

# ORANGE WATER DEPARTMENT

ISSUE 31

A NEWSLETTER FROM THE ORANGE WATER DEPARTMENT

June 2022

## KEEP IT LOCAL: DRINK TAP WATER!

Where does your tap (drinking) water come from?

**Well #1** is located off of Holtshire Rd. (and is used for emergencies only).

**Wells #2 & 2A** are located off of West River St. (Magee Meadows).

**Well #3** is located off of Daniel Shays Highway (Route 202).

We also have an emergency interconnection with the Town of Athol on Brookside Rd.



PWS ID  
1223000

Equal Opportunity Provider  
**BOARD OF WATER COMMISSIONERS**

**Michael Hume, Chair**

**Donald Priestley, Vice-Chair**

**Carl Sauter, Member**

### Regular Meetings

2nd Monday, 4:00 PM at  
our West Myrtle Street office

### STAFF

**Kenneth Wysk, Superintendent**  
watersuper@townoforange.org

**Michael Bjorlin, Foreman**

**Matthew Karpeichik, Water Operator**

**Jamey Bass, Secondary Operator**

**Lynne Boutwell, Billing Clerk**

Office Hours Mon-Fri 6:30AM-3:00PM

Office Phone 978-544-1115

Billing Questions 978-544-1100 x102

## What's on Tap for 2022?

North Main Street Water Main Replacement; School Street to Lincoln Avenue Dam maintenance  
Town Wide Hydrant/Valve maintenance and repairs.  
Well #1: Continued testing to provide a replacement source.

*Note: Field work may cause delays and inconvenience, your patience is greatly appreciated.*



## Lead and Copper Detections

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. Orange Water Department (OWD) 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 <http://www.epa.gov/safewater/lead>.

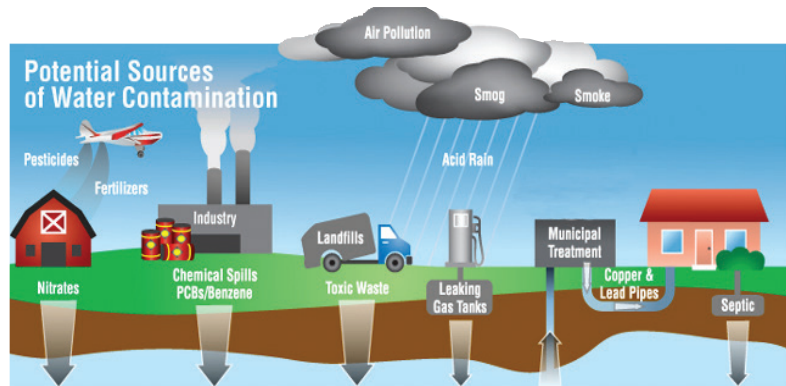
*Note: Our water quality testing results for 2021 are provided on the enclosed table.*



### Tips For Saving Water

- Visit our website for money-saving water conservation ideas.
- Visit our office for a free water conservation kit.
- Pay attention to leaky toilets and fixtures. Repair as needed.
- If your water bill is unusually high or you suspect a leak in your outdoor water service line, please contact us right away so that we can assess the situation and reduce the likelihood of wasteful leaks.

# Health Effects of Some Contaminants



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 U.S. Environmental Protection Agency (EPA) Safe Drinking Water Hotline (1-800-426-4791).

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 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 (1-800-426-4791).

## Sources of Drinking Water and Drinking Water Contaminants

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 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. Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we chemically treat the water to reduce lead and copper concentrations, and, we add a disinfectant to protect you against microbial contaminants. The water quality of our system is constantly monitored by us and MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.

### 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.

**Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water 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 storm water runoff and septic systems.

**Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the MA Department of Environmental Protection (DEP) and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the MA Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

### For Your Information

The Water Dept. will be flushing most of the hydrants in town during normal working hours in the spring and fall. The flushing schedule will be posted in the newspaper and on the Town's web site ([www.townoforange.org](http://www.townoforange.org)). Flushing is very important to maintain good water quality and fire flow. We apologize for any temporary inconvenience.

# Source Water Assessment Report

Our wells draw their water from source water protection areas along Holtshire Road, South Main Street and Routes 2 and 202. Potential sources of contamination in these areas are associated with a variety of commercial, residential and agricultural land uses as well as transportation corridors. DEP has assessed these areas as highly susceptible to potential contamination from fertilizers, pesticides and underground storage tanks. For a full copy of the DEP Source Water Assessment Report for our system, call us or download it at

<http://www.mass.gov/doc/western-region-source-water-assessment-protection-swap-program-reports/download> Orange is on pages 889-899

## Protecting Against Cross-Connections

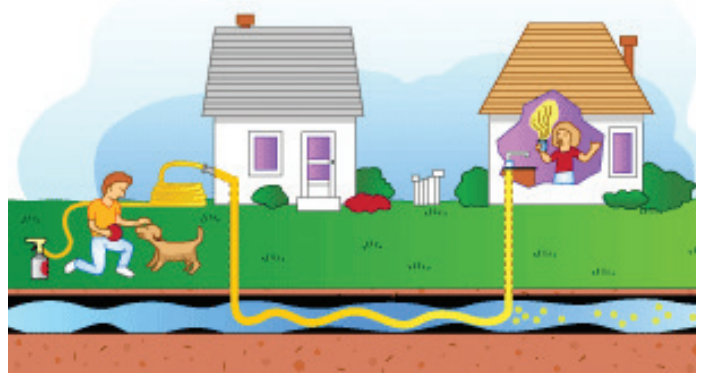
### What is a “cross-connection”?

A cross-connection is a permanent or temporary piping arrangement which can allow your drinking water to be contaminated if backflow occurs.

Cross connections can occur in many residential, commercial and institutional settings and are often associated with: Boilers, air conditioning units, fire sprinklers, lawn irrigation, solar heaters, chemical sprayers/storage, auxiliary wells, lab equipment, submerged piping, cooling towers, soda fountains, mop sinks, heat exchangers, soap injectors, etc.

### What is “backflow”?

Backflow is when the water flows in the opposite direction from normal. With the direction of flow reversed, due to a change in pressures, contaminants may enter the town’s water system through cross-connections.



A potentially hazardous cross-connection occurs every time someone uses a garden hose sprayer to apply insecticides or herbicides to their lawn. Another cross-connection occurs when someone uses a garden hose to clear a stoppage in their sewer line. Without a backflow prevention device between your hose and hose bibb (spigot or outside faucet), the contents of the hose and anything it is connected to can backflow into the piping system and contaminate drinking water throughout the town.

Backflows and cross-connections are serious plumbing problems. They can cause sickness and even death. However, they can be avoided by the use of proper protection devices such as air gaps, pressure vacuum breakers, reduced pressure valves and double check valves. The type of device used depends on the degree of health hazard. For example, hose-bibb vacuum breakers (photo below) are simple, inexpensive and easy to find, and should be installed on every home spigot.



More complex backflow prevention devices are often needed for businesses and municipal facilities. These devices are tested on an annual or semi-annual basis. If you own one or more of these devices, please refer to State Regulation 310 CMR22.22 to fully understand your maintenance responsibilities.

For more information on cross-connection control and backflow prevention for your home or business, please contact the Orange Water Department at 978-544-1115.

**PFAS:** Per- and polyfluoroalkyl substances (PFAS) samples must be reported in the Consumer Confidence Report (CCR). In October 2020 PFAS6 was regulated with a maximum contaminant level (MCL) of 20 **parts per trillion (ppt)**. **PFAS6** are comprised of six compounds: **perfluorooctane sulfonic acid (PFOS)**, **perfluorooctanoic acid (PFOA)**, **perfluorohexane sulfonic acid (PFHxS)**, **perfluorononanoic acid (PFNA)**, **perfluoroheptanoic acid (PFHpA)**, and **perfluorodecanoic acid (PFDA)**. PFAS6 detections must be reported in the regulated contaminant table. Other PFAS detections not included in PFAS6 must be reported in your unregulated table. Samples for PFAS during the calendar year that had no detections are not required to be included that in our CCR. PFAS6 is considered one contaminant even though it is a combination of six different PFAS. Results are averaged for each individual quarterly sampling site. You report the highest average of all your sampling sites. But if several sites are over the MCL then all of those must be reported in the CCR. **Note that “j values” are not included in your reporting as they are estimates only** in that they are below reliable detection accuracy limit thresholds that have been established for the testing, which could be reported as “Below Detection Level” (BDL), but above “Not Detected” (ND). **All samples** taken in 2021 were either **ND**, or a **“J” value estimate**, so have not been listed as per MassDEP CCR instructions.



# 2021 Water Quality Testing Results



Reportable detections of contaminants from the most recent annual round of testing done within the last five years in accordance with the regulations are included below. 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, through representative, is older than one year old. We are committed to providing you the best water quality available and encourage you to contact us with any questions. Your drinking water continues to meet all applicable state and federal health standards.

CONTAMINANT	HIGHEST DETECTED	RANGE DETECTED	AVERAGE DETECTED	MCL or SMCL	MCLG or ORSG	VIOLATION (Y/N)	POSSIBLE SOURCES
Arsenic(1) Tested 2020	1 ppb	BDL - 1 ppb	<1 ppb	10 ppb	N/A	N	Erosion from natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium Tested 2020	0.069 mg/L	BDL - 0.069 mg/L	0.035 mg/L	2 mg/L	2 mg/L	N	Erosion of natural deposits.
Cadmium(2) Tested 2020	0.4 ppb	BDL - 0.4 ppb	N/A	5.0 ppb	Zero	N	Corrosion of galvanized pipe; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints
Total Coliform(3) Tested 2021	3 Samples in June	No Range	N/A	>1 Sample / Month	Zero	Y	Naturally present in the environment.
	5 Samples in July					Y	
	1 Sample in August					N	
	3 Samples in Sept.					Y	
	0 Samples in Nov.					Y (3A)	
Nitrate(4) Tested 2021	6.4 mg/L	0.271 - 6.4 mg/L	5.31 mg/L	10 mg/L	10 mg/L	N	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits.
Perchlorate Tested 2021	0.20 ug/L	0.12 ug/L - 0.20 ug/L	0.15 ug/L	2.0 ug/L	Zero	N	Rocket propellants; Fireworks; munitions; flares; blasting agents.
CONTAMINANT	# SITES SAMPLED	# SITES ABOVE AL	90th PERCENTILE	AL	MCLG	VIOLATION (Y/N)	POSSIBLE SOURCES
Lead(5) Tested 2020	20	ZERO	1.2 ug/L	15 ug/L	0 ug/L	N	Corrosion of lead solder in household plumbing; erosion of natural deposits.
Copper Tested 2020	20	ZERO	0.13 mg/L	1.3 mg/L	1.3 mg/L	N	Corrosion of household plumbing; erosion of natural deposits; wood preservatives.
UNREGULATED or SECONDARY CONTAMINANT	HIGHEST DETECTED	RANGE DETECTED	AVERAGE DETECTED	SMCL	HEALTH ADVISORY	—	POSSIBLE SOURCES
Sodium(6) Tested 2021	100 mg/L	—	—	NONE	20 mg/L	—	Runoff from winter Road de-icing.
Emergency Backup Source Well #1 Manganese(7) Tested 2021	220 ug/L	140 ug/L - 220 ug/L	188 ug/L	50 ug/L	300 ug/L	—	Erosion of natural deposits.
Daily Use Source Wells #2, 2A, & 3 Manganese(7) Tested 2021	90 ug/L	14 ug/L - 90 ug/L	29 ug/L	50 ug/L	300 ug/L	—	Erosion of natural deposits.
Emergency Backup Source Well #1 Iron Tested 2021	3,700 ug/L	3,200 ug/L - 3,700 ug/L	3,525 ug/L	300 ug/L	—	—	Naturally occurring, corrosion of cast iron pipes.
Daily Use Source Wells #2, 2A, & 3 Iron Tested 2021	560 ug/L	BDL - 560 ug/L	219 ug/L	300 ug/L	—	—	Naturally occurring, corrosion of cast iron pipes.

## Disinfection and Disinfection Byproducts

Regulated Contaminant	Date(s) Sampled	Highest Result/ or Average	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	POSSIBLE SOURCES
Total Trihalomethanes / (TTHM's)	8/17/2021	2.03 ug/L	<0.50 - 5.1 ug/L	80.0 ug/L	—	N	Byproduct of drinking water chlorination.
Haloacetic Acids / (HAA5)	8/17/2021	BDL	No Range	60.0 ug/L	—	N	Byproduct of drinking water disinfection.
Free Chlorine (mg/L)	Daily Throughout 2021	Annual Average .39 mg/L	.02 - .69 mg/L	4.0 mg/L	4.0 mg/L	N	Water additive used to control microbes.

(1) Arsenic: Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

(2) Cadmium: Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

(3) Total Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found Coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify any problems that were found during these assessments. During the CY2021, we were required to conduct a single Level 1 assessment, and one Level 1 assessment was completed. In addition, we were required to take one corrective action, and we completed that one action. During the CY2021, we were required to conduct two Level 2 assessments, and two Level 2 assessments were completed. In addition, we were required to take one corrective action, and we completed that one action.

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.

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. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found Coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify any problems that were found during these assessments.

During the CY2021, we were required to conduct a single Level 1 assessment, and one Level 1 assessment was completed. In addition, we were required to take one corrective action, and we completed that one action.

During the CY2021, we were required to conduct two Level 2 assessments, and two Level 2 assessments were completed. In addition, we were required to take one corrective action, and we completed that one action.

(4) Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six 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 for advice from your health care provider. The highest collected nitrate level was less than 10 ppm.

(5) Some older homes have lead joints or pipes in their plumbing systems. When water is allowed to remain in these systems for a period of time, lead can dissolve into the water. If you are concerned about your home's water, you may elect to have it tested.

(6) Sodium sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of sodium levels exceeding the state chronic exposure guideline of 20 mg/L (where exposures are being carefully controlled).

(7) 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 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 ug/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 ug/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 <http://www.epa.gov/safewater/cccl/pdfs/regdetermine1/supportcc1magnese-dwreport.pdf> and MassDEP Office of Research and Standards Guideline (ORSG) for Manganese <http://www.mass.gov/eea/agencies/masdep/water/drinking/manganese-in-drinking-water.html>.

**Maximum Contaminant Level or MCL:** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs (see below) as feasible using the best available technology.

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

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

**Office of Research & Standards Guideline or ORSG:** Health-based guidance level for contaminant without an MCL.

**90th Percentile:** Out of every 20 homes tested, 18 were at or below this level.

**Maximum Residual Disinfection 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 Disinfection 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 use of disinfectants to control microbial contaminants.

**Units:** Milligrams/Liter or **mg/L** = parts per million; Micrograms/Liter or **ug/L** = parts per billion; Nanograms/Liter or **ng/L** = parts per trillion; **BDL** = Below Detection Level; **ND** = Not Detected.