



2019 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 active gravel-packed wells and the inactive 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.

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. We are currently designing new water treatment plants using greensand filtration media to remove iron and manganese from the water produced at the Patton and Shabokin Wells. The new Patton and Shabokin treatment plants will also consist of granular activated carbon and resin exchange filters to remove PFAS. At MacPherson Well we are designing a new treatment plant that will remove PFAS only as that well does not have high levels of iron and/or manganese. Additionally, we have installed temporary PFAS treatment plants at each of our 3 wells that will continue to operate until the new permanent plants are up and running. Patton and Shabokin treatment plants will come online by mid-2022 and the MacPherson plant is to be online in early 2021. Currently, in addition to the temporary PFAS treatment, our treatment at each well consists of adding a blended phosphate solution to water. This results in a chemical reaction known as sequestration and helps 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 2019 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 | | | | | | | |
| Barium (ppm) | 2019 | 0.02 | NA | 2 | 2 | N | Erosion of natural deposits |
| Nitrate (ppm) | 2019 | 0.68 | 0 – 0.68 | 10 | 10 | N | Runoff from fertilizer use; erosion of natural deposits |
| Perchlorate (ppb) | 2019 | 0.07 | 0.06 – 0.1 | 2 | -- | N | Rocket propellants, fireworks, munitions, flares, blasting agents |

| 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 |
|---|-----------------|-------------------------------|----------------|-------------|---------------|-----------------|---|
| Disinfectants & Disinfection By-Products | | | | | | | |
| Chlorine (ppm) | Monthly in 2019 | 0.38* | 0.11 – 0.9 | 4 | 4 | N | Water additive to control microbes |
| Total Trihalomethanes (TTHMs) (ppb) | 2019 | 24* | -- | 80 | -- | N | By-product of drinking water disinfection |
| Haloacetic Acids (HAA5) (ppb) | 2019 | 0* | -- | 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) | 2019 | 1 | 15 | 0 | 20 | 0 | Corrosion of interior plumbing materials |
| Copper (ppm) | 2019 | 0.344 | 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.

| Secondary and Unregulated Contaminants | Year Sampled | Range Detected | Average | ORSG or Health Advisory | Possible Source of Contamination |
|---|--------------|----------------|---------|-------------------------|--|
| Manganese (ppb) | 2019 | 0 - 371 | 119 | 300* | Erosion of natural deposits |
| Sodium (ppm) | 2019 | NA | 88 | 20** | Natural sources; runoff from road salt |
| Sulfate (ppm) | 2019 | 7.5 - 17 | 12 | -- | Natural sources |
| PFOS, PFOA, PFNA, PFHxS, PFHpA (ppt) (combined) | 2019 | 0-32 | 14 | 70*** | Man-made chemicals. Used as surfactants to make products stain or water resistant, in fire-fighting foam, for industrial purposes, and as a pesticide. Used in fluoropolymers (such as Teflon), cosmetics, greases and lubricants, paints, adhesives and photographic films. |
| Perfluorohexanoic acid (PFHxA) (ppt) | 2019 | 0-8 | 3.2 | †† | Directly emitted to the environment or are formed indirectly from the environmental degradation or metabolism of precursor substances. Some are or have been used in a wide variety of industrial and consumer applications. |

* **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 <https://www.mass.gov/files/documents/2016/08/nr/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.

*** **PFAS contaminants.** Our system, out of an abundance of caution and the location of potential sources of PFAS in proximity to one or more of our sources sampled for PFAS compounds during 2018 & 2019. PFAS are unregulated contaminants for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted. However, US EPA has set a Health Advisory (HA) of 70 ppt for PFOS and PFOA and in 2018 MassDEP's Office of Research and Standards set a guideline (ORSG) of 70 ppt for five PFAS contaminants: PFOS, PFOA, PFNA, PFHxS and PFHpA individually or as a group. On January 27, 2020, MassDEP issued an updated ORSG for drinking water of 20 ppt for six PFAS compounds, PFOS, PFOA, PFNA, PFHxS, PFHpA, and PFDA.

†† There is no MassDEP ORS Guideline or US EPA UCMR3 reference concentration or other health benchmark for this compound.

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).

ppt: Parts per trillion, or nanograms per liter (ng/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. The Devens susceptibility level is rated at High.

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).

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. 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.

PFAS Contaminants: In February of 2018, anticipating stricter regulations than the EPA's Health Advisory of 70 ppt, the MacPherson Well was removed from service and consumers were notified of this development in March 2018. Subsequent PFAS levels in the drinking water have been below the US EPA Health Advisory and MassDEP's ORSG of 70 ppt. In anticipation of the updated MassDEP ORSG of 20 ppt, our system installed temporary PFAS treatment at the Shabokin and MacPherson Wells in July 2019 and the Patton Well was removed from service in August 2019. Subsequent PFAS levels in the drinking water have been below the MassDEP's updated ORSG of 20 ppt. Additionally, temporary PFAS treatment was installed at the Patton Well in January 2020. We are conducting pilot testing to facilitate the design of permanent treatment facilities to address PFAS and continue to sample on a monthly basis as part of our pilot program.

If you are a sensitive consumer (pregnant women, nursing mothers, and infants) you can minimize your exposure by using bottled water that has been tested for PFAS for drinking, for making infant formula and cooking foods that absorb water. Please consult your health practitioner if you have any health related questions. For a consumer factsheet on PFAS see <https://www.mass.gov/doc/massdep-fact-sheet-pfas-in-drinking-water-questions-and-answers-for-consumers/download>

For further information regarding MassDEP PFAS regulation development and consumer information refer to:

<https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas>

<https://www.mass.gov/lists/2019-proposed-mcp-revisions>

<https://www.mass.gov/lists/development-of-a-pfas-drinking-water-standard-mcl>

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.*