



Presented By
Denville Water

Annual
WATER
QUALITY
REPORT

Reporting Year 2013



DENVILLE TOWNSHIP

MAYOR: THOMAS W. ANDES

COUNCIL MEMBERS

COUNCIL PRESIDENT: GENE FITZPATRICK

DOUGLAS GABEL

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PWS ID#: NJ1408001

There When You Need Us

We are once again proud to present our annual water quality report, covering testing performed between January 1 and December 31, 2013. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

For more information about this report, or for any questions relating to your drinking water, please call Thomas M. Andes, Licensed Water Treatment Operator, at (973) 625-8334.

Where Does My Water Come From?

Our primary drinking water supply is from a groundwater source called the Early Mesozoic Basin Aquifer. The rock type in this aquifer is sandstone. We have five wells placed throughout the area that are used to draw from this groundwater supply. In addition to our own wells, we purchase water from the Morris County Municipal Utilities Authority (MUA). The MUA operates six wells in Alamatong, located in Randolph and Chester Township, and two wells in Flanders Valley, located in Mount Olive and Roxbury Township. These wells draw from the Upper and Lower Stratified Glacier Drift and the Lower Leithsville Limestone Formations. Customers from the south side of town receive their drinking water solely from the MUA. Customers in all other areas receive their water from the Denville Water Department. Demand for good, safe drinking water is high: we provide to our customers an average of 1.8 million gallons of water every day.

Our water supply is part of the Hackensack-Passaic Watershed, which covers an area of about 1,123 square miles. One-third of our watershed is covered by urban development, with the remainder under forest cover or used for agricultural purposes. We are entrusted to maintain this watershed property, ensuring a safe and dependable water supply to our customers. To learn more about our watershed on the Internet, go to the U.S. EPA's Surf your Watershed Web site at www.epa.gov/surf.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the first and third Tuesdays of each month, beginning at 7:30 pm at Town Hall, 1 St. Marys Place, Denville.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include: **Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife; **Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; **Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems; **Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

How Is My Water Treated and Purified?

Our groundwater supply is not exposed to air and is not subject to the direct pollution and contamination that a river or a reservoir may receive. In fact, because groundwater is the safest and highest quality water available to meet the public health demand of water intended for human consumption, we are able to provide your water directly from the source. However, as an additional service to our customers, we initially process our water through an air stripper to remove volatile organic compounds, such as MTBE. Vyrodox for manganese removal is conducted. Then we add chlorine (a precaution against any bacteria that may be present) before pumping the water to sanitized, underground reservoirs, water towers and into your home or business. We carefully monitor the amount of water additive, adding the lowest quantity necessary to protect the safety of your water without compromising quality and taste.

About our Violation

During the second quarter of 2013, we failed to take a required sample and did not monitor for Volatile Organic Compounds (VOCs) at one well in the public drinking water system. Upon being notified of this violation, we immediately analyzed for the VOCs. Results of the analysis have been received and properly recorded as required by state and federal law. We do not believe that missing this monitoring requirement had any impact on public health and safety. We have already taken the steps to ensure that adequate monitoring and reporting will be performed in the future so that this oversight will not be repeated.

Monitoring Requirements Not Met for the Morris County Municipal Utilities Authority

The Morris County MUA violated a drinking water standard in 2013. Even though this was not an emergency, as their customers, you have a right to know what happened and what they did to correct these situations. They 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 their drinking water meets health standards. During the year 2013 they inadvertently did not complete all monitoring for Nitrate, and therefore cannot be sure of the quality of the drinking water during that time. They have eight active wells. They missed a Nitrate sample at two of these wells in 2013. There is nothing you need to do at this time. All prior and subsequent Nitrate sample test results from these wells have been in compliance.

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. 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.

For more information, please contact the MCMUA at (973) 285-8385.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are 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 or at www.epa.gov/safewater/lead.

Radon

Radon is a radioactive gas that you cannot see, taste, or smell. It is 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. You should pursue radon removal for your home if the level of radon in your air is 4 pCi/L or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your state radon program or call U.S. EPA's Radon Hotline at (800) SOS-RADON.

Source Water Assessment

Denville Township Water Department- PWSID # NJ1408001

Denville Township Water Department is a public community water system consisting of 5 well(s), 0 wells under the influence of surface water, 0 surface water intake(s), 2 purchased ground water source(s), and 4 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 water system(s) (if applicable): ROCKAWAY BORO WD, BOONTON TWP. WD, MORRIS COUNTY MUA, MOUNTAIN LAKES WD, PARSIPPANY TROY HILL WD, RANDOLPH MUA

Susceptibility Ratings for Denville Township Water Department Sources

The table to the right 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 ratings of purchased water, refer to the specific water system's source water assessment report.

The seven contaminant categories are defined at the bottom of this page. 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 contaminant 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.

CONTAMINANT CATEGORY	SOURCES	WELLS-5	GUDI-0	SURFACE WATER INTAKES
Pathogens	H			
	M	5		
	L			
Nutrients	H	5		
	M			
	L			
Pesticides	H			
	M			
	L	5		
Volatile Organic Compounds	H	5		
	M			
	L			
Inorganics	H			
	M	1		
	L	4		
Radionuclides	H			
	M	5		
	L			
Radon	H	2		
	M	3		
	L			
Disinfection Byproduct Precursors	H	3		
	M	2		
	L			

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 organic 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.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES ¹										
				Township of Denville Water Department		MUA				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE	
Alpha Emitters (pCi/L)	2011	15	0	3.88	ND-3.88	3.6	ND-3.6	No	Erosion of natural deposits	
Arsenic (ppb)	2011	5	0	1	ND-1	0.6	ND-0.6	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	
Asbestos (MFL)	2009	7	7	4.4	ND-4.4	NA	NA	No	Decay of asbestos cement water mains; Erosion of natural deposits	
Barium (ppm)	2011	2	2	0.017	0.012-0.017	0.5	0-0.5	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	
Chlorine ² (ppm)	2013	[4]	[4]	0.37	0.37-0.37	0.5	0.5-0.5	No	Water additive used to control microbes	
Chromium (ppb)	2011	100	100	1	1-1	1.6	0.8-1.6	No	Discharge from steel and pulp mills; Erosion of natural deposits	
Combined Radium (pCi/L)	2011	5	0	1.5	ND-1.5	NA	NA	No	Erosion of natural deposits	
Fluoride (ppm)	2011	4	4	0.13	0.07-0.13	0.2	0.07-0.2	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	
Haloacetic Acids [HAA]-Stage 2 (ppb)	2013	60	NA	1.1	ND-1.1	4.2	ND-4.2	No	By-product of drinking water disinfection	
Methyl tert-Butyl Ether [MTBE] (ppb)	2013	70	NA	NA	NA	0.6	ND-0.6	No	Leaking underground gasoline and fuel tanks, gasoline and fuel oil spills	
Nickel (ppb)	2011	100	NA	1	ND-1	3.5	ND-3.5	No	Pollution from mining and refining operations; natural occurrence in soil	
Nitrate (ppm)	2013	10	10	1.81	0.54-1.81	3.0	0.6-3.0	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	
Selenium (ppb)	2011	50	50	NA	NA	0.8	ND-0.8	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines	
TTHMs [Total Trihalomethanes]-Stage 2 (ppb)	2013	80	NA	6.5	ND-6.5	NA	NA	No	By-product of drinking water disinfection	
Trichloroethylene (ppb)	2013	1	0	0.5	ND-0.5	NA	NA	No	Discharge from metal degreasing sites and other factories	
p-Dichlorobenzene (ppb)	2013	75	75	0.6	ND-0.6	NA	NA	No	Discharge from industrial chemical factories	

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2011	1.3	1.3	0.134	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2011	15	0	3	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES (TOWNSHIP OF DENVILLE WATER DEPARTMENT)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	RUL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2011	250	NA	146	70–146	No	Runoff/leaching from natural deposits
Hardness [as CaCO ₃] (ppm)	2011	250	NA	284	198–284	No	Naturally occurring
pH (Units)	2011	6.5-8.5	NA	8.17	6.67–8.17	No	Naturally occurring
Sodium ³ (ppm)	2011	50	NA	70.8	19.2–70.8	No	Naturally occurring
Sulfate (ppm)	2011	250	NA	27	16–27	No	Runoff/leaching from natural deposits; Industrial wastes

¹ Under a waiver granted on December 30, 1998, by the State of New Jersey Department of Environmental Protection, our system does not have to monitor for synthetic organic chemicals/pesticides because several years of testing have indicated that these substances do not occur in our source water. The SDWA regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals and synthetic organic chemicals. Our system received monitoring waivers for synthetic organic chemicals and asbestos.

² Amount Detected value represents an average.

³ 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 recommended upper limit may be a concern to individuals on a sodium restricted diet.

Definitions

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MFL (million fibers per liter): A measure of the presence of asbestos fibers that are longer than 10 micrometers.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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 contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

RUL (Recommended Upper Limit): Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RULs are recommendations, not mandates.

Secondary Contaminant: Substances that do not have an impact on health. Secondary Contaminants affect aesthetic qualities such as odor, taste, or appearance. Secondary standards are recommendations, not mandates.