

Exposure to PFAS in Private Residential Drinking Water Wells Communities near the Pease International Tradeport in New Hampshire

At the request of the U.S. Air Force (USAF), ATSDR evaluated whether drinking water containing per- and polyfluoroalkyl substances (PFAS) from private residential drinking water wells within one mile of the Pease International Tradeport may harm people's health. USAF coordinated the sampling and analysis of water from these wells between June 2014 and December 2017. The source of PFAS in the drinking water wells likely came from aqueous film-forming foam (AFFF) used on the former Pease Air Force Base. **This fact sheet summarizes ATSDR's findings and recommendations.**

ATSDR Findings: General Summary

- USAF tested 40 wells in Newington and Greenland:
 - 3 wells did not have any PFAS detected in them (so users have not been exposed to harmful levels of PFAS)
 - 1 well is no longer in use (so users may have been exposed to harmful levels of PFAS in the past)
 - 4 wells had a treatment system installed (so users may have been exposed to harmful levels of PFAS in the past but no current exposure to PFAS is of concern)
 - 8 wells have PFAS detected but at a level well below what is expected to cause harmful health effects
 - 24 wells have a mixture of PFAS detected that may have caused past or current exposure; however, the risk of harmful health effects is uncertain because of limited scientific information*
- The cancer risk from current and past exposure to PFAS in many private wells is uncertain because of limited scientific information*
- Other PFAS exposure sources, such as food and consumer products, could increase the risk of harmful effects beyond the risk from the drinking water exposures alone.

Use the table on page 2 to look up your specific well and learn more about the possible health effects from exposure to PFAS.

*Limited Scientific Information

Currently, there is limited scientific studies about the health effects of many PFAS. Also, there are inadequate methods to evaluate the possible harmful effects from the mixtures of PFAS found in some of the wells.



Possible Health Effects

Current studies suggest that exposure to PFAS may cause the following health effects:

- Increased cholesterol levels
- Changes in liver enzymes
- Decreased vaccine response in children (an immune effect)
- Increased risk of high blood pressure or pre-eclampsia in pregnant women
- Small decreases in infant birth weights (a developmental effect)
- Increased risk of kidney or testicular cancer



**U.S. Department of
Health and Human Services**
Agency for Toxic Substances
and Disease Registry

ATSDR Findings: Specific Wells

Private Wells	Expected Health Effects from Past and Current PFAS Exposure
7, 8, 10, 12, 13, 27, 34, 51	Users of these private wells are exposed to PFAS; however, we don't expect you to have harmful cancer or non-cancer effects because your exposure levels are likely well below the level that causes harmful health effects.
17	<p>This well now has a whole-house treatment system, installed by the USAF. Therefore, we don't expect you to have harmful health effects from current exposure to PFAS.</p> <p>Young children who drank the water from this well before the treatment system was installed (or were born to mothers who did) may have increased risk of harmful non-cancer health effects (such as, developmental and immune effects). Adults who used this well previously are also at an increased risk of harmful non-cancer health effects.</p> <p>The cancer risk from past exposure to PFAS is uncertain for both adults and children.</p>
19, 21	<p>These wells now have whole-house treatment systems, installed by the USAF. Therefore, we don't expect users of these wells to have harmful health effects from current exposure to PFAS.</p> <p>Young children who drank the water from these wells before the treatment system was installed (or were born to mothers who did) may have increased risk of harmful non-cancer health effects (such as, developmental and immune effects).</p> <p>We are uncertain about the risk of harmful non-cancer health effects for adults who used these wells before the treatment system because current scientific methods are inadequate to evaluate the non-cancer health effects from the mixture of PFAS. The cancer risk from past exposure to PFAS in these wells is also uncertain (for both adults and children).</p>
23	<p>This well now has a whole-house treatment system, installed by the USAF. Therefore, users of this well aren't expected to have harmful health effects from current exposure to PFAS.</p> <p>Young children who drank the water from this well before the treatment system was installed (or were born to mothers who did) may have increased risk of harmful non-cancer health effects (such as, developmental and immune effects).</p> <p>Adults who used this well before the treatment system are not at risk because PFAS exposures were below levels likely to cause harmful non-cancer effects.</p> <p>The cancer risk from past exposure to PFAS is uncertain (for both adults and children).</p>
30, 42, 52	PFAS was not detected in these wells. If you drink water from these wells, you are not exposed to PFAS through your drinking water; therefore, harmful cancer or non-cancer health effects are not expected.
37	<p>This well is currently not in use. However, young children who drank the water from this well previously (or were born to mothers who did) may have increased risk of harmful non-cancer health effects.</p> <p>We are uncertain about the risk of harmful health effects for adults who used this well previously because current scientific methods are inadequate to evaluate the non-cancer health effects from the mixture of PFAS. The cancer risk from past exposure to PFAS in this well is also uncertain (for both adults and children).</p>
Remaining 24 wells	Users of water from the remaining 24 sampled private wells are exposed to a mixture of different PFAS. We cannot determine your risk of harmful cancer or non-cancer health effects because current scientific methods are inadequate to evaluate the health effects from these mixtures.

Note: The USAF used "RES" followed by the well number to identify wells sampled around Pease. ATSDR used the same designations in the health consultation to avoid confusion.

ATSDR Recommendations

For Agencies: The New Hampshire Department of Environmental Services (NHDES), U.S. Environmental Protection Agency (EPA), and USAF should continue with long-term plans to stop exposure to private drinking water sources that have PFAS above EPA or other applicable guidelines. They should also identify any affected wells that were not part of the original inventory plan.

For Residents: If you want to reduce your exposures to PFAS from private well water, use an alternative or treated water source for drinking, food preparation, cooking, brushing teeth, and other activities that might result in ingestion of water. We do not expect you to have significant exposure from PFAS-contaminated water for bathing, showering, washing dishes, and doing laundry.

For People with Long-Term Exposure to PFAS: If you have long-term PFAS exposure, be aware of ways to reduce your exposure. For example, you can:

- Visit the ATSDR website (www.atsdr.cdc.gov/pfas/pfas-exposure.html) to learn more
- Arrange a consultation with ATSDR scientists by calling (770) 488-3731
- Consult with an ATSDR scientist during a public availability session (to be determined)

For Breastfeeding Mothers: Because of the health benefits of breastfeeding for both you and your baby, continue to breastfeed. To reduce any potential exposure for formula-fed infants, use pre-mixed baby formula or reconstitute dry formula with water sources not containing PFAS.

For Concerned People: If you are concerned about exposure you or your family might have had, talk to your doctor. ATSDR is available to consult with any healthcare provider, as needed. Information to guide healthcare providers is available from www.atsdr.cdc.gov/pfas/info-for-health-professionals.html.

For More Information

Community members with questions about ATSDR's report or private well users with questions about their individual test results:

- Please call site team lead, Greg Ulirsch, Ph.D., by email at gru1@cdc.gov or by phone at 770-488-3731



To read the full report online, visit www.atsdr.cdc.gov/HAC/PHA/index.asp or visit the following locations:

- **Portsmouth Public Library**, 175 Parrott Avenue, Portsmouth, NH 03801
- **Langdon Library**, 328 Nimble Hill Road, Newington, NH 03801
- **Weeks Public Library**, 36 Post Road, Greenland, NH 03840

CDC/ATSDR

For more information about ATSDR, visit www.atsdr.cdc.gov, about PFAS, visit the following websites:

- **PFAS and your health:** www.atsdr.cdc.gov/pfas/index.html
- **PFAS Clinical Guidance:** www.atsdr.cdc.gov/pfas/docs/ATSDR_PFAS_ClinicalGuidance_12202019.pdf
- **Breastfeeding and Contaminants:** www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/environmental-exposures/index.html

EPA

- **Pease AFB:** cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0101213

NHDES

- **Perfluorochemicals:** www.dhhs.nh.gov/dphs/pfcs/index.htm



This evaluation of past and current PFAS exposure from water in private wells near the Pease International Tradeport is limited by several uncertainties. Read more about these uncertainties in the full report, "Per- and Polyfluoroalkyl Substances (PFAS) in Private Residential Water Wells near the Pease International Tradeport."

You can access the full report at www.atsdr.cdc.gov/HAC/PHA/HCPHA.asp?State=NH. ATSDR released this report on April 30, 2020 for public comment. Your feedback on the report can help improve the quality of it. Email your comments by July 30, 2020 to ATSDRRecordsCenter@cdc.gov or mail them to us at ATSDR Records Center, 4770 Buford Highway NE, Mailstop: S-102-2, Chamblee, GA 30341.

