SPDES Permit Fact Sheet Buffalo Sewer Authority Bird Island Wastewater Treatment Facility NY0028410

Contents

Summary of Permit Changes 4
Administrative History 4
Facility Information 5
Site Overview 11
Enforcement History 11
Existing Effluent Quality 12
Interstate Water Pollution Control Agencies 12
Additional Site-Specific Concerns 12
Receiving Water Information 14
Impaired Waterbody Information 15
Critical Receiving Water Data & Mixing Zone 16
Permit Requirements 18
Whole Effluent Toxicity (WET) Testing 18
Anti-backsliding 20
Antidegradation 20
Discharge Notification Act Requirements 20
Special Conditions 20
Requirements for Combined Sewer Overflows (CSOs) 20
Stormwater Pollution Prevention Requirements 21
Mercury 21
Biennial Pollutant Scan 22
Industrial Pretreatment Program 22
Schedule(s) of Compliance 22
Emerging Contaminant Monitoring 22
Schedule(s) of Additional Submittals 23
OUTFALL AND RECEIVING WATER SUMMARY TABLE 24
POLLUTANT SUMMARY TABLE 24
Outfall 002 24
Outfall 01A 37
Outfall 001 38
Appendix: Regulatory and Technical Basis of Permit Authorizations 40
Regulatory References 40
Outfall and Receiving Water Information 40
Interstate Water Pollution Control Agencies 41

Existing Effluent Quality.....41
Permit Requirements.....41

Summary of Permit Changes

The New York State Department of Environmental Conservation ("Department", "NYSDEC") has drafted a State Pollutant Discharge Elimination System (SPDES) EBPS permit renewal for the Bird Island Wastewater Treatment Facility (WWTF). The changes to the permit are summarized below:

General

- Updated permit format, definitions, and general conditions
- Added "WWTF Special Conditions" for operation of the WWTF
- Added Schedule of Compliance with interim effluent limits
- Added Schedule of Additional Submittals for several items
- Updated WWTF flow diagram

Outfall 002

- Revised $CBOD_5$ and TSS loading limitations to use 2 significant figures
- Changed Ammonia from "as NH3" to "as N"
- Increased Ammonia (as N) sampling from 1/Month to 1/Day
- Reduced the WET action levels from 35 TUa and 230 TUc to 3.0 and 20.0 for acute and chronic, respectively
- Added Instantaneous Max monitoring requirement for Flow
- Added Mercury 12-MRA effluent limitation of 5.7 ng/L
- Added Total Phenols concentration compliance level of 5.0 ug/L
- Added concentration reporting for Total Copper and Total Zinc
- Added Action Levels for PFOA and PFOS of 10 ng/L
- Added requirement for quarterly emerging contaminant monitoring
- Added effluent Biennial Pollutant Scan requirement
- Removed requirement for reporting of influent pH, settleable solids, temperature, and ammonia
- Removed Action Levels for Cadmium, Chromium, Dissolved Copper, Lead, Nickel, Dissolved Zinc, Cyanide, and Bis(2-ethylhexyl)phthalate
- Removed TKN monitoring

Outfall 001/01A

- Revised sampling frequency footnote
- Added Outfall 001 7-day geometric mean effluent limitation for Fecal Coliform of 400 cfu/100mL
- Removed TKN monitoring
- Changed Ammonia from "as NH3" to "as N"

This fact sheet 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 fact sheet.

Administrative History

1/1/2010 The last full technical review was performed and the SPDES permit became effective with an expiration date of 6/30/2014. The 2010 permit, along with all subsequent modifications, has formed the basis of this permit.

7/1/2014 The 2010 permit was administratively renewed and became effective with a new five-year term and expiration date of 6/30/2019.

10/1/2014 The 2010 permit was modified to include new language incorporating the approved Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP).

6/30/2019 The 2014 permit was allowed to stay in effect pursuant to SAPA[1] issued on 12/11/2018.

5/17/2023 Department issued a Request for Information (RFI) to modify and renew the SPDES permit due to the facility's EBPS score[2]. At the time of the RFI, the facility had an EBPS score of 270 and ranking of 57.

8/30/2023 The Buffalo Sewer Authority (BSA) submitted a NY-2A 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 facility is a publicly owned treatment works that receives flow from domestic and industrial users, including waste from categorical industrial users, with effluent consisting of treated combined sewage. The collection system consists of both separate and combined sewers. The facility accepts flow from significant industrial users (SIUs).

The current 560 MGD treatment facility consists of:

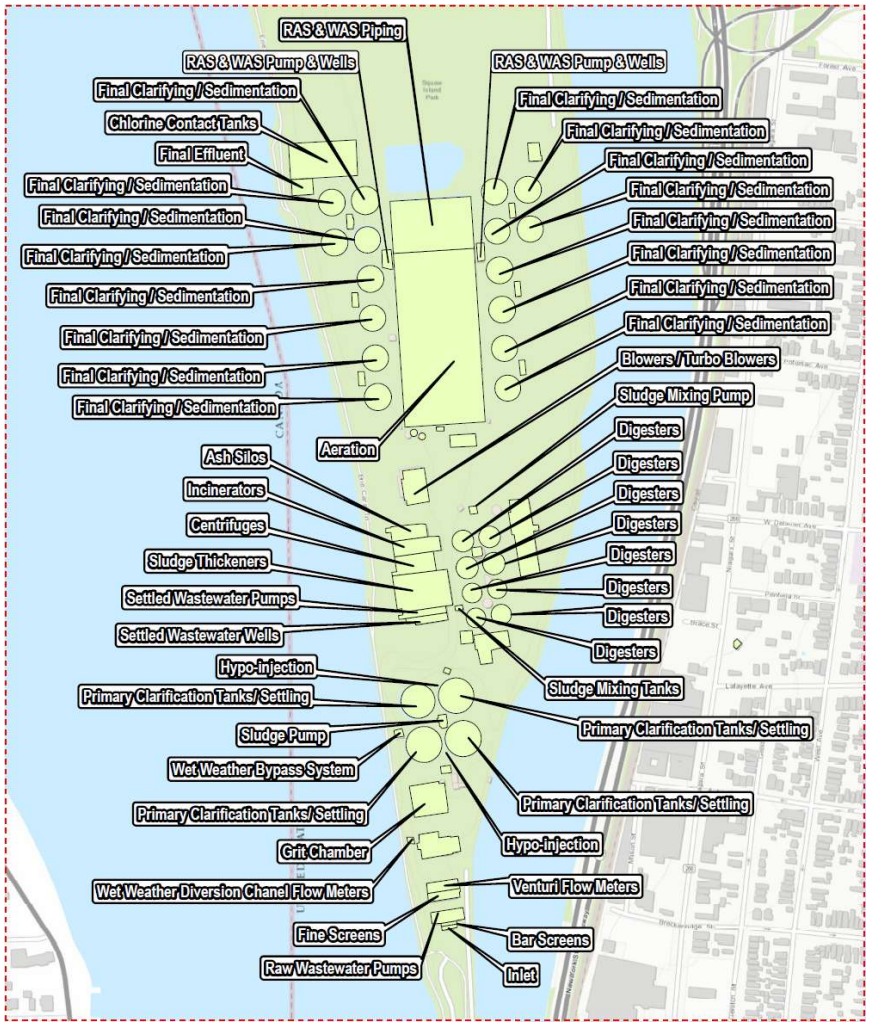
- Preliminary Treatment: Course Manual Bar Screening (1.5"), Fine Mechanical Bar Screening (1"), Vortex Grit Removal
- Primary Treatment: Primary Clarification (4 circular clarifiers)
- Secondary Treatment: Activated Sludge (16, 4-pass aeration tanks & 16 circular clarifiers)
- Advanced Treatment: Phosphorus Removal (Ferric Chloride Addition)
- Disinfection: Chlorination by Liquid Sodium Hypochlorite (4 serpentine chlorine contact tanks)

Sludge is thickened by dissolved air floatation, anaerobic digestion, dewatered by centrifuge, and incinerated in multi-stage hearth incinerators.

The secondary treatment outfall (Outfall 002) is fully submerged, approximately 26.6 feet below mean low water level and discharges to the Niagara River via a two-port 108" diameter pipe, with the ports approximately 48 feet and 72 feet offshore. The primary treatment outfall (Outfall 001) is fully submerged and discharges to the Niagara River via a single-port 96" diameter pipe approximately 200 feet offshore. The emergency bypass outfall (01A) is a partially submerged double-barrel (84" diameter each) outfall located at the shoreline.

A diagram of the facility's treatment units was provided as part of BSA's permit application and is seen below.

[1] State Administrative Procedures Act Section 401(2) and 6 NYCRR 621.11(*l*)
[2] Pursuant to 6 NYCRR 750-1.18 and NYS Environmental Benefit Permit Strategy (EBPS)



The facility is planning the following upgrades/improvements:

- A State of Good Repair (SOGR) project is underway to remove grit from the secondary treatment system.
- Primary and Secondary Treatment Renovations are planned in accordance with a 2013 No Feasible Alternative (NFA) to modify primary treatment capacity, add disinfection at Outfall 001, expand secondary treatment capacity, and expand disinfection capacity at Outfall 002.

The facility accepts wastewater from the following municipalities:

Municipality	POSS # or SPDES #	Collection System
City of Buffalo	NY0028410	Combined
Erie County Sewer District (ECSD) 1	NYS900038	Separate
ECSD 4	NYS900040	Separate
Town of West Seneca Sewer Districts (WSSD) 1, 2, 3, 4, 5, 9, 10, 13, 14, 15	NY0203734	Separate
Town of Cheektowaga	NYS900020	Separate
Village of Sloan	NYS900022	Separate

The facility accepts wastewater from the following significant industrial users (SIUs):

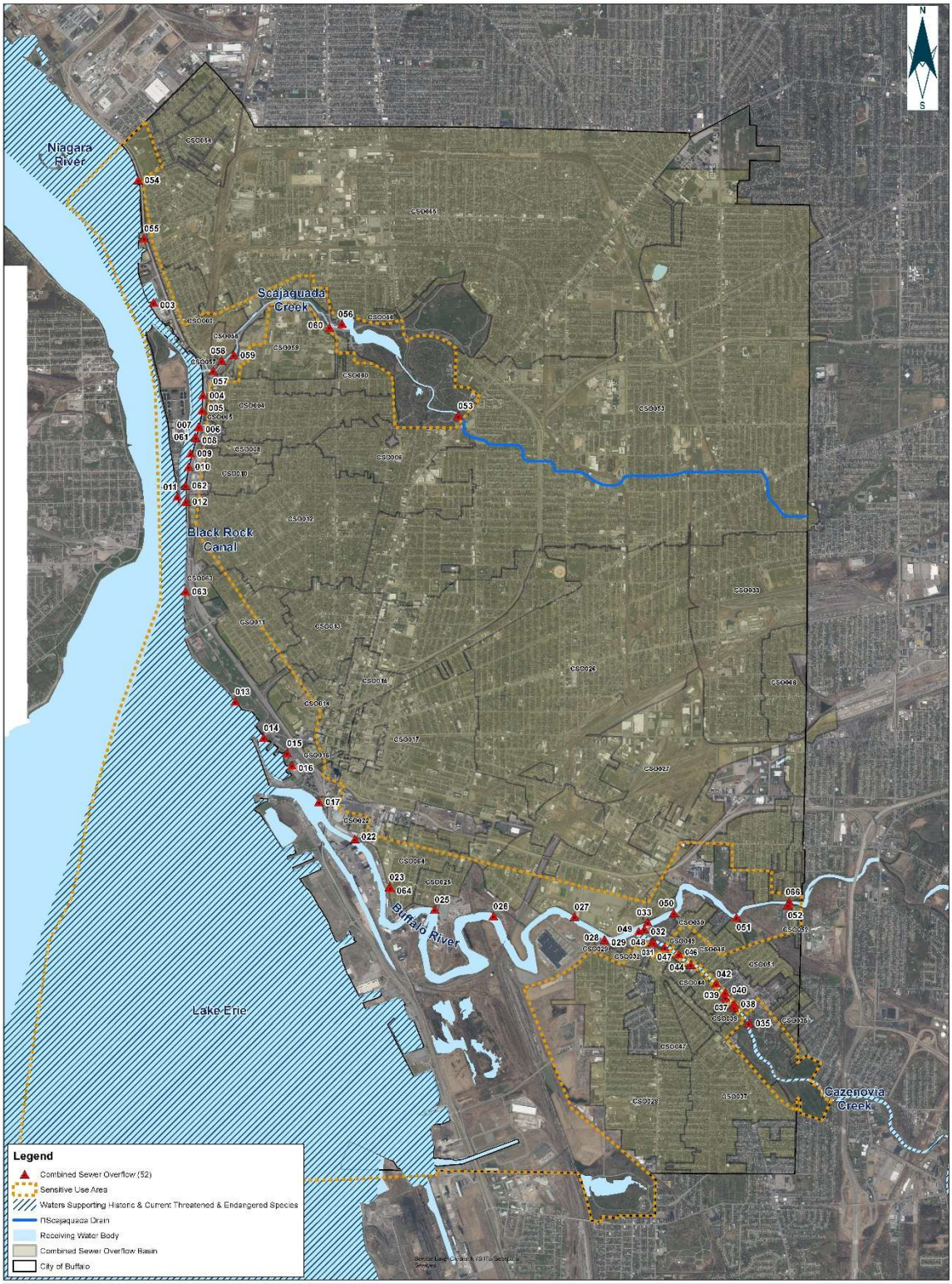
Significant Industrial User (SIU)	SIC Code	Categorical Reference (if applicable to 40 CFR)
PVS Chemical Solutions, Inc.	2819	Part 415.546
Safety-Kleen Systems, Inc.	2992	Part 437.25
Sorrento Lactalis, Inc.	2022	-
Tripp Plating Works, Inc.	3471	Part 433
Zehnder Rittling, Inc.	3433	Part 433.17
Goldman Titanium, Inc.	5093	Part 433.17
Veolia Water North America, LLC./Buffalo Water Authority	4941	-
Elk Street Commerce Park, LLC.	5171	-
Aurubis Buffalo, Inc.	3366 3369 3341 3351 3357	Part 464.26-(a),(b),(c) Part 468.14- (a),(b),(c),(d),(f),(h),(i),(j),(k),(l),(m),(n), (o),(p),(q) Part 468.15-(h),(j),(m),(o)
Big Heart Pet Brands, Inc.	2047	-
Kaleida Health-Buffalo General Hospital Medical Campus	8062	-
Buffalo Metal Finishing Co., Inc.	3471	Part 413.14 – Subpart A
Clean Care Linen	3582 7218	-
Deluxe Anodizing Co., Inc.	3471	Part 433
Frontier Plating of Buffalo, Inc.	3471	Part 433.17
General Mills Operations, Inc.	2043 2041	-
Honeywell International, Inc.-BRL	2869	Part 414.111
Keystone Corporation	3471	Part 433.17
Matrion Advanced Materials Technologies & Services	3341 3471 3356	Part 421 L and X Part 433.17
Morgan Services, Inc.	7218	-
Roberts Gordon, LLC	3499	Part 433.17
Sahlen Packing Company, Inc.	2013	-
Tesla, Inc.	3699 3629	Part 469.18 – Subpart A- Semiconductor
Rosina Foods – Empire Dr.	2038 2099	-
Rosina Food Products – Clinton St.	2013	-
Rosina Food Products – Industrial Parkway	2013	-
Buffalo Niagara International Airport	4580	-
United Silicone, Inc.	2893	Part 433.17
Mayer Brothers	2086	-
Upstate Niagara Cooperative – Pleasant Dr.	2026	-
Upstate Niagara Cooperative – North American Dr.	5143	-

Derrick Corporation	3532	Part 433.17 Part 463.2d
Greatbatch Medical, Inc.	3692 3675	Part 433.17
United Precious Metals	3341	Part 421.126 (f) Part 421.266 (e),(h) Part 471.45 (k)
Cintas Corporation	7218	-
Brill Inc.	2087	-
Culinary Arts Specialties	2038	-
Avox Systems, Inc. – Plant 2	3449	Part 433.17
Niagara Refining LLC.	3399	Part 421 Subpart J – 421.106 (d),(e),(g),(i),(j)
Erie Engineered Products, Inc.	3089 3499	Part 433.17
Amdor LLC	3442	Part 433.17
Parker Hannifin	3564	Part 433.17
R&J Metal Finishing, Inc.	3471	Part 433.17
Cintas Corporation 67P	7218	-

During wet-weather events, combined sewage is also permitted, under special conditions, to be discharged through the following CSOs:

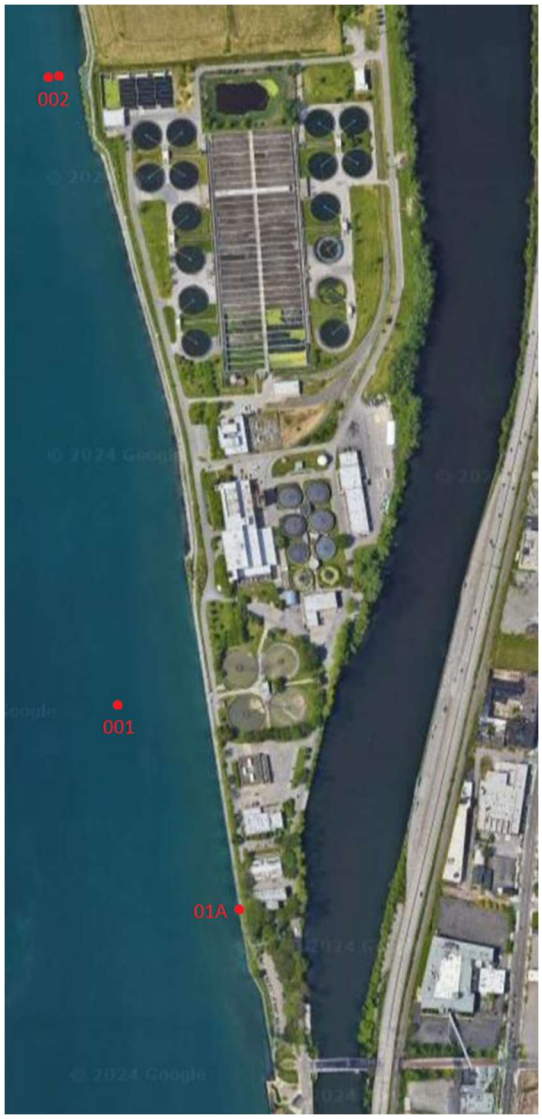
Outfall Number	**Receiving Waterbody**	**Latitude**	**Longitude**
003	Black Rock Canal	42° 56' 14" N	78° 54' 26" W
004	Black Rock Canal	42° 55' 34" N	78° 53' 57" W
005	Black Rock Canal	42° 55' 27" N	78° 53' 57" W
006	Black Rock Canal	42° 55' 20" N	78° 53' 59" W
007	Black Rock Canal	42° 55' 20" N	78° 53' 58" W
008	Black Rock Canal	42° 55' 15" N	78° 54' 0" W
009	Black Rock Canal	42° 55' 8" N	78° 54' 3" W
010	Black Rock Canal	42° 55' 2" N	78° 54' 5" W
011	Niagara River	42° 54' 49" N	78° 54' 12" W
012	Black Rock Canal	42° 54' 48" N	78° 54' 7" W
013	Buffalo Harbor	42° 53' 20" N	78° 53' 37" W
014	Buffalo Harbor	42° 53' 1" N	78° 53' 12" W
015	Buffalo Harbor	42° 52' 58" N	78° 53' 7" W
016	Buffalo Harbor	42° 52' 53" N	78° 53' 3" W
017	Buffalo River	42° 52' 38" N	78° 52' 47" W
022	Buffalo River	42° 52' 21" N	78° 52' 25" W
023	Buffalo River	42° 52' 1" N	78° 52' 5" W
025	Buffalo River	42° 51' 51" N	78° 51' 37" W
026	Buffalo River	42° 51' 49" N	78° 51' 3" W
027	Buffalo River	42° 51' 48" N	78° 50' 16" W
028	Buffalo River	42° 51' 38" N	78° 49' 56" W

029	Buffalo River	42° 51' 37" N	78° 49' 57" W
031	Cazenovia Creek	42° 51' 36" N	78° 49' 28" W
032	Buffalo River	42° 51' 43" N	78° 49' 35" W
033	Buffalo River	42° 51' 45" N	78° 49' 31" W
035	Cazenovia Creek	42° 51' 2" N	78° 48' 31" W
037	Cazenovia Creek	42° 51' 8" N	78° 48' 40" W
038	Cazenovia Creek	42° 51' 10" N	78° 48' 40" W
039	Cazenovia Creek	42° 51' 13" N	78° 48' 46" W
040	Cazenovia Creek	42° 51' 15" N	78° 48' 46" W
042	Cazenovia Creek	42° 51' 19" N	78° 48' 51" W
044	Cazenovia Creek	42° 51' 27" N	78° 49' 6" W
046	Cazenovia Creek	42° 51' 32" N	78° 49' 13" W
047	Cazenovia Creek	42° 51' 35" N	78° 49' 22" W
048	Cazenovia Creek	42° 51' 38" N	78° 49' 29" W
049	Buffalo River	42° 51' 42" N	78° 49' 36" W
050	Buffalo River	42° 51' 49" N	78° 49' 16" W
051	Buffalo River	42° 51' 47" N	78° 48' 39" W
052	Buffalo River	42° 51' 54" N	78° 48' 8" W
053	Scajaquada Creek	42° 55' 26" N	78° 51' 26" W
054	Niagara River	42° 57' 7" N	78° 54' 36" W
055	Niagara River	42° 56' 42" N	78° 54' 32" W
056	Scajaquada Creek	42° 56' 5" N	78° 52' 34" W
057	Scajaquada Creek	42° 55' 43" N	78° 53' 52" W
058	Scajaquada Creek	42° 55' 49" N	78° 53' 45" W
059	Scajaquada Creek	42° 55' 51" N	78° 53' 39" W
060	Scajaquada Creek	42° 56' 4" N	78° 52' 42" W
061	Black Rock Canal	42° 55' 15" N	78° 54' 1" W
062	Black Rock Canal	42° 54' 55" N	78° 54' 7" W
063	Black Rock Canal	42° 54' 8" N	78° 54' 6" W
064	Buffalo River	42° 51' 59" N	78° 52' 4" W
066	Buffalo River	42° 51' 54" N	78° 48' 7" W


Niagara River
Scajaquada Creek
Black Rock Canal
Buffalo River
Lake Erie
Cazenovia Creek
Legend
Combined Sewer Overflow (52)
Sensitive Use Area
Waters Supporting Historic & Current Threatened & Endangered Species
Scajaquada Drain
Receiving Water Body
Combined Sewer Overflow Basin
City of Buffalo
BUFFALO SEWER AUTHORITY
Item 5.2
Combined Sewer Overflow Map
0 2,200 4,400 8,800
Feet
8/30/2023

Site Overview

The Bird Island WWTF is located on Bird/Unity Island to the West of the City of Buffalo. An aerial view of the facility is below with approximate outfall locations.



(Google Maps, 2024)

Enforcement History

BSA developed and submitted to United States Environmental Protection Agency (USEPA) and the Department, a draft LTCP on January 13, 2014. The LTCP was jointly approved by USEPA and the Department on March 18, 2014. On April 11, 2014, the permittee was issued a USEPA Amended Administrative Order on Consent (ACO), CWA-02-2014-3033. The Order requires the following compliance actions:

- Implementation of the approved 2014 LTCP
- Final compliance date of March 18, 2034

The SPDES permit was subsequently modified effective October 1, 2014, to incorporate by reference, the approved 2014 LTCP and the USEPA ACO.

BSA has failed to meet several project deadlines specified in the approved 2014 LTCP and ACO. As a result, the Department and BSA have entered into to a State Consent Judgement ("Judgement"), effective October 22, 2025. The Judgement (Case No. R9-20060922-35) includes a requirement to submit an updated LTCP, revised implementation schedule and final compliance date for implementation of the LTCP.

Since the issuance of the 2014 Permit, the facility has received two Notice of Violations for:

- 11/8/2018 failure to comply with LTCP schedule. BSA did not commence design work or start construction on time.
- 6/10/2022 significant non-compliance of effluent limits for BOD 5-Day Percent Removal during the period between October 1st, 2021 and March 31st, 2022.

Compliance and enforcement information can be found on the USEPA'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 submitted by the permittee for the period 6/1/2018 to 6/30/2023. Appendix Link

Interstate Water Pollution Control Agencies

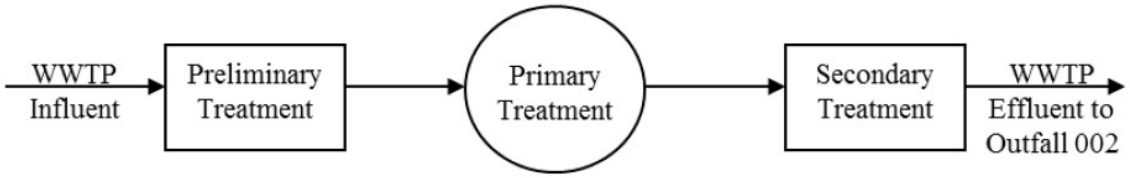
The facility and each of the outfalls are located within the Great Lakes watershed and International Joint Commission (IJC) compact area which places additional requirements in the SPDES permit. Discharges in the Great Lakes watershed are required to comply with the provisions set forth in 40 CFR Part 132. The Bird Island WWTF discharges to the Niagara River, which is considered a connecting channel of the Great Lakes, as defined in 40 CFR Part 132.2. Appendix Link

Additional Site-Specific Concerns

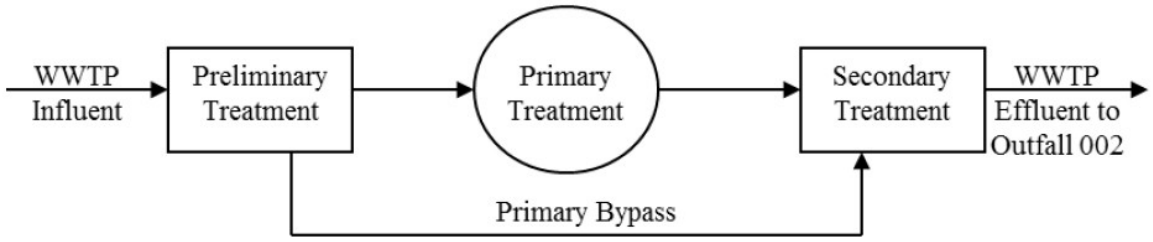
The BSA collection system is 97% combined sewers resulting in significant variations in operations for dry weather conditions vs. wet weather conditions. The 2014 permit requires BSA to provide treatment of a minimum of 450 MGD through the WWTF headworks and a minimum of 300 MGD through the secondary treatment during wet weather. The current WWTF headworks capacity is 560 MGD. The 2014 permit requires that all flows received up to the WWTF headworks capacity which are not discharged from Outfall 002, must be discharged from Outfall 001. BSA is required to manage wet weather operations through implementation of a wet weather operating plan (WWOP). The approved 2025 WWOP is summarized below.

The Bird Island WWTF operates in 3 distinct treatment modes depending on influent flow. The treatment process can be grouped into 4 portions: preliminary treatment (screening and grit removal), primary treatment (clarification), secondary treatment (aeration, secondary clarification, phosphorus removal), and disinfection. Phosphorus removal is conducted through the dosing of ferric chloride in the settled wastewater wet well (prior to aeration). Disinfection is conducted at both Outfall 001 and 002, through the application of liquid sodium hypochlorite. For Outfall 001 discharges, hypochlorite is applied to the influent of the primary settling tanks; and for Outfall 002, hypochlorite is applied to secondary effluent ahead of the chlorine contact tanks.

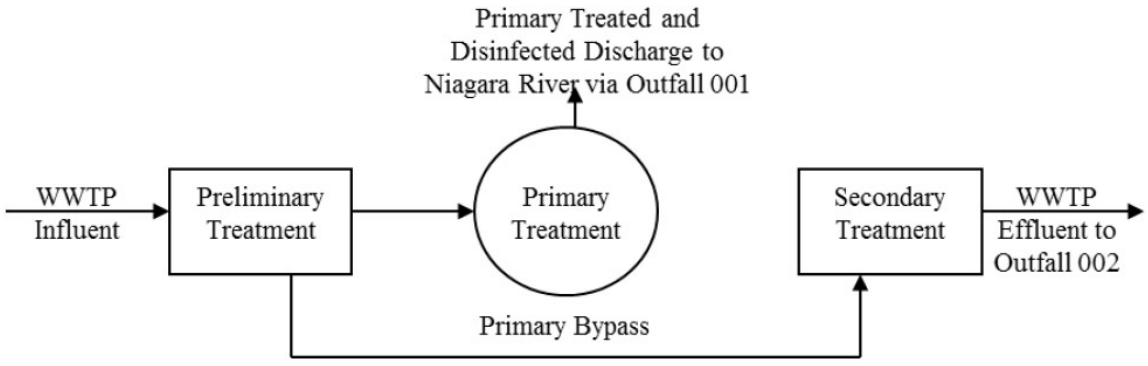
When total flows are below primary treatment capacity, the facility operates in “Normal Mode”. All flows are sent through the entire treatment train (preliminary, primary, secondary, disinfection).



Once influent flow exceeds the capacity of primary treatment, the facility enters “Primary Bypass Mode”. Flows up to the capacity of primary treatment are sent through the full treatment train as in Normal Mode. Flows exceeding the capacity of primary treatment are bypassed directly to secondary treatment and disinfection. All flows during this process mode are discharged from Outfall 002.



If influent flows continue to rise and exceed secondary treatment capacity, the facility enters “Partial Treatment Mode”. Flows are split after preliminary treatment between primary treatment and secondary treatment to maximize total flow throughput. As much flow as possible is routed to the secondary treatment system followed by disinfection and discharge from Outfall 002. Excess flows are sent to the primary treatment system and are discharged from Outfall 001. During this operation, the influent to the primary treatment settling tanks is dosed with Sodium Hypochlorite to provide some level of disinfection.



BSA was required by the 2014 LTCP and ACO, and subsequently the Judgement, to upgrade the primary and secondary treatment systems in two phases under an NFA Project, including upgrades to disinfection for both systems. BSA included an additional State of Good Repair (SOGR) project for secondary treatment, for a total of 3 phases. The secondary treatment

system will be rehabilitated in two phases (Phase I and III). Phase I (SOGR) will clear the system of accumulated grit, restoring capacity to 360 MGD. Phase II (NFA) will rehabilitate the primary treatment system and will add a new high-rate disinfection (HRD) system to be used during Partial Treatment Mode. The primary treatment system capacity will remain at 160 MGD. Phase III (NFA) will improve hydraulics through aeration and add additional clarifiers to further increase capacity to 400 MGD. The disinfection system will also be expanded to increase disinfection capacity to 400 MGD.

Additional information on the pathogen reduction requirements can be found in the Pollutant Summary Table. Additional information on required phosphorus removal can be found in the Impaired Waterbody Information section of this fact sheet.

Receiving Water Information

The facility discharges via the following outfalls:

Outfall No.	SIC Code	Wastewater Type	Receiving Water
001	4952	Partially treated Combined Sewage (Screening, Settling, Disinfection)	Niagara River, Class A-Special
01A	4952	Emergency Bypass (Partially screened combined sewage[3])	Niagara River, Class A-Special
002	4952	Treated Combined Sewage	Niagara River, Class A-Special

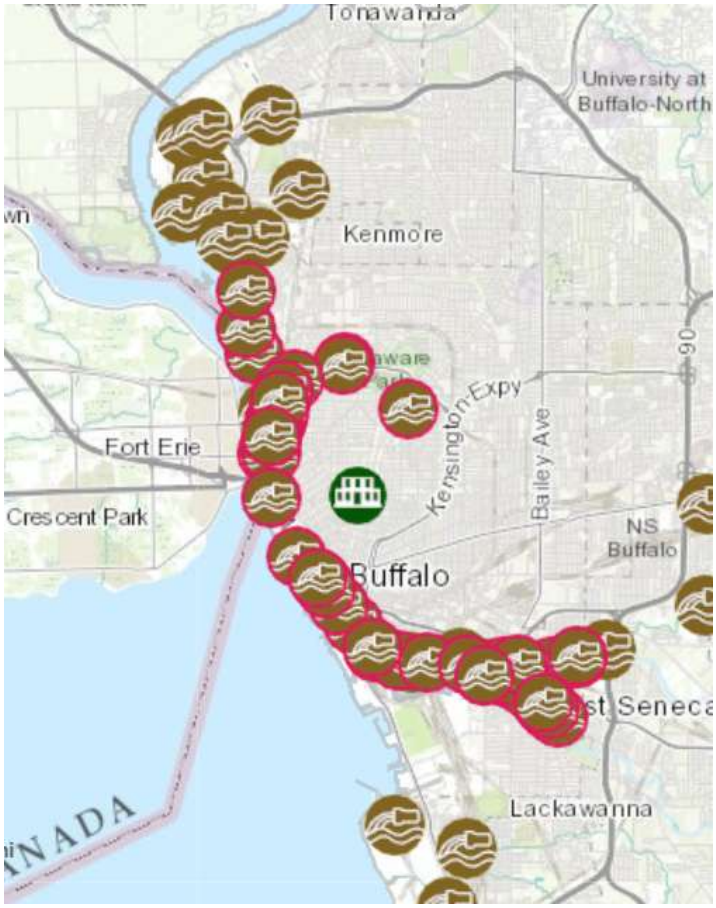
The facility is also authorized to discharge site stormwater through the following 19 outfalls under MSGP NYR00H113 (See Stormwater Pollution Prevention Requirements):

Outfall No.	SIC Code	Wastewater Type	Receiving Water
001 - 011	4952	Stormwater	Black Rock Canal, Class C
012 - 019	4952	Stormwater	Niagara River, Class A-Special

Reach Description: The Niagara River (0101-0006) is fed by Lake Erie, within the Lake Erie/Niagara River watershed. The Niagara River is Class A-Special through its entire reach from Lake Erie to Lake Ontario. Approximately 37 miles downstream from the facility, the Niagara River drains into Lake Ontario, which is a Class A lake. There are several CSO outfalls owned by BSA (brown icons outlined in red) and other SPDES permitted facilities (brown icons with no outline) discharging to the Niagara River and other tributary waters such as Lake Erie and Buffalo River, both upstream and downstream of the Bird Island WWTF.

See the Outfall and Receiving Water Summary Table and Appendix for additional information.

[3] Discharges through Outfall 01A may occur from flows bypassed both before and after course bar screening.



Impaired Waterbody Information

The Niagara River segment (PWL No. 0101-0006) was first listed on the 1998 New York State Section 303(d) List of Impaired/TMDL Waters as impaired due to PCBs from Contaminated Sediment and Land Disposal. The segment was also listed for suspected PAHs in 2002 and Organochlorine Pesticides in 2006. The segment continues to be listed for each impairment as of the 2020/2022 NYS Section 303(d) List. A TMDL has not been developed to address the impairments and, therefore, there are no applicable wasteload allocations (WLAs) for this facility.

The Black Rock Canal/Channel (PWL No. 0101-0025) was first listed on the 1998 New York State Section 303(d) List of Impaired/TMDL Waters as impaired for Fish Consumption due to PCBs from Contaminated Sediment and Land Disposal. The segment continues to be listed for this impairment as of the 2020/2022 NYS Section 303(d) List. A TMDL has not been developed to address the impairments and, therefore, there are no applicable wasteload allocations (WLAs) for this facility.

Scajaquada Creek, Lower (PWL No. 0101-0023) was first listed on the 2004 New York State Section 303(d) List of Impaired/TMDL Waters as impaired due to Fecal Coliform and Oils & Floating Substances from CSOs and Urban Runoff. The segment was also listed in 2010 for Phosphorus and Low Dissolved Oxygen in 2010 from CSOs and Urban Runoff. The segment continues to be listed for each impairment as of the 2020/2022 NYS Section 303(d) List. A TMDL has not been developed to address the impairments and, therefore, there are no applicable wasteload allocations (WLAs) for this facility.

Lake Erie, Erie Basin[4] (PWL No. 0104-0032) was first listed on the 2002 New York State Section 303(d) List of Impaired/TMDL Waters as impaired for Fish Consumption due to PCBs from Contaminated Sediment. The segment continues to be listed for each impairment as of the 2020/2022 NYS Section 303(d) List. A TMDL has not been developed to address the impairments and, therefore, there are no applicable wasteload allocations (WLAs) for this facility.

The Buffalo River[4] (PWL No. 0103-0001) was first listed on the 1998 New York State Section 303(d) List of Impaired/TMDL Waters as impaired for Fish Consumption due to PCBs from Contaminated Sediment. The segment continues to be listed for PCBs as of the 2020/2022 NYS Section 303(d) List. The segment was also listed in 2022 for Aluminum. A TMDL has not been developed to address the impairments and, therefore, there are no applicable wasteload allocations (WLAs) for this facility.

Critical Receiving Water Data & Mixing Zone

The low flow condition for the Niagara River was obtained from the USGS/NYSDEC Bulletin 74, 1979, using the Niagara River at Buffalo, NY gage (Gage ID 04216000). The 1Q10 flow was estimated as half the 7Q10 and the 30Q10 flow was estimated as 1.2 x 7Q10. The low flows at the facility location were assumed equivalent to those at the USGS Gage, given no changes in flow between the 2 locations.

Gage Name: Niagara River at Buffalo, NY
Gage ID: 04216000
Drainage Area at Gage (mi^2): 264,000
7Q10 Flow at Gage (CFS): 145,000 Source: Bulletin 74
Estimated 1Q10 (CFS): 72,500
Estimated 30Q10 (CFS): 174,000

DRAINAGE BASIN RATIO	1Q10	7Q10	30Q10
Gage Name	Niagara River at Buffalo		
Gage ID Number	4216000		
Low Flow at Gage (cfs)	72500	145000	174000
Drainage Area at Gage (mi^2)	264000	264000	264000
Drainage Area at Facility (mi^2)	264000	264000	264000
Drainage Basin Ratio (facility / gage)	1.0	1.0	1.0
Calculated Flow at Facility (cfs)	72500.00	145000.00	174000.00

Consistent with TOGS 1.3.1, the outfall information submitted in the application and mixing zone form was used to develop a mixing zone model for the main outfall (002) to establish dilution ratios for the water quality analysis. Multiple models were developed in this evaluation. As stated in the Facility Information section of this factsheet, Outfall 002 is fully submerged, approximately 26.6 feet below mean low water level and discharges to the Niagara River via a two-port 108" diameter pipe, with the ports approximately 48 feet and 72 feet offshore. The international boundary between Canada and the United States of America is approximately 200 feet off the western shore of Bird Island.

[4] For Lake Erie and Lake Ontario Shoreline segments included on the Section 303(d) List due to fish consumption restrictions, the primary source of contamination is the open lake rather than the near-shore waters. Due to fish migration, the advisories apply to tributary waters up to the first impassable barrier.

Outfall No.	Acute Dilution Ratio A(A)	Chronic Dilution Ratio A(C)	Human, Aesthetic, Wildlife Dilution Ratio (HEW)	Basis
002	10:1	20:1	20:1	CORMIX

Consistent with Department practice, the modeling software CORMIX was utilized. Unfortunately, CORMIX does not contain the ability to evaluate 2-port outfalls. In lieu of modeling the existing 2-port condition, both a single port and 3-port model were developed initially to evaluate mixing conditions using 108" diameter ports. After building these models, a third model was developed to simulate the effects of the outfall as a single port discharge with the same estimated effluent momentum (the simulated outfall). In the simulated outfall model, a single port diameter was estimated, based on the total effective area of the 2 ports and replacing them with an equivalently sized single port with a diameter of 12.73 feet. This maintains momentum of the effluent with the same discharge flow.

The initial single port model, using one 108" diameter port, resulted in formation of a jet plume mixing condition, achieving 25:1 dilution at the end of discharge-induced mixing (End of the near-field region). However, this model does not realistically evaluate similar effluent momentum of the actual outfall, since the velocity through one port is far greater than the velocity through two ports of equal size. Similarly to the initial single-port model, the three-port model does not accurately reflect realistic mixing conditions that are expected from the existing 2-port outfall, due to the increased discharge area. The Department determined that the best model using the Department's available tools is the simulated outfall. The simulated outfall model estimates a root-mean squared dilution of approximately 4.7:1 at the end of the near-field region (considered equivalent to the end of discharge-induced mixing).

Both the three-port model, using three, 108" diameter ports, and the simulated outfall model resulted in a wake flow condition. "Wake flows are characterized by unsteady "patchy" plumes with high, instantaneous effluent concentrations. At any downstream location from the discharge source there are instantaneous, high concentration pools of effluent flowing by, followed by periods of low concentration effluent pools; The effluent mixing is hence un-steady in behavior. Because of the "patchy" quality of wake flows, measurements of plume trajectory, width, and dilution in laboratory and field studies may be difficult and furthermore may be subject to significant measurement errors [CORMIX Image Gallery: Wake Flows]."[5]

Since the discharge to the Niagara River, which is a defined connecting channel of the Great Lakes, there is no mixing zone size restriction specified in 40 CFR Part 132. Per TOGS 1.3.1, for incomplete mixing scenarios, mixing zones shall not exceed 20 times the stream width. Acute mixing zone sizing recommendations provided in the USEPA Technical Support Document for Water Quality-based Toxics Control (TSD) are 50 times the discharge length scale (DLS) or 5 times the local water depth. Given the relevant conditions at the outfall, mixing zone size was estimated by applying the USEPA TSD's method of 50 times the DLS. With this methodology, in conjunction with the CORMIX prediction file, the acute dilution is estimated as 10:1. The acute mixing zone was determined using the TSD method's length downstream from the port of approximately 167.87 meters (550 feet) and the model's predicted plume width at the same distance downstream the port centerline of 5.87 meters (19.3 feet). Following Department guidance, the chronic mixing zone size may be set equal to 3-5 times the size of the acute mixing zone. This yields an estimated chronic dilution of 20:1 with a multiplier of 5. The chronic mixing zone size was determined similar to the acute mixing zone, using the model's downstream

[5] From the CORMIX FAQ, CORMIX Image Gallery: Wake Flows

distance of approximately 845.9 meters (2,775 feet) downstream and the corresponding width of 9.45 meters (31 feet). The HEW dilution was set equal to the chronic dilution. See below for a visual representation of the acute (green stripes) and chronic (red & white dotted) mixing zones (not to scale).

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.

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. (#1)
- 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. (#4)
- Treatment plants which equal or exceed a discharge of 1MGD. (#7)

Consistent with TOGS 1.3.2, a reasonable potential analysis was performed using the existing WET data for this facility (see data below). It was determined that while the analysis indicated no potential for toxicity in the effluent, WET testing is required based on the criteria listed above and WET action levels are being continued in the permit. Given the dilution available and location within the Great Lakes basin, the permit requires chronic only WET testing. Samples will be collected quarterly for years ending in 2 and 7. WET testing action levels of 3.0 TUa and 20.0 TUc have been included in the permit for each species. The acute action level for each species represent the acute dilution ratio times a factor of 0.3. The chronic action levels represent the chronic dilution ratio.

Test Date	[1]MSS 48H LC50 (%Effluent)	[2]MSS TUa	[3]TUa Action Level	[4]MSS Survival 100% Effluent	[5]Acute Test Result	[6]MSS RPD TUa	[7]Acute WET Limit Required	[8]MSS 7D NOEC/IC25 (%Effluent)	[9]MSS NOEC/IC25 TUc	[10]TUc Action Level	[11]Chronic Test Result NOEC/IC25	[12]MSS RPD IC25 TUc	[13]Chronic WET Limit Required
01/22	>100% (FI)	<0.3 (FI)	15.0	100% (FI)	Pass	<0.8	No	>100% (FI)/>100% (FI)	<1.0 (FI)/<1.0 (FI)	100.0	Pass/Pass	<2.6	No
04/22	>100% (FI)	<0.3 (FI)	15.0	100% (FI)	Pass	<0.8	No	>100% (FI)/>100% (FI)	<1.0 (FI)/<1.0 (FI)	100.0	Pass/Pass	<2.6	No
08/22	>100% (FI)	<0.3 (FI)	15.0	98% (F)	Pass	<0.8	No	>100% (FI)/>100% (FI)	<1.0 (FI)/<1.0 (FI)	100.0	Pass/Pass	<2.6	No
10/22	>100% (FI)	<0.3 (FI)	15.0	100% (FI)	Pass	<0.8	No	>100% (FI)/>100% (FI)	<1.0 (FI)/<1.0 (FI)	100.0	Pass/Pass	<2.6	No

[1]Most Sensitive Species 48-hour Lethal Concentration: (F=Fish; I=Invertebrate) is the concentration or percentage of effluent that is lethal to 50% of the exposed organisms over a 48-hour period, and often indicates one species is more sensitive than the other during effluent testing.

[2]Most Sensitive Species Toxic Units Acute: is calculated as (100 / MSS 48H LC50). However, because ≤ 0.3 TUa is defined as the acceptable amount of Acute toxicity at the edge of the Acute mixing zone, and mathematically 100 / 100 = 1.0 (i.e. a failing result), non-toxic Acute test results are indicated as < 0.3.

[3]Toxic Unit Acute Action Level/Limit: is calculated as [Acute Dilution Factor x 0.3 TUa] representing the maximum allowable effluent TUa at the edge of the Acute mixing zone ensuring Acute protection of the receiving water. When the Acute Dilution Factor is < 3.3, the default Acute Action Level of 0.3 TUa is used representing the maximum allowable effluent TUa at the end of pipe.

[4]Most Sensitive Species Survival in 100% Effluent: is the lowest percentage of surviving organisms in 100% effluent, providing additional evidence of unacceptable Acute toxicity when the necessary 50% or greater mortality required to generate an LC50 has not been attained. *Denotes statistically significant mortality in 100% effluent as compared to the control.

[5]Acute Test Result: MSS TUa ≤ TUa Action Level/Limit for passing effluent test result and MSS TUa > TUa Action Level//Limit for a failing effluent test result. If unacceptable mortality (i.e. statistically significant as compared to the control) is noted in 100% effluent, this may also be considered a failing test result.

[6]Most Sensitive Species Reasonable Potential Determination Toxic Units Acute: is calculated as (MSS TUa x 2.6), the Reasonable Potential Multiplier when four quarterly tests have been completed, taking into account the statistical potential for effluent variability to occur causing an exceedance of the toxicity-based Action Level.

[7]Acute Whole Effluent Toxicity Limit Required: MSS RPD TUa ≤ TUa Action Level, then no toxicity-based Limit is required, and the Action Level remains in place. If MSS RPD TUa > TUa Action Level, then a toxicity-based Limit is required, and the Action Level becomes the Limit. **In low dilution situations, the application of the RPD to the Acute results often mathematically suggests the need for Acute WET Limits even when there is no toxicity evident in 100% effluent (i.e. a non-detect). Therefore, this data cannot be used to implement a WET Limit.

[8]Most Sensitive Species 7-day No Observed Effect Concentration or 25% Inhibition Concentration: is the highest concentration or percentage of effluent tested that causes no statistically significant effect to the exposed test organisms as compared to the control over a 7-day period, or the concentration or percentage of effluent that causes a 25% reduction in survival, growth, or reproduction for the test population.

[9]Most Sensitive Species Toxic Units Chronic: is calculated as (100 / MSS 7D NOEC) or (100 / MSS 7D IC25).

[10]Toxic Unit Chronic Action Level/Limit: is calculated as [Chronic Dilution Factor x 1.0 TUc] representing the maximum allowable effluent TUc at the edge of the Chronic mixing zone ensuring Chronic protection of the receiving water.

[11]Chronic Test Result: MSS NOEC/IC25 TUc ≤ TUc Action Level/Limit for passing effluent test result and MSS NOEC/IC25 TUc > TUc Action Level/Limit for a failing effluent test result.

[12]Most Sensitive Species Reasonable Potential Determination Toxic Units Chronic: is calculated as (MSS IC25 TUc x 2.6), the Reasonable Potential Multiplier when four quarterly tests have been completed, taking into account the statistical potential for effluent variability to occur causing an exceedance of the toxicity-based Action Level.

[13]Chronic Whole Effluent Toxicity Limit Required: MSS RPD IC25 TUc ≤ TUc Action Level, then no toxicity-based Limit is required, and the Action Level remains in place. If MSS RPD IC25 TUc > TUc Action Level, then a toxicity-based Limit is required, and the Action Level becomes the Limit. ***In low dilution situations, the application of the RPD to the Chronic results often mathematically suggests the need for Chronic WET Limits even when there is no toxicity evident in 100% effluent (i.e. a non-detect). Therefore, this data cannot be used to implement a WET Limit.

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)[6] 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.

Special Conditions

Special Conditions for the WWTF operational treatment modes have been added to the permit. These conditions, included in the draft permit, require the permittee to operate the WWTF to maximize treatment, including when transitioning between normal, primary bypass, and partial treatment modes during wet-weather event ramp-up and wind-down.

Requirements for Combined Sewer Overflows (CSOs)

Appendix Link

Best Management Practices (BMPs) for CSOs

The BMPs for CSOs require the permittee to implement operation and maintenance procedures[7]; use the existing treatment facility and collection system to the maximum extent practicable; effect sewer design replacement and drainage planning; maximize pollutant capture; and minimize water quality impacts from CSOs. The submittal requirements are summarized in the Schedule of Additional Submittals. This requirement is being continued from the previous permit.

Long-Term Control Plan (LTCP)

CSO discharges from the permittee are currently being addressed under the LTCP approved by the Department on 3/18/2014. These LTCP requirements were initially required under USEPA ACO # CWA-02-2014-3033 and incorporated by reference in the 2014 Permit. Due to missed milestones and updates to the LTCP Model, BSA and the Department entered into a State Consent Judgement (Case No. R9-20060922-35), effective October 22, 2025. The Judgement requires submission of an updated LTCP, revised implementation schedule and final compliance date for implementation of the LTCP.

Multiple projects are planned under the facility's LTCP to maximize the capacity of the collection system and minimize CSO discharges during wet weather events. Projects

[6] As prescribed by 6 NYCRR Part 617
[7] See 6 NYCRR 750-2.8(a)(2)

include in-line storage, off-line storage, green infrastructure, and implementation of real-time control systems.

Post-Construction Compliance Monitoring (PCCM)

PCCM is required by all CSO permittees to verify compliance with the USEPA National CSO Control policy and evaluate attainment of NYS water quality standards. A PCCM plan was submitted in December 2015 and approved on 3/1/2016. Previous PCCM has been conducted annually for implemented LTCP controls from 2016 to present. Monitoring was previously required in accordance with USEPA Administrative Consent Order (CWA-02-2014-3033) and submitted in a PCCM report within 120 days after completion of the monitoring. The State Consent Judgement requires development of a new PCCM Plan to be submitted in conjunction with the revised LTCP documents. Submission of the PCCM Report(s), summarizing the PCCM sampling and evaluation, are detailed in the SPDES permit.

Sensitive Area Reassessment

The permit requires the reassessment of the feasibility of eliminating or relocating CSO outfalls discharging to sensitive areas. The reassessment is required once per permit term, or every five years.

Stormwater Pollution Prevention Requirements

The facility is a publicly owned treatment works ≥ 1 MGD that requires SPDES permit coverage under 40 CFR 122.26 (b)(14)(ix). The Bird Island WWRF has nineteen (19) stormwater outfalls on-site, discharging to the Niagara River and the Black Rock Canal.

The stormwater pollution prevention language has been removed from the permit and the permittee has gained coverage of their stormwater outfalls separately under the SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) Sector [T] (GP-0-23-001).

Mercury[8]

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

The facility is a USEPA Major Publicly-Owned Treatment Works (POTW) (Class 05) facility within the Great Lakes Watershed and the permit includes requirements for the implementation of MMP Type I.

The permit includes a daily max total mercury effluent limitation of 50 ng/L, sampled monthly. The facility has ≥10 effluent mercury data points and the existing effluent quality (EEQ) of 5.7 ng/L was calculated from the lognormal 95th percentile of 57 mercury effluent samples collected from June 1, 2018 to June 30, 2023. A mercury minimization program consisting of the following is also required:

- Additional monitoring of key locations, as defined in the MMP
- Control strategy for implementation of the MMP
- Annual status report (maintained onsite)

The facility is located within the Great Lakes Basin, therefore, the permit also includes a 12-month rolling average total mercury effluent limitation equal to the EEQ.

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

As the EEQ is ≤12 ng/L (i.e., the concentration attributed to natural atmospheric deposition), the sampling frequency in the permit is reduced from monthly to quarterly. The permit language reflects additional reductions in the MMP requirements.

Biennial Pollutant Scan

Three effluent samples for applicable parameters must be submitted with an NY-2A Application[9]. The permit includes a requirement to perform biennial sampling (once every two years) of the WWTF effluent for the parameters in the NY-2A Application, Tables A – D. This requirement ensures the data is representative of effluent conditions over the permit term and will be available for the next application submittal and permit review. This requirement is new.

Industrial Pretreatment Program

The permittee is required to continue implementation of a USEPA-approved pretreatment program in accordance with 40 CFR Part 403 and TOGS 1.3.3. The program specifies continued implementation of an industrial user compliance program, submission of user information, modification of local sewer use law (if necessary), and periodic reporting.

Schedule(s) of Compliance

A Schedule of Compliance is being included[10] for the following items (Appendix Link):

- Compliance period for attainment of final effluent limits at Outfall 002 for total residual chlorine and total phenols and at Outfall 001 for fecal coliform. The limits were reduced and/or added and a major modification to the treatment facility is underway and affects the operation of the entire facility, including disinfection. These modifications will not be completed until 2031.

Emerging Contaminant Monitoring

Background: Emerging Contaminants, such as Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), and 1,4-Dioxane (1,4-D), have been used in a wide variety of consumer and industrial products as well as in manufacturing processes for decades. These contaminants do not break down easily, therefore their presence in wastewater can remain a concern for years following their discontinued use. As the science surrounding these contaminants is still evolving, additional monitoring is needed to better understand potential sources and background levels. For more information on emerging contaminants, please see the NYSDEC Division of Water web page: Emerging Contaminants In NY's Waters - NYSDEC.

Given the emerging nature of these contaminants; the USEPA's addition of PFOA and PFOS to the hazardous substance list under CERCLA; the USEPA's addition of PFOA and PFOS to the recommended contaminant monitoring list for state fish advisory programs; and pursuant to 6 NYCRR 750-1.14(f), the Department is imposing Action Levels, and minimization programs when there is confirmation those Action Levels are exceeded. This requirement is being imposed for the protection of the downstream receiving waterbody and to gather additional data needed to support establishment of TBELs.

Requirements: Based on the available data and detections of PFOA and PFOS at Outfall 001, Action Levels set at the NYS Department of Health Maximum Contaminant Level (MCL) of 10 ng/L are specified for PFOA and PFOS with monitoring required for the remaining 38 PFAS compounds pursuant to 6 NYCRR Part 750-1.13(b). Monitoring requirements are also consistent with guidance released in USEPA memos dated April 28, 2022, and December 5, 2022. Please see the Pollutant Summary Table below for more information.

[9] Pursuant to 40 CFR 122.21(j)(4)(vi).
[10] Pursuant to 6 NYCRR 750-1.14

Schedule(s) of Additional Submittals

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

- Emerging Contaminant Minimization Program
- WTC Annual Report
- Annual Flow Certification
- Biennial Pollutant Scan (maintained onsite)
- WET Testing Result Reports
- Submit Schedule for Facility Grit Accumulation Inspection
- Updated WWOP (post-WWTF construction)
- CSO Annual Report
- PCCM Report
- Sensitive Area Reassessment Report
- Mercury Minimization Program Annual Status Report (maintained onsite)
- IPP Annual Report

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
001	42° 55' 10" N	78° 54' 16" W	Niagara River	A-S	Ont 158 PWL: 0101-0006	Lake Erie-Niagara River/ Niagara River Main Stem	119[11]	46,850	93,700	112,440	-	-	-	-
01A	42° 55' 1" N	78° 54' 14" W									-	-	-	-
002	42° 55' 16" N	78° 54' 20" W									180	10:1	20:1	20:1

POLLUTANT SUMMARY TABLE

Outfall 002

Outfall #	002	**Description of Wastewater:** Treated Combined Sewer Effluent														
		Type of Treatment: Screening, grit removal, primary settling, conventional secondary treatment, final clarification, disinfection[12]														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[13]	# 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 June 1, 2018 to June 30, 2023 was obtained from Discharge Monitoring Reports provided by the permittee and additional data provided in the NY-2A application. 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	12 MRA	180	130 Actual Average	61 / 0	**180**	Design Flow	Narrative: No alterations that will impair the waters for their best usages.					703.2	-	Design Flow
	The flow limit is set at the design flow of the wastewater treatment facility.														
pH	SU	Minimum	6.0	6.8 Actual Min	61 / 0	**6.0**	40 CFR 133.102	8.1[11]	-	6.5 – 8.5	Range	-	703.3	-	TBEL
		Maximum	9.0	8.0 Actual Max	61 / 0	**9.0**									
	Consistent with TOGS 1.3.3 for POTWs, TBELs reflect secondary treatment standards. Ambient pH included above is the average of available data from the RIBS station 01-NIAG-0.2. Given the available dilution, an effluent limitation equal to the TBEL is protective of the WQS.														

[11] Ambient hardness & pH was calculated from RIBS station 01-NIAG-0.2, located ~36 miles downstream, using 84 samples for Hardness and 65 samples for pH, collected from 2001 - 2016.
[12] Treatment describes standard operational mode.
[13] 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:** Treated Combined Sewer Effluent
		Type of Treatment: Screening, grit removal, primary settling, conventional secondary treatment, final clarification, disinfection[12]

Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[13]	# 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		
Temperature	°F	Daily Max	Monitor	86 Actual Max	61 / 0	**Monitor**	750-1.13 Monitor	20.6 °C[14]	Narrative (Non-Trout): The water temperature at the surface of a stream shall not be raised to more than 90F at any point and... shall not be raised or lowered to more than 5F over the temperature that existed before the addition				704.2	-	Monitor
	Ambient temperature included above is the average of available data from the RIBS station 01-NIAG-33.4. 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.														
Dissolved Oxygen (DO)	mg/L	Daily Min	*Monitoring Not Currently Required*			-	-	-	7.11 Critical Point	(A-Special) 6.0 mg/L	Narrative	No Reasonable Potential		-	No Limitation
	The downstream DO concentration was modeled using the Streeter-Phelps equations and the following assumptions: Effluent DO = 2 mg/l ((assumed value consistent with TOGS 1.3.1D)), Effluent UOD = 158.03 mg/L (estimated from BOD_5 and NOD concentrations), Effluent $CBOD_5$ = 40 mg/L (assumed secondary treatment requirement), Effluent NOD = 99.5 mg/L (estimated using 99th lognormal percentile of Ammonia (as NH_3) effluent data). The model also conservatively assumed the ambient flow of the river available for mixing was 50% of the published 7Q10, due to the presence of the international boundary line with Canada. The model assessed dissolved oxygen from the BSA Bird Island WWTF to a point 2 miles downstream. No other dischargers exist within the reach and no other significant waterbody features were necessary to include. The DO concentration at the end of the reach was estimated to be 7.11 mg/L, which is well above the water quality standard. Therefore, the model showed that DO standards are maintained and consequently WQBELs for DO, UOD, and $BOD_5/CBOD_5$ are unnecessary and the TBELs are protective of water quality.														
5-day Biochemical Oxygen Demand (BOD_5)	mg/L	Monthly Avg	30	19	58 / 1	**30**	40 CFR 133.102	-	See Dissolved Oxygen			No Reasonable Potential		-	TBEL
		7 Day Avg	45	67	60 / 0	**45**									
	lbs/d	Monthly Avg	45036	27,000	59 / 1	**45,000**									
		7 Day Avg	67554	130,000	60 / 0	**68,000**									
	% Rem	Minimum	85	85 (Average)	60 / 0	**85**									

[14] Ambient temperature was calculated from RIBS station 01-NIAG-33.4, located ~1.0 mile downstream, using 25 samples, collected from 1982 - 2020.

Outfall #	002	**Description of Wastewater:** Treated Combined Sewer Effluent
		Type of Treatment: Screening, grit removal, primary settling, conventional secondary treatment, final clarification, disinfection[12]

Effluent Parameter	Units	Averaging Period	Existing Discharge Data: Permit Limit	Existing Discharge Data: Existing Effluent Quality[13]	Existing Discharge Data: # of Data Points Detects / Non-Detects	TBELs: Limit	TBELs: Basis	Water Quality Data & WQBELs: Ambient Bkgd. Conc.	Water Quality Data & WQBELs: Projected Instream Conc.	Water Quality Data & WQBELs: WQ Std. or GV	Water Quality Data & WQBELs: WQ Type	Water Quality Data & WQBELs: Calc. WQBEL	Water Quality Data & WQBELs: Basis for WQBEL	ML	Basis for Permit Requirement
	Two outliers were observed, in August 2019 and December 2021. The December 2021 outlier was removed from EEQ calculations. Reported maximum 7-day average load is only 48,000 lbs/d. Consistent with 40 CFR Part 133.102 and TOGS 1.3.3 for POTWs, TBELs reflect secondary treatment standards. In accordance with Department practice, loading limitations have been adjusted to use 2 significant figures.														
Total Suspended Solids (TSS)	mg/L	Monthly Avg	30	8.4	60 / 0	**30**	40 CFR 133.102	-	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages.				703.2	-	TBEL
		7 Day Avg	45	20.	60 / 0	**45**									
	lbs/d	Monthly Avg	45036	16,000	60 / 0	**45,000**									
		7 Day Avg	67554	100,000	60 / 0	**68,000**									
	% Rem	Minimum	85	91 (Average)	60 / 0	**85**									
	2 outliers were observed, in October 2020 and December 2021. The December 2021 outlier was removed from EEQ calculations. Reported maximum 7-day average load is only 21,000 lbs/d. Consistent with 40 CFR Part 133.102 and TOGS 1.3.3 for POTWs, TBELs reflect secondary treatment standards. Given the available dilution, an effluent limitation equal to the TBEL, and consistent with TOGS 1.3.3, is protective of water quality standards.														
Settleable Solids	mL/L	Daily Max	0.3	0.1 (1 Detect)	1 / 59	**0.3**	TOGS 1.3.3	-	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages				703.2	-	TBEL
	59 data points were nondetect and one detection of 0.1 mL/L was observed in Mar 2023. An outlier of 90 mL/L (Aug 2022) was removed from EEQ calculations. Consistent with TOGS 1.3.3, the effluent limitation is equal to the TBEL of 0.3 mL/L for POTWs providing secondary treatment without filtration. Given that adequate dilution is available the TBEL is protective of WQS.														
Total Kjeldahl Nitrogen (TKN)	mg/L	Daily Max	Monitor	17	61 / 0	-	-	-	Narrative: None in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.				703.2	-	Discontinued
	Previous monitoring of TKN for informational purposes is being discontinued, given existing requirement for Ammonia monitoring and no water quality standard for TKN specifically.														
Total Phosphorus	mg/L	Monthly Avg	1.0	1.2	61 / 0	**1.0**	TOGS 1.3.3	-	Narrative: None in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.				703.2	-	TBEL

Outfall #	002	**Description of Wastewater:** Treated Combined Sewer Effluent														
		Type of Treatment: Screening, grit removal, primary settling, conventional secondary treatment, final clarification, disinfection[12]														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement	
			Permit Limit	Existing Effluent Quality[13]	# 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			
	The facility discharges to the Great Lakes and therefore is required to have a 1.0 mg/L MA limitation for Total Phosphorus. Of the 61 data points reviewed, 3 exceedances of the 1.0 mg/L limitation were observed. The existing 1.0 mg/L shall be continued.															
Nitrogen, Ammonia (as N) (June 1 – Oct 31)	mg/L	Daily Max	Monitor	8.8 (as NH_3)	26 / 0	**Monitor (MA)**	750-1.13 Monitor	0.1	0.55	1.2	A(C)	No Reasonable Potential		-	Monitor	
Nitrogen, Ammonia (as N) (Nov 1 – May 31)	mg/L	Daily Max	Monitor	11 (as NH_3)	34 / 1	**Monitor (MA)**	750-1.13 Monitor	0.1	0.63	1.9	A(C)					
	Monitoring in the 2014 permit for Ammonia is year-round, however the EEQ and reasonable potential analysis data presented above has been split into seasonal periods in order to appropriately assess reasonable potential against the seasonal water quality standards. Summer season: The projected instream concentration was calculated using the EEQ effluent concentration of 8.8 mg/L (as NH_3), a multiplier of 1.3, the human health/aesthetic/wildlife dilution ratio, and an assumed upstream ambient concentration of 0.1 mg/L. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation. Given the expected presence of ammonia in the effluent, monitoring shall be continued. Winter Season: The projected instream concentration was calculated using the EEQ effluent concentration of 11 mg/L (as NH_3), a multiplier of 1.2, the human health/aesthetic/wildlife dilution ratio, and an assumed upstream ambient concentration of 0.1 mg/L. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation. Given the expected presence of ammonia in the effluent, monitoring shall be continued. Reporting for Ammonia has been changed from (as NH_3) to (as N) for simpler data reporting, as this is consistent with the laboratory reporting units. Values can be converted using the equation: Ammonia (as N) = Ammonia (as NH_3) x 0.8224. Consistent with TOGS 1.3.1.E, the averaging period has been revised from Daily Maximum to Monthly Average. Sampling frequency remains as 1/month.															
Mercury, Total	ng/L	Daily Max	50	8.9	57 / 0	-	-	-	-	0.7	H(FC)	**50**	GLCA	-	DOW 1.3.10	
	ng/L	12 MRA	*Monitoring Not Currently Required*			-	-	-	-	-	-	**5.7**	-	-	DOW 1.3.10	

Outfall #	002	**Description of Wastewater:** Treated Combined Sewer Effluent **Type of Treatment:** Screening, grit removal, primary settling, conventional secondary treatment, final clarification, disinfection[12]													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data: Permit Limit	Existing Discharge Data: Existing Effluent Quality[13]	Existing Discharge Data: # of Data Points Detects / Non-Detects	TBELs: Limit	TBELs: Basis	Water Quality Data & WQBELs: Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL	ML	Basis for Permit Requirement
	See Mercury section of this fact sheet.														
Coliform, Fecal	#/100 mL	30d Geo Mean	200	57	61 / 0	**200**	TOGS 1.3.3	-	Narrative: The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.				703.4	-	TBEL
		7d Geo Mean	400	870	61 / 0	**400**	TOGS 1.3.3	-							
	An outlier measuring 9,078 cfu/100mL was recorded in July 2019 for 7d Geomean. Average 7d Geomean for Fecal Coliform was 260 cfu/100mL. Consistent with TOGS 1.3.3, effluent disinfection is required year-round due to the class of the receiving waterbody. Fecal coliform effluent limitations equal to the TBEL are specified.														
Total Residual Chlorine (TRC)	mg/L	Daily Max	2.0	1.8	61 / 0	**2.0**	TOGS 1.3.3	-	0.176	0.005	A(C)	0.1	703.5	-	WQBEL
	Effluent disinfection is currently required year-round and will remain a permit requirement. The WQBEL was calculated by multiplying the WQS by the chronic dilution ratio and a decay factor of five. Due to the low dilution, the calculated WQBEL is less than the TBEL and an effluent limitation equal to the WQBEL is appropriate.														
Phenols, Total	lbs/d	Monthly Avg	36.6	34	28 / 33	37	Antibacksliding	0	2.45 ug/L	1 ug/L	E	20 ug/L 30 lbs/d	703.5	-	WQBEL
	The projected instream concentration was calculated using effluent concentration data provided by the facility of 49 ug/L and a multiplier of 1.0. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the WQS indicates a reasonable potential to cause or contribute to a WQS violation. The previous effluent load limitation of 36.6 lbs/d has been discontinued in favor of a new effluent WQBELs for concentration and loading of 20 ug/L and 30 lbs/d, respectively.														
Cadmium, Total	lbs/d	Daily Max	30 - AL	0.21 (1 Detect)	1 / 60	30 - AL	TOGS 1.2.1	0	0.0131 ug/L	4.67 ug/L	A(A)	No Reasonable Potential		-	Discontinued
	Only 1 detection of 0.21 lbs/d reported (June 2023), concentration data is not reported under the 2014 permit. The projected instream concentration was calculated using an estimated effluent concentration of 0.14 ug/L (using 0.21 lbs/day & design flow of 180 MGD), a multiplier of 1.0, the acute dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A metals translator of 1.068 was also applied to convert between the total and dissolved form in accordance with the USEPA Document 823-B-96-007. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and the Action Level has been discontinued given only 1 detection.														
Chromium, Total	lbs/d	Daily Max	12.5 - AL	*No Detects*		13 - AL	TOGS 1.2.1	0	0 ug/L	85 ug/L	A(C)	No Reasonable Potential			Discontinued

Outfall #	002	**Description of Wastewater:** Treated Combined Sewer Effluent **Type of Treatment:** Screening, grit removal, primary settling, conventional secondary treatment, final clarification, disinfection[12]													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[13]	# 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		
	No detections reported of 61 samples, therefore there is no reasonable potential to cause or contribute to a WQS violation and the Action Level has been discontinued.														
Copper, Total	lbs/d	Daily Max	31.9 - AL	68	12 / 49	**32 - AL**	TOGS 1.2.1	0	See Dissolved Copper			No Reasonable Potential			Action Level
Copper, Dissolved	lbs/d	Daily Max	Monitor	48	13 / 48	Monitor	750-1.13 Monitor	0	4.35 ug/L	16 ug/L	A(A)				Discontinued
	The projected instream concentration was calculated using an estimated effluent concentration of 45.3 ug/L (using EEQ loading for Total Copper & design flow of 180 MGD), a multiplier of 1.0, the chronic dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A metals translator of 1.042 was also applied to convert between the total and dissolved form in accordance with the USEPA Document 823-B-96-007. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation. The Total Copper Action Level will be continued given the number of detections, however monitoring of Dissolved Copper has been discontinued. Reporting of Total Copper concentration data has been added.														
Total Cyanide	lbs/d	Daily Max	90.0 - AL	7.2	2 / 59	90 - AL	TOGS 1.2.1	0	0.24 ug/L	5.2 ug/L	A (C)	No Reasonable Potential		-	Discontinued
	Only 2 detections of Total Cyanide with an EEQ of 7.2 lbs/d reported, concentration data is not reported under the 2014 permit. The projected instream concentration was calculated using an estimated effluent concentration of 4.8 ug/L (using 7.2 lbs/day & design flow of 180 MGD), a multiplier of 1.0, the chronic dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. The WQS is as Free Cyanide, however no Free Cyanide data is available. For the reasonable potential analysis, all Total Cyanide data was conservatively assumed to be Free Cyanide. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and the Action Level has been discontinued given only 2 detections with a low projected instream concentration.														
Lead, Total	lbs/d	Daily Max	66.2 - AL	2.3 (1 Detect)	1 / 60	66 - AL	TOGS 1.2.1	0	0.06 ug/L	4.6 ug/L	A(C)	No Reasonable Potential		-	Discontinued
	Only 1 detection of 2.3 lbs/d reported (July 2021), concentration data is not reported under the 2014 permit. The projected instream concentration was calculated using an estimated effluent concentration of 1.5 ug/L (using 2.3 lbs/day & design flow of 180 MGD), a multiplier of 1.0, the chronic dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A metals translator of 1.306 was also applied to convert between the total and dissolved form in accordance with the USEPA Document 823-B-96-007. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and the Action Level has been discontinued given only 1 detection.														
Nickel, Total	lbs/d	Daily Max	43.8 - AL	5.9	2 / 59	44 - AL	TOGS 1.2.1	0	0.19 ug/L	60 ug/L	A(C)	No Reasonable Potential		-	Discontinued

Outfall #	002	**Description of Wastewater:** Treated Combined Sewer Effluent
		Type of Treatment: Screening, grit removal, primary settling, conventional secondary treatment, final clarification, disinfection[12]

Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[13]	# 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		
	Only 2 detections with an EEQ of 5.9 lbs/d reported, concentration data is not reported under the 2014 permit. The projected instream concentration was calculated using an estimated effluent concentration of 3.9 ug/L (using 5.9 lbs/day & design flow of 180 MGD), a multiplier of 1.0, the chronic dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A metals translator of 1.003 was also applied to convert between the total and dissolved form in accordance with the USEPA Document 823-B-96-007. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and the Action Level has been discontinued given only 2 detections with a low projected instream concentration.														
Zinc, Total	lbs/d	Daily Max	174 - AL	120	11 / 49	**170 - AL**	TOGS 1.2.1	0	See Dissolved Zinc			No Reasonable Potential		-	Action Level
Zinc, Dissolved	lbs/d	Daily Max	Monitor	150	29 / 32	Monitor	750-1.13 Monitor	0	11.3 ug/L	136 ug/L	A(A)			-	Discontinued
	The projected instream concentration was calculated using an estimated effluent concentration of 115.5 ug/L (using existing action level loading for Total Zinc & design flow of 180 MGD), a multiplier of 1.0, the acute dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A metals translator of 1.022 was also applied to convert between the total and dissolved form in accordance with the USEPA Document 823-B-96-007. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation. The Total Zinc Action Level will be continued given the number of detections, however monitoring of Dissolved Zinc has been discontinued. Reporting of Total Zinc concentration data has been added.														
Bis (2-Ethylhexyl) Phthalate	lbs/d	Daily Max	16.7 - AL	5.0 (Actual Average)	2 / 59	17 - AL	TOGS 1.2.1	0	0.54 ug/L	0.60 ug/L	A(C)	No Reasonable Potential		-	Discontinued
	A review of the data reported on the DMRs, indicates a maximum of 9.46 lbs/d and an actual average of 5.0 lbs/d. Concentration data is not reported under the 2014 permit. The concentration data from each DMR reported value was requested during permit development and indicated only two detections (July 2020 @ 10.8 ug/L and September 2021 @ 2.24 ug/L). The projected instream concentration was set using the maximum reported effluent concentration of 10.8 ug/L, a multiplier of 1.0, the chronic dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and the Action Level has been discontinued given only 2 detections with a low projected instream concentration.														
Additional Pollutants Reported in NY-2A Application															
Arsenic	ug/L	NY-2A	N/A	1.5	1 / 0	-	-	0	0.47	150	A(C)	No Reasonable Potential		-	No Limitation
	Only 1 detection was reported, with a value of 1.5 ug/L. The projected instream concentration was calculated using an estimated effluent concentration of 1.5 ug/L, a multiplier of 6.2, the chronic dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and no limitation is recommended.														

Outfall #	002	**Description of Wastewater:** Treated Combined Sewer Effluent													
		Type of Treatment: Screening, grit removal, primary settling, conventional secondary treatment, final clarification, disinfection[12]													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[13]	# 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		
Nitrate (as N)	mg/L	NY-2A	N/A	5.9	1 / 0	-	-	0	1800 ug/L	10,000 ug/L	H(WS)	No Reasonable Potential			No Limitation
	Only 1 detection was reported, with a value of 5.9 mg/L. The projected instream concentration was calculated using an estimated effluent concentration of 5.9 mg/L, a multiplier of 6.2, the HEW dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and no limitation is recommended.														
Nitrite (as N)	mg/L	NY-2A	N/A	0.84	5 / 0	-	-	0	96 ug/L	100 ug/L	A(C)	No Reasonable Potential		-	No Limitation
	Only 1 detection was reported in the application, with a value of 0.34 mg/L. The Department requested collection of an additional 4 samples during permit development, resulting in a maximum concentration of 0.84 mg/L. The projected instream concentration was calculated using the maximum effluent concentration of 0.84 mg/L, a multiplier of 2.3, the chronic dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and no limitation is recommended.														
Total Dissolved Solids (TDS)	mg/L	NY-2A	N/A	590	5 / 0	-	-	0	69	200	A(C)	No Reasonable Potential			No Limitation
	Only 1 detection was reported in the application, with a value of 500 mg/L. The Department requested collection of an additional 4 samples during permit development, resulting in a maximum concentration of 590 mg/L. The projected instream concentration was calculated using the maximum effluent concentration of 590 mg/L, a multiplier of 2.3, the chronic dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the WQS indicates no reasonable potential to cause or contribute to a WQS violation and no limitation is recommended.														
Other Miscellaneous NY-2A Detections	ng/L	NY-2A	N/A	See Notes	See Notes	-	-	-	-	-	-	-	-	-	No Limitation
	Additional Parameters detected in the NY-2A application sampling for which a WQS does not exist: Hardness (as CaCO3). Since a WQS does not exist, additional routine sampling is not required. However, these parameters will continue to be sampled as part of the Biennial Pollutant Scan and re-evaluated in the next permit modification.														

Emerging Contaminants – Outfall 002

Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[15]	# 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		
Notes: See Emerging Contaminant Monitoring section above. Effluent samples were analyzed for the 40 PFAS compounds and 1,4-Dioxane.															
Perfluoro-butanoic Acid (PFBA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-pentanoic Acid (PFPeA)	ng/L	Daily Max	-	9.5	2/0	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-hexanoic Acid (PFHxA)	ng/L	Daily Max	-	18	2/0	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-heptanoic Acid (PFHpA)	ng/L	Daily Max	-	2.5	2/0	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-octanoic Acid (PFOA)	ng/L	Daily Max	-	9.0 Actual Max	2/0	**10** Action Level	BPJ MCL	-	1.7	6.7 GV	H(WS)	No Reasonable Potential	TOGS 1.1.1	-	**Action Level**
	The projected instream concentration was calculated using the maximum measured effluent concentration of 9.0 ng/L, a multiplier of 3.8, the HEW dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the guidance value indicates no reasonable potential to cause or contribute to a water quality violation. However, due to the presence of PFOA and the need to protect downstream waters, an action level has been established at the NYSDOH Maximum Contaminant Level (MCL) for finished drinking water (10 ng/L). Discharges above the MCL would indicate the potential presence of a controllable source and the need to implement track down measures. See the Emerging Contaminant section for more information.														
Perfluoro-nonanoic Acid (PFNA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-decanoic Acid (PFDA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13

[15] 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)

Emerging Contaminants – Outfall 002

Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[15]	# 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		
Perfluoro-undecanoic Acid (PFUnA)	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-dodecanoic Acid (PFDoA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-tridecanoic Acid (PFTiA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-tetradecanoic Acid (PFTeA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-butanesulfonic Acid (PFBS)	ng/L	Daily Max	-	14	2/0	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-pentanesulfonic Acid (PFPeS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-hexanesulfonic Acid (PFHxS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-heptanesulfonic Acid (PFHpS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-octanesulfonic Acid (PFOS)	ng/L	Daily Max	-	4.4 Actual Max	2/0	**10** Action Level	BPJ MCL	-	0.8	2.7 GV	H (WS)	No Reasonable Potential	TOGS 1.1.1	-	**Action Level**
	The projected instream concentration was calculated using the maximum measured effluent concentration of 4.4 ng/L, a multiplier of 3.8, the HEW dilution ratio, and an assumed negligible upstream ambient concentration. The multiplier was selected from USEPA's Technical Support Document Chapter 3.3 to account for the number of samples. A comparison of the projected instream concentration to the guidance value indicates no reasonable potential to cause or contribute to a water quality violation. However, due to the presence of PFOS and the need to protect downstream waters, an action level has been established at the NYSDOH Maximum Contaminant Level (MCL) for finished drinking water (10 ng/L). Discharges above the MCL would indicate the potential presence of a controllable source and the need to implement track down measures. See the Emerging Contaminant section for more information.														

Emerging Contaminants – Outfall 002

Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[15]	# 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		
Perfluoro-nonanesulfonic Acid (PFNS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-decanesulfonic Acid (PFDS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-dodecane-sulfonic Acid (PFDoS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-octane-sulfonamide (FOSA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
N-methyl Perfluoro-octanesulfon-amidoacetic Acid (NMeFOSAA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
N-ethyl Perfluoro-octanesulfon-amidoacetic Acid (NEtFOSAA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
1H,1H,2H,2H-Fluorotelomer Sulfonic Acid (4:2 FTS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
1H,1H,2H,2H-Fluorotelomer Sulfonic Acid (6:2 FTS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
1H,1H,2H,2H-Fluorotelomer Sulfonic Acid (8:2 FTS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
N-ethyl Perfluoro-octanesulfon-	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13

Emerging Contaminants – Outfall 002

Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[15]	# 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		
amide (NEtFOSA)	Monitoring has been added to support establishment of future standards or TBELs.														
N-methyl Perfluoro-octanesulfon-amide (NMeFOSA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
N-methyl Perfluoro-octanesulfon-amidoethanol (NMeFOSE)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
N-ethyl Perfluoro-octanesulfon-amidoethanol (NEtFOSE)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
9-Chlorohexadeca-fluoro-3-oxanonane-1-sulfonic Acid (9Cl-PF3ONS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Hexafluoro-propylene Oxide Dimer Acid (HFPO-DA or GenX)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
11-Chloroeicosafluor o-3-oxaundecane-1-sulfonic Acid (11Cl-PF3OUdS)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
4,8-Dioxa-3H-perfluorononanoi c Acid (ADONA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13

Emerging Contaminants – Outfall 002

Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[15]	# 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		
3-Perfluoropropyl Propanoic Acid (3:3 FTCA)	Monitoring has been added to support establishment of future standards or TBELs.														
2H,2H,3H,3H-Perfluoro-octanoic Acid (5:3 FTCA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
3-Perfluoroheptyl Propanoic Acid (7:3 FTCA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Nonafluoro-3,6-dioxaheptanoic Acid (NFDHA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-4-methoxy-butanoic Acid (PFMBA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro-3-methoxy-propanoic Acid (PFMPA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
Perfluoro(2-ethoxyethane)sulfonic Acid (PFEESA)	ng/L	Daily Max	-	No Detects	0/2	-	-	-	-	-	-	-	-	-	**Monitor** 750-1.13
	Monitoring has been added to support establishment of future standards or TBELs.														
1,4-Dioxane	µg/L	Daily Max	-	0.22 Actual Max	2/0	-	-	-	0.0015	0.35 GV	H (WS)	No Reasonable Potential	TOGS 1.1.1	-	No Limitation
	Based on available data no additional monitoring is required at this time.														

Outfall 01A

Outfall #	01A	**Description of Wastewater:** Untreated Combined Sewer Effluent – Headworks Bypass						
		Type of Treatment: Partial Screening Available[16]						
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[17]	# of Data Points Detects / Non-Detects	Limit	Basis	
General Notes: Existing discharge data from June 2018 to June 2023 was obtained from Discharge Monitoring Reports provided by the permittee. This outfall is only utilized to bypass the WWTF in emergency situations or when necessary equipment is out of service. This is considered a CSO outfall, as bypass primarily occurs prior to the screens of the WWTF. When discharge does occur, monitoring is required.								
Flow, Monthly Total	MGal/mo	Monthly Avg (Estimate)	Monitor	8.33 Actual Average	31/0	Monitor	750-1.13 Monitor	Monitor
	October 2020 contains an outlier of 169.6 MG. Without this datapoint, monthly average is 2.95 MG. Flow will continue to be monitored for informational purposes and to calculate pollutant loadings.							
5- Day Biochemical Oxygen Demand (BOD_5)	mg/L	Daily Max	Monitor	119 Actual Average	31/0	Monitor	750-1.13 Monitor	Monitor
	BOD_5 will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Oil and Grease	mg/L	Daily Max	Monitor	14 Actual Average	30/0	Monitor	750-1.13 Monitor	Monitor
	Oil and Grease will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Solids, Settleable	mg/L	Daily Max	Monitor	4.8 Actual Average	31/0	Monitor	750-1.13 Monitor	Monitor
	Settleable Solids will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Solids, Total Suspended	mg/L	Daily Max	Monitor	274 Actual Average	31/0	Monitor	750-1.13 Monitor	Monitor
	Total Suspended Solids will continue to be monitored for informational purposes and to calculate pollutant loadings.							

[16] Bypass can occur before or after course bar screening.

[17] 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 001

Outfall #	001	**Description of Wastewater:** Partially Treated Combined Sewer Effluent						
		Type of Treatment: Screening, grit removal, primary settling, disinfection[18]						
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[19]	# of Data Points Detects / Non-Detects	Limit	Basis	
General Notes: Existing discharge data from June 2018 to June 2023 was obtained from Discharge Monitoring Reports provided by the permittee. This outfall is only utilized when the WWTF is operating in partial treatment mode during wet-weather events. This is considered a CSO-related bypass outfall, as discharge occurs after preliminary and primary treatment at the WWTF. When discharge does occur, monitoring is required. The discharge from this outfall is disinfected.								
Flow, Monthly Total	MGal/mo	Monthly Avg	Monitor	327 Actual Average	61 / 0	Monitor	750-1.13 Monitor	Monitor
	Flow will continue to be monitored for informational purposes and to calculate pollutant loadings.							
5- Day Biochemical Oxygen Demand (BOD_5)	mg/L	Daily Max	Monitor	99.7 Actual Average	61/0	Monitor	750-1.13 Monitor	Monitor
	BOD_5 will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Solids, Total	mg/L	Daily Max	Monitor	130 Actual Average	61 / 0	Monitor	750-1.13 Monitor	Monitor
Suspended	Total Suspended Solids will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Solids, Settleable	mg/L	Daily Max	Monitor	2.34 Actual Average	61/0	Monitor	750-1.13 Monitor	Monitor
	Settleable Solids will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Ammonia as N	mg/L	Daily Max	Monitor	5.34 Actual Average	61/0	Monitor	750-1.13 Monitor	Monitor
	lbs/d			2440 Actual Average	61/0	Monitor	750-1.13 Monitor	Monitor
	Ammonia will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Total Kjeldahl	mg/L	Daily Max	Monitor	10.5 Actual Average	61/0	-	-	Discontinued
Nitrogen (TKN)	TKN was previously monitored consistent with Outfall 002, for data collection and analysis. Since TKN monitoring is no longer necessary and is being discontinued at Outfall 002, monitoring for TKN has also been discontinued at 001.							

[18] Treatment describes standard operational mode. Primary Bypass bypasses primary settling.

[19] 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 #	001	**Description of Wastewater:** Partially Treated Combined Sewer Effluent						
		Type of Treatment: Screening, grit removal, primary settling, disinfection[18]						
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[19]	# of Data Points Detects / Non-Detects	Limit	Basis	
Total Phosphorus	mg/L	Daily Max	Monitor	2.07 Actual Average	61/0	Monitor	750-1.13 Monitor	Monitor
	Total Phosphorus will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Oil & Grease	mg/L	Daily Max	Monitor	41.8 Actual Average	60/0	Monitor	750-1.13 Monitor	Monitor
	Data for March 2022 unavailable. Oil & Grease will continue to be monitored for informational purposes and to calculate pollutant loadings.							
Fecal Coliform	No./ 100 ml	30d Geo Mean	Monitor	250,000 Actual Average	61/0	Monitor	750-1.13 Monitor	Monitor
	No./ 100 ml	7d Geo Mean		1,340,000 Actual Average	61/0	400	TOGS 1.3.3	TBEL
	Given the installation of High-Rate Disinfection technology at this outfall, a 7-day geomean limit for Fecal Coliform is being added.							
Total Residual Chlorine (TRC)	mg/L	Daily Max	2.0	1.15 Actual Average	61/0	2.0	Anti-backsliding	TBEL
	Total Residual Chlorine will continue to be limited for protection of the receiving water.							

Appendix: Regulatory and Technical Basis of Permit Authorizations

The Appendix is meant to supplement the fact sheet 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 fact sheet:

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 a USEPA-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 fact sheet. Consistent with current case law[20] and USEPA interpretation[21] 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.

[20] American Iron and Steel Institute v. Environmental Protection Agency, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997)
[21] 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)

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 are summarized in TOGS 1.3.3. Where the TBEL is more stringent than the WQBEL, the TBEL is applied as a limit in accordance with 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. There are no federal technology-based standards for toxic pollutants from POTWs. A statistical analysis of existing effluent data, as described in TOGS 1.2.1, may be used to establish other performance-based TBELs.

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. Additionally, 6 NYCRR Part 701.1 prohibits the discharge of pollutants that will cause impairment of the best usages of the receiving water as specified by the water classifications at the location of discharge and at other locations that may be affected by such discharge. 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 at the point of discharge and in downstream waters 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 USEPA'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.

The Division of Water has been using the TMDL approach in permit limit development for the control of toxic substances. Since the early 1980's, the loading capacity for specific pollutants has been determined for each drainage basin. Water quality-limiting segments and pollutants have been identified, TMDLs, wasteload allocations and load allocations have been developed, and permits with water quality-based effluent limits have been issued. In accordance with TOGS 1.3.1, the Division of Water implements a Toxics Reduction Strategy which is committed to the application of the TMDL process using numeric, pollutant-specific water quality standards through the Watershed Approach. The Watershed Approach accounts for the cumulative effect of multiple discharges of conservative toxic pollutants to ensure water quality standards are met in downstream segments.

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 USEPA'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 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

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

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.

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.