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 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
Warminister 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
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 EPAs 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)

Graph courtesy of The Intelligencer

Sources: Warminster Municipal Authority, Horsham Water & Sewer Authority, Aqua Pennsylvania
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
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

- 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
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
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
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
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