

**New York City Department of Environmental Protection
Bureau of Water Supply**

**WWTP Water Quality Sampling Monitoring Semiannual Report
(July 1 – December 31, 2020)**

March 2021

*Prepared in accordance with Section 6.2 of the NYSDOH
2017 Filtration Avoidance Determination*



Prepared by: DEP, Bureau of Water Supply

Summary

The enclosed information was prepared in accordance with DEP's 2017 Long-term Watershed Protection Program and NYSDOH's 2017 Filtration Avoidance Determination. It reports the results of DEP's monitoring of all New York City-owned wastewater treatment plants (WWTPs) and all non-City-owned WWTPs discharging in the Catskill and Delaware (CAT/DEL) watersheds from July 1, 2020 through December 31, 2020. Notably, for this period, monitoring was only conducted at NYC-owned plants due to reduced sampling associated with CoVID-19. The Croton Falls and Cross River basins, located east of the Hudson River, are only considered part of the FAD watershed when the pump stations for those reservoirs are in operation. These two pump stations were not in operation during the latter half of 2020, therefore results from WWTPs discharging in these basins are not included in this report.

The data are divided into two tables, and there is a third table containing data qualifiers. The first table lists all of the DEP water quality samples that contravened State Pollutant Discharge Elimination System (SPDES) limits. The second table is a listing of the raw data for all samples collected in this half-year period. Note that DEP's water quality samples are surveillance samples, not regulatory, and single samples that exceed limits may not constitute a true SPDES violation. In previous reports, an additional table was included (formerly Table 2); however, information in that table already existed in other tables in the report, and DEP successfully sought permission from NYSDOH and US EPA to eliminate it from this report and in the future.

The second table of this report includes raw data and, as such, includes coding conventions where applicable. Parameters not detected in the effluent are indicated with a "<" sign and the reporting level. For example, settleable solids <0.10 mgL⁻¹ means that the settleable solids concentration in the effluent was less than the reporting level of 0.10 mgL⁻¹. Errors occurring in the field or in the lab are noted by "Error". Fcoli code E means estimated. This report mainly tabulates effluent data; however, influent data are included and marked with an "*" in Tables 2 and 3 for the five plants that require percent removal calculations (Grand Gorge, Pine Hill, Tannersville, Grahamsville, and Margaretville).

Due to the CoVID-19 pandemic, water quality monitoring reductions were made throughout the watershed in March of 2020, which carried through this reporting period. The impact of the DEP's CoVID Reduced Monitoring Plan on the WQ WWTP program was that only NYC-owned WWTPs were monitored from July 1 through December 31, 2020.

Table 1. DEP samples that contravened SPDES limits July – December 2020.

Catskill System:

<u>Facility</u>	<u>Date</u>	<u>Parameter</u>	<u>Daily Measurement</u>	<u>SPDES Limit</u>
None				

Delaware System:

<u>Facility</u>	<u>Date</u>	<u>Parameter</u>	<u>Daily Measurement</u>	<u>SPDES Limit</u>
None				

East of Hudson System (Croton Falls and Cross River):

<u>Facility</u>	<u>Date</u>	<u>Parameter</u>	<u>Daily Measurement</u>	<u>SPDES Limit</u>
Not in operation				

Catskill System

Table 2. Raw Data for CAT/DEL WWTP effluent samples collected July – December 2020. Influent data (*) is included for the five plants that require percent removal calculations (Grand Gorge, Pine Hill, Tannersville, Grahamsville, and Margaretville).

Plant	Sample Date	Flow (MGD)	BOD5 (mg/L)	CBOD5 (mg/L)	CL (mg/L)	DO (mg/L)	Fcoli (FC/100mL)	NH3 (mg/L)	NO3 (mg/L)	pH (SU)	SETSLDS (mg/L)	SUSPSLDS (mg/L)	TCR (mg/L)	Temperature (°C)	TP (mg/L)	Turbidity (NTU)	MBAS (mg/L)	TDS (mg/L)	TKN (mg/L)	
Grand Gorge*	2020-07-07			129								136								
Grand Gorge	2020-07-07			<3.0				<0.20				<1.0			0.035					
Grand Gorge	2020-07-08						<1													
Grand Gorge*	2020-07-21			223								293								
Grand Gorge	2020-07-21			<3.0				<0.20				<1.1			0.030					
Grand Gorge	2020-07-22						<1													
Grand Gorge*	2020-08-04			168								300								
Grand Gorge	2020-08-04			<3.0				<0.20				<1.1			0.032					
Grand Gorge	2020-08-05						<1													
Grand Gorge*	2020-08-18			117								158								
Grand Gorge	2020-08-18			<3.0				<0.20				<1.1			0.057					
Grand Gorge	2020-08-19						<1													
Grand Gorge*	2020-09-01			91.6								66								
Grand Gorge	2020-09-01			<3.0				<0.20				<1.1			0.043					
Grand Gorge	2020-09-02						<1													
Grand Gorge*	2020-09-15			Error								105								
Grand Gorge	2020-09-15			Error				<0.20				<1.1			0.019					
Grand Gorge	2020-09-16						<1													
Grand Gorge*	2020-09-29			133																
Grand Gorge	2020-09-29			<3.0																
Grand Gorge*	2020-10-06			116								77.3								
Grand Gorge	2020-10-06			<3.0				<0.20				<1.1			0.022					
Grand Gorge	2020-10-07						<1													
Grand Gorge*	2020-10-20			113								109								
Grand Gorge	2020-10-20			<3.0				<0.20				<1.0			0.016					
Grand Gorge	2020-10-21						<1													
Grand Gorge*	2020-11-04			78.7								61.6								
Grand Gorge	2020-11-04			<3.0				<0.20				<1.1			Error					
Grand Gorge	2020-11-04														0.013					
Grand Gorge	2020-11-05						<1													
Grand Gorge*	2020-11-17			79								68.9								
Grand Gorge	2020-11-17			<3.0				<0.20				<1.0			0.016					
Grand Gorge	2020-11-18						<1													
Grand Gorge*	2020-12-01			37.2								36.4								
Grand Gorge	2020-12-01			<3.0				<0.20				<1.1			0.027					
Grand Gorge	2020-12-02						<1													
Grand Gorge*	2020-12-15			97.2								85.7								
Grand Gorge	2020-12-15			<3.0				<0.20				<1.1			0.015					
Grand Gorge	2020-12-16						<1													
Pine Hill*	2020-07-07		430									557								
Pine Hill	2020-07-07		<3.0					<0.20				<1.0			0.029					
Pine Hill	2020-07-08						<1													

Catskill System

Plant	Sample Date	Flow	BOD5	CBOD5	CL	DO	FColi	NH3	NO3	pH	SETSLDS	SUSPSLDS	TCR	Temperature	TP	Turbidity	MBAS	TDS	TKN
Pine Hill*	2020-07-21		104									141							
Pine Hill	2020-07-21		<3.0					<0.20				<1.1			0.045				
Pine Hill	2020-07-22						<1												
Pine Hill*	2020-08-04		535									790							
Pine Hill	2020-08-04		<3.0					<0.20				<1.1			0.029				
Pine Hill	2020-08-05						<1												
Pine Hill*	2020-08-18		208									292							
Pine Hill	2020-08-18		<3.0					<0.20				<1.1			0.030				
Pine Hill	2020-08-19						<1												
Pine Hill*	2020-09-01		58									50.3							
Pine Hill	2020-09-01		<3.0					<0.20				<1.1			0.033				
Pine Hill	2020-09-02						<1												
Pine Hill*	2020-09-15		92.8									53.6							
Pine Hill	2020-09-15		<3.0					<0.20				<1.1			0.032				
Pine Hill	2020-09-16						<1												
Pine Hill*	2020-10-06		68									30.8							
Pine Hill	2020-10-06		<3.0					<0.20				<1.1			0.017				
Pine Hill	2020-10-07						<1												
Pine Hill*	2020-10-20		395									686							
Pine Hill	2020-10-20		<3.0					<0.20				<1.1			0.016				
Pine Hill	2020-10-21						<1												
Pine Hill*	2020-11-04		94.8									68							
Pine Hill	2020-11-04		<3.0					<0.20				<1.1			0.022				
Pine Hill	2020-11-05						<1												
Pine Hill*	2020-11-17		58.4									60							
Pine Hill	2020-11-17		<3.0					<0.20				<1.1			0.035				
Pine Hill	2020-11-18						<1												
Pine Hill*	2020-12-01		26.9									44.5							
Pine Hill	2020-12-01		<3.0					<0.20				<1.1			0.023				
Pine Hill	2020-12-02						<1												
Pine Hill*	2020-12-15		53.9									20.2							
Pine Hill	2020-12-15		<3.0					<0.20				<1.1			0.011				
Pine Hill	2020-12-16						<1												
Tannersville*	2020-07-07			162								158							
Tannersville	2020-07-07			<3.0				<0.20				<1.1			0.091				
Tannersville	2020-07-08						<1												
Tannersville*	2020-07-21			174								233							
Tannersville	2020-07-21			<3.0				<0.20				<1.1			0.047				
Tannersville	2020-07-22						<1												
Tannersville*	2020-08-04			163								258							
Tannersville	2020-08-04			<3.0				<0.20				<1.0			0.092				
Tannersville	2020-08-05						<1												

Catskill System

Plant	Sample Date	Flow	BOD5	CBOD5	CL	DO	FColi	NH3	NO3	pH	SETSLDS	SUSPSLDS	TCR	Temperature	TP	Turbidity	MBAS	TDS	TKN
Tannersville*	2020-08-18			116								131							
Tannersville	2020-08-18			<3.0				<0.20				<1.0			0.144				
Tannersville	2020-08-19						<1												
Tannersville*	2020-09-01			124								155							
Tannersville	2020-09-01			<3.0				<0.20				<1.1			0.059				
Tannersville	2020-09-02						<1												
Tannersville*	2020-09-15			Error								169							
Tannersville	2020-09-15			Error				<0.20				<1.1			0.053				
Tannersville	2020-09-16						<1												
Tannersville*	2020-09-29			182															
Tannersville	2020-09-29			<3.0															
Tannersville*	2020-10-06			127								132							
Tannersville	2020-10-06			<3.0				<0.20				<1.1			0.031				
Tannersville	2020-10-07						<1												
Tannersville*	2020-10-20			115								115							
Tannersville	2020-10-20			<3.0				<0.20				<1.0			0.024				
Tannersville	2020-10-21						<1												
Tannersville*	2020-11-04			92.8								76							
Tannersville	2020-11-04			<3.0				<0.20				<1.0			Error				
Tannersville	2020-11-04														0.011				
Tannersville	2020-11-05						<1												
Tannersville*	2020-11-17			70								80.4							
Tannersville	2020-11-17			<3.0				<0.20				<1.1			0.012				
Tannersville	2020-11-18						<1												
Tannersville*	2020-12-01			47.4								60.7							
Tannersville	2020-12-01			<3.0				<0.20				<1.1			0.024				
Tannersville	2020-12-02						<1												
Tannersville*	2020-12-15			>153								167							
Tannersville	2020-12-15			<3.0				<0.20				<1.1			0.010				
Tannersville	2020-12-16						<1												

Delaware System

Plant	Sample Date	Flow	BOD5	CBOD5	CL	DO	FColi	NH3	NO3	pH	SETSLDS	SUSPSLDS	TCR	Temperature	TP	Turbidity	MBAS	TDS	TKN
Grahamsville*	2020-07-01			117								126							
Grahamsville	2020-07-01			<3.0				<0.20				<1.0			0.057				
Grahamsville	2020-07-01						E2												
Grahamsville*	2020-08-04			44								59.6							
Grahamsville	2020-08-04			<3.0				<0.20				<1.0			0.049				
Grahamsville	2020-08-04						23												
Grahamsville*	2020-09-01			94.4								79.1							
Grahamsville	2020-09-01			<3.0				<0.20				<1.1			0.040				
Grahamsville	2020-09-01						<1												
Grahamsville*	2020-10-06			111								163							
Grahamsville	2020-10-06			<3.0				<0.20				<1.1			0.041				
Grahamsville	2020-10-06						<1												
Grahamsville*	2020-11-04			83								41.1							
Grahamsville	2020-11-04			<3.0				<0.20				<1.0			Error				
Grahamsville	2020-11-04														0.019				
Grahamsville	2020-11-04						<1												
Grahamsville*	2020-12-01			70.2								64.1							
Grahamsville	2020-12-01			<3.0				<0.20				<1.1			0.015				
Grahamsville	2020-12-01						<1												
Margaretville*	2020-07-07			245								274							
Margaretville	2020-07-07			<3.0				<0.20				<1.1			0.109				
Margaretville	2020-07-08						<1												
Margaretville*	2020-07-21			202								633							
Margaretville	2020-07-21			<3.0				<0.20				<1.1			0.105				
Margaretville	2020-07-22						<1												
Margaretville*	2020-08-04			170								385							
Margaretville	2020-08-04			<3.0				<0.20				<1.1			0.124				
Margaretville	2020-08-05						<1												
Margaretville*	2020-08-18			274								398							
Margaretville	2020-08-18			<3.0				<0.20				1.6			0.111				
Margaretville	2020-08-19						<1												
Margaretville*	2020-09-01			214								300							
Margaretville	2020-09-01			<3.0				<0.20				<1.0			0.162				
Margaretville	2020-09-02						E1												
Margaretville*	2020-09-15			Error								383							
Margaretville	2020-09-15			Error				<0.20				<1.1			0.122				
Margaretville	2020-09-16						<1												
Margaretville*	2020-09-29			194															
Margaretville	2020-09-29			<3.0															
Margaretville*	2020-10-06			173								178							
Margaretville	2020-10-06			<3.0				<0.20				<1.0			0.122				
Margaretville	2020-10-07						<1												

Delaware System

Plant	Sample Date	Flow	BOD5	CBOD5	CL	DO	FColi	NH3	NO3	pH	SETSLDS	SUSPSLDS	TCR	Temperature	TP	Turbidity	MBAS	TDS	TKN
Margaretville*	2020-10-20			220								435							
Margaretville	2020-10-20			<3.0				<0.20				<1.1			0.126				
Margaretville	2020-10-21						<1												
Margaretville*	2020-11-04			153								186							
Margaretville	2020-11-04			<3.0				<0.20				<1.0			Error				
Margaretville	2020-11-04														0.116				
Margaretville	2020-11-05						<1												
Margaretville*	2020-11-17			155								133							
Margaretville	2020-11-17			<3.0				<0.20				<1.1			0.129				
Margaretville	2020-11-18						<1												
Margaretville*	2020-12-01			95								143							
Margaretville	2020-12-01			<3.0				<0.20				<1.0			0.142				
Margaretville	2020-12-02						<1												
Margaretville*	2020-12-15			165								230							
Margaretville	2020-12-15			<3.0				<0.20				<1.1			0.078				
Margaretville	2020-12-16						E5												

Table 3. Data Qualifiers

Plant	Analyte	Sample Date	Sample ID	Qualifier
Grand Gorge*	CBOD	2020-09-15	K-2003054-04	QC failed.
Grand Gorge	CBOD	2020-09-15	K-2003054-05	QC failed.
Grand Gorge*	CBOD	2020-10-20	K-2003494-04	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Grand Gorge	CBOD	2020-10-20	K-2003494-05	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Grand Gorge	Phosphorus, Total (as P)	2020-11-04	K-2003688-05	Data reanalyzed. Result associated with a QC that had an analytical procedure error.
Grand Gorge*	CBOD	2020-11-17	K-2003939-04	Result is associated with a calibration check that fails the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Grand Gorge	CBOD	2020-11-17	K-2003939-05	Result is associated with a calibration check that fails the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Pine Hill*	BOD	2020-10-20	K-2003494-07	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Pine Hill	BOD	2020-10-20	K-2003494-12	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Pine Hill*	BOD	2020-11-17	K-2003939-07	Result is associated with a calibration check that fails the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Pine Hill	BOD	2020-11-17	K-2003939-12	Result is associated with a calibration check that fails the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Pine Hill*	BOD	2020-12-15	K-2004245-07	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Pine Hill	BOD	2020-12-15	K-2004245-12	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Tannersville*	CBOD	2020-09-15	K-2003054-01	QC failed.
Tannersville	CBOD	2020-09-15	K-2003054-02	QC failed.
Tannersville*	CBOD	2020-10-20	K-2003494-01	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Tannersville	CBOD	2020-10-20	K-2003494-02	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Tannersville	Phosphorus, Total (as P)	2020-11-04	K-2003688-02	Data reanalyzed. Result associated with a QC that had an analytical procedure error.
Tannersville*	CBOD	2020-11-17	K-2003939-01	Result is associated with a calibration check that fails the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Tannersville	Ammonia (as NH3)	2020-11-17	K-2003939-02	Sample frozen with visible ice crystals.
Tannersville	CBOD	2020-11-17	K-2003939-02	Sample frozen with visible ice crystals.
Tannersville	Solids, Total Suspended	2020-11-17	K-2003939-02	Sample frozen with visible ice crystals.
Tannersville	Phosphorus, Total (as P)	2020-11-17	K-2003939-02	Sample frozen with visible ice crystals.
Tannersville	CBOD	2020-11-17	K-2003939-02	Result is associated with a calibration check that fails the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Tannersville*	CBOD	2020-12-15	K-2004245-01	Result is an estimate. No sample dilution met the criteria of a minimum final DO residual of 1.00 mg/L.
Grahamsville*	CBOD	2020-07-01	G-2002015-01	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Grahamsville	CBOD	2020-07-01	G-2002015-02	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Grahamsville	Phosphorus, Total (as P)	2020-11-04	G-2003809-02	Data reanalyzed. Result associated with a QC that had an analytical procedure error.
Margaretville*	CBOD	2020-09-15	K-2003054-09	QC failed.
Margaretville	CBOD	2020-09-15	K-2003054-10	QC failed.
Margaretville*	CBOD	2020-10-20	K-2003494-09	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Margaretville	CBOD	2020-10-20	K-2003494-10	Result is associated with a calibration check that failed the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Margaretville	Phosphorus, Total (as P)	2020-11-04	K-2003688-10	Data reanalyzed. Result associated with a QC that had an analytical procedure error.
Margaretville*	CBOD	2020-11-17	K-2003939-09	Result is associated with a calibration check that fails the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Margaretville	CBOD	2020-11-17	K-2003939-10	Result is associated with a calibration check that fails the requirement. All other calibration QC, including the analytical QC, was satisfactory.
Margaretville	Phosphorus, Total (as P)	2020-11-17	K-2003939-10	Sample frozen with visible ice crystals.
Margaretville	CBOD	2020-11-17	K-2003939-10	Sample frozen with visible ice crystals.
Margaretville	Solids, Total Suspended	2020-11-17	K-2003939-10	Sample frozen with visible ice crystals.
Margaretville	Ammonia (as NH3)	2020-11-17	K-2003939-10	Sample frozen with visible ice crystals.