2019 Drinking Water Quality Report

Randolph-Holbrook Joint Water System Information
The Towns of Randolph and Holbrook jointly manage and treat the water supply that each town uses for its drinking water. In 2019, the Randolph-Holbrook Joint Water System produced 822,966,700 gallons of finished water. The maximum amount of water pumped in one day was 3,357,000 gallons (July 16, 2019). The annual average daily volume of water supplied from the Randolph-Holbrook water treatment plant was 2.3 MGD. In total, the Town of Randolph bought 618,921,600 gallons of finished water from the water treatment plant.

Source Water Assessment and Protection (SWAP) Program
The source water supply is derived from the Great Pond Reservoir System. The Source Water Assessment and Protection (SWAP) program assesses the susceptibility of public water supplies to contamination due to land uses and human activities. Randolph and Holbrook maintain and operate four public water supply sources: Lower Great Pond (4040000-01S), Upper Great Pond (4040000-04S), Richardi Reservoir (4040000-02S), and Farm River (4040000-03S).

A high susceptibility ranking was assigned by the DEP to the four water sources. A high ranking is given to any water supply that has at least one high threat land use within the water supply protection area. Randolph and Holbrook have 17 high threat land uses within the protection areas, including livestock operations, manure storage or spreading, body shops, gas stations, service stations/auto repair shops, bus and truck terminals, paint shops, photo processors, hazardous materials storage, industry/industrial parks, machine/machine working shops, pharmaceutical manufacturers, plastic manufacturers, clandestine dumping, large quantity hazardous waste generators, past and present military facilities, and transportation corridors. If you would like more information, the complete SWAP report is available at the Randolph Board of Health and online at http://www.mass.gov/eea/docs/dep/water/drinking/swap/sero/3040002.pdf. You can also contact Keith Nastasia, Public Works Department Superintendent, at (781) 961-0942.

July 2019 Boil Water Order
On July 10th, 2019, the Randolph-Holbrook water system's pressure dropped below 20 psi as a result of routine maintenance at the water treatment plant. A boil water order was issued in response to this loss in pressure. A valve that isolates the Randolph-Holbrook water system from the Braintree water system was operated to temporarily connect the two systems. When the Randolph-Holbrook water system's pressure was restored to be above 20 psi at 6:30pm on July 10th, the temporary connection to Braintree water system was stopped. Water quality samples were collected on July 11th and were absent of coliform bacteria. The boil water order was lifted on July 12th.
Nonpoint Source Water Pollution

Stormwater pollution occurs when water runs over land or through the ground, picks up contaminants and deposits them in a waterbody or infiltrates to the groundwater. According to the EPA, nonpoint source pollution is, now, the leading source of water quality degradation. Water quality degradation can have harmful effects on drinking water supplies, recreation, fisheries, and wildlife. For more information, go to the USEPA’s website “How’s My Waterway” to check out the condition of waters in your neighborhood http://watersgeo.epa.gov/mywaterway/.

Lead Information

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. All water service lines for schools in Randolph have been checked and are not made of lead. The Randolph-Holbrook Joint Water Board 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.

Randolph-Holbrook Joint Water System’s Drinking Water Treatment Process

Water Quality

The Randolph-Holbrook Joint Water System’s water meets all federal and state standards. During the year 2019, hundreds of water samples were collected from the system and tested for compliance with federal and state health standards. School water fountains have also been checked for compliance and all samples collected meet state and federal standards. Federal and state regulators routinely monitor our compliance and testing protocols to assure that we deliver safe drinking water to our customers. A summary of contaminants detected in 2019 is provided in the table on the next page. The most recent results from the last seven years are given for contaminants that are not required to be sampled annually, and not sampled in 2019. Not listed are other substances for which we tested, but were not detected during 2019.

PFAS was tested for out of an abundance of caution and to aid in planning for the Tri-Town Regional Water Treatment Plant. 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 MassDEP’s Office of Research and Standards has set an ORSG of 70 ppt for PFOS, PFOA, PFNA, PFHxS and PFHpA individually or as a group. Our system’s reported PFAS results are less than the 70 ppt US EPA HA and MassDEP’s ORSG. Additional information is available at https://www.mass.gov/service-details/per-and-polyfluoroalkyl-substances-pfas-in-drinking-water.
## Definitions and Abbreviations

### MCLG (Maximum Contaminant Level Goal)
- 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.
- MCLGs are set as close to the MCL as feasible using the best available treatment technology.
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### MCL (Maximum Contaminant Level)
- The highest level of a contaminant in drinking water below which there is no known or expected risk to health. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

### AL (Action Level)
- The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.
- ALs are not health-based.

### TT (Treatment Technique)
- A required process intended to reduce the level of a contaminant in drinking water.
- A TT that addresses a secondary contaminant monitors the occurrence in the drinking water and whether future regulation is warranted.

### HA (Health Advisory)
- The concentration of a contaminant in drinking water above which adverse health effects are unlikely to occur after chronic (lifetime) exposure.

### RD/RL (Maximum Recreational Limit)
- The concentration of a contaminant in drinking water above which adverse health effects are unlikely to occur after acute (short-term) exposure.

### RAA (Running Annual Average)
- The average of four consecutive quarters of data.

### source of contamination
- Natural deposits; Leaching from wood preservatives
- Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
- Rocket propellants, fireworks, munitions, flares, blasting agents
- Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
- Soil runoff
- Naturally present in the environment
- Naturally present in the environment
- Man-made chemicals
- Originally used as surfactants, but are now manufactured from synthetic fluoropolymers (such as Teflon), cosmetics, greases and lubricants, paints, adhesives and photographic film. PFOS U.S. manufacturing phased out in 2002; PFOS may be still generated incidentally or in imported products.

### PFAS
- Perfluorinated substances
- Man-made chemicals

### chlorine
- An oxidizing agent
- By-product of drinking water chlorination
- Man-made chemicals

### Turbidity
- Daily Compliance: 0.10 NTU
  - 0.06 - 0.10 NTU: 1 NTU
  - 1 NTU: NA
- Monthly Compliance: 100% of monthly sample results <0.349 NTU
  - At least 95% of samples <0.349 NTU: NA
- soil run off

### Regulated for Source Water or After Treatment

#### Chlorine (total)
- 1.04 ppm

#### Haloacetic Acid
- 38.5 ppb

#### Total Coliform
- 0 positive samples per month

#### Total Trihalomethanes
- 79.5 ppb

### Unregulated Contaminants

#### Potassium
- 2.23 ppm

#### Sodium
- 76.9 ppm

#### Chloroform
- 2.9 ppb

#### Bromodichloromethane
- 3.4 ppb

#### Chlorodibromomethane
- 2.0 ppb

#### PFAS
- 25.4 ppt

### Secondary Contaminants

#### Iron
- ND

#### Manganese
- 24 ppb

#### Aluminum
- 20 ppb

#### Chloride
- 137 ppm

#### Hardness
- 40.8 ppm

#### Magnesium
- 2.88 ppm

#### Odor
- 5 TON

#### Sulfate
- 10.2 ppm

## 2019 Treated Drinking Water Quality Data

### Regulated at the Customer's Tap

#### Copper
- 0.33 ppm

#### Lead
- 1 ppb

### Regulated for Source Water or After Treatment

#### Nitrate
- 0.15 ppm

#### Nitrite
- ND

#### Perchlorate
- ND

#### Total Organic Carbon
- 79.5 ppb

### Footnotes
1. Compliance is determined as a running annual average of TOC removal ration (actual percent removal to required percent removal of TOC). The lowest running annual average is indicated as the Highest Detected Value.
2. Turbidity is a measure of the cloudiness of water. It is measured because it is a good indicator of water quality and the effectiveness of filtration. No turbidity samples exceeded the Max Daily NTU Limit.
3. Monthly turbidity compliance is related to the specific Treatment Technique.
4. The highest detected level is based on a running annual average.
5. This range or value is based on the individual sample detected in Randolph.
6. The highest level allowed (MCL) for total trihalomethanes and haloacetic acids is based on the locational running annual average.
7. 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 the drinking water and whether future regulation is warranted.
8. Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart disease, should be aware of the sodium levels where exposures are controlled.
9. PFAS are man-made chemicals, used as surfactants to make products stain or water resistant, in fire fighting foams, for industrial purposes, and as a pesticide.Used in fluoropolymers (such as Teflon), cosmetics, greases and lubricants, paints, adhesives and photographic film. PFOS U.S. manufacturing phased out in 2002; PFOS may be still generated incidentally or in imported products.
10. US EPA and MassDEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects and a one-day and 10-day HA of 1000 ppb for acute exposure.
Important Health Information

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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

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 (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).

In order to ensure that tap water is safe to drink, MassDEP and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. FDA and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health. This report provides you with information about the contaminants found naturally in your drinking water, at levels at which they are found, and the likely source of each contaminant. Common contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, can be naturally-occuring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides** may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- **Organic chemical contaminants**, include synthetic and volatile organic chemicals that 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** can be naturally occurring or be the result of oil and gas production, and mining activities.

Unregulated Contaminants Monitoring Rule (UCMR)

Under the UCMR water systems are required by the USEPA to test for Unregulated Contaminants. Unregulated Contaminants are those for which USEPA has not established drinking water standards. The purpose of monitoring for Unregulated Contaminants is to assist USEPA in determining their occurrence in drinking water and whether future regulation is warranted. For more information about the UCMR, please visit the following USEPA website: https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule. Of the 30 Unregulated Contaminants monitored, only 6 were identified as noted below. See below for additional information on manganese.

<table>
<thead>
<tr>
<th>Manganese</th>
<th>Average Detected Level</th>
<th>Range of Detected Levels</th>
<th>Highest Level Allowed (MCL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>914 ppb</td>
<td>68.6 - 2550 ppb</td>
<td>NR</td>
</tr>
<tr>
<td>Bromide</td>
<td>61 ppb</td>
<td>Single Sample</td>
<td>NR</td>
</tr>
<tr>
<td>Total Organic Carbon</td>
<td>2.91 ppm</td>
<td>Single Sample</td>
<td>NR</td>
</tr>
</tbody>
</table>

Manganese

Manganese is a naturally occurring mineral found in rocks, soil, 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 μg/L (microgram 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 ppb, the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 ppb and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ppb, primarily due to concerns about possible neurological effects. Children younger than one year old should not be given water with manganese concentrations over 300 ppb, nor should formula for infants be made with that water for more than a total of ten days throughout the year. 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 six months of age to children up to one year of age to address concerns about children’s susceptibility to manganese toxicity.

The Town of Randolph is actively monitoring Manganese levels and will evaluate options to reduce levels if necessary.