Drinking Water Quality Report 2003

Bolton Point-Municipal Water System City of Ithaca Water System Cornell University Water System

Introduction

In the spirit of municipal cooperation, the Bolton Point, City of Ithaca, and Cornell University water systems are pleased to provide this Drinking Water Quality Report describing the quality of your drinking water. These three interconnected water supply systems are the largest in Tompkins County. The purpose of this report is to provide information on the quality of your drinking water and raise awareness of the need to protect our drinking water sources.

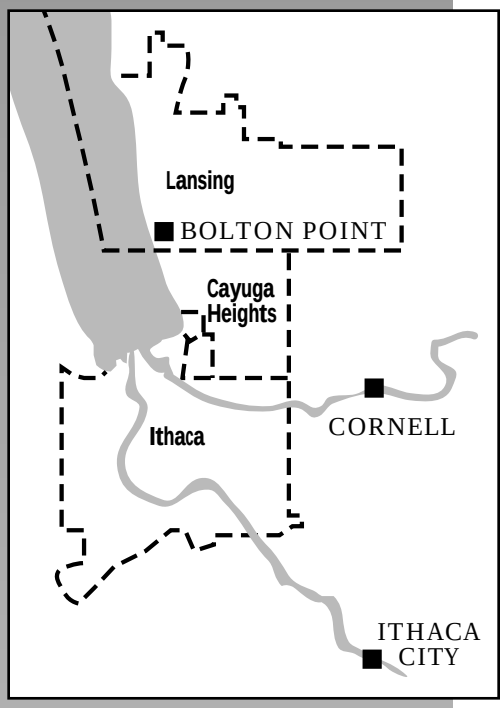
Last year, the three water systems conducted tests for over 120 contaminants. The Bolton Point system detected 10 of those contaminants in its tap water and none were detected at a level higher than the State allows. The City of Ithaca system detected 14 of those contaminants and the Cornell University system detected 11. In both the City and Cornell systems one class of contaminants, haloacetic acids, was detected at a level higher than the State allows.

To lower the levels of haloacetic acids, both the City and Cornell are moving the point of initial chlorination to after the sedimentation process. This will decrease the contact time with chlorine and will introduce the chlorine at a point where the initial concentration of total organic carbon has been reduced. The City will also place baffles in their clearwell to increase retention time after filtration to maintain microbiologically safe water.

The City of Ithaca also violated the State requirement for continuously recording filter effluent turbidities during the period of January through March 2002. However, turbidity was monitored every four hours during this period as previously required. A continuous monitoring system was fully implemented in March, which brought the City into compliance.

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 standards. If you have any questions about this report or your drinking water, please contact the people listed to the right. If you want to learn more about your drinking water, we invite you to attend any of our regularly scheduled public meetings.

Location and Description of Water Sources



Bolton Point Municipal Water System (Bolton Point or BP-MWS)

Cayuga Lake is the source of water for the BP-MWS. The water intake is approximately 3 miles north of Stewart Park, 400 feet out from the eastern shore of Cayuga Lake and 65 feet below the surface of the lake. During 2002, the Bolton Point system did not experience any restriction of its water source. Bolton Point serves residents of the Towns of Dryden, Ithaca and Lansing, and the Villages of Cayuga Heights and Lansing. Bolton Point provides water to the City and Cornell during emergencies and planned maintenance periods. Meetings of the Bolton Point Water Commission are held on the first Thursday after the first Tuesday of each month at 4:00 p.m. at the Village of Lansing Municipal Office, 2405 North Triphammer Road, Ithaca, New York 14850. Questions regarding the Bolton Point information contained in this report can be directed to Ken Butler, Production Manager, at 277-0660. Additional information on the BP-MWS can be found at www.boltonpoint.org.

City of Ithaca Water System (City or CIWS)

Six Mile Creek is the source of water for the CIWS. Water is drawn from a reservoir in the creek and flows by gravity to the water plant. The forested watershed is 46.4 square miles in size. During 2002, the City system did not experience any restriction of its water source. The City system serves residents of the City of Ithaca and supplies water to Bolton Point Town of Ithaca customers in Inlet Valley, on West Hill and along East Shore Drive. The City water treatment plant is located at 202 Water Street, Ithaca, NY 14850. The Board of Public Works Committee of the Whole meets the first and third Wednesday of the month. An additional voting meeting is held the second Wednesday of the month. These meetings begin at 4:30 p.m. Common Council meets the first Wednesday of the month at 7:00 p.m. All meetings are held in council chambers on the third floor of City Hall, 108 East Green Street, Ithaca, NY 14850. Questions regarding the City information contained in this report can be directed to Chuck Baker, Chief Operator, at 273-4680.

Cornell University Water System (Cornell or CUWS)

Fall Creek is the source of water for the CUWS. The water intake is on Forest Home Drive near the Cornell Plantations Arboretum entrance. Fall Creek originates in Lake Como northeast of Ithaca and flows through a 125 square mile watershed. During 2002, the Cornell system did not experience any restriction of its water source. The Cornell system serves the University's campus and supplies water to City customers in the Cornell Heights area and to Bolton Point Town of Ithaca customers on the south side of Fall Creek in the Forest Home area. The Cornell water treatment plant is located at 101 Caldwell Road, Ithaca, NY 14853. Questions regarding the Cornell information contained in this report can be directed to Henry Van Ness, Water Filter Plant Manager, at 255-3381.

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Common Water Quality Definitions

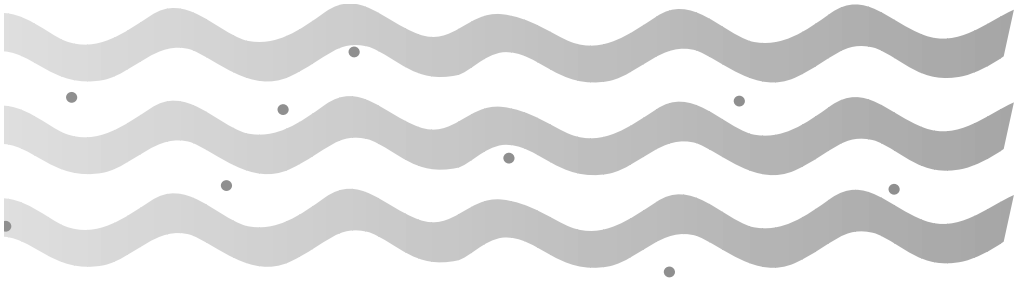
ALKALINITY: Alkalinity is a measure of the capability of water to neutralize acids. Bicarbonates, carbonates, and hydroxides are the most common forms of alkalinity

HARDNESS: Hardness is a measure of the calcium and magnesium content of natural waters. The harder the water, the greater the tendency to precipitate soap and to form mineral deposits. Alkalinity and hardness occur naturally due to the contact of water with minerals in the earth's crust.

pH: pH indicates how acidic or alkaline a water is. A reading of 7 is neutral, 0-6 is acidic and 8-14 is alkaline.

TOTAL ORGANIC CARBON (TOC): TOC is a measure of the organic content of water. A high concentration of TOC in water may lead to high levels of disinfection byproducts.

TURBIDITY: Turbidity is a measure of the cloudiness of water. It is an indication of the effectiveness of water treatment. NYS regulations require that treated water turbidity always be below 1 NTU (nephelometric turbidity unit). For filtered systems, 95% of the composite effluent samples must be below 0.3 NTU.



A Water Treatment Processes

The three water systems use the following conventional treatment process.

PRE-TREATMENT: Chlorine and coagulating agents, such as alum and polymers, are added to the water to destroy microorganisms, remove impurities, and control taste and odor.

MIXING: The water is rapidly mixed to distribute the treatment chemicals evenly.

COAGULATION AND FLOCCULATION: The water flows into large basins where the coagulants react with impurities in the water (coagulation) causing them to form larger, heavier particles called floc (flocculation).

SEDIMENTATION: Flocculated water flows into basins where the floc particles settle to the bottom, thereby removing impurities and chemicals from the water.

FILTRATION: Following the settling process, water flows through layers of anthracite coal, sand, and gravel where further removal of particulate impurities occurs.

POST-TREATMENT: Chlorine is added to inhibit bacterial growth in the distribution system and the pH is adjusted to inhibit the corrosion of metal pipes and fixtures.

B Health Effects and Individuals At-Risk

All 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.

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.

Environmental Protection Agency/Center for Disease Control (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). No trace of cryptosporidium or giardia has been detected in previous testing of the treated water of Bolton Point, the City, or Cornell. Individuals who think they may have cryptosporidiosis or giardiasis should contact their health care provider immediately. For additional information on these illnesses, please contact the Tompkins County Health Department, 401 Harris B. Dates Drive, Ithaca, New York 14850, or by phone at 274-6688.

C Security Concerns

Until recently, security threats to the three water systems have been primarily minor vandalism and property damage. Recent events have changed the security focus to a much less likely, but more serious threat of intentional contamination of the water supply. All three water systems have performed security assessments of their entire systems. Weaknesses in procedures have been corrected, and improvements to increase the security of the infrastructure have been undertaken. Local police are aware of the security needs of the water systems and have increased patrolling of the facilities. The awareness of customers to report suspicious activity throughout the systems is also appreciated.

D General Water Information

Table 1: General Water Data — 2002

Water System Public Water Supply ID#	BP-MWS 5404423	CIWS 0066600	CUWS 5417680
Water source	Cayuga Lake	Six Mile Creek	Fall Creek
Approximate population served	30,000	35,000	27,000
Number of service connections	6,100	5,400	216
Total production in 2002 (MG)	924	1,288	606
Average daily withdrawal (MGD[1])	2.58	3.53	1.66
Average daily delivered (MGD)	2.53	2.93	1.43[2]
Average daily lost (MGD)[3]	0.05	0.60	0.23
Annual charge per 1000 gal.	$2.95	$3.29	$2.96

[1] MGD = million gallons per day [2] Flow to Cornell Heights area is estimated

[3] The average daily lost includes water used to flush mains, fight fires and leakage.

Table 2: General Water Quality Data — 2002

Analyte	Units	BP-MWS Annual Average	CIWS Annual Average	CUWS Annual Average
pH	pH	8.3	7.9	7.3
Turbidity (EP)	NTU	0.03	0.05	0.06
Total hardness	mg/l	138	112	134
Total alkalinity	mg/l	102	93	100
Total dissolved solids	mg/l	NR	203	NR
Iron (soluble)	mg/l	NR	0.01	NR
Chlorine residual (EP)	mg/l	1.4	1.2	1.4
Chlorine residual (POU)	mg/l	0.70	0.73	0.43
Turbidity (POU)	NTU	0.09	0.22	0.17
Total organic carbon (EP)	mg/l	2.2	2.3	2.5

NR = Not Required; EP = Entry Point; POU = Point of Use

Definitions of NTU and mg/l found with Tables 3-5

E Water Quality Data

INTRODUCTION

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 humans. 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 EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Health Department and Federal Drug Administration regulations also establish limits for contaminants in bottled water, which must provide the same level of protection for public health.

In accordance with State regulations, the three water systems routinely monitor your drinking water for numerous contaminants. These include: coliform bacteria, turbidity, inorganic compounds, nitrate, lead, copper, volatile organic compounds, disinfection byproducts, synthetic organic contaminants including herbicides and pesticides, sodium, principal organic contaminants and vinyl chloride, and radiological contaminants.

Tables 3-5 show the analytical test results for contaminants that were detected in your water. The test results are compared to the applicable State guideline or maximum contaminate level (MCL). Table 6 shows the contaminants that were not detected in your water.

The State allows water systems to test for some contaminants less than once per year since the concentrations of these contaminants do not change frequently. Therefore some of the data, though representative, are more than one year old. Also, the Bolton Point Municipal Water System performed additional water quality analyses in 2002 as part of a trial of a new disinfectant. The results of these analyses are available as a supplement to this report by contacting Ken Butler at 277-0660.

LEAD

While the Bolton Point Municipal Water System had no violations of State standards, it should be noted that the action level for lead was exceeded in two of the thirty samples collected. 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. You can also flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791).

SODIUM

People who are on severely restricted sodium diets should not drink water containing more than 20 mg/l of sodium. People who are on moderately restricted sodium diets should not drink water containing more than 270 mg/l of sodium. Bolton Point customers on severely restricted sodium diets may wish to consult their health care providers since the level of sodium in Bolton Point water was 27.8 mg/l in 2002.

HALOACETIC ACIDS

Tables 4 and 5 show that the City of Ithaca and Cornell University systems exceeded the MCL for haloacetic acids. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

The violations were detected in December 2002. Since haloacetic acids are regulated in terms of a running annual average, it may take two to three quarters to bring the running annual average below the MCL. The results of the first quarter of 2003 monitoring performed by both systems were below the MCL.

The City and Cornell are working to lower the levels of haloacetic acids by moving initial chlorination to after the sedimentation process. This will decrease the contact time with chlorine and introduce the chlorine at a point where the initial concentration of total organic carbon has been reduced. In addition, the City plans to baffle their clearwell to increase the retention time after filtration to maintain microbiologically safe water.

F Tables of Detected Contaminants

Table 3: Detected Contaminants: Bolton Point Municipal Water System

Contaminant	Units	Violation Yes/No	Date of Sample	Maximum Level Detected (Range)	Regulatory Limit	MCLG	Likely Source of Contamination
Microbiological contaminants							
Turbidity	NTU	No	8/6/02	0.05	TT=<1 NTU	N/A	Soil runoff.
Turbidity samples	%	No	Daily	100%	TT=95% of samples<.3NTU	N/A	Soil runoff.
Disinfection by-products							
Total THMs	ug/l	No	2002	57 (37-114)	MCL = 80	N/A	By-product of drinking water chlorination.
Total HAA5	ug/l	No	2002	20 (1-34)	MCL = 60	N/A	By-product of drinking water chlorination.
Chlorine residual	mg/l	No	2002	1.60 (0-1.60)	MRDL=4	N/A	By-product of drinking water chlorination.
Inorganics							
Chloride	mg/l	No	2000	45	MCL=250	N/A	Naturally occurring or road salt.
Copper	mg/l	No	2002	0 .078 (ND-0.954)	AL=1.3	1.3	Household plumbing corrosion; erosion of natural deposits; wood preservatives.
Fluoride	mg/l	No	6/12/02	0.123	MCL=2.2	N/A	Erosion of natural deposits; fertilizers.
Lead	ug/l	No	2002	8.8 (ND-16.9)	AL=15	0	Corrosion of household plumbing; erosion of natural deposits.
Nitrate	mg/l	No	12/9/02	1.4	MCL=10	10	Fertilizer runoff; septic tank leaching; sewage; erosion of natural deposits.
Oxamyl Vydate	ug/l	No	12/9/02	1.8	MCL=50	N/A	Runoff/leaching from insecticide used on apples. potatoes, and tomatoes.
Sodium	mg/l	No	12/9/02	27.8	See E. Water Quality Data	N/A	Naturally occurring; road salt; animal waste; water softeners; water treatment chemicals.
Sulfate	mg/l	No	12/13/01	29.1	MCL=250	N/A	Naturally occurring.
Radioactive							
Gross alpha	pCi/l	No	12/13/01	<2	MCL=15	0	Erosion of natural deposits.
Gross beta	pCi/l	No	12/13/01	<2	MCL=50	0	Erosion of natural deposits.

Notes and Definitions for Tables 3-5:

AL: (action level) - the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

HAA5: (haloacetic acids) - mono-, di- and trichloroacetic acids, mono- and di-bromoacetic acids. These compounds are byproducts of the disinfection of water. The maximum level detected of HAA5 is the highest of the four quarterly running annual averages calculated during the year. The range refers to single samples at individual sampling points during the year.

Lead and Copper: the maximum level values reported for lead and copper represent the 90th percentile of the samples taken. This means that 90 percent of the individual samples tested for lead and copper were at or below the action level set by the State. Each of the three water systems collected 30 samples for lead and copper in 2002. A water quality violation would have occurred if four or more samples were above the action level.

Level Detected (Range): the range of lowest to highest measurements detected for contaminants measured during the year.

Maximum Level Detected: The highest measurement detected for the contaminant during the year. For total THMs and HAA5, the maximum is the highest of the four quarterly running annual averages during the year.

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.

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.

mg/l: (milligrams per liter) - corresponds to one part in one million parts of liquid (parts per million, ppm).

MRDL: (maximum residual disinfection 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 contamination.

N/A: (not applicable)

ND: (not detected) - indicates that the constituent is not present at a concentration higher than the detection limit of the laboratory analysis method used.

NTU: (nephelometric turbidity unit) - a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable by the average person.

pCi/l: (pico curies per liter) - a measure of radioactivity in water.

THM: (trihalomethanes) - bromodichloromethane, bromoform, chloroform, dibromochloromethane. These compounds result from the disinfection of water. The maximum level detected of THMs is the highest of the four quarterly running annual averages calculated during the year. The range refers to single samples at individual sampling points during the year.

TT: (treatment technique) - a required process intended to reduce the level of a contaminant in drinking water.

ug/l: (micrograms per liter) - corresponds to one part in one billion parts of liquid (parts per billion, ppb).

Table 4: Detected Contaminants: City Of Ithaca Water System

Contaminant	Units	Violation Yes/No	Date of Sample	Maximum Level Detected (Range)	Regulatory Limit	MCLG	Likely Source of Contamination
Microbiological contaminants							
Turbidity	NTU	No	9/16/02	0.1	TT=<1 NTU	N/A	Soil runoff.
Turbidity samples	%	No	Daily	100%	TT=95% of samples<.3NTU	N/A	Soil runoff.
Disinfection by-products							
Total THMs	ug/l	No	2002	72 (37-98)	MCL = 80	N/A	By-product of drinking water chlorination.
Total HAA5	**ug/l**	**Yes**	**2002**	**77** (35-120)	**MCL = 60**	**N/A**	By-product of drinking water chlorination.
Chlorine residual	mg/l	No	2002	1.7 (0.6-1.7)	MRDL=4	N/A	By-product of drinking water chlorination.
Inorganics							
Barium	mg/l	No	3/6/02	0.025	MCL=2	2	Drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chloride	mg/l	No	3/6/02	28	MCL=250	N/A	Naturally occurring or road salt.
Copper	mg/l	No	2002	0.97 (0.08-1.2)	AL=1.3	1.3	Corrosion of household plumbing; erosion of natural deposits; wood preservatives.
Flouride	mg/l	No	3/6/02	0.25	MCL=2.2	N/A	Erosion of natural deposits: discharge from fertilizer.
Iron	ug/l	No	7/12/01	136	MCL=300	N/A	Naturally occurring.
Lead	ug/l	No	2002	10 (1.0-15)	AL=15	0	Household plumbing corrosion; erosion of natural deposits.
Manganese	ug/l	No	7/12/01	8.7	MCL=300	N/A	Naturally occurring; landfill contamination.
Nickel	mg/l	No	3/6/02	0.0013	N/A	N/A	Discharge from steel and pulp mills; erosion of natural deposits.
Nitrate	mg/l	No	3/6/02	0.42	MCL=10	10	Fertilizer runoff; septic tank leaching; sewage; erosion of natural deposits.
Sodium	mg/l	No	2002	16 (14-16)	See E. Water Quality Data	N/A	Naturally occurring; road salt; animal waste; water softeners; water treatment chemicals.
Sulfate	mg/l	No	7/12/01	8.8	MCL=250	N/A	Naturally occurring.
Zinc	mg/l	No	3/6/02	0.0023	MCL=5	N/A	Naturally occurring; mining waste.
Radioactive							
Gross alpha	pCi/l	No	6/19/02	0.61	MCL=15	0	Erosion of natural deposits.

Table 5: Detected Contaminants: Cornell University Water System

Contaminant	Units	Violation Yes/No	Date of Sample	Maximum Level Detected (Range)	Regulatory Limit	MCLG	Likely Source of Contamination
Microbiological contaminants							
Turbidity	NTU	No	6/7/02	0.39	TT=<1 NTU	N/A	Soil runoff.
Turbidity samples	%	No	Daily	100%	TT=95% of samples<.3NTU	N/A	Soil runoff.
Disinfection by-products							
Total THMs	ug/l	No	2002	77 (29-107)	MCL = 80	N/A	By-product of drinking water chlorination.
Total HAA5	**ug/l**	**Yes**	**2002**	**66** (16-105)	**MCL = 60**	**N/A**	By-product of drinking water chlorination.
Chlorine residual	mg/l	No	2002	1.1 (0.1-1.1)	MRDL=4	N/A	By-product of drinking water chlorination.
Inorganics							
Barium	mg/l	No	10/16/02	0.029	MCL=2	2	Drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chloride	mg/l	No	9/22/00	24	MCL=250	N/A	Naturally occurring or road salt.
Chromium	mg/l	No	1/24/01	0.0011	MCL=.1	.1	Discharge from steel and pulp mills, erosion of natural deposits.
Copper	mg/l	No	2002	0.18 (.006-1.2)	AL=1.3	1.3	Household plumbing corrosion; erosion of natural deposits; wood preservatives.
Cyanide, total	mg/l	No	1/24/01	0.01	MCL=.2	.2	Discharge from steel mills, pulp mills, plastic, and fertilizer factories.
Flouride	mg/l	No	10/16/02	0.40	MCL=2.2	N/A	Erosion of natural deposits; discharge from fertilizer.
Iron	ug/l	No	1/29/01	100	MCL=300	N/A	Naturally occuring.
Lead	ug/l	No	2002	1.3 (ND-7.3)	AL=15	0	Corrosion of household plumbing; erosion of natural deposits.
Manganese	ug/l	No	1/29/01	12	MCL=300	N/A	Naturally occuring; lamdfill contamination.
Nickel	mg/l	No	10/16/02	0.0021	MCL=.1	.1	Discharge from steel and pulp mills; erosion of natural deposits.
Nitrate	mg/l	No	10/16/02	0.5	MCL=10	10	Fertilizer runoff; septic tank leaching; sewage; erosion of natural deposits.
Sodium	mg/l	No	1/29/01	15	See E. Water Quality Data	N/A	Naturally occurring; road salt; animal waste; water softeners; water treatment chemicals.
Sulfate	mg/l	No	9/22/00	16	MCL=250	N/A	Naturally occurring.
Zinc	mg/l	No	1/29/01	0.0031	MCL=5	N/A	Naturally occurring; mining waste.
Radioactive							
Gross alpha	pCi/l	No	2/2/02	0.174	MCL=15	0	Erosion of natural deposits.
Gross beta	pCi/l	No	2/2/02	0.943	MCL=50	0	Erosion of natural deposits.

G Table 6: Non-Detected Contaminants

CONTAMINANT	BP-MWS	CIWS	CUWS
Microbiological			
Total Coliform	X	X	X
E. Coli	X	X	X
Inorganics			
Antimony	X	X	X
Arsenic	X	X	X
Asbestos	NR	X	NR
Barium	X	D	D
Beryillium	X	X	X
Cadmium	X	X	X
Chromium	X	X	X
Cyanide	X	X	X
Color	NR	X	NR
Odor	NR	X	NR
Mercury	X	X	X
Nickel	X	D	D
Nitrite	NR	X	X
Selenium	X	X	X
Silver	NR	X	NR
Thallium	X	X	X
Synthetic Organics & Pesticides; Groups 1 & 2			
Alachlor	X	X	X
Aldicarb	X	X	X
Aldicarb sulfoxide	X	X	X
Aldicarb sulfone	X	X	X
Atrazine	X	X	X
Carbofuran	X	X	X
Chlordane	X	X	X
Dibromochloropropane	X	X	X
2,4-D	X	X	X
Endrin	X	X	X
Ethylene dibromide	NR	X	X
gamma-BHC	NR	NR	X
gamma-Chlordane	NR	NR	X
Heptachlor	X	X	X
Heptachlor epoxide	X	X	X
Lindane	X	X	X
Methoxychlor	X	X	X
PCB - aroclor 1016	X	X	X
PCB - aroclor 1221	X	X	X
PCB - aroclor 1232	X	X	X
PCB - aroclor 1242	X	X	X
PCB - aroclor 1248	X	X	X
PCB - aroclor 1254	X	X	X
PCB - aroclor 1260	X	X	X
Pentachlorophenol	X	X	X
Toxaphene	X	X	X
2,4,5-TP (silvex)	X	X	X
Aldrin	X	X	X
Benzo(a)pyrene	X	X	X
Butachlor	X	X	X
Carbaryl	X	X	X
Dalapon	X	X	X
Di(2-ethylhexyl)adipate	X	X	X
Di(2-ethylhexyl)phthalate	X	X	X
Dicamba	X	X	X
Dieldrin	X	X	X
Dinoseb	X	X	X
Glyphosphate	NR	X	NR
Hexachlorobenzene	X	X	X
Hexachlorooxyclopentadiene	X	X	X
3-Hydroxycarbofuran	X	X	X
Methomyl	X	X	X
Metolachlor	X	X	X
Metribuzin	X	X	X
Oxamyl vydate	D	X	X
Picloram	X	X	X
Propachlor	X	X	X
Simazine	X	X	X
Principal Organics			
Benzene	X	X	X
Bromobenzene	X	X	X
Bromochloromethane	X	X	X
Bromomethane	X	X	X
N-Butylbenzene	X	X	X
sec-Butylbenzene	X	X	X
tert-Butylbenzene	X	X	X
Carbon tetrachloride	X	X	X
Chlorobenzene	X	X	X
Chloroethane	X	X	X
Chloromethane	X	X	X
2-Chlorotoluene	X	X	X
4-Chlorotoluene	X	X	X
1,2-Dibromo-3-chloropropane	X	NR	NR
1,2-Dibromoethane	X	NR	NR
Dibromomethane	X	X	X
1,2-Dichlorobenzene	X	X	X
1,3-Dichlorobenzene	X	X	X
1,4-Dichlorobenzene	X	X	X
Dichlorodifluoromethane	X	X	X
1,1-Dichloroethane	X	X	X
1,2-Dichloroethane	X	X	X
1,1-Dichloroethene	X	X	X
cis-1,2-Dichloroethene	X	X	X
trans-1,2-Dichloroethene	X	X	X
1,2-Dichloropropane	X	X	X
1,3-Dichloropropane	X	X	X
2,2-Dichloropropane	X	X	X
1,1-Dichloropropene	X	X	X
cis-1,3-Dichloropropene	X	X	X
trans-1,3-Dichloropropene	X	X	X
Ethylbenzene	X	X	X
Hexachlorobutadiene	X	X	X
Isopropylbenzene	X	X	X
p-Isopropyltoluene	X	X	X
Methylene chloride	X	X	X
Naphthalene	X	NR	NR
n-Propylbenzene	X	X	X
Styrene	X	X	X
1,1,1,2-Tetrachloroethane	X	X	X
1,1,2,2-Tetrachloroethane	X	X	X
Tetrachloroethene	X	X	X
Toluene	X	X	X
1,2,3-Trichlorobenzene	X	X	X
1,2,4-Trichlorobenzene	X	X	X
1,1,1-Trichloroethane	X	X	X
1,1,2-Trichloroethane	X	X	X
Trichloroethene	X	X	X
Trichlorofluoromethane	X	X	X
1,2,3-Trichloropropane	X	X	X
1,2,4-Trimethylbenzene	X	X	X
1,3,5-Trimethylbenzene	X	X	X
m-Xylene	X	X	X
o-Xylene	X	X	X
p-Xylene	X	X	X
Vinyl chloride	X	X	X
MBTE	X	X	X

X = Monitored, but not detected.
D = Refer to detected list for this water system.
NR = Not required and not monitored in the past five years.

H Major Modifications Completed in 2002

Bolton Point (BP-MWS):

No major changes were made in the supply, treatment and transmission system. The five municipalities served also made no major changes to their distribution systems. However, there were ja number of smaller improvements during the year. For example:

- A 500 kw generator was installed at the raw water pump station, and a 400 kw generator was installed at the treatment plant to provide emergency backup power.
- New soft start controllers were installed on one 300 hp pump motor at the water treatment plant and one 250 hp pump motor at the raw water pump station.
- A new pump control valve was installed on one 300 hp pump at the water treatment plant.
- Water main extensions, replacements and improvements occurred in each of the five municipalities served.

City (CIWS):

- The East Ithaca process water line within the plant was replaced, and metering and backflow devices were added to this line.
- One filter was refilled with new media.
- A new premium efficiency motor was installed on one pump serving the Mitchell Street zone.
- Approximately 380 feet of 16 inch main were installed down Cayuga Street under the Fall Creek Bridge.
- Approximately 300 feet of 8 inch water main were on Woodcrest Avenue.

Cornell (CUWS):

- Approximately 200 feet of new water mains were installed in the campus distribution system.
- Some valves were replaced in the filtration / treatment plant.
- A streaming current detector was installed to optimize coagulation and flocculation.

I Future Capital Imrovements (Planned for 2003)

Bolton Point (BP-MWS)

- Continue work on a computer-based control system for the treatment plant and distribution system.
- Upgrade Bolton Road (service road to the raw water pumping station) to Village of Lansing specifications.
- Replace two filter effluent control valves. (One completed in January 2003)
- Replace the cast iron sludge scraper chain and sprockets in the south sedimentation basin with noncorroding nylon and plastic materials.
- Replace the motor control center for one Oakcrest booster station pump. (Completed – February 2003)
- Complete office and work space additions at the treatment plant.
- Link the South Hill and the West Hill areas of the Town of Ithaca by means of a 12-inch main, storage tank, and pump station.
- Complete the engineering and site work to locate a 1.5 million gallon tank on East Hill in the Town of Ithaca.

City (CIWS):

- Continue improvements to filter valves and telemetry.
- Move point of initial chlorination to just prior to filtration and install clearwell baffles to lessen the production of disinfection byproducts.
- Upgrade the electrical service to the treatment plant.
- Complete engineering study on water supply and new treatment facility.

Cornell (CUWS)

- Continue the installation of new water mains in the campus distribution system.
- Upgrade the filtration plant controls.
- Move point of initial chlorination to just prior to filtration to lessen the production of disinfection byproducts.

J Water Conversation Measures

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. Conserving water reduces the cost of energy required to pump water and the need to construct costly new infrastructure to provide that excess water. It also lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions that would be required to ensure essential fire fighting needs are met.

It is not hard to conserve water. The following are some ideas that can be directly applied to your home.

- A steady faucet drip wastes 20 to 30 gallons per day or 10,000 gallons per year.
- Never put water down the drain when there may be another use for it, such as watering a plant or garden, or cleaning.
- When washing a car, use soap and water from a bucket. Use a hose with a shut-off nozzle for rinsing.
- Put 10 drops of food coloring in your toilet tank. If the color shows up in the bowl, you have a leak to repair. It is common to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it, and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Turn off all taps and water using appliances, then record the meter reading and check the meter after 15 minutes. If it moved, you have a leak.
- Keep a pitcher of water in the refrigerator to avoid running water until it is cold.
- A layer of mulch in the flowerbeds and garden is not only aesthetically pleasing, but will help retain moisture.
- Water your lawn after 6:00 P.M.; this helps prevent water loss due to evaporation.

Saving water can lower your power bills by reducing your demand for hot or pumped water. These few simple steps will preserve the resource for future generations and also save up to 30% on your bill.

Water Trivia

- The average American household uses 107,000 gallons per year.
- A person must consume two and a half quarts of water from all sources (i.e. water and food) per day to maintain health.
- Once groundwater is polluted, it may remain that way for several thousand years.
- The bathroom accounts for 75 percent of the water used inside the home.
- 2,072 gallons of water are used to make four new tires.
- A one-acre cornfield gives off 4,000 gallons of water per day in transpiration.
- Community public water supply systems in the US process 39 billion gallons of water a day.
- The use of six gallons of gasoline per week requires 6,000 gallons of water for production.
- When it rains one inch, you get 27,000 gallons of water per acre.

High Quality Drinking Water for Tompkins County Residents

Current Resident