2020
Water Quality Report

Dear Community Members,

The Plainville Public Water System continues to meet the operational challenges in its efforts to provide clean safe drinking water to the residential and commercial customers it serves.

In 2020, new wells were drilled to replace the wells located behind the Highway Garage, and water mains on Washington and Bugbee Streets were replaced.

The Plainville Water System is significantly challenged during the peak demand season of May through September to meet the current demand for water, which has grown significantly over the past few years and will continue with any new growth.

The Board of Selectmen and the Department of Public Works are making efforts to find new sources to meet current and future demand. An exploration for a new water source was completed in 2020 and follow up projects will need to be planned and funded to permit, design and construct a new water well. A new water booster station was constructed on Man Mar Drive and interconnected to the Town of North Attleborough water supply to provide redundancy to the Everett Street Booster Station and provide a source of additional water as may be necessary to meet demand.

In closing the following report details the 2020 operation of the Town of Plainville Public Water System.

Sincerely,

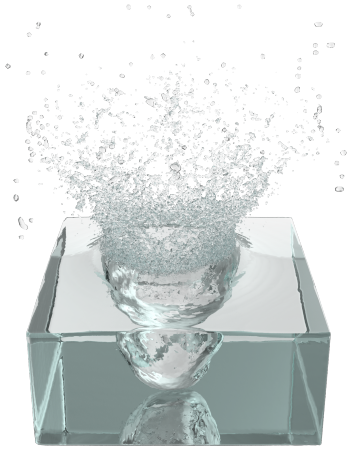
Paul Scott

Paul Scott
Director of Public Works

Mission

The Plainville Department of Public Works primary mission is the delivery of clean, safe potable water to the community for consumption. Our goal is to provide the community with water that is not only safe but dependable. Our team works diligently to continually improve the water treatment process and protect our water resources.

Our Team Delivers



The water delivered to Plainville's consumers is regulated by state and federal laws, and as such, all of our water treatment plant operators must be licensed and are required to continuously update their training to meet all regulations and standards. Our licensed water professionals have a basic understanding of a wide-rage of subjects, in-cluding chemistry, biology, math and physics. Our operators are tasked with:

- Operating and maintaining equipment to disinfect and distribute potable drinking water;
- Monitor and inspect machinery, meters, gauges, and operating conditions;
- Conduct tests and inspections on water and evaluating the results;
- Maintaining optimal water chemistry;
- Applying data to formulas that determine treat-ment requirements, flow levels, and concentration levels;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education and outreach.

When you turn on your faucet, take a shower, or pour a glass of water please think of the skilled professionals who stand behind each drop.

Plainville's Water Supply

The Town of Plainville supplies water to 2,400 water service connections within the community through groundwater wells, treatment plants, pump stations, water storage tanks and watermains.

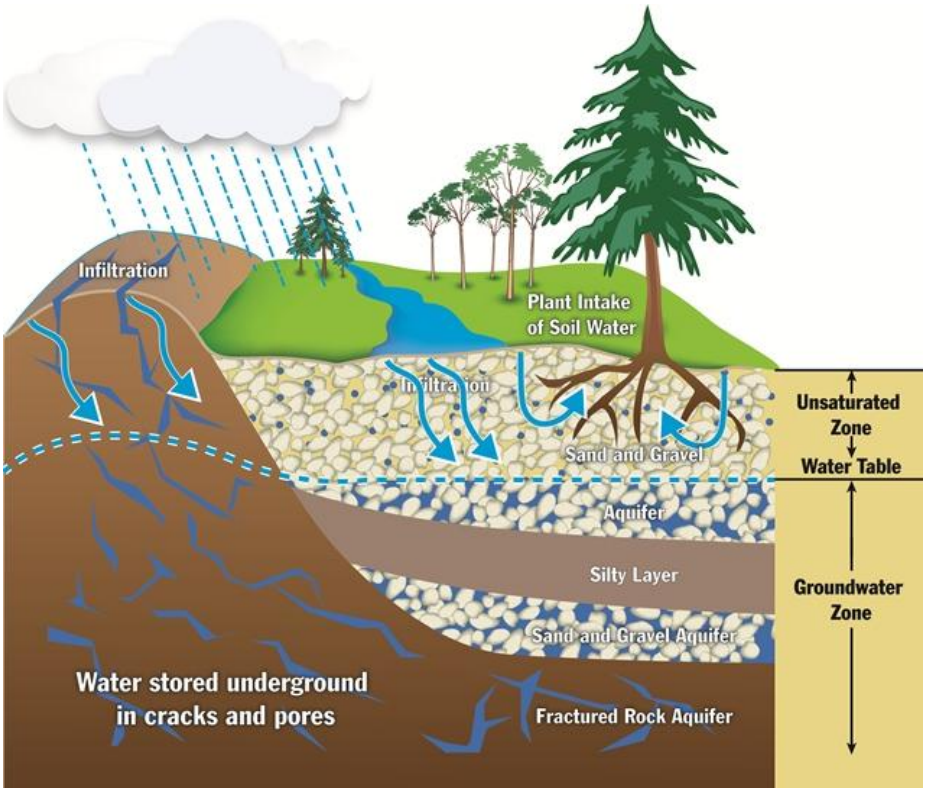
Plainville's Water Resources

Plainville's water is drawn from groundwater sources. Groundwater is one of Plainville's most valuable resources. Groundwater is the water found underground in the cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers.

Seasonal variations in rainfall and the occasional drought affect the "height" of the underground water level. Withdrawing water from a well causes the water levels around the well to lower.

During periods of peak demand, outdoor water conservation restrictions are typically needed to ensure minimum volumes of water are available for public health & Safety.

These restrictions can range from limited outdoor watering to a temporary ban on outdoor watering, depending on the conditions of the resource.



Our Wells

Plainville withdraws water from several groundwater wells in three separate wellfields located near Turnpike Lake, Lake Mirimichi and at the rear of the Highway Garage off of West Bacon Street.

Source	MassDEP Source ID	Source Type	Location
Well #1	4238000-01G	Ground Water	171 E. Bacon St.
Well #2	4238000-02G	Ground Water	171 E. Bacon St.
Well #5	4238000-05G	Ground Water	171 E. Bacon St.
Well #M1	4238000-06G	Ground Water	Mirimichi Pump Station
Well #M2	4238000-07G	Ground Water	Mirimichi Pump Station
Well #M3	4238000-08G	Ground Water	Mirimichi Pump Station
Well #3	4238000-09G	Ground Water	Rear of 33 W. Bacon St.

The Condition of Plainville's Wells

- The Turnpike Lake Wells are currently operational.
- The Lake Mirimichi Wells were taken offline in September of 2017 due to elevated levels of iron and manganese. The Mirimichi Pumping Station/Treatment Plant does not have a system to remove these contaminants.
- **Highway Replacement Well Project**: Wells 3B and 3C (Highway Well area) structurally failed in 2019 after 30-plus years of service. Two new wells were designed, constructed, and tested in the second half of 2020. The replacement wells are complete and operational.

Water System Facilities

Turnpike Lake Treatment Facility

Water is drawn from the Turnpike Lake Wells, which is treated at the Turnpike Lake Treatment Plant. The water goes through a filtration process to remove iron and manganese and is disinfected; it is then routed to both the water storage tanks; and the distribution system to the community through water mains that feed service lines to water consumers.

North Attleborough Water treatment Plant

Through an Inter-Municipal partnership with the Town of North Attleborough, raw water is drawn from Plainville's well #3 and pumped to the North Attleboro Treatment Plant where it is filtered and disinfected and then enters the Plainville water distribution system through the Everett Street Booster Pump Station.

Water Storage Tanks

Water storage is essential to meet all of Plainville's domestic, industrial and fire demands. Plainville has two storage tanks, the East Bacon Water Storage Tank and the Sharlene Water Storage Tank. Each of the tanks are flat-bottomed cylindrical tanks.

The East Bacon Water Storage tank is a steel structure with the capacity to hold 1.5-million-gallons of water. The Sharlene Water Storage Tank is a concrete structure with the capacity to hold 1.5-million-gallons of water. The East Bacon and Sharelene Water Storage Tanks were remote operation inspected and provided with a clean bill of health.

Water Pumping Stations

Plainville's five booster pump stations are instrumental in pressurizing the water distribution system for elevated segments of Town to maintain constant reliable water supply and pressure.

Water Mains

Plainville's distribution system contains about 58 miles of pipeline of various sizes from six to twelve inch pipes. The Washington Street and Bugbee Street water mains were replaced in 2020.

Planning for Our Future

We recognize the tremendous responsibility to provide you with high quality drinking water 24 hours a day, 7 days per week, 365 days per year. Water is vital not only to our health and well being but to our economy and way of life. The Plainville Public Works is continually evolving our planning process to provide our community with a safe and reliable water system.

- Annual flushing of water mains to remove sediment.
- Replacement of undersized and or older water mains.
- Inspection, repairs and improvements to Pump Stations and Treatment Plants.
- Cleaning and inspection of water storage tanks.
- Cleaning, inspection and restoration of water well systems.
- Implementation of new software to ensure meter reading accuracy for billing.

Quality Control

As mandated by the Massachusetts Department of Environmental Protection and the Massachusetts Drinking Water Regulation, 310 CMR 22.00 Plainville's water is sampled and tested to ensure compliance with all drinking water standards.

To ensure water quality, the Plainville Department of Public Works exceeds the mandated monitoring, by testing monthly for total organic carbon and by performing weekly monitoring of:

- Chlorine
- Iron
- Manganese
- PH
- Water Temperature

Water Conservation

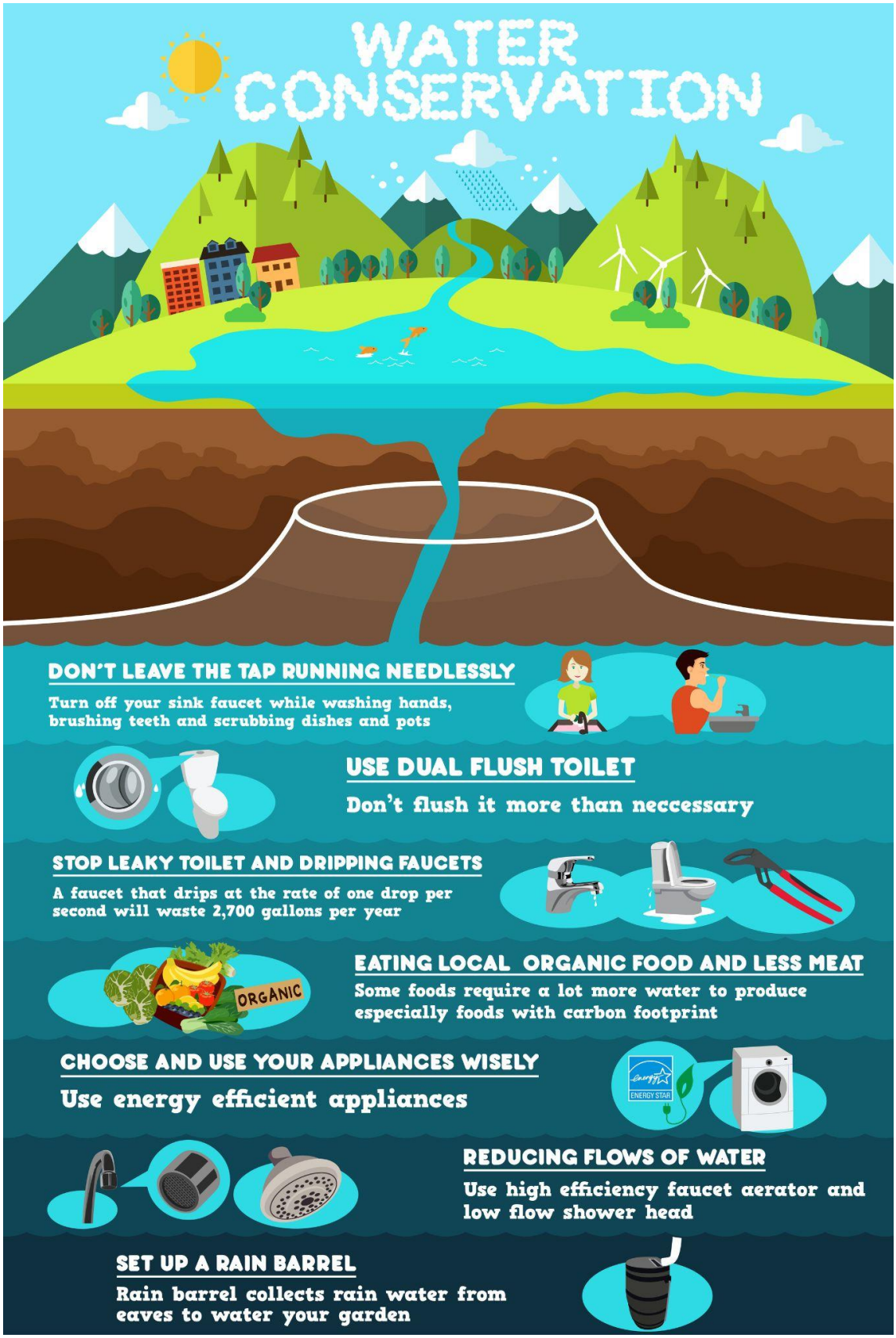
Outdoor water use restrictions will be implemented to protect our water supply during peak season (May 1st – Sept 30th). The reduction in water consumption is necessary to ensure that the demand for public health and safety for our community is met. https://bit.ly/2QSp9ku

Do Your Part To Help Protect Our Water Supply:

In order to ensure its availability, while saving you money at the same time, it is critical that everyone practice good water conservation.

Tips for Water Conservation in Your Home:

- When washing dishes by hand, don't let the water run. Fill one basin with wash water and the other with rinse water.
- Dishwashers typically use less water than washing dishes by hand. Now, Energy Star dishwashers save even more water and energy.
- If your dishwasher is new, cut back on rinsing. Newer models clean more thoroughly than older ones.
- Designate one glass for your drinking water each day, or refill a water bottle. This will cut down on the number of glasses to wash.
- Soak pots and pans instead of letting the water run while you scrape them clean.
- Use the garbage disposal sparingly. Instead, compost vegetable food waste and save gallons every time.
- Wash your fruits and vegetables in a pan of water instead of running water from the tap. Visit: www.plainville.ma.us/water-conservation for more information about how you can conserve water.


WATER CONSERVATION
DON'T LEAVE THE TAP RUNNING NEEDLESSLY
Turn off your sink faucet while washing hands, brushing teeth and scrubbing dishes and pots
USE DUAL FLUSH TOILET
Don't flush it more than neccessary
STOP LEAKY TOILET AND DRIPPING FAUCETS
A faucet that drips at the rate of one drop per second will waste 2,700 gallons per year
ORGANIC
EATING LOCAL ORGANIC FOOD AND LESS MEAT
Some foods require a lot more water to produce especially foods with carbon footprint
CHOOSE AND USE YOUR APPLIANCES WISELY
Use energy efficient appliances
ENERGY STAR
REDUCING FLOWS OF WATER
Use high efficiency faucet aerator and low flow shower head
SET UP A RAIN BARREL
Rain barrel collects rain water from eaves to water your garden

Frequently asked Questions

How is My Water Treated?

In order to maintain compliance with Federal and State Drinking Water Standards, Plainville well water must be treated before it reaches consumers' taps. The Turnpike Lake Treatment Plant treats water from groundwater wells which is filtered for iron & manganese removal, pH adjusted for corrosion control, and disinfected with chlorine and ultraviolet light.

We regularly and routinely receive water from the Town of North Attleboro Water Treatment Plant. The water is treated with Chlorine, pH adjusted, fluoridated, and has iron and manganese removed by pressure filtration methods. This treated water we receive is equal to the volume we pump from our wells at the rear of the highway department off West Bacon Street.

How are These Sources Protected?

The Department of Environmental Protect prepared a Source Water Assessment Program (SWAP) Report for our drinking water sources to contamination. The results of the assessment are available at the Plainville Water Operations Office and online at www.mass.gov/files/documents/2016/08/my/4238000.pdf

Some of the land uses that exist within groundwater recharge areas include: gas stations, auto repair shops, electrical manufacturers, and underground storage tanks. The Plainville Water System was assigned a highly susceptibility ranking in the SWAP Report. We have established protective land use restrictions to reduce exposure to certain contaminants including bylaws to protect Zone II drinking water well recharge areas. For more information, call Steve Nunnery, Superintendent at **(508) 695-6871**.

Residents can help protect sources by:

- Practice good septic system maintenance
- Taking hazardous household chemicals to hazardous materials collection days
- Limit pesticide and fertilizer use, etc.

What are Potential Sources of Contamination?

Sources of Drinking Water (both tap water and bottled water) include lakes, rivers, 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 can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include;

Emerging contaminants, such as Per- and polyfluoroalkyl substances (PFAS).

Microbial contaminants, such as viruses and bacte-ria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wild-life.

Inorganic contaminants, such as salts and metals can be naturally occurring or result from urban stormwater 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 agricultural, urban stormwater runoff and residual uses;

Organic chemical contaminants, including synthetic and organic chemicals that are by-products of industrial processes and petroleum production, that can come from gas stations, urban stormwater runoff and septic systems.

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

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

Water Quality Test Results

The water quality information presented in the following table(s) is from the most recent round of testing done in accordance with the 1996 Safe Drinking Water Act Amendments. All data shown was collected during the last calendar year unless otherwise noted.

Regulated Contaminants are those for which the EPA has set legal limits on the levels allowed in drinking water. The limits reflect both the level that protects human health and the level that water systems can achieve using the best available technology.

Regulated Substances[1]												
			Lake Mirimichi Finished 4238000-06G through 08G		Turnpike Lake Treatment Plant Finished 423800-01G,02,05G		South St. Market 004		Heather Hills Clubhouse 10025			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDLG]	AMOUNT DETECTED	RANGE LOW/HIGH	AMOUNT DETECTED	RANGE LOW/HIGH	AMOUNT DETECTED	RANGE LOW/HIGH	AMOUNT DETECTED	RANGE LOW/HIGH	VIOLATION	TYPICAL SOURCE
Haloacetic Acids (HAAs) (ppb)	2020	60	NA	NA	NA	NA	16[1]	9.7-2[1]	20[1]	16-22[1]	No	By-product of drinking water disinfection
Nitrate (ppm)	2020	10	10	1.08	NA	0.69	NA	NA	NA	NA	No	Runoff from fertilizer use; Latching from septic tanks, sewerage, Erosion of natural deposits
Perchlorate (ppb)	2020	2	NA	0.14	NA	NA	NA	NA	NA	NA	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
TTHMs [Total Trihalomethanes] (ppb)	2020	80	NA	NA	NA	NA	41[1]	28-64[1]	30[1]	13-52[1]	No	By-product of drinking water disinfection

[1] Samples taken every quarter.

Distribution System Running Average for 2020						
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	AMOUNT DETECTED	RANGE LOW/HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2020	[4]	[0.45]	Nd - 2.36	No	Water additive used to control microbes

Tap water samples were collected for lead and copper analysis for sample sites throughout the community							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED	SITE ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2020	1.3	1.3	0.280	0/20	No	Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits
Lead (ppb)	2020	15	0	12	0/20	No	Lead service lines, corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

Secondary Substances									
				Lake Mirimichi Finished 4238000-06G Through 08G		Turnpike Lake Treatment Plan Finished 4238000-01G, 02G, 05G			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE	AMOUNT DETECTED	RANGE	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2020	50	NA	8	NA	ND	NA	No	Leaching from natural deposits

Unregulated Substances (Turnpike Lake Treatment Plant Finished 4238000-01G, 02G, 05G[2])				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW - HIGH	TYPICAL SOURCE
Sodium (ppb)	2020	119	NA	Natural deposits; Road salts

[2] Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

Definitions to assist you understanding test results:

90th %ile: Out of every 10 homes sampled, 9 were at or below this level. This number is compared to the Action Level to determine lead and copper compliance.

AL (Action Level): The concentration of a contaminant which, 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory Analysis.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

PFAS and Drinking Water – *WHAT ARE PFAS AND WHY ARE THEY A PROBLEM?*

Per- and polyfluoroalkyl substances (PFAS) are a family of chemicals used since the 1940s to manufacture stain-resistant, water-resistant, and non-stick products. PFAS are widely used in common consumer products as coatings, on food packaging, outdoor clothing, carpets, leather goods, and more. Certain types of firefighting foam— historically used by the U.S. military, local fire departments, and airports to fight oil and gasoline fires may contain PFAS. PFAS stay in the environment for a long time and do not break down easily, which is why they are often referred to as "forever chemicals". As a result, PFAS are widely detected in soil, water, air, and food. Some PFAS can accumulate in the food chain. Exposure can occur when someone uses certain products that contain PFAS, eats PFAS-contaminated food, or drinks PFAS-contaminated water. When ingested, some PFAS can build up in the body and, over time, these PFAS may increase to a level at which health effects could occur.

PFAS are present throughout the environment because they have been widely used for decades in industrial applications, household and consumer products, food packaging and firefighting foam. When these products break down they leach PFAS compounds into the environment.

- **The Massachusetts Drinking Water Regulations established a Maximum Contamination Level (MCL) of 0.000020 milligrams per liter (mg/l) or 20 ng/l (also called parts per trillion or ppt) for the sum of PFAS6. For reference:** https://www.mass.gov/doc/per-and-polyfluoroalkyl-substances-pfas-drinking-water-regulations-quick-reference-guide/download

- We continue to monitor the EPA's evaluation of unregulated contaminants to be aware of latest developments in water quality detection, health studies and future regulation.
- Plainville will participate in the next U.S. EPA evaluation of unregulated contaminants scheduled for 2021 – 2023, which will include PFAS compounds and use new analytical testing methods that were not available during the previous study.

- It's important that the U.S. EPA completes its regulatory process under the **Unregulated Contaminant Monitoring Rule** to fully understand the potential health impacts, maximum contaminant levels and treatment methods.

- Unregulated contaminants are continually studied by the U.S. Environmental Protection Agency to determine if there is a need to add them to the list of regulated contaminants in drinking water. There are currently no federal regulations for PFAS under the **Clean Water Act** or **Safe Drinking Water Act**.

Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune systems disorders, some elderly, and infants may be particularly at risk from infections. These people should seek ad-vice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline