



PERFLUORINATED CHEMICALS IN DRINKING WATER QUESTIONS & ANSWERS

Willow Grove and Warminster, PA

October 2015

At the request of the U.S. Navy and the Air National Guard (ANG), the U.S. Environmental Protection Agency (EPA) continues to test private drinking water wells in the Horsham, Warminster and Warrington, Pennsylvania areas for perfluorinated chemicals (PFCs), including perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) found at the Willow Grove Naval Air Station Joint Reserve Base (NASJRB) in Horsham, Pennsylvania. In addition, private drinking water wells that were tested for PFCs near the Naval Air Development Center, (NADC) Warminster, Pennsylvania continue to be monitored.

To date, EPA has sampled more than 114 private wells near the Naval Air Warfare Center (NAWC), Warminster, PA and the Navy is providing other sources of water to properties in which PFCs are present at or above the EPA's provisional health advisory level (HAL). Near NASJRB, EPA has sampled 270 private wells and the Navy and Air National Guard are providing bottled water to more than 40 properties in which PFCs are present at or above the EPA's HAL.

Testing done by the local public water supplies, as part of the federal Unregulated Contaminant Monitoring Rule 3 (UCMR), show levels of PFOS above EPA's provisional HAL in a few public supply wells. Those wells have been taken off-line and are not currently supplying water to the public. At this time, PFOA has not been detected above the provisional HAL at any of the other public water supply wells. The purpose of the residential testing is to determine if private wells have been impacted by PFOA and PFOS and if additional actions are needed to protect human health and the environment. EPA is coordinating closely with the U.S. Navy, ANG, Pennsylvania Department of Environmental Protection (PADEP), the Centers for Disease Control and Prevention (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR), and Local Officials and Public Water Authorities.

Representatives from the EPA are continuing to contact private drinking water well owners in the Horsham, Warminster and Warrington areas that might be impacted by the contamination at the NASJRB site, to obtain permission to take water samples from those wells to determine if levels of PFOS and PFOA are present in drinking water above the provisional HALs and to ensure that people have access to an alternate water supply. The sampling is being done at no cost to private well owners and the results are expected to be available within three to five weeks. To have your well tested, please contact any of the EPA staff listed on the last page of this fact sheet.

HEALTH QUESTIONS

Q: Can I continue to drink the public water?

A: Yes. The Horsham Water and Sewer Authority, Warrington Township Water and Sewer Department or Warminster Municipal Authority wells that had PFOS and/or PFOA levels exceeding the provisional HALs have been taken off-line until appropriate treatment can be installed.

Q: How long have I been exposed to PFOS and PFOA in my drinking water?

A: Unfortunately, there is no way to determine how long this chemical has been present in the water supply.

The drinking water production wells, where PFOS and PFOA were detected at or above the HALs, have been taken off line to prevent further exposure. The Navy, EPA and PADEP continue to investigate potential sources.

HEALTH QUESTIONS, CONT'D

Q: What are the health effects from being exposed to PFOS and PFOA at levels above the HAL?

A: In laboratory studies of animals given large doses of PFCs, results indicate that PFOS and PFOA can cause developmental, reproductive, and other adverse effects including increased liver weight in laboratory animals. In humans, more research is needed, but the most consistent findings from epidemiology studies are elevated blood serum total cholesterol levels among exposed populations, and limited findings related to low infant birth weights.

Q: What are Provisional Health Advisory Levels (HALs)?

A: In 2009, EPA issued provisional HALs for PFOS and PFOA. The HALs are intended to ensure protection of public health, with a margin of safety built-in, following short-term exposure to PFOS and PFOA in drinking water. The provisional HALs are 0.2 micrograms per liter of water ($\mu\text{g/L}$) for PFOS and 0.4 $\mu\text{g/L}$ for PFOA.

While EPA continues its research on these chemicals, it's important to note that HALs are designed to have a significant built-in cushion of protection to account for uncertainties related to toxicity and other sources of exposure.

Q: Do PFOS and PFOA cause cancer?

A: There is evidence that both chemicals, in large doses, have caused tumors in animal studies.

At this time, there is not enough information to determine, with certainty, if cancers and other adverse health effects in humans are caused by PFOS and PFOA.

There are some epidemiology data that indicate a link between PFOA (but not PFOS) and kidney and testicular cancers in humans however, more research is underway to evaluate the impacts of these compounds on human health. We do know that studies show that nearly all people have some level of PFCs in their blood, regardless of age. People may be exposed to PFCs through food, water, or from using certain commercial products.

Q: What can I do to protect my family?

A: A few simple steps can help reduce your exposures to PFOS and PFOA in drinking water, including:

- Avoid ingesting contaminated tap water above the provisional HALs for PFOS and PFOA.
- For private well users in the test area, participate in the Navy's sampling program.
- When considering a household treatment system, consult the manufacturer's customer service department about the system's specifications. Research is underway to study the effectiveness of household treatment for PFOS and PFOA.
- Discuss your health concerns with your family doctor. Toxicologists from EPA and CDC/ATSDR are available to answer questions (see contact information on last page).

Q: Can I prepare baby formula with water contaminated with PFOS/PFOA above the HAL, or at any level?

A: To reduce potential exposure to infants, caregivers should use pre-mixed baby formula or reconstitute formula using alternative water sources not containing PFOS and/or PFOA.

Q: Should I be concerned about the other PFCs listed on my private well results?

A: At this time, we don't have much information about the toxicity of the other PFCs. Most toxicity studies involving PFCs have focused on PFOS and PFOA. As more research is done on this group of chemicals, we will share information about potential health effects.

Q: Can I use my private well to water my vegetable garden?

A: From a health perspective, the ingestion of PFOS and PFOA in drinking water, above the provisional HALs, is the primary exposure pathway of concern. PFOS and PFOA are unlikely to be taken up by plant roots via contaminated water. As a prudent public health action for all produce, vegetables and/or fruits should be washed thoroughly prior to consumption.

HEALTH QUESTIONS, CONT'D

Q: Can I use my private well for showering/bathing children?

A: Yes. Our primary concern is the ingestion of PFOS and PFOA in drinking water above the provisional HALs. When brushing teeth, monitor children so they do not ingest the water.

PRIVATE WELL TESTING

Q: Do I have to get my private well tested?

A: You do not have to have your well tested but, if you live within the testing area, EPA and our health partners recommend that you get your well tested so you may take the proper steps to ensure the health and safety of your family. The testing process is quick and offered at no cost to residents.

Q: Can I get my well tested if I live outside of the testing area?

A: At this time, the Navy the Air National Guard are focusing their testing on certain areas where PFOS and PFOA are impacting the public drinking water supply. If the results of the current sampling indicate the need to expand the testing area, the Navy will perform additional sampling.

Q: Who is paying for the testing and alternate water supply for private well users?

A: The U.S. Navy and the Air National Guard are paying for the private well testing and providing bottled water for drinking and cooking until an appropriate solution is implemented.

EPA'S UNREGULATED CONTAMINANT MONITORING RULE (UCMR)

Q: What is the Unregulated Contaminant Monitoring Rule (UCMR)?

A: The EPA's UCMR program is used to collect data for selected contaminants, suspected to be present in drinking water, to determine how frequently and at what level they occur. These contaminants do not have health-based standards under the Safe Drinking Water Act.

Q: How often does EPA look for new contaminants?

A: Every five years EPA develops a Contaminant Candidate List to evaluate new chemicals not currently tested for in public drinking water supplies.

From this list and other sources of information, EPA identifies a smaller group of contaminants (30 or less) for monitoring by public water systems. The next list of chemicals to be monitored under the UCMR is due in 2016.

PFCs, including PFOS and PFOA, are part of the third list of contaminants to be investigated, therefore we call it UCMR3. UCMR3 contains 28 chemical contaminants and two viruses. Of the chemical contaminants, only six are PFCs and only two of the PFC's have provisional health advisory levels at this time (PFOS and PFOA).

Q: Do all water systems have to sample for UCMR contaminants?

A: No. Only those water systems serving more than 10,000 people are required to sample for UCMR contaminants. In addition, approximately 800 small water systems are randomly selected to be included in the sampling program.

ADDITIONAL INFORMATION

Q: What are PFOS and PFOA?

A: PFOS and PFOA are organic chemicals used in repellants for stains, water, oil, and grease. Commercial and consumer products containing or degrading to these compounds were first introduced in the 1950s.

They have been used in a variety of products such as the fabric of upholstered furniture, carpets, non-stick cookware, floor wax, and the lining of microwave popcorn bags. Firefighting foams also contain these chemicals.

Over time, both chemicals became widely distributed in the environment and have been detected in the blood of humans, wildlife, and fish.

For more information about PFOS and PFOA, please see links to fact sheets on the last page of this fact sheet.

CONTACT US

Private Drinking Water Well Testing

Eduardo Rovira, On-Scene Coordinator
U.S. EPA
215-814-3436
rovira.eduardo.@epa.gov

Ruth Scharr, On-Scene Coordinator
U.S. EPA
214-756-7897
scharr.ruth@epa.gov

Larry Brown, Community Involvement Coordinator
U.S. EPA
215-814-5527
Brown.larry@epa.gov

Willow Grove Naval Air Station Joint Reserve Base

Willington Lin
BRAC Environmental Coordinator
215-897-4904
Willie.Lin@navy.mil

Air National Guard

Keith Freihofer
Environmental Restoration Program Manager
240-612-8762
keith.e.freihofer.civ@mail.mil

Health Questions:

Karl Markiewicz, PhD
Senior Toxicologist
DHHS/CDC/ATSDR
215-814-3149 (office)
kvm4@cdc.gov

Linda Watson
EPA Toxicologist
215-814-3116
watson.linda@epa.gov

Dawn Ioven
EPA Toxicologist
215-814-3320
ioven.dawn@epa.gov

Links to More Information

Provisional Health Advisory Fact Sheet:

http://water.epa.gov/action/advisories/drinking/upload/2009_01_15_criteria_drinking_pha-PFOA_PFOS.pdf

UCMR Fact Sheet:

http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/upload/UCMR3_FactSheet_General.pdf

PFOS/ PFOA Emerging Contaminant Fact Sheet:

http://www2.epa.gov/sites/production/files/2014-04/documents/factsheet_contaminant_pfos_pfoa_march2014.pdf

EPA Headquarters Frequently Asked Questions Page:

<http://www.epa.gov/oppt/pfoa/pubs/faq.html>

ATSDR TOXFAQs Link for Perfluoroalkyls:

<http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=1116&tid=237>