

Emerging Threat From Pease

This story is not much of a holiday one but people need to know about the extent of PFC contamination in Newington. Newington is not alone; hundreds of bases around the United States and the world are also being severely impacted by this same problem. The following information and data can help you better understand the problems.

The truth is that there is a lot that we do not know about the most recently detected wave of pollutants coming off Pease Air Force Base. But what we do know is very concerning.

Living in one of the homes closest to the end of the runway and the old fire training area (Site 8 - located at the corner of Short Street and Arboretum Drive), I am well aware of the cycles of clean-up activities that have occurred at Pease after it was declared a Superfund site in 1990.

Even before that, many people in Newington had front row seats to the clouds of black smoke that rose for decades every time waste chemicals, jet fuel, and old planes were burned at Site 8, as well as to the seemingly endless

stream of foaming suds from fire-fighting foam and other chemicals that washed out of Pease and along the gully in South Newington (located by Alfred Smith's house and today's therapeutic horse farm).

Much like a punch-drunk boxer, Newington may still be standing but is obviously reeling from the first (organic chemicals, PCBs, heavy metals, etc.), second (trichloroethylenes, TCEs), and most recent (polyfluorinated chemicals, PFCs) rounds of contaminants coming off the old base into our residential areas.



Although the Haven Well on Pease was recently closed in May 2014 due to high levels of PFCs, it is important to realize that these contaminants have been leaching off the old base for decades – at least 40-50 years. But, no one was testing for them, so no one knew they were here.

A worse realization is that the Air Force was just about to declare Site 8 all cleaned up and close the cleanup program for that area before, woops, the emerging threat of PFCs was first noticed. It is even worse to think of what might still be in our ground and surface water that no one knows about yet.

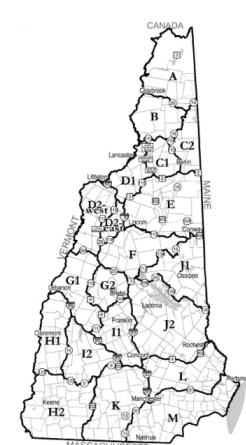
There are three area of concern:

- Drinking water issues have been prioritized by the USAF and seem to be under control. Some Newington well owners have either received charcoal treatment systems or have been connected to the Portsmouth water supply.
- Groundwater aquifer issues – work is just beginning to clean up the groundwater under the old fire training area in Newington – a long term process that will take a decade or more to impact the groundwater used for certain drinking water wells in Newington.
- Surface water issues and the impact of PFCs on the environment, vegetation, people, and wildlife are only just beginning to draw attention.

Based on the historic use of aqueous fire-fighting foams (AFFFs), in 2015 the US Air Force (USAF) identified sites around town where PFC contaminants were most likely to occur. The map on page 6 shows the brooks and sites (purple shading) they identified in North and South Newington.

In August 2018, surface water at these sites was found to be highly contaminated. The USAF presented this information for the first time at the Pease Restoration Advisory Board (RAB) in October 2018.

Newington is awash in contaminated surface water, much of which is coming to the surface from underground. We have higher levels and more widespread



2017 NEW HAMPSHIRE WILDLIFE HARVEST SUMMARY

WHITE-TAILED DEER 2017

Town	Wildlife Management Unit	Male	Female	Total	Kill Per Square Mile
Dover	L	72	42	114	4.27
Durham	L	55	55	110	4.92
Greenland	M	39	25	64	6.04
Newington	M	36	27	63	7.73
Portsmouth	M	27	18	45	2.88

NH Fish and Game Department 2017 Wildlife Harvest Summary

WILD TURKEY 2017

Town	Wildlife Mngt Unit	Spring Hen	Spring Jake	Spring Tom	Spring Male Total	Spring Male	Fall Hen	Fall Male	Fall Total	Fall Kill per square mile
Dover	L	0	3	15	18	0.90	1	1	2	0.10
Durham	L	0	4	17	21	1.12	1	1	2	0.11
Greenland	M	0	4	11	15	1.75	1	1	2	0.23
Newington	M	0	0	7	7	1.17	0	0	0	0
Portsmouth	M	0	0	3	3	0.38	2	1	3	0.38

PFC contamination than Pease, Portsmouth, Greenland, or Coakley Landfill.

Surface water was tested at Flagstone Brook, Pickering Brook, Watering Spring, Pickering Spring, Mott's Pond, Fernald's man-made pond, Frink's (?) man-made pond, Peverly Brook, McIntyre Brook, Air National Guard Drainage Ditch, and Upper and Lower Newfield's Ditches. The map on page 4 shows levels in Newington groundwater as high as 7,600 ppt, which is 100 times higher than the drinking water standard that impacts human health (70 ppt PFOA+PFOS).

The levels in Mott's Pond, which is about 1.5 miles away from the old fire training site, is 670 ppt, or 10 times higher than the health safety standard. This pond is about 100 by 200 feet across and up to 3 feet deep. The brooks feeding into the Piscataqua River and Great Bay are also highly contaminated. Additional sites at the Wildlife Refuge and at the south end of the runway still need to be tested.

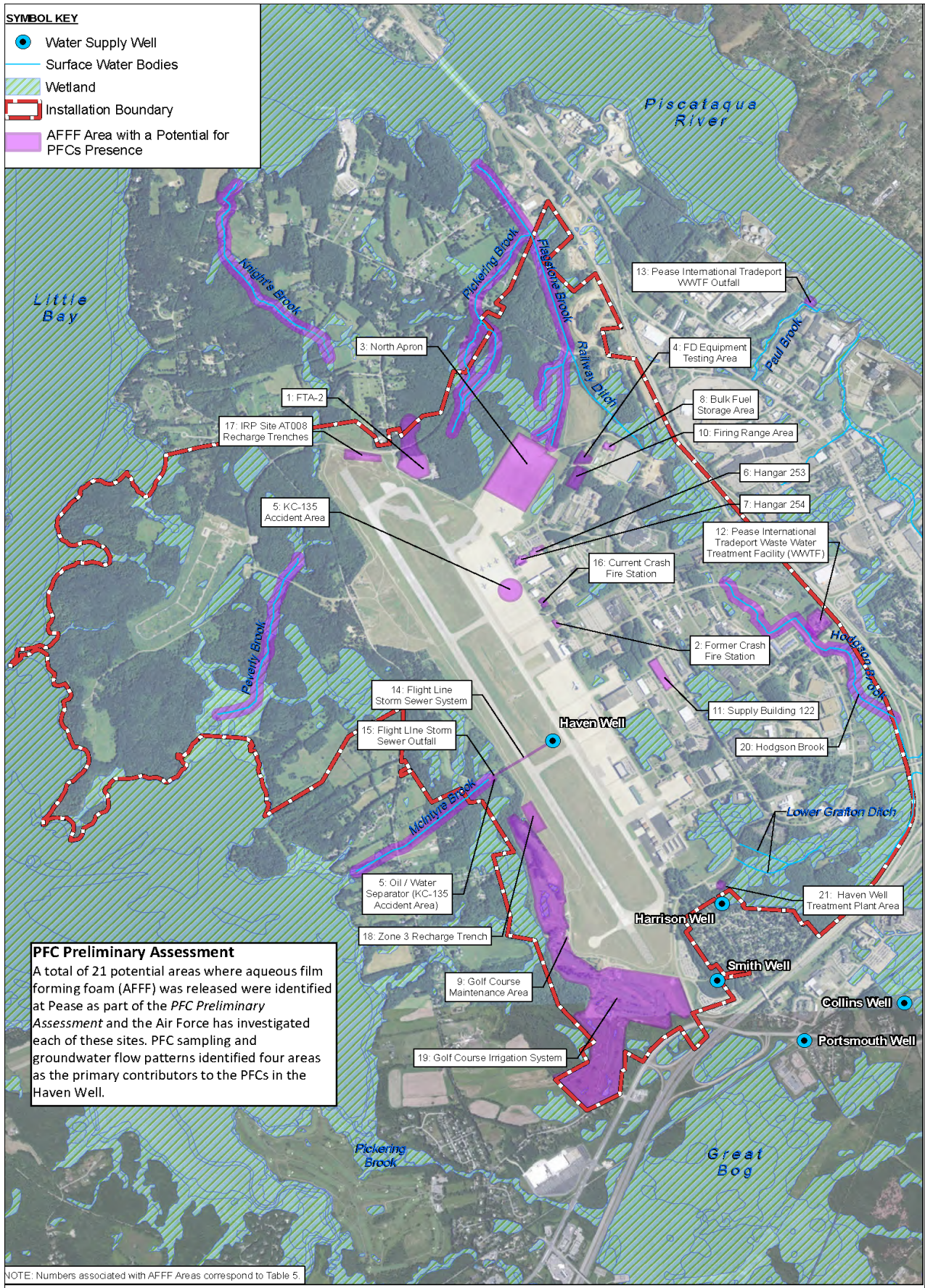
Experts tell us that wading in the contaminated surface water, even swimming in it, will cause no harm for adults or children as long as they do not

drink it. The experts are ignoring the cows, alpacas, horses, sheep, deer, turkeys, and other animals that drink the water.

But, in Newington, we do need to care about these issues because many of our hunters kill and eat deer and turkeys caught in Newington (see chart above). It is difficult indeed to see where deer in Newington can go to drink water that is not contaminated. Unfortunately, PFCs are concentrated in certain tissues in deer and can be consumed by hunters at fairly high levels (see page 7). Newington has been fighting for over a year to get the USAF to test locally caught deer, to have the tissues tested, and to determine how much of a problem this may, or may not, be. No one knows.

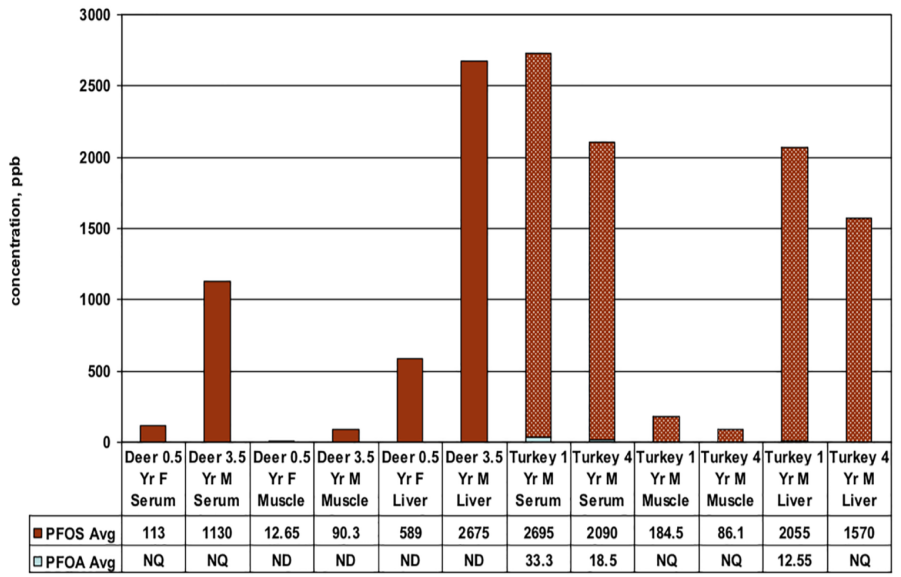
Newington is not alone. In October 2018, the Michigan Department of Health and Human Sciences (DHHS) issued a warning not to eat deer killed within 5 miles of Clark's Marsh (next to the old Wurtsmith Air Force Base) due to PFC contamination from the base that had leached into the surrounding water bodies.

Emerging Threat From Pease



<p>Air Force Civil Engineer Center 2281 Hughes Avenue Building 171, Ste 155 JBSA Lackland, Texas 78236</p>	<p>FIGURE 4 Potential AFFF Areas PFC Preliminary Assessment Former Pease Air Force Base, Portsmouth, New Hampshire</p>		
	<p>0 250 500 1,000 1,500 2,000 2,500 Meters</p> <p>0 1,000 2,000 4,000 6,000 8,000 Feet</p>	<p>NOTES: Aerial Imagery: ESRI Online Services</p>	<p>06/10/2015 Rev: 01</p>
		<p>Drawn: KAN</p>	<p>Chk: PROJ: 775290177</p>

PFOA PFOS in Deer and Turkey Serum/Muscle/Liver Dalton LAS



They found high levels of PFOS in the muscle (547 parts per billion -ppb, above the 300 ppb threshold) of one of the 20 deer caught and tested. Michigan also has “Do Not Eat” fish advisories in various areas due to PFOS contamination.

On November 7, 2018, the Australian government also issued warnings that residents near Richmond Air Base should reduce their intake of locally caught fish and locally grown eggs and red meat because of PFAS contamination.

Earlier still in December 2009, Dalton Utilities in Dalton, Georgia voluntarily tested deer and turkeys around the old Bupong Chemical plant and found high levels of PFCs concentrated in the liver of both animals.

PFCs are being called emerging threats because so little is known about them and how they impact human health. The USAF has just begun a study to look at the ways people can be exposed to PFCs in the environment rather than just in drinking water. This includes testing shellfish in Little Bay and the Piscataqua River, but so far does not include testing in wildlife, hay, garden crops, or chicken eggs from those areas close to the underground water table or those flooded by contaminated surface waters.

Should people be concerned? Yes. But, so little data exists on the health impacts of ingesting PFCs that it is still a black box. Will people who eat contaminated wildlife, garden crops, or eggs get sick? Not necessarily. Does it mean they won't get sick? No one knows.

The Newington Selectmen have been giving the PFC contamination issue a lot of attention. One way you can help is to share any information that you have about your property with the town office. If contractors are testing your well or surface water or drilling wells to test underground water, please ask that you always be given a copy of the data as soon as it is available and share that data with the town office.

One of the difficulties the selectmen are having is that the USAF is hiding behind a shield on not wanting to disclose test results from private properties due to confidentiality issues. It can then take the USAF years to create a final report that is disclosed to the public, and that report only contains some of the data.

Newington Private Wells Data Summary

- 40 residential wells have been tested since 2014.
- 35 of the wells (87%) have been below the human health advisory for drinking water of 70 parts per trillion (ppt) since the sampling began and have remained that way, including all the tested wells in South Newington.
- 5 of the wells in North Newington have tested near or above the human health advisory at least once since 2014.
- Either bottled water and/or granulated activated carbon (GAC) treatment has been provided to these 5 well owners since discovery.
- The peak combined PFOS+PFOA concentrations at each of the five wells was:
 - o 870 ppt in 2014; 446 ppt in Dec 2017
 - o 97 ppt in 2014; 49 ppt in Dec 2017
 - o 89 ppt in 2015; 63 ppt in Dec 2017
 - o 67 ppt in 2016; 46 ppt in Dec 2017
 - o 144 ppt in 2015; 35 ppt in Sep 2016 (well taken out of use)
- GAC treated water from these 5 wells has consistently had levels so low that the tests read as PFOA+PFOS not detected.

WENTWORTH-DOUGLASS HOSPITAL
 MASSACHUSETTS GENERAL HOSPITAL SUBSIDIARY

For more information, visit wdhospital.com

To better understand the PFC contamination issue facing the Town of Newington, the Selectmen invited various experts to attend a meeting at the Town Office. A summary of the discussions is given on the next three pages, which can help update townspeople about what is going on.

Blood Testing

Some Newington folks did have their blood tested in the earlier state program, but they were included in the study because they either worked on Pease or had children in daycare there, not because they were drinking contaminated well water.

There is no money available for additional blood testing. The earlier state program has ended. Folks with well PFC contamination less than 70 ppt are not eligible for testing anyway.

Private testing can cost between \$600 to \$800 for the test, plus up to two doctor's visits to determine if the test will be ordered, and then to discuss the results. See www.dhhs.nh.gov/dphs/pfcs/blood-testing.htm for the blood testing vendors.

The selectmen plan to add \$8,000 to the 2019 town budget for blood testing.

NH DHHS is focusing its educational efforts primarily on health care providers, see the July 2018 letter on the town's website.

Anecdotal information exists (Lisa Morris/DHHS, Dr. Benjamin Chan/DHHS) that some health insurance companies have covered the cost of testing but this is likely wishful thinking because Tarah Somers/ATSDR and Christopher Reh/ATSDR have heard otherwise. Unless there is some health issue that the person is complaining about that may possibly be related to PFC ingestion, it is unlikely that insurance companies will pay.

The state labs and NH DHHS do not have internal capabilities to do PFC testing. All prior blood testing was done by external vendors with DHHS solely acting as a go-between. The costs of the DHHS's work to coordinate this activity were absorbed internally in their existing budget. This included the Pease blood testing study and the Merrimack biomonitoring study.

NH has two legislative commissions looking at environmental contamination. HB511 (Establishing a commission to study environmentally-triggered chronic illness) was sponsored by Mindi Messmer, Dennis Malloy, Tamara Lee, Martha Fuller Clark et al, and signed by Governor Sununu 06/28/2017. The other is HB 484 (Establishing a commission on the seacoast cancer cluster investigation).

To increase its PFC testing capabilities, there is already a plan with a budget to add equipment and resources to the DHHS labs. A copy of this plan will be sent to Martha Roy. It is unclear whether this plan will increase the capabilities or capacity at the state level for testing any animal tissues. Michigan increased their state capabilities through legislative actions and appropriations.

Federal Register Health Effects Study

Nothing concrete came from the meeting about the ability of Newington folks to be included in the different waves of this study, other than a general assertion of eligibility once all other avenues have been exhausted to fill the available spots with people who took part in the earlier Pease study.

The handout from Christopher Reh/ATSDR shows three components of a multi-site study that includes the Pease study. The emphasis of these studies is on

drinking water and not on occupational or environmental exposure. In a general sense, however, what is learned from the drinking water studies should help inform any health effects of people who have PFC exposure from their occupation or environment.

It is important to appreciate that from a scientific standpoint, the ATSDR is most interested in a strong study that correlates, or not, PFC exposure to health problems. They are highly focused on the Pease group who took part in the earlier blood testing work because those folks are a somewhat homogeneous group who all drank from a single contaminated water source with known levels of contamination. Yes, Newington contaminated well water drinkers will benefit as much as anyone else on the results of this study. BUT, no, the costs of covering PFC blood testing for these Newington well water drinkers will not be possible unless some of these folks get enrolled in the study.

Tarah Somers/ATSDR mentioned perhaps including some additional "diet" questions in the survey that study participants will fill out – presumably relating to whether the person eats venison.

No real feedback on whether a Division of Community Health Investigation petition would help Newington with the deer issue. It sounded like the PFC issue is being addressed in a different path.

Port City Vending

*Delicious Vending Snacks and Ice
Cold Soft Drinks, Juices and Water*



www.PortCityVending.com
817-3821

We are a local, family-owned vending snacks & soft drinks business that specializes in giving our customers the best service possible.

Owners, Michele and Jack Anderson

Attendees

Benjamin Chan	State Epidemiologist, NH DHHS
Ted Connors	Chair, Newington Board of Selectmen
Peter Clark	Senator Shaheen's Office
Clark Freise	Assistant Commission, Environmental Services Dept., NH DES
Kerry Holmes	Senator Hassan's Office
Ken Latchaw	Newington Selectman
Mike Marconi	Newington Selectman
Ashley Molta	Congresswoman's Shea-Porter's Office
Robin Mongeon	Civil Engineer, Environmental Services Dept., NH DES
Lisa Morris	Director and State Health Officer, NH DHHS
Christopher Reh	Associate Director, ATSDR
Peter Sandin	Hydrogeologist, Environmental Services Dept., NH DES
Tarah Somers	Regional Director, ATSDR Region 1, Boston
Kevin Kelley	Newington Health Officer
Martha Roy	Newington Town Administrator

The water table in Newington is high in many locations, which leads to contaminated ground water being present at the surface at various times of the year. This year the water table stayed at surface level, or just below, for most of the summer and fall. Clark Freise/NH DES told Ken Latchaw that such a condition could create a risk for farmers or folks growing backyard gardens.

Clark Freise/NH DES is working on an ambitious schedule to create the first state drinking water standards for four PFC compounds. [Note: On December 31, 2018, NH DES proposed Maximum Contaminate Levels (MCLs), which by law become Ambient Groundwater Quality Standards (AGQS), of 38 ppt for PFOA, 70 ppt for PFOS, 70 ppt for PFOA+PFOS combined, 85 ppt for PFHxS, and 23 ppt for PFNA.]

Water

Tarah Somers/ATSDR indicated that NH used to be part of a cooperative agreement with ATSDR but not any longer. PFC issues are now being handled by NH DES.

Newington well owners with PFC levels of 70 ppt or more have been contacted about hooking up to the Portsmouth

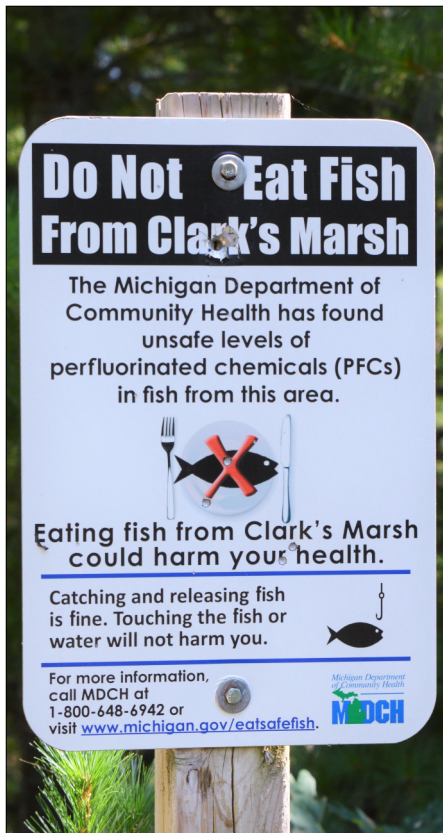
drinking water supply. Peter Sandin/NH DES said that 3 of the 4 impacted well owners were already on Portsmouth water. He also said that people with wells testing less than 70 ppt for PFC were not eligible for this offer.

The USAF is currently conducting a study of the level of contamination at various levels in the underground water. Wells are being dug around town to test for PFCs in the bedrock and at 2-3 levels above bedrock, including in surface water. This information will inform us about the extent of the contaminated water flow at the surface level and below ground in two different strata plus bedrock. It may, or may not, lead to the creation of a new groundwater management zone – not really discussed. One such zone already exists under the Old Stone School and Old Parsonage, which are located by the old fire training area (site 8) on Pease.

Clark Freise/NH DES said that even if NH creates standards for drinking water that are lower than 70 ppt for PFC, there is no guarantee that the state standards will take precedence over the national EPA standard of 70 ppt.

We need to appreciate that getting the water standards right is important. NH DES needs to appreciate that a linear approach is not the only viable one. Working on multiple aspects of the contamination issue in a parallel fashion is also a viable approach.

Dr. Chan/DHHS said it best when he noted that the water standards NH DES is creating will impact future deer drinking contaminated water, but the town is also interested in what can be done now for hunters eating deer who are drinking contaminated water today.



GREAT BAY
MARINE, Inc.

61 Beane Lane
Newington, NH 03801
603.436.5299
VHF Channel 68
greatbaymarine.com

Your neighborhood full service boat yard!

- Full Professional Services
- ABYC Certified Technicians
- Dockage - Moorings
- Season Pass for Launch Ramp
- Parts Department & Ship's Store
- On-Site Restaurant
- Transients Welcome

Eating Contaminated Venison

After 2 years of Newington discussing the hunter/venison pathway of exposure at RAB meetings (Pease Restoration Advisory Board) with members of NH DES in attendance (Peter Sandin and Robin Mongeon), Clark Freise/NH DES said the November 15th meeting was the first time he had heard of the issue. Are the RAB DES folks talking with other DES folks?

It was good that Kevin Kelley, Newington's Health Officer, spoke up in support of deer hunters. As a hunter, he is concerned about the PFC issue in deer and wants to know who is informing hunters or the NH Fish and Game about any potential risks from eating locally-killed deer. The two-day deer hunt at Great Bay Wildlife Refuge began Saturday November 17, 2018.

Clark Freise/NH DES said that he hears different "most important" pathways of PFC exposures in different communities he visits around the state, and we may not like what he says/does about the deer/hunting pathway. Obviously different communities can have different pathways of exposure, and there is nothing inconsistent or out of the ordinary for Newington's main pathway of human risk to potentially be from

contaminated deer consumption. Unless some of the local deer are tested, however, we will not know how much of a risk the venison issue is, or is not.

Other areas of NH are dealing with PFC contamination in drinking water, for example, Bedford and Litchfield. According to the 2017 Fish and Game report, 80 deer were killed in Bedford, 63 in Newington, and 42 in Litchfield (see page 5 chart). If deer are a human exposure pathway, Newington is likely not alone in needing to address this potential risk to human health.

Next Steps

At a minimum, everyone who attended the meeting is at least aware of what Newington is wrestling with in terms of widespread PFC contamination. They are also aware of the Town's concerns and our request for help in addressing the potential risk from eating local deer.

Clark Freise/NH DES said he would contact Glenn Normandeau of the NH Fish and Game Department to discuss the PFC issue and deer. The Newington selectmen plan to do the same.

Peter Clark/Senator Shaheen's office, Kerry Homes/Senator Hassan's office, and Ashley Motta/Rep. Shea-Porter's office said after the meeting that if the selectmen write a



letter to their offices about the deer testing issue that the congresswomen, in turn, could send a letter to the USAF asking that deer in Newington be tested for PFC levels.

Lisa Morris/DHHS will send information on their proposal to expand PFC testing capabilities in NH.

Robin Mongeon/ NH DES mentioned that RAB may be a good way to inform the public about human health issues relating to PFC. Probably not. RAB already affords little time to ask questions and discuss topics, and the public has to wait until the very end of the meeting with each person limited to 3 minutes. A Newington-specific meeting would be better to focus on Newington related issues. The town and the state both have a responsibility to keep townfolk updated on potential public health risks.

TE SubCom – Newington, NH



- TE SubCom is a leading supplier of undersea fiber optic networks and cable installation services.
- The Newington Campus includes manufacture of both undersea and shore terminal equipment.
- TE SubCom has manufactured enough undersea fiber-optic cable to circle the equator more than 47 times (373,000 miles)!
- More than 97% of International Internet Traffic is carried by undersea cable.
- TE SubCom has been a part of the Newington Community since 1953.

PO. Box 479 Portsmouth, NH 03802-0479 (603) 436-6100



Kingston Family Dental

The Care You Deserve, The Smile You Desire

William Blatt D.M.D.
H.C. Kingston D.M.D., P.A.
Patrick J. Racz D.D.S.

Eliot Commons
17 Levesque Drive, Suite 3
Eliot, Maine 03903

Hours By Appointment
(207) 439-0779
kingstonfamilydental.com

Eric Morris

📍 32 Nimble Hill Rd
Newington, NH 03801
☎ 603-319-8429
✉ eric@greatbaystrength.com



Feel better than ever!