New York City Department of Environmental Protection
Bureau of Water Supply

WWTP Water Quality Sampling Monitoring Semiannual Report
(January 1 – June 30, 2021)

September 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 January 1, 2021 through June 30, 2021. Notably, for this period, monitoring was, in large part, only conducted at NYC-owned plants due to condensed monitoring associated with CoVID-19 reductions. 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 first half of 2021, 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 most of this reporting period. The impact of the DEP's CoVID Reduced Monitoring Plan on the WQ WWTP program was that, for the most part, only NYC-owned WWTPs were monitored from January 1 through June 30, 2021.

Table 1. DEP samples that contravened SPDES limits January – June 2021.

Catskill System:

Facility	Date	Parameter	Daily Measurement	SPDES Limit
Trailside at Hunter LLC	6/16/2021	Total Suspended Solids	12.0	10 mg/L
Trailside at Hunter LLC	6/16/2021	Dissolved Oxygen	4.8	≥7 mg/L

Delaware System:

Facility	Date	Parameter	Daily Measurement	SPDES Limit
Grahamsville (NYCDEP)	2/02/2021	CBOD5	17.3	5 mg/L

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

Facility	Date	Parameter	Daily Measurement	SPDES Limit

Not in operation

Table 2. Raw Data for CAT/DEL WWTP effluent samples collected January – June 2021. Influent data (*) is included for the five plants that require percent removal calculations (Grand Gorge, Pine Hill, Tannersville, Grahamsville, and Margaretville).

Catskill System

Plant	Sample Date	Flow (MGD	BOD5 (mg/L)	CBOD5 (mg/L)	CL (mg/L	DO (mg/	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*	1/5/2021			77								69.8							
Grand Gorge	1/5/2021			<3.0				Error				<1.1			8				
Grand Gorge	1/5/2021							<0.20											
Grand Gorge	1/6/2021						<1												
Grand Gorge*	1/19/2021			109								64.3							
Grand Gorge	1/19/2021			<3.0				<0.20				<1.0			6				
Grand Gorge	1/20/2021						<1												
Grand Gorge*	2/2/2021			83.8								92.5							
Grand Gorge	2/2/2021			<3.0				<0.20				<1.1			12				
Grand Gorge	2/3/2021						<1												
Grand Gorge*	2/16/2021			91.6								128							
Grand Gorge	2/16/2021			<3.0				<0.20				<1.1			11				
Grand Gorge	2/17/2021						<1												
Grand Gorge*	3/2/2021			35.8								44.4							
Grand Gorge	3/2/2021			<3.0				<0.20				<1.0			13				
Grand Gorge	3/3/2021						<1												
Grand Gorge*	3/16/2021			49								61.3							
Grand Gorge	3/16/2021			<3.0				<0.20				<1.0			9				
Grand Gorge	3/17/2021						<1												
Grand Gorge*	4/6/2021			58.1								81							
Grand Gorge	4/6/2021			<3.0				<0.20				<1.0			12				
Grand Gorge	4/7/2021						<1												
Grand Gorge*	4/20/2021			56								62.4							
Grand Gorge	4/20/2021			<3.0				<0.20				<1.1			17				
Grand Gorge	4/21/2021						<1												
Grand Gorge*	5/4/2021			38.9								54							
Grand Gorge	5/4/2021			<3.0				<0.20				<1.1			17				
Grand Gorge	5/5/2021						<1												
Grand Gorge*	5/18/2021			77								91							
Grand Gorge	5/18/2021			<3.0				<0.20				<1.0			19				
Grand Gorge	5/19/2021						<1												
Grand Gorge*	6/1/2021			59.3								64.7							
Grand Gorge	6/1/2021			<3.0				<0.20				<1.0			29				
Grand Gorge	6/2/2021						<1												
Grand Gorge*	6/15/2021			47.2								57.3							
Grand Gorge	6/15/2021			<3.0				<0.20				<1.0			99				
Grand Gorge	6/16/2021						<1												
Hunter Highlands	6/16/2021														259				
Hunter Highlands	6/16/2021			4.3		4.8	<1	<0.20		6.78	<0.1	12	<0.05	19.8	Error	3.4			

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*	1/5/2021		59									42.1							
Pine Hill	1/5/2021		<3.0					Error				<1.1			11				
Pine Hill	1/5/2021							<0.20											
Pine Hill	1/6/2021						<1												
Pine Hill*	1/19/2021		111									54.4							
Pine Hill	1/19/2021		<3.0					<0.20				<1.0			11				
Pine Hill	1/20/2021						<1												
Pine Hill*	2/2/2021		84.6									45.1							
Pine Hill	2/2/2021		<3.0					<0.20				<1.0			21				
Pine Hill	2/3/2021						<1												
Pine Hill*	2/16/2021		174									156							
Pine Hill	2/16/2021		<3.0					<0.20				<1.1			28				
Pine Hill	2/17/2021						<1												
Pine Hill*	3/2/2021		70.4									68.4							
Pine Hill	3/2/2021		<3.0					<0.20				<1.1			17				
Pine Hill	3/3/2021						<1												
Pine Hill*	3/16/2021		42.2									27							
Pine Hill	3/16/2021		<3.0					<0.20				<1.1			15				
Pine Hill	3/17/2021						<1												
Pine Hill*	4/6/2021		46									41							
Pine Hill	4/6/2021		<3.0					<0.20				<1.1			8				
Pine Hill	4/7/2021						<1												
Pine Hill	4/20/2021		46.7									32.2							
Pine Hill	4/20/2021		<3.0					<0.20				<1.0			11				
Pine Hill	4/21/2021						<1												
Pine Hill*	5/4/2021		56.8									61.2							
Pine Hill	5/4/2021		<3.0					<0.20				<1.1			12				
Pine Hill	5/5/2021						<1												
Pine Hill*	5/18/2021		89.6									86.4							
Pine Hill	5/18/2021		<3.0					<0.20				<1.1			13				
Pine Hill	5/19/2021						<1												
Pine Hill*	6/1/2021		31.4									67.2							
Pine Hill	6/1/2021		<3.0					<0.20				<1.1			24				
Pine Hill	6/2/2021						<1												
Pine Hill*	6/15/2021		43.9									77.4							
Pine Hill	6/15/2021		<3.0					<0.20				<1.1			31				
Pine Hill	6/16/2021						<1												
Tannersville*	1/5/2021			111								111							
Tannersville	1/5/2021			<3.0				Error				<1.0			5				

Catskill System

Plant	Sample Date	Flow	BOD5	CBOD5	CL	DO	FColi	NH3	NO3	pH	SETSLDS	SUSPSLDS	TCR	Temperature	TP	Turbidity	MBAS	TDS	TKN
Tannersville	1/5/2021							<0.20											
Tannersville	1/6/2021						<1												
Tannersville*	1/19/2021			163								114							
Tannersville	1/19/2021			<3.0				<0.20				<1.1			10				
Tannersville	1/20/2021						<1												
Tannersville*	2/2/2021			118								89							
Tannersville	2/2/2021			<3.0				0.26				<1.1			65				
Tannersville	2/3/2021						<1												
Tannersville*	2/16/2021			163								192							
Tannersville	2/16/2021			<3.0				0.24				<1.1			102				
Tannersville	2/17/2021						<1												
Tannersville*	3/2/2021			64.6								75.8							
Tannersville	3/2/2021			<3.0				<0.20				<1.1			48				
Tannersville	3/3/2021						<1												
Tannersville*	3/16/2021			72.6								71							
Tannersville	3/16/2021			<3.0				<0.20				<1.1			17				
Tannersville	3/17/2021						<1												
Tannersville*	4/6/2021			72.6								79							
Tannersville	4/6/2021			<3.0				<0.20				<1.1			9				
Tannersville	4/7/2021						<1												
Tannersville*	4/20/2021			83.6								90.2							
Tannersville	4/20/2021			<3.0				<0.20				<1.1			29				
Tannersville	4/21/2021						<1												
Tannersville*	5/4/2021			89.2								81.3							
Tannersville	5/4/2021			<3.0				<0.20				<1.1			30				
Tannersville	5/5/2021						<1												
Tannersville*	5/18/2021			110								126							
Tannersville	5/18/2021			<3.0				Error				<1.0			20				
Tannersville	5/18/2021							<0.20											
Tannersville	5/19/2021						<1												
Tannersville*	6/1/2021			92.4								109							
Tannersville	6/1/2021			<3.0				<0.20				<1.0			43				
Tannersville	6/2/2021						<1												
Tannersville*	6/15/2021			113								98.6							
Tannersville	6/15/2021			<3.0				<0.20				<1.1			37				
Tannersville	6/16/2021						<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*	1/5/2021			76.4								69							
Grahamsville	1/5/2021			<3.0				Error				<1.0			9				
Grahamsville	1/5/2021							<0.20											
Grahamsville	1/5/2021						<1												
Grahamsville*	2/2/2021			51								43.3							
Grahamsville	2/2/2021			17.3				<0.20				<1.0			5				
Grahamsville	2/2/2021						<1												
Grahamsville*	2/10/2021			105															
Grahamsville	2/10/2021			<3.0															
Grahamsville*	3/2/2021			65.6								47							
Grahamsville	3/2/2021			<3.0				<0.20				<1.0			30				
Grahamsville	3/2/2021						<1												
Grahamsville*	4/6/2021			103								142							
Grahamsville	4/6/2021			<3.0				<0.20				<1.0			35				
Grahamsville	4/6/2021						<1												
Grahamsville*	5/4/2021			93.4								91.8							
Grahamsville	5/4/2021			<3.0				<0.20				<1.1			76				
Grahamsville	5/4/2021						<1												
Grahamsville*	6/1/2021			86								131							
Grahamsville	6/1/2021			<3.0				<0.20				<1.1			60				
Grahamsville	6/1/2021						<1												
Margaretville*	1/5/2021			72								91							
Margaretville	1/5/2021			<3.0				Error				<1.0			35				
Margaretville	1/5/2021							0.28											
Margaretville	1/6/2021						<1												
Margaretville*	1/19/2021			194								182							
Margaretville	1/19/2021			<3.0				<0.20				<1.1			40				
Margaretville	1/20/2021						<1												
Margaretville*	2/2/2021			170								202							
Margaretville	2/2/2021			<3.0				<0.20				<1.0			37				
Margaretville	2/3/2021						<1												
Margaretville*	2/16/2021			150								224							
Margaretville	2/16/2021			<3.0				<0.20				<1.0			44				
Margaretville	2/17/2021						<1												
Margaretville*	3/2/2021			124								226							
Margaretville	3/2/2021			<3.0				<0.20				<1.0			39				
Margaretville	3/3/2021						<1												
Margaretville*	3/16/2021			113								144							
Margaretville	3/16/2021			<3.0				<0.20				<1.1			43				
Margaretville	3/17/2021						<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*	4/6/2021			156								407							
Margaretville	4/6/2021			<3.0				<0.20				1.5			53				
Margaretville	4/7/2021						<1												
Margaretville*	4/20/2021			139								179							
Margaretville	4/20/2021			3				<0.20				2.6			69				
Margaretville	4/21/2021						<1												
Margaretville*	5/4/2021			114								210							
Margaretville	5/4/2021			<3.0				<0.20				<1.0			93				
Margaretville	5/5/2021						<1												
Margaretville*	5/18/2021			123								177							
Margaretville	5/18/2021			<3.0				<0.20				<1.1			69				
Margaretville	5/19/2021						<1												
Margaretville*	6/1/2021			385								1260							
Margaretville	6/1/2021			<3.0				<0.20				<1.1			74				
Margaretville	6/2/2021						<1												
Margaretville*	6/15/2021			284								252							
Margaretville	6/15/2021			<3.0				0.21				<1.1			115				
Margaretville	6/16/2021						<1												

Table 3. Data Qualifiers

Plant	Analyte	Sample Date	Sample ID	Qualifier
Grand Gorge	Ammonia (as NH3)	2021-01-05	K-2004457-05	QC failed.
Grand Gorge*	CBOD	2021-01-19	K-2100051-04	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Grand Gorge	CBOD	2021-01-19	K-2100051-05	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Hunter Highlands	pH	2021-06-16	K-2102063-01	The duplicate analysis was not within the control limits.
Hunter Highlands	Phosphorus, Total (as P)	2021-06-16	K-2102063-01	Data reanalyzed due to result above calibration range.
Pine Hill	Ammonia (as NH3)	2021-01-05	K-2004457-12	QC failed.
Pine Hill*	BOD	2021-01-19	K-2100051-07	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Pine Hill	BOD	2021-01-19	K-2100051-12	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Tannersville	Ammonia (as NH3)	2021-01-05	K-2004457-02	QC failed.
Tannersville*	CBOD	2021-01-19	K-2100051-01	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Tannersville	CBOD	2021-01-19	K-2100051-02	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Tannersville	Ammonia (as NH3)	2021-05-18	K-2101453-02	Air spike or irregular peak; sample reanalyzed. Instrument autosampler malfunction.
Grahamsville	Ammonia (as NH3)	2021-01-05	G-2004443-02	QC failed.
Grahamsville	Phosphorus, Total (as P)	2021-05-04	G-2100831-02	The duplicate analysis was not within the control limits.
Margaretville	Ammonia (as NH3)	2021-01-05	K-2004457-10	QC failed.
Margaretville*	CBOD	2021-01-19	K-2100051-09	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.
Margaretville	CBOD	2021-01-19	K-2100051-10	This sample is associated with a dilution water blank that has a DO uptake of >0.2 mg/L.

* Influent samples are noted with an asterisk for those sites which require percent removal calculations (Grand Gorge, Pine Hill, Tannersville, Grahamsville, and Margaretville).