2015 Drinking Water Report

Town of Holbrook, Massachusetts

Published by:

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2015 Drinking Water Quality Report

This report contains important information about your water system for the 2015 calendar year. 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.

If you are interested in learning more about the Randolph-Holbrook Joint Water System or water quality and other related information in the Town of Holbrook please contact Benjamin Ecord at the Holbrook Public Works Department at 781-767-1800. You may also inquire about drinking water issues at the posted meetings of the Board of Selectmen and Public Works Commissioners meetings. Meetings are held every other Wednesday at 7:00 pm at the Holbrook Town Hall in the Noel King Meeting Room. For more information regarding the meetings, please visit www.holbrookma.gov/pages/holbrookma_meetingscal/.

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 2015, the Randolph-Holbrook Joint Water System produced 984,030,000 gallons of finished water. The maximum amount of water pumped in one day was 3,483,000 gallons (October 18, 2015). The annual average daily volume of water supplied from the Randolph-Holbrook water treatment plant was 2.70 MGD. In total, the Town of Holbrook bought 207,731,000 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 Holbrook Board of Health and online at http://www.mass.gov/eea/docs/dep/water/drinking/swap/sero/3133000.pdf. You can also contact Benjamin Ecord, Public Works Department Superintendent, at (781) 767-1800.

Holbrook Water System Projects

In August 2013, the Holbrook water system began a 3-year program of replacing old, undersized, cast iron water mains with new ductile iron water mains. In the summer/fall of 2013, water mains were replaced on Linwood Street, Walsh Road, Zenas Road, Thornton Road, Morgan Road, French Road, Spring Lane, and Leonard Lane. Beginning in the spring of 2014, construction work continued on Platts Street, Summer Street, Winter Street, Cottage Street, Linfield Street, and Maple Avenue. In the fall of 2014, a new water main was installed on Weymouth Street. In the spring/summer of 2015, water mains were replaced on Stevens Drive, Baker Road, Quincy Street, Hillsdale Road, Grove Avenue, Shirley Street, Shirley Terrace, Belcher Street, School Street, Newton Avenue, and Thayer Avenue. It is anticipated that construction on Pond Street and Laurel Park will begin in 2016. In addition to these water main projects, the Holbrook Public Works Department is initiating a customer meter replacement program and anticipates completing repairs to the water storage tank in 2016.

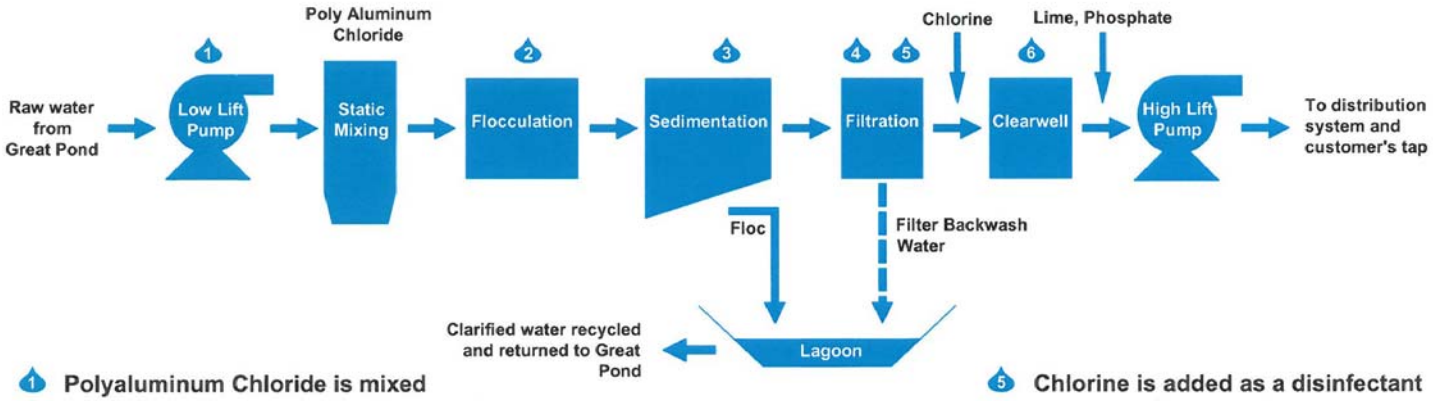
Protecting Your Raw Water Quality

According to the USEPA, the Cochato River and Lake Holbrook do not meet water quality standards. Besides the impacts from the Baird McGuire superfund site, the Cochato River is considered to be impaired due to excess bacteria and phosphorus levels. Lake Holbrook is on USEPA's list of being impaired due to high phosphorus levels. Please help protect our valuable waters by picking up your pet's waste, which is full of harmful bacteria and excess nutrients that can wash into the town's storm drains and eventually lead to streams and lakes. Deposit the waste in the trash, not the nearby catch basin, which is part of the storm drain system, and not a sewer. Also, use lawn fertilizer without phosphorus, which is usually in plentiful supply in our soils. 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. 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 https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.

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



1. Polyaluminum 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.

Water Quality

The Randolph-Holbrook Joint Water system's water meets all federal and state standards. During the year 2015, hundreds of water samples were collected from the system and 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. A summary of contaminants detected in 2015 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 2015. Not listed are other substances for we which tested, but were not detected during 2015.

2015 Treated Drinking Water Quality Data

Substance	Highest Detected Levels	Range of Detected Levels	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Source of Contamination
Regulated for Source Water or After Treatment					
Nitrate	.20 ppm	Single sample	10 ppm	10 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite$_{11}$	ND	Single sample	1 ppm	1 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate	ND	Single sample	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents
Total Organic Carbon[1] (TOC)	1.00	1.00 – 2.11	TT	NA	Naturally present in the environment
Turbidity[2]					
Daily Compliance	0.14 NTU	0.08 – 0.14 NTU	1 NTU	NA	Soil runoff
Monthly Compliance[3]	100% of monthly sample results <0.349 NTU	–	At least 95% of samples <0.349 NTU	NA	Soil runoff
Regulated in the Town's Distribution System					
Chlorine (total)	1.58 ppm[4]	0.05 – 1.58 ppm[5]	4 ppm (MRDL)	4 ppm (MRDLG)	Water additive used to control microbes
Haleoacetic Acid	37.6 ppb[4]	14 – 37.6 ppb[5]	60 ppb[6]	NA	By-product of drinking water chlorination
Total Coliform	0 positive samples per month	0 positive samples per month	1 positive sample per month	0 positive samples per month	Naturally present in the environment
Total Trihalomethanes	112 ppb[4]	19.5 – 112 ppb[5]	80 ppb[6]	NA	By-product of drinking water chlorination
Regulated at the Customer's Tap					
Copper$_{14}$	0.18 ppm[7]	0.03 – 0.18 ppm	1.3 ppm (Action Level)	1.3 ppm	Corrosion of household plumbing systems; Erosion of natural deposits
Lead$_{14}$	8 ppb[7]	ND – 8 ppb	15.0 ppb (Action Level)	0 ppb	Corrosion of household plumbing systems; Erosion of natural deposits
Unregulated Contaminants[8]					
Potassium	2.20 ppm	Single sample	NR	NR	Naturally present in the environment
Sodium[9]	62.1 ppm	Single sample	NR	NR	Naturally present in the environment
Chloroform	1.8 ppb	Single sample	NR	NR	By-product of drinking water chlorination
Bromodichloromethane	2.0 ppb	Single sample	NR	NR	By-product of drinking water chlorination
Chlorodibromomethane	1.0 ppb	Single sample	NR	NR	
Secondary Contaminants					
Substance	**Highest Detected Levels**	**Range of Detected Levels**	**SMCL**	**Ideal Goal (MCLG)**	**Noticeable Aesthetic Effects above the Secondary MCL**
Iron	ND	Single sample	NR	NR	Taste and colored water
Manganese[10]	56 ppb	Single sample	50 ppb	NR	Colored water, unpleasant taste, stains on plumbing fixtures.
Aluminum	.07 ppm	Single sample	.05 ppm	NR	Colored water
Calcium	16.4 ppm	Single sample	NR	NR	Taste and deposition on plumbing fixtures
Chloride	161 ppm	Single sample	250 ppm	NR	Salty taste
Hardness	58.0 ppm	Single sample	NR	NR	Taste and deposition on plumbing fixtures
Magnesium	4.15 ppm	Single sample	NR	NR	Taste and deposition on plumbing fixtures
Odor	10 TON	Single sample	3 TON	NR	"Rotten-egg", musty or chemical smell
Sulfate	11.3 ppm	Single sample	250 ppm	NR	Salty taste
Total Dissolved Solids (TDS)	340 ppm	Single sample	500 ppm	NR	Hardness; deposits; colored water; staining; salty taste
Zinc	.015 ppm	Single sample	5 ppm	NR	Metallic taste

Definitions and Abbreviations

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which 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 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 below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

SMCL (Secondary Maximum Contaminant Level): Concentration limit for a contaminant which may have aesthetic effects such as taste, odor, and staining.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

NA: 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

TON: Threshold Odor Number

V: Violation

<: Less than, **>**: Greater Than

$_{11}$: A 2-digit subscript denotes the calendar year for the reported results.

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. These results include data from Holbrook and Randolph.
5. This range or value is based on the individual sampled detected in Holbrook.
6. The highest level allowed (MCL) for total trihalomethanes and haloacetic acids is based on the average of four quarterly samples.
7. The level shown in 90th percentile value which is used to determine compliance with the Lead and Copper Rule and must be below the AL.
8. 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.
9. The Massachusetts DEP Office of Research and Standards has set a guideline concentration of 20 ppm for sodium. Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart disease, should be aware of the sodium levels where exposures are carefully controlled.
10. EPA has established a lifetime Health Advisory (HA) for manganese at 300 ppb and an acute HA at 1,000 ppb.

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 contamination. 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, the Department 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-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and 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: http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/index.cfm. Of the 21 Unregulated Contaminants monitored, only 3 were identified as noted below:

Substance	Average Detected Level	Range of Detected Levels	Highest Level Allowed (MCL)
Chromium-6_{14}	.075 ppb	.04-.1 ppb	N/A
Chromium (total)$_{14}$	.1 ppb	ND-.3 ppb	NA
Strontium$_{14}$	94 ppb	83-100 ppb	N/A