

SPDES Permit Fact Sheet

Consolidated Edison Company of New York, Inc.

59th Street Station

NY0005134



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Permittee: Consolidated Edison Company of New York, Inc.
Facility: 59th Street Station
SPDES Number: NY0005134
USEPA Major/Class 03 Industrial

Date: March 10, 2023 v.1.14
Permit Writer: Gwendolyn Temple
Water Quality Reviewer: Gwendolyn Temple
Full Technical Review

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Summary of Permit Changes

A State Pollutant Discharge Elimination System (SPDES) permit renewal with changes requested by the permittee has been drafted for the 59th Street Station. The changes to the permit are summarized below:

- **General**
 - Updated permit format, definitions, and general conditions
 - Updated Toxic Class (TX) from N to T to reflect inclusion of mercury limit for Outfall 002
 - Updated Water Index Number (WIN) from HR 6.5 to HR (portion 1) to reflect appropriate WIN under 6 NYCRR 864.6
 - Added Item No. (864 – 1) to cover page of permit
 - Updated permittee attention and contact information
 - Updated primary outfall from Outfall 001 (permanently closed) to Outfall 002
 - Removed Additional Requirements (Special Conditions) #3, #4, #5, #6, and #9
 - Updated Additional Requirements (Special Conditions) #8 to reflect sufficiently sensitive test procedures under 40 CFR 136
 - Added Special Conditions – Biological Monitoring Requirements to permit
 - Added MMP Type III requirements
 - Updated treatment schematic to reflect request included in permittee-initiated modification
 - Added Schedule of Additional Submittals for BMP Plan; Whole Effluent Toxicity (WET) Testing; Water Treatment Chemical (WTC) Annual Report Form; and Mercury Minimization Plan
- **Outfall 001**
 - Removed Outfall 001 permit limits table as outfall has been permanently closed
- **Outfall 002 (and internal outfalls)**
 - Added WET testing action levels to Outfall 002 with appropriate footnotes
 - Added Mercury, Total limit of 50 ng/L to Outfall 002
 - Updated Outfall 02A language from “Boiler Blowdown” to “Package Boiler drains routed to CO2 Blowdown Neutralization System via the Package Boiler Heat Exchanger” to reflect request included in permittee-initiated modification
 - Added Outfall 02F (reverse osmosis water treatment plant discharge) with appropriate effluent limitations to reflect request included in permittee-initiated modification
- **Outfall 003**
 - Added influent and effluent monitoring for Copper, Total
 - Added influent and effluent monitoring for Lead, Total

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

Administrative History

5/1/2011 The last full technical review was performed and the SPDES permit became effective with a new five-year term and expiration date of 4/30/2016. The 2011 permit, along with all subsequent modifications, has formed the basis of this permit.

10/29/2015 The permittee submitted a timely and sufficient renewal application.

- 3/7/2016 Permit was modified to include continuous pH and temperature monitoring, updated outfall descriptions, fire suppression system testing discharges, addition of an outfall from demineralization plant, and conditions regarding boiler draining.
- 4/1/2016 Permit was modified to correct monitoring locations and sampling frequency for Outfall 002 and 02D.
- 5/1/2016 The current permit was extended pursuant to SAPA¹.
- 10/30/2019 The permittee submitted a request to modify the permit to reroute the Station's package boiler drains through the CO₂ blowdown neutralization system via the package boiler heat exchanger.
- 11/2/2020 The Department issued a Request for Information (RFI) to modify and renew the SPDES permit due to the permittee requesting to reroute the Station's package boiler drains through the CO₂ blowdown neutralization system via the package boiler heat exchanger.
- 1/29/2021 The permittee submitted an NY-2C permit application.

The Notice of Complete Application, published in the [Environmental Notice Bulletin](#) and newspapers, contains information on the public notice process.

Facility Information

This is an industrial facility (SIC code(s) 4961) that produces steam, for sendout for customer use, which is produced by boilers that are fired by gas or oil. The facility also has a combustion turbine for generating electricity for peak loads. The primary source of revenue for this facility is steam. Wastewater consists of process wastewater, stormwater, and non-contact cooling water.

Cooling Water Intake Structure (CWIS) Biological Monitoring

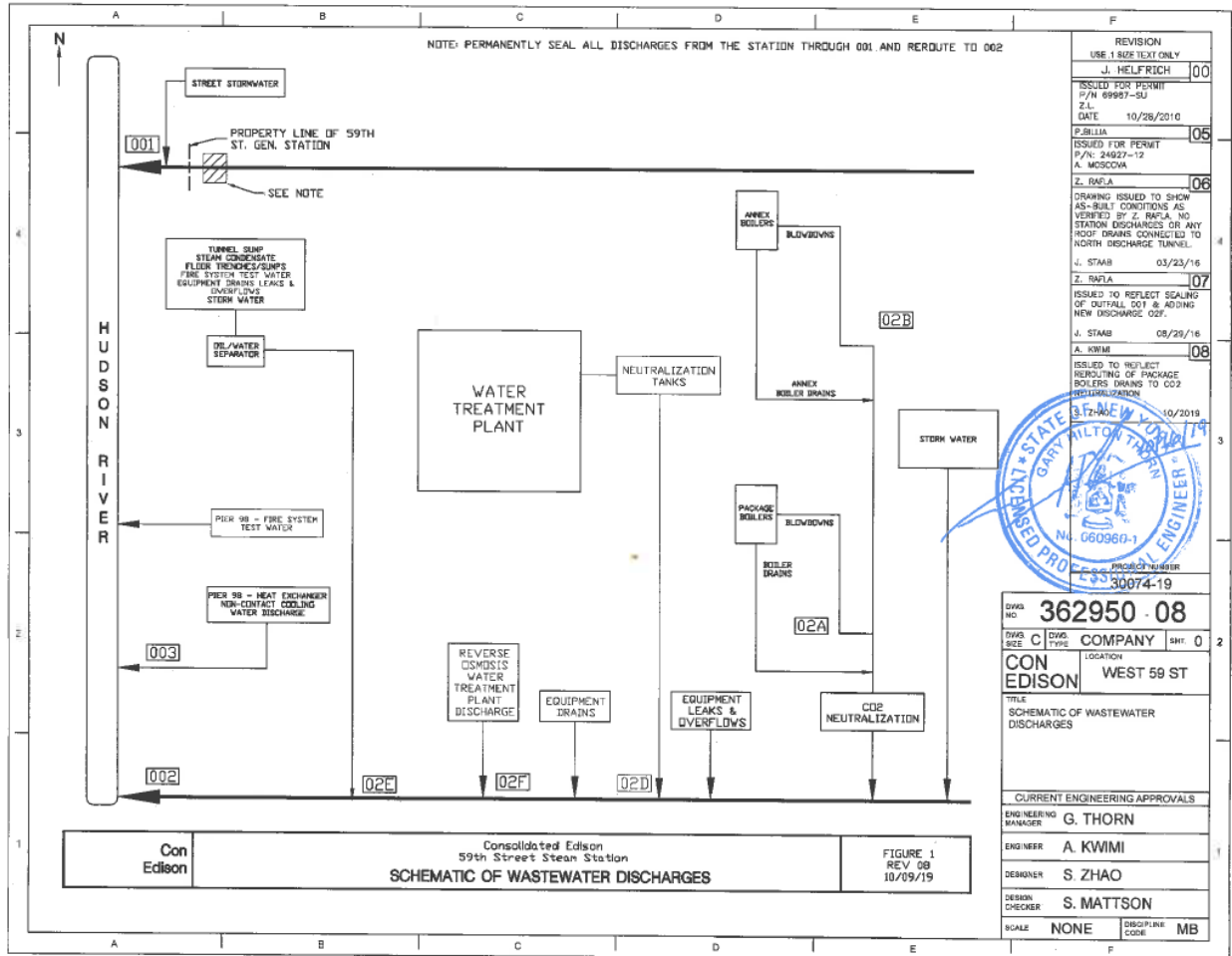
The facility currently uses a once-through cooling system to withdraw water from the Hudson River using a cooling water intake structure and is subject to the requirements of 6 NYCRR 704.5. Appendix A contains the Biological Fact Sheet with details on the permit requirements related to the CWIS.

¹ State Administrative Procedures Act Section 401(2) and 6 NYCRR 621.11(f)

Site Overview







Enforcement History

Compliance and enforcement information can be found on the EPA's [Enforcement and Compliance History Online \(ECHO\)](#) website.

Existing Effluent Quality

The [Pollutant Summary Table](#) presents the existing effluent quality and effluent limitations. The existing effluent quality was determined from Discharge Monitoring Reports and the application submitted by the permittee for the period 7/31/2016 to 6/30/2021. [Appendix Link](#)

Interstate Water Pollution Control Agencies

Outfall(s) 002 and 003 are located within the Interstate Environmental Commission (IEC) compact area. [Appendix Link](#)

Receiving Water Information

The facility discharges via the following outfalls:

Outfall No.	SIC Code	Wastewater Type	Receiving Water
001		Former Outfall 001 – Removing from Permit	
002	4961	Combined Discharge of Boiler Blowdowns, Waste Neutralization Tanks, Tunnel Sump Steam Condensate, Floor Trenches, Fire System Test Water, Equipment Leaks & Overflow, Stormwater, Equipment Drains	Hudson River, Class I
02A	4961	Package Boiler Drains Routed to CO2 Neutralization System Through Package Boiler Heat Exchanger; Package Boiler Blowdown	Internal Outfall to Outfall 002
02B	4961	Annex Boiler Blowdown	Internal Outfall to Outfall 002
02D	4961	Waste Neutralization Tank Discharge	Internal Outfall to Outfall 002
02E	4961	Tunnel Sump Steam Condensate, Floor Trenches, Fire System Test Water, Equipment Leaks & Overflow, Stormwater	Internal Outfall to Outfall 002
02F	4961	Reverse Osmosis Water Treatment Plant Discharge	Internal Outfall to Outfall 002
003	4961	Heat Exchanger Non-Contact Cooling Water	Hudson River, Class I

Reach Description: The Hudson River (portion 1) is in the Lower Hudson River basin and is an estuary. The segment of the Hudson River at the point of discharge is classified as I (6 NYCRR 864.6 – Table I – Item 1). This classification is located from Battery to New York-Bronx County line within the boundaries of New York State.

See the [Outfall and Receiving Water Summary Table](#) and [Appendix](#) for additional information.

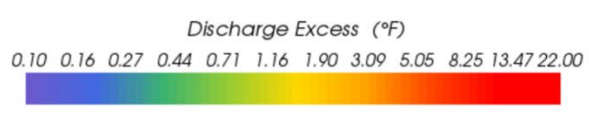
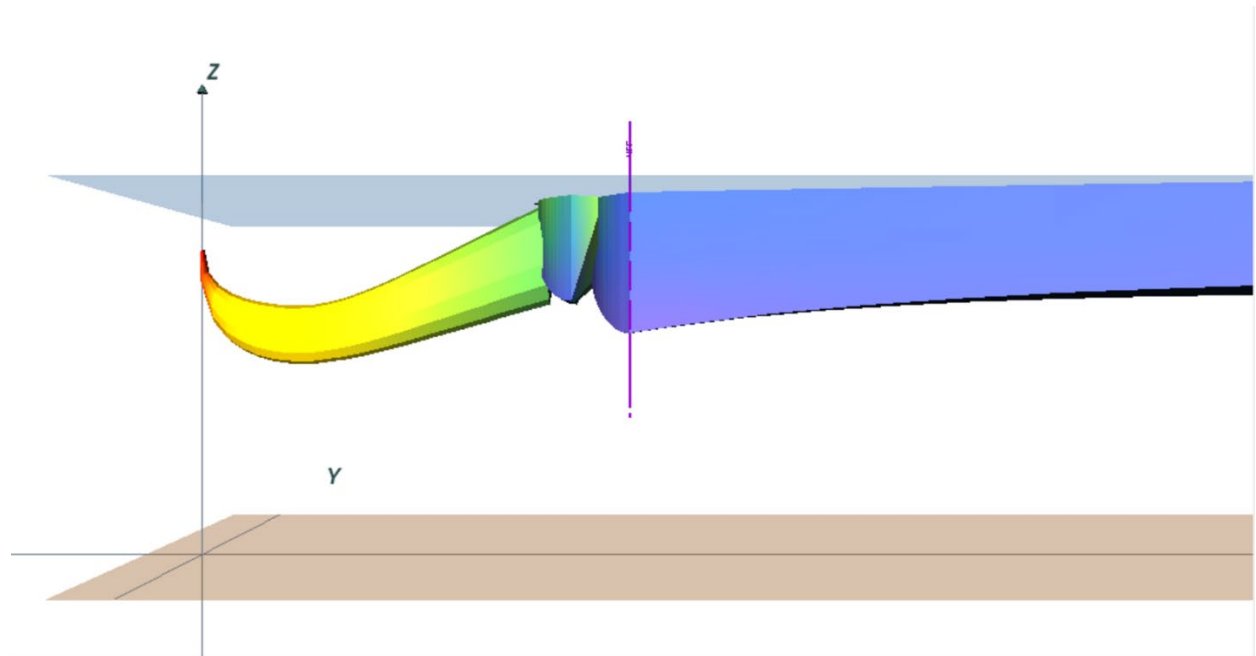
Impaired Waterbody Information

The Hudson River segment (PWL No. 1301-0006) was first listed on the 1998 [New York State Section 303\(d\) List](#) of Impaired/TMDL Waters as impaired due to PCBs and other toxics from contaminated sediment. The segment continues to be listed as of the 2018 NYS Section 303(d) List. A TMDL has not been developed to address the impairment and, therefore, there are no applicable wasteload allocations (WLAs) for this facility.

Critical Receiving Water Data & Mixing Zone

Consistent with TOGS 1.3.1, the outfall information submitted in the application and detailed mixing zone form was used to develop a CORMIX mixing zone model to establish dilution ratios for the water quality analysis for Outfall 003 which is a subsurface once-through cooling water

discharge. The model showed the mixing is dominated by either the positive buoyancy of the discharge or the upward vertical orientation of the discharge port leading to surface interaction.



CORMIX.IndSPDES.NY0005134.2022-09-12.CurrentLimit104FCriticalConditio

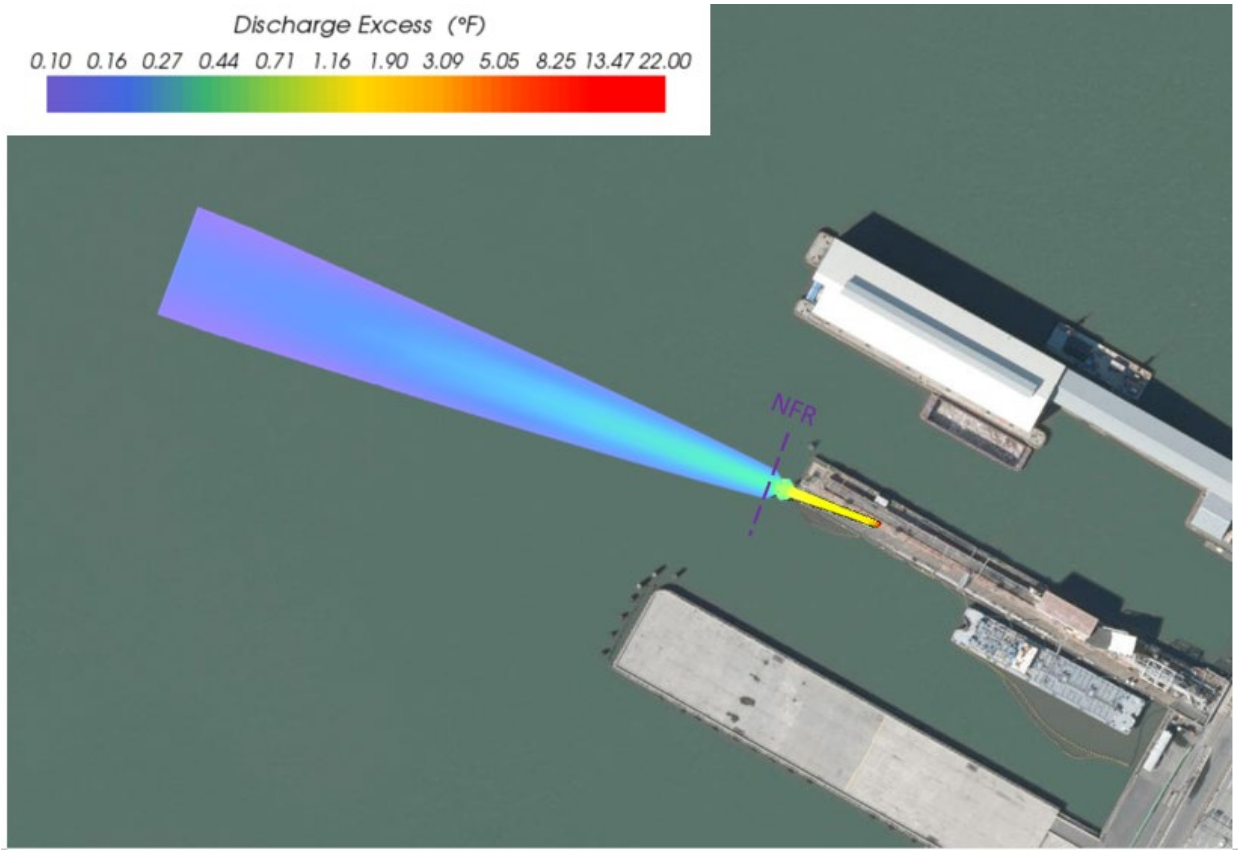
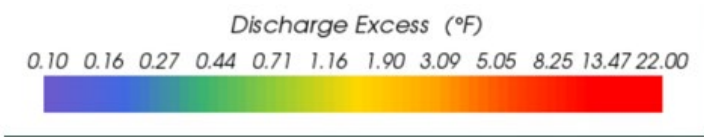
Flow Class: IPV3 Origin: Ambient Bottom

CORMIX1 Simulation

Distortion Scale: Y:X = 2.8 Z:X = 4

Visualization up to X = 295 m (out of ROI X = 295 m)

- Plume Centerline
- Regulatory Mixing Zone (RMZ)
- End of Near Field Region (NFR)
- Comix Module Boundary (MOD)





Outfall No.	Acute Dilution Ratio A(A)	Chronic Dilution Ratio A(C)	Human, Aesthetic, Wildlife Dilution Ratio (HEW)	Basis
002	10:1	10:1	10:1	TOGS 1.3.1
003	57.4:1	74.8:1	74.8:1	CORMIX

Critical receiving water data are listed in the [Pollutant Summary Table](#) at the end of this fact sheet. [Appendix Link](#)

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 [Pollutant Summary Table](#).

USEPA Effluent Limitation Guidelines (ELGs) Applicable to Facility

Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT), Best Available Technology Economically Achievable (BAT), and New Source Performance Standards (NSPS) limitations are based on [Effluent Limitation Guidelines](#) developed by USEPA for specific industries². For this facility there are no promulgated effluent guidelines. [Appendix Link](#)

² As promulgated under 40 CFR Parts 405 - 471

Whole Effluent Toxicity (WET) Testing

An evaluation of the discharge indicates the potential for toxicity based on the following criteria:

[Appendix Link](#)

- There is the presence of substances in the effluent for which ambient water quality criteria do not exist.
- There is the possibility of complex synergistic or additive effects of chemicals, typically when the number of metals or organic compounds discharged by the permittee equals or exceeds five.

The requirement for WET testing is new. No previous WET data was available to perform a reasonable potential analysis. Consistent with TOGS 1.3.2, given the dilution available and location outside of the Great Lakes basin, the permit requires chronic WET testing. WET testing action levels of 3 TUa and 10 TUc have been included in the permit for each species. The acute action levels for each species represent the acute dilution ratio times a factor of 0.3. The chronic action levels represent the chronic dilution ratio. Samples will be collected quarterly during years ending in 4 and 9.

Anti-backsliding

The limitations contained in the permit are at least as stringent as the previous permit limits and there are no instances of backsliding. [Appendix Link](#)

Antidegradation

The permit contains effluent limitations which ensure that the best usages of the receiving waters will be maintained. The Notice of Complete Application published in the Environmental Notice Bulletin contains information on the State Environmental Quality Review (SEQR)³ determination.

[Appendix Link](#)

Discharge Notification Act Requirements

In accordance with the Discharge Notification Act (ECL 17-0815-a), the permittee is required to post a sign at each point of wastewater discharge to surface waters, unless a waiver is obtained. This requirement is being continued from the previous permit.

Additionally, the permit contains a requirement to make the DMR sampling data available to the public upon request. This requirement is being continued from the previous permit.

Best Management Practices (BMPs) for Industrial Facilities

In accordance with 6 NYCRR 750-1.14(f) and 40 CFR 122.44(k), the permittee is required to continue implementation of a BMP plan that prevents, or minimizes the potential for, the release of toxic or hazardous pollutants to state waters. The permittee is required to review the BMP plan annually. This requirement is being continued from the previous permit.

Stormwater Pollution Prevention Requirements

The facility discharges stormwater associated with industrial activity and requires SPDES permit coverage under 40 CFR 122.26(a)(6).

On 9/22/2022, the permittee submitted a Conditional Exclusion for No Exposure Form, certifying that all industrial activities and materials are completely sheltered from exposure. This condition must be maintained for the exclusion to remain applicable. The schedule of submittals includes a due date for re-certification every five years as required by 40 CFR 122.26(g)(iii). This requirement is new.

³ As prescribed by 6 NYCRR Part 617

Mercury⁴

The multiple discharge variance (MDV) for mercury provides the framework for NYSDEC to require mercury monitoring and mercury minimization programs (MMPs), through SPDES permitting. [Appendix Link](#)

Since the facility is outside of the Great Lakes and is an EPA Major, Class 03 Industrial, the permit includes requirements for the implementation of MMP Type III. This requirement is new.

Based on 1 data point(s) of 19.9 ng/L, collected as part of the NY-2C application, the facility is expected to meet the new daily max permit limit of 50 ng/L (with monthly sampling frequency). The limit represents the general level currently achievable (GLCA). The data collected will be used to establish an additional 12-month rolling average effluent limit during the next permit review.

A mercury minimization program consisting of the following is also required:

- Additional monitoring
- Control strategy for implementation of the MMP
- Annual status report (maintained onsite)

Schedule(s) of Additional Submittals

A schedule of additional submittals has been included for the following ([Appendix Link](#)):

- BMP Plan
- Whole Effluent Toxicity (WET) Testing
- Water Treatment Chemical (WTC) Annual Report Form
- Mercury Minimization Plan

Special Conditions

Special Conditions #1, #2, and #8, contained in the previous permit, continue to be applicable to the permit due to the processes being performed at the facility. Special Condition #7, contained in the previous permit, continues to be applicable to the permit as the facility is located within the Interstate Environmental Commission (IEC) compact area (6 NYCRR 750-2.1(d)).

Special Condition #3, contained in the previous permit, is not included in this draft permit because the requirement to submit Water Treatment Chemical Notification Forms is required under the General Requirements section of this draft permit.

Special Conditions #4, #5, and #6, contained in the previous permit, are not included in this draft permit because the permittee will be required to install BTA.

Special Condition #9, contained in the previous permit, is not included in this draft permit as Outfall 001 has been permanently closed and no longer exists on-site.

⁴ In accordance with DOW 1.3.10 Mercury – SPDES Permitting & Multiple Discharge Variance (MDV), December 30, 2020.

OUTFALL AND RECEIVING WATER SUMMARY TABLE

Outfall	Latitude	Longitude	Receiving Water Name	Water Class	Water Index No. / Priority Waterbody Listing (PWL) No.	Major / Sub Basin	Hardness (mg/l)	1Q10 (MGD)	7Q10 (MGD)	30Q10 (MGD)	Critical Effluent Flow (MGD)	Dilution Ratio		
												A(A)	A(C)	HEW
002	40° 46' 40" N	73° 59' 50" W	Hudson River	I	H (portion 1) PWL: 1301-0006	13 / 01	-	Not Applicable (TOGS 1.3.1, for ponded or tidal waterbodies)			Monitor	10:1	10:1	10:1
02A	Internal Outfall	Internal Outfall	-	-	-	-	-	-	-	-	-	-	-	-
02B	Internal Outfall	Internal Outfall	-	-	-	-	-	-	-	-	-	-	-	-
02D	Internal Outfall	Internal Outfall	-	-	-	-	-	-	-	-	-	-	-	-
02E	Internal Outfall	Internal Outfall	-	-	-	-	-	-	-	-	-	-	-	-
02F	Internal Outfall	Internal Outfall	-	-	-	-	-	-	-	-	-	-	-	-
003	40° 46' 40" N	73° 59' 50" W	Hudson River	I	H (portion 1) PWL: 1301-0006	13 / 01	-	Not Applicable (TOGS 1.3.1, for ponded or tidal waterbodies)			Monitor	54.7:1	74.8:1	74.8:1

POLLUTANT SUMMARY TABLE

Outfall 001 (discontinued)

Outfall #	001	Description of Wastewater: Stormwater and Flood Pumps													
		Type of Treatment: N/A													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁵	# 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		
General Notes: Existing discharge data from 7/31/2016 to 6/30/2021 was obtained from Discharge Monitoring Reports provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	MGD	Daily Max	Monitor	-	-	Monitor	750-1.13 Monitor	Narrative: No alterations that will impair the waters for their best usages.				703.2	-	Discontinued	
		Monthly Avg	Monitor	-	-	Monitor	750-1.13 Monitor								
No flow rate data was reported due to a lack of discharge over the entire 5-year period. Outfall 001 has been permanently closed by the permittee. Therefore, this limit is being discontinued.															
pH	SU	Minimum	6.0	-	-	6.0	TOGS 1.2.1	The normal range shall not be extended by more than one-tenth (0.1) of a pH unit.				703.3	-	Discontinued	
		Maximum	9.0	-	-	9.0									
No pH data was reported due to a lack of discharge over the entire 5-year period. Outfall 001 has been permanently closed by the permittee. Therefore, this limit is being discontinued.															
Temperature	°F	Daily Max	Monitor	-	-	Monitor	750-1.13 Monitor	Narrative (Estuary): The water temperature at the surface of an estuary shall not be raised to more than 90F at any point				704.2	-	Discontinued	
		No temperature data was reported due to a lack of discharge over the entire 5-year period. Outfall 001 has been permanently closed by the permittee. Therefore, this limit is being discontinued.													

⁵ Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Outfall #	002	Description of Wastewater: Combined Discharge, Equipment Drains, Leaks, and Overflows, Boiler Drains, Stormwater, and Designated Sub-Outfalls													
		Type of Treatment: N/A													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁶	# 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		
General Notes: Existing discharge data from 7/31/2016 to 6/30/2021 was obtained from Discharge Monitoring Reports provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	MGD	Daily Max	Monitor	1.9 Actual Max	60/0	Monitor	750-1.13 Monitor	Narrative: No alterations that will impair the waters for their best usages.					703.2	-	Monitor
		Monthly Avg	Monitor	0.20 Actual Avg	60/0	Monitor	750-1.13 Monitor								
Flow will continue to be monitored for informational purposes and to calculate pollutant loadings.															
pH	SU	Minimum	6.0	6.1 Actual Min	60/0	6.0	TOGS 1.2.1	The normal range shall not be extended by more than one-tenth (0.1) of a pH unit.					703.3	-	TBEL
		Maximum	9.0	8.7 Actual Max	60/0	9.0	TOGS 1.2.1								
Consistent with TOGS 1.2.1, TBELs reflect the available treatment technology listed in Attachment C. Given the available dilution an effluent limitation equal to the TBEL is reasonably protective of the WQS.															
Temperature	°F	Daily Max	Monitor	90 Actual Max	60/0	Monitor	750-1.13 Monitor	Narrative (Estuary): The water temperature at the surface of an estuary shall not be raised to more than 90F at any point					704.2	-	Monitor
		Monthly Avg	Monitor	59.1 Actual Avg	59/0	Monitor	750-1.13 Monitor								
Consistent with 6 NYCRR 750-1.13(a), monitoring is required and may be used to inform future permitting decisions. This requirement is continued from the previous permit.															
Mercury, Total	ng/L	Daily Max	-	19.9	1/0	-	-	-	-	0.7	H(FC)	50	GLCA	-	DOW 1.3.10
	See Mercury section of this factsheet .														
Additional Pollutants Detected															
Chromium, Total	mg/L	-	-	0.0007	1/0	-	-	-	0.0004	0.05	A(C)	No Reasonable Potential	-	-	No Limitation
	Chromium, Total was detected in the effluent as reported in the NY-2C application. No water quality standard exists for this parameter for Class I waterbodies. The WQS of Chromium (hexavalent), which applies to the acid-soluble form and is a subset of Chromium, Total, has been listed above. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation. Therefore, no WQBEL is specified. No limitation is being added to the permit.														

⁶ Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Outfall #	Description of Wastewater: Combined Discharge, Equipment Drains, Leaks, and Overflows, Boiler Drains, Stormwater, and Designated Sub-Outfalls														
	Type of Treatment: N/A														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁶	# 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		
Selenium, Total	mg/L	-	-	0.307	1/0	-	-	-	-	-	-	-	-	-	No Limitation
	Selenium, Total was detected in the effluent as reported in the NY-2C application. No water quality standard exists for this parameter for Class I waterbodies. Therefore, no limitation is being added to the permit.														
Chloroform	ug/L	-	-	12	1/0	-	-	-	-	-	-	-	-	-	No Limitation
	Chloroform was detected in the effluent as reported in the NY-2C application. No water quality standard exists for this parameter for Class I waterbodies. Therefore, no limitation is being added to the permit.														

Outfall 02A

Outfall #	Description of Wastewater: Package boiler drains routed to CO2 blowdown neutralization system via the package boiler heat exchanger														
	Type of Treatment: N/A														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁷	# 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		
General Notes: Existing discharge data from 7/31/2016 to 6/30/2021 was obtained from Discharge Monitoring Reports provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	GPD	Daily Max	Monitor	41674 Actual Max	58/0	Monitor	750-1.13 Monitor	Narrative: No alterations that will impair the waters for their best usages.				703.2	-	Monitor	
	Flow will continue to be monitored for informational purposes and to calculate pollutant loadings.														
Total Suspended Solids	mg/L	Daily Max	100	3.96	24/34	100	BPJ	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages.				703.2	-	TBEL	
		Monthly Avg	30	4.05	3/55	30	BPJ								
	Effluent limitation guidelines (ELGs) as defined in 40 CFR Part 423 were previously applied to the discharge of this facility. However, the applicability defined in 40 CFR 423.10 states that ELGs only "apply to discharges resulting from the operation of a generating unit by an establishment whose generation of electricity is the predominant source of revenue or principal reason for operation..." This facility's predominant source of revenue comes from steam production for sendout to customers and therefore, the ELGs do not apply. However, the existing limitations will continue to be applied to be protective of water quality.														

⁷ Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Outfall #	02B	Description of Wastewater: Boiler Blowdown													
		Type of Treatment: N/A													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁸	# 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		
General Notes: Existing discharge data from 7/31/2016 to 6/30/2021 was obtained from Discharge Monitoring Reports provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	GPD	Daily Max	Monitor	144175 Actual Max	48/0	Monitor	750-1.13 Monitor	Narrative: No alterations that will impair the waters for their best usages.				703.2	-	Monitor	
		Flow will continue to be monitored for informational purposes and to calculate pollutant loadings.													
Total Suspended Solids	mg/L	Daily Max	100	6.50	18/29	100	BPJ	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages.				703.2	-	TBEL	
		Monthly Avg	30	8.539	4/43	30	BPJ								
Effluent limitation guidelines (ELGs) as defined in 40 CFR Part 423 were previously applied to the discharge of this facility. However, the applicability defined in 40 CFR 423.10 states that ELGs only "apply to discharges resulting from the operation of a generating unit by an establishment whose generation of electricity is the predominant source of revenue or principal reason for operation..." This facility's predominant source of revenue comes from steam production for sendout to customers and therefore, the ELGs do not apply. However, the existing limitations will continue to be applied to be protective of water quality.															

⁸ Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Outfall #	02D	Description of Wastewater: Waste Neutralization Tanks (Demineralization System)													
		Type of Treatment: N/A													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁹	# 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		
General Notes: Existing discharge data from 7/31/2016 to 6/30/2021 was obtained from Discharge Monitoring Reports provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	GPD	Daily Max	Monitor	295931 Actual Max	60/0	Monitor	750-1.13 Monitor	Narrative: No alterations that will impair the waters for their best usages.				703.2	-	Monitor	
		Monthly Avg	Monitor	-	-	Monitor	750-1.13 Monitor								
Flow will continue to be monitored for informational purposes and to calculate pollutant loadings.															
Total Suspended Solids	mg/L	Daily Max	100	28.85	59/0	100	BPJ	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages.				703.2	-	TBEL	
		Monthly Avg	30	13.79	54/5	30	BPJ								
Effluent limitation guidelines (ELGs) as defined in 40 CFR Part 423 were previously applied to the discharge of this facility. However, the applicability defined in 40 CFR 423.10 states that ELGs only "apply to discharges resulting from the operation of a generating unit by an establishment whose generation of electricity is the predominant source of revenue or principal reason for operation..." This facility's predominant source of revenue comes from steam production for sendout to customers and therefore, the ELGs do not apply. However, the existing limitations will continue to be applied to be protective of water quality.															

⁹ Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Outfall #	02E	Description of Wastewater: Tunnel Sump, Steam Condensate, Stormwater, Equipment Drains, Leaks, and Overflows, Fire System Test Water, and Floor Trenches/Sumps													
		Type of Treatment: N/A													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ¹⁰	# 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		
General Notes: Existing discharge data from 7/31/2016 to 6/30/2021 was obtained from Discharge Monitoring Reports provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	GPD	Daily Max	Monitor	50000 Actual Max	60/0	Monitor	750-1.13 Monitor	Narrative: No alterations that will impair the waters for their best usages.				703.2	-	Monitor	
		Monthly Avg	Monitor	4890.55 Actual Avg	60/0	Monitor	750-1.13 Monitor								
Flow will continue to be monitored for informational purposes and to calculate pollutant loadings.															
Oil & Grease	mg/L	Daily Max	15	10	1/59	15	TOGS 1.2.1	Narrative: No residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.				703.2	-	TBEL	
		Consistent with TOGS 1.2.1, TBELs reflect the available treatment technology listed in Attachment C. Given the available dilution an effluent limitation equal to the TBEL is reasonably protective of the WQS.													
Total Suspended Solids	°F	Daily Max	100	18.15	59/1	100	BPJ	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages.				703.2	-	TBEL	
		Monthly Avg	30	5.77	52/8	30	BPJ								
Effluent limitation guidelines (ELGs) as defined in 40 CFR Part 423 were previously applied to the discharge of this facility. However, the applicability defined in 40 CFR 423.10 states that ELGs only "apply to discharges resulting from the operation of a generating unit by an establishment whose generation of electricity is the predominant source of revenue or principal reason for operation..." This facility's predominant source of revenue comes from steam production for sendout to customers and therefore, the ELGs do not apply. However, the existing limitations will continue to be applied to be protective of water quality.															

¹⁰ Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Permittee: Consolidated Edison Company of New York, Inc.
 Facility: 59th Street Station
 SPDES Number: NY0005134
 USEPA Major/Class 03 Industrial
 Outfall 02F

Date: March 10, 2023 v.1.14
 Permit Writer: Gwendolyn Temple
 Water Quality Reviewer: Gwendolyn Temple
 Full Technical Review

Outfall #	02F	Description of Wastewater: Reverse Osmosis water treatment plant discharge													
		Type of Treatment: N/A													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ¹¹	# 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		
General Notes: Outfall 02F is a new outfall proposed by the permittee for reverse osmosis water treatment plant discharge. All applicable water quality standards and TBELs were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	GPD	Daily Max	-	-	-	Monitor	750-1.13 Monitor	Narrative: No alterations that will impair the waters for their best usages.					703.2	-	Monitor
		Monthly Avg	-	-	-	Monitor	750-1.13 Monitor								
Flow will be monitored for informational purposes and to calculate pollutant loadings.															
Total Dissolved Solids	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Limitation
While Total Dissolved Solids is a pollutant of concern for reverse osmosis treatment, no water quality standard exists for this pollutant for Class I waterbodies. Therefore, no limitation is being added to the permit.															

¹¹ Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Outfall #	Description of Wastewater: Heat Exchanger Non-Contact Cooling Water														
	Type of Treatment: N/A														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ¹²	# 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		
General Notes: Existing discharge data from 7/31/2016 to 6/30/2021 was obtained from Discharge Monitoring Reports provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	MGD	Daily Max	Monitor	4.32 Actual Max	26/0	Monitor	750-1.13 Monitor	Narrative: No alterations that will impair the waters for their best usages.				703.2	-	Monitor	
	Flow will continue to be monitored for informational purposes and to calculate pollutant loadings.														
Temperature	°F	Daily Max	104	101 Actual Max	26/0	-	-	-	Narrative (Estuary): The water temperature at the surface of an estuary shall not be raised to more than 90F at any point.			704.2	-	TBEL	
	The discharge is a subsurface thermal discharge consisting of heat exchanger non-contact cooling water (NCCW). To continue to achieve the narrative water quality standards specified in 6 NYCRR Part 704, the permit contains an effluent temperature limit of 104 °F. This requirement is being continued from the previous permit. In accordance with TOGS 1.3.1, the Department performed a CORMIX analysis reflecting both the critical effluent flow rate of 4.32 MGD and critical ambient conditions reflecting the period of approximately one hour after slack tide. The CORMIX analysis confirmed that the previous thermal limit, which is a subsurface thermal limit and being continued in this permit, continues to meet the water quality criteria per 6 NYCRR 704.2(b)(5) and, thus, meets the thermal criteria specified in 6 NYCRR 704.1.														
Additional Pollutants Detected															
Copper, Total	mg/L	-	-	0.021	1/0	Monitor	750-1.13 Monitor	0.021	0.021	0.0034	A(C)	-	-	-	Monitor
	Copper, Total was detected in the effluent as reported in the NY-2C application. The existing effluent quality is representative of the ambient conditions. Based on information provided by the permittee, it is presumed that the detected Copper, Total reported in the NY-2C application is resulting from its presence in the intake water and not occurring because of a treatment process, of which there are none for Outfall 003, or from the materials that make up the heat exchanger. Therefore, no WQBEL is specified. Monitoring of the influent and effluent will be included in the permit to determine whether there is a net increase of Copper, Total in the Hudson River.														
Lead, Total	mg/L	-	-	0.007	1/0	Monitor	750-1.13 Monitor	0.007	0.007	0.008	A(C)	-	-	-	Monitor
	Lead, Total was detected in the effluent as reported in the NY-2C application. The existing effluent quality is representative of the ambient conditions. Based on information provided by the permittee, it is presumed that the detected Lead, Total reported in the NY-2C application is resulting from its presence in the intake water and not occurring because of a treatment process, of which there are none for Outfall 003, or from the materials that make up the heat exchanger. Therefore, no WQBEL is specified. Monitoring of the influent and effluent will be included in the permit to confirm that there is no net increase of Lead, Total in the Hudson River.														
Selenium, Total	mg/L	-	-	0.313	1/0	-	-	-	-	-	-	-	-	-	No Limitation
	Selenium, Total was detected in the effluent as reported in the NY-2C application. No water quality standard exists for this parameter for Class I waterbodies. Therefore, no limitation is being imposed.														

¹² Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Appendix A: Biological Fact Sheet

Biological Fact Sheet - Cooling Water Intake Structure

Bureau of Ecosystem Health, Energy Unit

Name of Facility: 59th Street Generating Station
Owner/Operator: Consolidated Edison Company of NY Inc.
SPDES #: NY0005134
Location: New York County, New York
City of New York
Hudson River

1. Description of Facility

The Consolidated Edison's 59th Street Station (59th St.) is a facility that produces steam for third party use. In addition, the facility operates as a "peaking" electric generating facility. The facility uses a cooling water intake structure (CWIS) capable of withdrawing up to 17.28 million gallons per day (MGD) of water from the Hudson River to meet facility cooling needs. River water is used in a closed loop heat exchanger system. Once the river water has been used in the cooling process, it is permitted to be discharged back to the Hudson River at a maximum temperature of 104°F.

2. Ecological Resource

The Hudson River in the vicinity of 59th St. is classified as Class I Saline Surface Water. The best usages of Class I waters are secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. Although no biological studies have previously been conducted at 59th St., some of the fish species that could be expected to occur in the vicinity of the CWIS include Atlantic tomcod, bay anchovy, Atlantic menhaden, alewife, blueback herring, Northern pipefish, windowpane flounder, winter flounder, weakfish, striped bass, and shortnose and Atlantic sturgeon. In addition to these fish species, lobster and blue crab may also occur.

3. Discussion of Best Technology Available

According to 6 NYCRR 704.5 - *Intake structures* and Section 316(b) of the federal Clean Water Act (CWA), the location, design, construction, and capacity of cooling water intake structures must reflect the "best technology available" (BTA) for minimizing adverse environmental impact. The identification of BTA is a technology driven determination; however, the final decision may also consider cost.

4. Determination of Best Technology Available

After evaluating all the available alternatives capable of being implemented at 59th St., the Department will determine the technology or combination of technologies and/or operational measures that will meet the requirements of 6 NYCRR 704.5 and §316(b) CWA.

5. Monitoring Requirements

Biological Monitoring requirement #1 requires Consolidated Edison to conduct an impingement and entrainment characterization study to identify organisms impinged and entrained at the 59th St. CWIS. Once the Department makes the BTA determination for 59th St., Biological Monitoring requirement #5 requires Consolidated Edison to conduct a verification monitoring study, ensuring that the required reductions in impingement and entrainment are met.

6. Legal Requirements

The requirements for the cooling water intake structure in this State Pollutant Discharge Elimination System permit are consistent with the policies and requirements embodied in the New York State Environmental Conservation Law, in particular - Sections.1-0101.1.; 1-0101.2.; 1-0101.3.b., c.; 1-0303.19.; 3-0301.1.b., c., i.,

s. and t.; 11-0107.1; 11-0303.; 11-0535.2; 11-1301.; 11-1321.1.; 17-0105.17.; 17-0303.2., 4.g.; 17-0701.2., 6 NYCRR 704.5; Section 316(b) CWA, and the rules thereunder, specifically 40 CFR Parts 122 and 125.

8. Summary of Draft Permit Changes

Additions

Biological Monitoring Requirement 1	Requires permittee to conduct an Impingement and Entrainment Characterization study
Biological Monitoring Requirement 2	Requires permittee to submit a Design and Construction Technology Review
Biological Monitoring Requirement 3	Requires permittee to submit a Proposed Suite of Technologies and Operational Measures
Biological Monitoring Requirement 4	Requires permittee to submit a Technology Installation and Operation Plan
Biological Monitoring Requirement 5	Requires permittee to conduct a Verification Monitoring Study
Biological Monitoring Requirement 6	Requires permittee to submit a Verification Monitoring Study Report
Biological Monitoring Requirement 7	Provides for a contingency plan if reductions in impingement and entrainment are not met
Biological Monitoring Requirement 8	Requires permittee to maintain records for 10 years
Biological Monitoring Requirement 9	Prohibits modification to the CWIS without prior Departmental approval

9. References

6 NYCRR 701.13 Class I saline surface waters.

6 NYCRR 704.5 Intake Structures

33 U.S.C. 1251 §316(b) <https://www.epa.gov/sites/default/files/2017-08/documents/federal-water-pollution-control-act-508full.pdf>

40 CFR Parts 122 and 125 <https://www.epa.gov/npdes/npdes-regulations>

Consolidated Edison Response to a Request for Information. October 1, 2021.

Document prepared by Colleen Kimble and last revised on September 26, 2022.

Appendix B: Regulatory and Technical Basis of Permit Authorizations

The Appendix is meant to supplement the factsheet for multiple types of SPDES permits. Portions of this Appendix may not be applicable to this specific permit.

Regulatory References

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. Below are the most common citations for the requirements included in SPDES permits:

- 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, referred to as Technical and Operational Guidance Series (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 (DOW 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)

Outfall and Receiving Water Information

Impaired Waters

The [NYS 303\(d\) List of Impaired/TMDL Waters](#) identifies waters where specific best usages are not fully supported. The state must consider the development of a Total Maximum Daily Load (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 to

determine the existing capabilities of the wastewater treatment plants and to assure that wasteload allocations (WLAs) are allocated equitably.

Interstate Water Pollution Control Agencies

Some POTWs may be subject to regulations of interstate basin/compact agencies including: Interstate Sanitation Commission (ISC), International Joint Commission (IJC), Delaware River Basin Commission (DRBC), Ohio River Valley Water Sanitation Commission (ORSANCO), and the Susquehanna River Basin Commission (SRBC). Generally, basin commission requirements focus principally on water quality and not treatment technology. However, interstate/compact agency regulations for the ISC, IJC, DRBC and NYC Watershed contain explicit effluent limits which must be addressed during permit drafting. 6 NYCRR 750-2.1(d) requires SPDES permits for discharges that originate within the jurisdiction of an interstate water pollution control agency, to include any applicable effluent standards or water quality standards (WQS) promulgated by that interstate agency.

Existing Effluent Quality

The existing effluent quality is determined from a statistical evaluation of effluent data in accordance with TOGS 1.2.1 and the USEPA Office of Water, Technical Support Document for Water Quality-based Toxics Control, March 1991, Appendix E (TSD). The existing effluent quality is equal to the 95th (monthly average) and 99th (daily maximum) percentiles of the lognormal distribution of existing effluent data. When there are greater than three non-detects, a delta-lognormal distribution is assumed, and delta-lognormal calculations are used to determine the monthly average and daily maximum pollutant concentrations. Statistical calculations are not performed for parameters where there are less than ten data points. If additional data is needed, a monitoring requirement may be specified either through routine monitoring or a short-term high intensity monitoring program. The [Pollutant Summary Table](#) identifies the number of sample data points available.

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 effluent limitations form the basis for the next permit. Existing effluent quality is evaluated against the existing effluent 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 law¹³ and USEPA interpretation¹⁴ 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.

¹³ American Iron and Steel Institute v. Environmental Protection Agency, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997)

¹⁴ 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)

Antidegradation Policy

New York State implements the antidegradation portion of the CWA based upon two documents: (1) Organization and Delegation Memorandum #85-40, "Water Quality Antidegradation Policy" (September 9, 1985); and, (2) TOGS 1.3.9, "Implementation of the NYSDEC Antidegradation Policy – Great Lakes Basin (Supplement to Antidegradation Policy dated September 9, 1985) (undated)." The permit for the facility contains effluent limitations which ensure that the existing best usage of the receiving waters will be maintained. To further support the antidegradation policy, SPDES applications have been reviewed in accordance with the State Environmental Quality Review Act (SEQR) as prescribed by 6 NYCRR Part 617.

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) for Industrial Facilities

A TBEL requires a minimum level of treatment for industrial point sources based on currently available treatment technologies and/or Best Management Practices (BMPs). CWA sections 301(b) and 402, ECL sections 17-0509, 17-0809 and 17-0811, and 6 NYCRR 750-1.11 require technology-based controls on effluents. TBELs are set based upon an evaluation of New Source Performance Standards (NSPS), Best Available Technology Economically Achievable (BAT), Best Conventional Pollutant Control Technology (BCT), Best Practicable Technology Currently Available (BPT), and/or Best Professional Judgment (BPJ).

USEPA Effluent Limitation Guidelines (ELGs) Applicable to Facility

In many cases, BPT, BCT, BAT and NSPS limitations are based on effluent guidelines developed by USEPA for specific industries, as promulgated under 40 CFR Parts 405-471. Applicable guidelines, pollutants regulated by these guidelines, and the effluent limitation derivation for facilities subject to these guidelines is in the [USEPA Effluent Limitation Guideline Calculations Table](#).

Best Professional Judgement (BPJ)

For substances that are not explicitly limited by regulations, the permit writer is authorized to use BPJ in developing TBELs. Consistent with section 402(a)(1) of the CWA, and NYS ECL section 17-0811, the Department is authorized to issue a permit containing "any further limitations necessary to ensure compliance with water quality standards adopted pursuant to state law". BPJ limitations may be set on a case-by-case basis using any reasonable method that takes into consideration the criteria set forth in 40 CFR 125.3. Applicable state regulations include 6 NYCRR 750-1.11. The BPJ limitation considers the existing technology present at the facility, the statistically calculated existing effluent quality for that parameter, and any unique or site-specific factors relating to the facility. Technology limitations generally achievable for various treatment technologies are included in TOGS 1.2.1, Attachment C. These limitations may be used for the listed parameters when the technology employed at the facility is listed.

Water Quality-Based Effluent Limitations (WQBELs)

In addition to the TBELs, permits must include additional or more stringent effluent limitations and conditions, including those necessary to protect water quality. CWA sections 101 and 301(b)(1)(C), 40 CFR 122.44(d)(1), and 6 NYCRR Parts 750-1.11 require that permits include limitations for all pollutants or parameters which are or may be discharged at a level which may cause or contribute to an exceedance of any State water quality standard adopted pursuant to NYS ECL 17-0301. Water quality standards can be found under 6 NYCRR Parts 700-704. The limitations must be stringent enough to ensure that water quality standards are met and must be consistent with any applicable WLA which may be in effect through a TMDL for the receiving water. These and other requirements are summarized in TOGS 1.1.1, 1.3.1,

1.3.2, 1.3.5 and 1.3.6. The Department considers a mixing zone analysis, critical flows, and reasonable potential analysis when developing a WQBEL.

Mixing Zone Analyses

In accordance with TOGS 1.3.1., the Department may perform additional analysis of the mixing condition between the effluent and the receiving waterbody. Mixing zone analyses using plume dispersion modeling are conducted in accordance with the following:

“EPA Technical Support Document for Water Quality-Based Toxics Control” (March 1991); EPA Region VIII’s “Mixing Zones and Dilution Policy” (December 1994); NYSDEC TOGS 1.3.1, “Total Maximum Daily Loads and Water Quality-Based Effluent Limitations” (July 1996); “CORMIX v11.0” (2019).

Critical Flows

In accordance with TOGS 1.2.1 and 1.3.1, WQBELs are developed using dilution ratios that relate the critical low flow condition of the receiving waterbody to the critical effluent flow. The critical low flow condition used in the dilution ratio will be different depending on whether the limitations are for aquatic or human health protection. For chronic aquatic protection, the critical low flow condition of the waterbody is typically represented by the 7Q10 flow and is calculated as the lowest average flow over a 7-day consecutive period within 10 years. For acute aquatic protection, the critical low flow condition is typically represented by the 1Q10 and is calculated as the lowest 1-day flow within 10 years. However, NYSDEC considers using 50% of the 7Q10 to be equivalent to the 1Q10 flow. For the protection of human health, the critical low flow condition is typically represented by the 30Q10 flow and is calculated as the lowest average flow over a 30-day consecutive period within 10 years. However, NYSDEC considers using 1.2 x 7Q10 to be equivalent to the 30Q10. The 7Q10 or 30Q10 flow is used with the critical effluent flow to calculate the dilution ratio. The critical effluent flow can be the maximum daily flow reported on the permit application, the maximum of the monthly average flows from discharge monitoring reports for the past three years, or the facility design flow. When more than one applicable standard exists for aquatic or human health protection for a specific pollutant, a reasonable potential analysis is conducted for each applicable standard and corresponding critical flow to ensure effluent limitations are sufficiently stringent to ensure all applicable water quality standards are met as required by 40 CFR 122.44(d)(1)(i). For brevity, the pollutant summary table reports the results of the most conservative scenario.

Reasonable Potential Analysis (RPA)

The Reasonable Potential Analysis (RPA) is a statistical estimation process, outlined in the 1991 USEPA Technical Support Document for Water Quality-based Toxics Control (TSD), Appendix E. This process uses existing effluent quality data and statistical variation methodology to project the maximum amounts of pollutants that could be discharged by the facility. This projected instream concentration (PIC) is calculated using the appropriate ratio and compared to the water quality standard (WQS). When the RPA process determines the WQS may be exceeded, a WQBEL is required. The procedure for developing WQBELs includes the following steps:

- 1) identify the pollutants present in the discharge(s) based upon existing data, sampling data collected by the permittee as part of the permit application or a short-term high intensity monitoring program, or data gathered by the Department;
- 2) identify water quality criteria applicable to these pollutants;
- 3) determine if WQBELs are necessary (i.e. reasonable potential analysis (RPA)). The RPA will utilize the procedure outlined in Chapter 3.3.2 of EPA’s Technical Support Document (TSD). As outlined in the TSD, for parameters with limited effluent data the RPA may include multipliers to account for effluent variability; and,
- 4) calculate WQBELs (if necessary). Factors considered in calculating WQBELs include available dilution of effluent in the receiving water, receiving water chemistry, and other pollutant sources.

The Department uses modeling tools to estimate the expected concentrations of the pollutant in the receiving water and develop WQBELs. These tools were developed in part using the methodology referenced above. If the estimated concentration of the pollutant in the receiving water is expected to exceed the ambient water quality standard or guidance value (i.e. numeric interpretation of a narrative water quality standard), then there is a reasonable potential that the discharge may cause or contribute to an exceedance of any State water quality standard adopted pursuant to NYS ECL 17-0301. If a TMDL is in place, the facility's WLA for that pollutant is applied as the WQBEL.

For carbonaceous and nitrogenous oxygen demanding pollutants, the Department uses a model which incorporates the Streeter-Phelps equation. The equation relates the decomposition of inorganic and organic materials along with oxygen reaeration rates to compute the downstream dissolved oxygen concentration for comparison to water quality standards.

A Watershed Maximum Daily Load (WMDL) may be developed by the Department to account for the cumulative effect of multiple discharges of conservative toxic pollutants to ensure water quality standards are met in downstream segments. The WMDL uses a simple dilution model, assuming full mix in the receiving stream, to calculate the maximum allowable pollutant load that can be discharged and still meet water quality standards during critical low flow in downstream segments such as those with sensitive receptors (e.g. public water supply) or higher water classification. WQBELs are established to ensure that the cumulative mass load from point source discharges does not exceed the maximum allowable load to ensure permit limits are protective of water quality.

Whole Effluent Toxicity (WET) Testing:

WET tests use small vertebrate and invertebrate species to measure the aggregate toxicity of an effluent. There are two different durations of toxicity tests: acute and chronic. Acute toxicity tests measure survival over a 96-hour test exposure period. Chronic toxicity tests measure reductions in survival, growth, and reproduction over a 7-day exposure. TOGS 1.3.1 includes guidance for determining when aquatic toxicity testing should be included in SPDES permits. The authority to require toxicity testing is in 6NYCRR 702.9. TOGS 1.3.2 describes the procedures which should be followed when determining whether to include toxicity testing in a SPDES permit and how to implement a toxicity testing program. Per TOGS 1.3.2, WET testing may be required when any one of the following seven criteria are applicable:

1. There is the presence of substances in the effluent for which ambient water quality criteria do not exist.
2. There are uncertainties in the development of TMDLs, WLAs, and WQBELs, caused by inadequate ambient and/or discharge data, high natural background concentrations of pollutants, available treatment technology, and other such factors.
3. There is the presence of substances for which WQBELs are below analytical detectability.
4. There is the possibility of complex synergistic or additive effects of chemicals, typically when the number of metals or organic compounds discharged by the permittee equals or exceeds five.
5. There are observed detrimental effects on the receiving water biota.
6. Previous WET testing indicated a problem.
7. POTWs which exceed a discharge of 1 MGD. Facilities of less than 1 MGD may be required to test, e.g., POTWs <1 MGD which are managing industrial pretreatment programs.

Minimum Level of Detection

Pursuant to 40 CFR 122.44(i)(1)(iv) and 6 NYCRR 750-2.5(d), 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), 6 NYCRR 750-1.13, and 750-2.5 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.

Requirements for Combined Sewer Overflows (CSOs)

Pollution from combined sewer overflows is controlled with implementation of SPDES permit conditions in accordance with the Division of Water CSO Control strategy (TOGS 1.6.3) and the USEPA CSO Control Policy issued April 11, 1994.

CWA Section 402(q) requires that each permit for a discharge from a municipal combined storm and sanitary sewer shall conform to EPA's Combined Sewer Overflow Control Policy.^[1] The CSO Control Policy identifies specific requirements for Phase I and Phase II permits. Phase I permits must include requirements for the implementation of the Nine Minimum Controls (NMCs) and development of the Long-Term CSO Control Plan (LTCP).

The 15 CSO Best Management Practices (BMPs) required by NYS under TOGS 1.6.2 are equivalent to the "Nine Minimum Control Measures" required under the USEPA National Combined Sewer Overflow policy (33 USC section 1342(q)). BMPs are technology-based requirements developed in accordance with best professional judgement. These are largely non-structural measures which are designed to maximize pollutant capture and removal from the combined sewer system and the POTW as a whole.

Phase II permits must include requirements to implement the technology-based controls including the NMCs determined on a BPJ basis, as well as requirements which ensure that the selected CSO controls are implemented, operated, and maintained as described in the long-term CSO control plan (LTCP). These requirements are critical to meeting the objectives of the Policy, including to bring all CSO discharge points into compliance with the technology-based and water quality-based requirements of the CWA, and to minimize the water quality, aquatic biota, and human health impacts from CSOs.

Additionally, the 1994 CSO Control Policy requires permits include a requirement for CSO communities who have developed an approved LTCP to reassess overflows to sensitive areas in those cases where elimination or relocation of the overflows is not physically possible and economically achievable. The reassessment should be based on consideration of new or improved techniques to eliminate or relocate overflows or changed circumstance that influence economic achievability.

Other Conditions

Mercury

The multiple discharge variance (MDV) for mercury was developed in accordance with 6 NYCRR 702.17(h) "to address widespread standard or guidance value attainment issues including the presence of a ubiquitous pollutant or naturally high levels of a pollutant in a watershed." The first MDV was issued in October 2010, and subsequently revised and reissued in 2015; each subsequent iteration of the MDV is designed to build off the

^[1] Available at <https://www.epa.gov/sites/production/files/2015-10/documents/owm0111.pdf>

previous version, to make reasonable progress towards the water quality standard (WQS) of 0.7 ng/L dissolved mercury. The MDV is necessary because human-caused conditions or sources of mercury prevent attainment of the WQS and cannot be remedied (i.e., mercury is ubiquitous in New York waters at levels above the WQS and compliance with a water quality based effluent limitation (WQBEL) for mercury cannot be achieved with demonstrated effluent treatment technologies). The Department has determined that the MDV is consistent with the protection of public health, safety, and welfare. During the effective period of this MDV, any increased risks to human health are mitigated by fish consumption advisories issued periodically by the NYSDOH.

All surface water SPDES permittees are eligible for authorization by the MDV provided they meet the requirements specified in DOW 1.3.10.

Schedules of Compliance

Schedules of compliance are included in accordance with 40 CFR Part 132 Attachment F, Procedure 9, 40 CFR 122.47 and 6 NYCRR 750-1.14. Schedules of compliance are intended to, in the shortest reasonable time, achieve compliance with applicable effluent standards and limitations, water quality standards, and other applicable requirements. Where the time for compliance is more than nine months, the schedule of compliance must include interim requirements and dates for their achievement. If the time necessary to complete the interim milestones is more than nine months, and not readily divisible into stages for completion, progress reports must be required.

Schedule(s) of Additional Submittals

Schedules of Additional Submittals are used to summarize the deliverables required by the permit not identified in a separate Schedule of Compliance.

Best Management Practices (BMP) for Industrial Facilities

BMP plans are authorized for inclusion in NPDES permits pursuant to Sections 304(e) and 402 (a)(1) of the Clean Water Act, and 6 NYCRR 750-1.14(f). The regulations pertaining to BMPs are promulgated under 40 CFR Part 125, Subpart K. These regulations specifically address surface water discharges.

Pollutant Minimization Programs

Pollutant Minimization Programs are included when a pollutant is being discharged from the facility at detectable levels and the ML for the most sensitive method is greater than the calculated WQBEL. These programs typically include an on-going potential source identification, evaluation, and prioritization program to demonstrate progress towards meeting the goal of the WQBEL. Pollutant Minimization Plan requirements are based on 40 CFR Part 132 Appendix F Procedure 8, 6 NYCRR 750-1.13(a) and 750-1.14(f), and TOGS 1.2.1.

Mini Industrial Pretreatment Program

Pretreatment requirements are intended to protect a WWTP from receiving pollutants that cause pass through or interference to the operations of the POTW receiving such wastes. When necessary, the Department, in accordance with TOGS 1.3.3. and through issued SPDES permits, requires WWTPs to develop and implement mini or partial pretreatment programs. These requirements are consistent with regulations in 6 NYCRR §750-2.9(b)(1), ECL 17-0811, ECL 17-0825, and 40 CFR §403.5.

As part of the mini pretreatment program, a WWTP must identify industrial users; determine whether legal authority controls (e.g. sewer use laws) are adequate; require, issue, and enforce industrial user permits; and, implement the program.