



Minneapolis Water Works Water System News

Water Storage System Improvements

Current water storage in reservoirs in New Brighton, Columbia Heights, Fridley, and in the Washburn water tower total 162 million gallons. Although this may seem like a lot, it is little more than a one-day reserve for the Minneapolis Water Works customers. Increasing the system's storage capacity is viewed as a crucial public health and safety issue. Expansion of Minneapolis' water storage volume is described below.

Construction of Underground Reservoir in New Brighton

The most ambitious capital improvement project over the last four years has been construction of a new 34 million-gallon reservoir in New Brighton, shown on the cover of this report. This new underground facility is adjacent to the existing 40 million-gallon reservoir on Water Works property. Construction began in 1997 and the facility will be holding water within a few months.



This massive, cast-in-place, concrete structure measures 546' x 436' x 24' deep with 24" thick walls and concrete interior columns to support a flat concrete

roof slab. Three feet of soil cover on top of the roof minimizes water temperature variation and prevents freezing in the winter. Thirty-six thousand cubic yards of specially formulated concrete (specified for use in drinking water applications) were used in construction. Instead of expansion joints (which can be a source of leaks) the structure utilizes sealed control joints to accommodate any expansion or contraction. The reservoir is the largest concrete structure in North America built without expansion joints.

The new reservoir and the existing reservoir are located at the highest elevation in the metro area. This allows gravity flow of water into the water distribution system even in the event of a power outage. Operational savings are realized because pumping is not required.

Cost of this project will total about \$18 million when landscaping is completed next year. This figure is more than \$1 million under budget. The cost savings was realized through the work of Minneapolis Water Works staff who produced the structural design for the reservoir and provided design specifications resulting in no change orders during its construction.

Future Water Storage Projects

Even with the addition of the New Brighton reservoir, more storage capacity is needed. The Minneapolis Water

Works is already planning its next storage project: a 40-million gallon reservoir and pump station on Water Works property in St. Louis Park and Edina. This facility will eventually increase water storage capacity by another 30%.

In addition, the Minneapolis Water Works is studying the feasibility of an interconnection with St. Paul Regional Water Services. An interconnection would allow the two water systems to rely on each other for water reserves in case of an emergency or disaster.

Distribution System Improvements

Residential Water Main Rehabilitation

The MWW is collecting data in neighborhoods where "red water" is a persistent problem. Red water is water that contains high levels of the mineral iron. It is usually caused by corrosion of cast iron water mains. While not a health issue, red water can cause staining of laundry, porcelain, and fixtures. In neighborhoods where this is a problem, water mains are cleaned using a mechanical scraping process to remove iron deposits. The water main is then relined with a cement or epoxy coating which prevents further corrosion.

New Pump Station

A ninth pump station has been added to the system. The location is adjacent to pump station #4 near the Camden Bridge. Additional pumping capacity will provide needed system backup improve and water service.



New pump station #9 (above) near the Camden Bridge was designed to look similar to adjacent pump station #4 (right).

Source Water Protection

The 1996 Safe Drinking Water Act amendments created a new program of source water assessments. This program requires states to (1) define the boundaries of the areas providing source water for public water systems and (2) to identify, to the extent practicable, the origins of contaminants in the defined area in order to determine the susceptibility of public water systems to these contaminants. Our water source, the Mississippi River, has undergone a source water assessment by the Minnesota Health Department. This report will be available later this year.



Minneapolis Water Works Water Quality Report Spring, 2001

Inside: Lab testing results Water storage issues Water main rehab

Minneapolis Water Customer:

This annual water report is provided to you so you can find out about your own local tap water and how its quality measures up to national and state regulations.

If you have questions about your water, or if you would like information about public meetings where decisions impacting drinking water are made, please contact the Minneapolis Water Works at 612-661-4999.

Informacion importante. Si no la entiende, haga que alguien se la traduzca ahora.

Noy yog ntaub tseem ceeb. Yog koy tsi to taub, nrhiv neeg pab txhais rau koh kom sai sai.



Aerial view of construction on the Minneapolis Water Works' new 34-million gallon water reservoir in New Brighton.

Minneapolis Water Works: 2000 Monitoring Report

The table at the bottom of this page lists drinking water testing results for Minneapolis water during the 2000 reporting year. Those items listed were the only ones detected from a list of about 80 regulated substances and several more unregulated substances. Regulated substances are those that have had Maximum Contaminant Levels established by the Safe Drinking Water Act. Unregulated substances are monitored because they may affect the safety and quality of drinking water, and they are important for establishing future drinking water regulations. They are assessed using state standards known as Health Risk Limits to determine if they pose a threat. Because testing is not required for each parameter every year, some parameters listed below were detected in previous years' testing. **No parameters were detected at levels that exceeded Environmental Protection Agency (EPA) or State of Minnesota water quality standards.**

According to the EPA, drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. Their presence does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.



Lead. The Minneapolis water system is in compliance for lead. It is possible, however, that the lead levels in your home may be higher than at other homes in the city due to materials used in the construction of your home's plumbing system. If you are concerned about lead levels in your water (young children are more vulnerable to lead than adults) you may wish to have your water tested as well as flush your tap for 30 seconds to 2 minutes prior to using the water. Additional information is available from the Safe Drinking Water Hotline at 800-426-4791.

Information Collection Rule		
In 1997-98, the Minneapolis Water Works participated in an 18-month, EPA-mandated sampling and testing program known as the Information Collection Rule. The purpose of this program was to generate data for future regulations. The data obtained is listed below.		
Parameter	Average Result	Range Detected
Disinfection byproducts		
Chloral Hydrate (ppb)	1.4	0.5-1.9
Cyanogen Chloride (ppb)	3.61	1.91-5.33
Haloacetic Acids (ppb)	24	9-45
Naturally occurring substances		
Total Organic Carbon (ppm)	4.4	3.1-6
Total Organic Halogen (ppb)	130	73-215
ppb=parts per billion ppm=parts per million		

Drinking Water Safety Regulation → Testing → Enforcement

In order to regulate drinking water safety, the U.S. Environmental Protection Agency (EPA) prescribes rules that limit the amount of certain substances in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Your drinking water is routinely tested at the source, throughout the treatment process, as it leaves the Minneapolis Water Works Treatment Plant, and from homes throughout the city. Testing takes place at the Minnesota Department of Health, the water treatment plant, and independent laboratories. These samples are analyzed for various substances that can occur naturally in the environment or that may be produced through human activities.

While the Minneapolis Water Works obtains water from the Mississippi River, sources of water for other communities include lakes, ponds, reservoirs, springs, and wells. As water travels over land surfaces and down through the ground, it can dissolve naturally occurring minerals, radioactive material if present, and can pick up substances resulting from livestock, wildlife, and human activity. Analytical testing screens for the following contaminant groups in source water:

Microorganisms such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganics such as salts and metals, which occur naturally or result from storm runoff, wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from agriculture, urban storm runoff, and residential uses.

Organic chemicals, including synthetic and volatile organics, which are industrial and petroleum process by-products that can come from gas stations, urban storm runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

If you have special health requirements, you should know some people may be more vulnerable to contaminants found 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 providers about drinking water. Environmental Protection Agency/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hot-Line (800-426-4791).

Minneapolis Water Works 2000 Water Testing Results

Regulated Substances Controlled at the Water Treatment Plant	Substance	Alpha Emitters	Fluoride	Total Trihalomethanes	Total Haloacetic Acids	Thallium	Turbidity
	Units of Measure	pCi/L	ppm	ppb	ppb	ppb	NTU
	Year Tested	1999	2000	2000	2000	1999	Every month
	Highest Level Allowed (MCL)	15	4.0	100	60	2.0	Treatment Technology*
	Detected Level Used to Determine Compliance	1.1	1.06	26.08	26.08	1.0	All samples were within limits
	Range of Detections	—	0.97-1.2	14.9-39.2	13.9-45.0	—	0.05-0.39
	Recommended Maximum (MCLG)	0	4.0	—	0	0.5	—
	Typical Source of Substance	Erosion of natural deposits	Additive for dental health, erosion of natural deposits	Water disinfection by-product	Water disinfection by-product	Leaching from ore-processing sites; discharge from glass, electronics, and drug factories.	Soil runoff

Regulated Substances Controlled in the Distribution System	Substance	Lead	Copper
	Units of Measure	ppb	ppm
	Year Tested	1998	1998
	Action Level: 90% of samples must be below this level	15	1.3
	Number of samples tested over the action level	7 out of 100	0 out of 100
	90% of samples were below this level	9.9	0.096
	Typical source of substance	Corrosion of home plumbing	Corrosion of home plumbing

Unregulated Substances Detected in the Water	Substance	Sulfate	Sodium	Chloroform	Bromodichloromethane
	Units of Measure	ppm	ppm	ppb	ppb
	Year Tested	1999	1999	2000	2000
	Detected Level Used to Assess Substance in the System	25	8.3	40	4.5
	Typical Source of Substance	Erosion of natural deposits	Erosion of natural deposits	Water disinfection by-product	Water disinfection by-product

Key to Terms: *Detected amount used to determine compliance is sometimes the highest amount detected and sometimes the average of all detected amounts from samples tested throughout the year. **MCL:** Maximum Contaminant Level (The highest amount allowed in drinking water. Set as close to MCLGs as feasible using the best available treatment technology). **MCLG:** Maximum Contaminant Level Goal. (The level below which there is no known or expected risk to health. MCLGs allow for a margin of safety). **Action Level:** the concentration which, if exceeded, triggers treatment or other requirement the system must follow. **PPB:** parts per billion. **PPM:** parts per million. **NTU:** Nephelometric turbidity units. **pCi/L:** Picocuries per liter, a measure of radioactivity. *Turbidity is regulated by a specified Treatment Technology—a technique the water utility must utilize to reduce and control turbidity. Turbidity is a measure of water clarity. It is monitored because it is a good indicator of the effectiveness of the filtration system.