

**Testimony submitted on behalf of Riverkeeper, Inc.**

**New York State Senate Hearing  
Standing Committee on Environmental Conservation  
Notification procedures related to sewage and other pollutants released into our water**

**October 14, 2011**

Thank you Senators Grisanti and Espaillat for holding this Public Hearing. I am here today providing testimony on behalf of Riverkeeper, Inc. (“Riverkeeper”) regarding notification procedures for sewage contamination in the public waterways of New York State.

Riverkeeper is a member-supported watchdog organization dedicated to defending the Hudson River and its tributaries and protecting the drinking water supply of nine million New York City and Hudson Valley residents.<sup>1</sup> For more than 44 years, Riverkeeper has been New York’s clean water advocate. We have helped to establish globally recognized standards for waterway and watershed protection and serve as the model and mentor for the growing Waterkeeper movement that includes nearly 200 Keeper programs across the country and around the globe.<sup>2</sup>

Following the passage of the Clean Water Act in 1972 investments were made in wastewater infrastructure that greatly improved water quality in the Hudson River and other waterways across New York. Public perception of Hudson River water quality also improved and as a result its waterfront has undergone a renaissance as a destination for recreation, tourism, water sports and real estate development. However our current management of the river does not reflect this increasing public use and interest. In particular collection and publication of water quality conditions are not sufficient to fully protect public health.

**Riverkeeper’s Study on Sewage Contamination in the Hudson River**

In response to strong public demand for more information on Hudson River water quality, in 2006 Riverkeeper began a program to assess water quality in the Hudson River Estuary in partnership with researchers from Columbia University Lamont-Doherty Earth Observatory and Queens College, City University of New York.<sup>3</sup> Riverkeeper’s Water Quality Program focuses on regularly collecting and analyzing water samples from the entire length of the Hudson Estuary for indicators of human sewage, and disseminating that data to the public in

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<sup>1</sup> For more information on Riverkeeper’s mission and work, please see our website, [www.riverkeeper.org](http://www.riverkeeper.org), last accessed September 19, 2011.

<sup>2</sup> See the Waterkeeper Alliance website, <http://www.waterkeeper.org>

<sup>3</sup> Detailed information on Riverkeeper’s water quality sampling campaign, including sample locations and data from the last four years of sampling, can be found on our website at <http://www.riverkeeper.org/water-quality/locations>

a straightforward, clear and timely manner.<sup>4</sup> Our boat captain John Lipscomb samples at 75 set sampling locations, from just above the Troy Dam to the Battery in New York City. A mobile laboratory installed on the Riverkeeper vessel *R. Ian Fletcher* is used to analyze the samples. Sampling is done from early spring through late fall of each year, and sample results are posted on the Riverkeeper website and distributed through email reports.<sup>5</sup>

In August 2011, Riverkeeper released *How is the Water? Sewage Contamination in the Hudson River Estuary*, a comprehensive report that summarizes the results of our water quality sampling over the past five years, and identifies policy solutions to address the continuing problem of sewage pollution in the Hudson, including the need for a public notification law in New York State.<sup>6</sup>

The findings from our study show that sewage contamination remains a widespread problem in the Hudson River Estuary. Of the approximately 2,000 water quality samples we have collected in five years from 2006 to 2010, 21% of them failed the EPA guideline for safe swimming. By comparison, water quality samples collected at beaches nationwide (including ocean, bay and Great Lake beaches) failed the EPA safe swimming standard 7% of the times sampled over the same time period.<sup>7</sup>

We also found that sewage contamination increases after rain at many locations however some locations are contaminated even in dry weather.<sup>8</sup>

Contamination is higher near the shoreline and at the mouth of tributaries entering the Hudson where water quality samples were unacceptable 24% and 34% of the time respectively.<sup>9</sup> The shoreline is typically where sewage and people enter the Hudson.

This brings me to an important point. People use their local waterways at every possible access point they can find from the shoreline as well as from motorboats, sailboats, kayaks, windsurfers, surfboards, etc. Public contact with the water is by no means limited to designated beach areas. The Hudson River Estuary, which has four officially designated swimming beaches, is in fact a 155-mile long beach. This widespread use of our waterways outside of designated beach areas has been confirmed by fellow Waterkeeper groups across New York State - upstate as well as downstate, from the Atlantic to the Great Lakes.

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<sup>4</sup> Riverkeeper has based our assessment of acceptable water quality on the federal guidelines outlined in the 2000 Beaches Environmental Assessment and Coastal Health (BEACH) Act. We test for the sewage-indicating microbe of the genus *Enterococcus* (“Enterococcus”). It is the only group of microbes recommended by the EPA for use as a sewage indicator in both fresh and salt water. This is well suited to the Hudson River Estuary, which contains fresh, salt, and brackish (mixed) water.

<sup>5</sup> *Id.* at Note 3.

<sup>6</sup> Hard copies of the report *How is the Water? Sewage Contamination in the Hudson River Estuary*, are included with Riverkeeper’s testimony. The report is available to download from our website at [http://www.riverkeeper.org/wp-content/uploads/2011/08/RvK\\_How-Is-the-Water\\_2006-10.pdf](http://www.riverkeeper.org/wp-content/uploads/2011/08/RvK_How-Is-the-Water_2006-10.pdf)

<sup>7</sup> Dorfman, M., Rosselot, K.S., *Testing the Waters: A Guide to Water Quality at Vacation Beaches*, Natural Resources Defense Council, New York, NY, 2010, p. V.

<sup>8</sup> Brown, T., *How is the Water? Sewage Contamination in the Hudson River Estuary*, Riverkeeper, Ossining, NY, 2011, p. 19.

<sup>9</sup> *Ibid.* p. 17.

For this reason Riverkeeper is calling for a Sewage Notification legislation that is focused on protecting public health and is not limited to designated beaches or areas classified by the state as suitable for swimming. This law would respond to the clear need to better inform the public about water quality throughout our waterways, so that the public's exposure to waterborne illnesses is minimized.

### **Public Health Risks**

Exposure to raw and partially treated sewage poses serious health risks not only to swimmers, surfers and others who have "primary contact" with the water but also to people who have "secondary contact" such as kayakers, boaters and fishermen. A small drop of human or animal fecal matter can contain millions of microorganisms of many types, some of which are disease-causing pathogens.<sup>10</sup> Exposure to disease-causing pathogens can lead to short-term and chronic illnesses and in some instances death (see Addendum I: Acute and Chronic Health Effects Associated with Waterborne Pathogens).

Children, pregnant women, the elderly and people with compromised immune systems are at greater risk of contracting chronic illnesses from sewage-contaminated water.

A survey by the Center for Disease Control reported over 4,000 documented illnesses from recreational waters in the U.S. in 2005-2006. However this number is assumed to be low because waterborne illnesses are notoriously underreported. People often associate the most common ailments, stomach and digestive system problems, with what they ate for lunch instead of contact with water. Still, reports of illness resulting from swimming are on the rise nationally.<sup>11</sup>

### **Current Wastewater Infrastructure Investment Levels are Insufficient**

Investment in our wastewater infrastructure has been on the decline for decades so it should come as no surprise that sewage contamination in our waterways, and associated illnesses, are on the rise.<sup>12</sup>

According to a 2008 report by the New York Department of Environmental Conservation (DEC) many wastewater facilities in New York are past their expected useful lives and maintenance and upgrades at these facilities is lagging far behind where they need to be to keep up with increasing demand. Statewide more than 30% of the systems are in excess of 60 years old, while they were designed to last 30 to 40 years. The report makes the case for how important a fully functioning wastewater infrastructure is and calls for funding solutions to this worsening problem.<sup>13</sup>

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<sup>10</sup> Rose, J.B., et al., *Microbial Pollutants in Our Nation's Waters: Environmental and Public Health Issues*, American Society for Microbiology, Washington, D.C., 1999, p. 8.

<sup>11</sup> Yoder, J., et al., *Surveillance for Waterborne Disease and Outbreaks Associated with Recreational Water Use and Other Aquatic Facility-Associated Health Events*, Center for Disease Control, Washington D.C., 2008.

<sup>12</sup> Ibid.

<sup>13</sup> "Wastewater Infrastructure Needs of New York" NYS DEC, 2008, [http://www.dec.ny.gov/docs/water\\_pdf/infrastructure rpt.pdf](http://www.dec.ny.gov/docs/water_pdf/infrastructure rpt.pdf)

## **Increased Awareness Can Drive Renewed Investment in Wastewater Infrastructure**

A Sewage Right to Know law would go a long way towards educating the public, our elected officials and our government agencies about the widespread nature of our sewage contamination problems. Riverkeeper believes, based on our experience with communities on the Hudson, that this increased awareness will lead to investment in infrastructure repairs and other positive steps, both local and statewide, to improve our water quality and reduce the amount of sewage entering the Hudson.

You have received written testimony from the Chairwoman of the Rockland County Legislature, Harriet Cornell, and today you will hear from Rockland County legislator Connie Coker and Piermont Mayor Chris Sanders. These local elected officials all have accounts of actions taken to improve their local water quality that are in direct response to the water quality data from Riverkeeper's study. Our study shows the localized nature of sewage contamination and that information is leading to local actions to fix the sources of contamination in communities like Piermont up and down the Hudson River Estuary.

## **Feasibility of a Sewage Right to Know Law in New York State**

In tough economics times like these funding to fix our aging wastewater infrastructure is hard to come by so it is reasonable to expect that we will be living with exposure to sewage for quite a few years to come. In light of this reality Riverkeeper believes that citizens have the right to full public disclosure of all available data on water quality in our public waterways. This is not only a good practice of transparent governance, it is a necessity for protecting public health.

A Sewage Right to Know law is not a new idea or an expensive proposition. Similar public notification laws already exist in more than a dozen other states.<sup>14</sup> Some counties in New York have sewage public notification requirements or are working to put them in place.

The infrastructure to test for water quality and to provide public notification is already in place in New York. Through press reports and web postings we already know what the weather will be, if the ozone levels will be high on a given day and where the traffic jams are at any given moment. Unsafe water quality can and should be added to the list of daily notifications we have come to expect and rely on.

## **The Elements of a Successful Sewage Right to Know Law**

Based on our review of sewage notification laws in other states and our knowledge of sewage issues in the Hudson River Valley accumulated over decades of work on the subject,

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<sup>14</sup> See sample state notification laws in *What's In Your Water? The State of Public Notification in 11 U.S. States*, American Rivers, Washington D.C., 2007. <http://www.americanrivers.org/library/reports-publications/whats-in-your-water.html>

Riverkeeper recommends that a New York State Sewage Right to Know law contain the following three elements:

- 1) The online publishing of all currently available water quality data in a clear and timely manner. This should include the single sample data at each sample site, not averaged data. (The importance of posting single sample data is addressed in the testimony provided by Gregory O'Mullan of Queens College so I respectfully refer you to that testimony for further explanation of this important distinction.)

All currently available data on wet weather releases should be published, such as the specific locations of CSO discharge pipes and the amount of rainfall that triggers sewage to flow from each pipe.

Locations where there is currently no water quality testing taking place should also be published so the public knows that they cannot expect any water quality advisories at those locations until monitoring is put into place.

Locations where there is chronic sewage contamination should be highlighted and include a standing public health advisory until the water quality is improved. Signs should also be posted at those locations especially when they are at a public access point such as a boat launch or a waterfront park.

- 2) Daily Water Quality Advisories alerting the public to areas where water quality fails to meet the EPA guidelines for safe contact due to high levels of sewage contamination. The advisories should be issued to the media, posted online and available in a hotline recording for people without internet access. The advisories must cover all instances where water quality is unacceptable including accidental discharges, planned discharges and wet weather releases.

When advisories are issued only in response to accidental releases from failures in our wastewater infrastructure, or planned releases associated with repairs, the public is misled into thinking that they are getting advisories whenever water quality is unsafe for contact and that is not the case. For example, in Westchester County where there is a notification requirement that is applied to only accidental and planned releases the public has been warned to stay out of the water at beaches when water quality was actually acceptable, despite an ongoing discharge. Then after the discharge is fixed and beaches reopened, a significant rainfall triggers even larger and more widespread sewage discharges and the public unwittingly gets into water that is now truly unsafe for contact. A case study that details one such event that occurred this past August is included with these comments as Addendum II.

- 3) Increased water quality monitoring and the development of predictive models. The best practice in water quality monitoring is to create computer models that predict water quality in real time based on actual sampling data and other factors that determine water quality at a given location such as weather. Predictive water quality models are currently used across New York State, at our swimming beaches and elsewhere. The real time

reports from these models should be posted online as part of the publishing requirement of this law. There are many examples of this approach working successfully in other communities such as the Philly Rivercast site [<http://www.phillyrivercast.org/>] that provides online prediction of water quality on the Schuylkill River in Pennsylvania.

Water quality monitoring locations and frequency should also be reflective of where the public and the sewage enter our waterways to provide the greatest value. The more accurate our water quality data is the more accurate our advisories can be, lessening the misinformation and anxiety we saw this past July in response to the sewage releases associated with the fire at the North River Wastewater Treatment Plant in New York City. (See Addendum III for more information on the North River incident). A well-designed and implemented public notification system will bring more members of the public to New York waterfronts, empowering people to make well-informed choices on when and where to recreate.

Riverkeeper urges the Committee members to consider these recommendations for a Sewage Right to Know law for New York.

I appreciate the opportunity to present Riverkeeper's comments on this critical issue to the Environmental Conservation Committee. Riverkeeper is committed to working with the Senate, the Assembly, DEC and other agencies and community based organizations to improve public notification and monitoring of water quality in New York State, so that all New Yorkers can safely enjoy our many beautiful waterways. It is Riverkeeper's firm belief that the best way to ensure the long-term protection of our waterways is to build a strong public constituency that values and appreciates them like the people who have come here today and the thousands more like them across our state.

Please contact me if you have any questions or comments about Riverkeeper's testimony. I can be reached by phone at 917-589-8727, or via e-mail, [tbrown@riverkeeper.org](mailto:tbrown@riverkeeper.org).

Respectfully,

Tracy Brown  
Water Quality Consultant  
Riverkeeper

## Addendum I

### Acute and Chronic Health Effects Associated with Waterborne Pathogens

Source: Centers for Disease Control and Prevention. Emerging Infectious Diseases, vol. 3, no. 4, Oct-Dec 1997.

TYPE	AGENT	ACUTE EFFECTS	CHRONIC OR ULTIMATE EFFECTS
<b>BACTERIA</b>			
	E. coli O157:H7	Diarrhea	Adults: death (thrombocytopenia)
	Legionella pneumoniae	Fever, pneumonia	Elderly: death
	Helicobacter pylori	Gastritis	Ulcers and stomach cancer
	Vibrio cholerae	Diarrhea	Death
	Vibrio vulnificus	Skin & tissue infection	Death in those with liver disorders or problems
	Campylobacter	Diarrhea	Death: Guillain-Barré syndrome
	Salmonella	Diarrhea	Reactive arthritis
	Yersinia	Diarrhea	Reactive arthritis
	Shigella	Diarrhea	Reactive arthritis
	Cyanobacteria (blue-green algae) and their toxins	Diarrhea	Potential cancer
	Leptospirosis	Fever, headache, chills, muscle aches, vomiting	Weil's Disease, death (not common)
<b>PARASITES</b>			
	Aeromonas hydrophila	Diarrhea	
	Giardia lamblia	Diarrhea	Failure to thrive, Severe hypothyroidism, Lactose intolerance, Chronic joint pain
	Cryptosporidium	Diarrhea	Death in immune-compromised host
	Toxoplasma gondii	Newborn syndrome, Hearing and visual loss, Mental retardation, Diarrhea	Dementia and/or seizures
	Acanthamoeba	Eye infections	
	Microsporidia, (Enterocytozoon & Septata)	Diarrhea	
<b>VIRUSES</b>			
	Hepatitis viruses	Liver infection	Liver failure
	Adenoviruses	Eye infections, diarrhea	
	Caliciviruses, small round structured viruses, Norwalk virus	Diarrhea	
	Coxsackieviruses	Encephalitis, Aseptic meningitis, Diarrhea, Respiratory disease	Heart disease (Myocarditis), reactive insulin-dependent diabetes
	Echoviruses	Aseptic meningitis	

## **Addendum II**

### **Case Study 2: Ossining, NY, Westchester County, 8/11/11 – 8/12/11**

**Finding: Notifying the public of only accidental releases, not wet weather releases or chronic contamination, misleads people and puts the public health at risk.**

#### **Sewage Discharge Location**

The sewage discharge was flowing from a broken pipe in Killbrook Creek, into the Hudson River south of Westerly Marina, north of the Ossining Boat and Canoe Club. Ossining is on the eastern shore of the Hudson in Westchester County, NY.

#### **Discharge Source and Duration**

A member of the public discovered the discharge on August 11th, 2011. It was caused when a tree fell on an exposed section of a sewer main crossing Killbrook Creek. It is not known when the tree fell and the discharge started. Repairs on the broken main started shortly after the spill was discovered. Repairs were completed and the flow stopped late the next day, August 12th.

Westchester County estimated that 1.5 million gallons of sewage was released daily while the release was flowing.

#### **Response to Discharge**

Westchester County issued a public notification of the release to the press and the public on the day that the report was received. They closed the public beach in Croton Point Park and advised the closing of all other beaches in Westchester from Tarrytown to Croton for 8/11 through 8/13.

Riverkeeper sampled at the discharge point and in the surrounding area on 8/12/11 and again on 8/15/11. It rained on 8/14/11. We found worse water quality in the area around the discharge on 8/15/11 following the rain than the water quality on 8/12/11 when the sewage release was stilling flowing.

#### **Summary**

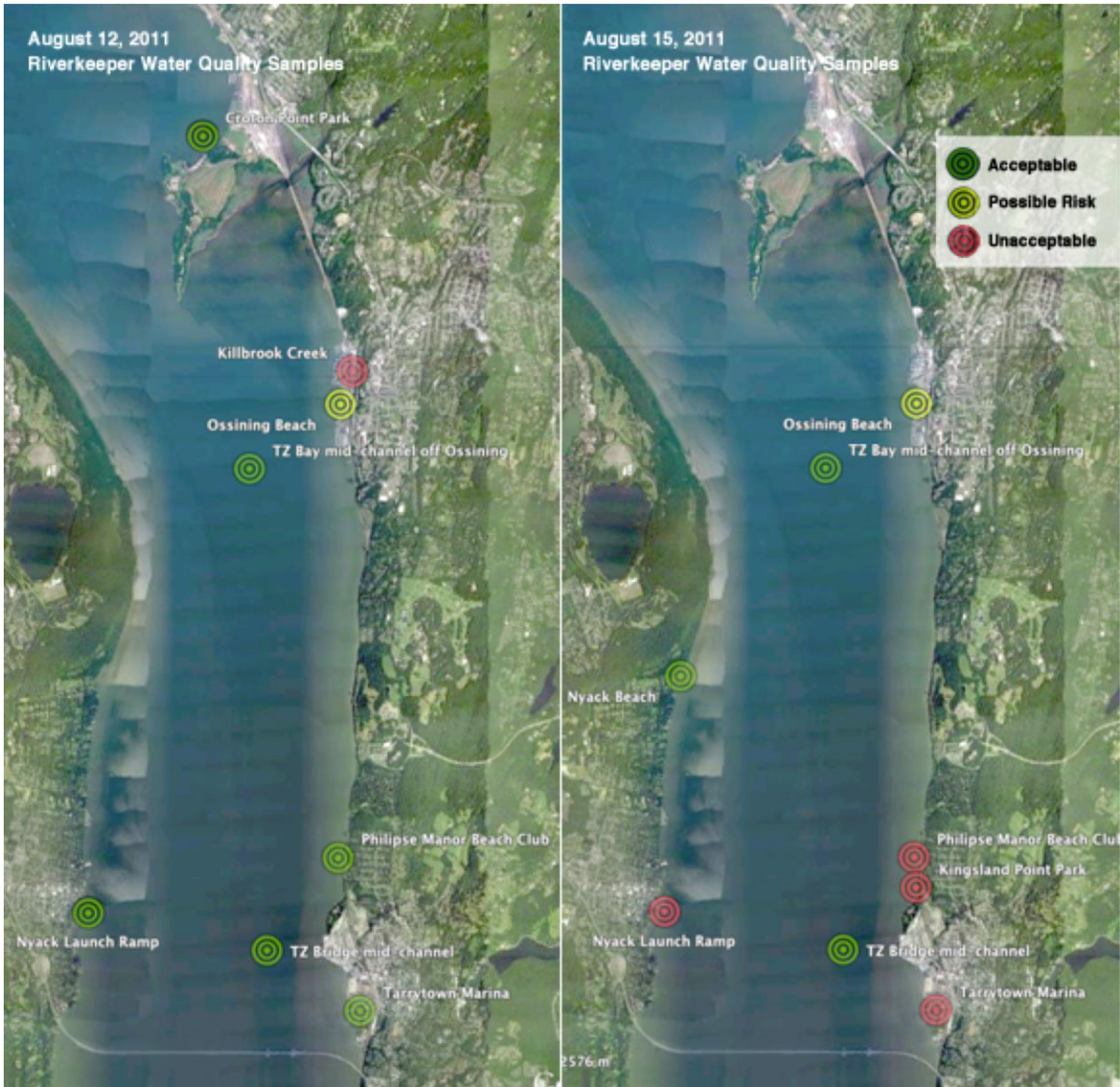
Notifying the public of only accidental releases, not wet weather releases or chronic contamination, misleads people and puts the public health at risk. If you notify about some sewage releases, you need to notify about all sewage releases.

Westchester County did a good job notifying the public of the dangers of coming into contact with sewage-contaminated water from the accidental release. However, the public is not getting notified when water quality is unacceptable due to high level of sewage after rain.

Following the spill in Ossining, Westchester County lifted their advisory to stay out of the Hudson on Saturday evening, 8/13, and the beaches in Croton and Sleepy Hollow reopened. On Monday, 8/15, the public was back in the water feeling relieved that the advisory had been lifted. What they didn't know was that the water quality on Monday was worse than it was during the advisory period. The rain on 8/14 had triggered sewage overflows along the shoreline that had a larger impact on water quality than the accidental release had.

Warning the public about sewage contamination only in the case of accidental releases does not sufficiently protect public health.





Water quality sampling following an accidental sewage release in Ossining, NY, 8/11 & 8/12/11

## **Addendum III**

### **Case Study 2: Harlem, New York City, 7/20/11 – 7/22/11**

**Finding: It matters where you collect your water quality samples. To have meaningful data and an appropriate response, water quality samples must be collected near the source of the discharge and at nearby public access points such as waterfront parks and kayak launches.**

#### **Sewage Discharge Location**

The sewage discharge was flowing from multiple combined sewer overflow (CSO) pipes on the Hudson River shoreline of Manhattan.

New York City Department of Environmental Protection (DEP) reported to Riverkeeper on 7/21/11 that the following CSO outfalls were discharging raw sewage diverted from the plant in the Hudson River: W. 18th Street, W. 26th Street, W. 158th Street, Bloomfield Street (Meatpacking District). A CSO at Academy Street was discharging into the Harlem River.

#### **Discharge Source and Duration**

A catastrophic fire at the North River Sewage Treatment Plant caused that plant to temporarily shutdown. As a result an estimated 250 million gallons of sewage was released into the Hudson and Harlem Rivers over the course of three days, 7/20/11 – 7/22/11.

#### **Response to Discharge**

NYC DEP issued public notification of the sewage release to the press on 7/20 that contained limited information. The DEP did not specify the locations of the outfalls where the sewage was discharging leading the public to assume it was only discharging in the vicinity of the plant, not at four locations spread along the Westside and one in the Harlem River. The distribution of the notification was also very limited in scope. As a result of these two factors many people were in the sewage-laden water during the release, both in the vicinity the plant itself and at the other discharge locations.

Riverkeeper sampled along the western shoreline of Manhattan, in the middle of the River and along the NJ shoreline on 7/19, 7/21, 7/22 and again on 7/25/11. We published our water quality data online as soon as it was available.

#### **Summary**

It matters where you collect your water quality samples. To have meaningful data and an appropriate response, water quality samples must be collected near the source of the discharge and at nearby public access points such as waterfront parks and kayak launches.

Riverkeeper's water quality data provided a more accurate representation of where contamination was present, and at what levels, than the data gathered by DEP. This is because Riverkeeper sampled at locations near the shoreline where the sewage was entering the river and where the public typically comes into contact with the water. DEP sampled primarily at their standard mid-channel sites where dilution lowers the sewage counts.

Public notification needs to be specific and directed to reach the people most likely to come into contact with the water, as well as the general public. NYC's limited notification was not sufficient to alert New Yorkers of the high levels of sewage contamination along the Hudson River shoreline and keep the public out of harm's way. Kayakers and swimmers were in the contaminated water during the sewage discharge.

## **Addendum IV**

### **Case Study 1: Beacon Harbor, Beacon, NY, Dutchess County, 9/17/11 – ONGOING**

**Finding: When public notification is not required by law it usually does not happen.**

#### **Sewage Discharge Location**

The sewage discharge was flowing from a pipe in the northeastern corner of Beacon Harbor in Beacon's waterfront park. The City of Beacon is on the eastern shore of the Hudson in Dutchess County, NY.

#### **Discharge Source and Duration**

A member of the public discovered the discharge on September 17th, 2011. At the time of this report (October 13, 2011) the discharge is still flowing. The source of this sewage release is not yet known.

#### **Response to Discharge**

Riverkeeper reported the discharge to the NY State Department of Environmental Conservation (DEC) through its 24-hour dispatch number on Sunday the 18th after visiting the site and confirming the report. We also notified the Beacon Harbormaster and Beacon Pool staff at that time.

Boat Captain John Lipscomb returned to the harbor on Friday the 23rd, found the discharge was still flowing and collected a water quality sample. The sample, taken directly at the discharge pipe, hit the limits of our onboard lab system at **>24,196 Enter count per 100/ml**. That is more than 397 times greater than the EPA guideline for acceptable water quality – 61 Enterococci per 100/ml.

Riverkeeper reported our water quality finding to DEC on September 24th. DEC reported it to the Beacon Water and Sewer Superintendent.

In the absence of any public notification of the spill, Riverkeeper notified the press and the public on the morning of September 28th, advising people to avoid contact with the water in the area of spill. The Mayor of Beacon issued the first official public notification of the spill that evening in the form of a message posted on the city website.

Riverkeeper collected another water quality sample on September 30<sup>th</sup>. It was also **>24,196 Enter count per 100/ml**. The Mayor of Beacon and NYS DEC called for the Dutchess County Department of Health to test the water on September 29th. The results of that testing has not yet been made public (as of October 3<sup>rd</sup>).

#### **Summary**

When public notification is not required by law it usually does not happen.

Dutchess County has not issued any public notification about the ongoing sewage discharge in Beacon Harbor even though it is happening at a public access point. There are no signs at the site of the discharge warning the recreating public to avoid contact with the water.