



Cornell University

2023 Drinking Water Quality Report (for Calendar Year 2022)

Cornell University is providing this Drinking Water Quality Report to our customers because we want you to be fully informed about your water quality and the need to protect its source. This overview of last calendar year’s water quality includes details about where your water comes from, what it contains, and how it compares to New York State standards. The staff of Cornell’s Water System are dedicated to providing the highest quality water and to serve the community’s needs.

If you have any questions about this report or your drinking water, please contact:

Andrew Murphy, Water Manager
607-255-1408 or water@cornell.edu.

Cornell University Source Water

Fall Creek is the source of water for the Cornell University Water System (CUWS). The water intake is on Forest Home Drive near the Cornell Botanic Gardens Arboretum entrance. Fall Creek originates in Lake Como northeast of Ithaca and flows through a 126 square mile watershed, indicated by the dark green area on the figure above and to the right. Flow in Fall Creek for most of 2022 was more than adequate with an average of 173 cubic feet per second (cfs). We experienced a minimum creek flow of 9.9 cfs in August and a maximum of 2390 cfs in March. Cornell withdraws a maximum of 5.5 cfs to put it in perspective! Our 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 Water Filtration Plant is located at 310 Caldwell Road, Ithaca, NY 14850.

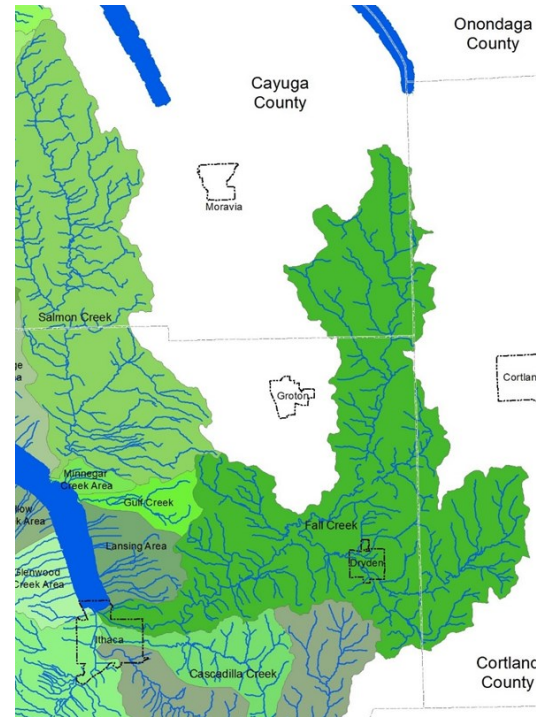


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A. Water Treatment Process

Pre-Treatment: Screens are used to prevent leaves and debris from entering the treatment process. Coagulants, such as alum or poly-aluminum chloride are added to remove impurities.

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

Coagulation and Flocculation: The water flows into chambers 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 large 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 a corrosion inhibitor is added to prevent the potential leaching of lead and copper into the water from plumbing systems.

“Eighty percent of the earth’s surface is covered by water, but only one percent of the earth’s water is suitable for drinking.”

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 the 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 those with cancer undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly, and some infants can be particularly at risk from infections. Please seek advice from your health care provider about your drinking water if you are, or are a caregiver for, an individual in one of those categories.

Environmental Protection Agency/Center for Disease Control (EPA/CDC) provides guidelines on appropriate means to lessen the risk of infection by cryptosporidium, giardia, and other microbial pathogens. These guidelines are available from the Safe Drinking Water Hotline (800-426-4791). Cornell’s water system has not detected these pathogens in previous testing of the treated water. For additional information please contact the Tompkins County Health Department, 55 Brown Road, Ithaca, New York, 14850 or by phone at 607-274-6688.

C. Water Quality Data

INTRODUCTION: The sources of drinking water (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. It also 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. 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 protection for public health.

In accordance with State regulations, the Cornell Water System routinely monitors your drinking water for numerous contaminants. Table 3a, page 5, shows the analytical test results for contaminants that were detected. These results are compared to the applicable state guideline or maximum contaminant level (MCL). Tables 3b and 3c, pages 6 and 7, show the unregulated contaminants that were detected. Table 4a, page 8, shows the contaminants that were not detected in your water.

C. Water Quality Data (cont.)

TOTAL COLIFORMS: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Total coliforms are tested on a weekly basis.

LEAD AND COPPER: The Cornell water system was not required to sample for lead and copper in 2022. Sampling was done in 2020 with no violations of State standards. We will sample again in 2023. The State allows testing less frequently than once per year for certain contaminants such as lead and copper since the concentrations of these contaminants do not change frequently. We will comply with the Lead and Copper Rule Revisions (LCRR) when implemented in 2024.

SODIUM: People who are on severely restricted sodium diets should not drink water containing more than 20 mg/l of sodium. **Since the 2022 level of sodium in Cornell water was 26 mg/l,** customers on severely restricted sodium diets might wish to consult their health care providers. People who are on moderately restricted sodium diets should not drink water containing more than 270 mg/l of sodium. The sodium levels of the water from all three local public water systems are well below this level.

EXCHANGES: During the course of the year, for maintenance, or for emergency help, potable water is exchanged among the three Ithaca area water systems. If you wish to know if this occurred, the time periods, and the water volumes, please call the Cornell Water System.

UCMR: Required testing by the EPA for the Unregulated Contaminant Monitoring Rule #4 (UCMR4) began in the summer of 2018 and continued into 2020. Information about the rule and the contaminants can be found on the EPA website. Required testing for UCMR5 will be conducted in 2024.

D. General Water Information

Table 1: General Water Data - 2022

| Water System Public Water Supply ID | Cornell University 5417680 |
|--|-------------------------------|
| Water source | Fall Creek |
| Approx Population Served | 33,000 |
| Number of Service Connections | 279 |
| Total Production in 2022 (MG) | 360 |
| Average Daily Withdrawal (MGD) | 2.093 |
| Average Daily Delivered (MGD) | 0.857 |
| Average Daily Lost (MGD) | 0.094 |
| Average Annual Charge per 1000 gallons | \$12.72 |

MG=Million Gallons, MGD=Million Gallons per Day

Table 2: General Water Quality Data - 2022

| Water System Public Water Supply ID | Units | Cornell University 5417680 |
|--|-------|-------------------------------|
| Turbidity (EP) | NTU | 0.030 |
| Total Hardness | mg/L | 140 |
| Total Alkalinity | mg/L | 138 |
| Total Dissolved Solids | mg/L | NR |
| Iron (Soluble) | mg/L | NR |
| Chlorine Residual (EP) | mg/L | 1.16 |
| Chlorine Residual (POU) | mg/L | 0.31 |
| Turbidity (POU) | NTU | 0.122 |
| Total Organic Carbon (EP) | mg/L | 2.0 |
| Dissolved Organic Carbon (EP) | mg/L | 1.8 |

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

Definitions of NTU and mg/L found in Section E.

COMMON WATER QUALITY DEFINITIONS

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

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

TOTAL ORGANIC CARBON (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 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.

Interesting Water Facts

There are over 58,900 community water systems in the United States processing more than 34 billion gallons per day.

The average residence in the United States uses 107,000 gallons of water a year.

It takes 62,600 gallons of water to produce one ton of steel.

It takes 101 gallons of water to make one pound of wool or cotton.

Water acts as a natural buffer against extreme or rapid changes in the earth's temperature.

It would take 219 million gallons of water to cover one square mile with one foot of water.

One gallon of water weighs 8.34 pounds.

When the weather is very cold outside, let the cold water drip from the faucet served by exposed pipes. Running water through the pipe - even at a trickle - helps prevent pipes from freezing.

Water is the second most common molecule in the universe. The most common is hydrogen gas, H₂.

There is ice on the poles of the moon, and on the poles of Mars and Mercury.

E. Detected Contaminants

Notes and Definitions for Tables 3-4:

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

Lead and Copper: The maximum level values reported for lead and copper represent the 90th percentile of the samples taken. Testing for these metals is only required every three years.

HAA5 (haloacetic acids): These are a group of chemicals that are formed when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The regulated haloacetic acids, known as HAA5, are monochloroacetic, dichloroacetic, trichloroacetic, monobromoacetic, and dibromoacetic acids. The maximum level detected of HAA5 is the highest of the four quarterly run-ning annual averages calculated during the year and is the basis of the MCL for these compounds.

Maximum Level Detected: The highest measurement detected for the contaminant during the year. For total THMs and HAA5 the maximum level detected 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 to control 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): Laboratory analysis indicates that the constituent is not present.

NTU (nephelometric turbidity unit): A turbidity of approximately 5 NTU is barely noticeable by the average person.

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

Range: The range of lowest to highest measurements detected for contaminants measured during the year.

THM (trihalomethane): These are a group of chemicals that are formed when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The regulated trihalomethanes are bromodichloromethane, bromoform, chloroform, and dibromochloromethane. These compounds result from the disinfection of water with chlorine. The maximum level detected of THMs is the highest of the four quarterly running annual averages calculated during the year and is the basis of the MCL for these compounds.

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

µg/L (micrograms per liter): Corresponds to one part in one billion parts of liquid (parts per billion, ppb).

PFOA/PFOS/1,4-Dioxane: Beginning in the Fall of 2020, NYS required sampling and analysis for Perfluorooctanoic Acid, Perfluorooctane Sulfonate and 1,4-Dioxane. These are released into the environment from widespread use in commercial and industrial applications. None were detected in 2021.

E. Detected Contaminants (cont.)

| Table 3a. Contaminant | Units | Violation Y/N | Date of Sample | Maximum Level Detected (Range) | Regulatory Limit | MCLG | Likely Source of Contamination |
|--|-------------|---------------|----------------|--|---------------------------------|------|---|
| Microbiological contaminants | | | | | | | |
| Turbidity | NTU | No | 2022 | 0.064 | TT=<1 NTU | N/A | Soil runoff. |
| Turbidity samples | % below MCL | No | daily | 100% <0.3NTU | TT=95% of samples <0.3NTU | N/A | Soil runoff. |
| Disinfection By-Products | | | | | | | |
| Total THMs Site 1 Site 2 Site 3 Site 4 | µg/l | No | 2022 | 79.6 (19.3-154.1) 75.6 (25.7-145.1) 76.3 (22.1-144.2) 76.6 (21.8-144.2) | MCL = 80 Running Annual Average | N/A | By-product of drinking water chlorination. |
| Total HAA5 Site 1 Site 2 Site 3 Site 4 | µg/l | No | 2022 | 14.5 (8.4-23.1) 11.2 (8.1-19.3) 15.8 (12.3-18.2) 18.7 (14.3-24.6) | MCL = 60 Running Annual Average | N/A | By-product of drinking water chlorination. |
| Chlorine Residual | mg/l | No | 2022 | 1.1 (0.5-1.8) | MRDL=4 | N/A | Due to drinking water chlorination. |
| Inorganics | | | | | | | |
| Barium | mg/l | No | 11/15/22 | 0.024 | MCL=2 | 2 | Drilling wastes; discharge from metal refineries; erosion of natural deposits. |
| Copper | mg/l | No | 2020 | 0.33 (0.006-0.80) | AL=1.3 | 1.3 | Household plumbing corrosion; erosion of natural deposits; wood preservatives. |
| Lead | µg/l | No | 2020 | 2.7 (ND-18.0) | AL=15.0 | 0 | Household plumbing corrosion; erosion of natural deposits. |
| Nickel | mg/l | No | 11/15/22 | 0.0016 | N/A | N/A | Discharge from steel and pulp mills, erosion of natural deposits. |
| Nitrate | mg/l | No | 11/15/22 | 0.93 | MCL=10 | 10 | Fertilizer runoff; septic tank leaching; sewage; erosion of natural deposits. |
| Sodium | mg/l | No | 11/15/22 | 26 | See Water Quality, Section C | N/A | Naturally occurring; road salt; animal waste; water softeners; water treatment chemicals. |
| Radioactive | | | | | | | |
| Radium-228 | pCi/l | No | 10/31/17 | .907 | MCL=5 | 0 | Erosion of natural deposits. |

E. Detected Contaminants (cont.)

Table 3b.
Detected Unregulated Contaminants (from 2013 UCMR3 list on Page 8)

| Contaminant | Units | Violation Y/N | Date of Sample | Maximum Level Detected (Range) | Regulatory Limit | MCLG | Likely Source of Contamination |
|---------------------|-------|---------------|----------------|--------------------------------|------------------|------|---|
| Chlorate | µg/L | No | 2013 | 277 avg | Unregulated | N/A | Chlorate ion is a known byproduct of the drinking water disinfection process, forming when sodium hypochlorite or chlorine dioxide are used in the disinfection process. |
| Hexavalent Chromium | µg/L | No | 2013 | 0.017 avg | Unregulated | N/A | Hexavalent chromium can enter waterways through the erosion of natural deposits or from industrial discharges. |
| Chromium, Total | µg/l | No | 2013 | 0.099 avg | Unregulated | N/A | Chromium is a metallic element found in rocks, soils, plants, and animals. It is used in steel making, metal plating, leather tanning, corrosion inhibitors, paints, dyes, and wood Preservatives. |
| Strontium, Total | µg/L | No | 2013 | 74.4 | Unregulated | N/A | Strontium occurs nearly everywhere in small amounts. Air, dust, soil, foods and drinking water all contain traces of strontium. Ingestion of small amounts of strontium is not harmful. However, high levels of strontium can occur in water drawn from bedrock aquifers that are rich in strontium minerals. |

E. Detected Contaminants (cont.)

Table 3c.
Detected Unregulated Contaminants , UCMR4

| Contaminant | Units | Violation Y/N | Date of Sample | Maximum Level Detected (Range) | Regulatory Limit | MCLG | Likely Source of Contamination |
|---------------------------------|-------|---------------|----------------|--------------------------------|--------------------|------|---|
| Total Haloacetic Acids (HAA5) | µg/L | No | 2019 | 23.7 avg | Unregulated | N/A | By-product of the drinking water disinfection process |
| Total Haloacetic Acids (HAA6Br) | µg/L | No | 2019 | 3.76 avg | Unregulated | N/A | By-product of the drinking water disinfection process |
| Total Haloacetic Acids (HAA9) | µg/l | No | 2019 | 27.5 avg | Unregulated | N/A | By-product of the drinking water disinfection process |
| Dichloroacetic Acid [2C] | µg/L | No | 2019 | 9.16 avg | Unregulated | N/A | By-product of the drinking water disinfection process |
| Trichloroacetic Acid | µg/L | No | 2019 | 14.6 avg | Unregulated | N/A | By-product of the drinking water disinfection process |
| Bromochloroacetic Acid [2C] | µg/L | No | 2019 | 1.87 avg | Unregulated | N/A | By-product of the drinking water disinfection process |
| Bromodichloroacetic Acid | µg/L | No | 2019 | 1.81 | Unregulated | N/A | By-product of the drinking water disinfection process |
| Chlorodibromoacetic Acid | µg/L | No | 2019 | 0.31 | Unregulated | N/A | By-product of the drinking water disinfection process |
| Manganese | µg/L | No | 2019 | 9.25 | Secondary Standard | 50 | Runoff of natural sediment |

UCMR4 parameters not detected: Monochloroacetic Acid, Monobromoacetic Acid, Dibromoacetic Acid, Tribromoacetic Acid, Germanium, BHA, o-Toluidine, Quinoline, 1-Butanol, 2-Methoxyethanol, 2-Propen-1-ol, alpha-BHC (alpha-Hexachlorocyclohexane), Chlorpyrifos, Dimethipin, Ethoprop, Oxyfluorfen, Profenofos, Tebuconazole, Permethrin (total), Tribufos

As part of the **UCMR4**, testing was also performed for Cyanotoxins in 2018, but none were detected.

F. Non-Detected Contaminants

Table 4a.

| CONTAMINANT | |
|--|----|
| Microbiological: 2022 | |
| Total Coliform | X |
| E. Coli | X |
| Inorganics: 2022 | |
| Antimony | X |
| Arsenic | X |
| Barium | X |
| Beryllium | X |
| Cadmium | X |
| Chromium | X |
| Cyanide | X |
| Fluoride | X |
| Mercury | X |
| Selenium | X |
| Thallium | X |
| Synthetic Organics & Pesticides: 2021 | |
| Alachlor | X |
| Aldicarb | X |
| Aldicarb sulfoxide | X |
| Aldicarb sulfone | X |
| Atrazine | X |
| Carbofuran | X |
| Chlordane | X |
| Dibromochloropropane | X |
| 2,4-D | X |
| Endrin | X |
| Ethylene dibromide | X |
| Heptachlor | X |
| Heptachlor epoxide | X |
| Lindane | X |
| Methoxychlor | X |
| PCB - aroclor 1016 | X |
| PCB - aroclor 1221 | X |
| PCB - aroclor 1232 | X |
| PCB - aroclor 1242 | X |
| PCB - aroclor 1248 | X |
| PCB - aroclor 1254 | X |
| PCB - aroclor 1260 | X |
| Pentachlorophenol | X |
| Toxaphene | X |
| 2,4,5-TP (Silvex) | X |
| Aldrin | X |
| Benzo(a)pyrene | X |
| Butachlor | X |
| Carbaryl | X |
| Dalapon | X |
| Bis (2-ethylhexyl) adipate | X |
| Bis (2-ethylhexyl) phthalate | X |
| Dicamba | X |
| Dieldrin | X |
| Dinoseb | X |
| Glyphosate | NR |
| Hexachlorobenzene | X |
| Hexachlorooxyclopentadiene | X |
| 3-Hydroxycarbofuran | X |
| Methomyl | X |
| Metolachlor | X |
| Metribuzin | X |
| Oxamyl vydate | X |

| CONTAMINANT | |
|----------------------------------|---|
| Picloram | X |
| Propachlor | X |
| Simazine | X |
| Additional Organics: 2021 | |
| PFOS | X |
| PFOA | X |
| 1,4-Dioxane | X |
| Principal Organics: 2022 | |
| Benzene | X |
| Bromobenzene | X |
| Bromochloromethane | X |
| Bromomethane | X |
| N-Butylbenzene | X |
| sec-Butylbenzene | X |
| tert-Butylbenzene | X |
| Carbon tetrachloride | X |
| Chlorobenzene | X |
| Chloroethane | X |
| Chloromethane | X |
| 2-Chlorotoluene | X |
| 4-Chlorotoluene | X |
| Dibromomethane | X |
| 1,2-Dichlorobenzene | X |
| 1,3-Dichlorobenzene | X |
| 1,4-Dichlorobenzene | X |
| Dichlorodifluoromethane | X |
| 1,1-Dichloroethane | X |
| 1,2-Dichloroethane | X |
| 1,1-Dichloroethene | X |
| cis-1,2-Dichloroethene | X |
| trans-1,2-Dichloroethene | X |
| 1,2-Dichloropropane | X |
| 1,3-Dichloropropane | X |
| 2,2-Dichloropropane | X |
| 1,1-Dichloropropene | X |
| cis-1,3-Dichloropropene | X |
| trans-1,3-Dichloropropene | X |
| Ethylbenzene | X |
| Hexachlorobutadiene | X |
| Isopropylbenzene | X |
| p-Isopropyltoluene | X |
| Methylene chloride | X |
| Methyl-tert-butyl-ether (MTBE) | X |
| n-Propylbenzene | X |
| Styrene | X |
| 1,1,1,2-Tetrachloroethane | X |
| 1,1,2,2-Tetrachloroethane | X |
| Tetrachloroethene | X |
| Toluene | X |
| 1,2,3-Trichlorobenzene | X |
| 1,2,4-Trichlorobenzene | X |
| 1,1,1-Trichloroethane | X |
| 1,1,2-Trichloroethane | X |
| Trichloroethene | X |
| Trichlorofluoromethane | X |
| 1,2,3-Trichloropropane | X |
| 1,2,4-Trimethylbenzene | X |
| 1,3,5-Trimethylbenzene | X |
| Xylenes (Total) | X |
| Vinyl chloride | X |

| CONTAMINANT | |
|-------------------------------------|-----|
| UCMR 1: 2003 | |
| 2,4-Dinitrotoluene | X |
| 2,6-Dinitrotoluene | X |
| Acetochlor | X |
| DCPA mono-acid degradate | X |
| DCPA di-acid degradate | X |
| 4,4'-DDE | X |
| EPTC | X |
| Molinate | X |
| Nitrobenzene | X |
| Perchlorate | X |
| Terbacil | X |
| UCMR 2: 2008 | |
| 1,2-Diphenylbrazine | X |
| Diazinon | X |
| Disulfoton | X |
| Fonofos | X |
| Nitrobenzine | X |
| Prometon | X |
| Terbufos | X |
| 2-Methylphenol | X |
| 2,4-Dichlorophenol | X |
| 2,4-Dinitrophenol | X |
| 2,4,6-Trichlorophenol | X |
| Diuron | X |
| Linuron | X |
| UCMR 3: 2013 | |
| 1,2,3-trichloropropane | X |
| Methyl bromide | X |
| Methyl chloride | X |
| HALON 1011 | X |
| HCFC-22 | X |
| 1,3-butadiene | X |
| 1,1-dichloroethane | X |
| 1,4-dioxane (also analyzed in 2020) | X |
| Vanadium | X |
| Molybdenum | X |
| Cobalt | X |
| Strontium | DU3 |
| Chromium1 | DU3 |
| Chromium6 | DU3 |
| Chlorate | DU3 |
| PFOS | X |
| PFOA | X |
| PFBS | X |
| PFHxS | X |
| PFHpA | X |
| PFNA | X |
| Radiological: 2017 | |
| Gross alpha | X |
| Gross beta | X |
| Radium | D |
| UCMR 4: 2018-2020 | |
| Anatoxins | X |
| Cylindrospermopsin | X |
| Total Microcystin | X |
| UCMR4 List 1 (See table 3c.) | DU4 |

X = Monitored, but not detected

D = Refer to detected list

DU3 = Refer to detected unregulated contaminant list, Table 3b.

DU4 = Refer to detected unregulated contaminant list, Table 3c.

NR = Not required and not monitored in the past five years

UCMR = Unregulated Contaminant Monitoring Requirements

G. Major Modifications Completed 2022

- Concrete repairs to basins and tanks at the Water Filtration Plant were completed
- Chemical feed systems were updated
- New vacuum priming pumps were installed
- Inline orthophosphate analyzers were installed to monitor the effectiveness of corrosion control
- Upgraded the Flocculator drive units with variable frequency drives
- Miscellaneous upgrades in the sedimentation basin room
- New technologies continued to be piloted for the College of Engineering's [AguaClara](#) Program and other student research

H. Future Projects and Capital Improvements 2023

- A new inline Total Organic Carbon analyzer will be installed
- A perimeter security fence will be installed around the Water Filtration Plant with secure access gates
- A comprehensive analysis of the performance of the filters will be conducted using the installed particle counters
- A pH control study will be initiated
- Chlorine booster pump system will be evaluated and designed
- Improvements to source water intake structures are planned
- Piloting new technologies for the student research projects will continue

I. Water Conservation

Fortunately, in 2022 we experienced an abundance of water in the Fall Creek watershed. However we must remain aware of the drought risks in our region. For example, in 2020, among all other things, saw a brief but intense period of drought where stream levels and ground water levels fell to lower than desired levels during late summer and early fall. A limited water advisory was implemented until water levels returned to normal.

Water conservation is very important to protecting our natural resource. You, too, can play a role in conserving water at work and at home by becoming conscious of the amount of water you are using and by looking for ways to use less whenever you can. It is not hard to conserve water. The following are some ideas that you can apply directly in your own facility or home:

- 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 registers usage, you have a leak.
- The bathroom accounts for 75 percent of the water used inside the home.
- Put 10 drops of food coloring in your toilet tank. If the color shows up in the bowl without flushing, you have a leak to repair.
- It is common to lose up to 100 gallons a day from a toilet leak. Fix it, and you save more than 30,000 gallons a year.
- If every American home installed low-flow faucet aerators, the United States would save 250 million gallons of water a day.
- Do not hose down your driveway or sidewalk. Use a broom to clean leaves and other debris from these areas. Using a hose to clean a driveway can waste hundreds of gallons of water.
- Water your lawn only when it needs it. If you step on the grass and it springs back up when you move, it doesn't need water. If it stays flat, it does.
- Fix leaks as soon as they are found. A dripping faucet with a 1/16 inch stream wastes 100 gallons of water per day. Please contact your facility manager if you notice leaking water.
- 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.

J. Security

Generally, security threats to the local water systems have consisted primarily of minor vandalism and property damage. However, our security efforts focus to a high degree on the much less likely, but more serious, threat of intentional contamination of the water supply and cyber attacks. We have performed security assessments of the entire system and updated our Emergency Response Plans and Vulnerability Assessments to cover the possibility of terrorism and attacks, including cyber attacks. 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 system and have maintained increased patrolling of our facilities. Your awareness and reporting of suspicious activity throughout the system is appreciated.

Cornell Water Links

[Drinking Water Home](#)

[Past Water Quality Reports](#)

[Distribution System](#)

K. Source Water Protection

The New York State Department of Health is in the process of developing a Source Water Protection Program for Cornell's surface drinking water source. A review and summary will be posted on our website and provided in future Annual Drinking Water Quality Report.

Work has begun to revise the Fall Creek Watershed Rules and Regulations. However a broader effort to revise/develop Rules and Regulations for the entire Cayuga Lake Basin are being explored in conjunction with the [Tompkins County Water Resources Council](#), the NYS Department of Health, and other local water purveyors.

Cornell University Water

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