

# **SPDES Permit Fact Sheet**

## **City of Syracuse Department of Water**

### **Skaneateles Lake NY0300004**



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## Summary of Permit Changes

A new State Pollutant Discharge Elimination System (SPDES) permit has been finalized for the City of Syracuse Water Department for:

- Application of the aquatic pesticide EarthTec in Skaneateles Lake to protect the City's water supply

After public notice, several minor non-substantive corrections have been made to the permit and factsheet.

**This factsheet summarizes the information used to determine the effluent limitations and other conditions contained in the permit. General background information about the regulatory basis for the effluent limitations and other conditions contained in this permit are in the [Appendix](#) linked throughout this factsheet.**

## Administrative History

8/16/2020 The City of Syracuse Department of Water submitted a complete permit application.

4/24/2019 The City of Syracuse Department of Water submitted a request for a permit to Discharge a Pesticide Labeled for Aquatic Use

Please see the Notice of Complete Application, published in the Environmental Notice Bulletin and newspapers, for information on the public notice process.

## Pesticide Treatment Information

Skaneateles Lake is a class AA waterbody that is used by the City of Syracuse as the primary source of their unfiltered water supply. Water is pumped from the lake to a reservoir where it is treated with Chlorine prior to distribution. The lake is a highly populated recreational lake with numerous riparian users. Harmful Algal Blooms (HABs) have been periodically detected at various locations within the lake.

Generally, aquatic pesticide applications in NYS are permitted under the SPDES Pesticide General Permit (GP-0-16-005), which works closely with other New York State Department of Environmental Conservation (NYSDEC) programs, such as the Aquatic Pesticide Program. The Aquatic Pesticide, Article 15, permitting process requires the applicant to certify that affected riparian owners and users have been notified of: the purpose of and the pesticide to be used for the proposed water treatment, any water use restrictions, and their right and how to file an objection; however, for Skaneateles Lake, the use of copper sulfate for algae control by a duly constituted water supply agency in its water supply is exempt from Article 15 permitting (see 6 NYCRR 327.1(c)).

Due to the potential for pesticide by-products resulting from application during a HAB, the proposed application of copper sulfate to Skaneateles Lake requires additional site-specific monitoring and operating conditions beyond those provided by the Pesticide General Permit (PGP) to avoid potential adverse environmental impacts. The PGP does not include public participation requirements prior to authorization, nor a vehicle to require post pesticide application monitoring to verify the pesticide application by-products are at safe levels to allow

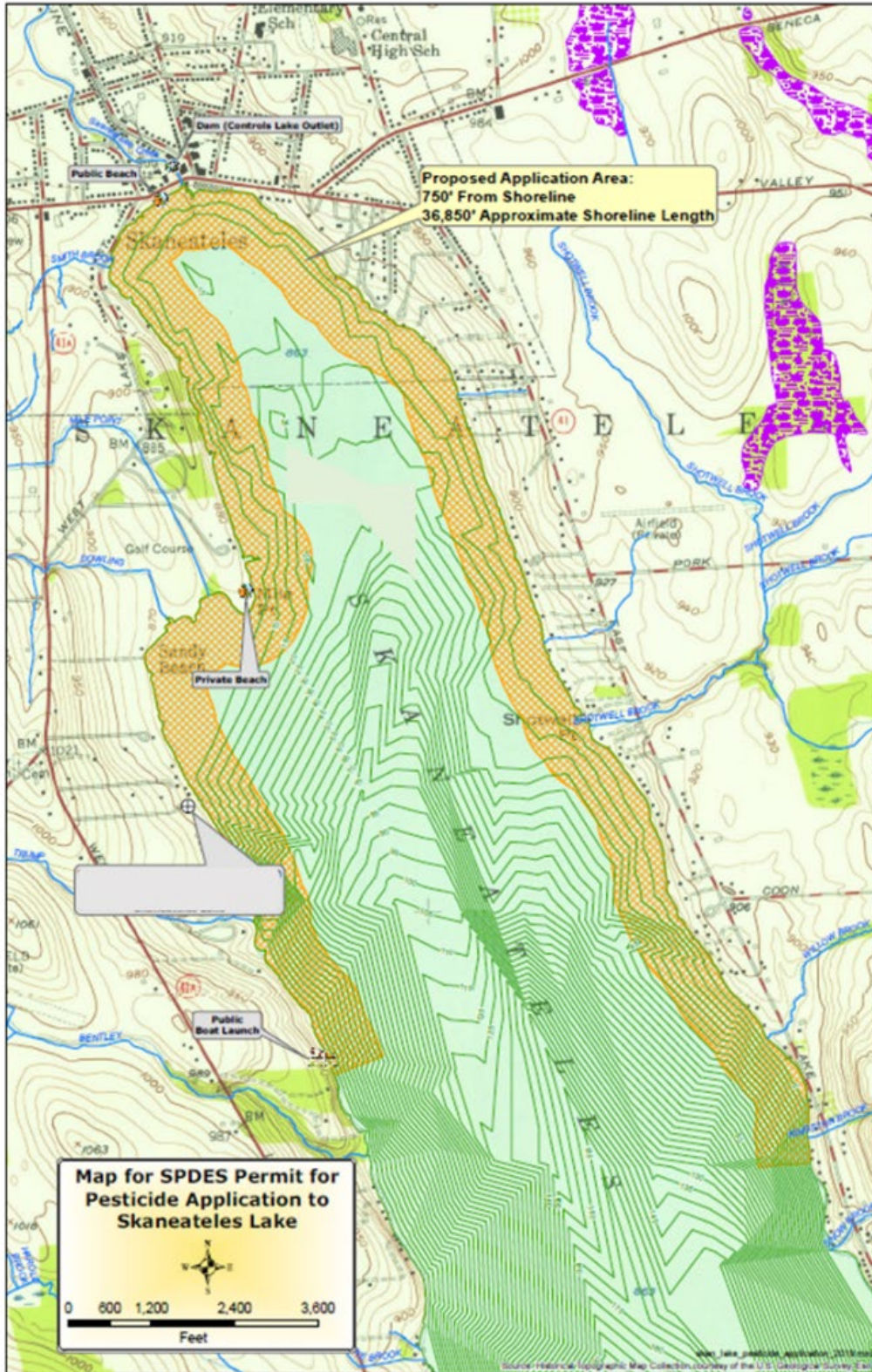
the water (Skaneateles Lake) to return to routine use. The cyanobacterial toxin microcystin is the application by-product of concern that NYSDEC Division of Water believes should have additional oversight and monitoring to ensure the safety of the public who recreate in the lake; therefore, an individual SPDES permit has been developed to provide additional site-specific control measures to ensure public safety.

This permit will authorize the use of the aquatic pesticide EarthTec in the North basin of Skaneateles Lake up to 2 times a year in an area of approximately 560 acres. EarthTec is an algaecide/bactericide, which uses copper sulfate as the active ingredient. The purpose of the proposed treatment is to protect the public water supply (Skaneateles Lake) from excessive algae growth, which may develop HABs. The use of the pesticide has the potential to release the toxin microcystin if present in the bacteria being treated.

The NYS Department of Health (DOH) guidance value for microcystin below which permitted bathing beaches may reopen, is 4.0 µg/L. In accordance with the narrative standard for protecting waters from deleterious substances that may contravene their best uses (6 NYCRR 703.2), this guidance value will ensure the recreational areas, identified below, that are located in the authorized treatment area will be protected. Monitoring of microcystin will be conducted following each EarthTec treatment at the Skaneateles Country Club bathing area, Village of Skaneateles bathing area and the Village of Skaneateles Pier and NYSDEC Boat Launch. If levels of microcystin exceed the 4.0 µg/L concentration, the permit requires the permittee to inform the Local Health Department with jurisdiction of the affected area and NYSDOH and conduct any follow up actions determined by either health department.

In accordance with the purpose of the DEC's public notification requirement (6 NYCRR Part 750-1.12) for point source discharges, the permit requires notification be made to NYSDEC, NYSDOH, the elected officials of the five townships in the watershed, and the riparian owners and users at least 48 hours prior to application to the treatment area.

Site Overview – Treatment Area (orange highlight)





## Receiving Water Information

Skaneateles Lake is classified as a Class AA water.

### Impaired Waterbody Information

The Skaneateles Lake segment (PWL No. 0707-0004) is not listed on the 2018 New York State Section 303(d) List of Impaired/TMDL Waters, and therefore, there are no applicable wasteload allocations (WLAs) for this discharge.

### Mixing Zone and Critical Receiving Water Data

The City proposed to apply the pesticide EarthTec to Skaneateles Lake, which is a ponded waterbody. The proposed dosage rates of the active ingredient in EarthTec will be from 0.03 ppm Cu - 0.06 ppm Cu, which is in accordance with the NYSDEC-approved EarthTec label requirements.

## Permit Requirements

The technology based effluent limitations ([TBELs](#)), water quality-based effluent limitations ([WQBELs](#)), [existing effluent quality](#) and a discussion of the selected effluent limitation for each pollutant present in the discharge are provided in the [Action Level Table](#).

### Whole Effluent Toxicity (WET) Testing

None of the seven criteria that are indicative of potential toxicity and listed in the [Appendix](#) to this factsheet, are applicable to this facility; therefore, WET testing is not included in the permit.

### Antidegradation

The permit contains effluent limitations which ensure that the designated best use of the receiving waters will be maintained. Please see the Environmental Notice Bulletin for information on the State Environmental Quality Review (SEQR)<sup>1</sup> determination. [Appendix Link](#)

### Mercury<sup>2</sup>

There are no mercury effluent limitations applicable to this pesticide application.

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<sup>1</sup> As prescribed by 6 NYCRR Part 617

<sup>2</sup> In accordance with NYSDEC's Mercury Multiple Discharge Variance (MDV) in TOGS 1.3.10.

Permittee: **City of Syracuse Department of Water**  
Facility: **Skaneateles Lake**  
SPDES Number: NY0300004  
USEPA Non-Major/Class 01 Industrial

Date: June 17, 2022 v.1.2  
Permit Writer: Douglas Ashline/Catherine Winters  
Water Quality Reviewer: Donald Canestrari

### Special Conditions

The permit contains notifications that must occur prior to the pesticide treatment; the requirements to adhere to during treatment; post treatment monitoring requirements; and possible further action, if, and as directed, by the NYSDOH.

After public notice, the permit conditions were updated. The *Pre-treatment Requirements* for the Pesticide Management Plan was updated to require submission to and review by the DEC prior to pesticide use. The *Treatment Requirements* were updated to reflect the 6 NYCRR Part 327.6 requirements for copper sulfate. The treatment application rate of gallons per acre foot was also updated to better reflect the FIFRA Section 2(ee) Recommendation for this product. Copper sulfate pesticide treatments conducted by a recognized water supply agency in its water supply are exempt from the 6 NYCRR Part 327 aquatic vegetation control regulation requirements; however, the DEC is recognizing the required water use restrictions of 6 NYCRR Section 327.6 regarding the use of copper sulfate.

Additionally, after public notice, the *Discharge Notification Requirements* section of the permit was updated to include pesticide application signage requirements identified in Figure 1 in the permit.

## RECEIVING WATER SUMMARY TABLE

Treatment Area	Latitude	Longitude	Receiving Water Name	Water Class	Water Index No. / Priority Waterbody Listing (PWL) No.	Major / Sub Basin	Hardness (mg/l) <sup>1</sup>	1Q10 (MGD)	7Q10 (MGD)	30Q10 (MGD)	Critical Effluent Flow (MGD)	Dilution Ratio		
												A(A)	A(C)	HEW
North end of the lake	42° 51' 37.548" N	76° 21' 50.076" W	Skaneateles Lake	AA	Ont 66-12-29-P193 PWL: 0707-0004	07/07	125	-	-	-	-	-	-	-

## ACTION LEVEL TABLE

### Outfall Treatment Area

Treatment Area	Description of Wastewater: N/A														
	Type of Treatment: Pesticide Application														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality <sup>3</sup>	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL		
Microcystin Post-treatment	µg/L		4.0 Action Level												Action Level
Action level of 4 µg/L based upon the NYSDOH Guidance Value for microcystin for contact recreation. If this level is exceeded, the City of Syracuse is required to notify the local NYSDOH districts such that any further action, as directed by the NYSDOH, can be performed.															

<sup>1</sup>Ambient hardness data obtained from 1984 WQSN Hardness data memo



## Appendix: Regulatory and Technical Basis of Permit Authorizations

The information presented in the Appendix is meant to supplement the factsheet for multiple types of permits and may not be applicable to this specific permit.

### Regulatory References

The requirements included in SPDES permits are based on both federal and state laws, regulations, policies, and guidance.

- Clean Water Act (CWA) 33 section USC 1251 to 1387
- Environmental Conservation Law (ECL) Articles 17 and 70
- Federal Regulations
  - 40 CFR, Chapter I, subchapters D, N, and O
- State environmental regulations
  - 6 NYCRR Part 621
  - 6 NYCRR Part 750
  - 6 NYCRR Parts 700 - 704 – Best use and other requirements applicable to water classes
  - 6 NYCRR Parts 800 – 941 - Classification of individual surface waters
- NYSDEC water program policy, often referred to as Technical and Operational Guidance Series memos (TOGS)
- USEPA Office of Water Technical Support Document for Water Quality-based Toxics Control, March 1991, Appendix E

The following is a quick guide to the references used within the factsheet:

SPDES Permit Requirements	Regulatory Reference
Anti-backsliding	6 NYCRR 750-1.10(c)
Best Management Practices (BMPs) for CSOs	6 NYCRR 750-2.8(a)(2)
Environmental Benefits Permit Strategy (EBPS)	6 NYCRR 750-1.18, NYS ECL 17-0817(4), TOGS 1.2.2 (revised January 25,2012)
Exceptions for Type I SSO Outfalls (bypass)	6 NYCRR 750-2.8(b)(2), 40 CFR 122.41
Mercury Multiple Discharge Variance	Division of Water Program Policy 1.3.10 (TOGS 1.3.10)
Mixing Zone and Critical Water Information	TOGS 1.3.1 & Amendments
PCB Minimization Program	40 CFR Part 132 Appendix F Procedure 8, 6 NYCRR 750-1.13(a) and 750-1.14(f), and TOGS 1.2.1
Pollutant Minimization Program (PMP)	6 NYCRR 750-1.13(a), 750-1.14(f), TOGS 1.2.1
Schedules of Compliance	6 NYCRR 750-1.14
Sewage Pollution Right to Know (SPRTK)	NYS ECL 17-0826-a, 6 NYCRR 750-2.7
State Administrative Procedure Act (SAPA)	State Administrative Procedure Act Section 401(2), 6 NYCRR 621.11(l)
State Environmental Quality Review (SEQR)	6 NYCRR Part 617
USEPA Effluent Limitation Guidelines (ELGs)	40 CFR Parts 405-471
USEPA National CSO Policy	33 USC Section 1342(q)
Whole Effluent Toxicity (WET) Testing	TOGS 1.3.2
General Provisions of a SPDES Permit Department Request for Additional Information	NYCRR 750-2.1(i)

The provisions of the permit are based largely upon 40 CFR 122 subpart C and 6 NYCRR Part 750 and include monitoring, recording, reporting, and compliance requirements, as well as general conditions applicable to all SPDES permits.

## Outfall and Receiving Water Information

### Impaired Waters

The NYS 303(d) List of Impaired/TMDL Waters (<http://www.dec.ny.gov/chemical/31290.html>) identifies waters where specific designated uses are not fully supported and for which the state must consider the development of a TMDL or other strategy to reduce the input of the specific pollutant(s) that restrict waterbody uses, in order to restore and protect such uses. SPDES permits must include effluent limitations necessary to implement a WLA of an EPA-approved TMDL (6 NYCRR 750-1.11(a)(5)(ii)), if applicable. In accordance with 6 NYCRR 750-1.13(a), permittees discharging to waters which are on the list but do not yet have a TMDL developed may be required to perform additional monitoring for the parameters causing the impairment. Accurate monitoring data is needed for the development of the TMDL, and to allow the Department to accurately determine the existing capabilities of the wastewater treatment plant. Accurate monitoring data will also assure that wasteload allocations (WLAs) are allocated equitably.

## Permit Requirements

### Basis for Effluent Limitations

Sections 101, 301, 304, 308, 401, 402, and 405 of the CWA and Titles 5, 7, and 8 of Article 17 ECL, as well as their implementing federal and state regulations, and related guidance, provide the basis for the effluent limitations and other conditions in the permit.

When conducting a full technical review of an existing permit, the previous permit limitations form the basis for the next permit. Existing effluent quality is evaluated against the existing permit limitations to determine if these should be continued, revised, or deleted. Generally, existing limitations are continued unless there are changed conditions at the facility, the facility demonstrates an ability to meet more stringent limitations, and/or in response to updated regulatory requirements. Pollutant monitoring data is also reviewed to determine the presence of additional contaminants that should be included in the permit based on a reasonable potential analysis to cause or contribute to a water quality standards violation.

### Anti-backsliding

Anti-backsliding requirements are specified in the CWA sections 402(o) and 303(d)(4), ECL 17-0809, and regulations at 40 CFR 122.44(l) and 6 NYCRR 750-1.10(c) and (d). Generally, the relaxation of effluent limitations in permits is prohibited unless one of the specified exceptions applies, which will be cited on a case-by-case basis in this factsheet. Consistent with current case law<sup>4</sup> and USEPA interpretation<sup>5</sup> anti-backsliding requirements do not apply should a revision to the final effluent limitation take effect before the scheduled date of compliance for that final effluent limitation.

## Effluent Limitations

In developing a permit, the Department determines the technology-based effluent limitations (TBELs) and then evaluates the water quality expected to result from technology controls to determine if any exceedances of water quality criteria in the receiving water might result. If there is a reasonable potential for exceedances of water quality criteria to occur, water quality-based effluent limitations (WQBELs) are developed. A WQBEL is designed to ensure that the water quality standards of receiving waters are met. In general, the CWA requires that the effluent limitations for a particular pollutant are the more stringent of either the TBEL or WQBEL.

### *Technology-based Effluent Limitations (TBELs)*

CWA sections 301(b)(1)(B) and 304(d)(1), 40 CFR 133.102, ECL section 17-0509, and 6 NYCRR 750-1.11 require technology-based controls, known as secondary treatment. These and other requirements

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<sup>4</sup> American Iron and Steel Institute v. Environmental Protection Agency, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997)

<sup>5</sup> U.S. EPA, Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; 65 Fed. Reg. 31682, 31704 (May 18, 2000); Proposed Water Quality Guidance for the Great Lakes System, 58 Fed. Reg. 20802, 20837 & 20981 (April 16, 1993)

are summarized in TOGS 1.3.3. Equivalent secondary treatment, as defined in 40 CFR 133.105, allow for effluent limitations of the more stringent of the consistently achievable concentrations or monthly/weekly averages of 45/65 mg/l, and the minimum monthly average of at least 65% removal. Consistently achievable concentrations are defined in 40 CFR 133.101(f) as the 95th percentile value for the 30-day (monthly) average effluent quality achieved by the facility in a period of two years. The achievable 7-day (weekly) average value is equal to 1.5 times the 30-day average value calculated above. Equivalent secondary treatment applies to those facilities where the principal treatment process is either a trickling filter or a waste stabilization pond; the treatment works provides significant biological treatment of municipal wastewater; and, the effluent concentrations consistently achievable through proper operation and maintenance of the facility cannot meet traditional secondary treatment requirements.

#### Other Technology Based Effluent Limitations:

There are no federal technology-based standards for toxic pollutants from POTWs. For each toxic parameter present in the discharge a Reasonable Potential Analysis is conducted. This may be a statistical analysis of existing data in accordance with TOGS 1.2.1, or an assessment of the technology employed at the facility and selection of the appropriate limitation from TOGS 1.2.1 Attachment C. Where the TBEL is more stringent than the WQBEL, the TBEL is applied as an action level in accordance with TOGS 1.3.3.

#### *Minimum Level of Detection*

Pursuant to 40 CFR 122.44(i)(1), SPDES permits must contain monitoring requirements using sufficiently sensitive test procedures approved under 40 CFR Part 136. A method is "sufficiently sensitive" when the method's minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant parameter; or the lowest ML of the analytical methods approved under 40 CFR Part 136. The ML represents the lowest level that can be measured within specified limitations of precision and accuracy during routine laboratory operations on most effluent matrices. When establishing effluent limitations for a specific parameter (based on technology or water quality requirements), it is possible that the calculated limitation will fall below the ML established by the approved analytical method(s). In these instances, the calculated limitation is included in the permit with a compliance level set equal to the ML of the most sensitive method.

#### **Monitoring Requirements**

CWA section 308, 40 CFR 122.44(i), and 6 NYCRR 750-1.13 require that monitoring be included in permits to determine compliance with effluent limitations. Additional effluent monitoring may also be required to gather data to determine if effluent limitations may be required. The permittee is responsible for conducting the monitoring and reporting results on Discharge Monitoring Reports (DMRs). The permit contains the monitoring requirements for the facility. Monitoring frequency is based on the minimum sampling necessary to adequately monitor the facility's performance and characterize the nature of the discharge of the monitored flow or pollutant. Variable effluent flows and pollutant levels may be required to be monitored at more frequent intervals than relatively constant effluent flow and pollutant levels (6 NYCRR 750-1.13). For industrial facilities, sampling frequency is based on guidance provided in TOGS 1.2.1. For municipal facilities, sampling frequency is based on guidance provided in TOGS 1.3.3.