

STATEMENT OF BASIS

FOR THE REISSUANCE OF A NPDES PERMIT

U.S. Environmental Protection Agency
Region 5, NPDES Programs Branch - WN-16J
77 West Jackson Boulevard
Chicago, Illinois 60604
(312) 886-6106

Public Notice No.: 15-05-01-A

Public Notice Issued On: May 8, 2015

Comment Period Ends: June 8, 2015

Permit No.: MI-0057087-3 (REISSUANCE)

Application No.: MI-0057087-3

Name and Address of Applicant:

Name and Address of Facility Where
Discharge Occurs:

Sault Tribe of Chippewa Indians
Sault Tribe Housing Authority
154 Parkside.
Kincheloe, Michigan 49788

Odenaang Subdivision WWTP
4000 Shunk Rd.
Sault Ste. Marie, Michigan
(NE ¼ of Section 29, T47N, R1E)

Receiving Water: Frechette Creek

Treatment Facility Description

The above named applicant has applied for an NPDES Permit to discharge into the designated receiving water. The facility is located within the boundaries of the Sault Ste. Marie Tribe of Chippewa Indian Reservation. The U.S. Environmental Protection Agency has retained the authority to issue NPDES permits to facilities with discharges to waters of the United States within Indian Country. The permit will be issued by the EPA under the authorities of the Clean Water Act.

The applicant provides wastewater treatment using a 25,000 gallon per day extended aeration package plant followed by a 2.5 acre polishing pond with a controlled discharge (outfall 001) to Frechette Creek. The polishing pond has sufficient capacity such that only an annual discharge during the spring is needed.

The treatment system serves a population of 250. Wastewater is from domestic sources only.

The treated effluent discharges into Frechette Creek which eventually enters the St. Mary River. Frechette Creek is classified as a Riverine, non-tidal, lower-perennial system, meaning that it is a

slow-flowing creek, however, with spring snowmelt, the flow of the Creek is considerably higher. Though not applicable at the point of discharge, under Michigan’s water quality standards, the receiving water would be protected for the following designated uses: (a) Agriculture; (b) Navigation; (c) Industrial water supply; (d) Public water supply at the point of water intake; (e) Warmwater fishery; (f) Other indigenous aquatic life and wildlife; (g) Partial body contact recreation, and; (h) Total body contact recreation from May 1 to October 31.

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

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 Frechette Creek.

Parameter	Date	30-day average	7-day Average	Daily Maximum	Daily Minimum	Comments
Flow	All year	Report	Report	---	---	PWJ
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	All Year	25 mg/L	40 mg/L			STS
Total Suspended Solids	All Year	30 mg/L	45 mg/L			STS
Ammonia	All Year	Report		Report		PWJ
Dissolved Oxygen	All Year				5 mg/L	WQS
E.coli	All year	126 E. coli/100 ml*		410 E. coli/100 ml		WQS
Total Phosphorus	All Year	1.0 mg/L	2.0 mg/L			WQS
Total Mercury	All Year	10.0 ng/L				WQC
pH	All Year			9.0 S.U.	6.5 S.U.	WQS/STS

*Geometric Mean

Loading limits in the permit were calculated using the following formula based on the design flow:

$$2.5 \text{ acres} * (3.259 * 10^5 \text{ gallons/acre/foot}) * 0.5\text{ft/d} = 0.41 \text{ mgd}$$

$$0.41 \text{ mgd} \times \text{limit (mg/l)} \times 8.34 = \text{Loading (lbs/d)}.$$

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 Sault Tribe of Chippewa Indians as neither has federally approved water quality standards applicable to the receiving water at the point of discharge, however as stated above, EPA believes the effluent limitations included in the draft permit meet state water quality standards at the reservation boundary.

ESA and NHPA Compliance

EPA has satisfied its requirements under the Endangered Species Act and the National Historical Preservation Act. This is an existing facility with no planned expansion within the permit term. The permittee is planning on connecting to the City of Sault Ste. Marie and this facility will be taken out of service. Therefore, it is believed that the reissuance of the permit and the associated discharge will have no effect on endangered or threatened species or their critical habitat and will have no impact on historical, archeological, or cultural resources.

Basis for Permit Requirements

The limits were developed to ensure compliance with 40 CFR Parts 131 and 133 and protection of human health and EPA's water quality criteria, and protection of Michigan's WQS where they are applicable.

pH

The limits for pH are based on protecting Michigan water quality standards (Rule 53). Monitoring indicates the permittee is in substantial compliance with the limits.

5-day Carbonaceous Biochemical Oxygen Demand (CBOD₅)

The limits for CBOD₅ are based on secondary treatment requirements pursuant to 40 CFR Part 133. A weekly average limit of 40 mg/L and a monthly average limit of 25 mg/L are carried from the previous permit. The permittee has been in substantial compliance with these limits. The weekly average and the monthly average are the arithmetic mean of pollutant parameter values for samples collected in a period of 7 and 30 consecutive days, respectively. We believe the limits will be protective of Michigan's dissolved oxygen standard.

Total Suspended Solids (TSS)

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

Dissolve Oxygen (DO)

The limit in the previous permit is carried over to this permit as we believe it is still appropriate. The limit was developed to protect Michigan's dissolved oxygen water quality standard of 5 mg/L as a daily minimum where it is applicable. Monitoring indicates the permittee is in substantial compliance with the limit.

E. coli

The limits for E. coli are based on the 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. The limits are applicable year round. Monitoring indicates the permittee is in substantial compliance with the limits.

It should be noted that a TMDL for the St. Mary River Watershed was approved in September of 2012 which includes the Frechette Creek Watershed. It does not have a formal WLA for the tribal facility; it is a “voluntary goal”. The Table below was taken from the TMDL report. The “voluntary goal” is based upon the existing permit. No reductions were “suggested”.

Table B-12: Daily E. coli wasteload allocations, load allocations, and loading capacities for the Frechette Creek Watershed.

Flow Interval	Season	Wasteload Goal (cfu / day)	State Loading Capacity (cfu / day)	Loading Capacity (cfu / day)
		Odenaang Subdivision WWTF ¹		
High flows	May 1 – Oct 31	4.66 E +9	8.93 E +10	9.40 E +10
	Nov 1 – Apr 30	1.55 E +10	2.98 E +11	3.13 E +11
Moist conditions	May 1 – Oct 31	4.66 E +9	2.40 E +10	2.87 E +10
	Nov 1 – Apr 30	1.55 E +10	8.00 E +10	9.56 E +10
Mid-range flows	May 1 – Oct 31	4.66 E +9	1.13 E +10	1.60 E +10
	Nov 1 – Apr 30	1.55 E +10	3.78 E +10	5.33 E +10
Dry conditions	May 1 – Oct 31	4.66 E +9	6.28 E +9	1.09 E +10
	Nov 1 – Apr 30	1.55 E +10	2.09 E +10	3.84 E +10
Low flows	May 1 – Oct 31	4.66 E +9	3.21 E +9	7.87 E +8
	Nov 1 – Apr 30	1.55 E +10	1.07 E +10	2.62 E +10

¹Facility is owned/operated by tribe, with permit issued by EPA. Load shown for this facility is a suggested as a voluntary goal but is not included in the TMDL. The allocation to be approved by EPA for this TMDL is the State Loading Capacity.

Phosphorus

The Frechette Creek watershed is not impaired due to nutrients at the point of discharge or at the reservation boundary. To protect the receiving stream against nuisance plant growth problems and ensure that Michigan's Water Quality Standards are met at the reservation boundary, the permit contains a monthly average limit for total phosphorus of 1.0 mg/l in accordance with Michigan’s Water Quality Standards (R.323.1060). This permit also includes a weekly average limit in accordance with 40 CFR 122.45(d). The draft permit requires the permittee to submit annual Phosphorus Operational Evaluation Reports.

Ammonia (as N)

Monitoring for ammonia is carried over from the previous permit. The facility discharges on a controlled basis during periods of high flows in the receiving stream. No limits are needed.

Mercury

The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a multiple discharge variance from the Michigan water quality-based effluent limit of 1.3 ng/L. EPA approved this variance and the method to calculate the LCA.

A LCA limit of 10.0 ng/L is included for total mercury in the permit as a monthly average. The LCA limit is based on existing effluent conditions. In addition, the permit also requires a Mercury Minimization Program (MMP) to be developed and implemented. The MMP for is included in the draft permit to help identify possible sources of mercury in the system.

EPA believes the use of the LCA limit is appropriate in this permit as there are no federally approved water quality standards for mercury applicable at the point of discharge. Using the LCA limit at the point of discharge will ensure that Michigan's WQS are protected at the reservation boundary.

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 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.
- Submittal of an annual Phosphorus Operational Evaluation Report.
- The development and implementation of a pollutant minimization program for mercury.
- 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) (Part III of the permit) if sludge is used or disposed within the Reservation. Part III was developed using the Part 503 Implementation Guidance for sludge and 40 CFR Parts 122, 501, and 503.

Significant Changes from the Previous Permit

The draft permit contains the following changes from the last issued permit:

1. Added 'Summary of Regular Reporting'.
2. A daily maximum limit for E. coli has been added to be consistent with 40 CFR § 122.45(d) and EPA 2012 Recreational Water Quality Criteria.
3. Weekly average limits for phosphorus have been added to be consistent with 40 CFR § 122.45(d). Added quarterly influent monitoring for phosphorus.
4. Added a monthly average mercury limit and associated monitoring.
5. The permit requires weekly observations of the outfall to look for unusual characteristics of the discharge.
6. Requirements related to Asset Management have been added (Part I.E.5).
7. Requirement to submit an annual Phosphorus Operational Evaluation Report (Part I.E.6).
8. Requires the development and implementation of a mercury minimization program (Part I.E.7).
9. The Industrial Waste Pretreatment Program language has been updated (Part I.E.8).
10. The 'Sludge Disposal Requirements' have been updated (Part I.E.9).

11. The “Standard Conditions” have been revised (Part II).

12. The “Sewage Sludge Requirements” have been revised (Part III).

The permit is based on an NPDES application dated March 3, 2014 and additional documents found in the administrative record.

This permit will be effective for approximately five years from the date of issuance as allowed by regulation.

Written By: John Colletti
U.S. EPA, Region 5, WN-16J
77 West Jackson Blvd.
Chicago, IL 60604
(312) 886-6106

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