NewsLeaks

FALL/ WINTER 2014

Vermont Rural Water Association

Vermont Rural Water Association....Supporting Water and Wastewater Systems since 1982

Tracer Wire Systems

Brent Desranleau, Water Systems Specialist

For over three decades, I have been pushing tracer wire installation on non-metallic pipe, and it has not been an easy road. Time and time again I would hear the same story; oh! we will just line-up with the gate valves, or hydrants, or our engineer said that with good record drawing you will be all set. Well I know from experience that this is not always the case, and I have had my share of up's and down's trying to assist municipal water systems with locating non-metallic water and sewer mains with several different pieces of equipment and methods.

I just recently came back from a national water conference in Seattle Washington, and had a chance to test drive a new locator that is supposed to make locating non-metallic pipe "easy". Well all I'm going to say is the technology that was being sold as something new was re-packaged with a few extra bells and whistles and has been around for many years. So my point is, I believe that with the right design approach and care in the installation of tracer wire, it is still the best thing going. Please find on pages 5 and 6 a very good article published by Water World Magazine vol. 26 Issue 9. I would also like to point out that there are water and wastewater systems out there that are starting to take this issue very seriously.

Another Productive Year For VRWA

Shaun Fielder, Executive Director

It's been a busy year for VRWA on many fronts and here is a sampling of our activities in 2014. The first part of year we were actively involved offering comments on Lake Champlain TMDL. VRWA took part in the annual Rural Water Rally in Washington in mid-winter and we continue to maintain support for rural water program funding with our Congressional delegation. In early spring we took part in a New England Rural Water Affiliate presentation to EPA Region 1 officials including Administrator Spalding, the focus was to showcase the value and need of our programs and services.

Throughout the year our team members were extremely busy offering ongoing continuing education training and onsite assistance on all aspects of operations for water and wastewater systems. We held another successful VRWA Conference and Tradeshow in May, we look forward to our May 2015 event at the same Lake Morey location.

It was very rewarding for VRWA to continue to strengthen partnerships with VT DEC, VT USDA RD, USDA FSA, VOSHA, VT DOL, GMWEA, VLCT, EPA Region 1, and many other entities. Our team members were very active on many industry committee assignments and continued to actively represent and promote the interests of public water and wastewater systems. *(Continued on page 9)*

The VRWA Team October 2014 (Left to right) Front row: Liz Royer, Doris Dastalto, Paul Sestito, Wayne Graham, Matt Guerino.
Back row: Brent Desranleau, Tim Russo, Aaron Perez, Shaun Fielder

Who We Are

Since 1982, Vermont Rural Water Association has supported water and wastewater systems across the state. We provide many services, including training, source water protection planning, and onsite assistance.

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News Leaks is the official publication of VRWA. It is published quarterly for distribution to operators, owners, managers and board members of water and wastewater systems in Vermont, as well as to association members, water and wastewater service providers, regulators, and other friends. Opinions expressed in the newsletter do not necessarily reflect the views and policies of VRWA.

Vermont Rural Water Association

Letters

September 30, 2014
Shaun Fielder
Executive Director
Vermont Rural Water Association

Re: Liz Royer, Source Protection Specialist

Dear Shaun,

Yesterday I had the pleasure of working with Liz to update the Town of Rutland Fire District #1 Source Protection Plan. I was extremely pleased with her professionalism, computer skills and pleasant work ethics in updating our plan. She arrived on time, was totally organized and prompt with questions and answers to complete her task. She is extremely thorough and ambitious and wasted no time in editing the document and organizing the maps, charts and attachments. This was a huge relief to me and I appreciate this more than Liz and you probably know. As always, the services that your organization provides to Fire Districts like ours is crucial to our everyday existence. The training and support that your VRWA organization provides is always professional, important and necessary for our day to day operations.

Sincerely;
Howard J. Burgess
Chairman, Prudential Committee
Town of Rutland Fire District #1
PO Box 231
Center Rutland, VT 05736

News on Tap

Thank you Paul Carroccio

After careful consideration Paul decided to step down from his director position this past November. All of us at VRWA appreciate his seven plus years serving as a director. At this time the board is taking steps to seek out a replacement to fill this director position.

Nominations for Tony Torchia Award and Board of Directors

In the spring, two of our director positions are up for election and given Paul Carroccio's resignation, that means three seats total will be voted on by membership following the receipt of nominations. Our all-volunteer board meets quarterly to direct and oversee the association.

Directors are representatives of VRWA-member water/wastewater systems and they are elected to the board for three-year terms by the membership. Self nominations are allowed.

The Tony Torchia VRWA Special Recognition Award honors a person affiliated with the water/wastewater industry for extraordinary effort or accomplishment during the previous year or over the course of a career. All the members are invited to submit nominations.

Nominations for a board seat or the Tony Torchia Award must be received by January 31, 2015. For a nomination form, visit www.vtruralwater.org.

Drinking Water Taste Contest

VRWA is pleased to announce the Vermont Drinking Water Week Committee drinking water taste contest will be conducted at our upcoming conference event in May at the Lake Morey Resort. The winner of the contest will be entered into the Great American Taste Contest to be held at the rural water rally February 2016 in Washington, DC. Community and non-transient non-community systems will eligible to participate and contest details and guidelines will be released in early 2015.

Rally Visit

VRWA is gearing up for another visit to Capitol Hill February 9 to 11, 2015 for the annual Rural Water Rally. We look forward to visits with our Congressional Delegation to advocate for rural water program funding and to be able to demonstrate the value and need for the services VRWA provides. As part of this endeavor, we pass along any letters or notes of support we have received. These support items are very valuable and often an item reviewed during our given meetings. If you are interested in submitting a short email or letter of support regarding how VRWA is important to you, your system and/or your community, please email them to vrwa@vtruralwater.org. They can be addressed to Shaun Fielder. If you would like to submit via mail, forward to our administrative address at 20 Susie Wilson Road, Essex Junction, VT 05452. Our thanks to Senator Leahy, Senator Sanders, and Congressman Welch for their ongoing support of rural water program funding.

Shut-Offs in Small Towns

By Aaron Perez, Water Systems Specialist

It can be difficult to collect past water and wastewater debt in a small town where you may know or even be related to many people in the community. But there are a few things you can do to make this process easier.

First, have a clearly written water bill. This should be designed to be easily read and understood. It should include not only the current balance owed by the account holder but also any past due, accrued interest and/or additional penalty fees that may apply. You should also note any shut-off and turn-on fees that the home owner may be subject to if the bill is not paid.

Second, have a clearly written policy in place that identifies when past due accounts will be subject to being shut off. It is best to supply shut-off notices regularly so that the amount owed doesn't get to the point where it's overwhelming. It is always easier to collect a relatively small amount of money and will also save the account holder from other fees that can accumulate the longer a bill goes. It is also important to have a policy in place that spells out the steps that will be taken before and after a shut-off occurs. This should a set time frame between notification and the actual shut-off as well as the time frame between bill payment and service restoration.

Third, when dealing with the public it is best to be perceived as professional as possible. Dressing in the systems uniform is always ideal but not always possible, but even a hat or a reflective vest with the name of your system printed on it can help identify you as a system operations specialist. It is also important to have the answers to any questions that someone may ask about the shut-off process. Responding the same way to all customers can go a long way in avoiding any accusations of favoritism or unfair practices that sometimes arise in small systems where the operator is commonly also part of the community. People who approach you in an angry state should be dealt with by calmly, explaining the situation then doing your work as quickly and professionally as possible. This obviously does not always work but it is important not to escalate the situation. Some people cannot be reasoned with so it is sometimes necessary to walk away and inform the town officials or board members of the situation so that further action can be taken in an appropriate way.

My final tip is to locate the curb stop at the time of notification. While you're at the address putting out the disconnect notice, it can be beneficial to locate and mark the curb stop. This will give the owner a visual aid that lets them know you will be back if no further action is taken on their part to pay the past amount owed. It also has the extra benefit of having to spend less time at that address at the time of actual shut off.

Do's and Don'ts of Tracer Wire Systems

By Michael Moore, re-printed with permission from WaterWorld

When designing a water or sewer piping system, how seriously is the design or specification of tracer wire taken? Unfortunately, not nearly as much as the rest of the system. Most water department specifications call out the fire hydrant specifications down to the threads on the riser, but tracer wire has been taken far too lightly with very broad specifications. Some water departments in parts of the country don't use tracer wire at all. Warning tape, detectable tape, bare copper, coated solid copper, copper clad steel, stainless steel, and stranded copper or stranded stainless steel are all options being used.

What are the right products to use? Wire is only a small piece of the puzzle. Proper installation and location to the pipe, termination of the wire and connecting the wire properly when splicing or connecting to a service are very important as well.

Many municipalities are writing tracer wire specifications that are too broad. An example would be "Install #12 solid copper wire with jacket". That's it. So, the contractor runs to a local lumber yard or electrical wholesaler and buys the least expensive wire, usually THHN. The nylon PVC coating on THHN will typically last around two years before it deteriorates and exposes the copper. THHN is not made for direct bury. And copper, over time, will turn back to its original state or earth. The locate signal will no longer remain in the wire path.

Articles as long ago as 2003 warning of the improper use of THHN as a tracer wire have been written by engineers and regulatory agencies. Look at your current specification; tighten it up to not allow THHN.

What should be considered when writing a tracer wire specification:

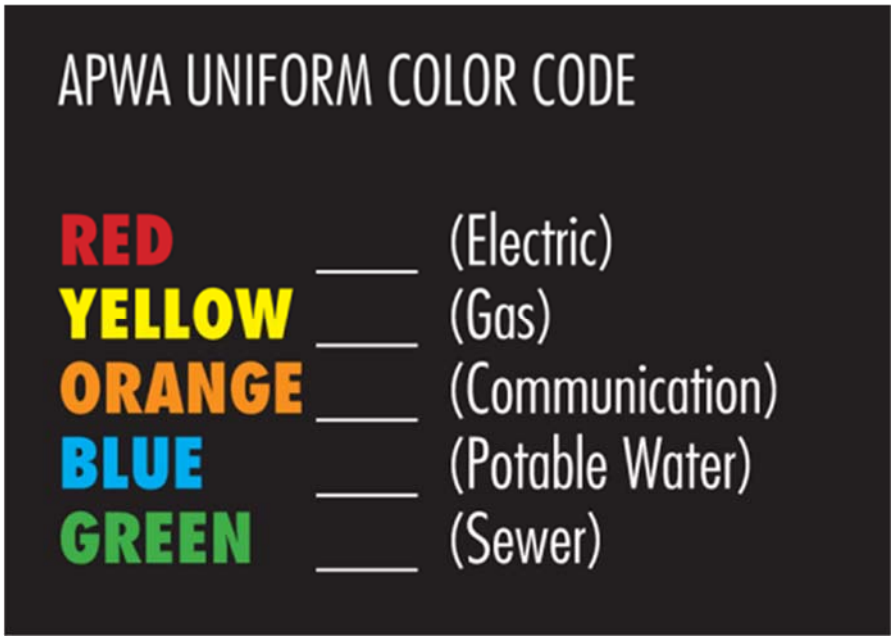
- Wire Size or Gauge (AWG)
- Jacket Color
- Jacket/ coating type
- Wire Types - Copper Clad Steel, Copper, Stainless
- Proper connections
- Placement of the wire in regards to pipe
- Termination method for wire, test stations and connections
- Specification for open ditch/ direct bury, pipe bursting and directional boring
- Inspection and testing upon completion of a new system

- The myth is the bigger the wire the stronger the signal. Not true. Larger diameter is normally called out for strength, not signal carrying qualities. A common failure that happens during installation is breakage. Size for size high strength Copper Clad Steel (CCS) has twice the break load of solid copper. This allows smaller diameter wire to be used, usually resulting in cost savings.
- Color is simple, follow the APWA uniform color code.system.
- Many different jackets or coatings are available. High Density Polyethylene (HDPE) or High Molecular Weight Polyethylene (HMWPE) are designed for direct burial. Nylon is not.
- Solid copper or copper clad steel (CCS) work well and there's no need for stranded. High Strength Copper Clad Steel (CCS) was introduced to the market in 2004 for tracer wire and it has a 2X strength advantage over solid copper. Copper Clad Steel has equal conductivity to solid copper and stainless, but is usually less expensive.

(Continued on page 6)

- Even if you have the best tracer wire in the ground, it's only as good as the connections. Proper connectors, which protect from moisture and corrosion, are extremely important. Copperhead SnakeBite connectors and 3M DBR are two of the commonly used moisture displacement connectors. Do not twist the wires together and wrap with electrical tape. Corrosion will happen eventually and the locate signal will be lost to ground at the connection.
- The tracer wire should be placed in the same orientation to all installed pipe. Using a spacer, taping the tracer wire to the pipe every 8-10 feet in the three o'clock position or specifying fill between the pipe and tracer wire are all acceptable practices. Taping the wire to the pipe helps prevent damage to the wire during back filling or when digging around the pipe in the future. Installation of color coded warning tape one foot above the pipe will enhance utility ID during excavation when repairs are needed. Once tape has been found, only hand digging should be allowed.
- The best tracer wire system is connected with electrical current characteristics in mind. Electricity will take the path of least resistance. Good grounding and terminating of the wire will improve the quality of the signal. Using test stations to bring the tracer wire above ground for ease of terminating a signal is best. Grounding one or both ends of the wire or introducing a small anode may enhance signal strength.
- Different types of wire should be considered for different installation applications. Open ditch/direct bury does not require as strong a wire as directional drilling or pipe bursting. Consider strength and coating type and thickness when specifying wire, making sure there will be no surprises after the project is completed or when locating is required.
- Another very important step is to make sure the contractor or city inspector performs a locate or conductivity test prior to signing off on the project. It is much easier to correct any issues promptly as opposed to months or years later when a locate is required and the piping cannot be found.

Like your fire hydrant, curb stop, manhole, piping and other important components of your system, tracer wire should be taken just as serious. It's one inexpensive insurance policy, especially if you weigh the cost of repairs once a utility has been damaged due to not being able to locate it. Write specifications to cover the entire tracer wire. Not just wire, but connectors, test stations and procedure as to how you want the components installed. Remember, THHN is not made for direct bury!



HAPPY HOLIDAYS

Thank you to all of our member systems. And thanks especially to the associate members listed below. They support us, so please support them!

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Preparing for Sanitary Surveys, Part 1: Groundwater Source Evaluation

Matt Guerino, Training Specialist

The phone rings at the treatment plant. You pick up the phone and a state sanitary surveyor requests a visit to your water system. After you set the date for the sanitary survey, what do you do as a water system operator? This article will address water system source inspections for a groundwater system prior to your sanitary surveys.

Water system sanitary surveys require an entire review of your water system from source to tap. So let's concentrate on your water source. If you have a drilled well start with inspecting the well cap. Make sure that the cap isn't cracked and that the gasket is intact. If the well cap is cracked you just have to replace it. Make sure that no bolts are missing and that the bolts are secured tightly. Now let's move on to the conduit, which is the usually made of plastic and protects the electrical lines going to your pump. If the conduit is cracked or is separated from the well cap it will need to be repaired or replaced. Finally, review the topography. The ground should gently slope away from the casing using a confining layer such as clay. Remember to use only products that meet basic Water Supply Rule standards. Believe it or not, these deficiencies have been identified frequently.

Let's discuss dug wells and the most identified deficiencies. Well tiles usually are cement cylinders that are placed on top of each other and sealed at each seam. The seam is generally where most of the problems occur. Make sure that there isn't any evidence of water entering in at the seams. Usually, if the seals have failed you will see staining on the inside of the well tile. An even worse issue would be something poking through the side of the casing such as tree roots. Review the topography around the well tiles as stated above. Remember to use only products that meet the basic Water Supply Rule standards.

You have a spring box instead, so let's start with a walk around the spring box building. Look for any open pathway for insects or little animals to get in. If you find a pathway, make sure to seal these gaps with a drinking water system approved product. Any overflow out of your spring should be properly screened with a 24 mesh non-corrodible screen. Now let's look inside your spring house. Make sure nothing is floating on the spring. There should be no evidence of anything living entering the spring house. If you have insulation at the spring house, make sure it is intact and not floating in the spring. The vents should be properly screened. Verify that the doors have seals on them to better protect the interior from insects or other critters. Close and lock the spring box hatch/door. Make sure everything is in working order and that you have proper access to the spring house.

Being prepared for a sanitary survey isn't difficult... if you follow some of these suggestions, you will make the sanitary survey process quick and simple, which is what we all want. In the future, I will discuss general guidelines to review your treatment plant and what kind of paperwork you should have on hand for review by the surveyor. Please look for new courses pertaining to this subject coming to your area in 2015.

SAVE THE DATE
Vermont Rural Water Annual Conference and Trade Show
May 6-7, 2015 · Lake Morey Resort · Fairlee, Vermont

"Another Productive Year For VRWA" continued from cover

In June we welcomed Paul Sestito to the team as a water wastewater specialist and he has been busy in both the classroom and the field this fall.

At the end of July we bid a fond goodbye to Phil Acebo upon his retirement. Phil led training coordination activities for water training this past seven years and did an outstanding job. He valued the friendships he created with many of you. He and his wife Cindy have retired to Spain, yes the country Spain, and they are doing very well. I don't think they will miss our winter weather, but I know Phil misses deer hunting in Vermont. Given Phil's retirement we were lucky enough to have Matt Guerino join our team in September. Matt has many years of experience in the industry, most recently with VT DEC DWGWPD. He has hit the ground running and been busy with various training activities.

This fall continued to be busy for all the team with the push on field services prior to freeze up and on other activities such gearing up for the February rally visit to DC and planning for our Annual Conference and Trade Show set for May 6 & 7, 2015 at the Lake Morey Resort. We are into planning of sessions and related details and looking forward to seeing many of you there.

You have heard me say a number of times change is never ending in this day and age. Noting the changes we have experienced on our team assignments I want to say thank you to all of our employees. Your dedication to VRWA, to each other, to our team, and to all the systems we serve is amazing. I appreciate your dedication.

All of us at VRWA look forward to another productive year and I wish you and your family members the best this holiday season!

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