

2007 MCB QUANTICO ANNUAL DRINKING WATER QUALITY REPORT MAINSIDE WATER SYSTEM



Introduction

We are pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day.

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

We are committed to ensuring the quality of your water. To help us meet this goal, we have established a water quality response team. Personnel from the Naval Medical Clinic join with our Water Quality Assurance Technician, to respond to customer concerns and water quality questions. Together, they have the resources to test the chemical and bacteriological quality at the consumer's tap.

Our water comes from protected surface water sources. The water is processed at the Mainside Water Treatment Plant.

Base Water Works Receives Award

On April 27, 2006, the Mainside Water Treatment Plant and distribution system received the 2005 Bronze Excellence in Performance Award.

The Virginia Department of Health (VDH), Office of Drinking Water, recognized the Base for achieving Virginia's Optimization Program Goal for Filtration. The plant succeeded in providing filtration performance three times below the United States Environmental Protection Agency (USEPA) standards.

The lower a plant's turbidity is the higher rate of contaminate removal. The USEPA standard is 0.3 NTU. The plant consistently maintained an effluent turbidity of below 0.10 NTU. Cleaner water equals more effective disinfection.

Summary

Mainside Water Plant routinely monitors for constituents in your drinking water according to Federal and State laws. This report shows the results of our monitoring for the period of **January 1 to December 31, 2007**.

As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be expected to contain at least small amounts of some constituents.

It's important to remember that the presence of these constituents does not necessarily pose a health risk. In

order to ensure tap water is safe to drink, the USEPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems.

The VDH, Office of Drinking Water, enforces the regulations. More information about contaminants and potential health effects can be obtained by calling the USEPA's *Safe Drinking Water Hotline* at **1-800-426-4791**.

Sources

We have 3 different sources of water at Quantico and each source tastes a little different. We encourage our customers to report bad tasting or discolored water. At that time we will visit the site and determine if we need to run additional tests.

The Facts

This report contains information on all regulated contaminants found in your drinking water. Additionally, over 85 water tests are performed for a variety of contaminants **not** found in the water delivered to the Base. An explanation of the results is included.

Maximum Contaminants Levels (MCL) are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

The VDH conducted a source water assessment in 2007. The purpose was to determine the relative susceptibility of the source water to activities in the water shed. The source water was calculated to have a high susceptibility to contamination due to ongoing Base activities.

Our testing did not indicate contamination of the water source.

Microbiological Contaminants

Total Coliform: Coliforms are bacteria that are present naturally in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. When Coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If the limit is exceeded, the water supplier must notify the public by newspaper, radio or television.

We are pleased to announce the Base was in compliance.

If you have any questions about this report or concerning your water utility, please contact **Carl Morgans**, Water/Wastewater Commodities Manager, Public Works Branch at (703) 784-5201.

Should some people take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immune system 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 microbiological contaminants are available from the Safe Drinking Water Hotline. We constantly monitor the water supply for various constituents.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in 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 flush your tap for 30 seconds to 2 minutes before using tap water.

The lead levels found in samples taken on Base are well below regulatory limits.

The drinking water hotline can answer your questions about lead contamination. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at 1-800-426-4791.

We strongly recommend that our customers not use water from the hot water tap for consumption.

Any contaminants found in the water may accumulate in the hot water tank. This would be true anywhere, regardless of the water source. This does not mean that there is anything wrong with our drinking water.

All water tests are conducted on water from the cold-water tap. Our concern is that the water quality is unknown when water from the hot-water tap is consumed. We believe you are better served by heating cold-water for this purpose.

Additional Monitoring:

Lead and Copper

In September 2006 the Base tested the distribution

system for lead and copper. Thirty sample sites were tested according to a VDH approved plan.

The final results proved the Base is in compliance. One sample tested above the EPA Action Level (AL). That sample was collected in Building 3252. The compliance level for lead was <2 ppb. Compliance with the Lead/Copper Rule is based on a percentage of acceptable samples. One elevated result does not mean a violation.

Cryptosporidium & E. coli

As this report is being prepared for publishing, Base personnel are conducting a two year sample collection and testing of the raw water source for Cryptosporidium and E. coli. This helps the WTP personnel monitor the raw source water and compare data collected during last Cryptosporidium and E. coli collection and testing.

This sampling helps set a base line for reference purposes, helps judge plant performance, and helps plan for future treatment needs. When these tests are completed, the results will be made available.

Previous testing did not indicate the presence of these contaminants.

Unregulated Contaminant Monitoring Rule 2 (UCMR2)

US EPA mandated UCMR2 testing is being conducted for 2008. The contaminants on the list are not known to be harmful, but USEPA feels it is imperative to test until more is known about the contaminants and possible effects on the environment.

Individual Distribution System Evaluation (IDSE)

Currently, the Base is waiting for approval of the IDSE plan submitted to VDH ODW in October 2007.

The evaluation of the distribution system is so the Base can better monitor Disinfection Byproducts through the distribution system. Once this information has been compiled, the Base will know where to make necessary changes in the system or maybe treatment process.

Pending Contract Will Keep Water Fresh on Base

Automatic Flush Valves

The Base has a contract to install automatic flush valves and chlorine monitoring stations at various locations on the Base. The Stage 2 Disinfection Byproduct Rule requires the Base to reduce the age of water in the distribution system.

Conclusion

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply, we sometimes need to make improvements that will benefit all of our customers.

As reported in the Quantico Sentry, water mains and fire hydrants are flushed twice a year. This may cause temporary water discoloration. We apologize for any

inconvenience. Our goal is to provide water of excellent quality to every customer. We work around the clock to provide top quality water to every tap.

Our customers can help protect themselves and our water system by careful use of this resource, which is the heart of our community, our way of life, and our children's future.

*If you have questions about what you can do to help, please contact **Carl Morgans**, Water/Wastewater Commodities Manager, Public Works Branch at (703) 784-5201.*

We don't often pause to consider the incredible value of a safe, reliable water supply and the water system that delivers it in our everyday lives. But consider what tap water does that no other water can do.

Only tap water delivers public health protection:

In a world where an estimated 3 million people die every year from preventable waterborne disease, our water systems allow us to drink from virtually any public tap with a high assurance of safety. Each community water supply meets rigorous federal and state health-protective standards.

Fire protection:

A well-maintained water system is critical in protecting our communities from the ever-present threat of fire. A system that provides reliable water at an adequate pressure can be the difference between a small fire and an urban inferno. The ability to suppress fires also influences new home construction, business location decisions and insurance rates.

Support for the economy:

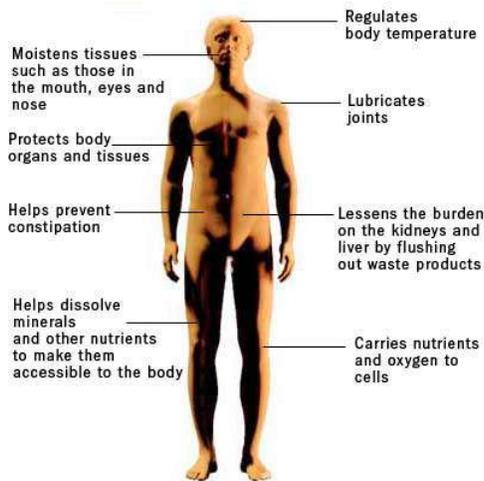
Businesses or housing developments do not succeed without a safe and sustainable water supply. Tap water is critical to businesses' day-to-day operations and is often a primary ingredient in the products they create. The incredible value of water is magnified during times of drought and when populations expand into arid climates.

The overall quality of life we enjoy:

Any measure of a successful society (low mortality rates, economic diversity, productivity, and public safety) is in some way related to access to safe water.

In North America, we take for granted that safe water is always accessible to drink, to wash our clothes, to water our lawns and for a myriad of other purposes. When water service is interrupted, we're all reminded of the extraordinary value of water resources and service.

UP TO 60 % OF THE HUMAN BODY IS WATER... WATER ALLOWS OUR BODIES TO WORK.





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MANSIDE WATER SYSTEM



BACTERIOLOGICAL QUALITY								
Microbiological Contaminates	MCLG	MCL	Percent Positive	Highest no. Positive	Monthly Samples	In Compliance	Source	
Total Coliform Bacteria	0	One Sample per Month	0	0	15	Yes	Naturally present in the environment	
<p style="text-align: center;"><i>We may not exceed one positive sample a month. Out of 180 samples we are proud to report none were positive.</i></p>								
REGULATED CONTAMINANTS								
METALS								
Parameter	Units	MCLG	Action Level	Results	No. of Sites Exceeding AL	Range	In Compliance	Source
Copper **	ppm	1.3ppm	90% of samples tested must be below 1.3ppm.	All samples were below 1.3ppm	0	.20 ppm is the lowest detection level for copper, range of test < 20 - .234 ppm.	Yes	Corrosion of household plumbing systems
Lead **	ppb	15ppb	90% of samples tested must be below 15ppb.	Compliance sample 2.41ppb	1	2 ppb is the lowest detection level for lead, range of test < 2 - 24 ppb.	Yes	Corrosion of household plumbing systems
<p style="text-align: center;">** The Lead and Copper results are from August 2007. Next test to be conducted in June 2010. Although one sample was above the EPA Safe Drinking Water Act 'Action' Level, the Base remained in compliance. (see accompanying text)</p>								
TURBIDITY								
Parameter	MCL			Units	Annual Avg.	Max. Detected	In Compliance	Source
Turbidity	Treatment technique (TT) at least 95% of all samples taken each month must be 0.30 NTU or less; 1 NTU maximum.			NTU	0.03	* March 2007 one sample tested 0.40 ntu	Yes	Soil Runoff * The total number of turbidity tests conducted on finished water for month of March is 372.
				Month with Lowest Average				
				March - Average	.97%			
THM (Trihalomethanes)								
Parameter	Units	MCLG	MCL	Highest	Range	Average	In Compliance	Source
TTHM	ppb	no limit	80	120	20 - 120	54	Yes	By-product of drinking water disinfection.
<p style="text-align: center;">Compliance is based on a 4 quarter running average, that value was 54 ppb.</p>								
HAA5 (Halo, Acidic Acids Group 5)								
Parameter	Units	MCLG	MCL	Highest	Range	Average	In Compliance	Source
HAA5	ppb	no limit	60	60	17-62	34	Yes	By-product of drinking water disinfection.
<p style="text-align: center;">HAA5 compliance is based on a 4 quarter running average, that value was 34 ppb.</p>								
TOTAL ORGANIC CARBONS (TOC)								
Parameter	Units	MCL	MCLG	Removal Ratio	Range	In Compliance	Source	
TOC	N/A	Treatment Technique	Average Removal Ratio Above 1.0	Average for Year 1.31	.85 - 1.81	Yes	Naturally present in the environment	
<p style="text-align: center;">Treatment Technique: TOC removal ratio must be above 1, average for the year was 1.31</p>								
FLUORIDE								
Parameter	Units	MCGL	MCL	Average	Range	In Compliance	Source	
Fluoride	ppm	4	4	1	0.40 - 2.0	Yes	Added for healthy teeth.	
CHLORINE (Cl ₂)								
Parameter	Units	MRDL	MRDLG	Highest	Range	Average	In Compliance	Source
Chlorine	ppm	4	4	3.40	0.20 - 3.4	1.6	Yes	Samples taken from distribution system. Used for disinfection
RADIOLOGICAL								
Parameter	Units	MCLG	MCL	Results	Range	In Compliance	Source	
Gross Beta	pCi/L	0	50 *	1.9	one test	Yes	Erosion of natural deposits.	
Radium 228	pCi/L	0	5	0.5	one test	Yes	Erosion of natural deposits.	
<p style="text-align: center;">* EPA considers 50 pCi/l to be the level of concern These results are from 2003. Because results were so low the next tests will be performed in 2013</p>								
UNREGULATED CONTAMINANTS								
Parameter	Units	MCLG	MCL	Results	Range	In Compliance	Source	
Chloroform	PPB	no limit	no limit	22	one test	Yes	By-Product of water chlorination.	
Bromodichloromethane	PPB	no limit	no limit	3.7	one test	Yes	By-Product of water chlorination.	
Sulfate	mg/l	no limit	250	30.6	one test	Yes	Decay of organic material	
WATER QUALITY (Key to Abbreviations)								
Non-Detects (ND)	Laboratory analysis indicates that the constituent is below the detection level.							
Parts per million, (PPM)	One part per million corresponds to one minute in two years, or a penny in \$10,000.							
Milligrams per liter (Mg/L)	Milligrams per liter is the same as parts per million.							
Parts per billion (ppb)	One part per billion corresponds to one minute in 2000 years, or a penny in \$10,000,000.							
Micrograms per liter (µ/L or mcL)	Micrograms per liter is the same as parts per billion.							
Picocuries per liter (pCi/l)	Picocuries per liter is a measure of the radioactivity in the water.							
Nephelometric (NTU)	Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just visibly cloudy.							
Action Level (AL)	Concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.							
Treatment Techniques (TT)	A treatment technique is a required process intended to reduce level of contaminant in drinking water							
Maximum Contaminant Level (MCL)	The "Maximum Allowed" is the highest level of contaminant allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.							
Maximum Contaminant Level Goal (MCLG)	The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk. MCLG's allow for a margin of safety.							
MRDL	<i>Maximum Residual Disinfection Level:</i> The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfection is necessary for control of microbial contaminants.							
MRDLG	<i>Maximum Residual Disinfection Level Goal:</i> 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.							