



WATER LINE

NEWS AND INFORMATION

FOR PUBLIC WATER SUPPLIERS IN MINNESOTA

Owatonna Fends Off Flood



Owatonna was among the communities in southeastern Minnesota that dealt with a flash flood in 2010. Earlier actions by the city helped save its wells. The city has taken more action to protect itself against future floods. See the story on page 4.

Water Operator Exam Dates

March 2, Rochester

March 8, St. Cloud

April 5, Minneapolis

April 12, Redwood Falls

May 2, Spicer

May 18, Grand Rapids

June, Central Minnesota

June 28, Wahkon

See calendar on back page for more information

Filling Stations for Water Bottles Popping Up Across Minnesota

Photo reprinted with permission of the *Journal of International Falls*.



Bruce Wilson at the bottle-filling station at the International Falls water plant.

Bottle-filling stations are working their way into government facilities, schools, and other public places as people who care about water are promoting drinking from the tap with refillable bottles as an alternative to buying bottled water.

Bruce Wilson, the chief operator at the International Falls water treatment plant, was recently featured in the *International Falls Journal* for installing such a station at the plant and promoting its use in other municipal buildings. Wilson had been to the College of St. Benedict in St. Joseph and was impressed with the school's attitude toward water. The students saw water as a basic human right, not a commodity to be sold. In addition to not allowing sales of bottled water on campus, St. Benedict has a bottle-filling station in each building. These stations combine a normal drinking fountain with a ledge in back to allow for the filling of reusable water bottles.

When the drinking fountain at the water treatment plant needed replacement, Wilson put in a bottle-filling station. Since then the fire department and municipal ice arena have installed these stations and other city facilities are considering it. "We want people to be aware we have an essentially free supply of water," said Wilson. "When you get right down to it, it's pretty convenient and pretty cheap."

Water filling stations—Continued on page 2



Jamie Dayton and Tom Valerius at St. Cloud Technical College.

The city of International Falls, as part of its wellness program, got a grant from its health insurance carrier to buy 200 stainless steel bottles containing the slogan, “Good for You—Good for Your Community.” The bottles were given to city employees and will be used as gifts to citizens at events such as an open house during Safe Drinking Water Week at the water plant.

“We’ve got a great source of water,” said Wilson. “We might as well use it. No sense hauling it in on trucks.”

Wilson and the city also developed a fact sheet with reasons to drink water, highlighting benefits such as weight loss, a remedy for headaches caused by dehydration, and a way to combat digestive problems and cancer risks. Water also promotes body cleansing and a healthy heart and skin.

The College of St. Benedict, along with nearby St. John’s University, provided a similar inspiration for students in the water environment technologies program at St. Cloud Technical and Community College. Impressed with the bottle-filling stations on those campuses, Kevin Justice, Jamie Dayton, and Tom Valerius are working on a club project to add or convert existing water fountains into bottle-filling stations. “We’re trying to follow their lead,” said Justice, “trying to be sustainable.”

The club is now in the planning and financing stage of its project and is soliciting donations. In addition to the bottle-filling stations, the group is hoping to eliminate bottled-water sales in the school and have every new student get a water bottle. Justice’s younger sister, Danielle, is involved in a similar activity as part of her senior project at Gustavus Adolphus College in St. Peter.

Dayton had attended St. Cloud State University and was impressed with the popularity of bottle-filling stations in a couple of the buildings on campus. He said the stations caught on quickly and were getting 2,000 to 3,000 fills every week.

The students are trying to add momentum to the movement, as is Wilson in International Falls. “I’m just trying to promote using tap water,” Wilson said. “People are becoming a little more aware green-wise. It’s not a hard sell.”

Water School Scenes



A number of Minnesota American Water Works Association (AWWA) districts held schools in the fall of 2011. Above, Rick Wanner of American Flow Control conducts a hydrant clinic at the Southeast school in Owatonna.



Meter Madness has been a popular event at each of the district schools. Above, Randy Rapacz of East Grand Forks and Jason Yonke of Moorhead race to get their meters together at the Northwest school in Bemidji. Below, Rapacz has his meter checked for leaks by Beth Peterson.



2012 Metro School

The 2012 Metro Waterworks Operators School will be held from Tuesday, April 3 through Thursday, April 5 at the Ramada Plaza, 1330 Industrial Boulevard NE, Minneapolis.

Participants in the school will receive 16 credit hours for their attendance. The registration for the school will be \$175 (\$210 after March 22 or at the door).

Registration will begin at 7 a.m. on April 3 with the sessions beginning at 7:45 Wednesday and 8:30 Thursday.

A registration form is on the next page.

Tuesday, April 3

8:00 to 11:30

- Breakfast
Speaker: Don Shelby
- Water for People
- Disaster Response

12:30 to 3:30

Water Sources

- Source Water Assessment/Protection
- Municipal Electric Utility Perspective
- Hydrology Ground Water Modeling
- Pump and Well Design and Construction

or

Treatment

- Softening
- Iron and Manganese Removal
- Fluoridation, Chlorination, Phosphates, Polymers
- Filtration

Wednesday, April 4

7:45 to 11:00

Water Quality

- Regulations
- Bacteriological Problems/Boil Orders
- Contaminants
- Sampling Techniques

or

Process Control

- Troubleshooting
- Instrumentation/Controls
- Security

An exam prep (separate sessions for A and B licenses and for C and D licenses) will be held in the morning and the afternoon.

The afternoon session will include tours to the Brooklyn Park Water Plant, Waterous, and Target Field to see the ballpark's water filtration system.

Thursday, April 5

The final day of the Metro School will have a product exposition in the morning with mini-sessions and Meter Madness competition. Certification exams will be held in the afternoon.

Other Spring 2012 Schools

- Southeast School, February 29-March 2, Ramada Hotel and Conference Center, Rochester
- Southwest School, April 12, Redwood Area Community Center, Redwood Falls
- Northeast School, May 16-18, Sugar Lake Lodge, Grand Rapids
- Central School, June, Location to be announced

Words to Live By

In the end our society will be defined not only by what we create but by what we refuse to destroy.
—John Sawhill

All an education does is open a mind;
it doesn't fill an empty one.
—Malcolm Forbes

The door of opportunity is marked *Push*.

Other Coming Attractions

Midwest Regional Water Utility Management Institute, March 13-15, 2012, University of Minnesota, St. Paul
<http://www.cce.umn.edu/Midwest-Regional-Water-Utility-Management-Institute>

Surface Water Treatment Workshop, April 24-26, 2012, Courtyard by Marriott, Moorhead

A registration form for the Southeast, Metro, and Southwest schools is on page 7.

Information on all district schools is at
http://health.state.mn.us/divs/eh/water/wateroperator/trng/wat_op_sched.html

Owatonna Survives 2010 Flood, Raises Wells to Head Off Future Floods



Owatonna Public Utilities was flooded in September 2010. The water utility offices moved into unflooded portions of the power plant. At right, Myron Volker points to the level the water rose to on the pump base for Well 4. The pump base had been raised earlier in 2010. It has since been removed, and the ground level raised for both Wells 4 and 2.

Rain fell across much of southern Minnesota throughout the day on Thursday, September 24, 2010. Meanwhile, water superintendents and others from utilities were gathered in the northern part of the state, at the annual conference of the Minnesota Section of American Water Works Association in Duluth.

That evening, as the group gathered for the awards dinner, reports came in that the rain was falling harder and flooding many areas. The decision makers huddled and talked on their cell phones, finding out what was happening in their communities; those who didn't have problems talked about what they could do to help those who were not so lucky.

Myron Volker of Owatonna learned his city was among the unlucky and was on its own. Because of prior wellhead protection planning he knew that a flood on the Straight River would threaten two of Owatonna Public Utilities' (OPU) public water supply wells. Volker called his office with instructions to seal and caulk one of their wells if the water got high enough to come in. He returned the next morning and found only one route in, from the west. "We were an island," he said, finding the city of 25,000, approximately 70 miles south of Minneapolis, split in two by the rising waters.

By the time the rain let up, about eight inches had come down over a two-day period near Owatonna and more in other areas. The rain in Owatonna followed a two-week period in which four inches had already fallen, leaving the ground saturated and unable to absorb more.

The main offices of Owatonna Public Utilities and several critical pieces of their water supply infrastructure are near the center of town, next to the Straight River in an isolated low point. At the bottom of a bowl covering 450 acres, the area collects storm water and has experienced flooding in the past. Owatonna had escaped the brunt of an even larger storm three years before, one that knocked out a number of cities, but the August 2007 storm that decimated areas to the south caused the city to more seriously examine options to protect its water supply.

Owatonna has 10 wells, 5 of which are used regularly, and treats the water at a central pump station by adding chlorine, fluoride, and a polyphosphate to sequester iron and manganese. The wells, ranging in depth from 649 to 1,325 feet, draw from the Prairie Du Chien-Jordan and Mount Simon aquifers.

The utility called on its consulting firm, Barr Engineering of Edina, Minnesota, and went through its wellhead protection plan in determining possible actions after the 2007 floods.

"The wellhead protection planning process was successful," said Brian LeMon of Barr Engineering. "It identified that Wells 2 and 4 were below the flood-plain level. We recommended a series of projects to get them up out of the flood plain. We had been working with them (OPU) for quite a few years, giving them different proposals and ideas of how to get them up out of the flood plain."

From this planning came the decision to raise the pump base of Well 4 to a foot above the 100-year flood plain. "The building for Well 4 had a high ceiling, allowing for the pump base to be raised," explained LeMon. That was one of the options. . . . They ran with it."

The work was completed in the spring of 2010, a project that LeMon and OPU engineering director Ronnie Johnson said was fortunate. Johnson referred to the "luck that we had addressed Well 4 in the spring."

"That was a true dodging of the bullet," LeMon said of the raising of the pump base of Well 4, which allowed crews, along with citizen volunteers, to concentrate on saving Well 2 by sandbagging during the 2010 flood. "They probably wouldn't have had time to sandbag both wells. At least the wellhead itself was up above the flood level."

Volker described the situation as, "A lot of chaos," as gas and electric services were turned off during the crisis. However, the water system survived and service continued. Well 3, located in the power plant adjacent to the water utility offices and the primary well field, was used as Wells 2 and 4 were shut down during the flooding.

Continued on page 5

Continued from page 4

Community involvement was a big factor in keeping Well 2 from being submerged, Volker said, noting that many people with flooded homes, rather than staying in shelters, came out to help with the sandbagging.

After getting the utility and city back to some degree of normalcy, OPU looked ahead again.

The 2007 floods that hit nearby areas had been enough of a wake-up call for Owatonna to realize it had to look at additional actions to protect the utility. Besides the raising of the Well 4 pump base, the city considered options ranging from ring dikes to levees to raising the wells.

“At that point, before the flood, they weren’t that concerned, but they were treating it seriously,” said LeMon. After the 2010 flood made a direct hit on the city, “Then the realization came, knowing we have to do something. After the flood, we sat down with them.”

Johnson looked at the Minnesota Recovery Flood Fund and then worked with the Minnesota Department of Natural Resources to receive matching funds to protect the wells, which were identified as critical infrastructure, by elevating them.

LeMon said the utility had already considered raising Well 2, “but it’s an older well and considerations had to be

made about investing this much in an older well. Well 4 was a newer well, but since the well house was in better shape, they had to consider if it was worth it to have to build a new building.” Despite the concerns, the utility decided to raise both wells.

Work on the ground raising began in mid-October of 2011 for a four-month project that included demolishing the existing well houses, removing the existing wellheads, bringing in fill, and constructing new wellheads. The general contractor for the project was Rocon, Inc., of Owatonna, and the well work was performed by E. H. Renner & Sons of Elk River, Minnesota.

Wells 2 and 4 were raised 2 feet above the 100-year flood plain, and the ground around the wells will keep the flood waters 50 feet away from the well houses in almost all areas.

“They made good decisions,” said LeMon. “They were on-track. They were actively planning for those projects. When the disaster came, they were ready to make the necessary investments.”

“Every time you learn,” said Johnson. “We were prepared for what we had experienced in the past. . . . When it hits you once, you know you have to prepare for it again.”



Left: Well 4 survived the 2010 flood because its pump base had been raised earlier in the year; with Well 4 out of danger, city crews and local volunteers were able to concentrate sand-bagging efforts on Well 2 (right).

Winners of the Worst Analogies in High School Essays

The little boat gently drifted across the pond exactly the way a bowling ball wouldn't.

McBride fell 12 stories, hitting the pavement like a Hefty Bag filled with vegetable soup.

From the attic came an unearthly howl. The whole scene had an eerie, surreal quality, like when you're on vacation in another city and *Jeopardy* comes on at 7 p.m. instead of 7:30.

Her hair glistened in the rain like nose hair after a sneeze.

Long separated by cruel fate, the star-crossed lovers raced across the grassy field toward each other like two freight trains, one having left Cleveland at 6:36 p.m. traveling at 55 mph, the other from Topeka at 4:19 p.m. at a speed of 35 mph.

The red brick wall was the color of a brick-red Crayola crayon.

He fell for her like his heart was a mob informant and she was the East River.

Consumer Confidence Report Distribution Due July 1

The Minnesota Department of Health (MDH) will not be mailing Consumer Confidence Reports to community water systems this year. Instead, systems will receive a postcard with a link to the MDH website, where the individual report can be retrieved. The reports will contain monitoring results from 2011.

Systems serving populations of 10,000 or greater must mail or otherwise deliver one copy of the report to each customer, or these systems may participate in a pilot study (contact Lih-in Rezania at lih-in.rezania@state.mn.us, 651-201-4661 for more information on the pilot study).

Systems serving populations of greater than 500 but fewer than 10,000 can perform individual distribution, similar to the larger systems, or they can publish the report in its entirety in one or more local newspapers serving their service area. Systems using this option must inform their customers that the reports will not be mailed to them (this can be done in the newspaper or newspapers in which the report appears) and that the reports are available to the public upon request.

Systems serving populations of 500 or fewer can perform either of the above options or they can provide a notice to their customers by mail, by door-to-door delivery, or by posting in an appropriate location that the report is available upon request.

Systems may post the report on their website and are encouraged to make other efforts to ensure that customers see the report. However, a web posting by itself will not satisfy distribution requirements, and the requirements listed in the above paragraphs must be done as a minimum.

The distribution must be done by July 1 and a copy of the report, along with a completed and signed certification form, sent to MDH by July 1.

Radon in Water Treatment Plants

Radon is a naturally occurring soil gas that has no color, odor, or taste and comes from the breakdown of radium-226. It is commonly found in the air in homes and buildings in Minnesota. Radon is the second-leading cause of lung cancer in the United States and is responsible for an estimated 21,000 lung cancer deaths annually. It enters buildings through cracks and openings to the soil, mainly due to how buildings operate. More detailed information can be found at the MDH radon website at <http://www.health.mn.gov/radon>.

In water treatment plants (WTPs), radon may be released from areas with radium accumulation such as filters, sludge, or water. Radon may also be found in WTPs that remove radium and, as a result, water operators may be exposed to elevated concentrations of airborne radon within the plant.

In 2003, MDH monitored airborne radon levels in a small number of WTPs in Minnesota. Elevated levels of airborne radon were found that may pose a potential occupational health risk. Care should be taken to limit the exposure of airborne radon to operators during occupied times. More details of this study were published in the Winter 2003-2004 edition of the *Waterline*.

MDH wishes to expand upon this study in 2012 by monitoring airborne radon levels continuously in selected WTPs. This will involve the use of continuous radon monitors as well as periodic radon samples in air and water taken throughout the study. The start date and duration of the study have yet to be determined but will be modified to fit those WTPs who wish to participate. There is no charge for participating in this study. Participants will be provided the radon information and testing resources as well as a detailed report upon completion of the study.

While occupational exposure to radon may occur in some WTPs in Minnesota, the majority of radon exposure occurs in the home. MDH recommends all homes be tested for radon regardless of age or location. Winter is the best time of year to test. For radon health and testing information, including where to obtain a low-cost radon test kit, see the MDH radon website.

If you wish to participate in this study or have any questions regarding radon, contact MDH environmental research scientist Joshua Kerber at josh.kerber@state.mn.us, 651-201-5613.

High-hazard Cross Connections as Significant Deficiencies

Second in a series by MDH engineer David Rindal

As mentioned in the previous edition of the *Waterline*, MDH district engineers are continuing to notify community water systems that inadequately protected high-hazard cross connections will need to be identified as part of their regular sanitary survey inspections. Such cross connections will require correction starting January 1, 2013.

In an effort to facilitate public water supply compliance with this identification process, the MDH is initiating a Request for Action with the Department of Labor and Industry Plumbing Board. It is hoped that language within the Minnesota Plumbing Code (Minnesota Rules Chapter 4715) can be modified to specify reporting of the installation and maintenance of reduced-pressure-zone backflow preventers, or their equivalent, directly to the public water supplier.

Finally, discussions are underway within the MDH Drinking Water Protection Section regarding potential support for cross-connection control efforts through Source Water Protection competitive grants, which are made possible by the Clean Water Fund. Further details will be provided before the next application period, which will be September 1-30, 2012.

MDH will also be working with other organizations to conduct workshops for water superintendents and city officials throughout the state in 2012.

From a Children's Science Exam

Q. Explain one of the processes by which water can be made safe to drink.

A. Flirtation makes water safe to drink because it removes large pollutants like grit, sand, dead sheep, and canoeists.

REGISTRATION FORM FOR 2012 DISTRICT 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, February 29-March 2, 2012. Ramada Hotel and Conference Center, Rochester. Fee: \$135 (\$145 after February 22 or at the door).

Metro School, April 3-5, 2012. Ramada Plaza, Minneapolis. Fee: \$175 (\$210 after March 22 or at the door).

Southwest School, April 12, 2012. Redwood Area Community Center, Redwood Falls. Fee: \$30 (\$35 after April 1 or at the door).

On-line registration may be available for the Metro School in early 2012 at <http://mnawwa.org>.

An agenda for the Metro School and Information on other district schools is available at http://health.state.mn.us/divs/eh/water/wateroperator/trng/wat_op_sched.html

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.

Reminder to All Water Operators

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

- Take coliform samples on the distribution system, not at the wells or entry points.
- Write the Date Collected, Time Collected, and Collector's Name on the laboratory request form.
- Write the Sample Point on the laboratory request form.
- Attach the label to each bottle (do not attach labels to the lab form).
- Include laboratory request forms with submitted samples; make sure the information on the bottle label and the lab form is the same.
- Use something other than a rollerball or gel pen; the ink may run.

Notify your Minnesota Department of Health district engineer of any e-mail changes for contact people.

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

Waterline

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

Editor: Stew Thornley

Staff: Noel Hansen, Jeanette Boothe

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



Environmental Health Division
 625 North Robert Street
 P. O. Box 64975
 St. Paul, Minnesota 55164-0975

Presort Standard
 US Postage
 PAID
 Permit No. 171
 St. Paul, MN

ADDRESS SERVICE REQUESTED

CALENDAR

Minnesota Section, American Water Works Association

*February 29-March 2, Southeast Water Operators School, Ramada Hotel and Conference Center, Rochester. Contact Dennis DuChene, 507-384-0559.

*April 3-5, Metro Water Operators School, Ramada Plaza, Minneapolis. Contact Jeanette Boothe, 651-201-4697, or Stew Thornley, 651-201-4655.

*April 12, Southwest Water Operators School, Redwood Area Community Center, Redwood Falls. Contact Jeff Larson, 507-537-7005.

*May 16-18, Northeast Water Operators School, Sugar Lake Lodge, Grand Rapids. Contact Mark Proulx, 952-240-2023.

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

***Includes a water certification exam.**

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

*March 6-8, Technical Conference, St. Cloud

*May 2, Operation & Maintenance, Spicer

*June 28, Operation & Maintenance, Wahkon

MRWA Class D and E Training

Class D
 April 10, Cohasset
 April 24, Welch

Class E
 March 7, St. Cloud
 March 21, Cologne
 May 16, Miliona
 June 19, Aitkin
 June 26, St. Paul

The workshops listed above include a certification exam. Other training dates are available at <http://mrwa.com/trainingcalendar.htm>.

Note: 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 Class E operators; thus, Class E operators may attend either the stand-alone four-hour workshop or the morning session of the Class D workshop.

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