Drinking Water Consumer Confidence Report
2014

Town of Rockport
Drinking Water Treatment Plants

Joseph P. Parisi Jr.
Director of Public Works

Christopher J. Martin
Plant Supervisor

March 2014

Department of Public Works Commissioners

Paul Sena **James Gardner** *Chairman* **Bruce Reed**

Dept. of Public Works
34 Broadway
Rockport, MA
(978)-546-3525

Water Filtration Plants
3 DPW Way
Rockport, MA
(978)-546-6992

Producing Drinking Water Since 1894.

Public Water Supply Number: 325-2000

2014
Drinking Water
Consumer Confidence Report

The Environmental Protection Agency (EPA) and the Department of Environmental Protection (DEP) require all communities that service at least 25 year-round residents, or that have 15 or more service connections, to prepare and distribute a

Drinking Water Consumer Confidence Report for the year of 2014'. Required in the annual reports are the following:

1. Source of the drinking water.
2. Levels of any contaminants detected, and the EPA's health standards (Maximum Contaminant Level or MCL).
3. Definitions for MCL, MCLG, Treatment Technique, and Action Level.
4. Potential health effects of any contaminant detected that is in violation of the EPA health standard, the length of the violation, the likely source of the contaminant in the water supply, and corrective measures taken to address the violation; compliance with other drinking water regulations, such as monitoring and reporting compliance data, record keeping, filtration and disinfection, cross connection control, lead and copper control.
5. Information on obtaining a copy of the water supplier's source water assessment.
6. A statement that the presence of contaminants in drinking water do not necessarily indicate that the water poses a health risk.
7. Phone numbers for additional sources of information, including the water system telephone numbers and the EPA's Safe Drinking Water Hotline (800) 426-4791.

At present, the drinking water for the Town of Rockport is supplied by two main surface water sources; Cape Pond located off Upper Main Street and Carlson's Quarry located off Granite St. at Quarry Rd. Flat Ledge Quarry is used to supplement Carlson's Quarry. The Mill Brook Replacement Well field went on line in 2002' and can average 200,000 gallons per day and is both a raw water source for Cape Pond and treated through the DAF plant. We pumped for 115 days with a yield of 12.9 million gallons from the well field in 2014'. All of Rockport's drinking water is treated through two water filtration facilities located off Upper Main Street. Treatment is for color, turbidity, bacteria, corrosion control, pH, disinfection, alkalinity and fluoridation and is implemented before delivery to the customer. Rockport currently utilizes two different systems to treat raw water. In 1939 the RSF (Rapid Sand Filtration) plant was built to treat Cape Pond water. In 1987 a new chemical building was added to the treatment plant and the existing plant was upgraded with new technologies. With the use of new technologies and techniques always being integrated, the old plant has been able to run as efficiently and effectively as newer plants. In May of 1998 the new DAF (Dissolved Air Flotation) plant was completed and went on line to treat Carlson's Quarry water. All of Rockport's water now goes through one of the treatment plants before being released into the distribution system. Rockport's water treatment facilities are treating water seven days a week year round.

Water is a vital natural resource, which must be protected to ensure the availability of safe, adequate drinking water supplies for the present and future needs of the Town of Rockport. Treating water supplies to remove health-threatening chemicals and bacteria is costly. Technical limitations and economics preclude the complete removal of all contaminants. To minimize the rising cost of water supply production, prevention of water supply contamination is critical. The Town of Rockport has had watershed surface protection in place since 1991. More than 10,000 water quality tests are performed each year looking for more than 120 potential contaminants. This report lists some of the potential contaminants and test results showing Rockport has met all of the goals set by the EPA and DEP.

Important Definitions

Actual Level: The level of a particular contaminant that has been detected after testing.

Contaminant: Anything found in water (including microorganisms, minerals, chemicals, radionuclides, etc.) which may be harmful to human health.

Cryptosporidium: A microorganism commonly found in lakes and rivers, which is highly resistant to disinfection. Cryptosporidium has caused several large outbreaks of gastrointestinal illness, with symptoms that include diarrhea, nausea, and/or stomach cramps. People with severely weakened immune systems (i.e., severely immune-compromised) are likely to have more severe and more persistent symptoms than healthy individuals.

Detection Limit (DL): The lowest level that can be detected by the latest techniques and equipment.

Disinfectant: A chemical (commonly chlorine, chloramine, or ozone) or physical process (e.g., ultraviolet light) that kills microorganisms such as bacteria, viruses, and protozoa.

Finished Water : Water that has been treated and is ready to be delivered to customers.

Maximum Contaminant Level (MCL): The highest level of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. EPA sets MCLs at levels that are economically and technologically feasible. Some states set MCLs, which are stricter than EPA's.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant at which there would be no risk to human health. This goal is not always economically or technologically feasible, and the goal is not legally enforceable.

Source or Raw Water: Water in its natural state, prior to any treatment for drinking.

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

Turbidity: Any small particle suspended in water that interferes with light penetration and disinfection.

Effects of Contamination and Vulnerability

The Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. These regulations are called Maximum Contaminant Levels (MCLs). An MCL is the maximum level of a contaminant that can be found in a system. For contaminants that are not considered primary health risks, a Maximum Contaminate Level Goal (MCLG) is set. If a detected level is higher than the MCL or MCLG for a given contaminant that does not automatically mean there is a danger. What is does mean is that there is a risk for a health hazard. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts 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 EPA Safe Drinking Water Hotline at 800-426-4791. Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline at (800) 426-4791.

The following will answer some of the most frequently asked questions and show the quality of water being produced. A MCL (Maximum Contaminant Level) is the maximum concentration of a contaminant that can be found in the system. MDL stands for Minimum Detection Limit; the lowest level detectable by current techniques and equipment. <DL means that the level of a contaminate is so low that it cannot be detected or ND for none detected. AL stands for Actual Level, the highest level that a contaminant has been found in the system. The unit mg/l stands for milligrams per liter. One mg/l is equivalent to one part per million or a single penny in $10,000. The unit ug/l stands for micrograms per liter. One ug/l is equivalent to one part per billion or a single penny in $10,000,000. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining their occurrence in the drinking water and whether future regulation is warranted.

ROCKPORT WATER QUALITY RESULTS and VIOLATIONS

We had no non-compliance violations for 2014'.

Microbiological Contaminants

The Town of Rockport did not have any violations for bacteria in 2014'.

Disinfection

The Town presently uses sodium hypochlorite (liquid chlorine) as a disinfectant after the treatment process. Levels in the distribution system can range from a high of 1.2 parts per million (mg/l) to a low of .2 parts per million (mg/l). With an average of .71ppm.The chlorine dosage is adjusted to the consumption, demand, and temperature of the water in the distribution system. We are mandated, as all communities are, to have a residual of free chlorine in the system.

Disinfection Byproducts

Because the town uses chlorine to disinfect the distribution system, tests are done quarterly for Total Trihalomethanes and Haloacetic Acids (HAA5's). These volatile organic compounds are a byproduct of chlorination, which include Bromoform, Chloroform Bromodichloromethane and Dibromochloromethane. The MCL for TTHM's is 80 parts per billion (ug/L) averaged. The TTHM levels for 2014' ranged from a high of 55.7 parts per billion (ug/L), to a low of 26.7 parts per billion (ug/L) in all samples taken, with an average of 40 ug/L. The MCL for HAA5's is 60 ug/L averaged. The high for 2014' was 18 ug/L, to a low of 8 and an average of 12.5 ug/L.

All other volatile organic compounds (VOC's) were not only below the MCL but were non-detected (ND). All synthetic organic contaminants (SOC's) such as pesticides and herbicides, including both the regulated and unregulated, were also not only below the detection level set by the DEP and EPA but ND.

M T B E

Methyl Tertiary Butyl Ether (MTBE) is a byproduct of gasoline. The Town is not required to test for MTBE's but because of all the publicity, water samples are taken 4 times each year and MTBE has never been detected in our system.

Turbidity Levels

Because the Town filters all of its water, regulations require we monitor turbidity levels after filtration. Turbidity, which is a measurement of the cloudiness of water, is a good monitor of the effectiveness of the process. The Town is required to have a turbidity level under 0.3 Nephelometric Turbidity Units (NTU's) at the end of the filtration process. The highest recorded level in 2014' was 0.16 NTU's with an average of about .05 NTU's for both plants combined.

TOC's

TOC's stands for total organic compounds. These are measured as another indicator in the analysis of water quality. The raw or source water is measured for TOC's before entering the treatment plant and the water out of the plant's filters is then measured to determine the efficiency of the treatment plant in its removal of the TOC's. These samples are taken monthly. Our TOC removal was well within Mass DEP standards for 2014'.

Fluoride

Fluoride is naturally occurring element in many water supplies in trace amounts. In 1982, by order of the Rockport Board of Health and a non-binding referendum question, the Town started adding fluoride to the water in the distribution system. In 2014' levels ranged from a high of 1.2 parts per million (ppm) or mg/l to a low of 0.8 parts per million with an average of 1.0 ppm. Studies have shown that the ideal level is from .90 to1.2 ppm for children. Rockport received an award from the Center for Disease Control for maintaining an optimum level for oral health for the 12 months in the year of 2013'. It was received in 2014'.

Perchlorate

Since 2007 all Massachusetts water supplies have had to test for an MCL for perchlorate in the water. Perchlorate is a chemical found in fireworks, blasting agents, military munitions and other manufacturing processes. Perchlorate interferes with thyroid function and may impair human development and metabolism.

The MCL for perchlorate is 2 ppm. Our sample for 2014' was ND or non-detected.

Rusty or Colored Water

The Town has been and will continue to update the water mains in the distribution system although not as much as in the past due to budget constraints. When the Town has sufficient levels in its reservoir, a flushing program is implemented in the spring to keep the system clean and operating at maximum flow. Because the Town still has some old (early 1900's) mains in the ground, changes in the distribution system can upset a very sensitive system. Opening a fire hydrant or a water main break can cause directional changes in the water flow, which will cause the water to become discolored. The discolored water does not present a health risk and is safe to drink. Usually flushing the household system for a few minutes will clear up most problems. If problems persist, call the Water Treatment Plant at 978-546-6992 or the DPW office at 978-546-3525.

Lead and Copper Program

In 1992 the Town of Rockport sampled 40 high risk homes for lead and copper as required by the EPA and DEP. Six homes did not meet the requirement of less than 15 parts per billion (ug/L). An extensive study showed Rockport's water was lead free but corrosive water could leach lead from household fixtures. In 1996 a corrosive control system was installed as a treatment process using sodium bicarbonate (baking soda) with great success. We are required to sample every three years. We have had no violations of the MCL since 1996 including the latest sampling of the summer of 2013'. Next sampling will be 2016'.

Sodium Levels in Rockport's Drinking Water

Rockport's detection level was 41 mg/l in the distribution system for 2014'. Assuming the average adult drinks the recommended 8 (8oz.) glasses of water a day he or she would typically ingest less than 75 mg of sodium per day from Rockport's drinking water. Based on this data, a ¼ liter serving (about an 8-ounce glass) would contain less than 10 mg of sodium well within the Food and Drug Administration's "Very Low Sodium" category which is anything below 35 mg/serving. The recommended daily intake of sodium seems to be about 2,300 mg for the average person and about 1,500 mg for those on sodium restricted diets.

INORGANIC CHEMICALS TABLE FROM THE DISTRIBUTION SYSTEM 2013'

Contaminant	MCL's mg/l	DL mg/l	AL mg/l	Meets Goals	Likely Source of Contamination
Regulated					
Antimony	0.006	0.003	ND**	✓	petroleum refineries
Arsenic	0.05	0.005	ND	✓	natural deposits, glass, electronic production
Barium	2	0.002	.009	✓	drilling waste, metal refineries
Beryllium	0.004	0.001	ND	✓	metal refineries, coal burning factories
Cadmium	0.005	0.001	ND	✓	galvanized pipes, metal refineries, battery waste
Chromium	0.1	0.001	.0013	✓	steel mills, pulp mills
Cyanide	0.2	0.01	ND	✓	steel , plastic, fertilizer factories
Fluoride	4	0.1	1.1	✓	Water additive to promote strong teeth
Lead	.015	.001	.002*	✓	household plumbing
Mercury	0.002	0.0003	ND	✓	refineries
Nickel	0.1	0.002	ND	✓	naturally occurring
Nitrogen Nitrate	10	0.02	ND	✓	fertilizer, septic tanks
Nitrogen Nitrite	1	0.02	ND	✓	fertilizer, septic tanks
Selenium	0.05	0.002	ND	✓	petroleum, metal refineries
Thallium	0.002	0.001	ND	✓	electronics, glass, drug factories
Unregulated					
Sodium	none	0.02	41	✓	Ocean spray, road salt
Sulfate	250	3.0	19	✓	naturally occurring

*The average of the highest 90 percentile levels detected in the 2013 samples.
The next lead and copper sampling will take place during the third quarter of 2016'.
**ND = None Detected

Nitrates / NitrNNnites N
N

Nitrates / Nitrites

Nitrates and Nitrites are considered to be Group B carcinogens by the E.P.A. Nitrites decrease the oxygen carrying capacity of the blood. This is called Methemoglobinemia and also known as Blue Baby syndrome. Nitrates are reduced to Nitrites in the body. Nitrates are sampled for every year and nitrites are sampled for every three years because of the very low levels in our water. Usually they are not even detectable.

Contaminant	MCL	MDL	Result	Year
Nitrite	1.0	.02	ND	2/13/ 2014
Nitrate	10	.02	ND	2/13/2014

Interconnections

The Town of Rockport has an emergency interconnection with the City of Gloucester. The last and only time this interconnection has been used was the summer of 2009 when Gloucester had to shut down its treatment plant periodically for about a week and requested water from us as well as other nearby communities. Over a period of about 5 days we pumped about 2.5 million gallons of treated drinking water to the City of Gloucester. This process was monitored constantly by our treatment and distribution staff and City of Gloucester employees who all worked closely with one another around the clock whenever the interconnection was opened.

SWAP / Source Water Assessment Program

The Source Water Assessment and Protection program assesses the susceptibility of public water supplies and notes key issues for them. The complete SWAP report is available at the DPW office and Board of Health office at the Town Hall. It can also be found on-line at http://www.mass.gov/dep/water/drinking/sourcewa.htm#reports.

For questions and Information

Copies of this report are available at the Rockport Public Library, the U.S. Postal Office, the office of the Department of Public Works at the Town Hall, and The Rockport Water Treatment Plants at 3 DPW Way off of Upper Main Street behind the Police Station. There is a Public Water Ad Hoc Committee that meets periodically. For times and location of meetings, contact the DPW office at (978)546-3525. For more information on the Town of Rockport's water quality and treatment process, feel free to call Chris Martin at the Water Treatment Plant at (978)546-6992, Monday through Friday, between 8am-4pm. Calls can also be directed to the DPW office at the Town Hall at (978)546-3525. Tours of the Water Treatment Plants can be scheduled for small groups. For more information the EPA has a drinking water hotline at (800) 426-4791.