

2011 Annual Drinking Water Quality Report

City Of New Castle
Municipal Services Commission
216 Chestnut Street
New Castle, Delaware 19720
Public Water System ID # DE0000634
June 1, 2011

The Municipal Services Commission is charged with the responsibility of providing you clean, safe drinking water, in fact it's the law, a federal law (The Safe Drinking Water Act) which we are happy to comply with. This Consumer Confidence Report is designed to let you know where your water comes from, what it contains and any risks water testing and treatment are designed to prevent.

The reporting period for this report is January 1, 2010 to December 31, 2010. The MSC wants you to know we are committed to providing you with the safest, most reliable water supply available.



Where Does New Castle's Water Come From?

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 radioactive material, and can pick up substances resulting from the presence of animals or from human activity. The source of the MSC's water is the Potomac Aquifer which is a confined aquifer who's natural filtering characteristics helps to protect our customers from contaminants. The Division of Public Health in conjunction with the Department of Natural Resources and Environmental Control has conducted a source water assessment for the City of New Castle's community water system. Please contact Chip Patterson of the Municipal Services Commission (302) 323-2330 regarding how to obtain a copy of this assessment. You may also review it on the website: <http://www.wr.udel.edu/swaphome/index.html>.



Where Do Contaminants Come From?

- A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.
- D) Organic chemical contaminants, including synthetic and volatile organics, which are by products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- E) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Are There Limits To Contaminants?

In order to ensure that tap water is safe to drink, the 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 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).

Are Some People At A Greater Risk From Contaminants?

Some people may be more vulnerable to contaminants in drinking water than in the general population. Immuno-compromised persons such as persons with cancer under going 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 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).

Does The MSC Do Only The Minimum Checks The Law Requires?

The MSC has tested or has had its water tested by other agencies to look for contaminants which may not be regulated substances. The Commission had DNREC test for contaminants which may have leaked from landfills in close proximity to its wells. The EPA and State of Delaware have not set standards for monitoring Radon at this time, none the less the Commission has tested for Radon in its source water and found minimal traces.

The Commission tested for Perfluorochemicals (PFCs) or Teflon© Precursors which have been showing up in drinking water supplies in Maryland and New Jersey even though the EPA does not regulate these substances. Three sets of tests have shown the presence of PFOA and PFOS in our source water. The MSC has shared this information with the State Office of Drinking Water and Toxicologist. In January 2009, the EPA set short-term provisional health advisory values for PFOA at 0.4ppb and PFOS at 0.2ppb. Epidemiological studies of exposure to PFOA, PFOS and adverse health outcomes in humans are inconclusive at present.

What's The Bottom Line?

Your drinking water meets or surpasses all federal and state drinking water standards. We at the Municipal Services Commission 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.

If you should have any questions about this report or concerning your water utility, please contact: Chip Patterson Tel: (302) 323-2330, Fax: (302) 323-2337
Email: pattersonc@newcastlecity.com Or look for us on the city web page at www.newcastlecity.org

Water Purchases

In 2010, the Municipal Services Commission started a 4 month long renovation of our School Lane Water Treatment Facility. During these renovations, the Commission purchased water from Artesian Water Company. Starting on September 20th through December 31st, the Commission purchased an average of 473,260 gallons of water per day.

Artesian Water draws their supply from wells located in the same aquifers as the Commissions. The water purchased was in compliance with all State and Federal regulations during the time the Commission was receiving water.

If you would like additional information about Artesian Water's supply, please visit their web site at www.artesianwater.com, select the Customer Service Center tab, select the Artesian Pipeline Newsletter tab, and select the most recent Water Quality Report.

This report is based upon tests conducted by the Office of Drinking Water, Division of Public Health, State of Delaware. 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, though representative, are more than one year old.

Inorganic Contaminants	Unit of Measure	MCL	MCLG	LEVEL DETECTED	ANNUAL RANGE	DATE SAMPLES	VIOLATION	MAJOR SOURCES OF CONTAMINANTS / SUBSTANCES
Arsenic	ppb	10	0	2	nd-2.0	2007	No	Erosion of natural deposits.
Fluoride	ppm	2	1.2	1.12	0.43-1.12	2010	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate	ppm	10	10	3.6	3.2-3.6	2010	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
Barium	ppm	2	2	0.1155	nd-0.1155	2007	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chromium	ppm	0.1	0.1	0.0012	nd-0.0012	2007	No	Discharge from steel and pulp mills; erosion of natural deposit.
Nickle	ppm	0.1	0.1	0.0082	nd-0.0082	2007	No	Nickel occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products.

Radiological Contaminants	Unit of Measure	MCL	MCLG	LEVEL DETECTED	ANNUAL RANGE	DATE SAMPLES	VIOLATION	MAJOR SOURCES OF CONTAMINANTS / SUBSTANCES
Radium, Combined (226.228)	pCi/l	5	0	2.9	2.73-2.90	2010	No	Erosion of natural deposits.
Gross Alpha Particle	pCi/l	15	0	2.9	1.70-2.90	2009	No	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation.
Gross Beta Particle	pCi/l	50*	0	2.2	nd-2.20	2009	No	Decay of natural and man made deposits that are radioactive and may emit a form of radiation known as beta radiation.

*The US EPA considers the level of concern to be 50 pCi/l for Beta Particles. The MCL for Beta Particles is 4 mrem/year.

Disinfection/Disinfection By-Products	Unit of Measure	MCL	MCLG	LEVEL DETECTED	ANNUAL RANGE	DATE SAMPLES	VIOLATION	MAJOR SOURCES OF CONTAMINANTS / SUBSTANCES
Chlorine, Free (2)	ppm	n/r	0.8	0.84	0.00-0.84	2010	No	Disinfectant used in the drinking water industry.
Haloacetic Acids Total	ppb	60	0	1.279	1.279-1.279	2010	No	By-product of drinking water chlorination
Trihalomethanes, Total	ppb	80	0	5.1	nd-5.10	2007	No	By-product of drinking water chlorination

Results of Lead and Cooper Testing (2008 data)- under this rule, the Commission is required to sample for these contaminants every three years. No samples exceeded the (MCL) Maximum Contaminant Level requiring action. The Commission will be collecting new samples for monitoring in the Summer of 2011.

Lead and Cooper	Unit of Measure	MCL	MCLG	LEVEL DETECTED	ANNUAL RANGE	DATE SAMPLES	VIOLATION	MAJOR SOURCES OF CONTAMINANTS / SUBSTANCES
Copper- 90th Percentile	ppm	1.3	1.3	0.21	0.005-0.210	2008	No	Corrosion of household plumbing system and erosion of natural deposit.
Lead-90th Percentile	ppm	0.015	0	0.011	nd-0.011	2008	No	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives.

Unregulated Contaminants	Unit of Measure	MCL	MCLG	LEVEL DETECTED	ANUAL RANNGE	DATE SAMPLED
Alkalinity	ppm	n/r	n/r	21	nd-21	2009
Chloride	ppm	n/r	250	57.1	nd-57.1	2009
Hardness Total	ppm	n/r	n/r	28.7	nd-28.7	2009
pH, Field (3)	0-14 scale	n/r	7.3	8.2	7.0-8.2	2010
Sodium	ppm	n/r	50	26.7	nd-26.7	2009
Temperature	Deg-C	n/r	n/r	16	12-16	2010
Solids, Total	ppm	n/r	500	186	nd-186	2009
Dissolved Sulfate	ppm	n/r	250	11.8	nd-11.8	2009
Perfluorooctanoic Acid (PFOA)	ppb	n/r	0.4	0.099	0.092-0.099	2010
Perluorooctane Sulfonic Acid (PFOS)	ppb	n/r	0.2	0.40	0.33-0.40	2010

Municipal Services Commission Water System Facts

Metered Customers:
2070 Customers

Annual Water Supply:
172,277,530 Gallons

Miles of Water Mains: 27 Miles

Average Daily Water Demand:
472,161 Gallons per Day

Peak Day Water Demand:
711,800 Gallons per Day

Active Wells: 2 Wells

Treatment Facilities: 1 Facility

Storage Capacity: 1.6 Million
Gallons

Public Fire Hydrants: 161

Average Cost for Residential
Water Service: \$1.07 per day

Microbiological Contaminants- Total Coliform Bacteria

120 Samples, 10 per month, were collected during 2010.

All samples collected were absent of Coliform Bacteria.

Number of Violations:
None

Major Sources:
Naturally present in the environment.

Annual Average Readings

- 1) Average Fluoride reading was 0.99 ppm
- 2) Average Chlorine Reading was 1.11 ppm
- 3) Average pH Reading was 7.42 on the 0 - 14 Scale

Note: Averages are based upon the daily water quality readings taken at the Commission's School Lane Treatment Facility.

Definitions:

90th Percentile - the ninth highest reading (of 10 samples), which is used to determine compliance with the Lead and Copper Rule.

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. MCL's are set as close to the MCLG's as feasible.

Maximum Contaminant Level Goal (MCLG) - the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Maximum Residual Disinfectant Goal (MRDLG) - the level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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.

Not Applicable (n/a) - field is not applicable to the substance.

Non-Detect (nd) - laboratory analysis indicates that the constituent is not present.

Not Regulated (n/r) - no MCL is identified because these substances are unregulated.

Parts Per Million (ppm) - 1 part per million corresponds to 1 minute in 2 years, or a single penny in \$10,000.

Parts Per Billion (ppb) - 1 part per billion corresponds to 1 minute in 2000 years, or a single penny in \$10,000,000.

Picocuries Per Liter (pCi/l) - a measure of the radioactivity in water.