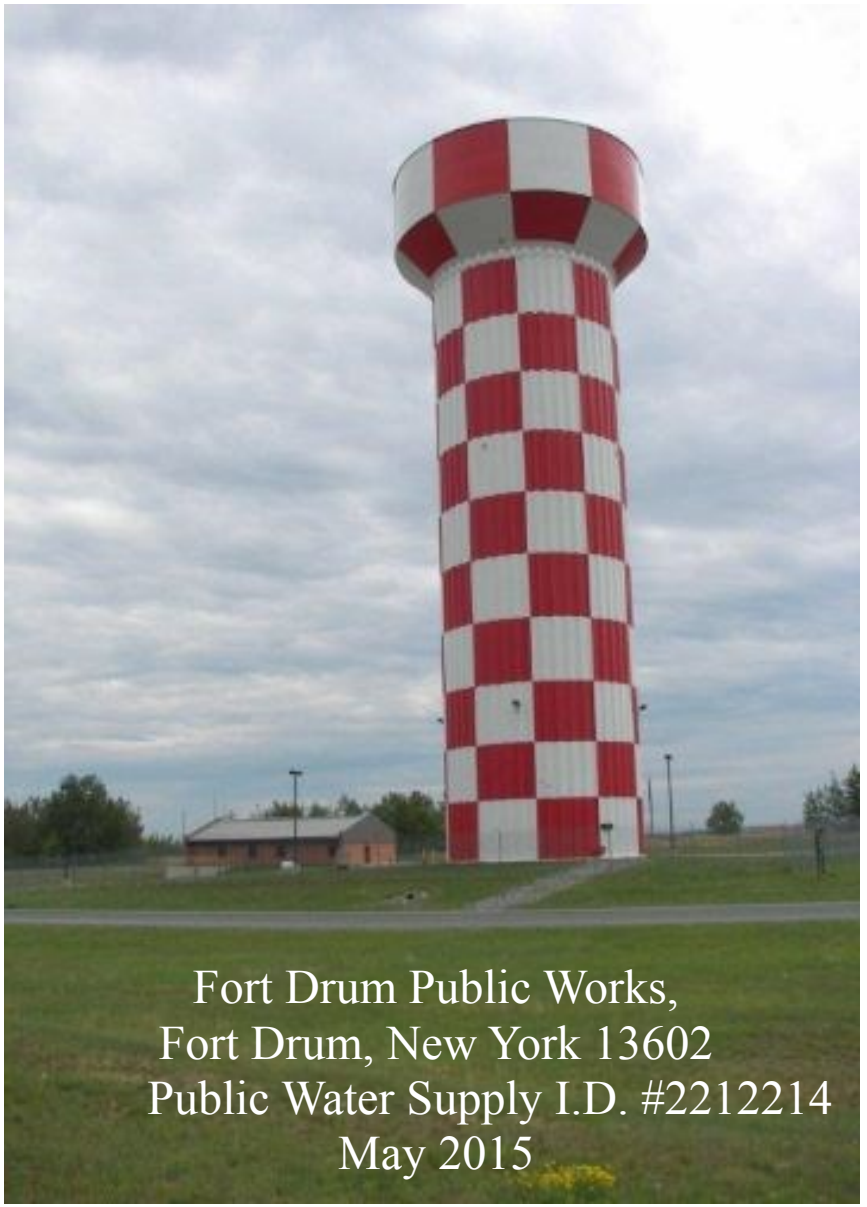
Residual Chlorine testing using portable colorimeter

2014 Annual Drinking Water Quality Report



Fort Drum Public Works,
Fort Drum, New York 13602
Public Water Supply I.D. #2212214
May 2015

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.

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

SYSTEM IMPROVEMENTS

Fort Drum 2014 improvements include revitalization of the water distribution system with high density polyethylene piping. Additional upgrades to in-line analytical monitors have made analysis of organics more accurate and precise. Deviations from normal are detected rapidly and corrective action is taken to maintain water quality. Planned 2015 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.

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.

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 2014, 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 hydroelectric 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. 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, three were taken out of service in 2010; The treatment process at the Fort Drum Drinking Water Treatment Plant, consists of UV and chlorine disinfection then 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 40,000. 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. The Fort Drum water plant produced 229,368,825 gallons. Our highest single day was 787,624 gallons. The remainder of the water used on post, 272,702,870 gallons, was purchased from the City of Watertown through DANC. The City of Watertown total plant output for 2014 was 1,795,695,000 gallons; the daily average was 4,919,712 gallons; the highest single day was 6,924,000 gallons.

-trichloropropane, 1,3-butadiene, bromochloromethane, bromomethane, chlorodiflouromethane, chloromethane, 1-4-dioxine, and perfluorinated compounds. Sampling occurred in September and December 2014. All results greater than the method detection limits are included in Fort Drum Table of Detected Contaminates. For more information please contact Diane Covell at 315-772-0218 or diane.h.covell.civ@mail.mil

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2014 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 2014, monitoring showed fluoride

minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at www.epa.gov/safewater/lead

Nitrate: Table 1, shows that nitrate was detected at levels well below New York State Action Levels. Although nitrate was detected below the MCL, it was detected a 4.7 mg/L which is a little less than one-half of the MCL. Therefore, we are presenting 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."

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. Fort Drum monitors residual chlorine, water storage tanks, and flushes unidirectionally to control biofilm formation.

UNREGULATED CONTAMINANTS MONITORING RULE (UCMR) Contaminant monitoring provides EPA with valid data on the occurrence of contaminants in drinking water. EPA can estimate the number of people potentially being exposed and provide an estimate of the levels of exposure. This data set is one of the primary sources of occurrence and exposure information the EPA uses to develop regulatory decisions for contaminates of concern. In 2014, we were required to collect and analyze drinking water samples for the following unregulated contaminants: (Total and Hexavalent Chromium, Cobalt, Molybdenum, Strontium, Vanadium, Chlorate, 1,1-dichloroethane, 1,2,3

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, Fort Drum and the City of Watertown routinely monitor and test your drinking water for numerous contaminants. These contaminants include: coliform, turbidity, inorganic compounds, nitrate, lead, 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 following two 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.

Fort Drum Table of Detected Contaminants						
Contaminant	Viola-tion Yes/No	Sample Date Mon/Year	Level Detected Avg/Max (Range)	Unit of Measure	Regulatory Limit (MCL,TT,AL)	Likely Source of Contamination
Total Coliform[1]	No	2,4,7,10,12 2014	1 positive sample	NA	MCL=>5% of all samples positive	Naturally present in the environment
Turbidity	No	2014	0.05 (0.03-0.13)	NTU	TT=<5NTU	Particles from water mains
Fluoride	No	2014	1.0 (0.8-1.1)	mg/L (ppm)	MCL=2.2	Added to prevent tooth decay
Copper[2]	No	7 2012	0.32 (ND-0.027)	mg/L (ppm)	AL= 1.3	Corrosion of household plumbing
Lead[2]	No	7 2012	1 (ND-3)	ug/L (ppb)	AL=15	Corrosion of household plumbing
Nitrate	No	2,5,8,11 2014	4.7 (3.5-6.13)	mg/L (ppm)	MCL=10	Natural deposits or fertilizer
Total Trihalome-thanes[3]	No	2,5,8,11 2014	64.6 (6.6-66.0)	ug/L (ppb)	MCL=80	Byproducts of drinking water chlorination
Haloacetic Acid[3]	No	2,5,8,11 2014	29.0 (0.8-33.1)	ug/L (ppb)	MCL=60	Byproducts of drinking water chlorination
Unregulated Contaminates Monitoring Rule 3 [4]						

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

Nanograms per liter (ng/L): Corresponds to one part of liquid in one trillion parts of liquid (parts per trillion - ppt).

Not Applicable (NA): Limits do not apply

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).

Million Fibers per Liter (MFL): A measure of the presence of asbestos fibers that are longer than 10 micrometers.

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

WHAT DOES THIS INFORMATION MEAN? Fort Drum had no violations. Some contaminates have been detected; however, these contaminants were detected below the level allowed by the State.

Lead: Table 1, shows that lead was detected at levels well 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

City of Watertown Table Footnotes:

1.Coliform: One in over 480 routine samples taken during 2014 was found to contain total coliform (sample was taken during July 2014). Coliform are naturally occurring bacteria that are used as an indicator of the possibility that potentially harmful bacteria could be present. Subsequent samples taken following the positive total coliform were negative. Less than 5% of our monthly samples were positive for total coliform, therefore there are no reportable violations.

2. 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 0.31 and occurred in August and November 2014. State regulations require that the monthly average turbidity must always be below 5 NTU.

2a. 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 2014 was 0.17 NTU and occurred in August 2014. 100% of the combined filter effluent turbidities were below the MCL.

3. The level presented represents the 90th percentile of the 30 sites tested. All 30 samples were less than the action level.

4. This level represents the highest locational running annual average of all the sites sampled.

5. All detectable unregulated contaminate results are listed and their presence does not indicate a health concern. Unregulated contaminates do not have a MCL and are being monitored to determine future regulations. You may obtain all the monitoring results by calling Aaron Harvill at (315)-785-7845.

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 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.

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

Total Chromium	No	9,12 2014	0.38 (ND-1.6)	ug/L (ppb)	NA	Naturally occurring
Hexavalent Chromium	No	9,12 2014	0.12 (0.03-0.26)	ug/L (ppb)	NA	Naturally occurring
Strontium	No	9,12 2014	657 (53-1700)	ug/L (ppb)	NA	Naturally occurring
Vanadium	No	9,12 2014	0.14 (ND-0.4)	ug/L (ppb)	NA	Naturally occurring
Chlorate	No	9,12 2014	44 (ND-130)	ug/L (ppb)	NA	Byproduct of disinfection process
Perfluoro heptanoic Acid (PFHpA)	No	9,12 2014	0.02 (ND-0.03)	ug/L (ppb)	NA	Manmade compound
Perfluorohexane Sulfonic Acid (PFHxS)	No	9,12 2014	0.05 (ND-0.07)	ug/L (ppb)	NA	Manmade compound
Perfluoroctanoic Acid (PFOA)	No	9,12 2014	0.02 (ND-0.03)	ug/L (ppb)	NA	Manmade compound

. Coliform: In months of Feb, Apr, July, Oct and Dec, one positive coliform was detected out of 40 monthly compliance samples collected. Four additional samples were collected for each positive and coliform coliform was not detected in those samples. Groundwater Rule source water testing has been waived by NYSDOH based on contact time.

2. The level presented represents the 90th percentile of the 30 sites tested. All 30 samples were less than the action level.

3. This level represents the highest locational running annual average of all the sites sampled.

4. All detectable unregulated contaminate results are listed and their presence does not indicate a health concern. Unregulated contaminates do not have a MCL and are being monitored to determine future regulations. You may obtain all the monitoring results by calling Diane Covell at (315)-772-0218.

City of Watertown Table of Detected Contaminants						
Contaminant	Viola-tion Yes/No	Sample Date Mon/Year	Level Detected Avg/Max (Range)	Unit of Measure	Regulatory Limit (MCL,TT,AL)	Likely Source of Contamina-tion
Total Coliform[1]	No	7 2014	1 positive sam-ple	NA	MCL=>5% of all samples pos-itive	Naturally present in the environment
Turbidity Distribution[2]	No	8,11 2014	0.31 (0.15-0.31)	NTU	TT=<5NTU	Particles from water mains
Turbidity[2a] Composite Filter Ef-fluent	No	8 2014	0.17 (0.05-0.17)	NTU	TT=95% of samples <0.3 NTU	Particles too fine to filter completely
Fluoride	No	2014	0.73 (0.63-0.79)	mg/L (ppm)	MCL=2.2	Added to prevent tooth decay
Copper[3]	No	7 2013	0.27 (0.024-0.58)	mg/L (ppm)	AL=1.3	Corrosion of household plumbing
Lead[3]	No	7 2013	5 (ND-10)	ug/L (ppb)	AL=15	Corrosion of household plumbing
Nitrate	No	9 2013	0.037	mg/L (ppm)	MCL=10	Natural deposits or fertilizer
Combined Radium-226 and Ra-dium-228	No	7 2014	1.2	pCi/L	5 pCi/L	Erosion of natural deposits
Asbestos	No	7 2014	0 fibers>10 um 1 fibers<10 um	MFL	7 MFL>10 um	Asbestos water pipe
Total Organic Carbon	No	2014	1.8 (1.5-2.0)	mg/L (ppm)	TT	Naturally present in the environment
Total Trihalomethanes[4]	No	2,5,8,11 2014	68.1 (16.3-119.4)	ug/L (ppb)	MCL=80	Byproducts of drinking water chlorination
Haloacetic Acid[4]	No	2,5,8,11 2014	52.8 (22.0-61.3)	ug/L (ppb)	MCL=60	Byproducts of drinking water chlorination
Unregulated Contaminate Monitoring Rule 3 [5]						
Hexavalent Chromium	No	2,5,8,11 2014	0.04 (ND-0.102)	ug/L (ppb)	NA	Naturally occurring
Strontium	No	2,5,8,11 2014	71.49 (45.0-120.4)	ug/L (ppb)	NA	Naturally occurring
Vanadium	No	2,5,8,11 2014	0.44 (ND-0.78)	ug/L (ppb)	NA	Naturally occurring
Androstene	No	2,5,8,11 2014	0.35 (ND-0.64)	ng/L (ppt)	NA	Naturally produced hormone
Testosterone	No	2,5,8,11 2014	0.1 (ND-0.25)	ng/L (ppt)	NA	Naturally produced hormone