MANCHESTER WATER DEPARTMENT (WSID #5022)
WATER QUALITY CONFIDENCE REPORT
APRIL 2017

Our goal is to provide a safe and dependable supply of drinking water.

Federal EPA regulations require that water departments throughout the country issue an annual Consumer Confidence Report to all water system customers. This report is designed to satisfy that requirement and to inform our customers about water quality, supply and service. This report is a snapshot of the quality of water that the Town of Manchester provided for January 1 through December 31, 2016. It also includes the date and results of any contaminants that were detected within the past five years, along with the date of detection and concentration.

Manchester Water Department Officials and Public Participation Opportunities

Questions about this report or the Water Department may be directed to any of the local officials listed below. Manchester Water Department values an informed customer base and encourages water users to attend Board of Water Commissioners meetings.

Board of Water Commissioners:
Ivan Beattie - Chair
Doug Kilburn
Lambert "Chops" Zoller

Owner
Town of Manchester
6039 Main St.
Manchester Ctr. VT 05255

Owner / Official
John P. O'Keefe
Town Manager
802-362-1313 - option 2
j.okeefe@manchester-vt.gov

Operator / Technical & Service Assistant
David Sheldon
Water / Sewer Superintendent
802-362-3339
d.sheldon@manchester-vt.gov

Billing & Collection
Kathleen Yanez
Finance Assistant
802-362-1313 - option 2
k.yanez@manchester-vt.gov

Water Source Information

The Source of your drinking water is:

Source Name:	**Batten Kill Well I (Primary)**
Vermont Source Type:	**Gravel Screened Well**
EPA Source Type:	**Groundwater**
Source Name:	**Batten Kill Well II (Secondary)**
Vermont Source Type:	**Gravel Screened Well**
EPA Source Type:	**Groundwater**

Protecting Manchester's Drinking Water

On December 8, 1995 the Vermont Water Supply Division approved the Water Department's Source Protection Plan (SPP). The SPP delineates the sensitive Well Head Protection Area around the Batten Kill wells, and outlines strategies to ensure that the aquifer remains free of contamination. Obviously, this recharge area is of vital importance, and the Water Department encourages every citizen in the community to do their part to keep Manchester's water as clean and pure as possible. The SPP may be reviewed and/or copied at the Town Manager's Office.

To protect Manchester's valuable drinking water supply, it is imperative that **none of the following hazardous wastes are ever discarded by flushing them down the drain, into a septic system or by dumping them on the ground.**

Acids
Adhesives
Aerosols
Antifreeze
Automobile Batteries
Boric Acid
Brake Fluid
Charcoal Lighter Fluid
Cleaning Fluid
Degreasers
Dioxin
Disinfectants
Dry Gas
Dyes
Pesticides
Epoxies
Furniture Strippers
Gasoline / Diesel Fuel
Hair Removers
Herbicides
Inks
Insecticides
Insect Repellants
Lacquers
Lubricants
Motor Oil
Muriatic Acid
Nail Polish
Nail Polish Removers
Oven Cleaners
Paints
Paint Removers
Pentachlorophenol
Permanent Solutions
Photo Chemicals
Rat Poison
Rust Solvents
Solvents
Spot Removers
Turpentine
Varnish
Weed Killers
Wood Polishes
Wood Preservatives
Wood Stains

SOURCES OF DRINKING WATER AND CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include surface water (streams, lakes) and ground water (wells, springs). As water travels over the land's surface or through the ground, it dissolves naturally-occurring minerals. It also picks up substances resulting from the presence of animals and human activity. Some "contaminants" may be harmful. Others, such as iron and sulfur, are not harmful. Public water systems treat water to remove contaminants, if any are present. In order to ensure that your water is safe to drink, we test it regularly according to regulations established by the U.S. Environmental Protection Agency and the State of Vermont. These regulations limit the amount of various contaminants:

- **Microbial Contaminants** (viruses and bacteria) may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic Contaminants** (salts and metals) can be naturally-occurring or result from the urban stormwater runoff, industrial or domestic wastewater discharges, or farming.
- **Pesticides and Herbicides** may come from agriculture, urban stormwater runoff, residential uses, and careless disposal of household chemicals.
- **Organic Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also come from gas stations, urban stormwater runoff and septic systems.
- **Radioactive Contaminants**, which can be naturally occurring or the result of mining activity.

WATER QUALITY DATA

The tables below list all the drinking water contaminants detected during the 2016 calendar year, and the date and results of any contaminants detected within the past five years. The presence of these contaminants does not necessarily mean that the water poses a health risk.

Terms and abbreviations - To help you better understand these terms, we have provided the following definitions:

- **Maximum Contamination Level Goal (MCLG):** 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.
- **Maximum Contamination Level (MCL):** 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.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** 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 disinfectants in controlling microbial contaminants.
- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. Addition of a disinfectant may help control microbial contaminants.
- **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **90th Percentile:** Ninety percent of the samples are below the action level. (Nine of ten sites sampled were at or below this level.)
- **Treatment Technique (TT):** A process aimed to reduce the level of a contaminant in drinking water.
- **Parts per million (ppm) or Milligrams per liter (mg/l)**: (one penny in ten thousand dollars).
- **Parts per billion (ppb) or Micrograms per liter (µg/l)**: (one penny in ten million dollars).
- **Picocuries per liter (pCi/L):** A measure of radioactivity in water.
- **Nephelometric Turbidity Units (NTU):** NTU is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **Locational Running Annual Average (LRAA):** The average of sample analytical results for samples taken at a particular monitoring location during four consecutive calendar quarters.
- **Running Annual Average (RAA):** The average of 4 consecutive quarters (when on quarterly monoitoring); values in the table represent the highest RAA for the year.
- **Level 1 Assessment:** A Level 1 Assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- **Level 2 Assessment:** A Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occassions.

LEVEL OF DETECTED CONTAMINANTS

Contaminant Detected	Level Detected (Units)	MCL	MCLG	Sample Date	Violation Yes or No	Typical Source
Nitrate	0.8 ppm	10	10	3/8/16	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Gross Alpha	1.22 pCi/L	15	N/A	5/12/15	N	Erosion of natural deposits
Radium 226	0.272 pCi/L	5	0	5/12/15	N	Erosion of natural deposits
Radium 228	0.191 pCi/L	5	0	5/12/15	N	Erosion of natural deposits
Combined Radium (226 & 228)	0.463 pCi/L	5	0	5/12/15	N	Erosion of natural deposits
Total Triahalomethanes	14.3 ppb	80	N/A	2016	N	By-product of drinking water disinfection

LEAD AND COPPER ACTION LEVELS

Contaminant Detected	Range	90th Percentile	Sample Date	Action Level	# of Sites Exceeding the Action Level	Total # of Sites Sampled	Typical Source
Copper	0.052-0.21 ppm	0.15	2014	1.3 ppm	0	20	Corrosion of household plumbing systems; erosion of natural deposits
Lead	<1-9 ppb	4	2014	15 ppb	0	20	Corrosion of household plumbing systems; erosion of natural deposits

DISINFECTION RESIDUAL

Disinfection Residual	RAA	Range	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.290	0.030 - 0.650	mg/L	4.0	4.0	Water additive to control microbes

VIOLATION(S) THAT OCCURRED DURING THE YEAR

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. The below table lists any drinking water violations we incurred during 2016. A failure to perform required monitoring means we cannot be sure of the quality of our water during that time.

The Town of Manchester Water Department had no violations in the calendar year 2016.
The Town of Manchester Water Department also had no Revised Total Coliform Rule TT violations in calendar year 2016.
No Level 1 Assessment or Level 2 Assessment was required.

PUBLIC NOTICE – PERMIT TO OPERATE ISSUED MAY 23, 2013

The Water System is required to notify all users of the following compliance schedule contained in the Permit to Operate issued by the State of Vermont Agency of Natural Resources:

On or before October 1, 2013 and no later than October 1 of each subsequent year, the Permittee shall provide the Secretary (attention: Tim Raymond, Operations and Engineering Section Chief) with an Annual Report updating the Water System's long range improvements plan and implementation schedule (LRP) and address the Water System's capability to meet the proposed infrastructure improvement dates. This Annual Report will notify the Division of the Water System's progress in meeting the LRP improvements schedule for each project milestone addressed in the LRP. Proposed improvements are to be ranked and prioritized based on the overall risk of failure, health risk and project improvement cost(s). A revised improvements plan and schedule is to be developed for the Water System should it be determined that the current projects implementation schedule that has been approved by the Division is not obtainable.

HEALTH INFORMATION REGARDING DRINKING WATER

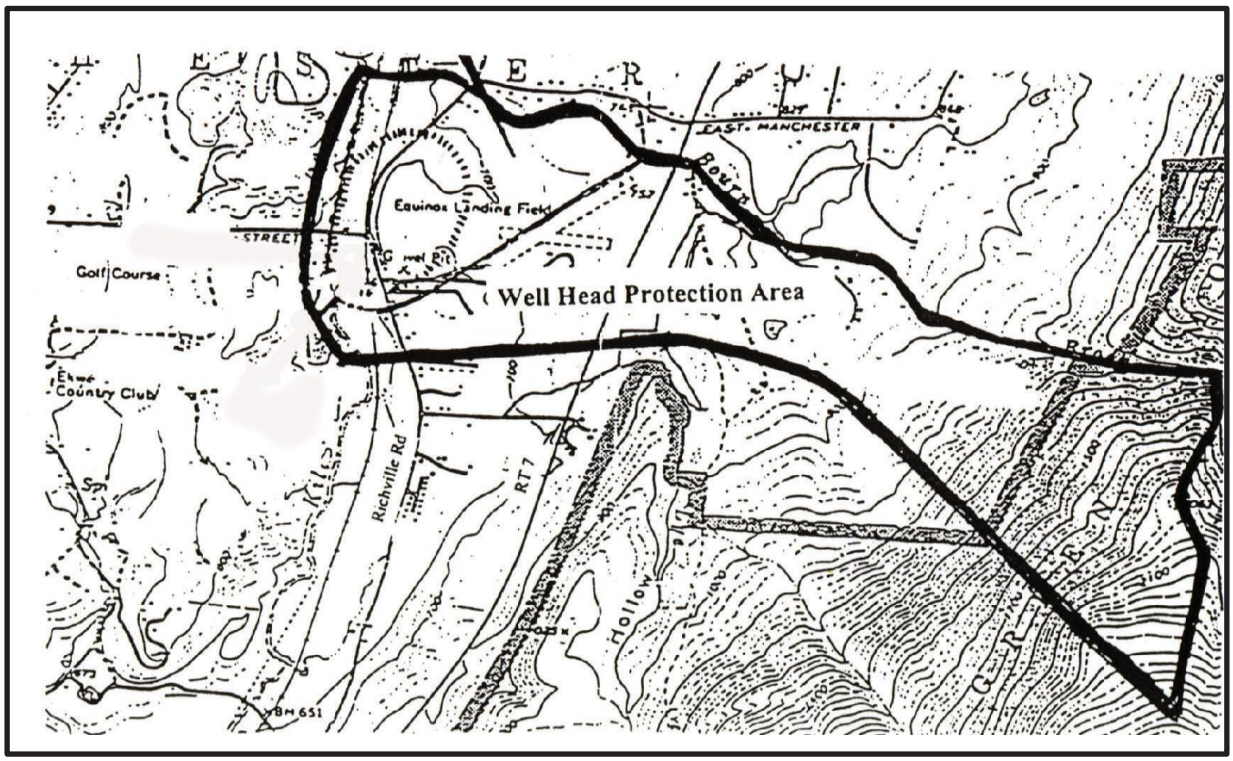
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly individuals and infants, can be particularly at risk of infections. These people should seek advice from their healthcare providers about drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline.

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 MANCHESTER WATER DEPARTMENT 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 www.epa.gov/safewater/lead.

WATER CONSERVATION

Vermonters are fortunate to live in a state where water is relatively plentiful and clean. As Vermont's population grows, however, water conservation will play an increasingly important role in protecting the health of our state's lakes and streams and the safety of our drinking water supplies. Using water more efficiently will protect and conserve drinking water supplies and save energy.

We can help safeguard our own health and the health of our neighbors by using less water. Water conservation can improve septic system performance, reduce the risk of groundwater contamination and limit the potential for septic system repair or replacement. If you use the municipal sewer system, water conservation can result in less chemicals for treatment and discharge of treated sewage. Water conservation also provides energy conservation savings as less electricity is needed to heat, pump, and treat water.

Customers are encouraged to research information at: www.epa.gov/watersense