

***Annual Drinking Water Quality Report for 2010***  
***Highland Water District***  
***12 Church Street, Highland N.Y. 12528***  
***(Public Water Supply ID#NY5503368 )***

## **INTRODUCTION**

To comply with State regulations, the Highland Water District is issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, your tap water met all State drinking water health standards. We are proud to report that our system did not violate a maximum contaminant level or any other water quality standard. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards.

If you have any questions about this report or concerning your drinking water, please contact Andrew Paccione, Chief Water Plant Operator, at (845) 691-2400. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled village board meetings. The meetings are held on the second Wednesday of the month, at the Town Hall, 12 Church Street, Highland, N.Y.

## **WHERE DOES OUR WATER COME FROM?**

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water sources are the Hudson River, four upland reservoirs, one horizontal well, and three vertical wells, drilled into Illinois Mountain, which are used as supplemental sources for the reservoirs. The reservoirs and wells are located behind the John Jankiewicz Water Plant at 2 Thomas Rizzo Boulevard, Highland, NY 12528. During 2010, our system did not experience any restrictions of our water source. The water was clarified, filtered, and chlorinated prior to distribution.

## **FACTS AND FIGURES**

Our water system serves approximately 5000 people through 1630 service connections. The total amount of water produced in 2010 was 194,352,600 gallons. The daily average of water treated and pumped into the distribution system was 537,000 gallons, with a highest single day production of 889,000 gallons. The amount of water delivered to customers was 138,646,361 gallons, leaving

55,706,239 gallons unaccounted for (29% of the total amount produced). The accounted for water was used to flush mains, fight fires, and lost due to leaks. In 2010, water customers were charged \$3.75 per 1000 gallons of water.

### ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrates, nitrites, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Ulster county Health Department at (845) 340-3010

Table of Detected Contaminants							
Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination

#### Microbiological Contaminants

Turbidity*	No	1/9/10	.25	NTU	N/A	TT=<1.0 NTU	Soil runoff
Turbidity*	No	1/10/10	100%<.03	NTU	N/A	TT=95% of samples <.03 NTU	Soil runoff
Total Organic Carbon*2	No	10/10/10	4.3	mg/l	N/A	TT range 1.1-4.3	Naturally present in the environment

#### Inorganic Contaminants

Barium	No	6/10/10	.015	mg/l	2	2	Erosion of natural deposits
Chloride	No	6/10/10	34	mg/l	N/A	250	Naturally occurring
Manganese	No	6/11/10	.003	mg/l	N/A	.3	Naturally occurring
Lead*3	No	6/11/10	24	ug/l	0	AL=15	Corrosion of household plumbing
	No	6/17/10	25	ug/l	0	AL=15	Corrosion of household plumbing
Copper*4	No	6/17/09	1.34	mg/l	1.3	AL=1.3	Corrosion of household plumbing
Sodium*5	No	6/10/10	19.6	mg/l	N/A	N/A	Naturally occurring
Sulfate	No	6/11/10	14	mg/l	N/A	250	Naturally occurring

#### Disinfection By Products

Total Trihalomethanes*6	No	8/19/10	*54.5 Range: 11.7-156.2	ug/l	N/A	80	Chlorine by products
Total Haloacetic Acids	No	11/10/10	*67 Range:<.001-67	mg/l	N/A	60	Chlorine by products

#### Disinfectants

Chlorine Residual*8	No	8/20/10	2.9	mg/l	N/A	4	Water additive used to control micro organisms
---------------------	----	---------	-----	------	-----	---	--

---

Notes:

\*1- Turbidity is a measure of the cloudiness of water. We test it because it is a good indicator of the effectiveness of our filtration system. Our highest, single most turbidity measurement was (0.25 NTU) for the year, occurring on 1/09/10. State regulations require that turbidity must always be less than or equal to 1.0NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3NTU.

\*2- Total Organic Carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs).

\*3- Twenty samples were collected in our water system and the range of detection was (ND-25). The 90<sup>th</sup> percentile value of the 20 sites tested was the third highest value (13 ug/l). A percentile is a value on a scale of 100 that indicates the percent of a distribution that equal to or below it. The 90<sup>th</sup> percentile is equal to or greater than 90% of the lead values detected at our water system. The action level for lead was exceeded at two of the sites tested.

\*4- Twenty samples were collected in our water system and the range of detection was (.027-1.34).The 90<sup>th</sup> percentile of the 20 sites tested was the third highest value (0.316mg/l). The action level for copper was exceeded at one of the sites tested.

\*5- Water containing more than 20mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270mg/l of sodium should not be used for drinking by people on a moderately restricted sodium diet..

\*6- This level represents the highest annual average calculated from the data collected.

\*7- This level represents the highest annual average calculated from the data collected.

\*8-Value presented represents the Maximum Residual Disinfectant Level (MRDL) which is a level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. MRDLs are currently not regulated but in the future they will be enforceable in the same manner as MCLs.

**Maximum Contaminant Level (MCL)**: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

**Maximum Contaminant Level Goal (MCLG)**: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Residual Disinfectant Level (MRDL)**: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG)**: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

**Action Level (AL)**: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Treatment Technique (TT)**: A required process intended to reduce the level of a contaminant in drinking water.

**Non-Detects (ND)**: Laboratory analysis indicates that the constituent is not present.

**Nephelometric Turbidity Unit (NTU)**: A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Milligrams per liter (mg/l)**: Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

**Micrograms per liter (ug/l)**: Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

## WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had no violations. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below New York State requirements. It should be noted that the action level for lead (15ug/l) was exceeded at two sites, or 10% of the homes tested. We are required to present the following information on lead in drinking water:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. The Highland Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

## **LONG TERM 2 ENHANCED SURFACE WATER TREATMENT RULE & STAGE 2 DISINFECTANTS AND DISINFECTION BYPRODUCTS RULE**

To control microbial contaminants, in 1989 the EPA promulgated the Surface Water Treatment Rule, which established maximum contaminant level goals for viruses, bacteria and Giardia. The Surface Water Treatment Rule also includes filtration and disinfection requirements which are treatment technique requirements to protect against the potential adverse health effects of exposure to these microbial pathogens. We add chlorine to disinfect the drinking water and protect it from microbes. However, chlorine can react with naturally-occurring materials in the water to form byproducts, such as trihalomethanes and haloacetic acids, which may pose health risks. Amendments to the Safe Drinking Water Act in 1996 require the EPA to develop rules to balance the risks between microbial contaminants and disinfection byproducts. It is important to strengthen protection against microbial pathogens, especially Cryptosporidium, and at the same time, reduce potential health risks of disinfection byproducts. The Stage 1 Disinfectants and Disinfection Byproducts Rule, announced in 1998, and the Long Term 1 Enhanced Surface Water Treatment Rule, finalized in January 2002, were the first phase of a set of rules under the 1996 Safe Drinking Water Act Amendments. These rules cover public water systems that use surface or ground water under direct influence of surface water and serve fewer than 10,000 people. In January 2006, the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) & Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR) were promulgated. These regulations build upon the earlier rules. The LT2ESWTR requires our system to monitor source water for microbial contaminants to determine if the source is vulnerable to contamination and may require additional treatment. The Stage 2 DBPR requires our system to complete an Initial Distribution System Evaluation to characterize disinfection byproduct levels in our distribution system and identify locations to monitor disinfection byproducts for compliance.

Chlorination of drinking water is considered to be one of the major health advances of the past century, as it may well have saved millions of lives by preventing the spread of disease. We add chlorine to accomplish "disinfection" which is the final protection against water borne disease. However, we are now discovering that there may be long-term consequences to using chlorinated water, such as an increased risk of bladder cancer, reproductive concerns for women, and other adverse health effects. If these potential risks are of concern to you, you may want to consider an additional "treatment" tool at home, in the use of 'chlorine reducing' carbon filters. If you choose to use such filters, please be aware of the need to maintain them, as a dirty filter can be more of a hazard than no filter at all.

## **IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?**

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During 2009, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

## **DO I NEED TO TAKE SPECIAL PRECAUTIONS?**

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

## **WHY SAVE WATER AND HOW TO AVOID WASTING IT?**

Systems must include a discussion of water conservation measures available to customers. A number of examples are presented on page 18-19 of the State Guidance document. An example statement is provided below.

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- ◆ Saving water saves energy and some of the costs associated with both of these necessities of life;
- ◆ Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- ◆ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ◆ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- ◆ Turn off the tap when brushing your teeth.
- ◆ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- ◆ Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.
- ◆ Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the meter after 15 minutes. If it moved, you have a leak.

## **CLOSING**

Included in this report is an attached "Source Water Assessment" that the Ulster County Health Department has provided. This report provides additional information regarding the conditions of our watersheds. Also included is last year's baseline monitoring program summary from the New York State Department of Health which provides information on water samples for polychlorinated biphenyl (PCBs) analysis during the dredging of the Hudson River by TROY N.Y.

The dredging will proceed again in May 2011, and sampling will start again.

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community. This report will also be available on the web site at [www.townoflloyd.com/water](http://www.townoflloyd.com/water). Please contact our office at (845)691-2400 if you have any questions.

Highland Water District  
Hudson River and Upland Reservoirs  
NY5503368  
AWQR Summary

The NYS DOH has completed a source water assessment for this water system, based on available information. Possible and actual threats to this drinking water source were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants could affect the sources. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become contaminated. See section “Are there contaminants in our drinking water?” for a list of the contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future.

Hudson River

The Hudson River watershed is exceptionally large and too big for a detailed evaluation in the Source Water Assessment Program. General drinking water concerns for public water supplies which use these sources include: storm generated turbidity, eutrophication (excessive nutrients and algae), wastewater, and toxic sediments. In addition, salt water can enter the lower Hudson and impact drinking water quality during periods of low flow. The summary below is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this PWS intake.

This assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agriculture land cover/pasture in the assessment area results in a high potential for protozoa contamination. There is also a high density of sanitary wastewater discharges which results in elevated susceptibility for numerous contaminant categories. Non-sanitary wastewater discharges may also contribute to contamination. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: Inactive hazardous waste sites and landfills. It should be noted that these types of facilities may typically be found within watersheds encompassing a large geographical area, such as the Hudson River Watershed.

Upland Reservoirs

The assessment area for this drinking water source contains no discrete potential contaminant sources, and the land cover contaminant prevalence ratings are low. However, the high mobility of microbial contaminants in reservoirs results in this drinking water intake having medium-high susceptibility ratings for protozoa and enteric bacteria and viruses. Furthermore, some reservoirs are highly susceptible to water quality problems caused by phosphorus additions.

Please note that our water is filtered and disinfected to ensure that the finished water delivered into your home meets the New York State’s drinking water standards for microbial contamination.

County and state health departments may use this information to direct future source water protection activities. This may include water quality monitoring, resource management, planning, and education programs.

You can view a copy of the assessment, including a map of the assessment area, by contacting us at:

Highland Water District  
12 Church Street  
Highland, N.Y. 12528  
845-691-2400



## New York State Department of Health

### Hudson River Public Water System 2009 Phase 1 Monitoring Program Summary

From May through November 2009, the New York State Department of Health (NYSDOH) collected water samples for polychlorinated biphenyl (PCB) analysis from public water systems on the Hudson River. The monitoring program was developed to provide information about the systems during the dredging of PCB-contaminated Hudson River sediments by the General Electric Company. These samples were compared to samples collected prior to dredging, to help us understand if water quality changed. Samples were collected before treatment (raw water) and after treatment (finished water). All samples were found to have a PCB concentration less than the Federal and State drinking water standard of 500 nanograms per liter (ng/L).

The baseline monitoring included systems in the Upper and Lower Hudson Rivers. We intended to include the same systems for the Phase 1 monitoring. However, prior to the start of dredging, Stillwater received a carbon filtration system from to remove PCBs from their well water, while Waterford and Halfmoon decided to use finished drinking water from Troy. As there were no Upper Hudson River systems actively using the river as a water source during dredging, we focused on four Lower Hudson River systems: Green Island, Rhinebeck, Port Ewen, and Poughkeepsie. These systems were sampled approximately every two weeks.

Two methods were used to analyze the samples for PCBs. One was an Aroclor Method, similar to the USEPA (Environmental Protection Agency) Method 508 that is used by most public water systems for routine testing of PCBs. We required the laboratory to report a lower detection limit than is commonly used. (A detection limit is the smallest amount that can be measured). We used an Aroclor Method because it allows for a direct comparison to existing data from the water systems. The other method is called the Green Bay Method, which provides more detailed information about specific types of PCBs, called congeners.

Using the Green Bay Method, PCBs in raw water ranged from less than 9.1 ng/L to 57.5 ng/L, and PCBs in finished water ranged from less than 9.1 ng/L to 29.7 ng/L. Using the Aroclor Method, PCBs in finished water ranged from less than 6.1 ng/L to 71.5 ng/L (see Table 1). These data are within the range of the PCB concentrations measured during the 2008 baseline monitoring (see the attached 2008 NYSDOH Baseline Monitoring information sheet).

Our 2008 and 2009 monitoring programs were funded by the USEPA. The USEPA expects dredging to resume in May 2011. The NYSDOH will continue to monitor the Hudson River public water systems during dredging if funding is extended.

The NYSDOH will continue to work with water systems, local health departments, the NYS Department of Environmental Conservation, local elected officials, and the USEPA to protect public water systems during dredging. If you have any questions, please call the DOH Environmental Infoline at 1-800-458-1158, extension 27711.