

2010 DRINKING WATER REPORT

TOWN OF RANDOLPH, MASSACHUSETTS

2010 Drinking Water Quality Report

This report contains important information about your water system for calendar year 2010. It describes the quality of the Randolph-Holbrook Joint Water System's drinking water, the sources, and programs that protect the high quality of our water supply.

This publication complies with federal law that requires water utilities to provide water quality information to customers each year.

While most of the content of this report is required by regulation, we also include information that responds to typical questions our customers ask about our water system.

To learn more about the Randolph-Holbrook Joint Water System or water quality in the Town of Randolph please contact David Zecchini, at the Randolph DPW at 781-961-0940. You may also attend the Town Council/Town Manager meetings, which are held every second and fourth Monday of the month, at the Town Hall. For more information about the Town Council meetings, visit: http://www.townofrandolph.com/Public_Documents/RandolphMA_Calendar/.

这份报告中有些重要的信息，讲到关于您所在社区的水的品质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。

Published by the:

Town of Randolph
Department of Public Works
41 South Main Street
Randolph, MA 02368
781-961-0940

David Zecchini, Superintendent

TOWN PWS ID# 4244000

JOINT SYSTEM PWS ID# 4244001

Randolph-Holbrook Joint Water System's Water Meets Safety and Health Standards

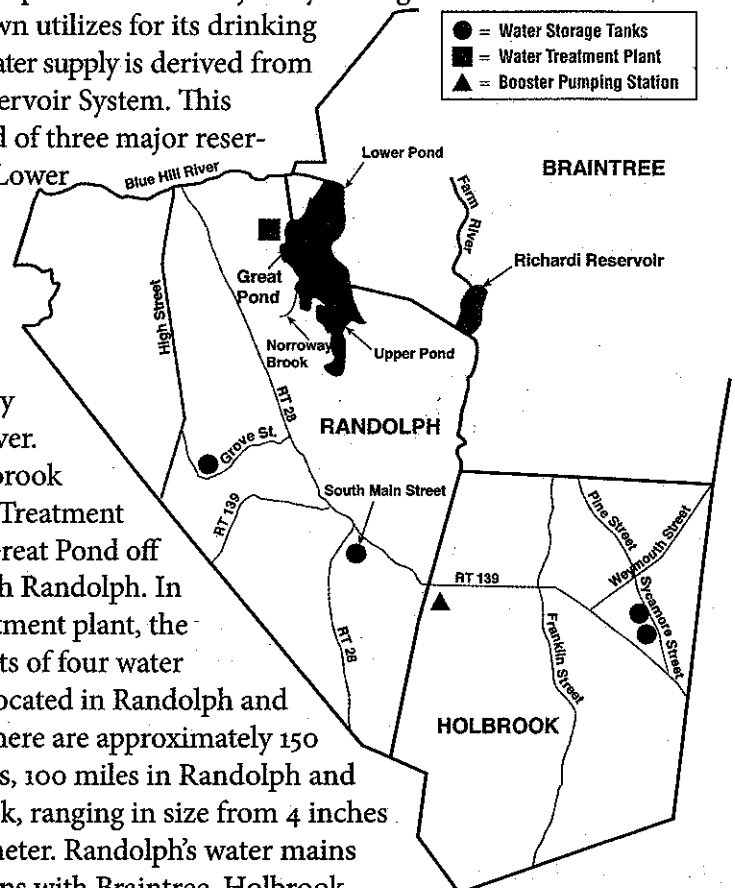
The Randolph-Holbrook Joint Water System's water meets all federal and state standards. During the year 2010 we collected approximately 600 water samples in the system that were then tested for compliance with federal and state health standards. Federal and state regulators routinely monitor our compliance and testing protocols to assure that we deliver safe drinking water to our customers.

Randolph-Holbrook Joint Water System's Water Sources

The Towns of Randolph and Holbrook jointly manage and treat the water supply that each town utilizes for its drinking water. The source water supply is derived from the Great Pond Reservoir System. This system is comprised of three major reservoirs: Great Pond (Lower

Pond), Upper Pond and the Richardi Reservoir. These reservoirs receive flows from the Blue Hill River, Norroway Brook and Farm River.

The Randolph-Holbrook Joint Water System Treatment Plant is located at Great Pond off Pond Street in North Randolph. In addition to the treatment plant, the water system consists of four water storage tanks; two located in Randolph and two in Holbrook. There are approximately 150 miles of water mains, 100 miles in Randolph and 50 miles in Holbrook, ranging in size from 4 inches to 24 inches in diameter. Randolph's water mains have interconnections with Braintree, Holbrook, Canton and Avon. These interconnections are available to maintain water pressure within the Randolph system in case of an emergency.



Important Health Information

All sources of drinking water (both tap water and bottled water) including rivers, lakes, streams, ponds, reservoirs, springs and wells, contain some naturally occurring contaminants or substances. Because water is the universal solvent, 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. Removing all contaminants would be extremely expensive and in nearly all cases would not provide greater protection of health.

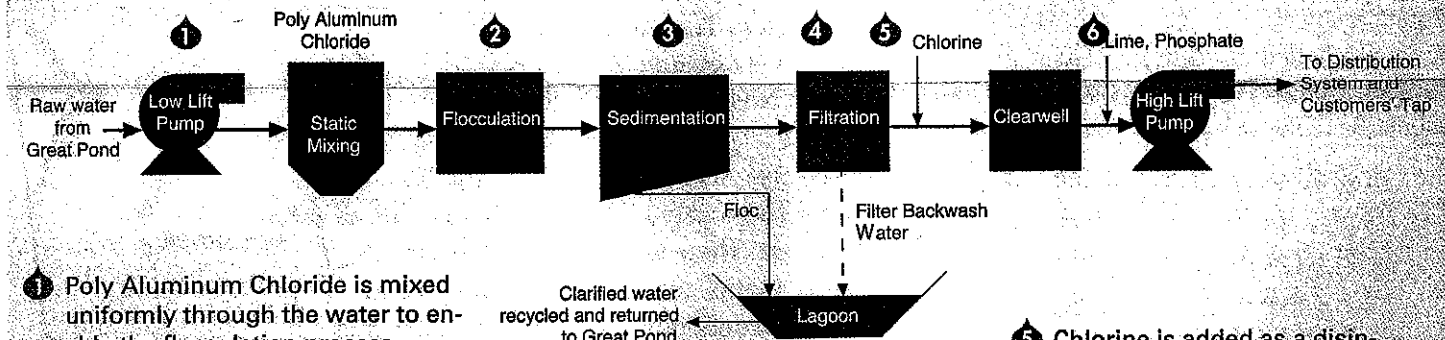
More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

To ensure that your water is safe to drink, the Department of Environmental Protection (DEP) and the EPA regulates the allowable amount of certain contaminants in the water provided by public water systems. Food and Drug Administration (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 a which they are found, and the likely source of each contaminant

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

Randolph-Holbrook Joint Water System's Drinking Water Process



- 1 Poly Aluminum Chloride is mixed uniformly through the water to enable the flocculation process.
- 2 Flocculation is a treatment process that uses gentle stirring to bring suspended particles together so that they will form larger, more settleable clumps called floc.
- 3 Sedimentation is a treatment process that involves reducing the velocity of water in basins so that

- the suspended material, or floc, can settle to the bottom of the basin by gravity.
- 4 Filtration, through the use of granular activated carbon/sand filters, removes remaining particles suspended in the water and clarifies the water.

- 5 Chlorine is added as a disinfectant to ensure that water is pathogen-free before it enters the distribution system.
- 6 Lime is mixed uniformly to the water to adjust pH. Phosphate is mixed uniformly to control corrosion of lead and copper from household plumbing fixtures.

2010 Treated Drinking Water Quality Data

Listed below are 14 substances detected in the Town of Randolph's drinking water during 2010.

Not listed are approximately 100 other substances for which we tested that were not detected during 2010.

| Substance | Highest Detected Levels | Range of Detected Levels | Highest Level Allowed (MCL) | Ideal Goal (MCLG) | Source of Contamination |
|--|--|----------------------------------|---|------------------------------|---|
| Regulated for Source Water or A/R Treatment | | | | | |
| Nitrate | 0.25 ppm | no range, only 1 sample required | 10 ppm | 10 ppm | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Perchlorate | 0.05 ppb | no range, only 1 sample required | 2 ppb | NA | Rocket propellants, fireworks, munitions, flares, blasting agents |
| Total Organic Carbon ¹ (TOC) | 1.10 | 1.00 – 1.49 | TT | NA | Naturally present in the environment |
| Turbidity | | | | | |
| Daily Compliance | 0.15 NTU | 0.06 – 0.15 NTU | 1 NTU | NA | Soil runoff |
| Monthly Compliance ³ | 100% of monthly sample results < 0.349 NTU | – | at least 95% of monthly samples below 0.349 NTU | NA | Soil runoff |
| Regulated in the Town's Distribution System | | | | | |
| Chlorine (total) | 1.00 ppm ⁴ | 0.06 – 1.91 ppm ⁵ | 4 ppm (MRDL) | 4 ppm (MRDLG) | Water additive used to control microbes |
| Halooacetic Acid | 11.4 ppb ⁴ | 11.9 – 23.7 ppb ⁵ | 60 ppb ⁶ | N/A | By-product of drinking water chlorination |
| Total Coliform ⁷ | 2 positive samples in 1 month | 2 positive samples in 1 month | 1 positive sample in 1 month | 0 positive samples per month | Naturally present in the environment |
| Total Trihalomethanes | 34.0 ppb ⁴ | 7.6 – 67.0 ppb ⁵ | 80 ppb ⁶ | N/A | By-product of drinking water chlorination |
| Regulated at the Customer's Tap | | | | | |
| Copper ⁸ | 0.38 ppm ⁹ | 0.08 – 0.5 ppm (0 results > AL) | 1.3 ppm (Action Level) | 1.3 ppm | Corrosion of household plumbing systems |
| Lead ⁸ | 3 ppb ⁹ | ND – 5 ppb (0 results > AL) | 15 ppb (Action Level) | 0 ppb | Corrosion of household plumbing systems |
| Unregulated Contaminant | | | | | |
| Bromodichloromethane | 2.6 ppb | no range, only 1 sample required | not regulated | 0 | Trihalomethane; by-product of drinking water chlorination |
| Chlorodibromomethane | 1.4 ppb | no range, only 1 sample required | not regulated | 60 ppb | Trihalomethane; by-product of drinking water chlorination |
| Chloroform | 2.6 ppb | no range, only 1 sample required | not regulated | 70 ppb | By-product of drinking water chlorination (regulated collectively with total trihalomethanes (THMs); in non-chlorinated sources, chloroform may be naturally occurring) |
| Sodium ¹⁰ | 54.6 ppm | no range, only 1 sample required | not regulated | not regulated | Naturally present in the environment |

Footnotes

- Compliance is determined as a running annual average of a TOC removal ratio (actual percent removal of TOC divided by required percent removal of TOC). The lowest running annual average is indicated as the highest detected value and is based on data from the last 11 months of 2009 and all 12 months of 2010. The range of detected values is based on the individual month values of 2010.
- 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. Approximately 2,200 turbidity measurements were taken during 2010 and none exceeded the Max Daily NTU Limit of 1 NTU.
- Monthly turbidity compliance is related to the specific Treatment Technique (TT).
- Highest detected level is based on a running annual average of data from the last three quarters of 2009 and the four quarters of 2010. Those results include data from Randolph and Holbrook.
- This range is based on the individual samples detected in Randolph in 2010.
- The highest level allowed (MCL) for total trihalomethanes and haloacetic acids is based on the average of four quarterly samples.
- Two positive samples were detected in one month during the year, but the repeat samples and the upstream and downstream samples that were taken within 48 hours were negative. Thus, those two samples do not count towards the number used for compliance.
- No sampling was required for 2010. The results presented here are from the most recent testing performed in 2008.
- The level shown is the 90th percentile value which is used to determine compliance with the Lead and Copper Rule and must be below the AL.
- The Massachusetts DEP Office of Research and Standards has set a guideline concentration of 20 ppm for sodium. Sodium-sensitive individuals, such as experiencing hypertension, kidney failure, or congestive heart disease, should be aware of the sodium levels where exposures are being carefully controlled.

Definitions

- AL (Action Level)** – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- MCL (Maximum Contaminant Level)** – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- 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.
- MRDL (Maximum Residual Disinfectant Level)** – The highest level of a disinfectant (chlorine) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- MRDLG (Maximum Residual Disinfectant Level Goal)** – The level of a drinking water disinfectant (chlorine) 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.
- TT (Treatment Technique)** – A required process intended to reduce the level of a contaminant in drinking water.
- 90th Percentile** – out of every 10 homes, 9 were at or below this level.

Abbreviations

- N/A** – Not applicable,
ND – Not detected
NTU – Nephelometric Turbidity Units
ppb (Part Per Billion) – One part per billion is the equivalent of \$1 in \$1,000,000,000
ppm (Part Per Million) – One part per million is the equivalent of \$1 in \$1,000,000
V – Violation
< – Less than, **>** – Greater than

Source Water Assessment and Protection (SWAP) Program

The Source Water Assessment and Protection (SWAP) program assesses the susceptibility of public water supplies to contamination due to land uses and activities within the recharge area of the water supply. Randolph and Holbrook, as part of the Randolph-Holbrook Joint Water Board, maintain and operate four water public water supply sources: Great Pond (Source ID #'s 3040002-01S, 3040000-01S, 3040001-01S), Richardi Reservoir (Source ID # 3040000-02S), Farm River (Source ID # 3040000-03S) and Upper Reservoir-Great Pond (Source ID # 3040000-04S). This system is explained on the first page.

A susceptibility ranking of high was assigned to the four water sources using the information collected during the assessment by the DEP. A high ranking is given to any water supply that has at least one high threat land use within the water supply protection area. Since Randolph and Holbrook have seventeen high threat land uses within the protection area of these sources, these wells must be assigned a high susceptibility ranking. Potential sources of contamination within the protection area are: 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, military facilities (past and present), 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/dep/water/drinking/3040002.pdf>. You can also call David Zecchini, DPW Superintendent, at (781)961-0940.

Vulnerability

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 about drinking water from their health care providers.

EPA/Centers for Disease Control and Prevention (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).

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. 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 drinking 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>.

2010 DRINKING WATER REPORT

TOWN OF RANDOLPH, MASSACHUSETTS



Town of Randolph
Department of Public Works
41 South Main Street
Randolph, MA 02368

Presorted Standard
U.S. Postage PAID
Permit #6
Abington, MA