



TESTING *for* PEASE

The PFAS Contamination at Pease: A Community Perspective

Highly Fluorinated Compounds – Social and Scientific Discovery
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An Introduction to TFP & the Pease Tradeport

Who is Testing
Testing for Pease?

Why Did
We Form?

History of the Pease
Air Force Base

History of the Pease
Tradeport

Who is Testing for Pease?

Testing for Pease is a community action group, whose mission is to be a reliable resource for education and communication while advocating for a long-term health plan on behalf of those impacted by the PFAS water contamination at the former Pease Air Force Base in Portsmouth, NH

*Testing for Pease founders (from left to right):
Alayna Davis, Michelle Dalton, and Andrea Amico*



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Why Did We Form?

- In May 2014, a local newspaper article revealed that PFAS contamination (PFOS & PFOA) was discovered in the three wells supplying water to the Pease Tradeport.
- One well (Haven) tested over the Environmental Protection Agency (EPA) PHA (Provisional Health Advisory).
- As community members, we were concerned as we work/worked for companies on Pease and have/had children attending the daycares on Pease. All of our families were exposed to contaminated public drinking water at Pease.



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History of the Pease Air Force Base

- 1956 to 1991 Strategic Air Command (SAC) Base
- 4,365 acres of land with 3 on site wells (Haven, Smith, & Harrison)
- In 1989 there were 3,461 active-duty military, 741 civil service workers, and 347 non-appropriated fund employees employed (~4500 total employees on Pease)
- In 1990 military personnel began leaving the base
- In 1991 Pease AFB closed and became the first base in the nation to be closed under the Base Realignment and Closure Act (BRAC)



History of the Pease Air Force Base

- In 1991 Pease became a superfund site
- What is a superfund site?

A Superfund site is any land in the US that has been contaminated by hazardous waste and identified by the EPA as a candidate for clean up because it poses a risk to human health and/or the environment.

- Pease has 41 hazardous waste sites identified
- Per NH DES, all previous remedial actions required by the Superfund were implemented by 1997



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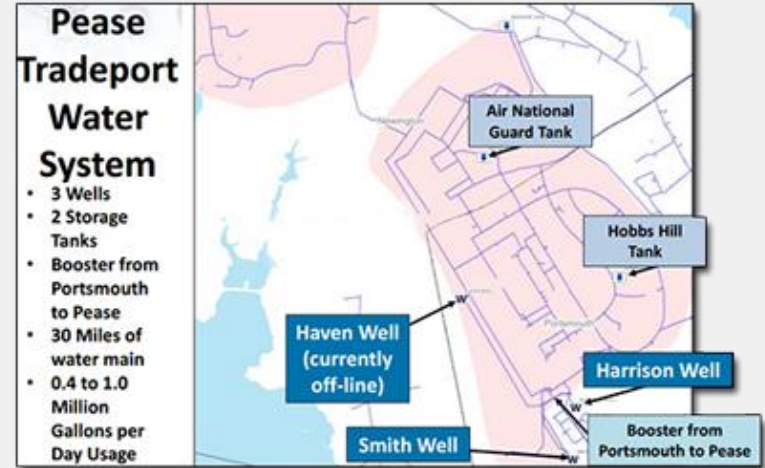
History of the Pease Tradeport

- Pease Tradeport developed in 1991
- Currently home to ~ 250 businesses & still growing
 - 2 large daycare centers
 - Restaurants
 - Healthcare establishments
 - Multiple colleges
 - Golf course
- 9,525 people employed and on Pease daily
- Portsmouth International Airport (PSM) currently in operation



History of the Pease Tradeport

- Pease Tradeport water is supplied by three wells on Pease:
 - Haven well
 - Smith well
 - Harrison well
- Haven well is estimated to have supplied 46% of water to the Pease businesses



History of the Pease Tradeport

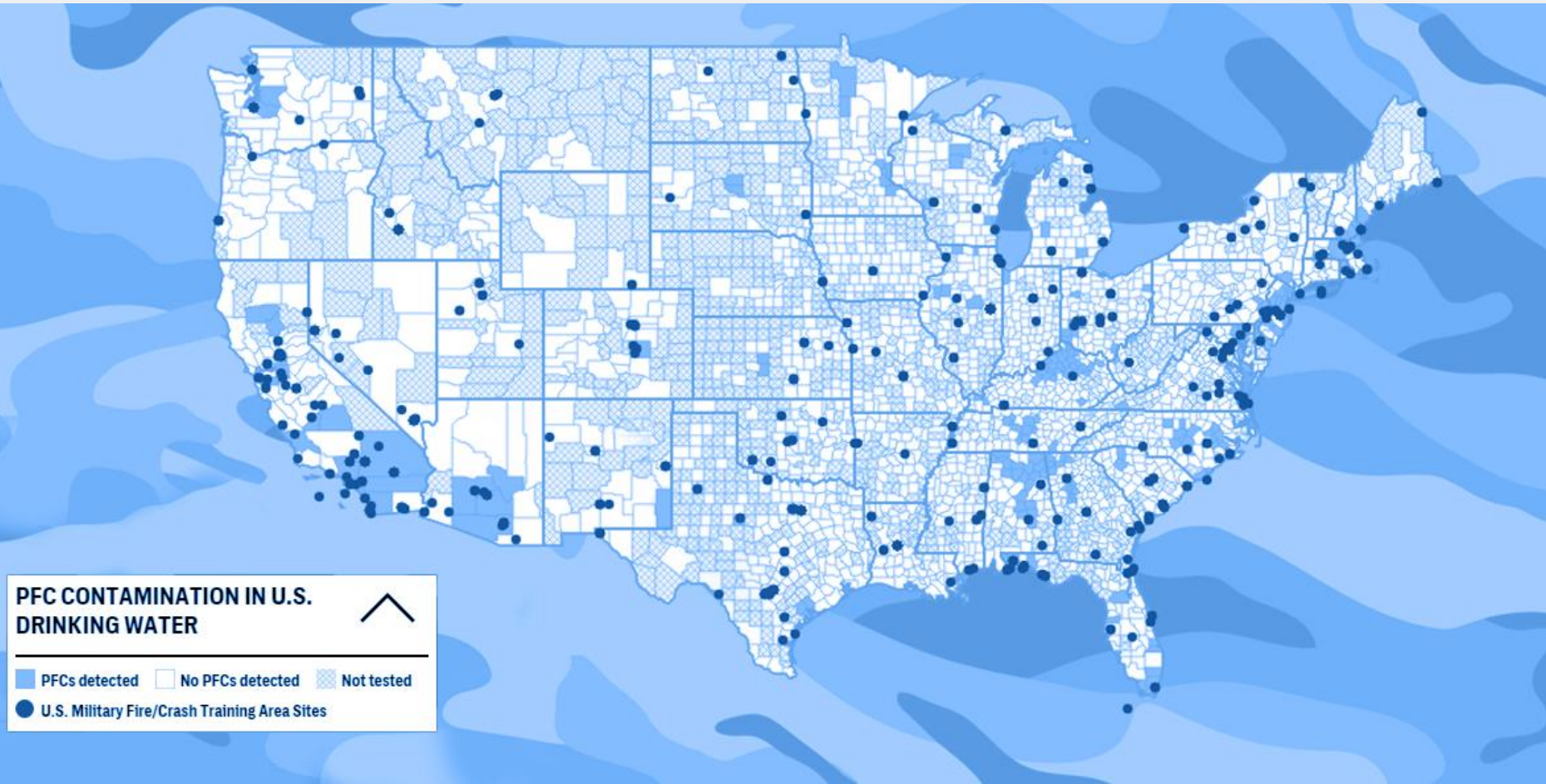


How was Pease Contaminated with PFAS?

- Pease water became contaminated by a fire fighting foam known as AFFF (Aqueous Film Forming Foam)
- Used by the Air Force since the 1970's
- 21 areas identified where AFFF was used, stored, or released on Pease
- AFFF is effective in putting out petroleum based fires



As of 2014, 664 fire or crash training sites identified by the Dept of Defense where
AFFF laced with PFCs was used in the US



Testing for Pease: Past, Present, & Future

Pease PFAS
Contamination

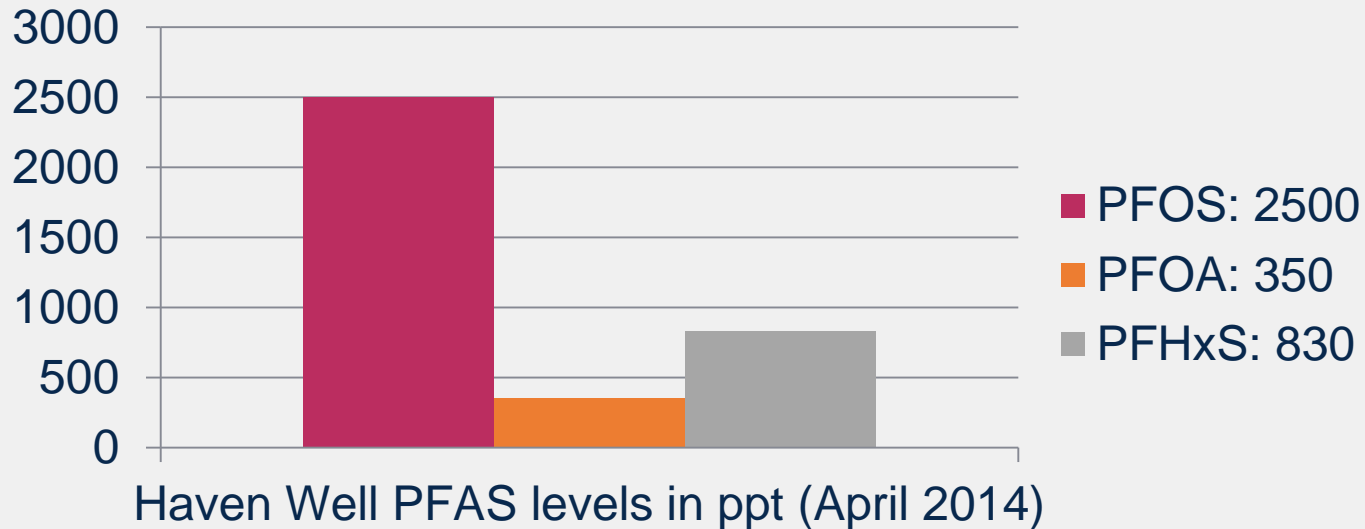
Pease Timeline
of Events

Pease Blood
Test Results

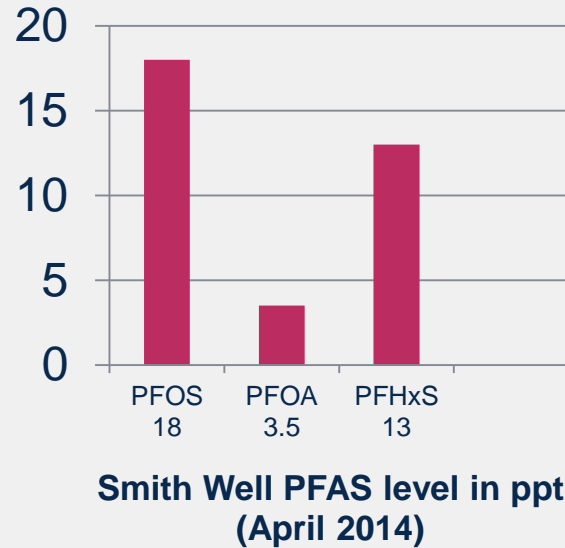
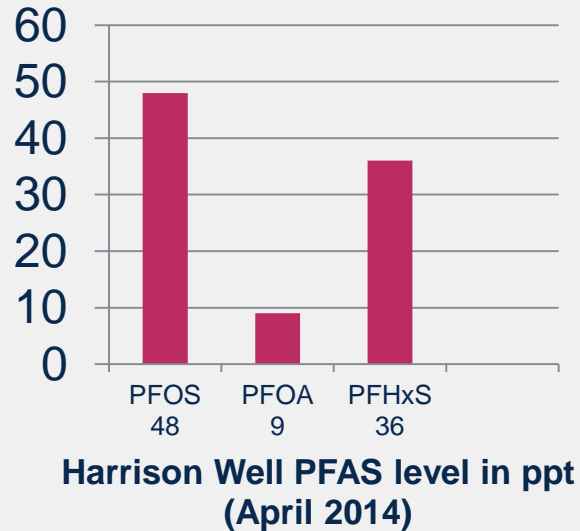
Community Concerns
& Efforts

Pease PFAS Contamination – April 2014

- PFASs were first tested for at Pease in April 2014
- High levels of PFASs caused the Haven well to be shut down immediately



Pease PFAS Contamination – April 2014



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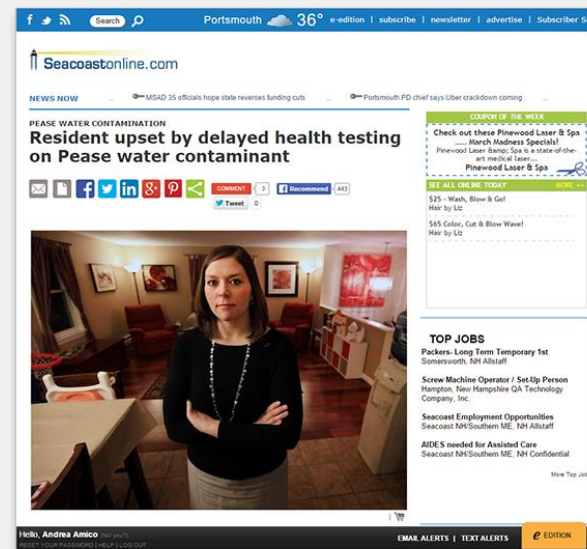
Pease Timeline of Events

2014

- **Apr:** PFASs tested for first time in drinking water wells.
- **May:** Haven well closed down once high levels of PFASs were identified.
- **Jun:** Andrea Amico advocates to NH DHHS to provide blood testing

2015

- **Jan:** Newspaper article runs expressing Andrea Amico's frustration with lack of blood testing



Pease Timeline of Events

2015

- **Apr:** Governor of NH opens blood testing to anyone on Pease that drank the water prior to Haven well closing in May 2014
- **Apr through Oct:** 2 rounds of blood testing offered to the community with 1578 participants tested (366 children, 31 adolescents, 1181 adults)
- **Jun:** 1st round of adult blood tests reveal PFHxS is highest PFAS found in the blood
- **Jul:** EPA places a strict order on the AF to clean up Haven well



Pease Timeline of Events

2015

- **Aug:** Community meets with AF and is referred to ATSDR for health concerns
- **Sept:** AF agrees to treat all 3 wells on Pease
- **Oct:** Community meets with ATSDR for the 1st time

2016

- **Mar:** ATSDR recruits community to form CAP
- **Apr:** AF forms RAB for Pease
- **May:** 1st ATSDR Pease CAP meeting
- **May:** EPA lowers PHA limit for PFOS and PFOA from 600ppt to 70 ppt

Pease Timeline of Events

2016

- **Jun:** Final blood testing report released from 2015 and shows elevated levels of PFAS in Pease community
- **Jul:** NH DHHS re-opens blood testing program indefinitely
- **Sep:** 2nd Pease CAP meeting
- **Sep:** 2 large GAC filters in place at Smith & Harrison wells on Pease



2017

- **Jan:** multiple bills at the state level surrounding PFASs and drinking water proposed by NH State Rep Mindi Messmer

Pease Timeline of Events

2017

- **Mar:** City of Portsmouth presents that GAC filters at Pease have non detect levels post treatment
- **May:** ATSDR releases feasibility assessment for possible health studies at Pease and AF reports at CAP meeting they do not have the authority to fund studies
- **Jun:** US Senator from NH Jeanne Shaheen questions the AF at an Armed Services Committee hearing about funding for a Pease health study



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Pease Community 2015 Blood Test Results



Blood levels are in ug/l

Pease Community 2015 Blood Test Results

PFCs	Pease Testing Population (µg/L)						NHANES (2011-2012) Data (µg/L)			
	n	Median	Geometric Mean	95% CI	Max	Above NHANES 95th Percentile n (%)	n	Geometric Mean	95% CI	95 th Percentile
PFOS	1578	8.90	8.59*	8.28-8.91	95.6	143 (9.1)	1904	6.31	5.84-6.82	21.7
PFOA	1578	3.20	3.09*	2.99-3.19	32	261 (16.5)	1904	2.08	1.95-2.22	5.68
PFHxS	1578	4.20	4.12*	3.92-4.33	116	628 (39.8)	1904	1.28	1.15-1.43	5.44
PFNA	1578	0.74	0.73‡	0.70-0.75	5.2	35 (2.2)	1904	0.88	0.80-0.97	2.54
PFDeA	1578	0.35	0.22	0.21-0.23	5.6	25 (1.6)	1904	0.20	0.18-0.22	0.69
PFUA	1578	0.30	0.19	0.18-0.19	1.6	19 (1.2)	1904	NC	NC	0.62
PFOSA	1578	0.07	0.13	0.12-0.14	0.4	N/A	1904	NC	NC	<0.1
Me-PFOSA	878	0.07	0.09	0.09-0.10	1.58	18 (2.1)	1904	NC	NC	0.69
Et-PFOSA	878	0.07	0.06	0.06-0.06	0.51	9 (1.0)	1904	NC	NC	0.11
PFBS	107	0.04	0.04	0.04-0.04	0.24	N/A	1904	NC	NC	<0.1
PFDoA	107	0.08	0.08	0.08-0.09	0.31	3 (2.8)	1904	NC	NC	0.14
PFHpA	107	0.07	0.07	0.07-0.07	0.39	NS	1904	NC	NC	0.22

Table 5. Summary of PFC serum concentrations in the Pease testing population compared with NHANES, all individuals (n=1578), Pease Tradeport, Portsmouth, NH, 2015–2016

CI=confidence interval, N/A=not applicable because 95th percentile was the limit of detection, NHANES=National Health and Nutrition Examination Survey, NT=not tested, NC=not calculated, NS= not shown in order to protect confidentiality, PFC=Perfluorochemical
 *Geometric mean is significantly higher than NHANES comparison data,
 ‡ Geometric mean is significantly lower than NHANES comparison data.

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Community Concerns & Efforts

Agencies we have worked with:

- NH Dept of Health & Human Services (DHHS)
- NH Dept of Environmental Services (DES)
- US Environmental Protection Agency (EPA)
- US Air Force (AF)
- City of Portsmouth Dept of Public Works (DPW) & Public Health officer
- City of Portsmouth City Council (i.e. city councilors, mayor)
- Agency for Toxic Substances & Disease Registry (ATSDR/CDC)

Community Concerns & Efforts

Many accomplishments since 2014 when PFASs were identified:

- Ongoing blood testing for community
- Air Force agreed to treat ALL three wells on Pease
- Ongoing planning with ATSDR for a long term health study at Pease
- Possibility of Pease being combined with other DoD sites for a larger study
- Increased awareness of PFASs in the environment and our community
- Relationships formed with government officials assisting with advocacy and political pressure to get more action
- Collaboration with local, national, and international communities facing similar contamination

Community Concerns & Efforts

Challenges

- No current specific health recommendations to healthcare providers on how to be proactive in monitoring for health effects.
- New Hampshire has not lowered their PHA for PFOS or PFOA as seen in other neighboring states.
- Health effects are downplayed by government agencies and community feels they are minimizing concerns.
- Communication to the community is inconsistent as many different businesses on Pease and some more willing to inform their employees and geography of population is scattered throughout NH, MA, and ME.

Community Concerns & Efforts

Other related concerns

- Pediatric cancer cluster identified in 5 NH seacoast towns in early 2016.
- Coakley Landfill (superfund site) in Greenland NH found to have high levels of PFASs flowing in the groundwater and surface water from the landfill and surrounding nearby residential homes and private wells.
- High levels of PFASs discovered in the surface water and storm water runoff on Pease.
- Several NH communities with elevated levels of PFASs have been identified outside of industrial sites, landfills, and firefighting areas.

Community Concerns & Efforts

Ongoing Efforts

- Advocate strongly for funding of a health study at Pease that can pave the path for a national study to include other communities.
- Advocate for more specific, long term bio monitoring recommendations for the exposed community.
- Advocate for lower PFAS levels in drinking water at the state and national level to protect the future population from exposure.
- Collaborate with other communities impacted by PFAS exposure to streamline efforts and share best practices.

Conclusion

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.”

- Margaret Mead

For more information, please visit:

- TestingforPease.com
- Facebook.com/TestingforPease

