

#### ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, Fort Drum and the City of Watertown routinely monitor and tests your drinking water for numerous contaminants. These contaminants include: coliform, turbidity, inorganic compounds, nitrate, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, List 1 and 2 of the Unregulated Contaminant Monitoring Rule, Giardia & Cryptosporidium, Gross Alpha, Radium 226 and 228 and synthetic organic compounds. The tables presented depict compounds which were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative, is more than one year old.

It should be noted that all drinking water, including bottled drinking water, might 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's Safe Drinking Water Hotline (800-426-4791) or the NYSDOH District Office at (315) 785-2277.

#### WHAT DOES THIS INFORMATION MEAN?

**Fort Drum had no violations. Some contaminants have been detected; however, these contaminants were detected below the level allowed by the State.**

**Lead:** As you can see by Table 1, our system had no violations but we have learned through our testing that some contaminants have been detected; however, these contaminants were detected below New York State Action Levels.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. 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. The Fort Drum Public Works is responsible for providing high quality drinking water, but 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>

**Nitrate:** As you can see by table 1, our system had no violations, but we have learned through our testing that some contaminants have been detected; however, these contaminants were detected below Action Level requirements. Although nitrate was detected below the MCL, it was detected a 5.48 mg/L which is greater than one-half of the MCL. Therefore, we are required to present the following information on nitrate in drinking water. The nitrate levels over 10mg/L in drinking water can cause decreased oxygen capacity of hemoglobin in infants, this is a commonly called the blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider."

**Organics:** As you can see by table 1, our system had no violations, but we have learned through our testing that some contaminants have been detected well below New York State Action Level. Some people who drink water containing the listed organics in excess of the MCL over many years could experience increased risk of liver, kidney, nervous system and possible anemia problems.

**Biofilm:** Testing and control program has been in place since May 1996. Biofilm is a non-hazardous bacteria that can grow on the inside of storage tanks and transmission lines. Increased bacteriological monitoring consists of weekly coliform and heterotrophic plate counts at eight locations in the distribution system (32 samples/month). Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present. Monitoring of residual chlorine, cycling of water storage tanks, and unidirectional hydrant flushing are all used to control biofilm formation.

#### IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

**During 2012 our system was in compliance with ALL New York State and Federal drinking water standard operating, monitoring, and reporting requirements.**

#### DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

#### INFORMATION ON FLUORIDE ADDITION

Our system is one of many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.8 to 1.2 mg/l (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the NYSDOH requires that we monitor fluoride levels on a daily basis. During 2012, monitoring showed fluoride levels in your water in the optimal range 100% of the time. None of the fluoride monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

#### WHY SAVE WATER AND HOW TO AVOID WASTING IT?

**Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:**

- Saving water saves energy and some of the costs associated with both of these necessities of life;
- Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

**You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:**

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.

#### SYSTEM IMPROVEMENTS

Fort Drum 2012 improvements were expansion of housing areas additional groundwater wells and upgrades to in-line analytical monitors. Analysis of organics are more accurate and precise. Deviation from normal are detected rapidly and corrective action is taken to maintain water quality.

Planned 2013 improvements include replacement of old piping with new HDPE piping.

#### CLOSING

Thank you for allowing us to continue to provide you and your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community. Please call our office if you have questions.

Additional information is available from the EPA's SAFE DRINKING WATER HOTLINE (800-426-4791)

**ANNUAL  
DRINKING  
WATER  
QUALITY  
REPORT**

*for*

**2012**

**Fort Drum Public Works  
Fort Drum, New York 13602  
April 2013  
Public Water Supply I.D. #2212214**

## INTRODUCTION

To comply with State and Federal regulations, **FORT DRUM PUBLIC WORKS** annually issues a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. **We are proud to report that our system has not violated a maximum contaminant level or any other water quality standard.** This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State and Federal standards.

If you have any questions about this report or concerning your drinking water, please contact **Thomas W. Ferguson, Chief Operations and Maintenance, at (315) 772-4947 or Diane Covell, Water and Wastewater Program Manager at (315) 772-0218.** We want you to be informed about your drinking water. If you want to learn more, please contact Diane Covell directly to discuss any drinking water issue in person.

## WHERE DOES OUR WATER COME FROM?

In general, 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 activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the Environmental Protection Agency prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the Food & Drug Administration regulation establishes limits for contaminants in bottled water which must provide the same protection for public health.

Our water source is both surface water from the Black River supplied by the Development Authority of the North Country (DANC) and from groundwater wells located on the installation. Under a purchase agreement, Fort Drum receives approximately 800,000 gallons per day from the DANC. DANC purchases water from the City of Watertown and delivers it to Fort Drum through its pumping and piping systems. The City of Watertown's water source is the Black River, a surface water source, which originates in the Adirondack Mountains and runs through the center of the City and westerly to Black River Bay. During 2012, the system did not experience any water source restrictions. Flows of the Black River are regulated by the Hudson-Black River Regulating District and are controlled by a series of hydro-electric power dams stretching from its headwaters in the Adirondacks to its mouth in Lake Ontario. The City of Watertown's 15 million gallon per day Water Treatment Plant utilizes 2.3% of the minimum flow of the Black River. The water is treated within modern facilities prior to distribution. The water filtration building and main pumping station were reconstructed in 1987-1991. Liquid alum and a nonionic polymer are added to the water to coagulate and settle out dirt and organic matter through a dosing station upstream of the water plant. The settled water is then pumped to the process complex at 1707 Huntington Street. Polyaluminum chloride and nonionic or cationic polymer are added prior to filtering. Carbon may be added to combat taste and odor. The filtered water is disinfected with chlorine to kill bacteria, viruses, and other microorganisms. The water is then treated with sodium silicate for corrosion control and with fluoride to help fight tooth decay. The finished product, high quality potable water, is pumped to the City's distribution system and through the DANC line to Fort Drum.

Fort Drum's groundwater source consists of ten drilled groundwater wells located to the east of the cantonment area. All wells were shut down in 2006 as a precautionary measure following discovery of a JP-8 fuel release at the Wheeler-Sack Army Airfield. Based on a well field assessment and concurrence from New York State Department of Health (NYSDOH) and New York State Department of Environmental Conservation (NYSDEC) six ground water wells were returned to service in December 2008, 3 were taken out of service in 2010; The treatment process at the Fort Drum Drinking Water Treatment Plant, consists of UV and chlorine disinfection and fluoride injection.

## NYSDOH SOURCE WATER ASSESSMENT PROGRAM FINDINGS

The NYSDOH has evaluated the City of Watertown's PWS's (Public Water Supply's) susceptibility to contamination under the Source Water Assessment Program (SWAP). Overall, the City of Watertown's water supply is most susceptible to microbial contaminants, primarily from pasture and permitted discharges within the watershed. Sediment and turbidity associated with mining operations is also a concern, and transportation routes also have a potential to contribute various contaminants. Fort Drum's Groundwater supply well's are most susceptible to inorganic contaminants from runway deicing, and volatile organics from fuel spills. Both City of Watertown & Fort Drum provide regular monitoring and treatment to ensure drinking water meets all applicable standards.

## FACTS AND FIGURES

The amount of people served by the Fort Drum drinking water system is, on average, approximately 32,500. This population is constantly changing due to the nature of frequent military reassignments. This population figure includes those people living on the installation and those who work on post but reside in other communities. Fort Drum water plant produced 211,845,329 gallons. Our highest single day was 752,894 gallons. The remainder of the water used on post, 313,774,700 gallons, was purchased from the City of Watertown through DANC. The City of Watertown total plant output for 2012 was 1,687,371,300 gallons; the daily average was 4,622,935 gallons; the highest single day was 7,183,100 gallons.

## DEFINITIONS:

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

**Maximum Contaminant Level Goal (MCLG):** 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.

**Maximum Residual Disinfectant Level (MRDL):** 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.

**Maximum Residual Disinfectant Level Goal (MRDLG):** 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 contamination.

**Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

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

**Non-Detects (ND):** Laboratory analysis indicates that the constituent is not present.

**Nephelometric Turbidity Unit (NTU):** A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Milligrams per liter (mg/L):** Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

**Micrograms per liter (ug/L):** Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

**Picocuries per liter (pCi/L):** A measure of the radioactivity in water.

The following tables present analytical results of Fort Drum's monitoring for the reporting period of 2012, unless otherwise noted. Other contaminants that were tested and not detected are not included in these tables.

Fort Drum Table of Detected Contaminants							
Contaminant	Violation Yes/No	Date of Sample M/Y	Level Detected (Avg/Max) (Range)	Unit Measure	MCLG	Regulatory Limit MCL, TT, or AL	Likely Source of Contamination
<b>MICROBIOLOGICAL CONTAMINANTS</b>							
Total Coliform <sup>1</sup>	No	8 2012	2 positive sample	N/A	N/A	MCL=>5% of samples positive	Naturally present in the environment.
Turbidity	No	2012	0.1	NTU	NA	TT=<5 NTU	Particles from corrosion of water mains.
Fluoride	No	2012	1.0 (0.5-1.5)	mg/L (ppm)	2.2	MCL-2.2	Added for tooth decay
<b>INORGANIC CONTAMINANTS</b>							
Copper <sup>2</sup>	No	7 2012	0.32 (ND-0.057)	mg/L (ppm)	1.3	AL=1.3	Corrosion of household plumbing.
Lead <sup>3</sup>	No	7 2012	1 (ND-3)	µg/L (ppb)	15	AL=15	Corrosion of household plumbing; erosion of natural deposits.
Nitrate	No	2,5,8,11 2012	5.48 (5.3 – 5.7)	mg/L (ppm)	10	MCL=10	Erosion of natural deposits
<b>DISINFECTION BYPRODUCTS</b>							
Total Trihalomethanes Stage 1	No	2, 5, 8, 11 2012	47.1 (4.2-96.6)	µg/L (ppb)	NA	MCL = 80	Byproduct of drinking water chlorination
Haloacetic Acid Stage 1	No	2, 5, 8, 11 2012	27.4 (ND-85.6)	µg/L (ppb)	NA	MCL = 60	Byproduct of drinking water chlorination
Total Trihalomethanes Stage 2	No	2, 4, 6, 2009	(0.5– 59.6)	µg/L (ppb)	NA	NA	Byproduct of drinking water chlorination
Haloacetic Acid Stage 2	No	2, 4, 6, 2009	(0-33)	µg/L (ppb)	NA	NA	Byproduct of drinking water chlorination
<b>ORGANICS</b>							
Cis-1,2-Dichloroethene	No	2012	0.63 (ND-.63)	µg/L (ppb)	0	MCL = 5	Discharge from industrial chemical factories

## Table 1 Footnotes:

- Coliform: In month of AUG 2012 positive coliforms were detected in 2 of the 40 routine monthly compliance samples collected. Eight additional samples were collected - negative for both coliform and E. Coli. Groundwater Rule source water testing waived by NYS DOH based on contact time.
- Copper level presented is the 90<sup>th</sup> percentile of 30 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The action level for copper was not exceeded at any of the sites tested.
- Lead level presented is the 90<sup>th</sup> percentile of 30 sites tested. The action level for lead was not exceeded at any of the sites tested.

City of Watertown T able of Detected Contaminants							
Contaminant	Violation Yes/No	Date of Sample M/Y	Level Detected (Avg/Max ) (Range)	Unit Measure	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
<b>Microbiological Contaminants</b>							
Turbidity Distribution <sup>1</sup>	NO	12 2012	0.47 (0.13-0.47)	NTU	N/A	TT=<5NTU	Particles from corrosion of water mains
Turbidity Composite Filter Effluent <sup>1a</sup>	NO	8 2012	0.13 (0.04-0.13)	NTU	N/A	TT=95% of samples<0.3 NTU	Particles introduced during the treatment process or too fine to filter completely
<b>Inorganic Contaminants</b>							
Copper <sup>2</sup>	NO	2010	0.27 (0.23-.45)	mg/L (ppm)	1.3	AL-1.3	Corrosion of household plumbing
Lead <sup>3</sup>	NO	2010	7 (ND-24)	ug/L (ppb)	15	AL-15	Corrosion of household plumbing
Nitrate	NO	7 2012	ND	mg/L ppm	10	MCL-10	Run off from fertilizer, Erosion of natural deposits
Fluoride	NO	2012	1.0 (0.8 -1.2)	mg/L ppm	2.2	MCL-2.2	Natural and added for prevention of tooth decay
<b>Disinfection Byproducts</b>							
Total Organic Carbon Stage 1 Rule	NO	01-12 2012	(1.5 -2.8)	mg/L ppm	NA	TT	Naturally present in the environment
Total <sup>4</sup> Trihalomethanes Stage1 Rule	NO	2,5,8,11 2012	71 (26-126)	ug/L ppb	NA	MCL=80	Byproduct of drinking water chlorination
Haloacetic <sup>5</sup> Acids	YES	2,5,8,11 2012	55 (3-89)	ug/L ppb	NA	MCL=60	Byproduct of drinking water chlorination

## Table 2 Footnotes:

- Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. Our highest average distribution turbidity measurement for the year was 0.47 and occurred in December 2012. State regulations require that the monthly average turbidity must always be below 5 NTU.
  - The regulations require that 95% of the combined filter effluent turbidity levels recorded have measurements below 0.3 NTU. The maximum combined filter effluent recorded at the plant in 2012 was 0.13 NTU and occurred in August 2012. 100% of the combined filter effluent turbidities were below the MCL.
  - The level presented represents the 90<sup>th</sup> percentile of the 30 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90<sup>th</sup> percentile is equal to or greater than 90% of the copper values detected at your water system. In this case, 30 samples were collected at your water system and the 90<sup>th</sup> percentile value was the fourth highest value (0.27). The action level for copper was not exceeded at any of the sites tested.
  - The level presented represents the 90<sup>th</sup> percentile of the 30 samples collected. The action level for lead was exceeded at one of the 30 sites tested.
  - This level represents the highest annual quarterly average calculated from data collected.
  - This level represents the highest annual quarterly average calculated from data collected.