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2011 CONSUMER CONFIDENCE REPORT

A DRINKING WATER QUALITY REPORT FOR THE CUSTOMERS OF MORA MUNICIPAL UTILITIES AND THE CITY OF MORA, KANABEC COUNTY, MINNESOTA JUNE 2012

In compliance with the Federal 1996 Safe Drinking Water Act Amendments, the Mora Municipal Utilities (MMU) is providing its water customers with this report on the quality of our drinking water. This report presents data compiled during the twelve months from January 1 to December 31, 2011. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources. Reports are published and distributed to customers in June of each year.

SOURCE OF WATER

Our Water Source – Our water comes from a groundwater source; three wells ranging from 195 to 210 feet deep that draw water from the Quaternary Buried Artesian and Quaternary Water Table aquifer.

Source Water Assessment – The water provided may meet drinking water standards, but the Minnesota Department of Health (MDH) has also made a determination as to how vulnerable the source water may be to future contamination incidents. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651.201.4700 or 1.800.818.9318 (and press 5) during normal business hours. Also you can view it on-line at <http://www.health.state.mn.us/divs/eh/water/swp/swa>.

RESULTS OF MONITORING

No contaminants were detected at levels that violated the Federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. Some contaminants are sampled less frequently than once per year; as a result not all contaminants were sampled for in 2011. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date detection occurred.

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TERMS

AL	= Action Level, the concentration of a contaminant which triggers treatment or other requirement which a water system must follow.
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.
MCL	= Maximum Contaminant Level, the highest allowable amount of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MRDL	= Maximum Residual Disinfection Level.
MRDLG	= Maximum Residual Disinfection Level Goal.
Nd	= no detection
N/A	= Not Applicable (does not apply).
ppm	= parts per million, or milligrams per liter (mg/l).
ppb	= parts per billion, or micrograms per liter (µg/l).
90 th percentile level	= This is the value obtained after disregarding (10%) of the samples taken that had the highest levels. For example, in a situation in which ten samples were taken, the 90 th percentile level is determined by disregarding the highest result, which represents 10% of the samples. In situations in which only five samples are taken, the average of the two with the highest levels is taken to determine the 90 th percentile level.

TABLE A
REGULATED CONTAMINANTS

Detected Contaminant (units)	MCLG	MCL	Range (2011)	Average/ Result*	Typical Source of Contaminant
Arsenic (ppb) (10/05/07)	0	10	N/A	2.51	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium (ppm) (10/05/07)	2	2	N/A	0.07	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride (ppm)	4	4	1.2-1.6	1.33	State of Minnesota requires all municipal water systems to add fluoride to promote strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories.
Haloacetic Acids (HAA5) (ppb) (08/11/2010)	0	60	N/A	10.7	By product of drinking water disinfection.

TTHM (Total trihalomethanes) (ppb) (08/11/2010)	0	80	N/A	10.4	By product of drinking water disinfection.
Total Coliform Bacteria	0 present	>1 present	N/A	1	Naturally present in the environment. Follow-up sampling showed no contamination present.

Notes

* This is the value used to determine compliance with Federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average it may contain sampling results from the previous year.

TABLE B
CHLORINE

Detected Contaminant (units)	MRDLG	MRDL	Highest & Lowest Monthly Average	Highest Quarterly Average	Typical Source of Contaminant
Chlorine (ppm)	4	4	nd-1.49	0.98	Water additive to control microbes.

TABLE C
LEAD AND COPPER

Detected Contaminant (units)	MCLG	AL	90% Level	# sites over AL	Typical Source of Contaminant
Copper (ppm)	1.3	1.3	0.88	0 out of 20	Corrosion of household plumbing systems; erosion of natural deposits.
Lead (ppm)	0	15	1.8	0 out of 20	Corrosion of household plumbing systems; erosion of natural deposits.

Notes

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. MMU is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for thirty (30) seconds to two (2) minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

TABLE D
UNREGULATED CONTAMINANTS

Detected Contaminant (units)	Level Found Range (2011)	Average/ Result *	Typical Source of Contaminant
Sodium (ppm) (12/22/2008)	N/A	9.9	Erosion of natural deposits.
Sulfate (ppm) (12/22/2008)	N/A	2.34	Erosion of natural deposits.

Notes

Some contaminants do not have a Maximum Contaminant Level (MCL) established for them. These “unregulated contaminants” are assessed using standards known as health risk limits to determine if they pose a threat to human health. If unacceptable levels of an unregulated contaminant are found, the response is the same if an MCL has been exceeded; the water system must inform its customers and take other corrective actions. In the table above are the unregulated contaminants that were detected.

COMPLIANCE WITH NATIONAL PRIMARY DRINKING WATER REGULATIONS

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive materials. Water can also pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- *Radioactive contaminants*, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) 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 at 1.800.426.4791.

YOU SHOULD KNOW...

Some people may be more vulnerable to contaminants 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 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. U.S. Environmental Protection Agency (EPA)/Center for Disease Control (CDC) guidelines on appropriate means to lessen risk of infection by *Cryptosporidium* are available from the EPA's Safe Drinking Water Hotline at 1.800.426.4791.

SYSTEM INFORMATION

Treatment – Our water is treated with chlorine to eliminate coliform bacteria and it is treated with fluoride to promote dental health. Our water is also treated with ammonium sulfate to control HAA5 and TTHM, as well as treated with caustic soda to control pH which helps reduce lead and copper contaminants. Our water is also filtered and treated with potassium permanganate to remove iron and manganese.

Hardness – Our water hardness is 9-10 grains.

Pressure – Our typical water pressure is around fifty pounds per square inch (50 psi).

Usage – Over 117 million gallons of water was pumped in 2011 to supply approximately 1,200 homes, businesses, industries and other customers. The water system serves about 3,600 people. Water is pumped into two elevated storage tanks of 150,000 and 500,000 gallons and a 50,000 gallon clear well to provide consistent water pressure and short-term storage.

Infrastructure Maintenance – Wells and pumps are pulled and thoroughly inspected by qualified professionals every ten (10) years. Water towers are cleaned and inspected every five (5) years. An upgrade to the water treatment plant was completed in 2011 that replaced outdated equipment and improved efficiency. The plant was built in 1976. The 150,000 gallon water tower will be cleaned and painted, inside and out, later this summer. The work will also include some structural and safety improvements.

Financial Information – Municipal water systems are supposed to be self-supporting financially, without contributions of tax dollars. In 2011 the water system had expenditures of \$606,162 and revenues of \$571,820. The resulting loss of \$34,342 was taken from the water fund reserves and was due, in part, to the treatment plant improvements.

ADDITIONAL INFORMATION

If you have questions regarding this report or you would like additional information regarding our water system, feel free to contact Joel Dhein, General Manager at the Utility Office in City Hall, 101 Lake Street South or call 679-1451. If you are interested in opportunities for public participation in decisions that may affect the quality of your water, you may attend public utility commission meetings on the Monday before the third Tuesday of each month at 3:00 p.m. in City Hall. Agendas are posted on the Friday before the meeting at City Hall and on our website <http://www.ci.mora.mn.us>.

LEAK THIS SIZE	WATER LOSS IN GALLONS		ANNUAL LOSS IN DOLLARS @ \$2.50 per 1,000 Gal. Rate
	Average Per Day	Average Per Month	
•	185	5,550	167
•	735	22,050	662
•	1,655	49,650	1,490
•	2,945	88,350	2,651
•	6,620	198,600	5,598
•	11,770	353,100	10,593
•	18,395	551,850	16,556
•	26,485	794,550	23,837
•	36,050	1,081,500	32,445
•	47,090	1,412,700	42,381

Leakage estimates based on 50psi pressure
and 365 days per year.

LEAKAGE CAN BE COSTLY!

The loss of water through leaky taps, running toilets, or constantly running garden hoses can be significant. Add to these number the sanitary sewer charge at \$5.65 per 1,000 gallons and you'll see why eliminating small leaks can add up to big savings.

MMU's rate per 1,000 gallons is \$3.57, somewhat higher than the rate used in the table at left.

