

Annual Drinking Water Quality Report **Pennsville Township Water Department** **For the Year 2016, Results from 2015**

PWSID # NJ(1708001)

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

You can also refer to the EPA web-site at www.epa.gov/safewater/ccr1.html for any updates or for downloading the CCR guidance document. It should also be noted that New Jersey regulates some volatile organic compounds, which are not regulated at the federal level and certain volatile organic compounds at more stringent levels than at the federal level.

Our source is ground water pumped from 8 wells that draw their water from the upper and lower Raritan Aquifer over 150 feet deep. The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for Pennsville Water, which is available at www.state.nj.us/dep/swap/ or by contacting the NJDEP, Bureau of Safe Drinking Water at 609-292-5550. You may also contact Pennsville Township Water Department to obtain information regarding Pennsville's Source Water Assessment. This water system's source water susceptibility ratings and a list of potential contaminant sources is attached.

The source water assessment performed on our 8 sources determined the following:

Susceptibility Ratings for Pennsville Township 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			Radio-nuclides			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 - 8		8		6	2			3	5	5		3	5	2	1	7	1			8		2	6	
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 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.

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. This report shows our water quality and what it means.

If you have any questions about this report or concerning your water utility, please contact our Water Superintendent Jack Lynch at 856-678-6360. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled Township Committee meetings at the Pennsville Township Municipal building located at 90 North Broadway. Meetings are held on the First and Third Thursday of each month at 7:00 p.m.

The Pennsville Township Water Department routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2015. As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably

expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

Contaminants 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, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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. 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 contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

DEFINITIONS

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of

water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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

Total Organic Carbon (TOC): We are required to remove a certain percentage of (TOC) from our drinking water on a monthly basis. Total Organic Carbon has no adverse health effects. However, TOC provides a medium for the formation of disinfection byproducts.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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 -The "Goal"(MCLG) is 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 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

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.

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

EPA requires monitoring for over 80 drinking water contaminants. Those contaminants listed in the table are only contaminants detected in Pennsville Township's water. The state of New Jersey allows us to monitor 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.

Some people may be more vulnerable to contaminants 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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

TEST RESULTS

Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Inorganic Contaminants: Sampled in July 2015						
Antimony	N	Range: 0.04 µg/l to 0.37 µg/l; Highest level detected 0.37 µg/l	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	N	Range: 0.3 µg/l to 5.2 µg/l; Highest level detected 5.2 µg/l	ppb	n/a	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	N	Range: 0.0273 mg/l to 0.0295 mg/l; Highest Level Detected 0.0295 mg/l	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper Result at 90 th Percentile	N	0.17 No sites exceeded the action level.	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Cyanide	N	Range: ND to 28 µg/l; Highest level detected 28 µg/l	ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride	N	Range: ND to 0.4 mg/l; Highest level detected 0.4 mg/l	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Result at 90 th Percentile	N	2.1 No sites exceeded the action level.	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Mercury (inorganic)	N	Range: ND to 0.0165 µg/l;	ppb	2	2	Erosion of natural deposits; discharge from refineries and

		Highest level detected 0.0165 µg/l				factories; runoff from landfills; runoff from cropland
Nickel	N	Range: 0.07 µg/l to 1.5 µg/l; Highest level detected 1.5 µg/l	ppb	N/A	N/A	Erosion of natural deposits
Nitrate (as Nitrogen)	N	Range: ND to 0.57 mg/l; Highest level detected 0.57 mg/l	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	N	Range: 3.4 µg/l to 22.4 µg/l; Highest level detected 22.4 µg/l	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Volatile Organic Contaminants: Quarterly during 2015						
Toluene	N	Range: ND to 0.00013 mg/l; Highest average level detected 0.00078 mg/l	ppm	1	1	Discharge from petroleum factories
Ethylbenzene	N	Range: ND to 0.1 µg/l; Highest average level detected 0.05 µg/l	ppb	700	700	Discharge from petroleum refineries
Xylenes	N	Range: ND to 0.000015 mg/l to 0.00055 mg/l; Highest average level detected 0.00033 mg/l	ppm	1	1	Discharge from petroleum factories; discharge from chemical factories
Methyl <i>tertiary</i> butyl ether (MTBE)	N	Range: ND to 0.110 µg/l; Highest average level detected 0.03 µg/l	ppb	70	70	Leaking underground gasoline and fuel oil tanks. Gasoline and fuel oil spills.

The New Jersey Department of Environmental Protection required the Pennsville Water Department to monitor for Volatile Organic Contaminants. Quarterly monitoring was conducted during 2015, fifty six other contaminants were tested and none were detected.

A new Disinfection Byproduct Rule called Stage II took effect for Pennsville Water in 2013. The first compliance calculations for this system will be available after the third quarter of 2014 once a full year of monitoring has been completed. After the third quarter of 2013, Stage I was phased out. Stage II HAA5 and TTHM compliance is based on the locational running annual average (LRAA) calculated at each monitoring location. The LRAA for Stage II HAA5s and TTHMs is included in this report since Stage II monitoring began in the fourth quarter of 2013.

Disinfection Byproducts Stage-2 – Taken Quarterly during 2015						
TTHM Total Trihalomethanes Test results Yr. 2015	N	Range = 1.45-18.9 Highest Detection = 18.9	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids Test results Yr. 2015	N	Range = 0-5.81 Highest Detection = 5.81	ppb	N/A	60	By-product of drinking water disinfection

Some people may be more vulnerable to contaminants 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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Secondary Contaminant	Level Detected	Units of Measurement	RUL
Manganese	132 Sampled on 01/09/2015	ppb	50
Sodium	74.8 Sampled on 07/22/2015	ppm	50

Sodium: 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 (RUL) may be of concern to individuals on a sodium restricted diet. Pennsville Township Water Department blends our water within our system, resulting in lower levels of Sodium below the level detected.

Manganese: The secondary Recommended Upper Limit (RUL) for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water.

Synthetic Organic Contaminants including Pesticides and Herbicides

New Jersey Department of Environmental Protection Issued a Waiver based on the vulnerability of the source (well) water to contamination by SOCs/ Pesticides.

The state of New Jersey allows us to monitor 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.

Some people may be more vulnerable to contaminants 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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Regulated Disinfectants	Level Detected (Average & Highest Detect)	MRDL	MRDLG
Chlorine	0.45 (Avg.) 0.77(High)	4.0 ppm	4.0 ppm

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

UCMR3 EPA Requirements:

Title: Revisions to the Unregulated Contaminant Monitoring Rule for Public Water Systems; 77 FR 26072, May 2, 2012.

Purpose: To collect occurrence data for contaminants suspected to be present in drinking water but that do not have health-based standards set under the Safe Drinking Water Act (SDWA). Assessment Monitoring targets contaminants that are analyzed with methods that utilize existing and widely used technology. The UCMR program is the primary source of drinking water contaminant occurrence data used by EPA in regulatory determinations.

Description: UCMR 3 includes Assessment Monitoring for 21 List 1 chemical contaminants using six EPA-approved analytical methods and four equivalent consensus methods. List 1 contaminants are always associated with an Assessment Monitoring sampling design. Public water systems (PWSs) subject to Assessment Monitoring will sample within a 12-month period during 2013 - 2015.

Utilities Affected: Community water systems (CWSs) and non-transient non-community water systems (NTNCWSs) with more than 10,000 retail customers and a representative sample of 800 systems serving 10,000 or fewer retail customers are required to conduct Assessment Monitoring.

Occurrence Data: The analytical results from UCMR 3 are stored in the National Contaminant Occurrence Database (NCOD). For a summary of the NCOD results, tips for querying NCOD, and health effects information (including reference concentrations) please refer to the UCMR 3 Data Summary document.

522 UCMR3 Safe Drinking Water Analysis - EPA	Level Detected	Units of Measurement	Likely Source of Contamination
1, 4-dioxane	Range: 0.19 µg/l to 0.61 µg/l; Highest average level detected 0.447 µg/l	ppb	Used as a solvent or solvent stabilizer in manufacture and processing of paper, cotton, textile products, automotive coolant, cosmetics, and shampoos.
Chlorate	Range: ND to 3500 µg/l; Highest average level detected 1767 µg/l	ppb	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide

Strontium	Range: 160 µg/l to 280 µg/l; Highest average level detected 237 µg/l	ppb	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Chromium - 6	Range: 0.1 µg/l to 0.21 µg/l; Highest average level detected 0.143 µg/l	ppb	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

ADDITIONAL INFORMATION

The Safe Drinking Water Act 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 all of these types of contaminants.

Health effects language:

Inorganic Contaminants:

- (1) Antimony. Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
- (2) Arsenic. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
- (3) Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
- (4) Copper. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
- (5) Cyanide. Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
- (6) Fluoride. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.
- (7) Lead. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

(8) Mercury (inorganic). Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

(9) Selenium. Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

(10) Thallium. Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

Volatile Organic Contaminants:

(11) TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

(12) Manganese. The secondary Recommended Upper Limit (RUL) for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water.

(13) Sodium. For healthy individuals the sodium intake from water is not important, because a much greater of sodium takes place from salt in the diet. However sodium levels above the Recommended Upper Limit (RUL) may be of concern to individuals on a sodium restricted diet.

As you can see by the table, our system is safe. **We're proud that your drinking water meets or exceeds all Federal and State requirements.** We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water IS SAFE at these levels.

We constantly monitor for various constituents in the water supply to meet all regulatory requirements.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

When the state issues water restrictions, the Pennsville Water Department asks everyone to adhere to the state regulations. If you have any drought related questions you can contact a drought hotline representative at 1-800-448-7379 or visit the New Jersey drought website at www.NJDrought.org.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Special Considerations Regarding Children, Pregnant Woman, Nursing Mothers, and Others:

Children may receive a slightly higher amount of a contaminant present in the drinking water than adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than do adults. For this reason, reproductive or developmental effects are used for calculating drinking water standards if these effects occur at lower levels than other health effects of concern. If there is insufficient toxicity information for a chemical (for example, lack

of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, thus making the standard more stringent, to account for additional uncertainties regarding these effects. In the case of lead and nitrate, effects on infants and children are the health endpoints upon which the standards are based.

Some people may be more vulnerable to contaminants 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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Please call the Pennsville Water Department if you have questions at 856-678-6360.

We at Pennsville Township Water Department work hard to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.