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

Energy Efficiency and VRWA

Dmitri Hudak, Energy Efficiency Specialist

I am pleased to announce that as of November 1, 2010 I am serving the water/wastewater community in a new and exciting position here at VRWA. Under a new subcontract VRWA has with Efficiency Vermont, my primary focus is to assist with identifying energy efficiency opportunities within the water/wastewater treatment sector. The goal of this joint venture between VRWA and EVT is simple: to assist communities in becoming more energy efficient in order to reduce their long term operating costs.

As the ARRA circuit rider, I have had the great pleasure of making site visits and discussing financing options with operators and board members alike. This provided me with the opportunity to meet a lot of great people around the state. I will continue to travel the state maintaining the contacts that I have developed while shifting the focus from discussing financing options to identifying efficiency opportunities.

I welcome input and ideas from our membership base. If you have an idea for a project that will improve the energy efficiency of your operation, please let me know about it! I can be reached at 802-660-4988 x338 or by email at dhudak@vtruralwater.org

Vermont's New Groundwater Withdrawal Rules

Eric Hanson, Source Protection Specialist

As all public water system operators in Vermont know, there are longstanding regulations in place concerning the permitting of sources and the operation of public water systems to help ensure adequate quantity and quality of drinking water for all water users connected to these systems. Because the majority of public water systems in Vermont obtain their water from groundwater sources, potential impacts to groundwater, such as interference with nearby water supply sources, are routinely evaluated during the permitting process for new public water system wells. Up until now there have not been similar requirements for commercial or industrial groundwater withdrawals in Vermont, such as those associated with golf course irrigation, industrial processes, and large bulk and bottled water operations. New rules – the Groundwater Withdrawal Reporting and Permitting Rules - are currently making their way through the administrative procedures process on their way to becoming officially adopted by the State of Vermont.

The Groundwater Withdrawal Reporting and Permitting Rules are a result of Act 199 of the 2007-2008 Vermont General Assembly, which was signed into law by Governor Jim Douglas on June 9, 2008. This Act, among other things, declares

Vermont's groundwater to be a public trust resource and requires the state to manage groundwater in the best interest of all Vermonters. The new rules do not apply to drinking water supplied by public water systems in Vermont. Therefore, public water system operators, board members, and town officials do not need to worry about any additional permitting or reporting requirements for their public water systems resulting from the adoption of these rules. Also exempt are groundwater withdrawals for fire suppression and other public emergency purposes, domestic groundwater use, groundwater withdrawals for farming, dairy processors and milk handlers, and non-extractive geothermal heat pumps.

The new rules include the following reporting and permitting requirements:

Reporting: Those making ground-water withdrawals of more than 20,000 gallons per day (equivalent to about 14 gallons per minute), averaged over a calendar month, are required to file an annual groundwater report with the Vermont Agency of Natural Resources that includes the average daily rate of withdrawal from each existing source.

(Continued on page 9)

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.

Board of Directors

Ed Savage, Town of West Rutland Richard Desautels, Colchester FD#2 Rod Lamothe, Castleton Meadows Paul Carroccio, Piper Ridge Homeowners Association Harry Hinrichsen, Town of Barre

20 Susie Wilson Road, Suite B Essex Junction, Vermont 05452-2827 802-660-4988 voice; 866-378-7213 fax vrwa@vtruralwater.org; www.vtruralwater.org

Contact Our Staff

Call us at 800-556-3792

Training Specialist

Phil Acebo, Ext. 337, pacebo@vtruralwater.org

Water Systems Specialist

Brent Desranleau, Ext. 322, bdesranleau@vtruralwater.org Paula Jackson, Ext. 332, pjackson@vtruralwater.org Aaron Perez, Ext. 331, aperez@vtruralwater.org

Wastewater Specialist

Wayne Graham, Ext. 319, wgraham@vtruralwater.org

Source Protection Specialist

Eric Hanson, Ext. 327, ehanson@vtruralwater.org Liz Royer, Ext. 336, lroyer@vtruralwater.org

Energy Efficiency Specialist

Dmitri Hudak, Ext. 338, dhudak@vtruralwater.org

Executive Director

Shaun Fielder, Ext. 315, sfielder@vtruralwater.org

Publication Staff

Tim Russo, Ext. 305, trusso@vtruralwater.org

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.

For advertising rates and submission criteria, please call 800-556-3792. We reserve the right to reject advertising deemed unsuitable. Acceptance of advertising does not constitute endorsement of the advertiser's products and services, nor do we make any claims or guarantees as to the accuracy or validity of the advertiser's offer. ©2010 Vermont Rural Water Association.



Letters

Office of the Prudential Committee

Water Department

Brandon Fire District No. 1

58 Franklin Street Brandon, Vermont 05733 802.247.3311

October 13, 2010

Shaun Fielder Vermont Rural Water Association 20 Susie Wilson Road Essex Junction, VT 05452

Dear Shaun,

Brandon Fire District No. 1 has been assisted by Vermont Rural Association employees for many years. In my time here, we have received aid from the following people: Elizabeth Walker, Jay Matuszewski, Shaun Fielder, Brent Desranleau, Paula Jackson, Eric Peterson, Aaron Perez and Eric Hanson. There are numerous others who have provided us with their expertise in training sessions. This letter is to thank you and your staff for the exemplary service that you provide. Your organization has been an invaluable resource to us.

I have been water system operator since 1997 and have encountered many situations that have required your assistance. With over 1100 connections and being the only employee, my job can sometimes be a bit overwhelming. It is comforting to know that we can make a phone call and help is on the way.

A special thank you goes out to Aaron Perez who has provided us with many hours of technical expertise. He has come to our aid at all hours of the day and night line locating, doing leak detection and troubleshooting problems. Without his service, it would be difficult to complete these projects and situations in a timely, efficient and cost effective manner.

Recently, Eric Hanson has been working with us to complete our petition for Class 2 groundwater designation. His expertise in source protection has provided us with a much better understanding of our groundwater supply.

The Prudential Committee and water customers of Brandon Fire District No 1 are sincerely grateful for the wonderful resource that you provide us. Thank you again.

Sincerely,

Raymond Counter Water Superintendent



News on Tap

VRWA Program Changes

Our ARRA RD circuit rider program services ended on October 31 due to the scheduled end of the program. We previously had two individuals on this program offering assistance to rural development funding eligible communities. In the southern zone, Randy Antinarelli was offering given assistance. He wrapped up work with our association the last week of October, we all wish Randy the best on future endeavors.

Dmitri Hudak (former northern zone ARRA circuit rider) is staying on board with VRWA as program manager of a new Energy Efficiency Program supported by our partners, Efficiency VT. Dmitri will be working with water and wastewater systems across the state on all initiatives associated with saving kilowatt hours for the given facilities. Dmitri recently received the Certified Energy Manager certification and is looking forward to assisting systems with various projects to reduce energy demand. See his article on the cover of this issue, and Amy Rubin's (Efficiency Vermont) article on page 7 for more details.

VRWA Seeks Nominations for Board of Directors and Tony Torchia Award

VRWA will have one seat on the Board of Directors up for election this spring. 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 common.

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, 2011. For a nomination form, visit www.vtruralwater.org or call the office at 802-660-4988 ext 305.

Rural Water Rally

VRWA is preparing for the annual rural water rally in Washington, DC in February 2011.

All rural water affiliates take part with the goal of securing continued funding support for rural water programs as part of the national budget.

The letters of commendation that we receive from systems like yours are an invaluable tool in this process. We use these to demonstrate the need and value of our programs and

services. If you're interested in contributing, please send these to the attention of Executive Director Shaun Fielder.

Richmond Deemed Best Tasting Water

Richmond recently won the drinking water tasting contest put on by the VT Drinking Water Week Committee at the GMWEA fall conference. VRWA co-sponsored the event and looks forward to assisting Richmond with entering their sample at the Great American Taste Contest in Washington, DC at the rally. Congratulations to Richmond and good luck in the national contest.

Save The Date!

The Vermont Rural Water Association Annual Conference and Trade Show will be held May 4th and 5th, 2011 at the Lake Morey Resort. Our annual golf tournament takes place on the afternoon of the 4th and the trade show, annual business meeting and training takes place May 5th. Come early and join the fun! Registration information will be coming soon.



Dmitri Hudak with city of Montpelier operators on a recent energy efficiency site visit (left to right; Dmitri, Geoff Wilson, George Hood)

Identifying Illicit Wastewater Discharges

Dave Braun, Water Quality Scientist, Stone Environmental Inc.

(Note from Wayne Graham VRWA Wastewater Specialist: in the past few years I have run into situations where identifying suspected wastewater was not always easy; a simple bacteria test is not always sufficient. Then I met Dave Braun! Dave has taken wastewater identification to a new level. I asked him to write this article to assist others in our field.)

Raw sanitary wastewater is easy to identify. But what if wastewater leaks from a sewer line and becomes diluted with groundwater, which is then intercepted by a stormdrain and discharged to a river: can we detect it then? Possibly, given the right test conditions, dogged persistence, and some luck. My name is Dave Braun and I am a water quality scientist at Stone Environmental in Montpelier. For the last three years I've been sleuthing for sanitary wastewater and other contaminated flows in stormwater drainage systems in many Vermont towns. Most of the projects have been funded by the Agency of Natural Resources, Center for

Clean and Clear. In most towns we've found one or more sources of wastewater entering stormdrains which are discharging to streams. On average we find dry weather flows in half the outfalls we assess and evidence of wastewater in 5% of them. We've also found petroleum contaminated groundwater from contaminated groundwater from contaminated sites (former industrial sites, gas stations, a town garage), contaminated discharges from industrial facilities, and municipal tap water leaks.

We typically sample at stormdrain outfalls and at selected catchbasins and manholes during dry weather, when illicit discharges and other contaminated flows are not diluted by stormwater. The first step is to describe the condition of the discharge point and any dry weather flows. The nose is a sensitive detector, and I encourage everyone working on these assessments to use theirs as best they can. Samples are then collected for analysis of ammonia, electrical conductivity, and fluoride, assuming the municipal water supply is fluoridated. At

every flowing outfall and in selected catchbasins and manholes, cotton pads enclosed in plastic mesh are secured in the flow stream, for detection of optical brighteners, which are fluorescent whitening agents (dyes) added to most laundry detergents. These are left in place for about a week, rinsed, dried, and viewed under a long-wave fluorescent lamp. Fluorescence usually indicates presence of laundry detergents, although oil can cause false positive results.

When test data suggest wastewater contamination, we return to collect samples for *E. coli* and total phosphorus analysis. High *E. coli* levels are a strong indication of wastewater contamination, although even apparently uncontaminated dry weather flows can have elevated *E. coli* levels. In fact, none of the tests we conduct can definitively differentiate between diluted wastewater sources and uncontaminated stormwater or groundwater.

Because no single test we perform provides definitive data, we take a weight of evidence approach in interpreting the data to determine which dry weather flows are likely to be contaminated. This determines where we conduct further investigations. Here are some rules of thumb we've developed in interpreting water quality test data, to distinguish between wastewater contamination and noncontaminated flows, along with potential interferences and other considerations (see table on the following page):



Test	Benchmark	Remarks
E. coli	>= 400 E. coli/100 mL	Undiluted municipal wastewater will generally have <i>E. coli</i> levels an order of magnitude higher than this benchmark. Pet waste and wildlife sources can also cause elevated <i>E. coli</i> levels.
Ammonia	>= 0.25 mg/L	In the absence of other wastewater indicators, follow-up investigation is performed when the ammonia concentration is 0.5 mg/L or higher. If other wastewater indicators are present, the 0.25 mg/L benchmark is used. Decomposing vegetation under anoxic conditions can release ammonia to water, which can be misleading.
Optical bright- ener	presence	Presence usually indicates contamination by sanitary wastewater or washwater. Exposure of the test pad for 5-10 days means that diluted and intermittent discharges may be detected. Unfortunately, oil fluoresces at the same wavelength as optical brighteners.
Fluoride or total chlorine	>= 0.3 mg/L	Fluoride is more stable than chlorine and is therefore preferred for detection of wastewater and tap water. Chlorine may be used if the municipal water supply is not fluoridated. Municipal tap water typically contains 1-2 mg/L fluoride. Natural fluoride levels in groundwater in Vermont rarely exceed 0.1 mg/L. The fluoride test is subject to interference by dissolved iron.
Specific conductance	>600 µS/cm	Specific conductance is not a reliable indicator of wastewater contamination. Road salt and metals from pipe corrosion often result in levels in the 1,000-10,000 μ S/cm range. However, flows contaminated with wastewater generally have specific conductance above 600 μ S/cm.

The hardest part comes after dry weather flows have been assessed and the sources of contaminants have been isolated to segments of the stormwater drainage systems to the best of our ability. After the water quality testing comes the "find and fix" stage, where the accidents of plumbing and failures of infrastructure are hopefully revealed and corrected. Certain communities, notably Montpelier, have investigated the sources of contaminants using their staff and resources. Using data collected by my team, Montpelier located and eliminated several direct sanitary wastewater connections to stormwater drainage systems through closed circuit television inspection and dye testing. Many other communities lack the resources or skills to take on the investigation work themselves, and it is here that we've partnered with Vermont Rural Water Association (VRWA) to assist them.

Wayne Graham of VRWA has been a great partner in the investigation stage. With Wayne, Stone Environmental has smoke tested, dye tested, and camera-inspected pipelines for

the towns of Swanton, Enosburg Falls, North Troy, and Richford. Wayne has the tools and the knowledge to use them, as well as good relationships with operators throughout Vermont. At times the investigations prove inconclusive; for example, the water quality data suggest a real problem but we cannot see the problem with the camera. In several instances we have nailed the problem though, such as the time in North Troy when we tracked washwater back to an improper connection in a house basement. We look forward to working with Wayne and VRWA again on upcoming projects.

Detecting illicit discharges and finding and fixing them is a field science. As we practice this science, we refine our methods and our ability to correctly interpret the data improves. In the future we expect to perform water quality tests that provide more definitive information than many of the current tests. We are particularly interested in definitive tests for human wastes, including tests for pharmaceuticals (including acetaminophen and ibuprofen), caffeine, and fecal steroids. At this time, these exotic tests are prohibitively expensive.

As method development continues, we expect to be able to use these tests, and others, to help Vermont communities identify longstanding sources of water pollution.

For more information on Stone Environmental Inc., please visit www.stone-env.com



just the probes you need now, and you're free to expand your parameters later!

To learn more about our new HQd-series, call Amy Pollock -**New Regional Sales Manager** 603-998-3852



Exciting and Challenging Times

Shaun Fielder, Executive Director

A number of us from VRWA were lucky enough to attend National Rural Water Association's WaterPro conference in New Orleans in late September. Louisiana's Lieutenant Governor Scott Angelle offered comments at the opening. Mr. Angelle noted, "Our national success depends on all those decisions we make in regards to energy, environment, and economy. Balanced decisions and good management in these areas is required." Angelle's comments were right on target and as he concluded, I thought of the situation back home on energy, environment, and economy.

In Vermont, energy is a concern for all of us-the future of Vermont Yankee is unknown and a license extension beyond 2012 is definitely in question. Recognize a closure will significantly impact all our electric rates while a transition to alternative sources and greener forms of energy takes place. Fortunately there are some great opportunities available now on efficiency initiatives, so do take advantage of them (see Dmitri Hudak's cover article and Amy Rubin's article on page 7).

On the environment, all of us are working double duty to keep up with the standards of the Safe Drinking Water Act and Clean Water Act. Efforts continue to reduce impacts caused by excessive stormwater runoff and nonpoint source pollution.

Our economy has stabilized compared to last year at this time but there still is room for significant improvement. With the Vermont

state budget showing a deficit of \$112 million dollars for the next fiscal year, the upcoming legislative session will be challenging for all involved.

For water and wastewater facilities, the aging infrastructure and need for continued improvements is a priority. The stimulus funding has been obligated, but systems do have access to some excellent financing opportunities; financing rates are at their lowest levels in a generation. If you can believe it, some systems have adequately saved and are prepared to fund improvements without taking out a loan or receiving a grant, all should be striving for this.

To address the challenges noted above, all of us need to continue to advocate for our sector. You need to insure revenues properly cover the expenses needed to operate your system. Full cost pricing has to be part of the budgeting process moving forward.

To end his presentation, Lieutenant Governor Angelle said it best; "We all will persevere and it is a matter of tightening up the belt and keep on trying." Good advice for all of us, stick to it and keep plugging away. Happy Holidays to all of you, I wish the best to you and your family members.



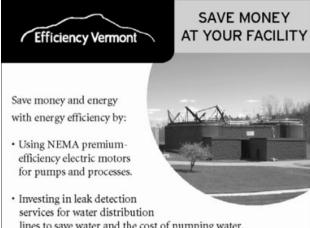
PITTSBURG TANK & TOWER MAINTENANCE CO., INC.

SAVE! We have a crew in YOUR AREA!

Inspections **New & Used** Tanks Repair Wet Clean Relocation Elevated Paint Erections Dry Underground ROV Insulation Dismantles Ground Storage (Robotic)

ROV inspections can be viewed on TV console during inspection & DVD All inspections include provided. bound reports, recommendations and cost estimates.

270-826-9000 Ext. 253



lines to save water and the cost of pumping water.

· Considering variable frequency drives on pumps and aeration motors for significant energy savings.

To learn more about cost-effective, energy-saving options for your facility, contact Efficiency Vermont today.

www.efficiencyvermont.com | 888-921-5990

Limited-Time Higher Rebates for Energy-Saving Lighting

Amy Rubin, Efficiency Vermont

A special, higher rebate is being offered by Efficiency Vermont through the end of December 2010. The rebate covers 50-90% of the cost of energy-saving lighting that is purchased and installed to replace T12 fluorescent lighting in 2010. This is a greatly increased rebate amount, put in place to help offset the costs associated with upgrading this equipment.

"In addition to this rebate information it's useful to know that, starting in 2012, high-energy T12 lighting will no longer be manufactured due to federal legislation," says George Lawrence of Efficiency Vermont. "That means a time will come when replacement lighting won't be available for burned out T12s. Because it will be necessary to replace T12s

eventually, it makes sense to do it now, to take advantage of this year's significantly higher rebates, save on the upfront cost, and then get a quicker payback from energy savings."

Efficiency Vermont-recommended lighting uses 36-56% less energy than T12s and can last 1.5 times as long, lowering future replacement costs and associated maintenance time. Energy-saving lighting provides better-quality illumination and operates cooler, which can mean less heat in a facility during the summer.

How do you know if your fluorescent lights are T12s? According to Lawrence, "T12s are fatter. They're 1.5 inches in diameter.

Efficient tubes, such as High Performance T8s, are one inch in diameter." For more information on T12 replacement-lighting upgrades and rebates, see the facts about Efficiency Vermont's "newLIGHT" program at www.efficiencyvermont.com/newlight.

Efficiency Vermont also has recently expanded its list of LED (light emitting diode) lighting products that are eligible for rebates. Included in the list are LED wall packs for outdoor use. Longlasting, low-energy LEDs can reduce costs for electricity, maintenance, and lighting replacements. LED quality can vary among manufacturers; to see a list of Efficiency Vermont-recommended, high-quality LEDs and to obtain a downloadable rebate application, visit:

www.efficiencyvermont.com/led



We've made your warehousing easier by eliminating your warehouse.

We carry the latest, highest quality sewer, water and erosion control products so you don't have to. In other words, everything you need to get your jobs done right — plus the expertise to advise you on product choices when you need. And, less products on your shelves mean less expenditure for you. It's all part of EJP's commitment to quality, innovative solutions that create revenue and conserve water.

EJP. We're making water work for you.

PIPELINE SPECIALISTS

TEAM

TE

Harnessing the power of water

1-800-EJP-24HR (357-2447) www.ejprescott.com

WATER, SEWER, DRAIN & STORMWATER SOLUTIONS

VRWA Offers Water Board Training

Paula Jackson, Water Systems Specialist

Vermont Rural Water Association offers water board training to selectboards, prudential commit-

tees, home owners associations, and any other type of drinking water system board that would like to learn more about their water system. Water board members are expected to make very important decisions regarding their water systems. Vermont Rural Water Association can attend meetings, set up special sessions or whatever works best for board members. Board members are usually volunteers and have job responsibilities, family etc. We understand that time is very valuable and very hard to come by.

We can flex our time to your sched-



For additional information, please contact Paula Jackson at 802-660-4988 x332 or pjackson@vtruralwater.org

ule and provide training that will help board members to make better educated decisions regarding their water systems. We can provide training that is geared towards your specific needs.

Some topics of interest: drinking water regulations and requirements, financial planning, budgeting, how your water system operates, how we can better help our water operator, liabilities, and general board member responsibilities. Vermont Rural Water Association can also provide your water board with educational

resources that they can work on when time allows.



"New rules – the Groundwater Withdrawal Reporting and Permitting Rules – are currently making their way through the administrative procedures process..."

"Vermont's New Groundwater Withdrawal and Reporting Rule" continued from cover

Permitting: On and after July 1, 2010, a groundwater withdrawal permit is required for new groundwater withdrawals for commercial. industrial, bottled or bulk water uses of more than 57,600 gallons a day (equivalent to 40 gallons per minute) from any source. Additionally, a groundwater withdrawal permit is required for previously unpermitted withdrawals where the increase in withdrawal for commercial, industrial, bottled or bulk water uses is 57,600 or more gallons per day, or the withdrawal is increased by 25 percent or more over its existing withdrawal rate if already over 57,600 gallons per day.

In order to obtain a groundwater withdrawal permit, several require-

ments must be satisfied to demonstrate that the proposed withdrawal will not adversely affect existing uses of groundwater or other water resources such as streams, ponds, and wetlands. The rules are currently making their way through the administrative procedures process. Public hearings are scheduled for December 8 and 9, 2010 in Rutland and Montpelier. If you are interested in learning more about making comments on these rules, please contact Eric Hanson at the Vermont Rural Water Association.



Call Eric at 802-660-4988 x327 or email him at ehanson@vtruralwater.org





SITEWORK... It's Not FREE!



- Aquastore ENVIRONMENTALLY friendly tanks are manufactured in an ISO-9000 factory.
- They don't require massive staging areas to manufacture on site.
- They don't require cutting down the forest to make room for 'onsite manufacturing'.
- 10' perimeter or less around the tank is all that needs to be cleared.
- · Get a substantial saving in sitework over field manufactured tanks.
- . The trees do grow back, but why cut them down in the first place?
- No need to inflate your project costs with unnecessary sitework.



Happy Holidays

Thanks to all of our members for helping to support and develop our association. We hope to see you all at our annual conference and trade show in Fairlee on May 4th and 5th, 2011. More information will arrive in the mail soon. Following is a list of our associate members. They support us, so please support them!

Aldrich + Elliott Allen Engineering & Chemical Atlantic Pump & Engineering **BCR** Environmental Chlorinators Inc. Clear Water Filtration Coyne Chemical Diving Services, Inc. E.J. Prescott, Inc. Eastern Analytical, Inc. **Efficiency Vermont** Endyne, Inc. **Environmental Compliance Services** EOS Research, Ltd. **Leach Engineering Consultants** F.R. Mahony & Associates Ferguson Waterworks Forcier Consulting Engineers Ford Meter Box Company, Inc. Green Mountain Engineering Green Mountain Pipeline HACH Co Hoyle, Tanner & Associates Hydron Inc. Lincoln Applied Geology M&K Commercial Diving Marble Valley Engineering Mineral Processing Services Mueller Company Natgun Corporation Northeast Pump & Instrument Otter Creek Engineering, Inc. Phelps Engineering, Inc. Pittsburg Tank & Tower Co. Sprague GeoScience Stantec

Vermont Campground Assoc. Water Industries, Inc Water Specialties Co.

Statewide Aquastore

Sullivan Associates

TPW Management USA BlueBook

Vellano Bros. Inc.

Utility Service Co., Inc.

Ti-SALES Inc.

Technical Planning & Management



20 Susie Wilson Road, Suite B Essex Junction, VT 05452-2827

www.vtruralwater.org

Non Profit Org.
US Postage
PAID
Essex Jct., VT
Permit No. 332

CURRENT RESIDENT OR

