

## Our Drinking Water Is Regulated

This report is a summary of the quality of the water we provide our customers. The analysis was made by using the data from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in the attached pages. We hope this information helps you become more knowledgeable about what's in your drinking water.

## Public Participation Opportunities

We want you to be informed about your water supply. If you want to learn more, please attend any of our regularly scheduled meetings.

Date: Third Tuesday of each month

Time: 4 p.m.

Phone: (610) 406-6300

Location: City Hall, Penn Room  
815 Washington St.  
Reading, PA 19601

This report shows our water quality and what it means. If you have any questions about this report, please contact Helen Piccone at (610) 926-5477.

## En Español

Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo ó hable con alguien que lo entienda bien.

**Reading Area Water Authority**  
1801 Kutztown Road  
Reading, PA 19604

# Reading Area WATER AUTHORITY

PWS ID# 3060059

# 2016 Annual Drinking Water Quality Report

## Source of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

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 run-off, 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 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.

## Where Do We Get Our Drinking Water?

The water supply for the City of Reading is obtained from Lake Ontelaunee, located six miles north of the City of Reading. Lake Ontelaunee is a 1,082-acre man made lake with a drainage area of approximately 192 square miles. Of which, the City of Reading owns 3,142.5 acres. The area around the lake consists of a marginal sanitary strip, with a minimum width of 500 feet, which surrounds the periphery of all but one section of the lake. This marginal strip was acquired by the city to minimize the pollution entering into the lake from the shore.

The Ontelaunee Creek, originating in Lehigh County, is the major tributary of Lake Ontelaunee. It is then joined by several other tributaries to form Maiden Creek, which is the main stream feeding Lake Ontelaunee. Surface water enters Lake Ontelaunee mainly from the Maiden

Creek and its main tributary the Saucony Creek, with inputs from the Bailey Creek, and other small tributaries that empty directly into the lake.

The dam, which is located on Route 73, was constructed in 1926 and raised to its present height in 1935. The dam has a capacity of 3.88 billion gallons. Water from the lake is then delivered to the Maiden Creek Filter Plant by gravity. The Reading Area Water Authority also has the capability of drawing water from Maiden Creek.

## All Drinking Water May Contain Contaminants

In order to ensure that tap water is safe to drink, EPA and DEP prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA and DEP 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 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 (800-426-4791).

## Required Additional Health Information for Lead

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. Reading Area Water Authority is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

## People Who May Be More Vulnerable to Contaminants

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 microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

## Source Water Protection

The Reading Area Water Authority is a leader in protecting their drinking water sources. RAWA's main source is Lake Ontelaunee, which is a tributary to the Maiden Creek, and then flows to the Schuylkill River. Reading's original watershed assessment was conducted in 1998, which found that potential contaminants to the Lake included bacterial contamination, sediment, and algae growth. This study prompted RAWA to develop and implement a comprehensive Source Water Protection Plan, which was approved by the PA Department of Environmental Protection in 2007. Since then, RAWA has been very active in source water protection within Berks County, and received the national Exemplary Source Water Protection award from the American Water Works Association in 2013. Recently, RAWA revised their potential contaminants inventory and time-of-travel studies, and will develop a 10-year update to their source water protection plan. Sediment and nutrients from agricultural runoff continue to be the highest potential contamination risk to Lake Ontelaunee and the Maiden Creek. The 1998 watershed study and other water protection information can be found on the RAWA website at <http://www.readingareawater.com/source-water/>

Although the Reading Area Water Authority is concerned with protecting its sources of water, current treatment processes are capable of transforming raw water from the lake, into finished water that meets all federal and state drinking water standards.

# 2016 Test Results

PWS ID# 3060059

We routinely monitor for contaminants in your drinking water according to federal and state laws. The following tables show the results of our monitoring for the period of January 1 to December 31, 2016. The State 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 is from prior years in accordance with the Safe Drinking Water Act. The date has been noted on the sampling results table.

## Entry Point Disinfectant Residual

Contaminant (Units)	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Sample Date	Violation Y/N	Likely Source of Contamination
Chlorine (ppm)	0.20	0.67	0.67-4.12	April 2016	N	Water additive used to control microbes

## Chemical Contaminants

Chemical (Units)	MCL in CCR Units	MCLG	Highest Level Detected	Range of Detections	Sample Date	Violation Y/N	Likely Source of Contamination
Chlorine (Monthly Average of Distribution System (ppm)	MRDL=4	MRDL=4	2.69	1.96-2.69	Feb. 2016	N	Water additive used to control microbes
Haloacetic acids Five (HAA5) (ppb)	60	N/A	39.91	25-67*	Oct. 2016	N	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) Distribution (ppb)	80	N/A	44.93	28-71	Oct. 2016	N	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) Entry Point (ppb)	80	N/A	26.7	N/A	Jan. 2016	N	By-product of drinking water chlorination

\* Compliance for HAA5s is based upon the annual average.

## Radionuclides

Contaminant (Units)	MCL	MCLG	Highest Level Detected	Violation Y/N	Sample Date	Likely Source of Contamination
Radium 228 (pCi/L)	5	0	3.2	N	May 2014	Erosion of natural deposits

Some people who drink water containing radium 226 or 228 in excess of the MCL over many years have an increased risk of getting cancer.

## Microbial Contaminants

Contaminant	Violation Y/N	TT	MCLG	Assessments/Corrective Actions	Likely Source of Contamination
Total Coliform Bacteria	N	Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement	0	None Required	Naturally present in the environment

Reading Area Water Authority is required, based on population served to do ninety bacteriological samples per month. In August 2016, 1 routine samples out of 105 confirmed to be positive for total coliform.

## Lead and Copper

Contaminant (Units)	Violation Y/N	Date Sampled	Action Level	MCLG	90th Percentile	# Sites Over AL	Likely Source of Contamination
Copper (ppm)	N	2016	1.3	1.3	0.281	0 out of 35	Corrosion of household plumbing systems
Lead (ppb)	N	2016	15	0	2	0 out of 35	

*If you think you have a single family structure that contains lead pipes, or copper pipes with lead solder installed after 1982, and/or are serviced by lead service lines, please contact the Water Authority office at 610-406-6300.*

In September 2016, to comply with the Lead and Copper Rule, Reading Area Water Authority conducted one study of 35 samples. 0 samples out of 35 samples were found to be above the required Action Levels established for lead and copper.

## Turbidity

Contaminant (Units)	Violation Y/N	Date Sampled	MCL	MCLG	Highest Level Detected	Likely Source of Contamination
Turbidity (NTU)	N	June 2016	TT=1 NTU for a single measurement	0	0.085 NTU	Soil runoff
		N/A	TT=at least 95% of monthly samples ≤0.3 NTU		100%	

## Total Organic Carbon

Substance(Units)	Range of % Removal Required	Range of percent removal achieved	Numbers of quarters out of compliance	Likely Source of Contamination
Drinking Water (ppm)	0-35	34 - 55	0	Naturally present in the environment

Total Organic Carbon (TOC) has no health effect. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. By-products of disinfection include trihalomethanes (THM) and haloacetic acids (HAA), which are reported elsewhere in this report.

## Inorganic Contaminants

Contaminant (Units)	Violation Y/N	Date Sampled	MCL	MCLG	Highest Level Detected	Range of Detections	Likely Source of Contamination
Barium (ppm)	N	Jan. 2016	2.0	2.0	0.018	N/A	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)		Jan. 2016	2*	4	0.8	N/A	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen) (ppm)		Jan. 2016	10.0	10.0	3.89	0-3.89	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits

\*EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.

## Unregulated Contaminant Monitoring Regulation – Cycle 3 (UCMR3)

The purpose of UCMR3 is 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 Water Drinking Act”. All testing performed quarterly starting in 2013.

### Unregulated Contaminants

Contaminant (Units)	Location	March	June	Sept.	Dec.	Likely Source of Contamination
Chromium (ppb)	EP101 Pumping Station	0.22	ND	0.31	0.26	Naturally occurring used in making steel and other alloys. Other forms also used for chrome plating, dyes and pigments, leather tanning and wood preservation
	320 S. 17th St. (DSMRT)	0.27	ND	ND	0.28	
Strontium (ppb)	EP101 Pumping Station	104	123	127	131	Naturally occurring element historically, commercial use has been in the faceplate glass of cathode ray tube televisions to block x-ray emissions
	320 S. 17th St. (DSMRT)	113	123	127	133	
Chromium, Hexavalent (ppb)	EP101 Pumping Station	0.18	0.043	0.051	0.12	Naturally occurring used in making steel and other alloys. Other forms also used for chrome plating, dyes and pigments, leather tanning and wood preservation
	320 S. 17th St. (DSMRT)	0.18	0.078	0.043	0.10	

## VIOLATIONS

We had a late reporting violation for August 2016. When one sample in August 2016 tested positive for total coliform bacteria we also tested that sample for E. coli. No E. coli was detected. However, we reported the E. coli portion of this test on September 28th and it was due to be reported by September 10th.

## Definitions

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

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

**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 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 contaminants.

**Minimum Residual Disinfectant Level (MinRDL)**  
- The minimum level of residual disinfectant required at the entry point to the distribution system.

**Level 1 Assessment** - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Level 2 Assessment** - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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

**Detection Limit** - The lowest level detected by the laboratory.

**ND (Non-Detectable)** - A result below the detection limit for the chemical.

**Mrem/year** - millirems per year (a measure of radiation absorbed by the body)

**pCi/L** - Pico curies per liter (a measure of radioactivity)

**ppb** - parts per billion, or micrograms per liter (µg/L). The equivalent of one minute in 2,000 years, or one penny in \$10 million.

**ppm** - parts per million, or milligrams per liter (mg/L). The equivalent of one minute in two years, or one penny in \$10,000.

**ppq** - parts per quadrillion, or picograms per liter

**ppt** - parts per trillion, or nanograms per liter