



Summer 2005

Service Connection

THE DRINKING WATER PROGRAM NEWSLETTER
 "Working Together for Safe Drinking Water."



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 Bureau of Health

Washburn Nitrate Removal System Goes On-Line!

Nate Saunders, Field Services Manager

In May 2004, the Washburn Water Department and its customers received unwelcome news. Nitrate levels in the drinking water were confirmed to be between 12 and 13 mg/l, above the Maximum Contaminant Level (MCL) of 10 mg/l. When ingested, nitrate converts to nitrite and interferes with the oxygen carrying capacity of the blood. Since this results in less oxygen reaching the body's cells, it is especially important that pregnant women, adults with medical conditions, and infants less than 6 months of age avoid drinking the water that contains excessive nitrate levels.

In response to the news of the nitrate MCL exceedance, town officials immediately began working with the Maine Drinking Water Program (DWP), the U.S. Department of Agriculture (USDA) Rural Development program, the State's Department of Economic & Community Development, and Olver Associates, the consulting engineer. Efforts focused on determining a reasonable technical solution to the nitrate problem and then obtaining adequate funding for the project. Within weeks, a plan was formulated and several funding components were arranged to pay for the project. The USDA Rural Development program provided a \$500,000 grant and the Department of Economic & Community Development provided a \$60,000 urgent needs grant. The Maine DWP approved the project for \$404,657 from the 2005 Drinking Water State Revolving Loan Fund. However, the lack of a General Obligation Bond in 2004 prevented this funding option from being implemented. In order to rapidly provide safe drinking water to its consumers, the Washburn Water Department chose to lease the treatment equipment with the intent to purchase it when SRF funding becomes available. Provided that the voters approve a General Obligation Bond in 2005, the final piece of the financial puzzle should be in place in the spring of 2006.

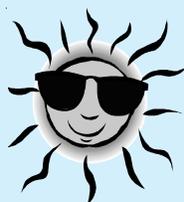


Nitrate Treatment at Washburn Water Department

The Washburn Water Department has now completed the construction of a new building that houses their nitrate, chlorination and fluoridation equipment, and is serving water with acceptable nitrate levels to its customers. It took about a year from the time the nitrate problem was first identified to the time that the Washburn nitrate treatment system went on-line. This is rapid completion for a project of this scope!

Congratulations to all who have been involved with the Washburn nitrate removal project! It is a great example of how the cooperative efforts among the Washburn Water Department, Olver Associates along with State and Federal agencies quickly developed and implemented a municipal scale drinking water treatment system, once again providing the community of Washburn with safe drinking water.

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Submitting Monthly Operating Reports

Roger Crouse, Assistant Director

All public water systems that add a chemical(s) to their water must submit a Monthly Operating Report (MOR) to the Drinking Water Program (DWP). There are essentially two types of MORs submitted to the DWP. The "Small System Chlorination Report Forms," as the name implies is only for small systems such as trailer parks, restaurants, motels and campgrounds. This report is 8 1/2" x 5 1/2" and is designated as "MOR-012."

The rest of the MORs submitted to the DWP are 8 1/2" x 11" and are designated "MOR-001" through 011. These forms are available on the DWP website for download in either Excel format or Adobe Acrobat (pdf). Most of the water systems using these MORs fill them out electronically, print out a copy, sign it and mail it to the DWP.

Starting with the August report (due by September 10th to the DWP), the DWP will accept electronic submission of MORs-001 through 011. This new method will save postage, as well as increase the probability that the DWP receives the report by the 10th of the following month. The DWP has created a new e-mail address, DWPMOR@maine.gov, as the address to submit your MORs.

Following is the procedure for electronic submission of MORs:

1. Using the Excel version of the MOR fill in all appropriate fields.
2. After you have filled out the MOR, print out a hard copy, sign it and place it in your files. The hard copy of the MORs should be available for review by DWP inspectors during a sanitary survey.
3. Each MOR should be saved with a file name with the following format: "ABC Water District" PWSID# "99999" July MOR.xls (or MOR001.xls).
4. Send an e-mail to DWPMOR@maine.gov. The subject line of your e-mail should read: "ABC Water District PWSID#99999 July MOR."
5. Upon receipt of an e-mail, the DWP will send an automatic reply alerting the sender that the e-mail was received.
6. Do not send any other copies via regular mail or fax to the DWP unless requested.

If you need any assistance completing your monthly report electronically or e-mailing it to the DWP, please contact Roger Crouse at 287-5684 or Jennifer Hitchcock at 287-3962.

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State Match for Drinking Water State Revolving Loan Fund

Nancy Beardsley, Director

On the evening of July 29, 2005 the Maine Legislature approved an \$83 million bond package that included the Drinking Water Program's request for \$3.5 million. It was a long, hard road getting to this place. In 2003 our \$1.8 million match request was cut by a third, jeopardizing \$532,000 in federal funding. In 2004, the Legislature did not vote out any bond package so we had no state match. The 2005 regular session also did not produce a bond package which created significant financial hardships for the program. In a special session held during the last week of July 2005 the Legislature agreed on a final bond package. The bond package will go out to Maine voters this November.

If voters approve, we will be able to restore critical program functions. Most importantly we can address public health threats by providing funds for projects that have been waiting to proceed. We can also restore funding for crucial education and outreach programs provided by the Maine Water Utilities Association and the Maine Rural Water Association. We can also reactivate our Wellhead Protection and Capacity Development Grant Programs.

If voters approve our request this November we will have secure funding only through 2006.

Thank you to all the public water systems, associations, staff and Legislators who helped to secure our state matching funds for the Drinking Water State Revolving Loan Fund..

Resolve 029: A Review of Existing Source Protection Legislation

Andy Tolman, Source Water Section Manager

LD 1265, An Act to Protect Aquifers, was introduced into the recently completed session of the legislature. It was a well-intended bill, which, as submitted, would have applied a Connecticut-based model to the protection of ground water, aquifers, and drinking water supplies.

After discussion with the sponsors and other state agencies, the bill was amended to direct the Maine Drinking Water Program (in consultation with the DEP, Maine Geological Survey, and Department of Agriculture) to review existing provisions concerning drinking water source protection and report back to the next session of the legislature.

Over the past 25 years, there have been a series of similar Studies chartered by the Legislature to recommend improvement in source protection. Each one has contributed new ideas and many have been successful at reducing the risk to water supplies. Since the existing laws and regulations have evolved over time, the resulting protection is not at a uniformly high level.

The recently completed source water assessments identified future development as the major risk to

Maine's water supplies. While the best and most effective source protection is ownership of most or all of the land area supplying water to a source, this is often not practical. If land cannot be acquired, then good land use planning and management is the next best means of source protection. The power to conduct planning, zoning, and permitting for land use activities are primarily vested in local government. Both the content and effectiveness of local ordinances is quite variable.

Certain activities that pose risks to water sources are regulated by the state, and many have provisions governing their practice in source protection areas. A variety of agencies and programs regulate activities, with varying enthusiasm and effectiveness. So, the protection of water supplies is left to a large number of individuals and organizations, none of whom has complete control over water quality related activities. It is this patchwork of regulation that we are going to review over this summer and fall and see if we can find ways to improve source protection effectiveness.



See **Resolve 029**, page 4



Long Term 2 Enhanced SWTR and Stage 2 D/DBP Rule Updates

Jennifer Hitchcock, Surface Water Treatment Rule Coordinator

The Environmental Protection Agency (EPA) is planning to publish both the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and the Stage 2 Disinfectants/Disinfection Byproducts Rule (Stage 2 D/DBPR) by the end of 2005. Both rules are a continuation of previous rules related to



protecting consumers from microorganisms and disinfection byproducts in their drinking water. Cumulatively, these rules are known as the Microbial/Disinfection Byproduct Rules, or M/DBP Rules. EPA realizes it is important to maintain a balance of protecting drinking water from microorganisms, such as bacteria, viruses and protozoa, by using chemical disinfectants, at the same time, protecting the public from consuming water with excessive amounts of byproducts created as a result of disinfecting the water.

As part of the current SWTR, public water systems utilizing surface water must also adhere to disinfectant concentration-contact time requirements, ensuring a 3-log removal and/or inactivation of *Giardia lamblia* as well as a 4-log

removal and/or inactivation of viruses and a 2-log removal of *Cryptosporidium*. These requirements will intensify with LT2, and surface water systems will be required to provide additional barriers and/or treatment to remove and/or inactivate *Cryptosporidium*. These barriers and/or treatment will be determined, following source water testing for E. Coli and/or *Cryptosporidium* levels. Depending on system size, the source water testing will begin six months to 2½ years following rule finalization.

In the Stage 1 D/DBP Rule, only Community (C) and Non-Transient, Non-Community (NTNC) water systems that add a chemical to the water were required to test for disinfection byproducts. However, in the Stage 2 D/DBP Rule, systems that are part of a combined distribution system will also be required to test for DBPs. Distribution systems are considered “combined” when two or more water systems are interconnected and actively use the interconnection. Interconnections that are for emergency use only are not considered “combined”. Here in Maine, we have approximately a dozen of these “combined” distribution systems. In the past, only the water system adding the disinfectant tested for DBPs. This summer, those systems that are purchasing treated water from another water system will begin DBP testing. This testing will provide background data for the Stage 2 D/DBP Rule, and may allow the water system to obtain a waiver for the Initial Distribution System Evaluation (IDSE) portion of the Stage 2 D/DBP Rule.

If you have any questions about the upcoming Stage 2 D/DBP Rule or LT2, please contact Jennifer Hitchcock, SWTR Coordinator, at (207) 287-3962 or at jennifer.hitchcock@maine.gov.

Resolve 029, continued from page 3

Next January, the group will report back to the Energy and Natural Resources Committee, who may choose to authorize a full stakeholder process to consider adopting new legislation for source water protection. That process would take place in 2006-07, and would be reported to the next regular session of the Legislature. The Drinking Water Program is looking forward to the opportunity to work with public water systems and others to make the path to protection as smooth and seamless as possible.



The Pressure Tank: A Key Component of Your Water System

Rod Hanscom, Field Services Engineer, District 3

Until the early 1960's, small water system operators (and homeowners) depended on large galvanized steel tanks, equipped with air supply fittings, air volume controls and pressure gauges, to provide well pump pressure control and a small amount of storage. When placed in service, this type of hydropneumatic tank required the operator to pump air into the tank (usually 30 psi) prior to setting the pump switch control pressures, starting the well pump, and filling the tank. There was no membrane separating the pressurized air in the top of the tank from the water being pumped into the tank bottom, which required close monitoring in order to avoid "waterlogging" as the air and water mixed over time. This leads, of course, to the situation where the well pump begins to "short cycle", repeatedly starting up and shutting down because there is no cushioning dome of air in the tank to absorb the pressure differential between "pump on" (30 psi) and "pump off" (typically 50 psi) settings on the pressure switch.

Contrary to popularly held opinion, the primary reason for utilizing a pressure tank is well pump control. Water storage, or drawdown, is only a secondary benefit. In order to give the typical 20 psi operating range between "pump on" and "pump off", air in the tank occupies most of the available space: a typical "20-gallon" residential pressure tank only contains a little over 5 gallons of water when fully charged! With the advent of pre-pressurized "bladder" tanks utilizing a sealed-in air charge, the most common cause of pump short cycling has been eliminated for all practical purposes, since the air and water cannot mix. Modern bladder tanks are usually pre-charged to 40 psi, with the pressure switch set for an operating range between 40 psi ("pump on") and 60 psi ("pump off").

So how did your well driller or pump installer determine the appropriate pressure tank size? It may surprise you to learn that, again, the amount of water storage is a secondary consideration (although more may be better!). Rather, the most important design factor in sizing the tank is the minimum well pump running time that the tank provides, and matches the pump discharge rate with tank volume to enable a minimum pump running time of one minute for pumps up to $\frac{3}{4}$ HP, or two minutes for 1 HP or larger pumps. This is done to reduce pump use to control wear and tear, and reduce energy consumption by keeping pump starts to a minimum.



What do you, as a water system operator, do to ensure your pressure tank is doing what it's supposed to do? Simply look and listen. With the exception of an exterior shell puncture and obvious leak, a pressure tank will offer few clues as to what's going on inside. Rather, it depends on the pump switch, controller, and pressure gauge to indicate potential problems. With the system drawing water, look at the pressure gauge, and listen for the pump control to start the pump (at the "pump on" pressure set in the pump switch) and stop the pump (when the "pump off" pressure has been reached). If the well pump appears to be short-cycling, or runs for less than the recommended minimum time specified above, additional air can be added to the tank with a tire pump or small air compressor. In the event the air bladder has failed, the bladder or the entire tank must be replaced. If you detect a problem that you can't handle on site, or the tank appears to be insufficiently sized to provide the minimum pump run time, the Drinking Water Program recommends you contact a licensed pump installer, well driller or plumber.

Water Operators

Teresa Trott, Operator Licensing Officer



As of June 30, 2005, 93% of all public water systems required to have operators are in compliance! This result is tremendous; the Board of Licensure and the Drinking Water Program wish to thank all trainers, operators and owners for their assistance in this success.

Exams

Maine is the first New England state to offer a direct entry examination option for persons with qualifying experience to get a quick start into the profession. The acceptance by examinees seems positive. So far, the pass rates on the direct entry option appear higher than on the sequential examinations. The April and June pass rates are reflected in the table below. Some rates show marked improvement, while others show a need for training availability and better exam preparation. Congratulations to the successful examinees. Exam applications are due September 17th for the October 25th and 27th exams in Augusta and Presque Isle.

Water Operator Exam Pass Rates					
DE = Direct Entry Exam	April	June		April	June
VSWS	78%	50%			
Class 1 Treatment	71%	72%	Class 1 Distribution	71%	57%
Class 2 Treatment	14%	30%	Class 2 Distribution	36%	70%
Class 2 DE Treatment	91%	33%	Class 2 DE Distribution	100%	50%
Class 3 Treatment	21%	33%	Class 3 Distribution	41%	100%
Class 3 DE Treatment	0%	100%	Class 3 DE Distribution	66%	100%
Class 4 Treatment	0%	20%	Class 4 Distribution	75%	100%
Class 4 DE Treatment	50%	25%	Class 4 DE Distribution	25%	28%

Renewal Training Request

The Board has received requests that large systems holding in-house training welcome smaller system operators to attend. If you are interested in inviting small system operators to your in-house training, please e-mail Terry at teresa.trott@maine.gov. If there is enough interest, a clearinghouse may be developed.

Continuing Education Training

There are many ERG training courses being offered this year. Check the on-line calendar (www.medwp.com) for more information. The courses offered to date have received excellent reviews.

Classes are \$20 or less.

Leak Detection: September 13 & 14 *Maine Rural Water Association (MRWA)*

Very Small Water System-Class I Exam Preparation Classes: Begin Week of Sept. 13 *MRWA*

Chemical Handling and Safety: Sept. 27, 28, 29 *MRWA*

Sampling Procedures: Oct 19 & 20 *New England Water Works Association*

Safety Plans: November 10 & 17 *Wright Pierce*



Watch for upcoming courses in Water Chemistry and Treatment, and Water System Hydraulics.



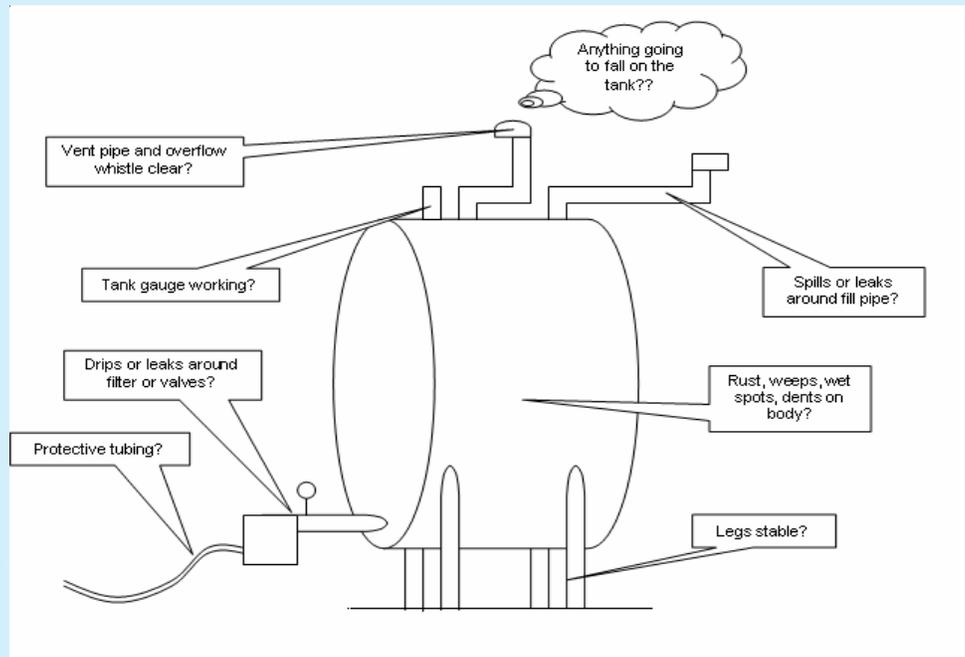
Simple Things to Protect Your Wellhead

Alex Wong, Groundwater Program Manager, Maine Rural Water Association

Protecting your wellhead doesn't have to be a big hassle. In fact, there are many small things a water system can do that take less time than you might imagine. Maine Rural Water Association recently assisted Independence Association, a well-known, non-profit service provider for individuals with developmental disabilities, in creating a wellhead protection plan. They have several locations in the Mid-Coast area, one of which has a well with a site classified as a VSWS.

The Independence Association well is drilled into fractured bedrock and is located at the edge of a paved parking area, within 300 feet of 2-250 gallon above ground heating fuel oil tanks and a heavily traveled road. A management plan was developed to address each of these issues. Reduced salting of the parking area near the wellhead will be instituted this winter, and a request for reduced salting in the wellhead protection area was made to the Maine Department of Transportation. We also developed an inspection and preventative maintenance schedule for the above ground home heating fuel oil tanks. The Maine Department of Environmental Protection estimates that over the last six years there has been an average of one oil spill per day related to above ground home heating fuel oil tanks. Simple tasks such as a visual inspection for leaks and corrosion and protecting the filter line can go a long way to preventing an oil spill near your wellhead.

By writing two simple letters and taking five minutes every month to inspect a tank, this VSWS has gone a long way to protect their wellhead. If you are interested in developing and implementing a wellhead protection plan of your own, please contact David Braley at the Drinking Water Program, 287-3194 or david.braley@maine.gov, or Alex Wong at the Maine Rural Water Association, 14 Maine Street, Brunswick, 729-6569.



Things to look for when inspecting your fuel oil tank

EPA Recognizes Water Educators



Governor John Baldacci and Chris Ryan from Environmental Protection Agency (EPA) Region 1 presented the 2005 EPA Environmental Educator Award to Steve Pomelow, a teacher from Wescott Jr. High School in Westbrook and Rob Taylor, a former science teacher from Livermore Falls. Both educators have worked closely with Portland and Livermore Falls Water Districts, respectively to raise awareness of water related issues for their students. Thanks to both Steve and Rob for your hard work!



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