

# PORTSMOUTH WATER AND FIRE DISTRICT

## 2002

# CONSUMER CONFIDENCE REPORT

### **Dear Customer:**

We are pleased to present a summary of the quality of the water provided to District customers during the past year. The 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. *Some water customers of the Newport Water Department and the Naval Station Newport water system, particularly in the Redwood Farms, Bay View and Melville areas, in addition to properties in the District with private wells, may receive this consumer notice, even though they are not customers of the District. This over-coverage is unavoidable in our effort to ensure that all potential water users within the District receive this legal notice through a Postal Customer mailing.*

### **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 mainland Portsmouth. 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. This study should be complete in 2004. The District also continues to require that new water main extensions be looped-in to existing water mains whenever possible, to maintain water quality. In addition, upcoming water quality capital improvements include a one-mile water main replacement in Island Park and the installation of three chlorine residual monitoring stations in the distribution system.

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. Minutes of

meetings are available upon request. The information in this report is available on the World Wide Web at <http://www.portsmouthwater.org>.

## **Your Water Source**

In 2002, 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 business 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 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 water source is at *MODERATE RISK* of contamination. This means source water 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.

## **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).

### ***Concerning Lead in Our 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. The District can also help you get your tap water tested for lead.

### ***About the Newport Water Department's Turbidity Violation***

Newport Water previously sent you a notice regarding this violation. On October 31, 2002 a chemical feed pump malfunctioned causing elevated turbidity levels. The pump was repaired and turbidity levels returned to normal within 12 hours. Turbidity is a measure of the cloudiness of the water and is monitored as an indicator of water quality since high turbidity can hinder the effectiveness of disinfectants. *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.* These symptoms are not caused only by organisms in drinking water. Newport Water's increased monitoring for bacteria indicated negative results during and after the pump repair.

### ***About the District's TTHM Violation***

We previously sent you a notice regarding this violation. In the fourth quarter of 2002, the District's four-quarter running average for TTHMs was 89 ppb. The EPA standard is 80 ppb, having been lowered from 100 ppb on January 1, 2002. The average TTHM level for the three most recent quarters is 65 ppb and it appears likely that the District will be in compliance with the standard after the next quarterly measurement in July of 2003.

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, typhoid and cholera were common throughout American cities and disinfection was a major factor in reducing these epidemics. However, disinfection poses risks of its own. *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.*

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 following steps have been taken to address the high 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 DPBs.
- The Newport Water Department is conducting a comprehensive evaluation of the treatment plant to determine what improvements are required to reduce TTHMs on both a short and long-term basis.
- 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.
- The District has retained a consulting engineer to investigate the possibility of re-treating the water purchased from the Newport Water Department in order to lower the TTHM levels.

There are no other reasonable, immediate actions the District can take to reduce the level of DPBs in the water. However, the District's Administrative Board is committed to resolving the TTHM problem in the most expeditious manner possible.

## 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. Contact William J. McGlenn, 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.**

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## 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
Michael W. Nott	Moderator
Gaetano Polselli, Jr.	Tax Collector

Phone: (401) 683-2090 Fax: (401) 682-1550  
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**PLEASE REFER TO 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

<b>AL</b>	<b>Action Level:</b> The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
<b>MCL</b>	<b>Maximum Contaminant Level:</b> 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.
<b>MCLG</b>	<b>Maximum Contaminant Level Goal:</b> 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.
<b>MRDL</b>	<b>Maximum Residual Disinfectant Level:</b> 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.
<b>MRDLG</b>	<b>Maximum Residual Disinfectant Level Goal:</b> 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.
<b>mrem</b>	<b>Millirems:</b> a measure of radiation absorbed by the body.
<b>N/A</b>	<b>Not Applicable.</b>
<b>ND</b>	<b>Not Detectable:</b> Not detectable at testing limits.
<b>NTU</b>	<b>Nephelometric Turbidity Units:</b> a measure of very small particulate matter in drinking water.
<b>pCi/l</b>	<b>Picocuries per liter:</b> a measure of radioactivity.
<b>ppb</b>	<b>parts per billion,</b> or micrograms per liter (µg/l).
<b>ppm</b>	<b>parts per million,</b> or milligrams per liter (mg/l).
<b>TT</b>	<b>Treatment Technique:</b> A required process intended to reduce the level of a contaminant in drinking water.

**WATER QUALITY TABLE \***

CONTAMINANT (footnote)	YEAR TESTED	UNIT	MCL / MRDL	MCLG / MRDLG	DETECTED LEVEL	RANGE	MAJOR SOURCES IN DRINKING WATER	VIOLA- TION
<b>Microorganisms</b>			MCL	MCLG				
Total organic carbon (1)	2002	removal ratio	TT	N/A	1.24	0.56 – 2.86	Naturally present in environment.	NO
Turbidity (1) (2)	2002	NTU	TT = 1.0	N/A	<b>3.6</b>	N/A	Soil runoff.	<b>*YES* ( 2)</b>
			TT = 95% of monthly samples ≤ 0.3		95% ≤ 0.3			
<b>Disinfection Byproducts</b>			MCL	MCLG				
Chlorite (1)	2002	ppm	1.0	0.8	0.862	ND – 0.935	Byproduct of drinking water chlorination.	NO
Haloacetic acids (HAA5s)	2002	ppb	60	N/A	20.6	4.2 – 50.9	Byproduct of drinking water chlorination.	NO
Total Trihalomethanes (TTHMs) (7)	2002	ppb	80	N/A	<b>89.0</b>	50.0 – 141	Byproduct of drinking water chlorination.	<b>*YES* (7)</b>
<b>Disinfectants</b>			MRDL	MRDLG				
Chlorine	2002	ppm	4	4	0.56	0.05 – 3.2	Water additive used to control microbes.	NO
Chlorine dioxide (1)	2002	ppm	0.8	0.8	0.77	0.02 – 0.77	Water additive used to control microbes.	NO
<b>Inorganic Chemicals</b>			MCL	MCLG				
Copper (4)	2001	ppm	AL = 1.3	1.3	0.07	N/A	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.	NO
Fluoride (1) (5)	2002	ppm	4	4	1.63	0.04 – 1.63	Water additive, which promotes strong teeth.	NO
Lead (6)	2002	ppb	AL = 15	0	<b>25</b>	N/A	Corrosion of household plumbing systems; erosion of natural deposits.	NO
Nitrate (3)	2002	ppm	10	10	0.3	0.08 – 0.3	Runoff from fertilizer use; leaching from septic tanks, sewerage; erosion of natural deposits.	NO
<b>Synthetic Organic Chemicals</b>			MCL	MCLG				
Di(2-ethylhexyl) phthalate (3)	2002	ppb	6	0	3.6	ND – 3.6	Present in plastics and cosmetics.	NO
Simazine (3)	2002	ppb	4	4	0.12	ND – 0.12	Herbicide runoff.	NO
<b>Volatile Organic Chemicals</b>			MCL	MCLG				
Carbon tetrachloride (1)	2002	ppb	5	0	0.7	ND – 0.7	Discharge from industrial activities.	NO
<b>Radionuclides</b>			MCL	MCLG				
Beta/photon emitters (3)	2001	pCi/L	50**	0	3.69	1.85 – 3.69	Decay of natural and man-made deposits.	NO
Combined radium (3)	2001	pCi/L	5	0	2.18	ND – 2.18	Erosion of natural deposits.	NO
<b>Unregulated Chemicals ***</b>			MCL	MCLG				
Sodium (3)	2002	ppm	100	N/A	19.9	14.4 – 19.9	Erosion of natural deposits; road-salt runoff.	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 Treatment Plant.
- (2) Exceedance of the Treatment Technique standard was a Newport Water Department violation, which is explained further in the Health Effects section of this report.
- (3) Measured in the Newport Water Department raw water reservoirs prior to treatment.
- (4) The detected copper level indicates the 90<sup>th</sup> percentile value of the 30 samples obtained at 30 high-risk homes. None of the 30 samples exceeded the Action Level.
- (5) Fluoride is added to the water at a rate of 1.0 ppm to help prevent tooth decay in children.
- (6) The detected lead level indicates the 90<sup>th</sup> percentile value of the 150 samples obtained from 60 high-risk homes. Twenty-two of the 150 samples exceeded the Action Level, whereas the regulations allow only 15 samples to exceed the Action Level. Prior to June of 2002, the lead test results were below the action level. The District has undertaken a corrosion control study, as required, and will be conducting additional lead testing in 2003 to determine the appropriate steps to reduce lead levels at the tap. A violation would occur if we did not take action. *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.*
- (7) The TTHM violation is explained further in the Health Effects section of this report. *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.*