



2016 Report to Consumers on Water Quality

Devens, Massachusetts Public Water System #2019001

Dear Customer,

We are pleased to present a summary of the quality of the water provided to you during the past year. The Safe Drinking Water Act (SDWA) requires that all utilities issue an annual “Consumer Confidence” report to customers in addition to other notices that may be required by law. This report details where our water comes from, what it contains and the risks our water testing and treatment are designed to prevent. MassDevelopment is committed to providing you with the safest and most reliable water supply. Informed consumers are our best allies in maintaining safe drinking water. This report was prepared with the technical assistance provided by the American Water Works Association, MassDEP, and information provided by Suez.

OVERVIEW

MassDevelopment provides high quality ground water to customers in the Devens Regional Enterprise Zone. The Devens water supply has a permit to pump up to 5 million gallons per day. Securing the quality and safety of this resource is extremely important to us.

WATER SOURCE AND TREATMENT

The Devens water system includes three gravel-packed wells and the well field at the Grove Pond pumping station. It also includes more than 50 miles of water mains and two 1-million-gallon storage tanks.

In 2016 MassDevelopment replaced a section of aging asbestos cement water main and installed a new water main along the re-aligned Jackson Road improving the reliability of the Devens Water System infrastructure.

Iron and manganese are often present in groundwater wells at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water is still safe to drink, treatment is often desired. Our treatment consists of adding a blended phosphate solution to water. This results in a chemical reaction known as sequestration and prevents iron and manganese from forming nuisance particles. The phosphate treatment also provides a coating to distribution mains that reduces corrosion. For additional corrosion control we use potassium hydroxide (KOH) to raise the pH of the water chemistry to bring our water up to a less corrosive state that is neutral or slightly alkaline. All chemicals used for this process are approved for water treatment by one of the following organizations: National Sanitation Foundation (now known as NSF International) or UL. Both are accredited by the American National Standards Institute (ANSI). Chemicals also must meet standards established by the American Water Works Association.

It is necessary to disinfect all reservoirs and some ground water sources to eliminate disease-carrying organisms. Nationally, EPA has found that these water sources contain numerous microorganisms, some of which can cause health problems if ingested. Disinfection destroys harmful organisms. Sterilization kills all microorganisms, even though most are not harmful, and is too costly to use on a routine basis. The Devens water system uses sodium hypochlorite (NaOCl) as its disinfectant. Chlorine destroys organisms by penetrating cell walls and reacting with enzymes. Disinfection with chlorine has proven to be effective at ensuring that water is safe to drink. MassDevelopment contracts the operations and maintenance of the water system to one of the world's largest O&M contractors of water systems, Suez.

WATER QUALITY DATA TABLES

The following tables show the results of our water quality analysis during 2016 or during the most recent monitoring period for the water we supplied. Every regulated and unregulated contaminant that was detected in the water, even in the minutest traces, is listed here. All data below is from sampling of the water supplied by the MassDevelopment/Devens Water System.

Regulated Contaminants	Year Sampled	Highest Detect or Highest RAA	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Sources in Drinking Water
Inorganic Contaminants							
Arsenic (ppb)	2015	6	0-6	10	--	N	Erosion of natural deposits
Barium (ppm)	2015	0.017	0 – 0.017	2	2	N	Erosion of natural deposits

Nitrate (ppm)	2016	0.77	0.2 – 0.77	10	10	N	Runoff from fertilizer use; erosion of natural deposits
Perchlorate (ppb)	2016	0.24	<0.05 – 0.24	2	--	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Disinfectants & Disinfection By-Products							
Chlorine (ppm)	Monthly in 2016	0.47*	0.01 – 2.2	4	4	N	Water additive to control microbes
Total Trihalomethanes (TTHMs) (ppb)	2016	6.3*	--	80	--	N	By-product of drinking water disinfection
Haloacetic Acids (HAA5) (ppb)	2016	1.5*	--	60	--	N	By-product of drinking water disinfection

* Highest RAA = highest running annual average of four consecutive quarters.

Lead and Copper	Year Sampled	90 th Percentile*	Action Level (AL)	MCLG	# of Sites Sampled	# of Sites Above the AL	Possible Source of Contamination
Lead (ppb)	2016	1	15	0	20	0	Corrosion of interior plumbing materials
Copper (ppm)	2016	0.51	1.3	0	20	0	Corrosion of interior plumbing materials

* Nine out of every 10 homes sampled were at or below this level. This number is then compared to the action level for each contaminant.

Bacteria	Highest # Positive in a month	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	3	1	0	Y	Naturally present in the environment
E.coli	1	***	0	N	Human and Animal Fecal Waste

Total Coliform: Coliforms are bacteria that are naturally present in the environment and re used as an indicator that other potentially harmful bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems

***Compliance with the E.coli MCL is determined upon additional repeat testing

Secondary and Unregulated Contaminants	Year Sampled	Range Detected	Average	ORSG or Health Advisory	Possible Source of Contamination
Manganese (ppb)	2016	105 - 752	255	300*	Erosion of natural deposits
Sodium (ppm)	2015	11 - 68	34	20**	Natural sources; runoff from road salt
Sulfate (ppm)	2016	12 - 41	22	--	Natural sources
Perfluoroheptanoic acid (PFOA) (ppt)	7/2016-12/2016	21-25	66	70 (ppt) combined	Breakdown product of stain- and grease-proof coatings on food packaging, couches, carpets.
Perfluorooctanoic acid (PFOS) (ppt)	7/2016-12/2016	41-44			Used in the process of making Teflon and similar chemicals, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films.
Perfluorobutanesulfonic acid (PFBS) (ppt)	7/2016-12/2016	9-97	39	-	Used as surfactants, to make fluoropolymers and as water and stain protective coatings for carpets, paper and textiles.
Perfluoroheptanoic acid (PFHpA) (ppt)	7/2016-12/2016	10-15	12	-	Industrial processes, including stain resistant and moisture repelling coatings, firefighting foams, cosmetics, lubricants, and synthesis of some polymeric materials.
Perfluorohexanesulfonic acid (PFHxS) (ppt)	7/2016-12/2016	54-58	55	-	Industrial processes, including stain resistant and moisture repelling coatings, firefighting foams, cosmetics, lubricants, and synthesis of some polymeric materials.
Perfluorononanoic acid (PFNA) (ppt)	7/2016-12/2016	2-21	9	-	Industrial processes, including stain resistant and moisture repelling coatings, firefighting foams, cosmetics, lubricants, and synthesis of some polymeric materials.

* **Manganese:** Manganese is a naturally occurring mineral found in rocks, soil and groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (micrograms per liter), or 50 parts per billion. In addition, MassDEP's Office of Research and Standards (ORS) has set a drinking water guideline for manganese (ORSG), which closely follows the EPA public health advisory for manganese. **Drinking water may naturally have manganese and, when concentrations are greater than 50 µg/L, the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 µg/L and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about possible neurological effects. Children up to 1 year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days. The ORSG differs from the EPA's health advisory because it expands the age group to which a lower manganese concentration applies from children less than 6 months of age to children up to 1 year of age to address concerns about children's susceptibility to manganese toxicity.** See: EPA Drinking Water Health Advisory for Manganese

https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf and MassDEP Office of Research and Standards Guideline (ORSG) for Manganese <http://www.mass.gov/eea/docs/dep/water/drinking/alpha/i-thru-z/mangorsg.pdf>.

**Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure should be aware of the levels of sodium in their drinking water where exposures are being carefully controlled.

**** Perfluorinated compounds, which were included under the EPA UCMR3 unregulated contaminant monitoring rule, are monitored by our water system with detections reported in the table above. *Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.* In the interim, EPA has established health advisories for (HA) for two of these unregulated compounds (PFOA & PFOS) at 70 ppt (combined). The Health Advisories for both PFOA and PFOS are based on similar developmental effects and are numerically identical; when these two chemicals co-occur at the same time and location in a drinking water source, a conservative and health-protective approach that EPA recommends would be to compare the sum of the concentrations ([PFOA] + [PFOS]) to the HA (70 ppt).

More information on the potential health effects of these chemicals can be found at: <http://www.atsdr.cdc.gov/substances/index.asp>; <http://www.epa.gov/iris>. EPA also provides additional information for several of these chemicals. See: https://www.epa.gov/sites/production/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfos_updated_5.31.16.pdf

DEFINITIONS:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG's as feasible using the best available treatment technology.

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

ppm: Parts per million, or milligrams per liter (mg/l).

ppb: Parts per billion, or micrograms per liter (ug/l).

pCi/l: Picocuries per liter (a measure of radioactivity).

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

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 (ex. Chlorine, chloramines, chloride dioxide).

Maximum Residual Disinfectant Goal (MRDLG): The level of a 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.

Secondary Maximum Contaminant Level (SMCL): These standards are developed to protect the aesthetic qualities of drinking water and are not health related.

Unregulated Contaminants: Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

Office of Research and Standards Guideline (ORSG): This is the concentration of a chemical in drinking water, at or below which, adverse health effects are likely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

SOURCE WATER ASSESSMENT & PROTECTION (SWAP) REPORT

In 2003, the Massachusetts Department of Environmental Protection (MassDEP) completed a SWAP report for the Devens Water System. The report is a planning tool to support local and state efforts to improve water supply protection. Your water sources are protected by the establishment of protective barriers known as Zone I and Zone II areas.

Source Protection Recommendations:

To better protect our sources for the future, MassDEP recommended that we:

- Continue to inspect the Zone I's regularly and where possible, obtain complete ownership of the Zones.
- Educate residents on ways they can help protect drinking water sources.

- Work with emergency response teams to ensure they are aware of the storm water drainage in our Zone II and to cooperate on responding to spills and accidents.
- Develop and implement a Wellhead Protection Plan.

The SWAP report may be viewed at the Devens Utilities office at 33 Andrews Parkway or online at www.mass.gov/eea/docs/dep/water/drinking/swap/cero/2019001.pdf

ADDITIONAL HEALTH INFORMATION

In order to ensure that tap water is safe to drink, MassDEP and the US Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for human 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 EPA's Safe Drinking Water Hotline (800-426-4791).

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. Contaminants that may be present in source water include:

- (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, stormwater 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 stormwater runoff and septic systems.
- (E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than is 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* or additional information on lead risks are available from the Safe Drinking Water Hotline (800-426-4791).

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. Devens Public Water Supply 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 or at www.epa.gov/safewater/lead.

While your drinking water meets the standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems."

RESIDENTIAL CROSS-CONNECTION EDUCATION

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home, such as a fertilizer spray unit on your garden hose. If the water pressure drops because of fire hydrant use in town or a water main break, fertilizer may be sucked back into the drinking water pipes through the hose. To prevent this problem, the Devens PWS recommends the installation of backflow prevention devices, such as a low-cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase the device at a hardware store or plumbing supply store. For additional information on the Devens cross-connection control program call (978) 784-2931.

CONTACT US

Please call (978) 784-2931 if you have any specific topics you would like to have addressed at any of the residential meetings that MassDevelopment holds as needed. Additional copies of this report are available on request. This report can also be found on our website at www.devenscommunity.com. *El informe contiene informacion importante sobre la calidad del agua en su comunidad. Traduzcalo o hable con alguien que lo entienda bien.*