



## **2016 Drinking Water Quality Report**

**City of Dover Department of Public Works  
15 Loockerman Plaza, Dover, DE 19901**

**PWSID#: DE0000571**

**May 24, 2017**

The Safe Drinking Water Act was amended, in 1996, to ensure consumers are provided with an Annual Water Quality Report containing this important information about their drinking water. The City of Dover is pleased to present our Annual Water Quality Report for the 2016 calendar year. Our goal as a public water purveyor is to provide a healthy and dependable supply of drinking water to our customers, many of which are family and friends of the dedicated people entrusted with the production, treatment, distribution and sampling of our water each and every day of the year. We want our customers to understand the continuous efforts we are making to improve the City's water treatment process and to protect our customers, families and friends, as well as our precious water resources. The City of Dover is committed to providing the highest quality drinking water possible. 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. Additional copies are available at the City of Dover's Public Works office.

In order to ensure that tap water is safe to drink, the EPA (Environmental Protection Agency) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may be reasonably 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. 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. More information about contaminants and potential health effects, as well as EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants, can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

An average of over 1,800 routine analyses are performed every month on samples drawn every day from various locations throughout the city. The table below shows the results of the City's regulated contaminant monitoring for the reporting period of **January 1<sup>st</sup> thru December 31<sup>st</sup>, 2016**.

Regulated Contaminant Test Results								
Contaminant	Year Sampled	Violation (Yes/No)	Range Detected	Highest level	Unit	MCLG	MCL	Likely Source of Contamination
<b>Inorganic Contaminants</b>								
Arsenic (As)	2013*	No	0 – 3.7	3.7	ppb	n/a	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics wastes.
Barium (Ba)	2013*	No	0–0.0685	0.0685	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chlorine (Cl)	2016	No	0.35– 1.98	1.98	ppm	MRDLG= 4	MRDL= 4	Water additive used to control microbes.
Chromium (Total)	2013/14*	No	0– 11.3	11.3	ppb	100	100	Erosion of natural deposits.
Fluoride (F)	2016	No	0.64 – 1.08	1.08	ppm	2.0	2.0	Erosion of natural deposits; water additive which promotes strong teeth.
Nickel (Ni)	2013*	No	0 – 5.3	5.3	ppb	100	100	Erosion of natural deposits.
Nitrate (NO <sub>3</sub> )	2016	No	0 – 4.5	4.5	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks & sewage.
<b>Radioactive Contaminants</b>								
Combined Radium	2013*	No	0.2 – 1.92	1.92	pCi/l	n/a	5	Erosion of natural deposits.
<b>Volatile Organic Contaminants</b>								
Contaminant	Year Sampled	Violation (Yes/No)	Range Detected	Highest Average	Unit	MCLG	MCL	Likely Source of Contamination
TTHM's (Total Trihalomethanes)	2016	No	16 – 46	46	ppb	n/a	80	Byproduct of drinking water chlorination.
HAA5's (Total Haloacetic Acids)	2016	No	6.1 – 17.3	17.3	ppb	n/a	60	Byproduct of drinking water chlorination.

\* Because the concentrations of some contaminants change less frequently, Drinking Water Regulations allow us to monitor for these contaminants less than once per year. Data for this compliance period was collected in the 2013/14 calendar years.

**Parts per million (ppm) or Milligrams per liter (mg/l)** - one part per million or one milligram per liter corresponds to one minute in two years or a single penny in \$10,000<sup>00</sup>.

**Parts per billion (ppb) or Micrograms per liter (µg/l)** - one part per billion or one microgram per liter corresponds to one minute in two millennia or a single penny in \$10,000,000<sup>00</sup>.

**Maximum Contaminant Level (MCL)** - the "Maximum Contaminant Level" is the highest level of a contaminant that is allowed in your drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG)** - the "Goal" 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 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.

**Nitrates (NO<sub>3</sub>):** The City of Dover did not exceed the maximum contaminant level for this particular contaminant; however the dominant land use for the City of Dover's wellhead protection areas is cropland requiring us to pay special attention to nitrate levels. Nitrate in drinking water at levels above 10 ppm is a health risk for Infants of less than six (6) 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.

In August & September 2015, the City of Dover obtained 33 water samples from our customers to comply with the requirements of the Lead & Copper Rule. These samples were analyzed by an independent private laboratory. The City of Dover will perform another round of sampling in the summer of 2018.

2015 Lead & Copper Rule Test Results							
Contaminant	Violation (Yes/No)	Number of sites above Action Level	90 <sup>th</sup> percentile	Unit	MCLG	AL	Likely Source of Contamination
Lead (Pb)	No	0	2.68	ppm	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Copper (Cu)	No	0	0.112	ppb	1.3	1.3	

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

**Lead (Pb):** 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. The City of Dover 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 (1-800-426-4791) or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

Secondary maximum contaminant levels and secondary maximum contaminant level goals are not federally enforceable but are intended as guidelines for contaminants in drinking water that primarily affect the aesthetic qualities relating to the public acceptance of drinking water and represent reasonable goals for drinking water quality. The table below shows the results of the City's unregulated inorganic contaminant monitoring (Delaware Secondary Standards) for the reporting period of **January 1<sup>st</sup> thru December 31<sup>st</sup>, 2016**.

Delaware Secondary Standards Test Results							
Contaminant	Year Sampled	Violation (Yes/No)	Range Detected	Average level	Unit	Secondary MCLG	Secondary MCL
Alkalinity	2016	No	295 – 328	310	ppm	N/A	N/A
Chloride	2016	No	4.9 - 31.5	8.9	ppm	250	250
Manganese	2013**	No	0.7 – 90.1	29.15	ppb	50	50
pH	2016	No	6.8 – 8.05	7.63		6.5 – 8.5	6.5 – 8.5
Sodium	2016	No	133.6 - 159	144.0	ppm	N/A	N/A
Sulfate	2016	No	1.3 - 56	11.4	ppm	250	250
Total Dissolved Solids	2016	No	356– 404	383	ppm	500	500

\*\* Because the concentrations of some contaminants change less frequently, Drinking Water Regulations allow us to monitor for these contaminants less than once per year. Data for this compliance period was collected in the 2013 calendar year.

**Additional Monitoring:** The US Environmental Protection Agency (USEPA) utilizes advances in sampling technology in programs such as the Unregulated Contaminant Monitoring Regulation (UCMR). The purpose of the UCMR program is to determine the occurrence of unregulated contaminants in finished drinking water and use that data in regulatory decision making. The City of Dover participated in the UCMR program during the 2012-2016 study period (UCMR3). The contaminants detected in the samples drawn by the City of Dover are listed in the table below. Information regarding these results can be obtained by contacting John Sisson, Water Production Supervisor, at (302) 736-7026.

## Unregulated Contaminant Monitoring Regulation Test Results

Contaminant	Year Sampled	Range Detected	Average level	Unit
Chlorate	2014	49 – 660	268	ppb
Chromium-6	2014	0 – 1.7	0.77	ppb
Cobalt	2014	0 – 2.3	1.9	ppb
Molybdenum	2014	0 – 3	2.2	ppb
Strontium	2014	86 – 360	175	ppb
Vanadium	2014	0 – 0.6	0.43	ppb
1,4-Dioxane	2014	0 – 0.22	0.22	ppb

**Source 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 materials and, in some cases, radioactive materials, 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. (None of the City of Dover's routine biological samples indicated microbial contamination in 2016.)

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.

The City of Dover's water supply system uses groundwater from 9 wells in the confined Cheswold aquifer, 6 wells in the confined Piney Point aquifer, and 7 wells in the unconfined Columbia aquifer. The 15 wells in the confined aquifers have a low vulnerability to contaminants while the 7 wells in the unconfined aquifer have a high vulnerability to contaminants. The Division of Public Health, in conjunction with the Delaware Department of Natural Resources and Environmental Control (DNREC) Division of Water Resources, has completed the Source Water Assessment for the public water supply wells of the City of Dover which contains detailed information on the potential sources of contamination located within Dover's wellhead protection areas including 9 underground storage tank facilities, 2 wastewater outfall sites, 1 salvage yard, and 1 superfund site. Contact the City of Dover's Public Works Department at 302-736-7026 regarding the availability of the Source Water Assessment and how to obtain a copy. You may also review it on-line at: [www.wr.udel.edu/swaphome/swassessments.html](http://www.wr.udel.edu/swaphome/swassessments.html).

**Source Water Protection:** The City of Dover adopted its Source Water Protection Ordinance, on November 26, 2007, updated March 24, 2008, which is designed to protect our most valuable resource at its source. The purpose of this ordinance is to ensure that groundwater is adequately protected minimizing contamination of the aquifer to protect public health and safety and to ensure that the aquifer is properly maintained and supplied with clean water through the reduction of impervious surfaces and control of hazardous material use. A copy of this ordinance (Appendix B, Article 3, Section 29 - Source Water Protection Overlay Zone) can be viewed at [www.municode.com/Library/DE/Dover](http://www.municode.com/Library/DE/Dover). Please contact the City of Dover Planning office at 302-736-7196 with questions regarding this ordinance.

Interested customers can also attend any of our regularly scheduled City Council meetings. These meetings are held on the second and fourth Mondays of each month in the Council Chambers of City Hall, 15 E. Lookerman Street, Dover, Delaware. The open forum segment of these meetings begins at 7:15 p.m.

The City of Dover staff would like to thank our customers for helping us in our efforts to provide the highest quality drinking water possible while meeting the challenges of maintaining an adequate supply of clean water for future generations.

If you have any questions concerning the information contained in this report, please contact **Jason Lyon, P.E., Water/Wastewater Manager, or John Sisson, Water Production Supervisor, at (302) 736-7025.**