

ANNUAL WATER
QUALITY
REPORT

WATER TESTING PERFORMED IN 2016



Presented By
Township of Moorestown

We've Come a Long Way

Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Where Does My Water Come From?

Your drinking water comes from a blend of sources that may include ground water from the Potomac-Raritan-Magothy Aquifer and surface water from the Delaware River. Moorestown Township purchases surface water from New Jersey American Water.

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/lead.



System Update

As recommended by the NJDEP, the North Church Street water treatment plant and supplying well were turned off in February 2016. After installation of NJDEP approved temporary treatment, the Plant and a supplying well were placed on line in February 2017. A permanent treatment facility to follow.

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.

Source Water Assessment



SWAP (Source Water Assessment Program) is a program of the New Jersey Department of Environmental Protection (NJDEP) to study existing and potential threats to the quality of public drinking water sources throughout the state. Sources are rated depending upon their contaminant susceptibility.

DEP considered all surface water highly susceptible to pathogens; therefore, all intakes received a high rating for the pathogen category. For the purpose of the 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 a low rating was assigned.

Susceptibility Ratings for the Township of Moorestown Water Department Sources

The table below 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.

| Sources | PATHOGENS | | | NUTRIENTS | | | PESTICIDES | | | VOLATILE ORGANIC COMPOUNDS | | | INORGANICS | | | RADIONUCLIDES | | | RADON | | | DISINFECTION BYPRODUCT 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 |
| Wells - 7 | | | 7 | | | 7 | | | 7 | | | 7 | | | 7 | | | | | | 7 | | | 7 |

For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report. Source Water Assessment Reports, Definitions, and Summaries are available for public water systems at www.state.nj.us/dep/swap/ or by contacting the NJDEP's Bureau of Safe Drinking Water at (609)292-5550.

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, NJDEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Unregulated Contaminant Monitoring

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

QUESTIONS?

We want you to be informed about your drinking water. For more information about this report, or for any questions relating to your drinking water, please call Martin Pratt at the Moorestown Township Department of Public Works at (856) 235-3520.

Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; our goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring 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

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | MCL [MRDL] | MCLG [MRDLG] | Moorestown Township | | Delaware River Regional WTP | | VIOLATION | TYPICAL SOURCE |
|--|-----------------|-------------------------|-----------------|---------------------|-------------------|-----------------------------|----------------------|-----------|---|
| | | | | AMOUNT DETECTED | RANGE LOW-HIGH | AMOUNT DETECTED | RANGE LOW-HIGH | | |
| 1,1-Dichloroethylene (ppb) | 2016 | 2 | 2 | 0.12 | NA | NA | NA | No | Discharge from industrial chemical factories |
| Alpha Emitters (pCi/L) | 2016 | 15 | 0 | 11.6 | NA | NA | NA | No | Erosion of natural deposits |
| Arsenic (ppb) | 2014 | 5 | 0 | 0.78 | 0.54–0.78 | NA | NA | No | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes |
| Barium (ppm) | 2014 | 2 | 2 | 0.083 | 0.031–0.083 | NA | NA | No | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| Beryllium (ppb) | 2014 | 4 | 4 | 0.7 | ND–0.7 | NA | NA | No | Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries |
| Cadmium (ppb) | 2014 | 5 | 5 | 0.06 | ND–0.06 | NA | NA | No | Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints |
| Chlorine (ppm) | 2016 | [4] | [4] | 0.32 ² | 0.21–0.46 | 1.02 | 0.36–1.02 | No | Water additive used to control microbes |
| Chromium (ppb) | 2014 | 100 | 100 | 0.66 | ND–0.66 | NA | NA | No | Discharge from steel and pulp mills; Erosion of natural deposits |
| Combined Radium (pCi/L) | 2016 | 5 | 0 | 3.87 | NA | NA | NA | No | Erosion of natural deposits |
| Fluoride (ppm) | 2014 | 4 | 4 | 0.129 | ND–0.129 | NA | NA | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| Haloacetic Acids [HAA] (ppb) | 2016 | 60 | NA | 4 ³ | ND–6 | NA | NA | No | By-product of drinking water disinfection |
| Mercury [inorganic] (ppb) | 2014 | 2 | 2 | 0.082 | 0.079–0.082 | NA | NA | No | Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland |
| Nickel (ppb) | 2014 | 100 | NA | 10.4 | 0.32–10.4 | NA | NA | No | Pollution from mining and refining operations; Natural occurrence in soil |
| Nitrate (ppm) | 2016 | 10 | 10 | 4.03 | ND–4.03 | 1 | 1–1 | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Selenium (ppb) | 2014 | 50 | 50 | 3.6 | 2.5–3.6 | NA | NA | No | Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines |
| TTHMs [Total Trihalomethanes] (ppb) | 2016 | 80 | NA | 26 ³ | 4.1–32 | NA | NA | No | By-product of drinking water disinfection |
| Tetrachloroethylene (ppb) | 2016 | 1 | 0 | 0.23 | NA | NA | NA | No | Discharge from factories and dry cleaners |
| Thallium (ppb) | 2014 | 2 | 0.5 | 0.03 | ND–0.03 | NA | NA | No | Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories |
| Total Organic Carbon (% removal) | 2016 | TT>or equal 35% removal | NA | NA | NA | 44% ⁴ | 44%–63% ⁴ | No | Naturally present in the environment |
| Trichloroethylene (ppb) | 2016 | 1 | 0 | 1.23 ⁵ | NA | NA | NA | No | Discharge from metal degreasing sites and other factories |
| Turbidity⁶ (NTU) | 2016 | TT=1 NTU | 0 | NA | NA | 0.16 | 0.04–0.16 | No | Soil runoff |

REGULATED SUBSTANCES ¹

| | | Moorestown Township | | Delaware River Regional WTP | | | | | |
|--|-----------------|--------------------------|-----------------|-----------------------------|-------------------|--------------------|-------------------|-----------|----------------|
| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | MCL [MRDL] | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
| Turbidity (Lowest monthly percent of samples meeting limit) | 2016 | TT=% of samples <0.3 NTU | NA | NA | NA | 100% | NA | No | Soil runoff |

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) | 2014 | 1.3 | 1.3 | 0.0731 | 0/33 | No | Corrosion of household plumbing systems; Erosion of natural deposits |
| Lead (ppb) | 2014 | 15 | 0 | 5.4 | 2/33 | No | Corrosion of household plumbing systems; Erosion of natural deposits |

UNREGULATED SUBSTANCES (MOORESTOWN TOWNSHIP)

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AMOUNT DETECTED | RANGE LOW-HIGH | TYPICAL SOURCE |
|-------------------------------------|-----------------|--------------------|-------------------|--|
| 1,2,3-Trichloropropane (ppb) | 2016 | 0.067 | ND-0.067 | Halogenated alkane; Used as an ingredient in paint, varnish remover, solvents, and degreasing agents |

UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3)

| | | Moorestown Township | | Delaware River Regional WTP | | | |
|----------------------------------|-----------------|---------------------|-------------------|-----------------------------|-------------------|---|--|
| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AMOUNT DETECTED | RANGE LOW-HIGH | AMOUNT DETECTED | RANGE LOW-HIGH | TYPICAL SOURCE | |
| 1,1-dichloroethane (ppb) | 2013/2014 | 0.049 | ND-0.049 | NA | NA | NA | |
| 1,4-Dioxane (ppb) | 2013/2014 | 0.31 | ND-0.31 | NA | NA | NA | |
| Chlorate (ppb) | 2013/2014 | 90 | ND-90 | NA | NA | NA | |
| Chromium-3 (ppb) | 2013/2014 | 1.6 | ND-1.6 | NA | NA | NA | |
| Cobalt (ppb) | 2013/2014 | 6.3 | ND-6.3 | NA | NA | NA | |
| Hexavalent Chromium (ppb) | 2013/2014 | 1.5 | ND-1.5 | 1.0 | 0.65-1.22 | Naturally occurring element; Used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation | |
| Molybdenum (ppb) | 2013/2014 | 2.1 | ND-2.1 | 1.4 | 1.2-1.7 | Naturally occurring elemental found in ores and present in plants, animals, and bacteria; Commonly used from molybdenum trioxide used as a chemical reagent | |
| Strontium (ppb) | 2013/2014 | 432 | ND-432 | 79 | 74.3-90.2 | Naturally occurring element, historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions | |
| Total Chromium (ppb) | 2013/2014 | NA | NA | 1.8 | ND-1.8 | Naturally occurring element; used in making steel and other alloys; chromium-3 or -6 forms used for chrome plating, dyes and pigments, leather tanning, and wood preservation | |
| Vanadium (ppb) | 2013/2014 | 0.31 | ND-0.31 | NA | NA | NA | |

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 the highest running annual average.

³ Amount Detected value represents the highest locational running annual average (LRAA). Total Haloacetic Acids (HAA5) and Total Trihalomethanes (TTHMs) compliance is based on a LRAA, calculated at each location. LRAA calculations are based on four quarters of results.

⁴ Represents the lowest removal of Total Organic Carbon (TOC).

⁵ Results rounded to the whole number.

⁶ Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU (no sample may exceed 1 NTU). 100% of samples were <0.3 NTU.

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.

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.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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).

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