Minneapolis Water Works:
Water System News

The Security of our Water Supply

Following recent events in our country, the security of our public systems and infrastructure is a concern to everyone. Evaluation and improvement of security procedures is an ongoing process for Water Works staff. Recent security-related improvements include:

Technology Upgrades. The water system is now controlled by a new SCADA (System Control and Data Acquisition) computer system that allows continuous monitoring of water quality and distribution parameters. This enables staff to respond quickly to problems or emergencies.

Controlled Access to Water Works Facilities. The Minneapolis Police Department is working with Water Works Staff to control access to facilities 24 hours a day.

Stepped-up Interagency Cooperation. Water Works staff is working with several other governmental agencies and trade associations to optimize security of the Minneapolis Water System. These groups include the FBI, the National Infrastructure Protection Center, the Association of Metropolitan Water Agencies, and local law enforcement.

Vulnerability Assessment. Staff members are currently and continuously evaluating the water system to find out where security measures can be improved.

This pipe delivers water from the Mississippi River to the Softening Plant

Operator monitoring the SCADA system from the Control Room

Pump Room at the Water Works' Fridley Plant

SCADA Computer System

The Water Works' new computer system has improved operations in three interconnected ways: efficiency, reactivity, and continuity.

Efficiency. Pumping 25 billion gallons of water through 1000 miles of water main every year takes a lot of energy. The new SCADA system provides real-time energy use data that can be integrated with other system parameters like storage levels and intake volume. This enables Water Works staff to manage the system in the most energy-efficient way possible. Continuous monitoring of source water quality reduces the consumption of water treatment chemicals, leading to further cost savings.

Reactivity. Efficient data collection and analysis gives Water Works staff information they need to react quickly and efficiently to situations and emergencies. Time spent on repairs or correcting problems is reduced from days to hours, and some problems can be averted altogether.

Continuity. Continuous monitoring of water quality, treatment, and distribution parameters allows seamless operation from shift-to-shift and from one day to the next. Continuity leads to flexibility, providing staff the means to react to changes in water demand, source water quality and storage capacity.

Operation and refinement of the SCADA system is a multi-year, multi-million dollar project. This new system, along with a recently completed 34 million-gallon reservoir, enhances the Water Works staff effort to provide a reliable water service.

Minneapolis Water Works
Report to Water Customers

Minneapolis Water Works Pump Station #3
1888-1931 Located at Soo Ave. N. near the river

In this report the Minneapolis Water Works is issuing the results of monitoring done on its drinking water during 2001. Along with these laboratory results, we have included additional information about the water system that is timely and important to residents and the city. Water Works staff hopes this report will enhance your knowledge of drinking water issues and heighten your awareness of the need to protect our water resources.

If you have questions about your tap water quality, or would like information on opportunities for public participation in decisions that affect water quality, please review our website at www.ci.minneapolis.mn.us/citywork or contact the water plant laboratory at 612-661-4999. Other good sources of drinking water information are:

www.epa.gov/safewater
www.health.state.mn.us/divs/eh/water/
www.awwa.org

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

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

Arintan waa arin muhiim ah oo ka hadlaysa biyaha la cabo. Hadii aanad ingiriisiga akhrin karin waxaad raadisaa gof kuu macneeya.

Tap Water Quality:

Issues and Answers

Source Water Supply

The water source for the City of Minneapolis and the seven suburbs served by the Minneapolis Water Works is the Mississippi River. Most large cities in the United States use a surface water source such as this for the community supply because it is a renewable resource.

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. Before a water source is used for a supply, it is tested for contaminants and other water quality parameters. These include:

Mississippi River near the Minneapolis Water Works intake and treatment plant.

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

Inorganic contaminants, such as salts and metals, which can occur naturally or come from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

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

Organic chemicals, including synthetic and volatile organic chemicals, which are industrial and petroleum process byproducts and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can occur naturally or result from oil and gas production and mining activities.

Drinking Water Regulations

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants 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. 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. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

If You Have Special Health Requirements

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 about drinking water from their health care providers. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

Working With EPA

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
Total Organic Halogen (ppb)	130	73-215
Naturally occurring substances		
Total Organic Carbon (ppm)	4.4	3.1-6

ppb=parts per billion ppm=parts per million

Minneapolis Tap Water:

2001 Water Quality Data

The table below lists lab testing results for Minneapolis tap water during 2001. About 160 substances are evaluated; only those detected are listed in the table. No substances have been found that violate state or federal regulations for tap water quality. Monitoring for some contaminants is not required on an annual basis. If a contaminant was detected the last time it was tested, the test date is listed if prior to 2001.

Regulated Substance (units) *MCL (highest level allowed in water by EPA)* *MCLG (level where there is no known health risk)*	Amount Found in Minneapolis Tap Water Compliance Level	 Range of Detections	Typical Source of Substance in Drinking Water
Total Trihalomethanes (ppb) *MCL:100* *MCLG: not established*	25.6	12.2-35.8	By-product of drinking water chlorination.
Haloacetic Acids-HAA5 (ppb) *MCL: 60* *MCLG: 0*	24.8	8.6-26.0	By-product of drinking water disinfection
Thallium (ppb) 7/2/99 *MCL: 2.0* *MCLG: 0.5*	1.0	—	Leaching from ore-processing sites; discharge from electronics, glass and drug factories.
Nitrate as Nitrogen (ppm) *MCL: 10* *MCLG: 10*	1.4	—	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Fluoride (ppm) *MCL: 4.0* *MCLG: 4.0*	1.0	0.86-1.2	State-required additive; erosion of natural deposits; fertilizer and aluminum factory discharge.
Alpha Emitters (pCi/L) 7/1/99 *MCL: 15* *MCLG: 0*	1.1	—	Erosion of natural deposits.
Carbon Tetrachloride (ppb) *MCL: 5.0* *MCLG: 0*	0.7	—	Discharge from chemical plants and other industrial activities.
Turbidity (NTU) *MCL: TT; 5.0 and water must be <0.5 NTU 95% of the time.* *MCLG: not established*	Less than 0.5 NTU 97% of the time	Highest single measurement: 0.56	Soil runoff. Turbidity is a measure of water clarity. It is a good indicator of the effectiveness of the filtration system.
Lead (ppb) *AL: 15 (90% of samples tested must be <15 ppb)*	90% of samples were <11.0	6 out of 101 homes tested >15 ppb	Corrosion of household plumbing systems; erosion of natural deposits.
Copper (ppm) *AL: 1.3 (90% of samples tested must be <1.3 ppm)*	90% of samples were <0.17	0 out of 101 homes tested >1.3 ppm	Corrosion of household plumbing systems; erosion of natural deposits.
Total Coliform Bacteria MCL: present in 5% of monthly samples tested MCLG: 0	Present in 1% of samples in one month	—	Naturally present in the environment.

Unregulated Substance (units)	Amount Found in Minneapolis Tap Water	Typical Source of Substance in Drinking Water
Sulfate (ppm) 7/2/99	25.0	Erosion of natural deposits.
Sodium (ppm) 7/2/99	8.3	Erosion of natural deposits.

Monitoring for unregulated contaminants as required by EPA rules (40CFR 141.40) was conducted in 2001. Results of this monitoring are available upon request from Pat McKasy, Minnesota Department of Health, at 651-215-0759.

Interpreting the Table

Regulated substances have Maximum Contaminant Levels (**MCLs**) set by the Safe Drinking Water Act. This is the highest level allowed in drinking water. Some contaminants also have MCL goals (**MCLGs**). This is the level of a substance where there is no known or expected health risk. MCLGs allow for a margin of safety. MCLs are set as close to MCLGs as possible using the best available treatment technology.

Some contaminants do not have established Maximum Contaminant Levels. These unregulated contaminants are assessed using state standards known as health risk limits to determine if they pose a threat to human health. EPA uses this data when considering future drinking water regulations.

Lead and copper are evaluated using a regulatory level known as an Action Level (**AL**). This is the concentration which, if exceeded, triggers treatment or other requirement a water system must follow. Lead and copper get into tap water via corrosion of home plumbing systems. The Minnesota Department of Health recently declared the Minneapolis Water System to be optimized for corrosion control, and lab tests show that the system is in compliance for lead and copper. 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.

Other Definitions:

ppb: parts per billion

ppm: parts per million

pCi/L: Picocuries per liter, a measure of radioactivity.

NTU: Nephelometric Turbidity Units

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