

Where's the water gone?



Finding and protecting Vermont's groundwater sources

By Carrie Chandler
Special to the *Vermont Guardian*

You wake up in the morning, start the shower, and hop in. Then, you turn on the tap, brush your teeth, or get a glass of water. All of these things involve water. Most of the time, people don't think of the water they use, or where it comes from.

In Vermont, two thirds of households rely on groundwater to supply their drinking, bathing, and cleaning needs. Because Vermont's groundwater is not protected, the majority of households could see their main source of water threatened.

Groundwater is stored underground in aquifers, made up of sand and gravel. Aquifers are recharged by rain and snow melt. When too much water is taken out of the aquifer, the resource is depleted

and water is unavailable. Pollution occurs when septic tanks, gas tanks, and landfill debris leak into the aquifer.

"In Vermont, there is a lack of knowledge about our groundwater and a lack of oversight of activities that have the potential to harm our groundwater resources," said Jon Groveman, water program director at the Vermont Natural Resources Council (VNRC).

"Most Vermonters think their groundwater is being protected, but it's not," said Annette Smith of Vermonters for a Clean Environment, referring to the Groundwater Protection Act of 1985. "The law currently allows you to sue if your water has been contaminated, but the damage has already been done.

"People think that Vermont has enough water, but there are very real issues with contamination and depletion," Smith adds.

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Shumlin supports impeachment call

By Christian Avard
Vermont Guardian

PUTNEY — Vermonters pressing for resolutions that would spark impeachment investigations into the actions of Pres. George W. Bush and Vice Pres. Dick Cheney have gained the support of a key Democrat in the Vermont Senate.

Senate Pro Tempore Peter Shumlin, D-Windham, believes the impeachment resolution is important and believes the Legislature should tackle the issue before winding down in May.

"My position is and always

has been this is incredibly important. That if a president can be impeached over an indiscretion with a woman, we certainly have the right to have impeachment hearings for a president that lied to American people, lied about weapons of mass destruction, lied about the reasons for going to war where hundreds of thousands of Iraqis, thousands of Americans, and many, many Vermonters lost their lives and has now created a breeding ground for terrorists all over the world," said Shumlin on WKVT-AM's *Live & Local* radio show on March 19.

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Residents fight for safe drinking water

By Justin Dragos
Special to the *Vermont Guardian*

SOUTH BURLINGTON — Nearly one year ago, the Champlain Water District became the first municipal water provider in Vermont to add an additional disinfectant called chloramine to its potable water system.

The following day, Ellen Powell of South Burlington, one of the nine towns served by Champlain Water District (CWD), started experiencing irritations in her eyes and on her skin, as well as problems breathing.

Suspecting that chloramine might be responsible, since noth-

ing else was new to her water supply, she immediately sent a letter to the editor of newspapers throughout Chittenden County. The responses she received confirmed her fears. Other residents were claiming to have experienced similar symptoms.

Local concern over the chloramination of the tap water led Powell to help form a group called People Concerned about Chloramine (PCAC). More than 130 people have since come forward with reports of what they believe to be chloramine-related problems.

The CWD maintains that monochloramine — which is

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Part of the problem is that the Agency of Natural Resources does not know the size or location of the state's aquifers. Without this knowledge, Vermont cannot protect its water resources from depletion or pollution.

"The states around Vermont have now taken steps to protect their groundwater from overuse," said Rep. David Deen, D-Putney, chairman of the House Natural Resource Committee. "That makes Vermont a target for further development of groundwater wells for commercial or industrial use. There is also a bit of a concern that international treaties like [the North American Free Trade Agreement] would override any controls we put in the place in the future so we wanted to put them in place now."

VNRC and a coalition of other

water groups in the state supported legislation to protect Vermont's groundwater during the 2006 legislative session.

"The coalition was looking for three major provisions in legislation: requiring compliance with Vermont law that mandates the mapping of groundwater, protecting groundwater, and declaring groundwater to be a public trust resource so it is clear that groundwater is a common resource that belongs to all of us," said Groveman.

Act 144 was adopted last session as a result of VNRC's efforts, creating a committee to study groundwater and "make recommendations to the Legislature about what type of groundwater protections should be adopted in Vermont, how to fund groundwater mapping and whether to

declare groundwater in Vermont a public trust resource," Groveman said. The committee is due to present their recommendations to the Legislature by January 2008.

The committee, comprised of representatives from House and Senate agricultural committees, the Vermont Agency of Agriculture, Vermont Agency of Natural Resources, and the Vermont state geologist, and also includes representatives from municipalities, industry, citizens, and statewide environmental groups. For seven months, the committee existed without a full membership, as the governor failed to appoint a member of a local environmental group. The appointment has finally been made, and the committee will continue into this year with a full slate.

A preliminary report released by the committee in January noted that groundwater mapping should begin as soon as possible, "to protect the groundwater resources of the state while simultaneously providing for adequately planned development and groundwater withdrawal."

In response, lawmakers are considering bills that would require the Agency of Natural Resources to begin groundwater mapping in Franklin County this year, with funding slated to come from the General Fund.

The preliminary report failed to touch on the issue of creating a public water trust in the state.

"New Hampshire has a groundwater protection program and has declared groundwater to be a public trust resource, so Vermont is behind the curve on groundwater protection," said Groveman. The report notes that the committee has heard testimony from New



"Water is not a commodity like other resources such as metals, minerals, oil, and gas."

John Groveman

Vermont Natural Resources Council

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Hampshire representatives involved in the creation of a public trust in that state, but have made no recommendations on whether this is the correct option for Vermont.

"As an overriding concept, the public trust is a good idea. It sets a framework that you can't just come in and take the water, because it belongs to everyone," said Smith.

She also notes that groundwater protection is "an extremely complicated issue, and the solution doesn't just pop out at you. It is really important that we take time to figure out the answer."

The committee is slated to meet again this month, and will continue to work toward just such a solution.

Vermont's interest in protecting groundwater flows from several sources — growing concerns worldwide about the exploitation and commodification of water and consensus among environmentalists in Vermont that groundwater knowledge and protection in Vermont are long overdue, Groveman said.

"The groundwater problems in Vermont represent a cross section of the threats to groundwater nationwide," he said. Like the rest of the nation, Vermont's water is not only subject to outside forces, but is threatened by pollution, overuse, and industrial withdrawals.

"Pollution is the biggest threat right now but in the long run

overuse will become a bigger problem. There are some few situations in Vermont where home development over time has overtaxed an aquifer," said Deen.


In Williston, housing subdivisions in one part of town were all tapping into the same aquifer for water supply. Eventually, the aquifer reached its limit and homes began seeing their wells run dry.

Of concern to VNRC and others is the kind of water withdrawal that takes water completely out of the system.

"Other uses return the water that is used to the watershed by discharging the water to a septic system or sewage treatment plant," said Groveman. "The water that is bottled and shipped is gone from that community forever."

In Randolph, a commercial water bottler, Clearsource (which purchased the operation from Vermont Pure), withdraws water daily from a local spring. The withdrawal has resulted in Blaisdell Brook experiencing low flows.

While these and other threats exist for Vermont's water, protection is necessary.

"Water is not a commodity like other resources such as metals, minerals, oil, and gas," said Groveman. "There are substitutes for these resources. However, if our fresh water supply is compromised, there is nothing that can substitute for water." 

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formed by chemically bonding chlorine with ammonia — is entirely safe for human consumption and use. It is one of three disinfectants sanctioned by the EPA for use in potable water systems along with chlorine and chlorine dioxide.

PCAC, however, asserts that there are a number of reasons why chloramine should not be used. “Among the many concerns we have about chloramine, there are eight key points,” says Rebecca Reno, a PCAC member. “One is that there has been no adequate testing on the skin or respiratory effects of chloramine on human beings.”

Dale Kemery, a spokesman for the regional office of the U.S. Environmental Protection Agency (EPA), said such tests have been conducted. They are contained in a 155-page public report.

However, the report clearly states that information on the human health effects of chloramines “are limited to a few clinical reports and epidemiologic studies. There are no epidemiologic studies that have been designed to address specifically the potential adverse effects of exposure to chloramines on human health.”

The report also claims that such testing has not been done on animals either.

CWD claims studies have been performed on the skin and respiratory effects of chloramine on human beings and provided the *Guardian* with a list of chloramine related health studies. Several studies pertained to the digestive effects of chloramines, but none focused on the respiratory effects of chloramine on human beings. And, there was only one study on the dermal effects in humans.

This study, conducted by June Wientraub in California, consisted of 17 phone interviews with people claiming chloramine-related symptoms. Wientraub concluded, “The complaints described were heterogeneous, and many of the respondents had underlying or preexisting conditions that would offer plausible alternative explanations for their symptoms. We did not recommend further study of these complaints.”

A growing concern

Many of the people who have come forward claiming side effects have reported symptoms that are consistent with those experienced in districts throughout the country. Complaints have arisen in California, Colorado, Florida, Hawaii, Kansas, Louisiana, Maine, Massachusetts, New



Hampshire, New York, Ohio, and Texas.

“I think the 400-plus people who have come forward here in the bay area goes a long way in proving a cause and effect relationship,” said Denise Kula, founder of Citizens Concerned about Chloramine, a San Francisco-based organization.

CWD officials say such claims are unproven.

“To date no reported symptoms have been linked by evidence-based physician diagnosis to be related to CWD’s drinking water,” CWD officials said in a four-page flyer responding to PCAC’s claims.

“It’s a catch-22,” said Reno. “If there is no formal testing done on the respiratory or dermal effects then there is no criteria upon which doctors can make an informed diagnosis.”

Many people in the area have performed tests on their own. They have refrained from using CWD’s water for weeks at time in order to see for themselves if it is the cause of their problems.

“Nearly every person who has done this finds that within days their symptoms are gone. As soon as they start taking showers in their own home again, they return,” said Reno.

Powell is one of the many people who continue to avoid using their own water. “I have to drive seven miles just to shower. Why would I or anyone else do this if we weren’t absolutely sure that our symptoms were coming from our faucets?” she said.

Unlike chlorine, chloramine cannot be boiled out of the water or removed by letting the water

sit out. It can only be removed by expensive home filtering systems which cost thousands of dollars.

The World Health Organization claims “chloramine is 2,000 to 100,000 times less effective than free chloramines for inactivation of E. Coli and rotaviruses.” Chlorine however, can result in cancer causing disinfectant byproducts that chloramine can reduce. PCAC asserts that there are other methods to reduce these byproducts such as prefiltration.

The Canadian EPA calls chloramine “toxic to the environment,” but it allows it to be used in tap water.

Toxic water spill?

Aside from the human effects, PCAC is worried it will harm aquatic life. CWD has issued warnings to homeowners before adding chloramine and the impact it might have on aquatic pets.

For many, the question this raises is “what are the potential effects on the eco-system if chloramine were to find its way into the watershed?”

According to Mike Barsotti, the director of water quality control at CWD, this is not a threat.

“Chloramine will not remain in the water outside of a controlled system,” Barsotti. Because the water mixes with so many other substances, the chloramines are used up in a matter of hours or days.

“The ground interface does not have the conditions of a clean, disinfected water system [because of dirt, etc.], and therefore, the chlorine residual from free chlorine and monochloramines dissipates

“I have to drive seven miles just to shower. Why would I or anyone else do this if we weren’t absolutely sure that our symptoms were coming from our faucet?”

Ellen Powell

People Concerned About Chloramine

much more quickly at the ground interface,” Barsotti said.

This does not rule out the possible environmental damage were a water main to break.

“There have been some instances of fish kills due to breaks of water mains where the utility has not been able to contain the spill or direct the water into sewers for transport to the wastewater treatment plant, but these are not common,” said Kemery of the EPA.

Reno believes CWD could meet new EPA drinking water standards without chloramines, such as using prefiltration.

A new set of sanitation goals spurred on by a series of EPA guidelines under the Safe Drinking Water Act calls for a reduction in the allowed level of disinfectant by-products (DBPs) in potable water. Chloramine has succeeded in decreasing to levels far beyond EPA requirements.

It is wondered whether these regulations could have been more moderately met through alternative measures.

Prefiltration is a method of filtering total organic carbon (TOC) out of the water prior to disinfection. TOC reacts with chlorine to form DBPs.

CWD does use a prefiltration method known as enhanced coagulation, Barsotti said. This method removes 25 to 35 percent of TOC. He states that because of CWD’s deep Shelburne Bay water source, which starts out with a low TOC level compared to other water districts, CWD does not use the more common and thorough method of prefiltration known as carbon contracting. This latter method, Barsotti adds, contains several drawbacks such as necessitating large amounts of fuel and landfill space in the transportation and disposal of waste matter produced from this method.

However, this method would reduce the level of TOC and, as logic follows, the level of DBPs in the drinking water. Whether it would reduce them to levels meeting EPA regulations is disputed.

Additionally, it is also asserted that chloramine has its own by-products — dichloramine and trichloramine.

“It is impossible for CWD water to drop to these extremely low pH levels due to the natural buffering capacity of the deep Shelburne Bay source. CWD’s optimized monochloramines residual actually eliminates the possibility of dichloramine and trichloramine being formed,” said Barsotti.

What’s on tap

With CWD the first, and arguably the largest, water system in Vermont approving the use of chloramines — will other districts follow?

As of right now, it appears there are no concrete plans for the addition of chloramine anywhere else in Vermont. While some water districts have expressed doubts over chloramine, few have ruled out completely the idea of adding it in the future.

Tom Dion, the chief operator of water at Burlington Public Works, said that their DBP level does not warrant adding chloramines. Like CWD, Burlington sources its water from Lake Champlain.

Officials in Berlin and Bennington also said they had no immediate plans to add chloramines, but would consider it if necessary, or as a last resort.

John Highter, chief operator of Brattleboro’s water treatment plant, said the town has no intention of adding chloramine. “I’m a little hesitant about ever mixing ammonia and chlorine together in our water,” Highter said.

Chloramine has been used in water for 90 years. However, it has only been used as disinfectant in the past few decades. Prior to this, it was used in very small dosages primarily to rid water of unpleasant taste.

This week, PCAC will present its case before the Legislature. Experts from both sides will give statements.

For Powell, the end result is simple: “We want this stuff out of our water.”

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towns passed resolutions — in some cases by narrow margins — supporting the impeachment process.

This weekend, the state Democratic Committee will hold a bi-monthly meeting in Randolph and, according to impeachment activists, Shumlin will try to persuade committee members to support joint resolution JRH 15.

JRH 15 asks that the lawmakers, under Section 603 of Jefferson's Manual of Parliamentary Practice, call on the U.S. House of Representatives to submit as soon as possible impeachment charges against Bush and Cheney for their trial and removal from office.

Last year, the state Democratic Committee voted unanimously to urge Congress to take action, and Shumlin hopes to garner support for a state resolution.

"What [Shumlin told me] yesterday was that he was going to support it and go to the Demo-

cratic State Meeting in Randolph in order to advocate they take up 603 impeachment process," said impeachment organizer Dan DeWalt of Newfane. He will try to "get the Democratic Party to endorse it and take a more public profile in favor of it."

Shumlin said he won't be making a huge speech on the issue.

"I'm not spending a lot of energy on it," said Shumlin. "Having said that I'm going to the state committee to report on the legislative session and I assume they'll ask me about it but I'm not going to be making any major speeches about it. They're going to their work and I'm not on the state committee and I'm going to tell them what's going on and [if they ask] I'll tell them where I stand."

Opposed to the resolution is House Speaker Gaye Symington, D-Jericho, who believes there is too much work to ac-

complish in the short amount of time available and the impeachment would only tie things up that need to get done.

"The Legislature has a very short amount of time to do its work and needs to focus its work on the issues most affecting Vermonters — property taxes, health care, and our energy future," said Symington in a recent interview with the *Vermont Guardian*. "We have a very limited amount of time dealing with national issues. The Iraq War has a direct impact on Vermonters in terms of the lives lost and the budget pressure that gets pushed onto the property taxes when we're cutting Medicare, Medicaid, and special education reimbursements."

Although Shumlin disagrees with Symington, he is also sympathetic.

"I'm sympathetic to her argument, to be honest. We do have an awful lot on our plate. We're working on education spending and global warming and health care," said Shumlin.

"The short of it is, I have to get those folks out of there by the first week of May and so does the speaker and so there's so much we can really chew on. Now I think we should do it. Don't get me wrong, but I'm sympathetic to her argument that's she's concerned about the time constraint and what would

"The fact is impeachment is not going to be a time consuming thing. It can be dealt with in a judicious and through fashion without exploring every possible charge."

— Dan DeWalt

it really produce?"

But impeachment activists like Newfane Selectman DeWalt believe it is doable.

"The fact is impeachment is not going to be a time consuming thing. It can be dealt with in a judicious and thorough fashion without exploring every possible charge. There's a lot of ways that can be approached that can be economical," said DeWalt. "The judiciary committees in the House and the Senate can take on impeachment and they can do it in a matter of hours. It can be a streamlined resolution that didn't involve a ton of time. So, let's save an entire day all in all that's devoted to impeachment. Is that too much of a price to pay?"


Shumlin said it would take up more time than DeWalt believes.

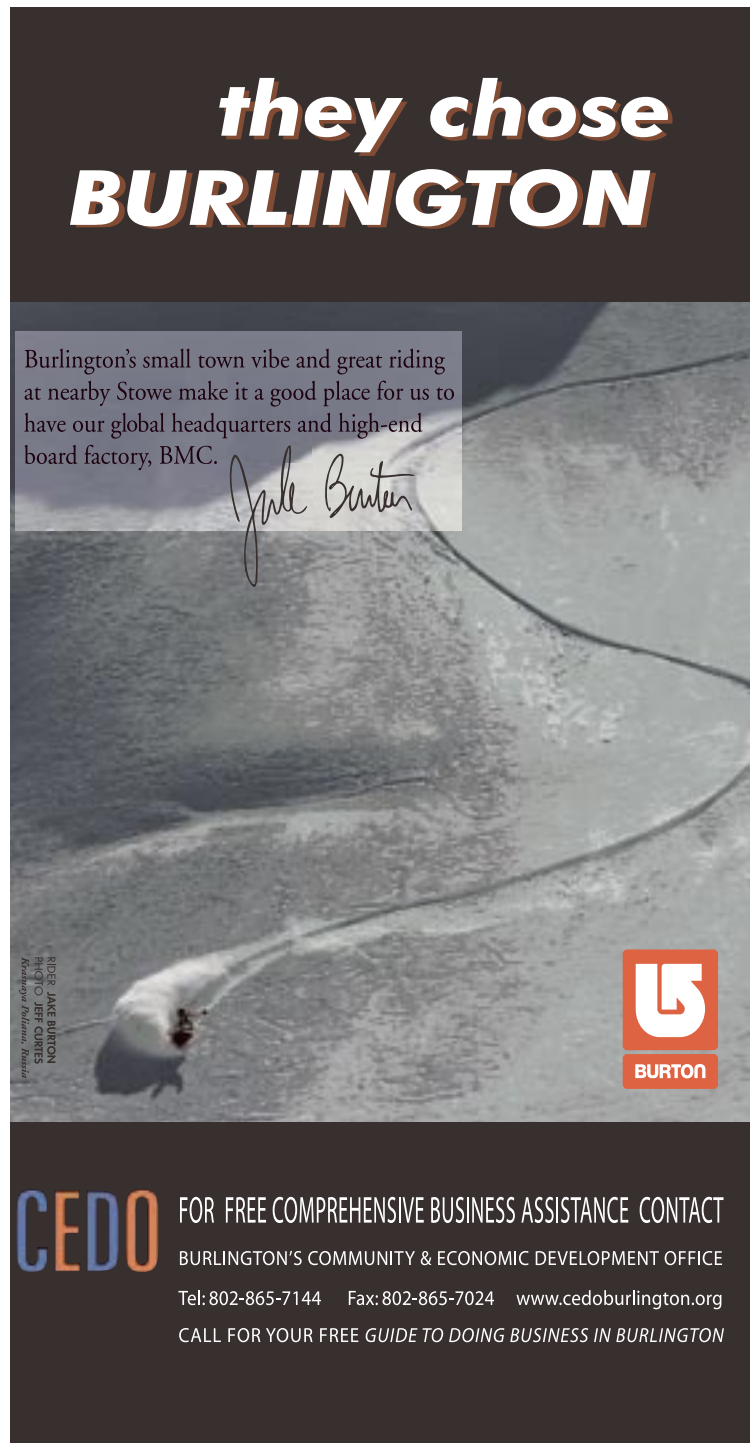
"If you're going to take on impeaching the president of the United States, you're going to have to take a lot of testimony

and you can't just kind of whip it out like it's a resolution honoring you're local police chief who's retiring," said Shumlin.

"I think Dan's done terrific work [but] he's never served in the Legislature and if it were that easy I don't think the speaker would be hesitating. If you're going to take up something that is serious as impeaching, you're going to have to spend more than an hour and a half listening and figuring out how to do this."

DeWalt, and other impeachment supporters, plan to press their case before lawmakers in the coming weeks.

"The Legislature can issue out an article of impeachment if they want to and they can send that down to Washington and if they did that, I agree a 100 percent with Peter Shumlin about what it would take," said DeWalt. "The Legislature can also issue a resolution that's very similar to the town meeting resolution." 




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