	---	5.6	lbs/day	1.0	---	2.0	mg/L	WQC/PWJ
E. coli	---	---	---	---	126*	---	235	E.coli/100 ml	WQS
Total Mercury	---	---	---	---	---	---	Report	ng/L	WQC
					Minimum Daily		Maximum Daily		STS/WQS
pH	---	---	---	---	6.0	---	8.5	S.U.	
Dissolved Oxygen	---	---	---	---	5.0	---	---	mg/l	WQS

\* Geometric Mean

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

$$0.335 \text{ mgd} \times \text{limit (mg/L)} \times 8.34 = \text{Loading (lbs/d)}$$

**Comment Key**

WQS – Water Quality Standards

WQC – Water Quality Concern

STS – Secondary Treatment Standards (40 CFR part 133)

PWJ – Permit Writer’s Judgment

### **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 or the tribe as neither has federally approved water quality standards applicable to the receiving water at the point of discharge.

### **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. 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.

### **Chemical Biochemical Oxygen Demand (CBOD<sub>5</sub>)**

The limits in the previous permit were meant to be protective of a LAL designated use. The limits for CBOD<sub>5</sub> 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.

### **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.

### **E.coli**

The limits for E.coli are based on the Menominee Tribe's water quality criteria and EPA's water quality criteria, and continuation of the limit from the existing permit. The limits are applicable from March 1 through October 31. 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. The 30-day limit was in the existing permit and the daily maximum limits was added to be consistent with 40 CFR § 122.45(d).

### **Ammonia**

The previous permit did not contain limits for ammonia as it was not believed that ammonia would be a concern in the discharge. Data indicates that there may be a reasonable potential to cause or contribute to a violation of applicable water quality standards as on occasion high levels of ammonia are being discharged. Therefore, we are including limits in the permit to ensure protection of the receiving water. Using applicable WDNR procedures for LAL waters, we

calculated new ammonia limits. The ammonia worksheet is included in the administrative record. We have included a 30-day average limit of 5.59 mg/L applicable during the months of May through October. The permit will also include a year round daily maximum limit of 9.87 mg/L and require that the pH be lower than 8.5 S.U.

### **Phosphorus**

According to Menominee Environmental staff, the receiving waters are not impaired for phosphorus at the point of discharge. 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. To protect the receiving stream against nuisance plant growth and ensure that Wisconsin's water quality standards for phosphorus are met at the reservation boundary, a monthly average limit for total phosphorus of 1.0 mg/L is continued from the existing permit and a daily maximum limit of 2.0 mg/L is included in the permit, pursuant to 40 CFR section 122.45(d).

### **Dissolve 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 and is a continuation from the current permit.

### **Mercury**

To help determine whether the permittee can meet the Menominee Tribe's fish and aquatic life water quality criterion of 12 ng/L, the permit will require monitoring for mercury for this permit term. A PMP for mercury is also included in the draft permit to help identify possible sources of mercury in the system if monitoring indicates that mercury is being discharged at levels of concern.

### **Additional Monitoring**

In accordance with 40 CFR § 122.21(j)(4)(iv)(C), EPA is requiring the permittee to monitor for the parameters found in Table 2 of Appendix J to 40 CFR Part 122 one time during the permit term with the data to be submitted with the next permit renewal application. The data will be used to determine if additional limits may be needed in the next permit.

### **Asset Management – Operation & Maintenance Plan**

On February 6, 2012, Region 5 invited Tribal Governmental Leaders to consult on proposed new permit requirements regarding asset management. The agreed upon language is found in the draft permit and the basis for the language is below.

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 draft permit contains requirements related to sludge disposal in accordance with 40 CFR parts 122 and 503. It is not expected that sewage sludge will be used or disposed of during the permit term.
- The permit requires the development and 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.

### **Significant Changes from the Last Permit**

Following are the significant changes in the draft permit:

- Daily maximum limits for E.coli and phosphorus have been added to be consistent with 40 CFR § 122.45(d).
- Quarterly mercury influent and effluent monitoring has been added to the permit. In addition, a mercury pollutant minimization plan is required if effluent are shown to be high.
- Ammonia limits have been included.
- The percent removal requirements for CBOD<sub>5</sub> and TSS have been deleted since the corresponding effluent limits are more stringent than the secondary treatment standards (40 CFR Part 133).

- The permit requires weekly observations of the outfall to look for unusual characteristics of the discharge.
- Monitoring for the additional pollutants found in 40 CFR 122 Appendix J, Table 2 have been added.
- Requirements related to Asset Management have been added.
- The “Standard Conditions” have been revised.

**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. As this is an existing discharge, with no planned construction during the permit term, we do not believe the discharge will have any effect on historic properties, cultural resources or threatened or endangered species.

The permit is based on an application with a received date of May 23, 2011, 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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