

MERRIMACK VILLAGE DISTRICT



2020 CONSUMER CONFIDENCE REPORT

(2019 Data)

EPA ID #: 1531010




Introduction: Like any responsible public water system, our mission is to develop, operate and maintain our water system in a cost-effective manner. MVD achieves this by servicing and maintaining 925,762 feet of water mains, 905 fire hydrants, six groundwater wells (4 active/2 inactive), three water storage tanks, an Iron & Manganese Treatment Plant and three Booster Stations. Aging infrastructure presents challenges to drinking water safety, and continuous improvements are needed to maintain the water quality throughout the distribution system. In the past year, we have begun multiple improvements to the water system including Water Storage Tank improvements, replacement of the Turkey Hill Booster Station, evaluation for alternatives to the Lime Stations at Wells 2, 3, 5, and 7 as well as the design of the PFAS Treatment Plant for Wells 4 and 5. In the coming year(s) we intend to design and construct two PFAS Treatment Plants on the remaining four wells at a cost of \$14.5 million, install a water main extension providing the availability of water service connection to approximately 37 properties, as well as explore options for feasibility of Artificial Recharge to the aquifer at Wells 4 and 5. These investments along with on-going operations and maintenance costs are supported by the water rates as well as grants and loans.

What is a Consumer Confidence Report? The Consumer Confidence Report (CCR) details the quality of your drinking water, where it comes from, and where you can get more information. This annual report documents all detected primary and secondary drinking water parameters, and compares them to their respective standards known as Maximum Contaminant Levels (MCLs).

The 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.

What is the source of my drinking water? 100% of Merrimack water comes from groundwater. Groundwater is precipitation that has soaked through the ground's surface and is stored where there are open spaces between rocks and soil. This water is pumped from six groundwater wells located in various parts of Merrimack and Hollis and known locally as Wells 2, 3, 4, 5, 7 and 8. Currently Wells 4 and 5 are offline and will remain so until the PFAS Treatment Plant is constructed and operational. Water treatment occurs onsite at each pumping station. Water from all online wells is chlorinated for disinfection. Additionally, Wells 7 and 8 are treated for naturally occurring Iron and Manganese. Once treated, water is pumped to one of the three water storage tanks. Water is distributed through a network of over 175 miles of water mains to homes, businesses and schools.



In order to ensure that tap water is safe to drink: The EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The US Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

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, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Why are there contaminants in my water? Drinking water, including bottled water, may reasonably be expected to contain at least a small amount 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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791) or online at www.epa.gov/safewater.

Do I need to take special precautions? 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/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 at 1-800-426-4791 or online at www.epa.gov/safewater.

Source Water Assessment Summary: In an effort to assess the vulnerability of each of the states' public water supply sources NH DES prepared drinking water source assessment reports for all public water systems between 2000 and 2003. Included in the report is a map of each source water protection area, a list of potential and known contamination sources, and a summary of available protection options. The results of the assessment, prepared for well 7 in 2000 and the remainder of the wells in 2002 indicates that four (4) wells were rated low, the other two (2) wells were rated in the medium range as noted below.

Well #	Susceptibility Rating		
	High	Medium	Low
1	1	2	9
2	1	2	9
3	1	2	9
4	3	4	5
5	4	3	5
7	1	2	9
8	1	2	9

How can I get involved?

For more information about your drinking water please contact MVD's Water Quality Testing Specialist, Jill Lavoie at 603-424-9241 x: 103 or email jill.lavoie@mvdwater.org. Or contact MVD's Superintendent, Ronald Miner, Jr. at 603-424-9241 x 107 or email ron.miner@mvdwater.org. The MVD Board of Commissioners meets the 3rd Monday of each month except holidays. You may submit questions in writing to MVD by sending them to 2 Greens Pond Road, Merrimack, NH 03054.

Violations and Other information: None

Water Quality

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. Last year MVD tested for various contaminants, including inorganic contaminants (salts, metals), organic chemical contaminants (synthetic and volatile chemicals), and radioactive contaminants. The following tables only show the substances that were detected in MVD's water in 2018 or earlier. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing completed in the prior calendar year. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one-year-old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions on page 10 of this report (refer to "IMPORTANT DRINKING WATER DEFINITIONS").



DETECTED WATER QUALITY RESULTS

Contaminant (Units)	Level Detected	MCL	MCLG	Violation YES/NO	Likely Source of Contamination	Health Effects of Contaminant
Microbiological Contaminants						
Turbidity (NTU)	Low < 0.5 High 0.710 Average 0.64	TT	N/A	No	Soil runoff	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
Inorganic Contaminants						
Nitrate (as Nitrogen) (ppm)	< 1	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	(5 ppm through 10ppm) Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider. (Above 10 ppm) Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Volatile Organic Contaminants						
Haloacetic Acids (HAA) (ppb)	Low 5.8 High 13 Average 9.4	60	NA	No	By-product of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.



SECONDARY CONTAMINANTS

Secondary MCLs (SMCL)	Level Detected	Date	Treatment technique (if any)	SMCL	Specific contaminant criteria and reason for monitoring
Chloride (ppm)	141	2019	N/A	250	Wastewater, road salt, water softeners, corrosion
Iron (ppm)	1.01	2019	N/A	0.3	Geological
Manganese (ppm)	0.19	2019	N/A	0.05	Geological
pH	6.26	2019	N/A	6.5-8.5	Precipitation and geology
Sodium (ppm)	64.8	2019	N/A	250	We are required to regularly sample for sodium
Sulfate (ppm)	22.01	2018	N/A	250	Naturally occurring
Zinc (ppm)	.0095	2018	N/A	5	Galvanized pipes

ADDITIONAL TESTING

Additional Tests	Results	Date	MCLG Or MRDLG	MCL, SMCL, TT or MRDL	Specific contaminant criteria and reason for monitoring
Alkalinity (mg/L)	Low 11.0 High 57.0 Average 27.35	2019			The capacity of water to neutralize acids.
Hardness (mg/L)	Low 42.6 High 112 Average 63.48	2019	100		A characteristic of water.
Copper (ppm)	Low <0.01 High 0.082 Average 0.012	2019		1.0	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (mg/L)	Low <0.005 High <0.005 Average <0.005	2019		15	Corrosion of household plumbing systems; Erosion of natural deposits
Barium (mg/L)	Low .020 High .118 Average .069	2019	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

LEAD AND COPPER RESULTS

Contaminant	AL	MVD's Results	Sample Date	# Samples Exceeding AL	Violation	Likely Source of Contamination	Health Effects of Contaminant
Copper - action level at consumer taps (ppm)	1.3	0.337	2017	0	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
Lead - action level at consumer taps (ppb)	15	0	2017	0	No	Corrosion of household plumbing systems; Erosion of natural deposits	(15 ppb in more than 5%) Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791). (above 15 ppb) Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

If present, elevated levels of lead can cause serious 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. MVD 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 at 800-426-4791 or at <http://www.epa.gov/safewater/lead>.

PFAS RESULTS

Contaminant All are Parts per Trillion (ppt)	EPA advisory/AGQS 70 ppt combined	Average Level PFOA/PFOS in MVD Wells	Range		Sample
			Low	High	Date
1531010_008 MVD - 2					
Perfluorobutanesulfonic acid	N/A	2.61	1.5	4.4	2019
Perfluorobutanoic acid	N/A	2.8	ND	5.4	2019
Perfluoroheptanoic acid	N/A	2.96	1.1	5.2	2019
Perfluorohexanesulfonic acid	N/A	0.91	0.63	1.3	2019
Perfluorohexanesulfonate	N/A	4.4	1.3	8.7	2019
Perfluorononanoic acid	N/A	0.3	ND	0.7	2019
Perfluorooctanesulfonamide	N/A	0.15	ND	1.2	2019
Perfluorooctanesulfonic acid	70 ppt	1.8	1.1	2.2	2019
Perfluorooctanoic acid	70 ppt	14.98	7.5	19	2019
Perfluoropentanesulfonate	N/A	0.09	ND	0.52	2019
Perfluoropentanoic acid	N/A	2.87	ND	6.5	2019
1531010_003 MVD - 3					
Perfluorobutanesulfonic acid	N/A	4.75	3.9	5.7	2019
Perfluorobutanoic acid	N/A	5.91	5.3	7	2019
Perfluoroheptanoic acid	N/A	5.09	3.6	7.3	2019
Perfluorohexanesulfonic acid	N/A	0.79	0.49	1.3	2019
Perfluorohexanoic acid	N/A	7.5	3.3	14	2019
Perfluorononanoic acid	N/A	0.85	0.61	1.2	2019
Perfluorooctanesulfonic acid	N/A	2.29	1.7	3.2	2019
Perfluorooctanoic acid	70 ppt	23.5	19	30	2019
Perfluoropentanesulfonate	70 ppt	0.04	ND	0.39	2019
Perfluoropentanoic acid	N/A	6.62	3.2	11	2019
Perfluoroundecanoic acid	N/A	0.04	ND	0.56	2019
1531010_007 MVD - 7					
Perfluorobutanesulfonic acid	N/A	1.7	1.5	1.9	2019
Perfluorobutanoic acid	N/A	2.29	1.8	2.8	2019
Perfluoroheptanoic acid	N/A	2.79	2.3	3.1	2019
Perfluorohexanesulfonic acid	N/A	1.38	1.2	1.6	2019
Perfluorohexanoic acid	N/A	2.55	2.1	2.9	2019
Perfluorononanoic acid	N/A	0.68	0.59	0.78	2019
Perfluorooctanesulfonic acid	70 ppt	2.65	2.1	3	2019
Perfluorooctanoic acid	70 ppt	21.6	19	25	2019

(PFAS RESULTS CONTINUED ON PAGE 9)

PFAS RESULTS (CONTINUED)

Contaminant All are Parts per Trillion (ppt)	EPA advisory/AGQS 70 ppt combined	Average Level PFOA/PFOS in MVD Wells	Range		Sample
			Low	High	Date
1531010_007 MVD – 7 (continued)					
Perfluoropentanesulfonate	N/A	0.11	ND	0.45	2019
Perfluoropentanoic acid	N/A	1.74	ND	2.5	2019
1531010_009 MVD - 8					
Perfluorobutanesulfonic acid	N/A	1.4	1.3	1.6	2019
Perfluorobutanoic acid	N/A	1.4	ND	2.2	2019
Perfluoroheptanoic acid	N/A	2.32	1.8	2.9	2019
Perfluorohexanesulfonic acid	N/A	1.15	1	1.4	2019
Perfluorohexanoic acid	N/A	2.25	1.9	2.6	2019
Perfluorononanoic acid	N/A	0.09	ND	0.43	2019
Perfluorooctanesulfonic acid	70 ppt	1.5	1.2	1.7	2019
Perfluorooctanoic acid	70 ppt	17.6	15	19	2019
Perfluoropentanesulfonate	N/A	0.07	ND	0.42	2019
Perfluoropentanoic acid	N/A	1.23	ND	2.1	2019
1531010_508 MVD - TP					
Perfluorobutanesulfonic acid	N/A	1.54	1.3	1.8	2019
Perfluorobutanoic acid	N/A	1.5	ND	2.6	2019
Perfluoroheptanoic acid	N/A	2.51	2	3	2019
Perfluorohexanesulfonic acid	N/A	1.23	1.1	1.4	2019
Perfluorohexanoic acid	N/A	2.45	1.9	2.8	2019
Perfluorononanoic acid	N/A	0.45	0.42	0.55	2019
Perfluorooctanesulfonic acid	70 ppt	2.04	1.6	2.5	2019
Perfluorooctanoic acid	70 ppt	19.38	17	22	2019
Perfluoropentanesulfonate	N/A	0.17	ND	0.43	2019
Perfluoropentanoic acid	N/A	1.1	ND	2.1	2019
To view more information on PFOA/PFOS along with testing results please visit our web site at www.mvdwater.org and click on the link provided.					



PFAS RESOURCES

The most up to date information can be found on the following NHDES websites:

NH PFAS Investigation

<https://www4.des.state.nh.us/nh-pfas-investigation/>

NH Department of Health and Human Services

<https://www.dhhs.nh.gov/dphs/pfcs/index.htm>

UNREGULATED CONTAMINANT RESULTS

As part of an on-going evaluation program the EPA has required us to monitor some additional contaminants/chemicals (UCMR). Information collected through the monitoring of these contaminants/chemicals will help to ensure that future decisions on drinking water standards are based on sound science.

UCMR	Result: Average	Result: Low	Result: High	Date	AL (Action Level), MCL, SMCL, MRL, AGQS	Likely Source of Contamination	Health Effects of Contaminant
Chromium	0.27 ug/L	ND	0.40 ug/L	14/15	100 ppm	Found naturally in rocks, plants, soil, volcanic dust and animals.	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Cobalt	0.38 ug/L	ND	1.6 ug/L	14/15	1 ug/L	A natural element found throughout the environment.	
Molybdenum	0.42 ug/L	ND	3.5 ug/L	14/15	1 ug/L	Found naturally in rocks, plants, soil and animals.	
Strontium	192.8 ug/L	72.7 ug/L	356 ug/L	14/15	0.3 ug/L	Naturally occurring element.	
Vanadium	1.58 ug/L	0.14 ug/L	2.5 ug/L	14/15	0.2 ug/L	Naturally occurring element.	
1,4 Dioxane	0.016 ug/L	ND	0.056 ug/L	14/15	0.07 ug/L	Used as a solvent or solvent stabilizer in manufacturing.	
Chlorate	71.91 ug/L	ND	290 ug/L	14/15	20 ug/L	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide.	
Chromium, Hexavalent	0.15 ug/l	0.11 ug/L	0.27 ug/L	14/15	100 ppm	Found naturally in rocks, plants, soil, volcanic dust and animals.	



IMPORTANT DRINKING WATER DEFINITIONS

Term	Definition
AGQS	Ambient Groundwater Quality Standard: An enforceable standard set by NHDES under Chapter 485 of the New Hampshire Safe Drinking water Act.
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.
MNR	Monitored Not Regulated
MPL	State Assigned Maximum Permissible Level
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 Disinfection 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.
MRL	Minimum Reporting Level
N/A or NA	Not Applicable
ND	Not Detected
NR	Monitoring not Required but Recommended.
NTU	Nephelometric Turbidity Units: Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
ppb	Parts per Billion or Micrograms per Liter (µg/L)
ppm	Parts per million or Milligrams per Liter (mg/L)
ppt	Parts per Trillion
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
UCMR	Unregulated Contaminant Monitoring Rule

If you have any questions regarding this report or would like additional information about the water system please contact MVD's Water Quality & Testing specialist, Jill Lavoie. Jill can be reached by phone at 603-424-9241 x: 103, email at jill.lavoie@mvdwater.org, or by visiting our office located at 2 Greens Pond Rd Merrimack NH, 03054. MVD's normal business hours are Monday - Friday, from 8:00 AM - 4:30 PM. Additionally, you may contact any of the offices listed below for information.

Name:	Phone/Website
US EPA	www.epa.gov
US EPA Safe Drinking Water Hotline	800-426-4791
NH DES Drinking Water & Groundwater Bureau	603-271-2513
American Water Works Association	www.awwa.org
New England Water Works Association	www.newwa.org
NH Water Works Association	www.nhwwa.org



WATERING RESTRICTIONS/BANS

MVD has a year-round Odd/Even Scheduled Watering Restriction which limits the use of irrigation and sprinkler systems based on your street address and the calendar date.

The purpose of MVD's watering restrictions is to assist in managing the water distribution system. Watering restrictions allow water withdrawal from the aquifer in a controlled manner which helps protect against seasonal fluctuations and aids in maintaining sufficient supply. MVD continuously monitors the water distribution system, the weather conditions and forecasts to determine if additional watering restrictions or bans are necessary. MVD will update customers of any change to Watering Restriction statuses.

What type of watering is restricted. . .? Irrigation and Sprinkler Systems

The following ***does not*** apply to the Odd/Even Scheduled Restrictions: Hand-held hoses and watering cans for flower and vegetable gardens/car washing/pool filling and pressure washers. While these are permitted any time, we ask that customers use discretion and be conservative when it comes to water usage.

When can I water. . .? Check Your Calendar

If the *last* digit of the property address ends in an *even* number (0, 2, 4, 6 or 8) you may water only on even-numbered calendar dates. For example, if the address is 1234 Main St., you would water on *EVEN* calendar days such as the 2nd, 4th, 6th, etc... Likewise, if the *last* digit of the property address ends in an *odd* number (1, 3, 5, 7 or 9) you may water only on odd-numbered calendar dates.

On the 31st of March, May, July August, and October ALL customers may water outside, but only from 5AM to 8AM.

As a reminder - All irrigation and sprinkler systems must be set to comply with the odd/even schedule. Additionally, they must also be adjusted/aligned appropriately to prevent unnecessary watering of areas such as driveways, roadways, parking lots, etc.



Find the following information and more on MVD's Website

www.mvdwater.org

Billing, Payment, and Rate Info

Appointment Scheduling

Scheduled Maintenance/Repairs, Water Flushing, Outages (planned or
emergency)

Water Quality

Water Restrictions/Bans

By-Laws, Meetings, and Reports

Want the latest updates...?

Visit the website to sign up for MVD's email notifications.



Merrimack Village District

Contact Information

Office Location and Hours

2 Greens Pond Rd Merrimack, NH 03054

Monday – Friday 8:00 AM - 4:30 PM

Phone : 603-424-9241

Fax : 603-424-0563

Email : customerservice@mvdwater.org

Website : www.mvdwater.org