



ANNUAL
**WATER
QUALITY
REPORT**

Water testing performed in 2009

Presented By:
CITY OF PORTSMOUTH

PWS ID#: 3740600

Maintaining High Standards

Once again we are proud to present our annual water quality report. This report covers all testing performed between January 1 and December 31, 2009. The events of the past few years have presented many of us with challenges we could not have imagined. Yet, in spite of this we have maintained our high standards in an effort to continue delivering the best quality drinking water possible. There may be other hurdles in the future but know that we will always stand behind you and the drinking water we work diligently to provide.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions, we are always available to assist you.



Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 (800) 426-4791 or www.epa.gov/safewater/hotline/.

How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria prior to being filled with tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

Source Water Assessment

A Source Water Assessment Plan (SWAP) is available at our watershed office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to the Source Water Assessment Plan, our water system had a susceptibility rating of "medium." If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours. Call 539-2201 X222.



Source Water Description

Your tap water comes from both surface lakes (Lake Meade) and deep wells (5). Portsmouth's water treatment facility has the capacity to treat 33 million gallons of water each day and serves over 120,000 customers in Portsmouth, Chesapeake, and Suffolk.

LT2 Rule

The U.S. EPA has created the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) for the sole purpose of reducing illness linked with the contaminant *Cryptosporidium* and other disease-causing microorganisms in drinking water. The rule will bolster existing regulations and provide a higher level of protection of your drinking water supply.

Sampling of our water source has shown the following:

Giardia lamblia: (0.08(Oo)cysts/L)

It is important to note that these results are from our raw water source only and not our treated drinking water supply. For more information, contact the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

For More Information

At the City of Portsmouth Department of Public Utilities, we value our customers and work hard to ensure your satisfaction. If you have questions or comments about this report or other issues concerning water quality, please call us or the other sources of water quality information listed below:

City of Portsmouth

Water Quality Desk

(757) 539-2201 X232

Additional sources of information regarding water quality may be found at:

Virginia Department of Health

Office of Water Programs

(757) 683-2000

U.S. Environmental Protection Agency Safe Drinking Water Hotline

(800) 426-4791

This Water Quality Report as well as other City issues can also be viewed at our Web site. Please visit us at www.portsmouthva.gov

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

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

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.



Which household activity wastes the most water?

Most people would say the majority of water use comes from showering or washing dishes; however, toilet flushing is by far the largest single use of water in a home (accounting for 40% of total water use). Toilets use about 4-6 gallons per flush, so consider an ultra-low-flow (ULF) toilet, which requires only 1.5 gallons.

What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, don't use any container with markings on the recycle symbol showing "7 PC" (that's code for BPA). You could also consider using stainless steel or aluminum with BPA-free liners.

Should I be concerned about what I'm pouring down my drain?

If your home is served by a sewage system, your drain is an entrance to your wastewater disposal system and eventually to a drinking water source. Consider purchasing environmentally friendly home products whenever possible, and never pour hazardous materials (e.g., car engine oil) down the drain. Check with your health department for more information on proper disposal methods.

Lead and Drinking Water

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. Lake Kilby Water Treatment Plant is responsible for providing high-quality drinking water, but we 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 or at www.epa.gov/safewater/lead.

About Our Violation

Due to an error in selecting the proper sample location, we missed the final reporting deadline for the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). The goal of the LT2ESWTR is to "reduce the risk of disease caused by *Cryptosporidium* and other microorganisms by identifying the waterworks at the greatest risk for source water contamination." The rule required monitoring for Crypto for a period of 24 months beginning in October 2006. Due to our sample location error, we did not start sampling at the proper location until November 2007, which extended our 24-month term to October 2009, causing us to miss the final reporting deadline of March 2009. This error in no way affects the quality of the drinking water delivered to Portsmouth's customers.

UMCR2

In response to the 1996 Safe Drinking Water Act Amendments, the U.S. EPA established the Unregulated Contaminant Monitoring Rule (UCMR) in 1999. The EPA uses the information gathered from the monitoring by periodic update to prioritize contaminants on the Drinking Water Contaminant Candidate List and identifies contaminants the agency considers for possible drinking water standards. During the monitoring period from July 2008 to April 2009, sampling has shown the following: N-nitrosodimethylamine (NDMA) 0.0047 µg/L.



Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2009	2	2	0.034	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chloramines (ppm)	2009	[4]	[4]	3.50	ND–4.97	No	Water additive used to control microbes
Chromium (ppm)	2009	100	100	0.001	NA	No	Discharge from steel and pulp mills; Erosion of natural deposits
Combined Radium¹ (pCi/L)	2009	5	0	0.2	NA	No	Erosion of natural deposits
Di(2-ethylhexyl) Phthalate (ppb)	2009	6	0	2.0	NA	No	Discharge from rubber and chemical factories
Fluoride (ppm)	2009	4	4	1.27	0.61–1.59	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2009	60	NA	32	26–42	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2009	80	NA	48	33–56	No	By-product of drinking water chlorination
Total Organic Carbon (ppm)	2009	TT	NA	3.1	2.0–3.9	No	Naturally present in the environment
Turbidity² (NTU)	2009	TT	NA	0.08	0.05–0.08	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2009	TT	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community (lead was not detected at the 90th percentile)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2009	1.3	1.3	0.181	0/65	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2009	250	NA	19	NA	No	Runoff/leaching from natural deposits
Sulfate (ppm)	2009	250	NA	55	NA	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2009	500	NA	237	NA	No	Runoff/leaching from natural deposits
pH (Units)	2009	6.5–8.5	NA	7.3	6.7–7.8	No	Naturally occurring

OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Alkalinity (ppm)	2009	107	8–132
Ammonia (ppm)	2009	0.56	NA
Calcium Hardness (ppm)	2009	16.8	NA
Hardness (ppm)	2009	23.9	15–34
Ortho-phosphate (ppm)	2009	0.14	NA
Sodium (ppm)	2009	78.2	NA

¹ Combined Radium is the combination of Radium 228 and Radium 226. Our data detected amount is a result of just the Radium 226.

² 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.

Definitions

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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