

# PEQUANNOCK TOWNSHIP'S WATER QUALITY REPORT

SOME PEOPLE MAY BE MORE VULNERABLE TO CONTAMINANTS IN DRINKING WATER THAN IS 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 ABOUT DRINKING WATER FROM THEIR HEALTH CARE PROVIDERS. EPA/CDC GUIDELINES ON APPROPRIATE MEANS TO LESSEN THE RISK OF INFECTION BY CRYPTOSPORIDIUM ARE AVAILABLE FROM THE SAFE DRINKING WATER HOTLINE (800 426-4791).

| Regulated Contaminants             | Units                     | Maximum Contaminant Level Goal (MCLG)        | Maximum Contaminant Level (MCL) | Results               |   | Source of Contaminant  |
|------------------------------------|---------------------------|--|---------------------------------|-----------------------|---|--|
|                                    |                           |  |                                 | Newark System         | Pequannock System   |  |
| <b>Inorganic Contaminants:</b>     |                           |  |                                 |                       |   |  |
| Antimony                           | ppb                       | 6  | 6                               | ---                   | <3  | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.                                     |
| Arsenic                            | ppb                       | N/A  | 50                              | ---                   | <2  | Erosion of natural deposits; runoff from orchards and glass and electronic production wastes.                            |
| Barium                             | ppm                       | 2  | 2                               | 0.01                  | 0.020   | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.                              |
| Cadmium                            | ppb                       | 5  | 5                               | ---                   | <4  | Erosion of natural deposits; corrosion of galvanized pipes; discharge from metal refineries, waste batteries and paints. |
| Chromium                           | ppb                       | 100  | 100                             | ---                   | <4  | Erosion of natural deposits; discharge from steel and pulp mills.  |
| Copper                             | ppm                       | 1.3  | AL=1.3                          | ---                   | 0.17  | Corrosion of household plumbing systems; erosion of natural deposits.  |
| Cyanide                            | ppb                       | 200  | 200                             | 0.066                 | <2  | Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.                                   |
| Fluoride                           | ppm                       | 4  | 4                               | 0.081                 | 0.12  | Erosion of natural deposits; water additive promoting strong teeth; discharge from fertilizer and aluminum factories.    |
| Lead                               | ppb                       | 0  | AL=15                           | 0-10.2                | 7   | Corrosion of household plumbing systems; erosion of natural deposits.  |
| Mercury                            | ppb                       | 2  | 2                               | <0.02                 | <0.2  | Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.       |
| Nitrate (ppm as nitrogen)          | ppm                       | 10   | 10                              | 0.05                  | 1.16-5.23<br>Highest level = 5.23   | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.                             |
| <b>Radiological Substances:</b>    |                           |  |                                 |                       |   |  |
| Gross Alpha                        | pCi/l                     | 0  | 15                              | ---                   | 2.7   | Erosion of natural deposits.   |
| Radium                             | pCi/l                     | 0  | 5                               | ---                   | ---   | Erosion of natural deposits.   |
| <b>Microbiological Substances:</b> |                           |  |                                 |                       |   |  |
| Total Coliforms, Bacteria          | Number of positive sample | 0  | One Positive Sample per month   | 0                     | 2   | Naturally present in the environment.  |
| <b>Turbidity:</b>                  |                           |  |                                 |                       |   |  |
| Turbidity                          | ntu                       | N/A  | 0.3-1 NTU                       | 0.03-0.39             | ---   | Soil runoff.   |
| <b>Volatile Organic Chemicals:</b> |                           |  |                                 |                       |   |  |
| TTHMs Total                        | ppb                       | N/A  | 80                              | 44-58<br>average = 50 | 0.05-55.8<br>average = 24.5   | By-product of drinking water disinfection.   |
| Halo Acetic Acids                  | ppb                       | N/A  | 60                              | 33-52<br>average = 44 | 1.20-21.5<br>average = 13.1   | By-product of drinking water disinfection.   |
| 1, 1, 1-Trichloroethane            | ppb                       | 26   | 30                              | N.D.                  | 2.2   | Discharge from metal degreasing sites and other factories.   |
| <b>Secondary Contaminants:</b>     |                           |  |                                 |                       |   |  |
| Secondary Contaminants             | Units                     | Secondary Standard (Recommended Upper Limit) | Results                         |                       | Source of Contaminant   |  |
|                                    |                           |  | Newark System                   | Pequannock System     |   |  |
| Aluminum                           | ppm                       | 0.2  | 0.046                           | <0.1                  | By-product of water treatment using aluminum salts.                                     |  |
| Chloride                           | ppm                       | 250  | 26.6                            | 135                   | Erosion of natural deposits.  |  |
| Chlorine Residual                  | ppm                       | 4  | 0.864                           | 0.02-0.89             | Chlorine remaining in treated water and available to destroy disease causing organisms. |  |
| Color                              | CU                        | 10   | 4                               | <5                    | Presence of manganese and iron, plankton, humus, peat and weeds.                        |  |
| Hardness                           | ppm                       | 50-250                                       | 42.2                            | 350                   | A characteristic of water caused primarily by salts of calcium and magnesium.           |  |
| Iron                               | ppm                       | 0.3  | ---                             | <0.15                 | Erosion of natural deposits.  |  |
| Manganese                          | ppm                       | 0.05   | 3.6                             | 0.005                 | Erosion of natural deposits.  |  |
| Odor (TON)                         | TON                       | 3  | 1                               | 0                     | Algae and plant matter.   |  |
| pH                                 | units                     | 6.5-6.8                                      | 7.34                            | 7.53-7.84             | Presence of carbonates, bicarbonates, and carbon dioxide.                               |  |
| Sodium                             | ppm                       | 50   | 13.7                            | 89.4                  | Runoff from road salt and from some water softening processes.                          |  |
| Sulfate                            | ppm                       | 250  | 14.0                            | 38                    | Drainage of mining wastes, erosion of natural deposits.                                 |  |
| Zinc                               | ppm                       | 5  | ---                             | 0.318                 | Erosion of natural deposits.  |  |
| Total Dissolved Solids             | ppm                       | 500  | 115                             | 464                   | Erosion of natural deposits.  |  |

LOCAL POSTAL CUSTOMER

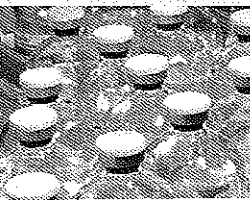
TOWNSHIP OF PEQUANNOCK  
530 TURNPIKE • POMPTON PLAINS, NJ 07444

# 2008 ANNUAL WATER QUALITY REPORT

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TOWNSHIP OF PEQUANNOCK

## SAFE DRINKING WATER ACT (SDWA)



Amendments to the Safe Drinking Water Act in 1996 require that utilities issue an annual "Consumer Confidence Report" to its customers. This report details where our water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. The Township of Pequannock is committed to providing you with the safest and most reliable water supply. Informed consumers are our best allies in maintaining safe drinking water.

We are proud to report that the water provided by Pequannock Township meets or exceeds Federal primary water standards.

**Water Source:** The Pequannock Township Water Utility is supplied by three ground water wells located in the northern portion of the Township in the vicinity of West Parkway and the Boulevard. Depths of the wells range from 152 to 196 feet.

Subsurface ground formations that produce ground water which the wells draw from are known as aquifers. Water in aquifers come mainly from rain and snow which passes through the ground and becomes part of the ground water. The aquifer which the Township wells draw from is known as the Buried Valley Aquifer. The characteristics of this aquifer is a thick layer of unconsolidated sediments which includes coarse sand, gravel and finer soils which were deposited at the end of the last ice age.

In addition to the three Township wells, Pequannock's water system has two interconnections with the City of Newark water system. Newark's water comes from a surface source from the Pequannock Water Shed which is supplied by five reservoirs; Charlottesburg, Echo Lake, Canistear, Clinton and Oak Ridge. The purpose of these interconnections is to supplement the Township's supply of water during high demand periods and for emergency supply. These interconnections exist along the aqueduct which crosses the Township and the connections are located at Hopper Avenue and Jefferson Street. During 2007, the approximate volume of water delivered from the Newark system represents 21.94% of the annual volume of water distributed by the Township.

The Township also has interconnections and provides water for distribution to the Borough of Lincoln Park and Riverdale.

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system, which is available at [www.state.nj.us/dep/swap/](http://www.state.nj.us/dep/swap/) or by contacting the NJDEP, Bureau of Safe Drinking Water at (609) 292-5550. The source water assessment performed on our three well sources determined the following:



Pequannock Township Water Department is a public community water system consisting of 3 well(s), 0 wells under the influence of surface water, 0 surface water intake(s), 0 purchased ground water source(s), and 1 purchased surface water source(s).

This system's source water comes from the following aquifer(s) and/ or surface water body(s) (if applicable): glacial sand and gravel.

This system purchases water from the following system(s) (if applicable): NEWARK WATER DEPARTMENT.

## SUSCEPTIBILITY RATINGS FOR THE PEQUANNOCK TOWNSHIP WATER DEPARTMENT SOURCES

The table on top of page 4 illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides the number of wells and intakes that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility of purchased water, refer to the specific water system's source water assessment report.

The seven contaminant categories are defined on page 4. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes' susceptibility to radionuclides was not determined and they all received a low rating.

If a system is rated highly susceptible for a contamination category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

| Sources                 | Pathogens |   |   | Nutrients |   |   | Pesticides |   |   | Volatile Organic Compounds |   |   | Inorganics |   |   | Radio-Nuclides |   |   | Radon |   |   | Disinfection Byproducts Precursors |   |   |
|-------------------------|-----------|---|---|-----------|---|---|------------|---|---|----------------------------|---|---|------------|---|---|----------------|---|---|-------|---|---|------------------------------------|---|---|
|                         | H         | M | L | H         | M | L | H          | M | L | H                          | M | L | H          | M | L | H              | M | L | H     | M | L | H                                  | M | L |
| Well-3                  |           |   |   | 3         | 3 |   |            |   |   | 1                          | 2 | 2 |            | 1 |   | 3              | 3 |   |       | 2 | 1 |                                    |   | 3 |
| GUDI-0                  |           |   |   |           |   |   |            |   |   |                            |   |   |            |   |   |                |   |   |       |   |   |                                    |   |   |
| Surface Water Intakes-0 |           |   |   |           |   |   |            |   |   |                            |   |   |            |   |   |                |   |   |       |   |   |                                    |   |   |

\* **Pathogens:** Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.

\* **Nutrients:** Compounds, minerals and elements that aid growth, that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.

\* **Volatile Organic Compounds:** Man-made chemicals used as solvents, degreasers and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.

\* **Pesticides:** Man-made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.

\* **Inorganics:** Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead and nitrate.

\* **Radionuclides:** Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.

\* **Radon:** Colorless, odorless, cancer-causing gas that occurs naturally in the environment. For more information go to <http://www.nj.gov/dep/rpp/radon/index.htm> or call (800) 648-0394.

\* **Disinfection Byproduct Precursors:** A common source is naturally occurring matter in surface water. Disinfection byproducts are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

If a system is rated highly susceptible for a contamination category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are detected at frequencies and concentrations above allowable levels.

## TREATMENT OF WATER

The Township treats its water with sodium hypochlorite (chlorine) at all three wells. The purpose of this treatment is to disinfect the water to kill microorganisms which can cause diseases such as typhoid fever and cholera.

In addition, Well #3 water passes through an air stripper to reduce the level of radon at this source.

## TESTING OF WATER

To ensure the safety of our water, the Township of Pequannock monitors the quality of water at the wells and within the distribution system. More than 100 compounds are evaluated at NJDEP and EPA certified laboratories. This report is based upon tests conducted in 2006 and 2007 by the Pequannock Township Health Department. Terms used in the Water Quality Table on pages 1 & 2 and in other parts of this report are defined here.

**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 using the best available treatment technology.

**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 disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant 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.

**Primary Standards** - Federal drinking water regulations that are health related.

**Secondary Standard** - Federal drinking water measurements for substances that are not health related. These are recommended levels and reflect aesthetic qualities of water.

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

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

**Variance and Exemption:** Both of these terms are defined as State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

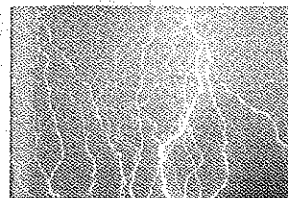
## Key to Table:

- AL = Action Level
- MCL = Maximum Contaminant Level
- MCLG = Maximum Contaminant Level Goal
- MFL = Million Fibers per Liter
- MRDL = Maximum Residual Disinfectant Level
- MRDLG = Maximum Residual Disinfectant Goal
- mrem/year = millirems per year (a measure of radiation absorbed by the body)
- NTU = Nephelometric Turbidity Units
- pci/l = picocuries per liter (a measure of radioactivity)
- ppm = parts per million, or milligrams per liter (mg/l)
- ppb = parts per billion, or micrograms per liter (ug/l)
- ppt = parts per trillion, or nanograms per liter
- ppq = parts per quadrillion, or picograms per liter
- TT = Treatment Technique

## WHAT DO THE #S MEAN?

In this newsletter, we have dealt extensively with standards in determining federal and state safe drinking water requirements. A standard is a rule, a principle or a measurement established by governmental authority. These regulations protect the public health and welfare.

Life is dependent upon water. Water exists in nature in many forms... in clouds, rain, snow, ice and fog. Even while falling as rain, water picks up small amount of gases, ions, dust, and particulate matter from the atmosphere. Then, as it flows over or through the surface layer, it dissolves and carries with it some of almost everything that it touches including that which is discarded by man.



## HEALTH INFORMATION

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water.

Drinking water, including bottled water, may reasonably be 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 Environmental Protection Agency Safe Drinking Water Hotline (800 426-4791).

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 radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

(A) Microbial contaminants which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

(B) Inorganic contaminants, such as salt and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

(C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff and residential uses.

(D) Organic chemical contaminants, including synthetic and volatile organics, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

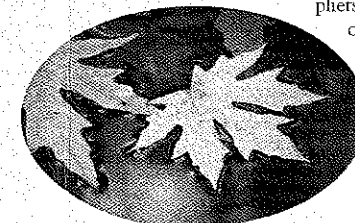
(E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

(F) Radon - Pequannock's water does contain radon, however, the amount of radon detected complies with State and Federal regulations. Radon is a radioactive gas that you can't see, taste or smell. Found throughout the U.S. radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Where the level of radon is 4 picocuries per liter of air (pCi/L) or higher, home repairs should be made which can correct this problem. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your state radon program or call ERA's Radon Hotline (800-SOS-RADON).

(G) Cryptosporidium - The City of Newark tests its finished water supply for cryptosporidium on a monthly basis. It has never been detected in a viable state in its treated water supply. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-

threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

(H) Chlorine - A century ago, acute diseases such as typhoid fever and cholera were a very real threat to our health because the microorganisms that caused these diseases were found in public drinking water. However, for almost 100 years, water suppliers in America and other countries have used chlorine to treat or disinfect drinking water. According to the U.S. Environmental Protection Agency and other health agencies, chlorine is currently one of the most effective disinfectants to kill harmful microorganisms. Disinfection of all public water supplies is required by State and Federal laws and regulations, including the Safe Drinking Water Act and the Surface Water Treatment Rule.



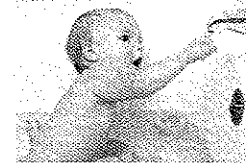
(I) Total Trihalomethanes (TTHMs) - Untreated water contains organisms that may cause illness. Chlorine is used as a primary disinfectant and serves to maintain a level of disinfection in the pipes that transport water to homes and businesses. When organic compounds in untreated water react with chlorine, they produce byproducts known as trihalomethanes (thms). Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with the liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

(J) Turbidity - Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

## WATER HARDNESS

Hardness is the level of dissolved natural minerals (calcium and magnesium) found naturally in water. These minerals are an important part of a healthy diet. Hard water contains more mineral nutrients and less sodium. A gradual build-up of calcium and magnesium may form a harmless, filmy white deposit on faucets, and in tea kettles. Hard water also requires more soap to lather fully.



## CONCERNING NITRATES IN OUR WATER

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause "Blue Baby" syndrome and shortness of breath. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.

## CONCERNING SODIUM IN OUR WATER

Pequannock Township Water System exceeded the Secondary Recommended Upper Limit (RUL), for Sodium during the period October 1, 2005 through September 30, 2006. The RUL for Sodium is 50 parts per million (ppm) and our water system detected sodium at 75.35 ppm.

This is not an emergency, but as our customers, you have the right to know what happened and what is being done to correct the situation. For healthy individuals, the sodium intake from water is not important, because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the RUL might be of concern to individuals on sodium restricted diets.

What Should I Do? There is nothing you need to do at this time. What Happened? What is being done? Sodium is derived geologically from the leaching of surface and underground deposits of salt (example: Sodium Chloride), and from the decomposition of sodium silicate and similar minerals. The sodium ion is a major constituent of natural waters. Human activities also contribute sodium to water supplies, primarily through the use of sodium chloride as a deicing agent and the use of washing products. Pequannock Township has not identified the origin of sodium in the water at this time. Pequannock Township will continue to closely monitor the water quality of the system to ensure compliance with State and Federal Laws, and is investigating what corrective action may be taken to improve this condition with guidance from the New Jersey Department of Environmental Protection (NJDEP).

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

## QUESTIONS ABOUT WATER TESTING AND THE PEQUANNOCK TOWNSHIP WATER SYSTEM

If you have any questions about this Water Quality Report or the water testing performed by the Township, please contact the Health Department at (973) 835-5700 Ext. 127 between the hours of 8:30 am and 4:30 pm.

To learn more about the water system, its' operation and supply, please contact the Department of Public Works at (973) 835-9001.

The Township Council meets on the second and fourth Tuesdays of each month. There is a public discussion period at each meeting where questions and concerns are addressed. These meetings are open to the public and you are always welcome and invited to attend.