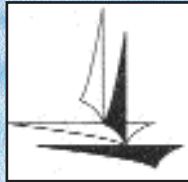


# CITY OF MINNEAPOLIS 2006

## DRINKING WATER



## QUALITY REPORT

Attention. If you want help translating this information, call 612-673-3737.

Atención. Si desea recibir asistencia gratuita para traducir esta información, llama 612-673-2700

Ogow. Haddii aad dooneyso in lagaa kaalmeeyo tarjamadda macluumaadkani oo lacag la' aan wac 612-673-3500

Ceeb toom. Yog koj xav tau kev pab txhais cov xov no rau koj dawb, hu 612-673-2800

ໂປດຊາບ. ຖ້າຫາກທ່ານຕ້ອງການ ການຊ່ວຍເຫຼືອໃນການແປຂໍ້ຄວາມດັ່ງກ່າວນີ້ຟຣີ, ຈົ່ງ ໂທລະສານ 612-673-5600

Hubbadhu. Yoo akka odeeffannoon kun sii hiikamu gargaarsa tolaa feeta ta'e, lakkoofsi bilbiltu 612-673-5600

Chú Ý. Nếu quý vị cần dịch thông-tin này miễn phí, xin gọi 612-673-5600





## Cleaning and Lining Water Mains

### Project Background

The City of Minneapolis has begun improving water quality by cleaning and lining the city's water mains. This involves scraping the mineral deposits out of the inside of the pipes and installing a liner that prevents future rust. This adds an estimated 50 years to the life of the pipe. The cost of cleaning and lining the water mains is approximately one-fourth of the cost of digging up the pipes and replacing them. The cost will not be assessed to your property.

There are approximately 1,000 miles of water mains in the City of Minneapolis, most of which were constructed 80 to 100 years ago, when pipes were unlined. It is estimated that approximately 800 miles of the system is made of unlined cast iron water mains. Only in the past 40 years have metal water main pipes been factory-produced with a liner.

With time, unlined cast iron water mains build up mineral deposits on the inside, which slows the flow of water and makes the water less pleasing.

At the same time, Minneapolis is in the midst of converting from a conventional sand filtration treatment process to a membrane ultra-filtration process. After the conversion, the City will produce some of the purest mass-produced drinking water. To reduce the mineral deposits on the pipes that distribute this water, the water main cleaning and lining project has been increased from approximately two miles per year to approximately 10 miles per year. A request has been submitted for increased funding next year so that even more water mains can be cleaned and lined then.

Locations for each year's cleaning and lining projects are prioritized by the condition of the water mains and by opportunities to save money by working in areas with other street construction. Cleaning and lining segments are almost never just one block long, since cleaning and lining one pipe will not eliminate water quality issues in the area.

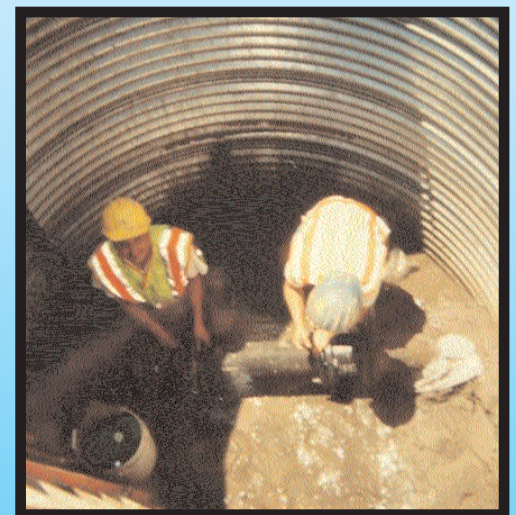
### Water main Cleaning and Lining Project

Since the main has to be empty to perform the work, residences that tap the water mains being cleaned and lined are given a temporary water supply through plastic pipes along the curb lines. Rubber hoses are connected from this pipe to the exterior faucet of each building. Another connection is provided

for lawn sprinkling. The water is sampled throughout the installation process to make sure that it meets or exceeds drinking water standards.

Fire protection is maintained by working on alternating streets and installing fire connections on the hydrants used for temporary water supply.

The City digs holes at intersections along the project area in order to get to the water pipes. Care is taken to allow residents traffic access during the project. All of the holes must be dug up and braced against cave-in before the work can begin, to protect the workers who will be inside them. It is necessary to get the holes prepared well in advance, because the cleaning and lining work is completed much more quickly than the holes are dug. Once all the holes are prepared, a contractor moves onto the jobsite to begin the cleaning and lining work. After the water mains are cleaned and lined, they are disinfected, sampled, the access holes backfilled and the pavement replaced. Water main valves that are past their service life are also replaced during this project.





## 2005 Laboratory Testing Results for Minneapolis Water

Detected Substance	Units of Measure *	MCL**	MCLG**	Level Found	Range Found	How Does it Get Into Drinking Water?
Alpha Emitters (found 4/17/02)	pCi/L	15.4	0	0.4	—	Erosion of natural deposits
Fluoride	ppm	4.0	4.0	1.02	0.99-1.1	Additive that promotes strong teeth, fertilizer and aluminum factory discharge. Erosion of natural deposits
Haloacetic Acids (HAA5)	ppb	60	0	26.97	7.2-55.5	By-product of drinking water disinfection
Nitrate (as Nitrogen)	ppm	10	10	0.24	—	Erosion of natural deposits; fertilizer runoff; leaching from septic tanks, sewage
TTHM (Total trihalomethanes)	ppb	80	0	35.77	ND-69.3	By-product of drinking water disinfection
Total Coliform Bacteria		present in >5% of monthly samples	0 present	1%	—	Naturally present in the environment
Turbidity	NTU	*TT; < 1.0 and < 0.3	—	99% of samples less than 0.3	Highest reading 0.31	Soil runoff
Chlorine	ppm	(MRDL**) 4.0	(MRDLG**) 4.0	2.85	2.1-3.1	Water additive used to control microbes
Copper	ppm	90% of samples must be < 1.3 ppm (AL)	—	90% of samples < 0.26	0 out of 50 samples > 1.3	Corrosion of home plumbing systems, erosion of natural deposits
Lead	ppb	90% of samples must be < 15 ppb (AL)	—	90% of samples < 4.0	0 out of 50 samples > 15.0	Corrosion of home plumbing systems, erosion of natural deposits
Sodium (found 12/01/04)	ppm	No USEPA limit set	—	8.9	—	Erosion of natural deposits
Sulfate (found 12/01/04)	ppm	No USEPA limit set	—	23	—	Erosion of natural deposits

\***ppb**: parts per billion, or micrograms per liter of water    **ppm**: parts per million or milligrams per liter of water  
**pCi/L**: PicoCuries per liter, a measure of radioactivity    **NTU**: Nephelometric Turbidity Units    **ND**: Not Detected  
**\*\*MCL**: Maximum contaminant level, **MCLG**: maximum goal (level for a substance where it has no expected health risks), **MRDL**: Maximum Residual Disinfectant Level, **MRDLG**: Maximum Residual Disinfectant Level Goal

