

Warminster PA Community

Highly Fluorinated Compounds - Social and Scientific Discovery
Northeastern University | June 14, 2017

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Warminster

- ▶ A suburban area 5 miles north of Philadelphia, PA with homes, industrial and commercial activities, parks, schools, golf courses
- ▶ Population 32,000
- ▶ 18 public water supply wells
- ▶ **Groundwater** is the sole source for both public and private water
- ▶ Complex water well distribution system due to fractured bedrock



Warminster Naval Air Development Center Background



- ▶ An 840 acre facility that operated from 1944 to 1996
- ▶ Historically contained up to 10 water supply wells on base
- ▶ Wastes generated on site from aircraft maintenance and testing, firefighting activities, pest control, and laboratory research
- ▶ Hazardous waste was burned in open pits in a fire training area until 1988
- ▶ In 1979 the NADC was first investigated by the EPA as possible Superfund site



Early Contamination in Warminster Public Drinking Water and Health Concerns

Volatile Organic Chemicals detected in late 1970s

- ▶ Tetrachloroethylene (PCE)
- ▶ Trichloroethylene (TCE)
- ▶ 1,2-dichloroethene (1,2,DCE),
- ▶ Carbon tetrachloride & more

*Prompted a CDC/Bucks County Department of Health TCE Study



Meet our Neighbors: Willow Grove Air and Air Reserve Stations

- ▶ 1942 to current
- ▶ Joint base that operated on 1,015 acres just 3 miles from the Warminster NADC
- ▶ 2 water supply wells
- ▶ Waste areas include 4 landfills, several hazardous waste storage areas, wastewater retention basin/treatment plant, and a fuel farm
- ▶ Collectively named one Superfund Site in 1995



Warminster NADC EPA Superfund Site

- ▶ Placed on the Superfund National Priority List in 1989
- ▶ Fire training area that burned planes/jet fuel spills/other waste
- ▶ Operations at the base ceased in 1996 (BRAC)
- ▶ All remediation under EPA Superfund Program was fulfilled in 2000
- ▶ Majority of the land was transferred to private sector and developed



Photo courtesy of *The Intelligencer*

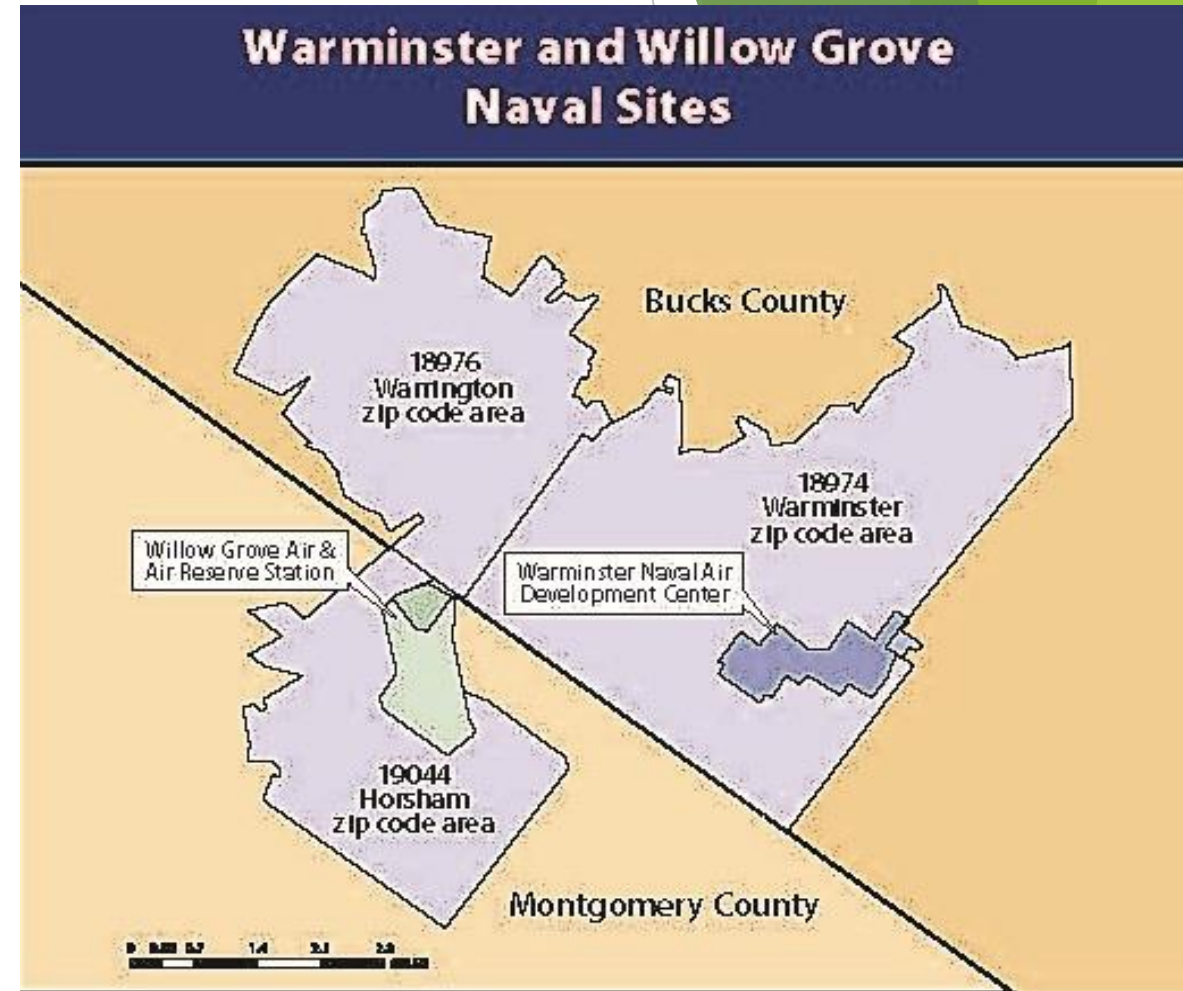
PFC's Detected in 2011-2012 by Navy



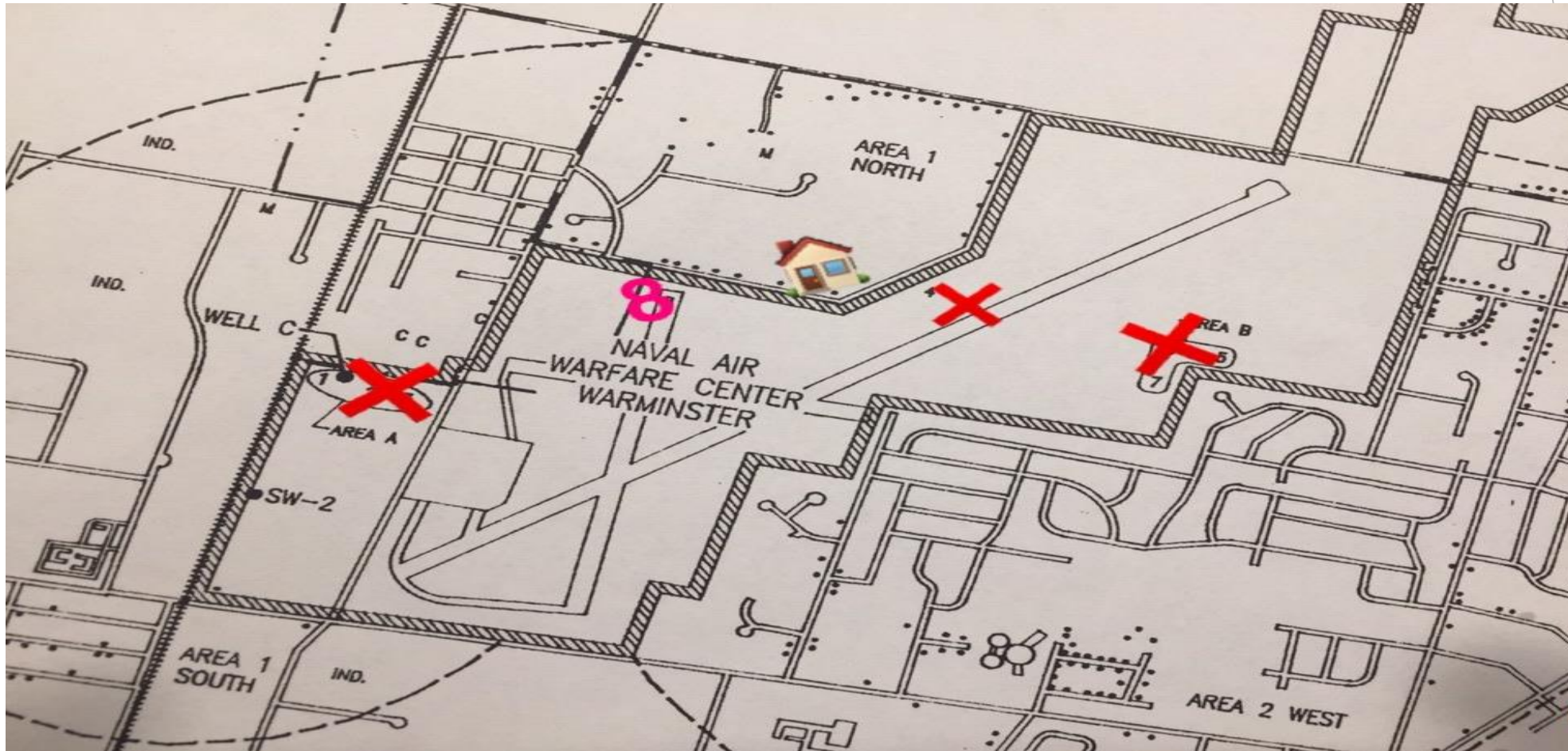
- ▶ PFC's were first detected in groundwater by the Navy at both locations
- ▶ 2013-14 initial federal unregulated chemical testing program forced 8 public drinking water wells shut down
- ▶ AFFF used on both area military sites since the early 1970s

Sources of Suspected PFAS Contamination

- ▶ Former Naval Air Warfare Center in Warminster
- ▶ Former Naval Air Station Joint Reserve Base in Horsham
- ▶ Active Willow Grove Naval Air Station Joint Reserve Base and Horsham Air Guard Station



View of Warminster NADC Site 8

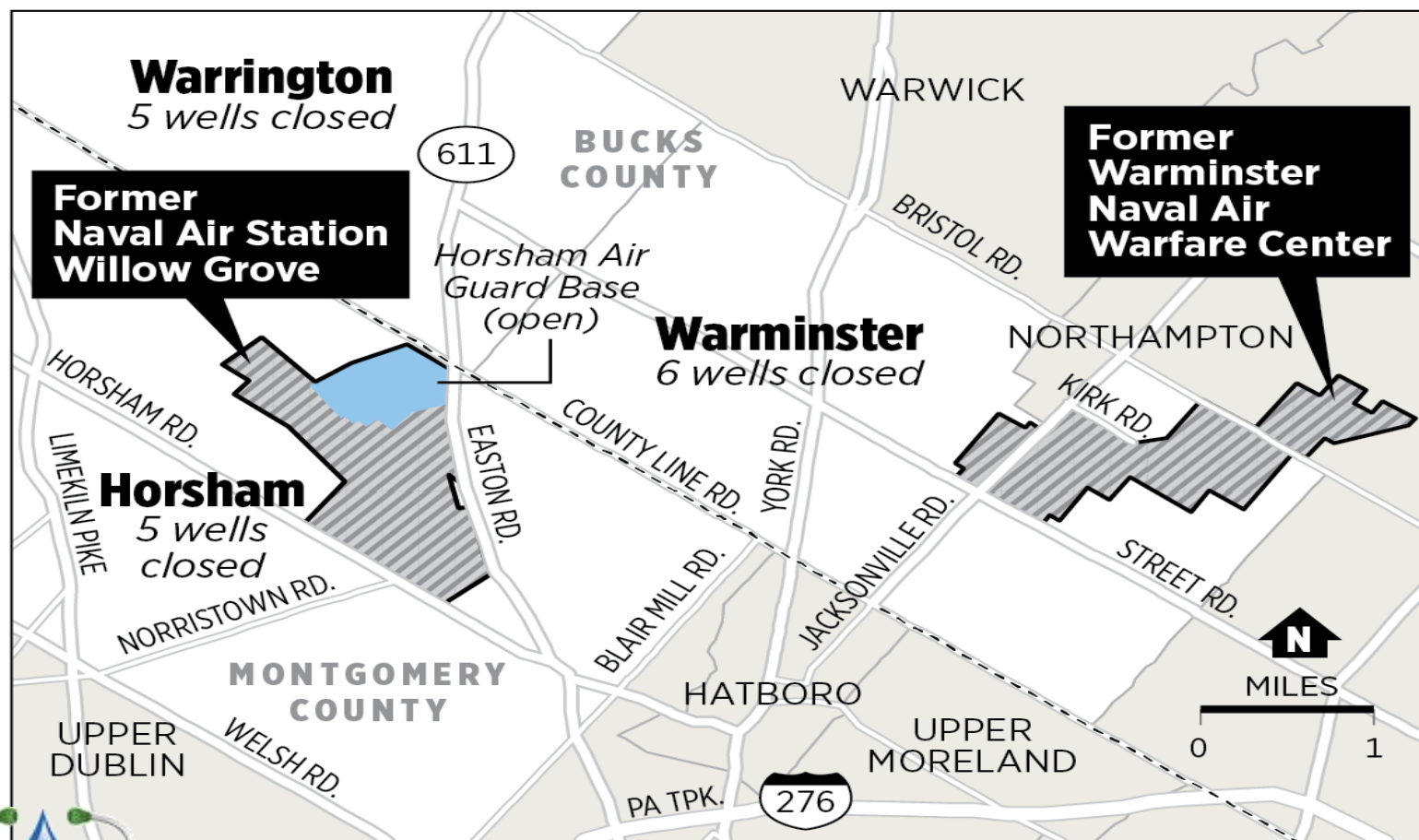


Easter Seals Campers sprayed by Warminster Navy Firefighters



Photo from NADC newsletter *The Reflector* August 1982

Contamination Continues to Expand



Graphic courtesy of The Intelligencer

PFOA/PFOS Impacts on Local Drinking Water Since 2013-14

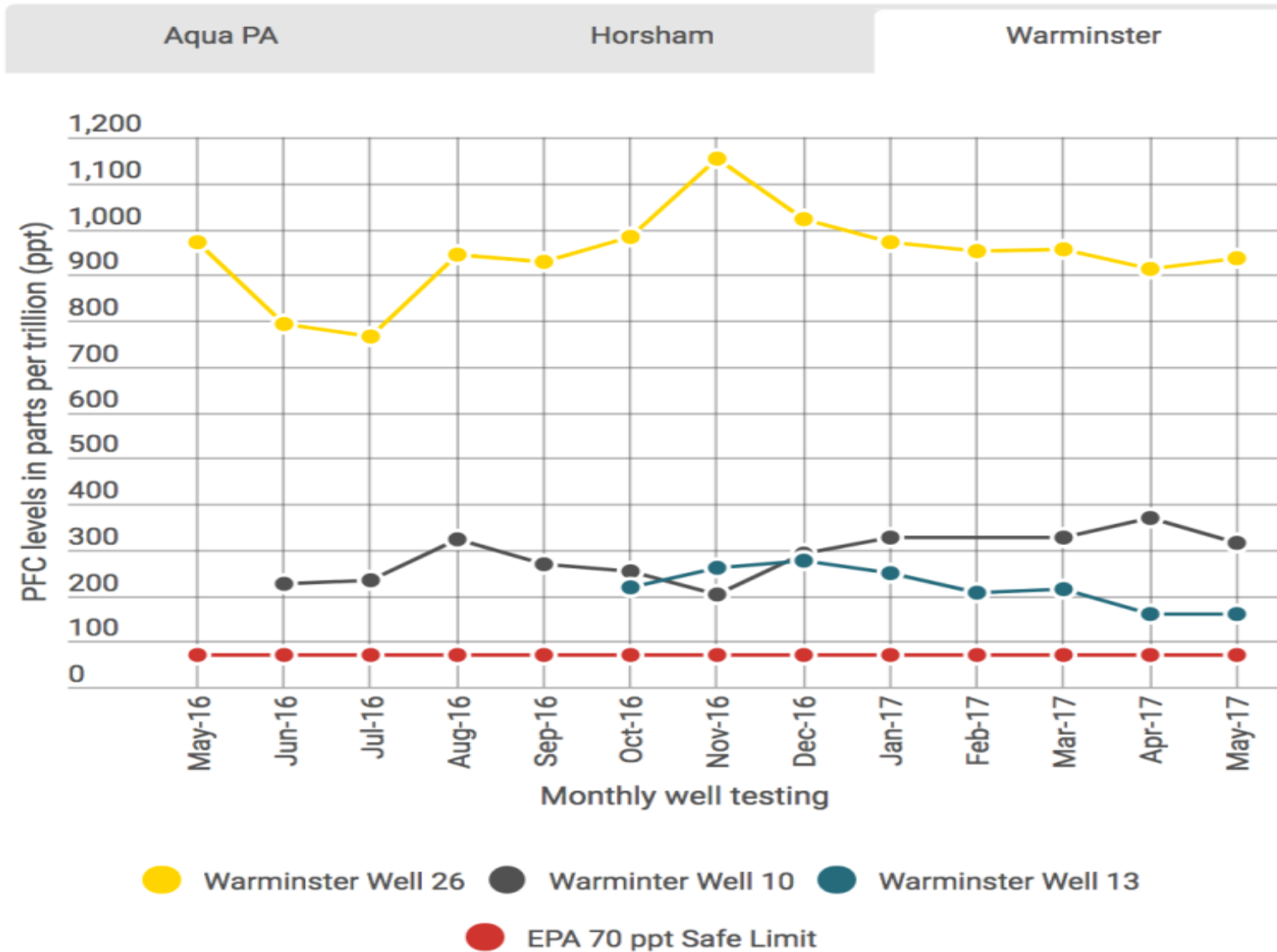
- ▶ Contamination of the drinking water of more than **100,000** people
- ▶ **22 public** drinking water wells have been shut down
- ▶ Over **200 private** drink water wells have been shut down
- ▶ Local residents were exposed to PFOA/PFOS up to **15x** the EPAs LTHA
- ▶ Local resident had PFOA blood level of 31ppt **15x** the national average



A Closer Look at Our Levels

- ▶ Warminster's highest public water **PFOA** level was 350 ppt
- ▶ Warminster has **3rd highest** public water **PFOS** level in the U.S. (1,100 ppt)
- ▶ Willow Grove site **on-base** water supply well tested **PFOS** at more than 240x the EPA's LTHA (19,000 ppt)
- ▶ The area has recorded among highest public **drinking water** level for **PFOA/PFOS combined** (1,290 ppt)
- ▶ All 3 area water utilities are among the top 10 utilities with the highest **PFHxS/PFOS** combined levels sampled in the U.S.

PFC Levels Detected In Municipal Well Water (1100 ppt)



Military Response

- ▶ Paid for installation of carbon filtration systems on public wells (above EPA HAL)
- ▶ Provided bottled water to residents
- ▶ Hooked homes with private well contamination into public systems
- ▶ Navy and Air Force has spent a combined \$27.3 million on remediation and testing

Photo courtesy of *The Intelligencer*



Local Water Authority Response

- ▶ Shut down wells and installed carbon filters
- ▶ Warminster and Horsham has purchased water from another local water authority
- ▶ Local Water Authorities agreed to removed the chemicals to below 1 ppt
- ▶ Also requested that the Navy pay for blood testing and health studies for residents

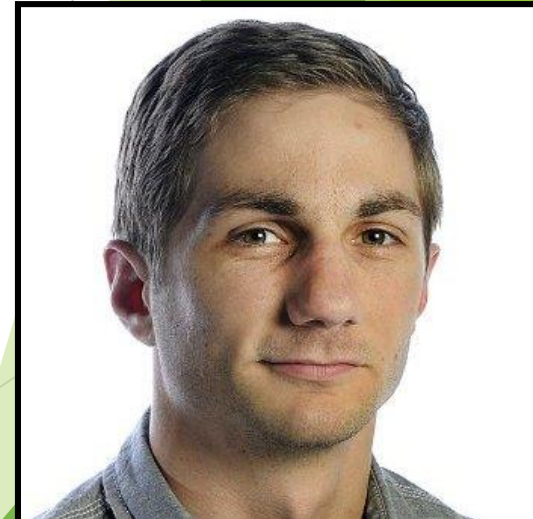


Media Response

The Intelligencer

BUCKS COUNTY
Courier Times

- ▶ Kyle Bagenstose, local newspaper environmental reporter, Calkins Media, first broke the news
- ▶ Informing the public
- ▶ Investigating the extent and impact of the problem
- ▶ Coverage includes an ongoing series “Unwell Water”



Community Member Responses

- ▶ Meetings with local and state lawmakers
- ▶ Meetings with regional EPA/ATSDR
- ▶ Meetings with local media
- ▶ Local Clean Water Action organized informational meetings
- ▶ Community rally
- ▶ Active social media posts sharing personal health stories
- ▶ Many pursuing legal action
- ▶ Community efforts remain scattered



Photo courtesy of *The Intelligencer*



Political

- ▶ Community members have met with local and state legislators
- ▶ Governor Tom Wolf has proposed DOD to fund blood tests for 70,000 residents in affected area
- ▶ Congressmen Boyle, Meehan, and Fitzpatrick propose legislation for DOD to pay for health screening
- ▶ One local State Rep (Todd Stephens) secured a grant to help pay to install carbon filters at 10 wells not covered by the Navy's remediation plan
- ▶ Local congressmen called for congressional hearings on the issue
- ▶ Continue to lobby the EPA and military to do more for the community



Photo courtesy of *The Intelligencer*

Legal Responses

Weitz & Luxenberg law firm associated with Erin Brockovich held public meeting

- ▶ Individual and class action law suits have been filed against both chemical manufacturers of fire fighting foam and the military
- ▶ Writ of Summons filed on behalf of 461 former & current employees and residents of the 3 bases against the chemical manufacturers



Photo courtesy of *The Intelligencer*

Additional Response to the Problem

- ▶ Testing of area private and public wells continues to expand
- ▶ ATSDR Cancer Data Review (1985 - 2013) of selected zip codes



²¹Photo courtesy of *The Intelligencer*



Health Studies in the Area over the Years

- ▶ 1979 CDC and Bucks County Department of Health TCE Study
- ▶ Early 1980s study (PA DOH, CDC, and Bucks County Department of Health) of the rate of birth defects in 4 area towns
- ▶ In 2006 PA DOH published a brain cancer study in children and young adults living in Warminster from 1993 to 2004
- ▶ ATSDR and PA Dept. of Health reviewed cancer data (1985-2013) by Zip Code in PFAS affected areas



Community Needs & Concerns

- ▶ Help organizing efforts
- ▶ Need for blood testing program
- ▶ Need for more formal Community Assistance Panel (CAP)
- ▶ ATSDR feasibility assessment for possible health studies
- ▶ Additional ways to inform the community about the extent/impact of problem
- ▶ Advocate for stricter environmental laws and Superfund site remediation requirements
- ▶ Advocate for continued research into the health effects (outside proven association) of PFAS, especially the combination of various exposures typical at military Superfund sites
- ▶ Advocate for continued research on children's exposure and second generation health effects
- ▶ Collaborate with PEASE on possible inclusion into larger study of military sites

