PORTSMOUTH WATER AND FIRE DISTRICT
2005
CONSUMER CONFIDENCE REPORT

ADMINISTRATIVE BOARD MEMBERS

Joseph A. Magliocco, Jr.	Tax Assessor Chairman
G. David Crockett	Tax Assessor
William L. Douglas, Jr.	Treasurer
Philip T. Driscoll	Clerk
Peter S. Kent	Water Commissioner
(Vacant)	Moderator
Gaetano Polselli, Jr.	Tax Collector

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Dear Customer:

We are pleased to present a summary of the quality of the water provided to District customers during the past year. The federal Safe Drinking Water Act (SDWA) requires that water utilities issue an annual "Consumer Confidence" report to customers in addition to other notices that may be required by law. This report details where our water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. The Portsmouth Water and Fire District is committed to providing you with the safest and most reliable water supply available. Informed consumers are our best allies in maintaining safe drinking water.

THE PORTSMOUTH WATER AND FIRE DISTRICT'S DRINKING WATER MET OR SURPASSED ALL FEDERAL AND STATE STANDARDS IN 2005

About the Portsmouth Water and Fire District

The Portsmouth Water and Fire District is a quasi-municipal agency created by the RI General Assembly and is responsible for providing drinking water and fire hydrants for ninety percent of Portsmouth on Aquidneck Island. The District is governed by a seven-member elected Administrative Board and holds an annual election of officers on the second Wednesday in June. Although the District is not affiliated legally or administratively with the Town of Portsmouth, the District and Town work cooperatively to best serve their common constituents.

The District does not own any water supplies, but purchases its regular water supply on a wholesale basis from the Newport Water Department and relies on the Stone Bridge Fire District in Tiverton for emergency water supply.

The Administrative Board's goal is to provide the customers of the District with an adequate supply of the best quality water available. To that end, the District is a member of the Aquidneck Island Partnership's Drinking Water Subcommittee, which is

charged with evaluating and recommending methods to protect the island's drinking water supply reservoirs. As part of its efforts to provide a long-term, adequate water supply for Portsmouth, the District has undertaken a fractured bedrock groundwater evaluation and test well program. The District also continues to require that new water main extensions be looped-in to existing water mains whenever possible, to maintain water quality.

We encourage public interest and participation in our community's decisions affecting drinking water. Regular meetings of the Administrative Board of the Portsmouth Water and Fire District are held on the first and third Tuesday of every month at 7:15 PM, at the District's office at 1944 East Main Road. The public is welcome and encouraged to attend these meetings. Written minutes of the meetings are available upon request. The information in this report and minutes of Board meetings are also available on the World Wide Web at http://www.portsmouthwater.org.

Your Water Source

In 2005, the Portsmouth Water and Fire District purchased all of its water from the Newport Water Department. The water is treated at the Lawton Valley Water Treatment Plant in Portsmouth, which is owned and operated by the Newport Water Department. The plant draws surface water from the Lawton Valley Reservoir, St. Mary Pond, and Sisson Pond in Portsmouth, Nonquit Pond in Tiverton and Watson Reservoir in Little Compton, all of which are owned by the Newport Water Department. The Stone Bridge supply is treated at the Stone Bridge Treatment Plant in Tiverton, which draws water from Stafford Pond in Tiverton.

Source Water Assessments

The University of Rhode Island, in cooperation with the RI Department of Health and other state and federal agencies, has assessed the threats to Newport Water's water supply sources. The assessment considered the intensity of development, the presence of businesses and facilities that use, store or generate potential contaminants, how easily contaminants may move through the watersheds, and the sampling history of the water. The assessment results will be used to plan source water protection efforts in the future.

The water quality monitoring program by the District and Newport Water continues to assure that the water delivered to your home is safe. However, the assessment found that the source waters on Aquidneck Island and in Little Compton and Tiverton are moderately susceptible to contamination. This average ranking for the entire system is based on land use and existing water quality. Because most land in source water areas is privately owned, the focus of the assessments has been on identifying threats from land use so local governments, residents and water suppliers can take action to protect valuable drinking water supplies. This means that monitoring and protection efforts are especially important to assure continued water quality. The complete Source Water Assessment Report is available at our office or by calling the RI Department of Health, Office of Drinking Water Quality at (401) 222-6867. The assessments are also available at the RI Department of Health and URI web sites at http://www.health.ri.gov/environment/dwq/index.php and http://www.uri.edu/ce/wq/program/html/SWAP/reports.html, respectively.

Health Effects Information for the Water You Drink

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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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. Contaminants that may be present in source water include:

(a) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
(b) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
(c) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
(d) 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 stormwater runoff and septic systems;

(e) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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

Some people may be more vulnerable to contaminants in drinking water than is 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 (800-426-4791).

Water Quality Issues

Concerning Lead in Our Water

Lead, a metal found in natural deposits, is commonly used in household plumbing materials. The greatest exposure to lead is swallowing or breathing in lead paint chips and dust.

Although there is no lead is our water, it can enter tap water through corrosion of household plumbing materials. Homes built before 1986 are more likely to have fixtures and solder containing lead. However, new homes are also at risk: even legally "lead-free" plumbing may contain up to 8 percent lead. The most common problem is with brass or chrome-plated brass faucets and fixtures which can leach significant amounts of lead into the water, especially hot water.

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) or from the Portsmouth Water and Fire District. Also, please refer to EPA website http://www.epa.gov/OGWDW/lead/index.html for more information on lead in drinking water. The District can also help you get your tap water tested for lead.

The current corrosion control treatment program for lead at the tap is being reviewed for optimization by the Newport Water Department with assistance from the District and Naval Station Newport.

Concerning Total Trihalomethanes (TTHMs) in our Water

When chlorine is used in the treatment of drinking water, it combines with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of DBPs in drinking water, one of which is TTHMs.

Many water systems disinfect their water with chlorine in order to inactivate pathogens that cause disease. The public health benefits of chlorine disinfection practices are significant and well-recognized. One hundred years ago, water borne diseases such as typhoid and cholera were common throughout American cities and disinfection of drinking water was a major factor in reducing these epidemics. However, disinfection poses risks of its own. EPA's health effects language for TTHMs states, "*Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer."* In addition, several reproduction and developmental studies have recently become available, and EPA has completed a more extensive analysis of reproductive and developmental effects associated with DBPs. Both human epidemiology studies and animal toxicology studies have shown associations between chlorinated drinking water and reproductive and developmental endpoints such as spontaneous abortion, stillbirth, neural tube defects, pre-term delivery, intrauterine growth retardation, and low birth weight. New epidemiology and toxicology studies evaluating bladder and rectal cancers have also increased the weight of evidence linking these health effects to DBP exposure.

Consequently, one of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and DBPs while providing increased protection against microbial contaminants.

The District's TTHM levels are the result of the organic content of the raw water, the chlorination and treatment processes at the Lawton Valley Water Treatment Plant, and the hydraulics at the plant and the District's system, and largely form prior to purchase by the District.

The District's Administrative Board is committed to ensuring that the TTHM levels are controlled to allow continued compliance with federal and state standards. The following steps have been taken by the District and Newport Water Department to reduce the TTHM levels:

- The amount of chlorine added to the water from time to time by the District has been reduced while still ensuring reliable bacteriological control.
- The Newport Water Department has modified its plant operations to the extent possible and permissible by regulations in an effort to minimize the production of TTHMs.
- The Newport Water Department has conducted a compliance evaluation of its treatment plants.
- The District, Newport Water Department and Naval Station Newport have participated in a joint study to examine the most efficient way to reduce TTHMs on an island-wide basis.
- The Newport Water Department is proceeding with the engineering, testing and design for improvements to the treatment processes at its two water treatment plants to primarily address the level of TTHMs
- The District has sought, and will continue to seek, the assistance of the Rhode Island Public Utilities Commission, the Rhode Island Department of Health and the EPA to ensure that everything possible is being done to reduce the production of TTHMs.

Concerning Manganese in our Water

Customers may occasionally receive water with a yellow or brown color. This is due to the level of the naturally occurring mineral "manganese" in the reservoirs, which does not always respond to the current treatment process. The EPA has established secondary drinking water regulations for contaminants such as manganese, which are recommended goals related to contaminants that primarily affect the aesthetic qualities (taste, color and odor) of drinking water. The Newport Water Department must balance the treatment processes to meet both enforceable levels of the primary drinking water regulations with the goals of the secondary drinking water regulations. Customers are requested to notify the District when discolored water occurs so that we may monitor its extent and consult our supplier accordingly. We apologize for the inconvenience of any discolored water problems experienced by our customers.

Questions

The Portsmouth Water and Fire District prepared this report. We'll be happy to answer any questions about the District and our drinking water quality. Please contact William J. McGlinn, General Manager and Chief Engineer (401-683-2090).

The Portsmouth Water and Fire District is a proud member and supporter of the American Water Works Association, the New England Water Works Association and the Rhode Island Water Works Association.

PLEASE REFER TO THE WATER QUALITY TABLE BELOW

How Do I Read This Water Quality Table?

It's easy! Our water is tested to assure that it is safe and healthy. The column marked Detected Level shows the highest test results during the year. The column marked Major Sources in Drinking Water shows where substances usually originate. Footnotes explain important details. Abbreviations and definitions of key terms are shown in the table below:

Abbreviations and Definitions used in the Water Quality Table

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.
mrem	**Millirems:** a measure of radiation absorbed by the body.
N/A	**Not Applicable**.
ND	**Not Detectable:** Not detectable at testing limits.
NTU	**Nephelometric Turbidity Units:** a measure of very small particulate matter in drinking water.
pCi/l	**Picocuries per liter:** a measure of radioactivity.
ppb	**parts per billion**, or micrograms per liter (µg/l).
ppm	**parts per million,** or milligrams per liter (mg/l).
ppt	**parts per trillion,** or nanograms per liter (nanograms/l)
TT	**Treatment Technique:** A required process intended to reduce the level of a contaminant in drinking water.

2005 WATER QUALITY TABLE *

CONTAMINANT (footnote)	YEAR TESTED	UNIT	MCL / MRDL	MCLG / MRDLG	DETECTED LEVEL	RANGE	MAJOR SOURCES IN DRINKING WATER	VIOLA-TION
Microorganisms			MCL	MCLG				
Total Coliform Bacteria (8)	2005	# of Positive Samples	Two or more positive samples in one month	0	1	N/A	Naturally present in the environment.	NO
Turbidity (1) (7)	2005	NTU	TT = 1.0 TT = 95% of monthly samples ≤ 0.3	N/A	0.28 100.00% ≤ 0.3	N/A	Soil runoff.	NO
Total organic carbon (1)	2005	Removal ratio	TT	N/A	1.06	0.82 – 1.22	Naturally present in the environment.	NO
Disinfection Byproducts			MCL	MCLG				
Chlorite (1)	2005	ppm	1.0	0.8	0.327	0.085 – 0.342	By-product of drinking water chlorination.	NO
Haloacetic acids (HAA5s)	2005	ppb	60	N/A	27.5	9.6 – 33.2	By-product of drinking water chlorination.	NO
Total Trihalomethanes (TTHMs) (6)	2005	ppb	80	N/A	75.6	49.9 – 103	By-product of drinking water chlorination.	NO
Disinfectants			MRDL	MRDLG				
Chlorine	2005	ppm	4	4	0.71	0.03 – 1.72	Water additive used to control microbes.	NO
Chlorine dioxide (1)	2005	ppb	800	800	710	60 – 710	Water additive used to control microbes.	NO
Inorganic Chemicals			MCL	MCLG				
Copper (3)	2005	ppm	AL = 1.3	1.3	0.092	N/A	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.	NO
Fluoride (1) (4)	2005	ppm	4	4	1.31	0.81 – 1.31	Water additive, which promotes strong teeth.	NO
Lead (5)	2005	ppb	AL = 15	0	24	N/A	Corrosion of household plumbing systems; erosion of natural deposits.	NO
Nitrate (2)	2005	ppm	10	10	1.81	0.49 – 1.81	Runoff from fertilizer use; leaching from septic tanks, sewerage; erosion of natural deposits.	NO
Synthetic Organic Chemicals including Pesticides and Herbicides			MCL	MCLG				
Simazine (2)	2005	ppb	4	4	0.15	ND – 0.15	Herbicide runoff.	NO
Radionuclides			MCL	MCLG				
Beta/photon emitters (2)	2001	pCI/L	50 **	0	3.69	1.85 – 3.69	Decay of natural and man-made deposits.	NO
Combined radium (2)	2001	pCI/L	5	0	2.18	ND – 2.18	Erosion of natural deposits.	NO
Unregulated Chemicals			MCL	MCLG				
Sodium (1)	2005	ppm	100 ***	N/A	22.9	16.6 – 22.9	Erosion of natural deposits; road-salt runoff; contained in water treatment chemicals.	N/A

* The data presented in this table is from the most recent testing done in accordance with regulations. Test results are from the Portsmouth Water and Fire District's distribution system unless otherwise noted by the footnotes.
****** The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/l to be the level of concern for beta particles.
*** Although not regulated by the EPA, we are required by the Rhode Island Department of Health to test for sodium. There is no MCL for sodium, however the Health Advisory Level is 100 ppm.

NOTE: The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

Water Quality Table Footnotes

(1) Measured after treatment at the Newport Water Department Lawton Valley Water Treatment Plant.
(2) Measured in the Newport Water Department raw water reservoirs prior to treatment.
(3) The detected copper level indicates the 90th percentile value of the 61 samples obtained at 61 high-risk homes in June and September. None of the 61 samples exceeded the Action Level.
(4) Fluoride is added to the water at a rate of 1.0 ppm to help prevent tooth decay in children.
(5) The detected lead level indicates the 90th percentile value of the 61 samples obtained from 61 high-risk homes in June. Fifteen (15) of the 61samples exceeded the Action Level. *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 water this water over many years could develop kidney problems or high blood pressure.*
(6) *Some people who drink water containing TTHM's in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.* The detected level indicates the highest four-quarter, running annual average.
(7) *Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.*
(8) In June, one of 21 routine samples tested positive for Total Coliform Bacteria. Repeat samples taken within 24-hours tested negative for Total Coliform Bacteria. The drinking water was in compliance with EPA and Department of Health standards. All of the 238 other routine samples taken during the year tested negative for Total Coliform Bacteria.