NYC Environmental Protection

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October 8, 2019

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Environmental Sciences & Engineering
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Patrick Palmer
New York State Department of Health
Bureau of Water Supply Protection, NYC Watershed Section
Empire State Plaza, Corning Tower, Room 1198
Albany, NY 12237

Katie Lynch
United States Environmental Protection Agency
Clean Water Division - New York City Water Supply Protection Program
290 Broadway, 24th Floor
New York, New York 10007-1866

RE: Monthly Water Quality Report for September 2019

Dear Ms. Huang, Mr. Palmer and Ms. Lynch:

Enclosed, please find the New York City Water Quality report for the month of **September 2019**. There was no well pumpage to distribution in the Groundwater System this month. Croton water was not feeding into distribution the entire month. In addition to the following list of compliance reports, a disc of electronic files containing compliance and non-compliance data for this month is enclosed with this report.

- Raw Water Fecal Coliform Report
- Raw Water Turbidity Report
- Distribution Microbiological Compliance Reports
  - Summary
  - Positive Samples
  - Resamples
- Chlorine Residual Reports
  - Entry Point Online
  - Entry Point Daily Minimum
  - Heterotrophic Plate Count
  - Monthly Summary
- Distribution Turbidity Reports
  - Distribution Turbidity Report
  - Source Water > 1.49 NTU Table
- Color Entry Point Report

- Fluoride Reports
  - Fluoride Entry Point Report
  - Distribution Fluoride Report
- Quarterly Disinfection By-products Report

The reports are summarized as follows:

FAD REQUIREMENTS

1. *Raw Water Fecal Coliform Concentrations* (Section 141.71(a)(1)):
Requirements met. The Delaware Aqueduct effluent from Kensico Reservoir exhibited fecal coliform concentrations in water prior to disinfection at levels less than or equal to 20 CFU/100 mL in at least 90% of the samples collected in the six-month period from April 1, 2019 to September 30, 2019. The six month running percentage of samples collected with fecal coliform concentrations >20 CFU/100 mL was 0.00% for the Catskill/Delaware System for this time period.

2. *Raw Water Turbidity* (Section 141.71(a)(2)):
Requirements met. The raw water leaving Kensico Reservoir via the Delaware Aqueduct in compliance samples collected at DEL18DT, just prior to disinfection, exhibited turbidity levels less than or equal to 5 NTU on an ongoing basis during the month. The highest reported turbidity value was 1.0 NTU on the Catskill/Delaware System for the month.

3. *Entry Point Chlorine Residual* (Section 141.71(b)(1)(iii) and 141.72(a)(3)):
Requirements met. As required, continuous monitoring for free chlorine residual was maintained at the distribution entry points throughout the month and at no time did the concentration fall below 0.2 mg/L for more than four hours. The minimum daily free chlorine residual value for entry point readings for the Catskill/Delaware System from sites 1S03 (Tunnel 1) was 0.52 mg/L, 1S03A (Tunnel 2) was 0.78 mg/L, and 1S03B (Tunnel 3) was 0.58 mg/L.

The Croton Filtration Plant was offline and thus there was no operational Croton entry point for the month.

4. *Distribution System Disinfection Residuals* (Section 141.71(b)(1)(iv) and 141.72(a)(4)):
Requirements met. All free chlorine residuals measured at compliance sites within the distribution system during the month were greater than or equal to 0.02 mg/L.

A total of 1309 distribution samples were tested for free chlorine residual this month. For all distribution sites free chlorine residual ranged from 0.02 mg/L to 1.16 mg/L, and averaged 0.57 mg/L for the month.

The third quarter of 2019 chlorine residual Running Annual Average was 0.56 mg/L. This meets the MRDL of 4 mg/L for the quarterly running annual averge of all systems samples.

5. *Trihalomethane Monitoring / HAA5 Monitoring* (Section 141.71(b)(6)):
Requirements met. The results for the third quarter of 2019 were included in the report dated September 10, 2019 (for the August 2019 reporting period).

6. Total Coliform Monitoring (Section 141.71(b)(5)):
Requirements met. The results of monthly coliform monitoring performed in the distribution system are enclosed. A total of 800 compliance samples were tested for total coliform during this period. HPC were all ≤500 CFU/mL, equivalent to a measurable free chlorine residual. Zero percent of the samples had an undetectable free chlorine residual or HPC >500 CFU/mL. This meets the requirements that a free chlorine residual be maintained at representative points in the distribution system, and that no more than 5% of the free chlorine residual samples be undetectable in any two months. During the month, there were no samples that tested positive for total coliform, and all samples were negative for *E. coli*.

OTHER WATER QUALITY MONITORING

7. *Microbiological Monitoring:*
Coliform monitoring at distribution sites near first service connections, in response to source water having a turbidity >1.49 NTU, was not required this month, but all of these samples were negative for total coliform.

The analyses of 509 distribution Operational samples resulted in two (2) sample testing positive for total coliform. No *E. coli* were detected.

The analyses of 240 Pre-Finished samples resulted in two (2) samples testing positive for total coliform. No *E. coli* were detected.

The analyses of 600 Autosampler Pre-finished samples resulted in two (2) samples testing positive for total coliform. No *E. coli* were detected.

8. *Distribution Turbidity Monitoring:*
For distribution sites turbidity ranged from 0.42 to 2.11 NTU and averaged 0.72 NTU for the month. This meets the MCL of 5 NTU for the monthly average of all distribution samples.

9. *Color Monitoring:*
The MCL of 15 units for color was met at each Catskill/Delaware entry point for the month. Daily analyses of entry point samples (90 samples in total), produced monthly average color values of seven (7) units for sites 1S03 (Tunnel 1), 1S03A (Tunnel 2), and 1S03B (Tunnel 3).

10. *Volatile Organic/TTHM/HAA5 Monitoring:*
Monthly Results: Twenty-three (23) distribution and three (3) entry point samples were collected for volatile organic contaminant (VOC) analysis. All VOC samples from distribution sites and entry points were below detection. Twenty-three (23) TTHM distribution samples were collected ranging from 39 µg/L to 79 µg/L. Three (3) TTHM entry point samples were collected ranging from 43 µg/L to 67 µg/L. Twenty-three (23) HAA5 distribution samples were collected ranging from 19 µg/L to 42 µg/L. Three (3) HAA5 entry point samples were collected ranging from 27 µg/L to 30 µg/L.

11. ***Semivolatile and Other Organic Chemicals/parameters:***
None conducted this month.

12. ***Fluoride Monitoring:***
Daily analyses of entry point samples (90 samples in total), produced monthly average fluoride levels of 0.70 mg/L for sites 1S03 (Tunnel 1), 1S03A (Tunnel 2), and 1S03B (Tunnel 3). The fluoride levels at the entry points did not exceed the MCL of 2.2 mg/L at any time during the month.

13. ***Other Monitoring:***
Sampling for Taste and Odor (T&O) compounds Geosmin and 2-Methylisoborneol (MIB) was conducted in September on 24 Croton water samples from New Croton Reservoir. Results from the September 26 and 30, 2019 sampling events are pending. Other results for Geosmin ranged from ND to 6.6 ng/L, and for MIB were all below detection. Contract laboratory reports of available data are included as pdf files on the disc of electronic files enclosed with this report.

Please note the revised report file "NYC_Monthly_Alldata_201908_rev.xls" specifically worksheet IOC_Daily_rev for August 2019 is included on the disc of electronic files submitted with this month's report which includes missing pH data that had failed to electronically transfer between our databases when generating the original file provided.

Please feel free to contact me at (845) 340-7701 if you would like to discuss any of this information in greater detail.

Sincerely,

Steven C. Schindler
Director, Water Quality

Enclosure

cc:

Mr. Andrew Brunsden, Inspector General for NYCDEP
Mr. Kenneth Kosinski, NYSDEC
Mr. David Kvinge, Westchester County Water Agency (by email only)
Mr. Huan Li, NYCDOHMH
Mr. Trevor McProud, NYCDOHMH
Mr. Andy Tse, NYSDOH (by email only)
Mr. Steven Zahn, NYSDEC – Region 2

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RAW WATER FECAL COLIFORM CONCENTRATIONS
(FAD Requirement)

NYCDEP Division of Watershed Water Quality Operations

Catskill/Delaware System Raw Water Fecal Coliform Compliance Report

Hawthorne Laboratory, ELAP Lab ID No. 10771
15 Skyline Drive, Hawthorne, NY 10532

Deputy Chief: David Robinson
914-345-4973

Catskill/Delaware Public Water System at Shaft 18 (DEL18DT) - Raw Water				Period: 07/17 To: 09/19
Date	Number of Fecal Coliform Samples Examined per Month	Number of Fecal Coliform Samples with >20 colonies per 100 mL	Percent of Monthly Fecal Coliform Samples with >20 colonies per 100 mL	Percent of Monthly Fecal Coliform Samples with >20 colonies per 100 mL for Previous Six Months
7-17	31	0	0.00	0.00
8-17	31	0	0.00	0.00
9-17	30	0	0.00	0.00
10-17	31	0	0.00	0.00
11-17	30	0	0.00	0.00
12-17	31	0	0.00	0.00
1-18	31	0	0.00	0.00
2-18	28	1	3.57	0.55
3-18	31	0	0.00	0.55
4-18	30	0	0.00	0.55
5-18	31	0	0.00	0.55
6-18	30	0	0.00	0.55
7-18	31	0	0.00	0.55
8-18	31	0	0.00	0.00
9-18	30	2	6.67	1.09
10-18	31	2	6.45	2.17
11-18	30	0	0.00	2.19
12-18	31	0	0.00	2.17
1-19	31	0	0.00	2.17
2-19	28	0	0.00	2.21
3-19	31	0	0.00	1.10
4-19	30	0	0.00	0.00
5-19	31	0	0.00	0.00
6-19	30	0	0.00	0.00
7-19	31	0	0.00	0.00
8-19	31	0	0.00	0.00
9-19	30	0	0.00	0.00

D.W. Robinson 10/3/19

Reported by: David Robinson, Deputy Chief, Hawthorne Water Quality Operations 10/2/2019

RAW WATER TURBIDITY
(FAD Requirement)

NYCDEP Division of Watershed Water Quality Operations

Water Systems Operation Report - Catskill/Delaware System

Hawthorne Laboratory, ELAP Lab ID No. 10771
15 Skyline Drive, Hawthorne, NY 10532

Deputy Chief: David Robinson
914-345-4973

Catskill/Delaware Public Water System at Shaft 18 (DEL18DT) - Raw Water — **Period: September, 2019**

Date	Turbidity (NTU) 12 AM	4 AM	8 AM	12 PM	4 PM	8 PM	Total Coliform (Colonies per 100 mL)	Fecal Coliform (Colonies per 100 mL)
9/1/19	0.75	0.80	0.85	0.75	0.75	0.75	E110	E4
9/2/19	0.85	0.85	0.85	0.80	0.75	0.95	E50	E1
9/3/19	0.80	0.75	0.80	0.70	0.90	0.75	E70	E2
9/4/19	0.85	0.80	0.85	0.85	0.85	0.85	E90	E3
9/5/19	0.85	0.85	0.85	0.80	0.80	0.85	E70	E1
9/6/19	0.85	1.0	0.95	0.85	0.85	1.0	E90	<1
9/7/19	0.65	0.65	0.75	0.75	0.65	0.65	E40	<1
9/8/19	0.60	0.65	0.60	0.65	0.75	0.70	E50	<1
9/9/19	0.75	0.70	0.75	0.65	0.65	0.85	E50	E2
9/10/19	0.85	0.90	0.85*	0.85	0.75	0.80	E70	<1
9/11/19	0.85	0.80	0.90	0.80	0.75	0.75	E70	<1
9/12/19	0.75	0.80	0.80	0.85	0.85	0.80	E140	E3
9/13/19	0.80	0.80	0.80	0.80	0.80	0.80	E90	<1
9/14/19	0.80	0.85	0.90	0.85	0.95	0.90	E80	E1
9/15/19	0.85	0.85	0.85	0.75	0.85	0.75	E80	E1
9/16/19	0.75	0.75	0.80	0.75	0.70	0.75	E70	E3
9/17/19	0.60	0.65	0.65	0.85	0.85	0.70	E90	E2
9/18/19	0.85	0.85	0.85	0.85	0.80	0.75	E40	E1
9/19/19	0.80	0.80	0.90	0.80	0.85	0.90	E30	E1
9/20/19	0.85	0.90	0.80	0.75	0.80	0.75	E30	E1
9/21/19	0.65	0.80	0.75	0.85	0.75	0.80	E20	<1
9/22/19	0.80	0.75	0.70	0.75	0.70	0.80	E30	<1
9/23/19	0.80	0.80	0.80	0.75	0.65	0.70	E20	E1
9/24/19	0.90	0.80	0.75	0.75	0.70	0.80	E60	<1
9/25/19	0.75	0.70	0.75	0.75	0.80	0.80	>=E20	E2
9/26/19	0.55	0.55	0.60	0.60	0.70	0.60	E10	<1
9/27/19	0.60	0.60	0.60	0.55	0.55	0.55	E40	<1
9/28/19	0.60	0.55	0.55	0.70	0.65	0.55	E10	E2
9/29/19	0.50	0.60	0.55	0.55	0.55	0.55	E30	<1
9/30/19	0.50	0.55	0.55	0.45	0.55	0.55	<20	E1

.: Aqueduct Shutdown, CONF: Confluent Growth (+ indicates positive coliform growth), LE: Lab Error, FE: Field Error,
E: estimated count based on non-ideal plate, >=: plate count may be biased low based on heavy growth, >: observed count replaced with dilution based value

1. Does a raw water turbidity M & R violation exist? ___ Yes X__ No
2. Does the turbidity reading exceed 5 NTU at any time? ___ Yes X_ No
   If yes, check for MCL violation, and notify state by the end of the next business day.
3. Minimum number of microbiological samples required per week: _5___
4. A daily microbiological sample is required every day the raw water turbidity exceeds 1 NTU.

Additional Comments: * - Grab sample was collected at 7:54 AM, outside the 4-hour mark for the 8:00 AM sample. The continuous monitoring result is reported.

D.W. Robinson 10/3/19

Reported by: David Robinson, Deputy Chief, Hawthorne Water Quality Operations 10/2/2019

All results that fall within the scope of the NELAP program meet that program's requirements unless stated in the qualifiers addendum printed at the end of this report.

Report Printed on 10/02/2019 1:25 pm

NYCDEP Division of Watershed Water Quality Operations

Water Systems Operation Report - Qualifiers and Methods Addendum

Environmental Protection

Hawthorne Laboratory, ELAP Lab ID No. 10771
15 Skyline Drive, Hawthorne, NY 10532

Deputy Chief: David Robinson
914-345-4973

Data Qualifiers and Additional Notes — Period: September, 2019

Date/Time	Site	Analytes Affected	Qualifier
9/10/19 07:54	DEL18DT	Turbidity	Grab sample was collected at 7:54 AM, outside the 4-hour mark for the 8:00 AM sample. CM result was 0.86.
9/30/19 09:21	DEL18DT	Total Coliform	QC blank contamination
9/5/19 09:47	DEL18DT	Total Coliform	QC blank contamination

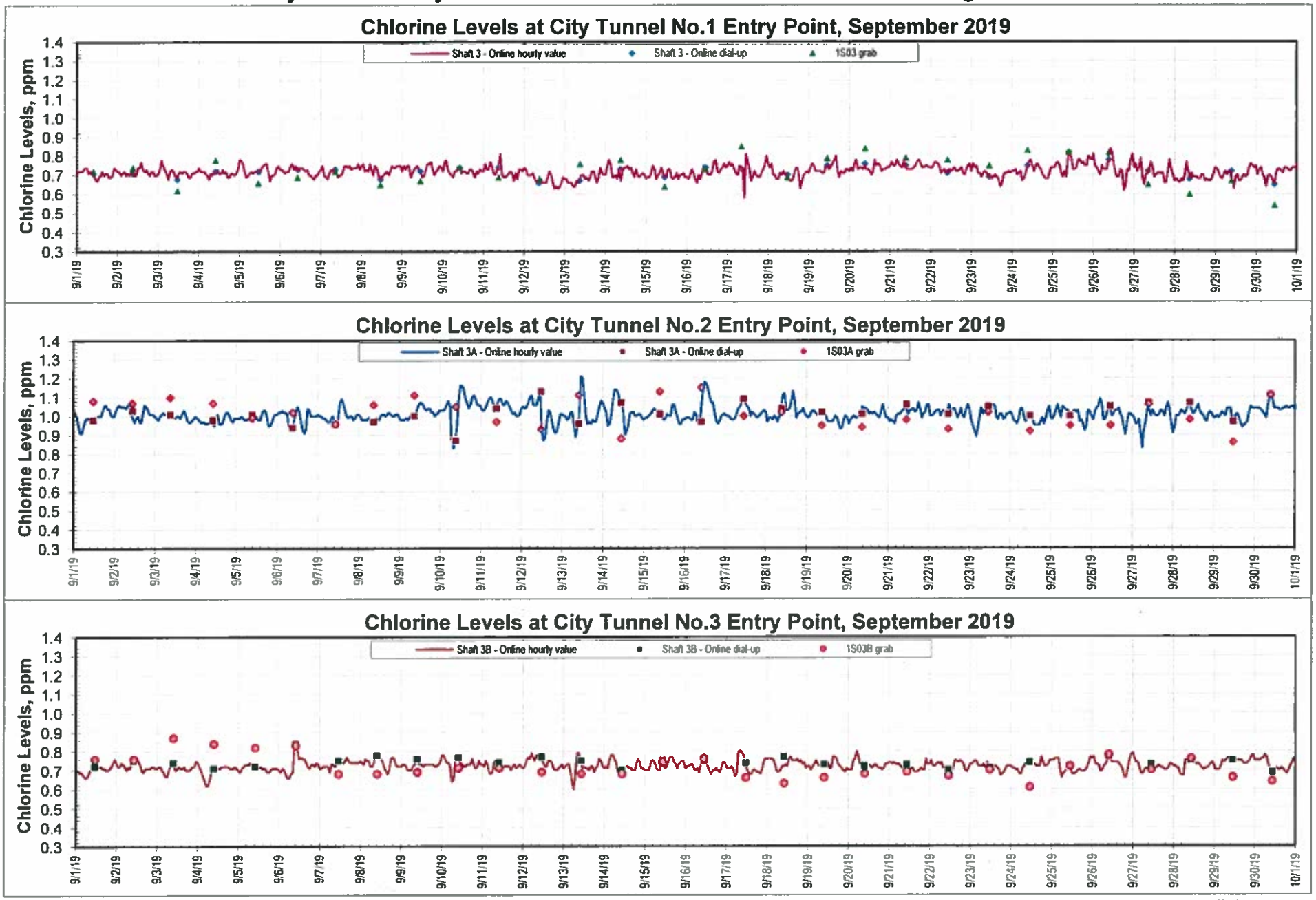
Analytical Methods

Coliform, Fecal	-	SM 9222D (2006)
Coliform, Total	-	SM 9222B (2006)
Turbidity	-	SM 2130B (01)

ENTRY POINT CHLORINE RESIDUAL
(FAD Requirement)

New York City Department of Environmental Protection
Bureau of Water Supply

City Tunnel Entry Point Residual Chlorine Continuous Monitoring Results



Note: Continuous monitoring of free chlorine residual (FCR) at distribution entry points was maintained. FCR was maintained at or above 0.2 ppm at all times. Since 3/10/19, all online readings, grab and online dial-up readings were recorded in Eastern Daylight Saving Time.

New York City Department of Environmental Protection
Bureau of Water Supply

Daily Minimum Chlorine Readings Recorded at Tunnel Entry Shafts for Catskill/Delaware System

Tunnel No.1 (Catskill) at Shaft 3			Tunnel No.2 (Delaware) at Shaft 3A			Tunnel No.3 (Cat/Del) at Shaft 3B		
Date	MinCl_1DL	Remark 1	Date	MinCl_2DL	Remark 2	Date	MinCl_3DL	Remark 3
09/01/19	0.66		09/01/19	0.90		09/01/19	0.66	
09/02/19	0.68		09/02/19	0.96		09/02/19	0.68	
09/03/19	0.64		09/03/19	0.96		09/03/19	0.63	
09/04/19	0.65		09/04/19	0.94		09/04/19	0.61	
09/05/19	0.66		09/05/19	0.93		09/05/19	0.68	
09/06/19	0.67		09/06/19	0.91		09/06/19	0.64	
09/07/19	0.66		09/07/19	0.92		09/07/19	0.68	
09/08/19	0.65		09/08/19	0.97		09/08/19	0.68	
09/09/19	0.63		09/09/19	0.97		09/09/19	0.68	
09/10/19	0.65		09/10/19	0.81		09/10/19	0.60	
09/11/19	0.65		09/11/19	0.98		09/11/19	0.68	
09/12/19	0.62		09/12/19	0.86		09/12/19	0.69	
09/13/19	0.61		09/13/19	0.86		09/13/19	0.58	
09/14/19	0.64		09/14/19	0.88		09/14/19	0.68	
09/15/19	0.65		09/15/19	0.95		09/15/19	0.67	
09/16/19	0.65		09/16/19	0.94		09/16/19	0.66	
09/17/19	0.66		09/17/19	0.97		09/17/19	0.67	
09/18/19	0.61		09/18/19	0.96		09/18/19	0.66	
09/19/19	0.68		09/19/19	0.92		09/19/19	0.67	
09/20/19	0.69		09/20/19	0.96		09/20/19	0.68	
09/21/19	0.71		09/21/19	0.95		09/21/19	0.68	
09/22/19	0.69		09/22/19	0.98		09/22/19	0.67	
09/23/19	0.61		09/23/19	0.88		09/23/19	0.66	
09/24/19	0.63		09/24/19	0.94		09/24/19	0.66	
09/25/19	0.67		09/25/19	0.91		09/25/19	0.64	
09/26/19	0.52		09/26/19	0.89		09/26/19	0.64	
09/27/19	0.62		09/27/19	0.78		09/27/19	0.68	
09/28/19	0.65		09/28/19	0.91		09/28/19	0.65	
09/29/19	0.61		09/29/19	0.93		09/29/19	0.67	
09/30/19	0.60		09/30/19	0.96		09/30/19	0.67	

Legend: MinCl_1DL: Shaft 3's minimum chlorine level measured at the shaft and recorded at the location via data logger, in ppm.
MinCl_2DL: Shaft 3A's minimum chlorine level measured at the shaft and recorded at the location via data logger, in ppm.
MinCl_3DL: Shaft 3B's minimum chlorine level measured at the shaft and recorded at the location via data logger, in ppm.

New York City Department of Environmental Protection
Bureau of Water Supply

Daily Minimum Chlorine Readings Recorded at Croton Distribution Entry Points

Low Service			High Service		
Date	MinCl_1SCL1	Remark 1	Date	MinCl_1SCH3	Remark 2
09/01/19			09/01/19		
09/02/19			09/02/19		
09/03/19			09/03/19		
09/04/19			09/04/19		
09/05/19			09/05/19		
09/06/19			09/06/19		
09/07/19			09/07/19		
09/08/19			09/08/19		
09/09/19			09/09/19		
09/10/19			09/10/19		
09/11/19			09/11/19		
09/12/19			09/12/19		
09/13/19			09/13/19		
09/14/19			09/14/19		
09/15/19		No Croton water.	09/15/19		No Croton water.
09/16/19			09/16/19		
09/17/19			09/17/19		
09/18/19			09/18/19		
09/19/19			09/19/19		
09/20/19			09/20/19		
09/21/19			09/21/19		
09/22/19			09/22/19		
09/23/19			09/23/19		
09/24/19			09/24/19		
09/25/19			09/25/19		
09/26/19			09/26/19		
09/27/19			09/27/19		
09/28/19			09/28/19		
09/29/19			09/29/19		
09/30/19			09/30/19		

Legend: MinCl_1SCL1: 1SCL1's minimum chlorine level measured and recorded at the location via data logger, in ppm.
MinCl_1SCH3: 1SCH3's minimum chlorine level measured and recorded at the location via data logger, in ppm.

Note: Croton water fed to High Service time period was determined by specific conductance greater than 150 uS/cm.

DISTRIBUTION SYSTEM DISINFECTION RESIDUAL

(FAD Requirement)

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Residual Chlorine (mg/L) Distribution Samples

September 2019

All Distribution Sites			
Samples	Min	Max	Average
1309	0.02	1.16	0.57

Hach DPD Method (analyte is not ELAP certified)

SAMPLE NUMBER	SAMPLE DATE	SAMPLE SITE	LOCATION TYPE	RESIDUAL CHLORINE	COMMENT
28778	9/30/19	12550	Regular	1.16	Max
25854	9/2/19	77150	Up Stream	0.02	Mini

A FCR is to be maintained at representative points in the distribution system and no more than 5% of the samples can be undetectable in any two months.

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Residual Chlorine (mg/L) Averages of Distribution Samples

Third Quarter 2019

Monthly Average			Quarterly Average				Running Annual Average †
Jul-19	Aug-19	Sep-19	4th Quarter of 2018	1st Quarter of 2019	2nd Quarter of 2019	3rd Quarter of 2019	
0.57	0.56	0.57	0.61	0.54	0.54	0.57	0.56

Hach DPD Method (analyte is not ELAP certified)

† The Running Annual Average of all distribution sites is calculated four times a year (at the end of every quarter) by taking the average of the quarterly average of this quarter and the three previous quarters, and is not to exceed the MRDL of 4.0 mg/L.

TOTAL COLIFORM MONITORING
(FAD Requirement)

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Summary of Results for Microbiological Quality
Compliance Samples

9/1/2019 to 9/30/2019

Location	Number of Sampling Points	Number of Samples Collected	Number of Samples Tested	Number of Samples with Positive Coliform *	Number of Samples with Positive E. coli *	Percent of Samples with Positive Coliform **
Bronx	46	131	131	0	0	0.0%
Brooklyn	70	194	194	0	0	0.0%
Manhattan	57	165	165	0	0	0.0%
Queens ***	79	227	227	0	0	0.0%
Staten Island	29	83	83	0	0	0.0%
Ground Water Supply ***	-	-	-	-	-	-
Total	281	800	800	0	0	0.0%

* As determined by Colilert Quanti-Tray-18 Method (SM 9223 B).

** If more than 5.0 % of all monthly TCR compliance samples are positive for total coliform, a Level I Assessment must be conducted.

*** There was no groundwater sample this month because no well was in operation to distribution.

Supervisor: Rupa Aggarwal Date: 10/07/19

Director: Date: 10/8/19

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Results for Microbiological Quality
Free Chlorine Residual and Heterotrophic Plate Count
Compliance Samples

9/1/2019 to 9/30/2019

Location	Number of Sampling Points	Number of Samples Collected	Number of Samples Tested (Free Chlorine Residual)	Number of Samples Tested (Heterotrophic Plate Count)	Number of Samples with Free Chlorine Residual *		Range of Heterotrophic Plate Count (CFU/mL) for Free Chlorine Residual of 0.00 mg/L **	Number of Samples with Free Chlorine Residual of 0.00 mg/L and HPC > 500	Percent of Samples with Free Chlorine Residual of 0.00 mg/L and HPC > 500 ***
					< 0.20 mg/L	0.00 mg/L			
Bronx	46	131	131	88	3	0	--	0	0.0%
Brooklyn	70	194	194	133	8	0	--	0	0.0%
Manhattan	57	165	165	120	21	0	--	0	0.0%
Queens †	79	227	227	166	44	0	--	0	0.0%
Staten Island	29	83	83	58	9	0	--	0	0.0%
Ground Water Supply †	-	-	-	-	-	-	--	-	-
Total	281	800	800	565	85	0	--	0	0.0%

* Free chlorine residual is determined by Hach DPD Method (analyte is not ELAP certified).
** Heterotrophic plate count is determined by method SM 9215 B, PCA medium, 35°C, 48hrs. HPC result ≤ 500 CFU/mL is equivalent to a measurable FCR.
*** No more than 5 % of FCR samples shall be undetectable in any 2 consecutive months.

† There was no groundwater sample this month because no well was in operation to distribution.

Supervisor: Rupe Aggarwal Date: 10/07/19

Director: [signature] Date: 10/8/19

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Results for Microbiological Quality
Positive Compliance Samples
9/1/2019 to 9/30/2019

Date	Time	Site Number	Boro	Location	Coliform *	E. coli *	Chlorine Residual (mg/L) **	Remarks
				No positive sample this month.				

* As determined by Colilert Quanti-Tray-18 Method (SM 9223 B). Results expressed in "MPN/100 mL."

** As determined by Hach DPD Method (analyte is not ELAP certified).

Supervisor: _____ Date: 10/02/19

Director: _____ Date: 10/8/19

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Results for Microbiological Quality
Resamples for Positive Compliance Samples

9/1/2019 to 9/30/2019

Date	Time	Site Number	Boro	Location	Coliform *	E. coli *	Chlorine Residual (mg/L) **	Remarks
				No positve sample this month.				

* As determined by Colilert Quanti-Tray-18 Method (SM 9223 B). Results expressed in "MPN/100 mL."
** As determined by Hach DPD Method (analyte is not ELAP certified).

Supervisor: Rupi Aggarwal   Date: 10/07/19

Director: [signature]   Date: 10/8/19

MICROBIOLOGICAL MONITORING

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Coliform Monitoring Results at Sample Sites near the First Service Connection When Source Water Turbidity Exceeds 1.49 NTU

September 2019

Source water		Distribution site near first service connection			
Date Turb>1.49 NTU	System	Sample Date	Sample Site	Coliform *	E.coli *

No official four-hour turbidity readings from Cat-Del source water were greater than 1.5 NTU this month.

*** As determined by Colilert Quanti-Tray-18 Method (SM 9223B). Results expressed in "MPN /100mL."**

DISTRIBUTION TURBIDITY MONITORING

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Turbidity (NTU) Distribution Samples

September 2019

All Distribution Sites			
Samples	Min	Max	Average
1309	0.42	2.11	0.72

Analytical Method SM 2130 B

SAMPLE NUMBER	SAMPLE DATE	SAMPLE SITE	LOCATION TYPE	TURBIDITY	COMMENT
26958	9/13/19	58950	Reg Stop	2.11	Max
28772	9/30/19	40550	Reg Stop	0.42	Min

The monthly average of all distribution samples is not to exceed 5 NTU.

COLOR MONITORING

REPORT

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY DISTRIBUTION LABORATORY (NYSDOH ELAP #10770; USEPA #NY01351)

Color (U) for Distribution Entry Points

September 2019

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Catskill/Delaware 1S03 (Tunnel 1)	7	7	6	7	7	7	8	7	7	6	7	6	7	7	7	6	7	6	7	7	6	8	7	6	7	7	7	7	6	8
Catskill/Delaware 1S03A (Tunnel 2)	6	7	6	7	8	7	7	6	6	6	7	7	7	7	7	6	6	7	7	7	5	7	7	6	7	7	7	6	5	7
Catskill/Delaware 1S03B (Tunnel 3)	7	6	6	7	7	6	7	7	6	6	7	7	6	7	7	6	6	6	6	7	6	7	7	6	7	8	8	6	6	7
Croton System 1SCL1 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croton System 1SCH3 [a]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analytical Method SM 2120 B. Apparent color.

The average of two consecutive samples from the same site is not to exceed the MCL of 15 color units.

[a] Croton System offline as of 6/4/2019.

Entry Point	Samples	Minimum	Maximum	Average
Catskill/Delaware 1S03 (Tunnel 1)	30	6	8	7
Catskill/Delaware 1S03A (Tunnel 2)	30	5	8	7
Catskill/Delaware 1S03B (Tunnel 3)	30	6	8	7
Croton System 1SCL1 [a]	-	-	-	-
Croton System 1SCH3 [a]	-	-	-	-

Supervisor _____ Date 10/07/19

Director _____ Date 10/8/19

FLUORIDE MONITORING

REPORT

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY DISTRIBUTION LABORATORY (NYSDOH ELAP #10770; USEPA #NY01351)

Fluoride (mg/L) for Distribution Entry Points

September 2019

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Catskill/Delaware 1S03 (Tunnel 1)	0.70	0.70	0.71	0.69	0.69	0.70	0.70	0.70	0.70	0.68	0.69	0.70	0.70	0.70	0.70	0.71	0.69	0.70	0.71	0.70	0.69	0.70	0.70	0.70	0.68	0.69	0.69	0.70	0.69	0.70
Catskill/Delaware 1S03A (Tunnel 2)	0.70	0.70	0.70	0.69	0.69	0.71	0.71	0.70	0.71	0.69	0.69	0.70	0.69	0.71	0.70	0.70	0.69	0.70	0.71	0.70	0.70	0.69	0.69	0.70	0.69	0.69	0.68	0.70	0.69	0.70
Catskill/Delaware 1S03B (Tunnel 3)	0.71	0.70	0.70	0.69	0.69	0.69	0.70	0.70	0.70	0.69	0.68	0.69	0.70	0.71	0.70	0.71	0.69	0.70	0.71	0.70	0.70	0.70	0.70	0.70	0.69	0.69	0.69	0.69	0.69	0.69
Croton System 1SCL1 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croton System 1SCH3 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analytical Method SM 4500 F'C (97)

The average of two consecutive samples from the same distribution entry point site is not to exceed the MCL of 2.2 ppm.

[a] Croton System offline as of 6/4/2019.

Entry Point	Samples	Minimum	Maximum	Average
Catskill/Delaware 1S03 (Tunnel 1)	30	0.68	0.71	0.70
Catskill/Delaware 1S03A (Tunnel 2)	30	0.68	0.71	0.70
Catskill/Delaware 1S03B (Tunnel 3)	30	0.68	0.71	0.70
Croton System 1SCL1 [a]	-	-	-	-
Croton System 1SCH3 [a]	-	-	-	-

Supervisor _____ Date 10/07/19

Director _____ Date 10/8/19