



CITY OF RUTLAND
DEPARTMENT OF PUBLIC WORKS
RUTLAND, VERMONT

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PUBLIC NOTICE

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Levels of HAA5 Above Drinking Water Standards

Dear Water Consumer:

This notice is similar to previous notices you have received. We are required to provide such a quarterly notice whenever there is an exceedance of a water quality standard. Our water system, in certain locations, continues to exceed drinking water standards for a regulated contaminant, HAA5 or haloacetic acids, and similar notices will likely be continued as we work towards a correction. This is not a health emergency or a “do not drink” notice. The information below should provide additional information and answer many questions.

The City is proud of its well-managed and protected drinking water system. Despite this HAA5 challenge, your drinking water quality is excellent and routinely passes tests for over 150 potential contaminants. Your water filtration facility is known for its excellence both in operation and performance. Haloacetic acids, as explained below, are a common byproduct of disinfection with chlorine, particularly when surface source waters such as a stream or lake are the water source. Their existence has existed since water supplies were disinfected with chlorine, but the regulation of them is relatively recent. The City is planning to reduce this contaminant by changing the way the City disinfects its drinking water. That process will take a year or more. In the meantime, the City will continue to sample the water distribution system, more extensively than that required by the State, to better understand the nature of the formation of these compounds. This may also be helpful to other communities, and to the regulatory bodies.

Please read this informational newsletter to learn more about this subject and contact the Department of Public Works with any questions.

WHAT DOES THE CITY TEST FOR IN OUR DRINKING WATER?

As required by State and Federal regulations, the City routinely tests for over 150 potential contaminants, both naturally occurring and man-made. These include hundreds of bacteriological tests, tests for inorganic compounds and metals such as lead and copper, volatile organic compounds, synthetic organic compounds (including herbicides and pesticides), per and polyfluoroalkyl substances (PFAS), nitrate, radionuclides and compounds referred to as Disinfection

Byproducts (DBP's). All tests have shown these 150+ potential contaminants to be either non-detectable or below regulated drinking water standards, **except for Total Haloacetic Acids (HAA5).**

The regulatory maximum contaminant level (MCL) for HAA5 is 60 parts per billion (ppb or µg/l). Four locations on the City water distribution system tested above this limit as follows:

62 µg/l on Greens Hill Lane, 66 µg/l on Gleason Road, 64 µg/l on South Main St, and 61 µg/l on Spruce St.

WHAT ARE HALOACETIC ACIDS?

Haloacetic Acids in drinking water are compounds formed when naturally occurring organic matter (dissolved plant material, etc.) combines with a strong oxidizing agent such as chlorine. Such dissolved organic compounds exist in all surface water and can increase with heavy rain events, easily erodible soils in the watershed, etc. The City manages the water from Mendon Brook very carefully, having the ability to shut off the water intake during high flow periods. However, despite the brook water being crystal clear in appearance, dissolved compounds still exist. Of interest is, after Tropical Storm Irene, the level of haloacetic acids went down significantly, since the brook was scoured of most vegetation. Since then, it has gradually increased to pre-storm levels.

Following the 1909 typhoid epidemic, the City began adding chlorine to its system, which essentially eliminated water borne illnesses. In 1995, the City constructed a water filtration facility. This facility not only removes bacteria and pathogens but also removes approximately 25% of the dissolved organic compounds contributing to the formation of HAA5 compounds. Chlorine, in the form of sodium hypochlorite, is added, following filtration, to maintain the large distribution system in a bacteria-free condition. However, chlorine, when combined with trace organic matter, create numerous compounds collectively known as disinfection byproducts (DBPs). Federal and State regulations require public water systems to test for two "families" of these compounds, Trihalomethanes (TTHM's) and Haloacetic Acids (HAA5's). The City has always maintained TTHM concentrations below the maximum contaminate limit but has exceeded the standard for HAA5's in the four official State testing locations referenced above.

ARE THERE HEALTH CONCERNS RELATED TO HAA5's?

First, this is not an emergency. Drinking water containing HAA5's, at this concentration, will not lead to any adverse short-term effects. The maximum contaminant level (MCL or standard) set by EPA is intended to protect against potential lifetime exposure health effects. The EPA and CDC indicate that chronic lifetime exposure to certain DBP's may increase the risk of cancer to a small percentage of the population.

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. In animal studies, some haloacetic acids have been associated with reproductive or developmental effects. For those who wish more detail, there are studies available on the internet done by the Department of Health and Human Services' National Toxicology Program. See [RoC Profile: Haloacetic Acids; 15th RoC 2021 \(nih.gov\)](#) and [Human Exposure - Report on Carcinogens Monograph on Haloacetic Acids Found as Water Disinfection By-Products - NCBI Bookshelf \(nih.gov\)](#), as well as several relevant data and information sheets by the CDC and EPA.

ARE DISINFECTION BYPRODUCTS NEW IN PUBLIC WATER SYSTEMS?

No. Just about any water system which uses surface water as a source (such as a lake, river or brook) and also disinfects with an oxidizing agent (such as chlorine) will create DBP's. These compounds

have been common in public drinking water (and in much higher concentrations) since the early 1900's when chemical disinfection was introduced. This goes for Rutland as well when higher concentrations of chlorine were added and there was no filtration facility. Filtration of surface water sources, now required for most all surface water supplies for removal of biologic contamination, reduces the dissolved natural organic matter, which, in turn, reduces the creation of DBP's. Rutland's very effective slow sand water filtration facility reduces this precursor material, thus reducing potential DBP's. However, the City does exceed the HAA5 standard in four of the monitoring locations.

WHAT IS THE CITY DOING TO LOWER THE HAA5 CONCENTRATION?

The City takes any exceedance of water quality standards seriously. We are actively working on addressing this issue and are coordinating with the Vermont Department of Environmental Conservation. The City had an engineering study done several years ago which examined options to reduce the level of DBP's. In addition, the City has received a technical assistance grant from EPA to further study changes in operation and/or facility additions which will address this issue. This is not an uncommon problem nationally (74% of the US population receives drinking water from surface water supplies) and the alternative solutions are well known. However, a fresh examination of the alternatives will help guide future decision making.

Potential alternatives are: 1) changing the type of disinfection from sodium hypochlorite to monochloramine (a less reactive form of chlorine, used by dozens of large communities nationwide including Vermont's largest water system, Champlain Water District), 2) adding granulated activated carbon filtration to the treatment process, or 3) adding an ion-exchange filtration process. Preliminary costs for these range from less than \$1M (option #1) to over \$10M (options #2 and #3), with proportional increased operating costs.

As an initial measure, the City has slightly lowered the level of chlorine concentration in the distribution system, while still maintaining a necessary level for disinfection in all parts of the system and additional HAA5 samples have been taken to evaluate the effectiveness of this change. Unfortunately, lowering the chlorine concentration to the minimum effective level has not brought those monitoring areas into compliance. Therefore, the City will be moving ahead with the most beneficial and effective solution for the City, involving both the State and the water users as that process moves forward.

CAN I USE A HOME FILTER TO REDUCE DBP'S?

Home filters can reduce DBP's if properly installed and maintained. There are various types of home water filters, including reverse osmosis and granulated activated carbon which are effective. However, the City does not advocate that home filters are necessary. Consumers who choose to add a home filter are advised to check on the product's effectiveness for this purpose and carefully follow the manufacture's recommended operation and maintenance procedures. Massachusetts DEP has an on-line resource for home filters at <https://www.mass.gov/service-details/home-water-devices-point-of-entry-and-point-of-usedrinking-water-treatment>

WHERE CAN I GET ADDITIONAL INFORMATION?

You can contact the Department of Public Works at 802-773-1813 or at PO Box 969, Rutland, VT 05701 with any questions. Regarding your personal health concerns, we recommend contacting your personal health care provider.

WATER FILTRATION FACILITY



FILTERED WATER STORAGE TANKS – 5 MILLION GALLONS



Please share this information with all the people who drink this water, especially those who may not have received this notice directly (for example, apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

**This notice contains previously omitted language*