STATEMENT OF BASIS

FOR THE ISSUANCE 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.: 18-03-02-A

Public Notice Issued On: March 21, 2018

Comment Period Ends: April 20, 2018

Permit No.: MI-0054861-5 (REISSUANCE)

Application No.: MI-0054861-5

Name and Address of Applicant:

Saginaw Chippewa Indian Tribe
Public Works Department
7070 East Broadway
Mt. Pleasant, Michigan 48858

Name and Address of Facility Where Discharge Occurs:

Isabella Reservation WWTP
7375 East Tomah Road
Mt. Pleasant, Michigan
Isabella County
(S.E. ¼ of the N.W. ¼ of S20, T14N, R3W)

Receiving Water: Unnamed tributary to Onion Creek.

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 since the discharge is located within the Saginaw Chippewa's Isabella Reservation.

The Saginaw Chippewa owns and the Tribe's Public Works Department operates a 0.58 mgd (0.70 mgd maximum daily) wastewater treatment plant (WWTP). Headworks treatment consists of screening and grinding. Wastewater then flows into a pre-equalization tank where it is stored and batch fed to three sequencing batch reactors (SBR) with phosphorus removal. Treated water is then decanted to the post-equalization tank where it is pumped to either of two sand filters for final "polishing" prior to flowing through two ultraviolet disinfection units. The effluent gravity flows through a recirculation channel to the final discharge point (Outfall 001: Latitude 43 3'28" Longitude 41 53'5") to the unnamed tributary to Onion Creek. Two six million gallon lagoons are available for additional treatment and holding if necessary. Solids from the SBR units are wasted to one of two sludge reaction tanks for lime stabilization. Lime stabilized sludge is transferred to one of two 500,000-gallon sludge storage tanks. From the storage tank, the sludge is beneficially recycled via bulk land application to an agricultural site located within the Isabella Reservation boundaries.

Wastewater is generated by domestic sources only including a casino.

LIMITATIONS AND MONITORING REQUIREMENTS- OUTFALL 001

Parameter	Date	Monthly Average	7-day Average	Daily Maximum	Daily Minimum
$CBOD_5$	May - September	4 mg/L 19 lbs/d	38 lbs/d	10 mg/L	
	October - November	7 mg/L 34 lbs/d	38 lbs/d	10 mg/L	
	December - March	25 mg/L 121 lbs/d 85 % removal	40 mg/L 193 lbs/d		
	April	13 mg/L 63 lbs/d	97 lbs/d	20 mg/L	
Total Suspended Solids (TSS)	May - November	20 mg/L 97 lbs/d	30 mg/L 145 lbs/d		
	December - April	30 mg/L 145 lbs/d 85 % removal	45 mg/L 218 lbs/d		
Ammonia	May - September	0.5 mg/L 2.4 lbs/d	2 mg/L 10 lbs/d		
	October - November		10 lbs/d	2 mg/L	
	December - March	Report			
	April		29 lbs/d	6 mg/L	
Dissolved Oxygen	May - September				6 mg/L
	October - November				6 mg/L
	December - March				5 mg/L
	April				4 mg/L
Total Phosphorus	All Year	1 mg/L 4.8 lbs/d		1.5 mg/L 7.2 lbs/day	

Total Mercury	All Year	3 ng/L 1.3 x 10^{-5} lbs/d Rolling average			
E. coli	All Year	126 E. coli/100ml*		235 E. coli/100ml	
pH	All Year			9.0 S.U.	6.5 S.U.

* Geometric mean

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

0.58 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 Saginaw Chippewa Indian Tribe as neither has water quality standards applicable to the receiving water at the point of discharge.

ESA and NHPA Compliance

EPA has satisfied its requirements under the Endangered Species Act and the National Historical Preservation Act. Since this is an existing facility with no planned expansion or construction expected within the permit term, it is believed that the issuance 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 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, EPA's water quality criteria and protection of Michigan's water quality standards where they are applicable.

In this regard, the Michigan Department of Environmental Quality (MDEQ) helped develop limits for this facility that would be protective of state water quality standards. Though the State's WQS are not applicable at the point of discharge, EPA's consideration of the limits will ensure compliance with the State's WQS at the reservation boundary. Also, permit writer's judgment is used to set some of the permit requirements. Information from MDEQ on the development of the limits can be found in the administrative record

pH

The limits for pH are based on protecting Michigan WQS (Rule 53) and federal secondary treatment standards (40 CFR Part 133). Monitoring indicates the permittee is in substantial compliance with the limits.

5-day Carbonaceous Biochemical Oxygen Demand($CBOD_5$), Total Suspended Solids (TSS), Dissolve Oxygen (D.O.), and Ammonia (as N)

The limits in the previous permit were developed using Michigan's Streeter-Phelps D.O. model. Information related to limit development and a January 16, 1996 letter from the Michigan Department of Environmental Quality (MDEQ) recommending effluent limits for the discharge are included in the administrative record. For this permit, MDEQ provided us with a revised model run based revised 95% exceedance flows and protection of the Michigan's coldwater D.O. standard at all times. Most of the limits in the draft permit have been carried over from the previous permit, however there are a few changes based on the revised model. The May-September monthly average limit for $CBOD_5$ has been changed from 7 mg/L to 4 mg/L. The May-September monthly average limit for Ammonia Nitrogen has been changed from 2.2 mg/L to 0.5 mg/L and a 7-day average limit of 2 mg/L has been added. A monthly average limit for Ammonia Nitrogen of 20.0 mg/L for December-March has been added. This limit is needed to protect against ammonia chronic toxicity. The May-September daily minimum limit for D.O. has been changed from 3 mg/L to 6 mg/L. It should be noted that based on the revised model, some of the limits in the draft permit could been made less stringent. However, 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 except as noted above. We have included corresponding load limits where they were not included before. However, load limits based on daily maximum concentrations are set as 7-day averages as this allows for some attenuation. This is done since we based the load limits on the annual average flow and not the peak daily maximum flow. We believe water quality standards are still being protected. Monitoring data indicates the permittee can consistently comply with the proposed limits for the above parameters and therefore no schedule of compliance is needed.

E. coli

The limits for E. coli are based on the EPA's water quality criteria in existence at the time the previous permit was drafted. The geometric mean of samples collected over a 30-day period shall not exceed 126 E. coli per 100 milliliters (ml). Any single sample shall not exceed 235 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). 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.

Disinfection

According to the permit application, the facility utilizes an ultraviolet disinfection system. Therefore, total residual chlorine requirements have not been included in this permit.

Phosphorus

Onion Creek drains into the Chippewa River. The River is not impaired due to nutrients at this point 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). With a large dilution ratio that the Chippewa River provides and a minimum dissolved oxygen discharge limit of 5 mg/L, phosphorus discharges from this facility will not cause, or have reasonable potential to cause, or contribute to an excursion beyond applicable water quality standard for phosphorus (1 mg/L) and DO (5 mg/L). This permit also includes a daily maximum limit of 1.5 mg/L in accordance with 40 CFR 122.45(d). This limit was included in the previous permit and is carried over to this permit. Monitoring indicates the permittee is in substantial compliance with the limits.

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 3.0 ng/L is included for total mercury in the permit as a 12-month rolling average. The LCA limit is based on existing effluent conditions. In addition, the permit also requires a Pollution Minimization Program (PMP) for mercury to be developed and implemented. The PMP for mercury is included in the draft permit to help identify possible sources of mercury in the system. A schedule of compliance has not been included in the permit as the permittee's existing data indicates substantial compliance with the proposed limit.

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.

Other Parameters

Detectable data points for Antimony, Arsenic, Barium, Chromium, Copper, Selenium, Nickel, Silver, Zinc and Available Cyanide were available in the monitoring reports submitted by the facility. Concentrations of these parameters in the effluent do not indicate the potential to cause or contribute to the exceedance of Michigan's WQS where they are applicable.

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.

Also, additional monitoring for Total Kjeldahl Nitrogen (TKN), Oil and Grease, Nitrate plus Nitrite Nitrogen and Total Dissolved Solids (TDS) is required for discharges with a design flow greater than 0.1 MGD. This monitoring is an application requirement of 40 CFR § 122.21(j).

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 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 requires the development and implementation of a pollutant minimization program for mercury.
- Additional monitoring as required for discharges with a design flow greater than 0.1 MGD. This monitoring is an application requirement of 40 CFR § 122.21(j).
- 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.
- The permittee has identified in its March 9, 2017 permit application the following land application site that it plans to use for the land application of sewage sludge. The property is located within the exterior boundaries of the Isabella Reservation.

If new sites are identified, information on those sites will be available for inspection at the Regional office.

Significant Changes From The Last Permit

Following are the significant changes in the draft permit:

1. Added 'Summary of Regular Reporting'.

2. Revised or added concentration and load limits as stated above for $CBOD_5$, Ammonia Nitrogen and D.O. (Part I.A.1)

3. Added a limit for mercury and a requirement to develop and implement a pollutant minimization program for mercury. (Part I.A.1 and Part I.A.4)

4. The Reporting requirement has been changed to require electronic submittal of DMRs. (Part I.A.6)

5. Additional requirements related to Asset Management have been added. (Part I.A.7)

6. The 'Sewage Sludge Requirements' have been updated. (Part III)

The permit is based on an application dated February 2, 2017 (2A) and March 9, 2017 (2S) 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 March 2018
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