

NEW YORK CITY

2016

BEACH SURVEILLANCE AND MONITORING PROGRAM



Photo by Maria Colon

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SECTION 1

INTRODUCTION

In accordance with the New York City Administrative Code §18-131(c)(4), this annual report summarizes the 2016 New York City Beach Surveillance and Monitoring Program for beaches permitted by the Department of Health and Mental Hygiene (DOHMH or the “Department”). This law requires that the Commissioner of Health and Mental Hygiene “forward a combined report of the dates and results of all inspections of all beaches and the dates and reasons for any warning (previously referred to as Advisory) or closure, and such other information deemed appropriate by the Commissioner of Health and Mental Hygiene, for the Friday proceeding the last Monday of May until the Friday after the first Monday of September of each year, to the Mayor, the Public Advocate and the Speaker of the Council.”

With the principal goal of protecting the public from the potential health and safety risks presented from recreating at ocean beaches, the Department closely monitors and conducts surveillance of permitted beaches in the City of New York. Under the regulatory directive and authority of both Article 167 of the New York City Health Code (Article 167) and Subpart 6-2 of the New York State Sanitary Code (Subpart 6-2), the Department administers the Beach Surveillance and Monitoring Program for all beaches operating within the city limits and with a permit issued by the Department. The Program responsibilities include: 1) beach monitoring and surveillance 2) public notification and communication, and 3) conducting annual safety inspections.

The City’s beaches function as an important recreational and quality-of-life resource for City residents and neighboring communities. As shown in Figure 1 (page 2) and Table 1 (page 3) there are eight public beaches operated by the Department of Parks and Recreation (the Parks Department) and seventeen privately operated beaches permitted within New York City limits.

This year, New York City Public Beaches remained open an additional week for the 2016 beach season to coincide with the school calendar. With the exception of Cedar Grove and Wolfe’s Pond, most public beaches remained open until September 11th, a week later than the traditional Labor Day weekend unofficial end to summer.

FIGURE 1: NEW YORK CITY PERMITTED BEACHES



TABLE 1: NEW YORK CITY PERMITTED BEACHES AND WATER BODY IDENTIFICATION

Borough	Beaches	Water Body
Brooklyn	<i>Public:</i> Coney Island, Manhattan <i>Private:</i> Seagate, Kiddie Gerritsen, Kingsborough	Lower New York Harbor
Bronx	<i>Public:</i> Orchard Beach <i>Private:</i> American Turner, Danish American, Manheim, White Cross Fishing, Morris Yacht Club, Schuyler Hill, Trinity Danish, Locust Point Yacht Club, West Fordham Street	Eastchester Bay, Western Long Island Sound
Queens	<i>Public:</i> Rockaway <i>Private:</i> Breezy Point	Atlantic Ocean Coastline
	<i>Private:</i> Douglaston Manor, Whitestone Booster Civic Association	Western Long Island Sound
Staten Island	<i>Public:</i> South Beach, Midland, Cedar Grove, Wolfe's Pond Park <i>Private:</i> Staten Island YMCA	Lower New York Bay

1.1 Public Risk Communication

The Department continued to improve its Public Notification and Risk Communication efforts during the 2016 beach season. Easy to interpret signs shown in Figure 2 that were developed and implemented during the 2014 season, were in continuous use for beach closures and warnings in 2016.

FIGURE 2: BEACH WARNING AND CLOSED SIGNS



The free texting service called “Know Before You Go”, which was introduced in 2014, was reprised for the 2016 beach season. The service enables subscribers to make informed decisions before they go to the beach by checking if the beach is open or closed or if there are any warnings due to wet weather conditions or water quality concerns. Subscribers simply text “BEACH” to 877-877 to get replies with the beach status of any of the eight public beaches in New York City. This tool also can be used by the Department to deliver notifications of high priority water quality warnings or closures as well as safety related messages such as warnings for high rip currents, closures for extreme weather and when beaches open and close for the season. This notification delivery system was successfully deployed in 2016, ahead of the landfall of Tropical Storm Hermine to notify all subscribers of the preemptive closures of six city beaches and to update subscribers of continued closures due to strong surf and rip currents (as described in Section 3.2).

In 2016, the Department’s advertising strategy included promotional posts on its social media channels (Twitter and Facebook) examples of which are shown in Figure 3 as well as scrolling news messages at the Staten Island Ferry. At the beginning of the season, the English-language campaign had 5,369 subscribers and the Spanish-language texting service had 56 subscribers. By the close of the beach season, there were 7,715 English-language subscribers (30% increase) and 168 Spanish-language subscribers (67% increase) to “Know Before You Go.”

Based on the success and innovation of its communication efforts, the Department was offered the opportunity to give a presentation at the EPA’s 2016 National Recreational Waters Conference in New Orleans, Louisiana. The presentation, titled *Providing and Promoting Recreational Water Quality Information through Mobile and Social Technology*, was well received and the Department has been contacted by other local jurisdictions interested using its signage designs for their notification programs.

FIGURE 3: KNOW BEFORE YOU GO TEXTING PROGRAM



SECTION 2

BACKGROUND INFORMATION

This chapter provides background information on the New York City Beach Surveillance and Monitoring Program. The topics of discussion include, bacteriological water quality criteria, pre-emptive rainfall thresholds, beach classifications, procedures and protocols for monitoring and surveillance, public notification and risk communication and safety inspections.

2.1 Water Quality Criteria

Under the New York State Sanitary Code §6-2.15, Article §167.13 of the New York City Health Code and the Federal Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH) Act, Enterococci is the indicator organism mandated for evaluating the microbiological quality of marine (saline) recreational beach water.

Under the New York State Sanitary Code and the New York City Health Code, Enterococci concentrations for a single sample shall not exceed 104 Colony Forming Units (CFU's) per 100 mL (61 CFU's per 100 ml for fresh water), and the Enterococci geometric mean shall not exceed 35 CFU's per 100 mL (33 CFU's per 100 ml for fresh water) for a series of five or more samples collected during a 30-day period. The geometric mean and single sample maximum is determined by analyzing samples for the presence and quantification of Enterococci using EPA method 1600.

In November, 2012, the Environmental Protection Agency (EPA) released the revised Recreational Water Criteria (RWQC). The revised criteria uses a geometric mean and a statistical threshold value to indicate whether the water quality is protective of the designated use of primary contact recreation. The 2012 revised criteria for marine waters are a 30-day geometric mean of 30 Enterococci (CFU/100 mL) and a statistical threshold value of 110 Enterococci (CFU/100 mL)(the statistical threshold value is calculated as no more than 10% of samples within 30 days shall exceed the criteria). In addition to the revised criteria, the EPA introduced a Beach Action Value (BAV) of 60 Enterococci (CFU/100 mL) to be used as a notification threshold for beach management; there is no longer a single sample maximum in the EPA criteria document. The revised recreational criteria are scheduled to be promulgated at the State level and subsequently implemented by local beach programs for the 2018 beach season.

2.2 Rainfall Events

Pre-emptive rainfall thresholds have been developed for New York City Beaches through statistical modeling of historical precipitation and water quality data. These preemptive thresholds are used as a management tool to provide a quick and reliable indication of water quality conditions. Because the majority of the city has combined stormwater and sewer conveyance systems, high levels of precipitation result in combined sewage and stormwater runoff bypassing the treatment system and overflowing into local waterbodies; this phenomenon

is referred to as a Combined Sewer Overflow (CSO). As described, there is a very high probability for elevated levels of harmful bacteria due to CSO's and stormwater runoff when threshold levels of precipitation are exceeded. Untreated sewage bypasses and excess stormwater runoff can potentially pose a public health threat at nearby beaches that are impacted by poor water quality conditions. When rainfall intensities meet the pre-emptive thresholds, as defined in Table 2 (page 6) a public notification or a warning will take effect for the predetermined duration.

TABLE 2: NEW YORK CITY PRE-EMPTIVE RAINFALL THRESHOLDS

Beach (Borough)	Rainfall Threshold (within 24 hrs)	Duration of Warning
South Beach, Midland Beach, Cedar Grove, Staten Island YMCA (Staten Island), Manhattan Beach, Kingsborough Community College (Brooklyn)	1.5 – 2.5 inches	12 hours
	> 2.5 inches	24 hours
Orchard Beach (Brooklyn)	> 2.5 inches	24 hours
Coney Island (Brooklyn)	> 2.5 inches	12 hours
Gerritsen Beach (Brooklyn) Whitestone Booster (Queens)	0.3 - 0.6 inches	18 hours
	> 0.6 inches	40 hours
American Turner, Danish American, Manheim, White Cross, Morris Yacht, Schuyler Hill, Trinity Danish, Locust Point Yacht Club, West Fordham Street Association (Bronx)	0.6 – 2.5 inches	36 hours
	> 2.5 inches	48 hours
Douglaston Manor (Queens)	0.3 – 0.6 inches	30 hours
	0.6 – 2.5 inches	60 hours
	> 2.5 inches	72 hours

2.3 Beach Classifications

There are three swimming classifications for New York City beaches which are determined by assessing water quality, rainfall and pollution events, on-site sanitary surveys, and/or historical information. Beaches, except those specifically restricted under Article §167.05, are classified as follows:

Class A: Open for Swimming and Wading. Beaches may be classified as open and approved for swimming and wading when all of the following conditions are met:

1. Beach water quality is in accordance with standards defined under Article §167.13.
2. Sanitary and safety surveys are satisfactory in accordance with Article §167.25.

3. The epidemiological history is satisfactory to the Department. No repeated complaints/reports of illness/injury received from the public or from owners/operators of city beaches.

Class B: Warning – Not Recommended for Swimming and Wading. Beaches may be classified as “Not Recommended for Swimming and Wading” when one or more of the following conditions exists:

1. When rainfall events exceed the pre-emptive rainfall thresholds, when naturally occurring organisms or human influences may cause a continuous or reoccurring degradation of water quality that would put public health at risk;
2. When a water quality sample exceeds the water quality standard or a beach notification threshold. The notification should remain in effect until resampling indicates that the beach water quality standard and/or notification thresholds are being met.
3. When an on-site sanitary survey or investigation reveals the presence of floatable debris, medical/infectious waste or toxic contaminants, petroleum products and/or other contamination on the beach; or
4. When there is evidence of sewage and wastewater discharge.

Class C: Closed – Temporarily Restricted for Swimming and Wading: Beaches may be classified as “Temporarily Restricted for Swimming and Wading” when one or more of the following conditions exists:

1. Sampling by bacteriological testing that finds beach water quality exceeding the statutory water quality standard for marine water beaches;
2. Epidemiological data indicates a significant incidence of related illnesses or repeated complaints/reports of illness/injury received from beach patrons;
3. A sanitary and safety survey or an investigation reveals the presence of potentially hazardous amounts of floatable debris, medical/infectious waste, toxic contaminants, petroleum products or other contaminants on the beach, or there is evidence of sewage and wastewater discharges in sufficient quantities that will adversely affect the quality of the beach water; or
4. Any other environmental factors determined to be a public health or safety hazard by the Department.

2.4 Beach Monitoring and Surveillance

Starting one month before the beach season, the Department monitors and samples each beach on a weekly basis with the exception of the Rockaway and Breezy Point beaches, which are sampled bi-weekly. In addition to routine water quality monitoring, the Department monitors on a daily basis the regional wet weather conditions and occasional Waste Water Treatment Plant (WWTP) bypasses, operational upsets and spills through interagency communication and cooperation. This information can be used to assess and make beach status determinations.

During a sample event, a routine on-site sanitary survey inspection is performed to identify any existing and/or potential sources of pollution that are likely to affect beach water quality. Water samples are collected at knee-depth (18 inches) in three feet of water, from the center left and right of the beach. At larger beaches, such as Coney Island and Rockaway, samples are taken from multiple locations to ensure adequate representation and reliable results. The collected samples are delivered to the Department's Public Health Laboratory for analysis. The analytical turnaround time for Enterococci is 24 hours.

The water quality of the samples analyzed is reviewed and assessed for conformance to applicable standards. If the regulatory limit for Enterococci is exceeded or conditions exist that may pose a threat to the health and/or safety of the public, the Department initiates one of the following actions: conducts immediate re-sampling; issues a warning and conduct re-sampling; and/or closes the beach and conduct re-sampling. The determining factors for additional sampling may include: proximity to suspected pollution sources; extent of pollution; beach use; historical water quality data; and other health risk factors.

2.5 Public Notification and Risk Communication

When beach status changes based upon evaluation and assessment of beach water quality as specified above, the Department notifies the public through on-site beach signage, website postings, 311 non-emergency government service hotline, Notify NYC (via Twitter, RSS feed, e-mail, and SMS), "Know Before You Go" texting service, and Department press releases when necessary. Beach operators are notified by phone, email and/or text as to the necessary on-site postings. The specific notification procedures and requirements for each of the above conditions are as follows:

On-Site Signage: When notified by the Department, the permittee is required to post or remove the warning or closure signs in designated areas visible to beach users such as beach entrances, bulletin boards, comfort stations or the general vicinity of the common swimming areas.

"Know Before You Go" Texting Service: Subscribers send a text using "BEACH" to 877-877 to get replies with the beach status for any of the eight public beaches in New York City.

Website Postings: The Department has developed an easily accessible website updated with location and information for all permitted beaches: www.nyc.gov/health/beach. The website contains background information on the beach program, explains the causes and sources of surface water pollution, and summarizes the beach classification system, including the different types of warnings. A list of City beaches by borough, along with their respective status (Open, Closed, or Warning) and sample results are promptly updated on the website. Beach warnings or closures are also posted under the "NYC Right Now" link on the City website, www.nyc.gov, during the beach season. The public can report swimming related illnesses through the website.

Notify NYC: When notified by the Department of status changes relating to public beaches the Office of Emergency Management will send members of the public who have signed up to Notify NYC status information via Twitter, RSS feed, e-mail and SMS.

311: The 311 telephone operators monitor the Department's website for updates on warning or closure information, as described above, and convey that information to 311 callers. The public can also report a swimming related illness via 311.

NYC Press Release: Press releases are disseminated to various types of media (newspaper, radio, website, television) as well as elected officials.

2.6 Inspections

The Department conducts annual safety inspections and complaint inspections at bathing beaches to assure that (1) all staff, especially lifeguards and supervisors, have proper certificates and coverage including CPR certification, (2) all required life-saving equipment is available, including rescue tubes, spine boards, first aid kits, and resuscitation equipment, (3) there is proper signage posted on site. Direct observations of conditions are supplemented by interviews with lifeguards and other personnel. The inspections also evaluate beach facility hygiene.

SECTION 3

FINDINGS

3.1 Water Quality and Illness Reporting

Routine water quality monitoring and sample collection was performed at all twenty-five permitted beaches. Approximately 1500 samples were collected and analyzed from these beaches between April and September 2016. There were no recreational water illnesses or complaints reported to the Department during the season.

Water quality sample results showing the 30-Day geometric mean and daily averages are listed in Appendix A, Tables A1-1 to A1-4 2016 Water Quality Results (pages 12 to 15), and exceedances of the single-sample maximum are listed in Appendix A Tables A2-1 to A2-3 2016 Sample Results and Single-Sample Exceedances (pages 16 to 17). Warnings and Closures issued by the Department throughout the season are summarized in Appendix B (pages 18 to 21).

For private beaches, Manhem had the highest exceedance rate (16.7%), while Breezy Point (219 and Reid Avenue), Locust Point Yacht Club, Sea Gate Beach Club and Morris Yacht and Beach Club had no exceedances. Bronx private beaches are located in the western terminus of the Long Island Sound which has a complex hydrodynamic system. Long retention times, complex water circulation and mixing patterns and seasonal tidal variations can produce poor mixing in these waters and may contribute to deteriorated water quality.

For public beaches, Manhattan Beach in Brooklyn had the highest percentage exceedance rate for all public beaches (6.3%) while Midland and Rockaway Beaches had no exceedances.

The Department of Environmental Protection has an ongoing investigation regarding the dumping of raw sewage into Coney Island Creek. The nearest public beach to the mouth of the creek, Seagate, is located on the western end of Coney Island. To assess the potential impact of the illegal discharge on permitted beaches, the Department utilized a Regional Bypass Model, developed in 2007 to simulate bacterial concentrations in NY Harbor as the result of unplanned sewerage spills. The simulation results indicate a steady equilibrium of water quality is reached at the nearest beach after the simulated discharge begins, and that the maximum concentrations is about 4 cfu/100 mL and an average is less than 2 cfu/100mL. Compared to the federal standard for swimming of 35 cfu/100mL, the impact of the discharge on the nearest harbor beach is small. There is no indication that this pollution event had any impact on 2016 beach sample results. Coney Island Creek, itself, is a water body that does not contain a bathing beach permitted by DOHMH, and therefore it is not subject to NYC Health Code requirements for water quality monitoring and for meeting water quality criteria protective of primary recreation. There is no indication that this pollution event had any impact on 2016 beach sample results.

3.2 Public Notification for Warnings and Closures

There are 17 private beaches of which 13 were issued at least one swimming advisory warning or closure notice during the 2016 bathing season. Of the private beaches that exceeded water quality standards, there were 194 warning days (103 of which were a result of wet weather conditions) and 13 closure days. The length of the notifications ranged from 1 to 8 days. Of the public beaches that exceeded water quality standards, there were 12 warning days (none of which were a result of wet weather conditions) and 0 closure days. On two occasions there were notifications at public beaches based on observed or anticipated conditions, 6 warning days due to visible debris in the water and 24 closure days due to tropical storm conditions. The length of notification ranged from 2 to 4 days. The specific warning and closure dates for each beach are shown in Appendix B: 2016 Warnings and Closures (pages 18 to 21).

Due to storm warnings from the National Weather Service, six public beaches were pre-emptively closed to swimming on Sunday, September 4th ahead of the landfall of Tropical Storm Hermine. Closures continued through Wednesday, September 7th due to strong rip tide conditions. On September 8th, all city beaches, except Cedar Grove and Wolfe's Pond beaches, reopened through Sunday, September 11th.

3.3 Inspections

During the 2016 beach season, a total of 25 inspections were conducted of both Public and Private beaches by the Department at 25 permitted facilities. Five facilities were cited for either general or public health hazards at the time of inspection as detailed in Table C, Appendix C: 2016 Inspection Non-compliance Summary (page 24).

APPENDIX A: 2016 WATER QUALITY RESULTS AND EXCEEDANCE

Table A1-1: Brooklyn Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards: 30 day geomean limit: 35cfu/100ml, Daily average limit: 104cfu/100ml

Date of Week Ending	CONEY ISLAND BEACH (public)		MANHATTAN BEACH (public)		GERRITSEN/ KIDDIE BEACH (private)		KINGSBOROUGH COMMUNITY COLLEGE (private)		SEA GATE 42 ND (private)		SEA GATE BEACH CLUB (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/28/2016	7	5	11	28	6	4	10	29	5	5	4	5
6/4/2016	6	4	12	5	7	44	9	4	5	4	5	5
6/11/2016	5	4	12	43	12	48	11	57	6	19	5	12
6/18/2016	5	14	12	4	11	4	27	600	6	5	5	4
6/25/2016	5	4	14	23	11	5	62	253	6	5	5	4
7/2/2016	5	5	9	4	12	7	42	4	6	4	5	4
7/9/2016	5	5	12	25	17	273	72	68	6	5	6	12
7/16/2016	5	4	7	4	10	4	44	5	5	4	5	4
7/23/2016	7	4	8	7	10	4	19	16	5	9	5	4
7/30/2016*	7	4	10	5	17	4	14	68	7	32	7	23
8/6/2016**	9	26	16	61	38	693	24	59	13	90	8	8
8/13/2016	9	5	19	60	19	4	22	76	12	4	7	5
8/20/2016	11	26	21	11	19	4	27	16	12	4	7	4
8/27/2016	7	4	29	36	20	5	35	44	10	4	7	4
9/3/2016	7	4	20	4	12	4	28	25	8	12	5	7
9/10/2016			12	4					5	8	5	11

* mid-week sample on result 7/27/2106 at Manhattan Beach resulted in a water quality exceedance, see appendix B for description.

** mid-week sample result on 8/2/2106 at Coney Island Beach resulted in a water quality exceedance, see appendix B for description.

Table A1-2: Bronx Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards: 30 day geomean limit: 35cfu/100ml, Daily average limit: 104cfu/100ml

Date of Week Ending	ORCHARD BEACH (public)		AMERICAN TURNER (private)		DANISH AMERICAN BEACH CLUB (private)		LOCUST POINT YACHT CLUB (private)		MANHEM CLUB (private)		MORRIS YACHT AND BEACH CLUB (private)		SCHUYLER HILL CIVIC ASSOC. (private)		TRINITY DANISH (private)		WEST FORDHAM STREET ASSOC. (private)		WHITE CROSS FISHING CLUB (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/28/2016	4	4	32	11	45	63	8	5	38	28	5	7	18	5	34	8	7	7	33	5
6/4/2016	4	4	17	15	25	15	10	15	30	76	6	9	12	4	13	7	10	47	25	153
6/11/2016	4	4	7	9	10	11	7	7	11	8	6	4	7	47	5	8	15	55	10	9
6/18/2016	4	4	8	7	14	20	8	7	12	7	6	4	7	4	6	5	16	8	11	8
6/25/2016	4	4	8	4	14	4	7	8	12	4	5	4	7	4	7	19	15	9	11	4
7/2/2016	4	4	8	11	12	31	7	7	12	33	5	5	7	8	10	44	29	148	15	21
7/9/2016	4	4	9	43	12	12	6	5	9	11	4	5	8	7	13	23	19	5	11	40
7/16/2016	4	4	8	4	14	27	6	4	8	4	4	4	5	4	12	5	12	8	10	4
7/23/2016	4	4	8	4	12	9	5	4	9	11	6	16	5	4	12	5	12	8	10	9
7/30/2016	5	9	8	4	12	4	4	4	9	4	6	4	5	5	10	4	11	5	11	8
8/6/2016*	8	4	11	65	15	81	5	15	11	97	6	8	5	4	11	64	8	28	14	69
8/13/2016	8	4	7	4	12	4	5	4	9	4	6	4	4	4	8	8	8	4	9	4
8/20/2016	9	9	12	56	11	24	6	13	16	91	7	13	4	5	10	16	8	12	13	41
8/27/2016	9	4	12	5	9	4	6	4	16	11	6	4	4	4	10	4	7	4	12	8
9/3/2016	8	4	15	11	9	4	6	4	19	12	8	36	4	5	10	4	8	11	13	9
9/10/2016	4	4	9	4	5	4			10	4	7	4					6	8		
9/17/2016					5	4					7	4					7	7		
9/24/2016																	6	5		

* mid-week sample on result 8/3/2106 at Orchard Beach resulted in a water quality exceedance, see appendix B for description.

Table A1-3: Queens Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards- 30 day geomean limit: 35cfu/100ml, Daily Average limit: 104cfu/100ml

Date of Week Ending	ROCKAWAY BEACH* (public)		BREEZY POINT 219 (private)		BREEZY POINT Reid Ave (private)		WHITESTONE BOOSTER CIVIC ASSOCIATION (private)		DOUGLASTON MANOR ASSOCIATION (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/28/2016	4	4	4	4	6	12	24	45	39	893
6/4/2016							20	5	49	104
6/11/2016	4	4	4	4	7	8	9	12	28	7
6/18/2016							9	4	28	9
6/25/2016	4	4	4	4	7	4	10	15	43	33
7/2/2016							9	23	21	27
7/9/2016	4	5	6	12	5	4	9	5	11	4
7/16/2016							9	11	10	4
7/23/2016	4	4	11	28	4	4	11	17	17	95
7/30/2016							12	16	14	19
8/6/2016	4	4	14	8	4	4	12	24	12	12
8/13/2016							11	4	13	5
8/20/2016	5	6	10	4	6	16	12	16	13	5
8/27/2016							10	9	8	8
9/3/2016	7	17	9	24	11	24	9	7	6	4
9/10/2016							7	7	5	4
9/17/2016									5	4
9/24/2016									9	117

*Note: Rockaway and Breezy Point Beaches are routinely sampled bi-weekly.

Table A1-4: Staten Island Beaches Water Quality Results**Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)***Water Quality Standards- 30 day Geomean limit: 35cfu/100ml, Daily Average limit: 104cfu/100ml**Fresh Water Standards- 30 day Geomean limit: 33cfu/100ml, Daily Average limit: 61cfu/100ml*

Date of Week Ending	SOUTH BEACH (public)		MIDLAND BEACH (private)		CEDAR GROVE BEACH (private)		WOLFE'S POND BEACH (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/28/2016	4	4	5	4	7	4	4	4
6/4/2016	5	8	5	15	8	7	4	4
6/11/2016	5	7	6	8	5	4	6	37
6/18/2016	5	4	5	4	6	5	6	4
6/25/2016	5	4	5	4	5	5	6	5
7/2/2016	5	4	5	4	5	4	6	4
7/9/2016	5	13	5	12	6	17	7	12
7/16/2016	5	4	5	4	6	4	6	9
7/23/2016	5	4	5	4	6	4	6	4
7/30/2016	5	4	5	4	7	13	5	4
8/6/2016*	9	4	8	55	11	5	13	5
8/13/2016	8	5	7	4	9	4	11	4
8/20/2016	9	5	7	4	9	4	10	4
8/27/2016	9	5	7	5	11	15	10	4
9/3/2016	8	7	7	5	9	4	13	23
9/10/2016	8	71	4	4				

* mid-week sample result on 8/2/2106 at Cedar Grove, South and Wolf Pond Beach resulted in water quality exceedances, see appendix B for description.

Table A2-1: 2016 Summary of Beach Samples and Single-Sample Exceedances

Beach	Sample Location	Total # of Samples	# of Sample exceed 104	% of Sample exceed 104
ALL Beaches TOTAL		1511	94	6.2%
Public Beaches TOTAL		582	21	3.6%
Private Beaches TOTAL		923	73	7.9%

Table A2-2: 2016 Public Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples	# of Sample exceed 104	% of Sample exceed 104 (Location)	% of Sample exceed 104 (Beach)
CEDAR GROVE	CEDAR GROVE	Left	21	1	4.8%	4.8%
	CEDAR GROVE	Center	21	1	4.8%	
	CEDAR GROVE	Right	21	1	4.8%	
CONEY ISLAND	CONEY ISLAND BR. 15TH - 6TH	Center	21	1	4.8%	4.0%
	CONEY ISLAND BR. 6TH - OCEAN PKWY	Center	21	1	4.8%	
	CONEY ISLAND OCEAN PKWY - WEST 8TH	Center	20	0	0.0%	
	CONEY ISLAND WEST 8TH - PIER	Center	20	0	0.0%	
	CONEY ISLAND WEST 16TH - WEST 27TH	Center	21	2	9.5%	
	CONEY ISLAND WEST 28TH - WEST 37TH	Center	21	1	4.8%	
MANHATTAN BEACH	MANHATTAN BEACH	Left	21	1	4.8%	6.3%
	MANHATTAN BEACH	Center	21	1	4.8%	
	MANHATTAN BEACH	Right	21	2	9.5%	
MIDLAND BEACH	MIDLAND BEACH	Left	21	0	0.0%	0.0%
	MIDLAND BEACH	Center	21	0	0.0%	
	MIDLAND BEACH	Right	21	0	0.0%	
ORCHARD BEACH	ORCHARD BEACH	Left	21	1	4.8%	3.2%
	ORCHARD BEACH	Center	21	1	4.8%	
	ORCHARD BEACH	Right	21	0	0.0%	
ROCKAWAY BEACH	ROCKAWAY BEACH 9TH - 13TH	Center	10	0	0.0%	0.0%
	ROCKAWAY BEACH 15TH - 22TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 23RD - 59TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 59TH - 80TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 80TH - 95TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 95TH - 116TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 116TH - 126TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 126TH - 149TH	Center	10	0	0.0%	
SOUTH BEACH	SOUTH BEACH	Left	22	1	4.5%	6.1%
	SOUTH BEACH	Center	22	1	4.5%	
	SOUTH BEACH	Right	22	2	9.1%	
WOLFE'S POND BEACH	WOLFE'S POND BEACH	Left	20	1	5.0%	5.0%
	WOLFE'S POND BEACH	Center	20	1	5.0%	
	WOLFE'S POND BEACH	Right	20	1	5.0%	
Public Beaches (Locations) Total			582	21	3.6%	

Table A2-3: 2016 Private Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples	# of Sample exceed 104	% of Sample exceed 104 (Location)	% of Sample exceed 104 (Beach)
AMERICAN TURNER	AMERICAN TURNER	Left	20	2	10.0%	10.0%
	AMERICAN TURNER	Center	20	2	10.0%	
	AMERICAN TURNER	Right	20	2	10.0%	
BREEZY POINT 219	BREEZY POINT 219	Center	10	0	0.0%	0.0%
BREEZY POINT Reid Ave	BREEZY POINT Reid Ave	Center	10	0	0.0%	0.0%
DANISH AMERICAN BEACH CLUB	DANISH AMERICAN BEACH CLUB	Left	21	2	9.5%	11.1%
	DANISH AMERICAN BEACH CLUB	Center	21	2	9.5%	
	DANISH AMERICAN BEACH CLUB	Right	22	3	14.3%	
DOUGLASTON MANOR ASSOCIATION	DOUGLASTON MANOR ASSOCIATION	Left	22	3	13.6%	13.6%
	DOUGLASTON MANOR ASSOCIATION	Center	22	3	13.6%	
	DOUGLASTON MANOR ASSOCIATION	Right	21	3	13.6%	
GERRITSEN/KIDDIE BEACH	GERRITSEN/KIDDIE BEACH	Left	20	3	15.0%	15.0%
	GERRITSEN/KIDDIE BEACH	Center	20	3	15.0%	
	GERRITSEN/KIDDIE BEACH	Right	20	3	15.0%	
KINGSBOROUGH COMMUNITY COLLEGE	KINGSBOROUGH COMMUNITY COLLEGE	Left	19	2	10.5%	14.0%
	KINGSBOROUGH COMMUNITY COLLEGE	Center	19	4	21.1%	
	KINGSBOROUGH COMMUNITY COLLEGE	Right	19	2	10.5%	
LOCUST POINT YACHT CLUB	LOCUST POINT YACHT CLUB	Left	19	0	0.0%	0.0%
	LOCUST POINT YACHT CLUB	Center	19	0	0.0%	
	LOCUST POINT YACHT CLUB	Right	19	0	0.0%	
MANHEM CLUB	MANHEM CLUB	Left	20	4	20.0%	16.7%
	MANHEM CLUB	Center	20	3	15.0%	
	MANHEM CLUB	Right	20	3	15.0%	
MORRIS YACHT AND BEACH CLUB	MORRIS YACHT AND BEACH CLUB	Left	21	0	0.0%	0.0%
	MORRIS YACHT AND BEACH CLUB	Center	21	0	0.0%	
	MORRIS YACHT AND BEACH CLUB	Right	21	0	0.0%	
SCHUYLER HILL CIVIC ASSOCIATION	SCHUYLER HILL CIVIC ASSOCIATION	Left	19	1	5.3%	5.3%
	SCHUYLER HILL CIVIC ASSOCIATION	Center	19	1	5.3%	
	SCHUYLER HILL CIVIC ASSOCIATION	Right	19	1	5.3%	
SEA GATE 42ND	SEA GATE 42ND	Left	20	0	0.0%	1.7%
	SEA GATE 42ND	Center	20	1	5.0%	
	SEA GATE 42ND	Right	20	0	0.0%	
SEA GATE BEACH CLUB	SEA GATE BEACH CLUB	Left	20	0	0.0%	0.0%
	SEA GATE BEACH CLUB	Center	20	0	0.0%	
	SEA GATE BEACH CLUB	Right	20	0	0.0%	
TRINITY DANISH	TRINITY DANISH	Left	19	2	10.5%	10.5%
	TRINITY DANISH	Center	19	2	10.5%	
	TRINITY DANISH	Right	19	2	10.5%	
WEST FORDHAM STREET ASSOCIATION	WEST FORDHAM STREET ASSOCIATION	Left	22	1	4.5%	3.0%
	WEST FORDHAM STREET ASSOCIATION	Center	22	1	4.5%	
	WEST FORDHAM STREET ASSOCIATION	Right	22	0	0.0%	
WHITE CROSS FISHING CLUB	WHITE CROSS FISHING CLUB	Left	19	3	15.8%	15.8%
	WHITE CROSS FISHING CLUB	Center	19	2	10.5%	
	WHITE CROSS FISHING CLUB	Right	19	4	21.1%	
WHITESTONE BOOSTER CIVIC ASSOCIATION	WHITESTONE BOOSTER CIVIC ASSOCIATION	Left	20	1	5.0%	5.0%
	WHITESTONE BOOSTER CIVIC ASSOCIATION	Center	20	1	5.0%	
	WHITESTONE BOOSTER CIVIC ASSOCIATION	Right	20	1	5.0%	
Private Beaches (Locations) Total			923	73	7.9%	

APPENDIX B: 2016 WARNINGS AND CLOSURES

Table B-1: Summary of Beach Warnings and Closure

Beach	Types	Reason	Start Date	End Date	Beach Days	Notification Days	Total Notification Days		
							Warning	Closure	Total
NYC ALL Beaches	Warning or Closure	Enterococci Exceedance or Rainfall Event	5/28/16	9/11/16	2420	249	212	37	249

Table B-2: Public Beaches Warnings and Closures

Beach	Types	Reason	Start Date	End Date	Beach Days	Notification Days	Total Notification Days		
							Warning	Closure	Total
CEDAR GROVE	Other	Pre-emptive Advisory	7/29/16	7/30/16	97	2	4	0	4
	Warning	Enterococci Exceedance (137 CFU/mL)	8/3/16	8/4/16		2			
CONEY ISLAND	Warning	Enterococci Exceedance (259 CFU/mL)	8/3/16	8/4/16	101	2	2	4	6
	Closure	Pre-emptive Advisory	9/4/16	9/7/16		4			
MANHATTAN BEACH	Warning	Enterococci Exceedance (140 CFU/mL)	7/28/16	7/29/16	101	2	2	4	6
	Closure	Pre-emptive Advisory	9/4/16	9/7/16		4			
MIDLAND BEACH	Warning	Pre-emptive Advisory	7/29/16	7/30/16	101	2	2	4	6
	Closure	Tropical Storm	9/4/16	9/7/16		4			
ORCHARD BEACH	Warning	Enterococci Exceedance (217 CFU/mL)	8/4/16	8/5/16	101	2	2	4	6
	Closure	Tropical Storm	9/4/16	9/7/16		4			
ROCKAWAY BEACH	Closure	Tropical Storm	9/4/16	9/7/16	103	4	0	4	4
SOUTH BEACH	Warning	Pre-emptive Advisory	7/29/16	7/30/16	99	2	4	4	8
	Warning	Enterococci Exceedance (293 CFU/mL)	8/3/16	8/4/16		2			
	Closure	Tropical Storm	9/4/16	9/7/16		4			
WOLFE'S POND PARK	Warning	Enterococci Exceedance (667 CFU/mL)	8/3/16	8/4/16	99	2	2	0	2
Public Beaches TOTAL					802	42	18	24	42

Table B-3: Private Beaches Warnings and Closures

Beach	Types	Reason	Start Date	End Date	Beach Days	Notification Days	Total Notification Days		
							Warning	Closure	Total
AMERICAN TURNERS	Warning	Rainfall Event	5/30/16	5/31/16	99	2	8	0	8
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
BREEZY POINT 219					107	0	0	0	0
BREEZY POINT REID					107	0	0	0	0
DANISH AMERICAN BEACH CLUB	Warning	Enterococci Exceedance	5/28/16	6/2/16	102	6	12	0	12
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
DOUGLASTON HOMEOWNERS ASSOCIATION	Warning	Enterococci Exceedance	5/28/16	6/2/16	82	6	33	6	39
	Closure	Enterococci Exceedance	6/3/16	6/8/16		6			
	Warning	Enterococci Exceedance	6/9/16	6/15/16		7			
	Warning	Enterococci Exceedance	6/23/16	6/29/16		7			
	Warning	Rainfall Event	7/5/16	7/7/16		3			
	Warning	Rainfall Event	7/15/16	7/15/16		1			
	Warning	Rainfall Event	7/26/16	7/27/16		2			
	Warning	Rainfall Event	7/29/16	8/1/16		4			
	Warning	Rainfall Event	8/12/16	8/12/16		1			
	Warning	Rainfall Event	9/1/16	9/2/16		2			
GERRITSEN/KIDDIE BEACH	Warning	Rainfall Event	5/30/16	5/31/16	73	2	28	0	28
	Warning	Rainfall Event	6/6/16	6/7/16		2			
	Warning	Rainfall Event	6/9/16	6/9/16		1			
	Warning	Rainfall Event	7/2/16	7/2/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Enterococci Exceedance	7/7/16	7/12/16		6			
	Warning	Rainfall Event	7/26/16	7/27/16		2			
	Warning	Enterococci Exceedance	7/28/16	7/29/16		2			
	Warning	Rainfall Event	7/30/16	8/1/16		3			
	Warning	Enterococci Exceedance	8/3/16	8/9/16		7			

Table B-3: Private Beaches Warnings and Closures (continued)

Beach	Types	Reason	Start Date	End Date	Beach Days	Notification Days	Total Notification Days		
							Warning	Closure	Total
KINGSBOROUGH COMMUNITY COLLEGE	Warning	Enterococci Exceedance	6/15/16	6/21/16	64	7	30	7	37
	Closure	Enterococci Exceedance	6/22/16	6/28/16		7			
	Warning	Enterococci Exceedance	6/29/16	7/19/16		21			
	Warning	Enterococci Exceedance	8/23/16	8/24/16		2			
LOCUST POINT YACHT CLUB	Warning	Rainfall Event	5/30/16	5/31/16	93	2	8	0	8
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
MANHEM BEACH CLUB	Warning	Enterococci Exceedance	5/28/16	6/2/16	95	6	12	0	12
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
MORRIS YACHT AND BEACH CLUB	Warning	Rainfall Event	5/30/16	5/31/16	106	2	8	0	8
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
SCHUYLER HILL CIVIC ASSOCIATION	Warning	Rainfall Event	5/30/16	5/31/16	93	2	8	0	8
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
SEAGATE 42 nd					107	0	0	0	0
SEAGATE BEACH CLUB					107	0	0	0	0
TRINITY DANISH YOUNG PEOPLE'S SOCIETY	Warning	Rainfall Event	5/30/16	5/31/16	93	2	8	0	8
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			

Table B-3: Private Beaches Warnings and Closures (continued)

Beach	Types	Reason	Start Date	End Date	Beach Days	Notification Days	Total Notification Days		
							Warning	Closure	Total
WEST FORDHAM STREET ASSOCIATION	Warning	Rainfall Event	5/30/16	5/31/16	107	2	14	0	14
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Enterococci Exceedance	6/30/16	7/7/16		8			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
	Warning	Rainfall Event	8/11/15	8/12/15		2			
	Warning	Rainfall Event	9/10/15	9/11/15		2			
WHITE CROSS FISHING CLUB	Warning	Rainfall Event	5/30/16	5/31/16	88	2	13	0	13
	Warning	Enterococci Exceedance	6/3/16	6/8/16		6			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/26/16		1			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
WHITESTONE BOOSTER CIVIC ASSOCIATION	Warning	Rainfall Event	5/30/16	5/31/16	95	2	12	0	12
	Warning	Rainfall Event	6/6/16	6/6/16		1			
	Warning	Rainfall Event	6/28/16	6/28/16		1			
	Warning	Rainfall Event	7/5/16	7/6/16		2			
	Warning	Rainfall Event	7/26/16	7/27/16		2			
	Warning	Rainfall Event	7/29/16	7/30/16		2			
	Warning	Rainfall Event	8/1/16	8/1/16		1			
	Warning	Rainfall Event	8/12/16	8/12/16		1			
Private Beaches TOTAL					1618	207	194	13	207

APPENDIX C: 2016 INSPECTION SUMMARY

Table C-1: Inspection Non-Compliance Summary *

Beach Name	Public Health Hazard Violations**	General Violations***					
	167.19(a)(4)	167.31(b) & 167.39(b)	167.31(d) & 167.39(b)(2)	167.05(a)	167.09(b)	167.23(a)	167.09(13)
CONEY ISLAND BEACH		√					√
MANHATTAN BEACH		√					
ORCHARD BEACH			√				
ROCKAWAY BEACH	√						
SEA GATE 42ND				√	√	√	

* All other beaches were in full compliance of the regulations at the time of inspection

**** Public Health Hazard Violations:**

§167.19(a)(4) Failure to post signs indicating "No Lifeguard on Duty - Swimming and Bathing Prohibited" at every entrance when lifeguard not on duty

***** General Violations:**

§167.31(b) & §167.39(b) Failure to provide adequate toilet and shower facilities
 §167.31(d) & §167.39(b)(2) Failure to provide liquid soap, paper towels or electric hand dryer
 §167.05(a) Permit is not conspicuously posted during the time of inspection
 §167.09(b) Most recent inspection report is not readily available at facility for inspection
 §167.23(a) Beach Safety Plan not available during inspection
 §167.09(13) Any other condition determined to be a Public Health Hazard by the department
(e.g. Boardwalk observed with missing and protruding planks and protruding screws causing a tripping hazard at and broken railing or Large pieces of lumber and construction material).