

FACT SHEET

NPDES Permit No. IL0020109  
Notice No. DGN:03041401.bah

National Pollutant Discharge Elimination System (NPDES)  
Permit Program

PUBLIC NOTICE/FACT SHEET  
of  
Draft Modified NPDES Permit to Discharge into Waters of the State

Name and Address of Discharger:

Village of Wauconda  
101 North Main Street  
Post Office Box 785  
Wauconda, Illinois 60084

Name and Address of Facility:

Wauconda WWTP  
302 Slocum Lake Road  
Wauconda, Illinois  
(Lake County)

The following water quality and effluent standards and limitations were applied to the discharge:

Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter I: Pollution Control Board and the Clean Water Act were applied in determining the applicable standards, limitations and conditions contained in the draft Permit.

The applicant is engaged in treating domestic and industrial wastewater.

The length of the Permit is approximately 5 years.

The main discharge number is 001. The seven day once in ten year low flow (7Q10) of the receiving stream, Fiddle Creek tributary to Fox River, is 0 cfs.

The design average flow (DAF) for the existing facility is 1.4 million gallons per day (MGD) and the design maximum flow (DMF) is 4.0 MGD. The design average flow (DAF) for the Phase 1 expansion is 1.9 million gallons per day (MGD) and the design maximum flow (DMF) is 5.963 MGD. The design average flow (DAF) for the Phase 2 expansion is 2.4 million gallons per day (MGD) and the design maximum flow (DMF) for the facility is 7.93 MGD. Treatment consists of two separate but interconnected treatment systems. The existing treatment plant consists of screening, grit removal, primary sedimentation, trickling filters, secondary sedimentation and sand filtration. In addition to the aforementioned existing treatment units, the two phased proposed plant includes the addition of screening, activated sludge, secondary sedimentation and sand filtration.

This modified NPDES Permit increases the facility's DAF, DMF, concentration limits, and/or load limits.

This draft permit does not contain requirements for disinfection of the discharge from discharge number(s) 001. Fiddle Creek has been determined to be unsuited to support primary contact activities (swimming) due to physical, hydrologic or geographic configuration. Anyone knowing of primary contact activities occurring within this water segment is invited to submit comments to the IEPA. Comments should give the nature of the activities (i.e swimming, fishing, canoeing, etc.), the location and months of the year when these activities have been observed. The IEPA is also interested in obtaining information on the proximity of residential dwellings and the accessibility of the public to this water segment. Anyone with such information is asked to submit comments to the IEPA on this draft permit action. Instructions for submitting comments are contained later in this document.

The IEPA will accept comments on the following draft modifications to the Permit:

1. Added effluent pages 3 & 4 of the permit for a 2 phased treatment plant expansion.
2. Adding dissolved oxygen limits of 6.0 mg/L for the expanded plant.
3. Adding Special Condition 16 for notification of completion of each phase of the plant expansion.

Application is made for the existing discharge(s) which is (are) located in Lake County, Illinois. The following information identifies the discharge point, receiving stream and stream classifications:

Outfall	Receiving Stream	Latitude	Longitude	Stream Classification	Biological Stream Characterization
001	Fiddle Creek	42° 15' 12" North	88° 9' 0" West	General Use	Not Rated
A01	Fiddle Creek	42° 15' 12" North	88° 9' 0" West	General Use	Not Rated

To assist you further in identifying the location of the discharge(s) please see the attached map.

The stream segment(s) receiving the discharge from outfall(s) 001 is (are) not on the 303 (d) list of impaired waters.

The discharge(s) from the facility is (are) proposed to be monitored and limited at all times as follows:

Discharge Number(s) and Name(s): 001 STP Outfall

Load limits for the existing facilities are computed based on a design average flow (DAF) of 1.4 MGD (design maximum flow (DMF) of 4.0 MGD).

The effluent of the above discharge(s) shall be monitored and limited at all times as follows:

Parameter	LOAD LIMITS lbs/day* DAF (DMF)			CONCENTRATION LIMITS mg/L			Regulation
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	
CBOD <sub>5</sub>	117 (334)		234 (667)	10		20	35 IAC 304.120 40 CFR 133.102
Suspended Solids	140 (400)		280 (801)	12		24	35 IAC 304.120 40 CFR 133.102
pH	Shall be in the range of 6 to 9 Standard Units						35 IAC 304.125
Ammonia Nitrogen: April - October November - March	14 (40) 29 (83)		35 (100) 68 (193)	1.2 2.5		3.0 5.8	35 IAC 355 and 35 IAC 302
Copper	0.38 (1.1)		0.64 (1.8)	0.0327		0.0544	35 IAC 302.208

\*Load Limits are calculated by using the formula:  $8.34 \times (\text{Design Average and/or Maximum Flow in MGD}) \times (\text{Applicable Concentration in mg/L})$ .

Discharge Number(s) and Name(s): 001 STP Outfall

Load limits for the Phase I Expansion are computed based on a design average flow (DAF) of 1.9 MGD (design maximum flow (DMF) of 5.963 MGD).

The effluent of the above discharge(s) shall be monitored and limited at all times as follows:

Parameter	LOAD LIMITS lbs/day* DAF (DMF)			CONCENTRATION LIMITS mg/L			Regulation
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	
CBOD <sub>5</sub>	158 (497)		317 (995)	10		20	35 IAC 304.120 40 CFR 133.102
Suspended Solids	190 (597)		380 (1194)	12		24	35 IAC 304.120 40 CFR 133.102
Dissolved Oxygen	Shall not be less than 6 mg/L						35 IAC 302.502
pH	Shall be in the range of 6 to 9 Standard Units						35 IAC 304.125
Ammonia Nitrogen: March-May/Sept.-Oct. June-August Nov.-Feb.	19 (60) 17 (55) 40 (124)	44 (139)	48 (149) 48 (149) 92 (288)	1.2 1.1 2.5	2.8	3.0 3.0 5.8	35 IAC 355 and 35 IAC 302
Copper	0.52 (1.6)		0.86 (2.7)	0.0327		0.0544	35 IAC 302.208

\*Load Limits are calculated by using the formula:  $8.34 \times (\text{Design Average and/or Maximum Flow in MGD}) \times (\text{Applicable Concentration in mg/L})$ .

Discharge Number(s) and Name(s): 001 STP Outfall

Load limits for the Phase 2 expansion are computed based on a design average flow (DAF) of 2.4 MGD (design maximum flow (DMF) of 7.93 MGD).

The effluent of the above discharge(s) shall be monitored and limited at all times as follows:

Parameter	LOAD LIMITS lbs/day* DAF (DMF)			CONCENTRATION LIMITS mg/L			Regulation
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	
CBOD <sub>5</sub>	200 (661)		400 (1323)	10		20	35 IAC 304.120 40 CFR 133.102
Suspended Solids	240 (794)		480 (1587)	12		24	35 IAC 304.120 40 CFR 133.102
Dissolved Oxygen	Shall not be less than 6 mg/L						35 IAC 302.502
pH	Shall be in the range of 6 to 9 Standard Units						35 IAC 304.125
Ammonia Nitrogen: March-May/Sept.-Oct. June-August Nov.-Feb.	24 (79) 22 (73) 50 (165)	56 (185)	60 (198) 60 (198) 116 (384)	1.2 1.1 2.5	2.8	3.0 3.0 5.8	35 IAC 355 and 35 IAC 302
Copper	0.65 (2.2)		1.1 (3.6)	0.0327		0.0544	35 IAC 302.208

\*Load Limits are calculated by using the formula:  $8.34 \times (\text{Design Average and/or Maximum Flow in MGD}) \times (\text{Applicable Concentration in mg/L})$ .

This Permit contains an authorization to treat and discharge excess flow as follows:

Discharge Number(s) and Name(s): A01 Excess Flow Outfall

Parameter			CONCENTRATION LIMITS mg/L	
			Monthly Average	Regulation
BOD <sub>5</sub>			30	40 CFR 133.102
Suspended Solids			30	40 CFR 133.102
Fecal Coliform	Daily Maximum Shall Not Exceed 400 per 100 mL			35 IAC 304.121
pH	Shall be in the range of 6 to 9 Standard Units			35 IAC 304.125
Chlorine Residual			0.75	35 IAC 302.208

This draft Permit also contains the following requirements as special conditions:

1. Reopening of this Permit to include different final effluent limitations.
2. Operation of the facility by or under the supervision of a certified operator.
3. Submission of the operational data in a specified form and at a required frequency at any time during the effective term of this Permit.
4. More frequent monitoring requirement without Public Notice in the event of operational, maintenance or other problems resulting in possible effluent deterioration.
5. Prohibition against causing or contributing to violations of water quality standards.
6. Effluent sampling point location.
7. Controlling the sources of infiltration and inflow into the sewer system.
8. Schedule for implementing a pretreatment program.
9. Monitoring for arsenic, barium, cadmium, hexavalent chromium, total chromium, copper, weak acid dissociable cyanide, total cyanide, fluoride, dissolved iron, total iron, lead, manganese, mercury, nickel, oil, phenols, selenium, silver and zinc is required eighteen (18) months prior to the expiration date and again at twelve (12) months prior to the expiration date and to submit the results of such tests with the NPDES renewal application prior to filing of the NPDES renewal application.
10. Submission of annual fiscal data.
11. A requirement to monitor and a limit of 0.05 mg/L for residual chlorine when it is used.
12. The Permittee is required to perform biomonitoring tests in the 18th, 15th, 12th and 9th months prior to the expiration date of the Permit, and to submit the results of such tests to the IEPA within one week of receiving the results from the laboratory.
13. Submission of semi annual reports indicating the quantities of sludge generated and disposed.
14. Recording the monitoring results on Discharge Monitoring Report Forms using one such form for each outfall each month and submitting the forms to IEPA each month.
15. Burden reduction.
16. Notification of completion of each phase of the plant expansion.

Please find the attached Anti-degradation Assessment for analysis of the proposed upgrades on the receiving stream.

**Subject:** Anti-degradation Assessment  
NPDES Permit No. IL0020109

Village of Wauconda  
County: Lake

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The subject facility has submitted an updated Facilities Plan, which proposes an upgrade of the existing STP to provide 1.0 MGD additional capacity. The existing trickling filter will be used to treat flows up to 1.4 MGD design average flow/ 4.0 MGD design maximum flow. A new 1.0 MGD activated sludge plant will be built to provide treatment for flows in excess of 1.4 MGD. The final design average flow will be 2.5 MGD with a design maximum flow of 7.3 MGD. The receiving stream will be Wauconda Creek.

#### **Identification and Characterization of the Affected Water Body**

Wauconda Creek has a 7Q10 flow of 0 cfs and is a General Use water. The stream is not listed on the draft 2002 Illinois 303(d) list. It is un-rated in the Agency's Biological Stream Characterization (BSC) system. A facility related stream survey was conducted for Wauconda Creek in 1993. The stream survey found fair environmental conditions with minor impact from the Wauconda STP discharge.

#### **Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses**

The treated domestic waste that characterizes this proposed effluent would be similar to other treated effluents of purely domestic origin. Ammonia limits in the permit will be set at water quality standards; however, ammonia loading to the receiving stream will increase over background levels. Biochemical oxygen demand (BOD) permit limits will be set at the most stringent effluent standards present in 35 IAC 304.120. The stream will nonetheless experience an increase, over time, in loading due to the increase in the effluent discharge.

Additionally, loading of nutrients will increase to the receiving stream as a result of this effluent. The Agency is developing state water quality standards that will formulate the basis for future nutrient management strategies. Upon adoption of state standards and development of a management strategy, there may be nutrient reduction requirements imposed on this source. At the present time however, the incremental nutrient loading anticipated to result from this project is not expected to increase algae or other noxious plant growth, diminish the present aquatic community or otherwise aggravate existing stream conditions. Therefore no permit limits for nutrients are recommended at this time. The Illinois Nutrient Standards Workgroup has been convened to develop nutrient standards and will strive to keep NPDES permitted dischargers aware of its findings, allowing them to anticipate future nutrient permit limits.

#### **Fate and Effect of Parameters Proposed for Increased Loading.**

The ammonia and BOD discharged by the facility will decay into simpler harmless byproducts by naturally occurring organisms in the receiving stream. Some of the nitrogen originating in the ammonia will remain in the stream in the form of nitrates or organic nitrogen. The nutrients discharged will be absorbed by aquatic or riparian terrestrial plants or will remain in the stream. Some nitrate not absorbed into the biota will be denitrified. Some fraction of the phosphorous will be absorbed by the biota. The remaining phosphorous will remain in the stream continuum. Ammonia and dissolved oxygen standards will not be exceeded by this discharge.

#### **Purpose and Anticipated Benefits of the Proposed Facility**

The Village of Wauconda has an existing population of 9448. The Wauconda FPA was expanded in August 2002. The Northeastern Illinois Planning Commission has projected an additional 10,625 PE growth for the areas added to the Wauconda FPA. The existing design flow (1.4 MGD) is adequate to provide treatment for future projected growth in the original Wauconda Facilities Planning Area (FPA). The proposed STP expansion (1.0 MGD) would allow sewer service to be extended to areas, which were added to the Wauconda FPA in August of 2002. If the STP were not expanded to allow service to new areas, service would be provided by onsite systems. Sewage treatment provided by onsite systems will result in multiple discharges to either surface water or groundwater. The expansion of the Wauconda STP will eliminate the need for multiple small sewage treatment systems. The proposed project will result in improved effluent quality as well as providing capacity for future growth in the Wauconda FPA.

#### **Assessments of Alternatives for Less Increase in Loading of Minimal Environmental Degradation**

The plans for construction of an expanded sewage treatment plant using the activated sludge process are consistent with appropriate technology for the size and type of this project. Treatment plant specifications will be selected so as to avoid or minimize environmental impacts. They also represent an economically reasonable design taking into consideration both initial capital costs and ongoing maintenance expenses.

Additional treatment units may be required for ammonia treatment based on changes to exiting state effluent standards.

Regionalization was not considered within the scope of this project. Wauconda was designated as the regional treatment facility for the Wauconda FPA at the time that FPAs were constituted in Lake County.

The construction of a second STP was considered for the area added to the Wauconda FPA. However, this was rejected due to the potential impact of the discharge on Island Lake, which would receive the effluent from a second STP

Surface application of the effluent was considered in the Village's March 1997 Facility Plan. However, such method of wastewater disposal would require that the Village to acquire between 1,000 to 2,000 acres of ground. The resulting expense of acquiring the site and constructing the facility made this alternative non-cost effective.

**Summary of Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards and Other Entities**

IDNR was notified of the Wauconda project in October 2002. No impact on threatened or endangered species was found and consultation with IDNR was terminated on November 14, 2002.

The Northeastern Illinois Planning Commission approved the proposed project on July 2, 2002.

**Agency Conclusion**

This assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard). We find that proposed activity will result in the attainment of water quality standards. Existing uses will be fully protected. Technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity. This activity will benefit the community at large by eliminating effluent violations due to the age of the facility and by providing capacity for sewage treatment for future growth in the FPA. The proposed activity is therefore compliant with the Antidegradation standard.

JCH:IL0020109

