



NEWS AND INFORMATION

FOR PUBLIC WATER SUPPLIERS IN MINNESOTA

Mankato Membranes



The city of Mankato is completing a 10-year project with upgrades to its water system, including the installation of ultrafiltration membranes. The project has doubled the utility's capacity to 12 million gallons per day. See page 5 for the story.

Update on Municipal Authority to Ban Well Construction and Control Well Use

This fall, the Minnesota Department of Health (MDH) notified the League of Minnesota Cities that MDH will no longer notify cities that they do not have the legal authority to ban the construction of wells within their jurisdictional authority. A city does not have the legal authority to regulate the actual construction, maintenance, or sealing of wells without a delegation agreement with the MDH. Only cities that have a board of health may apply for a delegation agreement, which means most cities are not eligible. All state requirements for well notifications and permits remain in effect, as well as all the other provisions of Minnesota Statutes, Chapter 103I, Minnesota Rules, Chapter 4725, and Minnesota Rules, Chapter 4727.

Cities also have some authority to control how a well is used under provisions of the State Plumbing Code (Minnesota Rules Chapter 4715). Specifically, cities can require that a property be connected to the city water supply distribution system (MR7715.0310) and that an existing well be disconnected from the plumbing system to avoid cross connection (MR4715.1920). Also, according to the Minnesota Department of Natural Resources, a city can limit pumping of a private well that is used for lawn irrigation to reflect the lawn sprinkling ban that it imposes on the users of the public water supply system.

Emergency Response Guidance Document Now Available

An emergency response guidance document for community water systems is now available at <http://www.health.state.mn.us/divs/eh/water/emergency.pdf>.

Upcoming Water Operator Exam Dates

March 3, St. Cloud
March 11, Rochester
April 7, Bloomington
April 13, Redwood Falls

May 11, Spicer
May 20, Two Harbors
June 10, Deerwood
June 15, Wahkon

See calendar on back page for more information

Operator Training News

2011 Metro School

The 2011 Metro Waterworks Operators School will be held from Tuesday, April 5 through Thursday, April 7 at the Ramada Mall of America (formerly the Thunderbird) next to the former site of Met Stadium in Bloomington.

Participants in the school will receive 16 credit hours for their attendance. The registration for the school will be \$175 (\$210 at the door or after March 24).

Registration will begin at 7 a.m. on April 5 with the sessions beginning at 7:30 a.m. on Wednesday and Thursday mornings. A registration form is on the next page.

Tuesday, April 5

8:00 to 11:30

- Regulatory Overview
- Water for People
- Security
- InfraGard and Other Security Issues

12:15 to 3:15

Distribution System Maintenance: Hydrants and Valves and Pipes, Oh My!

- Distribution System Maintenance
- Hydrant and Valve Operation and Maintenance
- Choosing the Right Pipe for Your System
- Unidirectional Flushing

Operations: SCADA, Pumps, Controls

- New Technologies for SCADA/Instrumentation and Controls
- Understanding Single Phase and Three-Phase Power
- Variable Frequency Drive and Soft Starters Basics and Energy Savings
- Reading and Understanding Electrical One-Line Diagrams

Wednesday, April 6

7:30 to 11:00

Exam Prep

or

Conservation

- Gopher State One-Call Ticket Management Program
- Conservation Strategies
- Rochester Conservation Program
- St. Anthony Water Reuse Project
- Cost-Benefit Analysis of Conservation Programs

or

Distribution Integrity: Locators, Leak Detection

- Leak Detection
- Gopher State One-Call Ticket Management Program
- Line Training Technologies
- GIS/GPS

11:45-3:30

Tours of Burnsville Water Treatment Plant, Waterous, St. Anthony Falls Laboratory

or

Exam Prep

Thursday, April 7

7:30 Breakfast

Speaking Program: *Leadership Lessons from Gettysburg and Little Bighorn*—Jeff Appelquist, Blue Knight Battlefield Seminars

9:00 Product Exposition with Mini-Sessions
Meter Madness
Pipe Tapping

12:30 Certification Exams

For updates on the Metro School agenda, go to <http://health.state.mn.us/divs/eh/water/wateroperator/trng/metro.html>

Other Spring 2011 Schools

Besides the Metro District Waterworks Operators School, several other schools, which are jointly sponsored by the Minnesota American Water Works Association and the Minnesota Department of Health, will be held:

- Southeast School, March 9-11, Ramada Hotel and Conference Center, Rochester
- Southwest School, April 13, Redwood Area Community Center, Redwood Falls
- Northeast School, May 18-20, Superior Shores Resort, Two Harbors
- Central School, June 8-10, Ruttger's Bay Lake Lodge near Deerwood

The agendas for the Southeast and Northeast schools are on the next page.

Information for all district schools, including agendas, is at <http://health.state.mn.us/divs/eh/water/wateroperator/trng/schoolagendas.html>

Water Utility Management Institute

The 2011 Midwest Regional Water Utility Management Institute will be held March 15 to 17 at the Continuing Education and Conference Center on the St. Paul campus of the University of Minnesota. The Institute is sponsored by the College of Continuing Education, Minnesota Suburban Utility Superintendents Association, and the Minnesota Section of American Water Works Association.

The Institute is designed to help attendees identify the qualities of effective leadership, assess their leadership style, and motivate others by understanding their individual strengths.

Program and registration information is at <http://www.cce.umn.edu/management-institute>. Questions may be directed to Nicole Freese, 612-624-3708, cceconf5@umn.edu.

REGISTRATION FORM FOR UPCOMING SCHOOLS

You may combine fees on one check if more than one person is attending a school; however, please make a copy of this form for each person. For questions regarding registration, contact Jeanette Boothe at 651-201-4697.

To request an exam application, contact Noel Hansen at 651-201-4690 or Mark Sloan at 651-201-4652.

- Southeast School, March 9-11, 2011. Ramada Hotel and Conference Center, Rochester. Fee: \$135 (\$145 after February 28 or at the door).
- Metro School, April 5-7, 2011. Ramada Mall of America, Bloomington. Fee: \$175 (\$210 after March 24 or at the door).
- Southwest School, April 13, 2011. Redwood Area Community Center, Redwood Falls. Fee: \$30 (\$35 at the door).
- Northeast School, May 18-20, 2011. Superior Shores Resort, Two Harbors. Fee: \$125 (\$135 after May 6 or at the door).

Name _____ Employer _____

Address _____

City _____ Zip _____ Day Phone _____

E-mail Address _____

Please enclose the appropriate fee. Make check payable to *Minnesota AWWA*. Mail this form and fee to Drinking Water Protection Section, Minnesota Department of Health, P. O. Box 64494, St. Paul, Minnesota 55164-0494.

2011 Southeast School Agenda

Wednesday, March 9

7:30 - 11:30

- Operator Breakfast - Speaker: Dick Jonckowski
- Exhibitor and Product Fair
- Meter Madness Competition and Taste Test

1:00 - 4:00

- 2010 Southeast Minnesota Flood Response
- New Meter Technology and Testing
- The Hazards of Hydrant Flushing

Thursday, March 10

8:00 - 11:30

- Workplace Violence
- 20 Questions
- Security Issues
- Trench Safety

or

Exam Prep

12:30 - 3:30

- Rochester Well and Hydropillar
- Top of the Tower
- Water in Haiti

or

Exam Prep

Friday, March 11

8:00 - noon

- Southeast District Business Meeting
- Water Plant Upgrades - Detroit Lakes and others
- Minnesota Department of Natural Resources' Involvement in Mississippi River Resource Management in Southeast Minnesota
- Red Rock Chlorine Leak

or

9:00 - Certification Exams

2011 Northeast School Agenda

Wednesday, May 18

8:00 - noon

- Water for People
- 20 Questions
- Workplace Violence
- Tower Painting

or

Exam Prep

1:00 - 4:00

- Water Is a Laughing Matter
- Arc Flash
- Instrumentation
- Laboratory Equipment

or

Exam Prep

Thursday, May 19

8:00 - 4:00

- Product Show with Mini-Sessions
- Meter Madness
- Tour of North Shore Mining Water Operations

Friday, May 20

8:00 - noon

- Northeast District Business Meeting
- Under the Water Table
- Chlorine, Fluoride, and Chemical Safety
- Minnesota Department of Health Update
- Electronic Asset Management

or

9:00 - Certification Exams

Reminder to All Water Operators

When submitting water samples for analyses, remember to do the following:

- Write the Date Collected, Time Collected, and Collector's Name on the lab form.
- Write the Sample Point on lab forms for bacteriological and fluoride samples.
- Attach the label to each bottle (do not attach labels to the lab form).
- Include lab forms with submitted samples.
- Do not use a rollerball or gel pen; the ink may run.

If you have questions, call the Minnesota Department of Health contact on the back of all sample instruction forms.

Drinking Water Protection Profile: Chris Eliasson



Chris Eliasson is an Office Administrative Specialist Senior in the Minnesota Department of Health's Drinking Water Protection Section. She is assigned to the Community Public Water Supply Unit and is working on several different projects, including the MDH General Water Chemistry Project, sanitary survey tracking, and data entry monitoring. Her work also includes general correspondence and serving as the lead central cashier, logging all incoming daily cash receipts as well as providing guidance and training others for these tasks. Chris has 10 years' experience in state service, having worked for MDH Sage Screening and the Minnesota State Retirement System. Chris and her husband have four kids. She enjoys outdoor activities, including boating and gardening.

Minnesota AWWA on Facebook

The Minnesota Section of American Water Works Association (AWWA) now has a Facebook page. Anyone with a Facebook account may become a fan of Minnesota AWWA by typing "MN AWWA" into the search box. The page is a source of information and photos and also has a discussion tab, a place for those in the profession to ask questions and swap information.

Environmental Quality Board Adopts State Water Plan

The Minnesota Environmental Quality Board (EQB) recently adopted the *2010 Minnesota Water Plan*, a comprehensive long-range water resources plan for the state that presents a vision for achieving sustainable water management.

The water plan, prepared every 10 years, identifies steps the state must take to meet its long-term needs. The report details seven principles and nine strategies for sustainable water management. It calls for new efforts to understand state groundwater systems and the role they play in nourishing surface waters and identifies additional steps to protect Minnesota's lakes and streams. With the support and engagement of local land and water interests, the plan calls for setting priorities, adapting management practices, increasing protection efforts, promoting wise water use, and restoring local management capacity.

The plan was prepared in cooperation with EQB member agencies and with public advice. It is the latest in a long history of bringing together agencies and others with an interest in achieving sustainable water management.

The report is on the EQB's website at http://www.eqb.state.mn.us/documents/2010_Minnesota_Water_Plan.pdf.

MPCA Issues Guidance on Pharmaceutical Disposal

The Minnesota Pollution Control Agency (MPCA) has a web page regarding pharmaceutical waste and the disposal of expired or unwanted medications. Common practice has been to flush medications down the toilet to ensure that they wouldn't be used by others, but studies have shown that pharmaceuticals can end up in water supplies. The MPCA recommends keeping the medication in its original containers and discarding them in the garbage, after taking other actions depending on whether the medications were solid, liquid, or in blister packs. The MPCA webpage with this information is at <http://tinyurl.com/23gf9kh>.

Waterline

Published quarterly by the Drinking Water Protection Section, Minnesota Department of Health

Editor: Stew Thornley

Staff: Karla Peterson, Jeanette Boothe, Noel Hansen

Past issues of the *Waterline* are available at <http://www.health.state.mn.us/water/newsletters.htm>

Mankato Moves Ahead with Membranes

The city of Mankato is nearing the end of a 10-year, multi-phased project to upgrade its water treatment plant and increase capacity. “The main reason for the upgrade was capacity,” said water superintendent Jim Jones. “The plant was getting old, we were approaching water use in the summer near its capacity. Mankato had never before put water restrictions on and did not want to start.” Jones added that 3- and 4-log removal of *Cryptosporidium*, *Giardia*, and viruses was also a goal.



the maximum contaminant levels (MCL); however, lime softening also removes the radium, along with calcium, in the finished water to below the MCL.

For the treatment plant, the city and AECOM considered rapid-sand filtration with ultraviolet light and membrane filtration using ultrafilter technology. The capital and operational costs were about the same, and ultrafiltration was chosen. Jones said the ability of ultrafiltration to capture

With a 20 percent growth in population, to nearly 39,000, projected for the first quarter of the 21st century, the city began working in the early 2000s on facility planning with AECOM (formerly EarthTech) of Minneapolis and Stevens Point, Wisconsin, to double its capacity from 6 million gallons per day (MGD) to 12 MGD.

The original Mankato water treatment plant included lime softening followed by a dual-media (sand and anthracite) filter. The plant was supplied by a pair of cased and open-rock hole type wells, approximately 700 feet deep into the Mount Simon-Hinckley aquifer, and a shallow (60 feet deep) Ranney collector-type well at the confluence of the Blue Earth and Minnesota rivers. The collector well has nine 12-inch lateral slotted pipes extending horizontally in different directions at one elevation two feet off the bottom (58 feet deep). The water moves to the center to be pumped to the treatment plant.

The upgrade to the water system included the replacement of one well with a higher capacity well and the addition of a new collector well on the Minnesota River, just to the west of the existing collector well, which remained in service along with one of the deep wells.

AECOM project manager Steve Quail explained that nitrate levels in the Blue Earth River vary during the year. Blending with the water from the other wells would keep the nitrate at a low level even when the river had higher levels. The new collector well, on the Minnesota River, does not have such a problem. The deep wells have low levels of iron and manganese but also has radium levels that would exceed

Cryptosporidium and viruses was another consideration. “Ultrafiltration is the future of water treatment, and that’s where Mankato wanted to go,” added Quail.

Pilot studies were then performed on two types of systems, one with submerged membranes and the other with pressure membranes. Quail said both were successful and then were put out for competitive bids with pressure membranes selected on the basis of the bid results.

The ultrafiltration has four skids with two units each. Each unit has 20 pressure vessels with 4 membrane cartridges in each vessel. “Each unit is independently operated, similar to what would be defined as a skid in most plants,” said Quail. “Due to space constraints, two units were placed on one skid, making the skids taller than normal.”

Construction began in 2006 on the new wells, a raw water transmission main, and a high-lift pump station. A reservoir and booster station were added the following year with plant construction starting in 2008. The first phase of the expansion was an addition to the existing plant and the installation of the membrane equipment and recarbonation basins. The existing plant was then remodeled with the conversion of the granular media filters to high-rate softeners. Jones said that the original softeners were put back into use while a hydraulic bottleneck in the new softener piping was retrofitted. “We can use the old system in the winter when water use is lower. The old system started up without any problems and is working fine.”

The project was completed in the spring of 2010, and the utility will have an open house for the public in April 2011.



The Ranney collector wells: the existing well is on the left, new well on the right. Details on the open house that the city of Mankato will have at its new water plant in the spring of 2011 will be posted at <http://www.mankato-mn.gov>.



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ADDRESS SERVICE REQUESTED

CALENDAR

Minnesota Section, American Water Works Association

*March 9-11, Southeast Water Operators School, Ramada Hotel and Conference Center, Rochester. Contact Dennis DuChene, 507-384-0559.
*April 5-7, Metro Water Operators School, Ramada Mall of America, Bloomington. Contact Jeanette Boothe, 651-201-4697, or Stew Thornley, 651-201-4655.

*April 13, Southwest Water Operators School, Redwood Area Community Center, Redwood Falls. Contact Jeff Larson, 507-537-7005.
*May 18-20, Northeast Water Operators School, Superior Shores Resort, Two Harbors. Contact Mark Proulx, 952-240-2023.

*June 8-10, Central Water Operators School, Ruttger's Bay Lake Lodge, Deerwood, Contact Lisa Vollbrecht, 320-255-7225.

Information for all district schools, including agendas, is at
<http://health.state.mn.us/divs/eh/water/wateroperator/trng/schoolagendas.html>

Minnesota Rural Water Association, Contact Kyle Kedrowski, 800-367-6792

*March 1-3, Technical Conference, St. Cloud
April 20, Operation & Maintenance, Elbow Lake
April 27, Operation & Maintenance, Lake Benton
May 4, Hands-on Specialized Treatment Training, LeCenter
*May 11, Operation & Maintenance, Spicer
*June 15, Operation & Maintenance, Wahkon

Class D Nonmunicipal Training
March 2, St. Cloud
April 6, Sturgeon Lake

Class E Training
January 27, St. Paul
February 3, Bemidji
March 23, Medina
April 12, Elbow Lake
May 3, Monticello
June 23, Rochester

Class D workshops are eight hours, and Class E workshops are four hours. The morning session of a Class D workshop is the same as a stand-alone four-hour workshop

For an up-to-date list of events, see the training calendar on the MDH web site at:
http://health.state.mn.us/water/wateroperator/trng/wat_op_sched.html

***Includes a water certification exam.**