



# Why Is the Navy Sampling for PFOS and PFOA?

Additional information can be found online at [www.secnav.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://go.usa.gov/xR6SX>

If you have specific questions, please contact [NavyAtlanticWater@usmc.mil](mailto:NavyAtlanticWater@usmc.mil) or 1-877-MCOLF17 (1-877-626-5317)

**Although we have no evidence that firefighting foam was used at Atlantic Field, the Navy is completing this investigation out of an abundance of caution.**

- The EPA established a drinking water lifetime health advisory (70 ppt) for PFOS and PFOA.
- The Navy is taking action to:
  - Identify and prioritize locations with the potential for exposure to PFOS and/or PFOA.
  - Protect our neighbors who may be exposed to drinking water that has PFOS and/or PFOA above the EPA lifetime health advisory.
  - Prevent AFFF (firefighting foam), which contains PFOS and PFOA, from being used for fire training.
- We will continue to keep the community informed.



AFFF aqueous film forming foam  
 EPA U.S. Environmental Protection Agency  
 LHA lifetime health advisory  
 PFAS per- and polyfluoroalkyl substances

PFOA perfluorooctanoic acid  
 PFOS perfluorooctane sulfonate  
 ppt parts per trillion



# Off-Base Drinking Water Well Sampling

Additional information can be found online at [www.secnav.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://go.usa.gov/XR6SX>

If you have specific questions, please contact [NavyAtlanticWater@usmc.mil](mailto:NavyAtlanticWater@usmc.mil) or 1-877-MCOLF17 (1-877-626-5317)

- Our first priority is to sample private drinking water wells near Atlantic Field with owner permission.
- Based on the results of off-base drinking water well sampling, the Navy may expand the sampling area.

## We need your cooperation!



**LEGEND**

Sampling Area Parcel

Groundwater Flow Direction

- |      |                                      |      |                                     |      |                           |
|------|--------------------------------------|------|-------------------------------------|------|---------------------------|
| AFFF | aqueous film forming foam            | PFA5 | per- and polyfluoroalkyl substances | PFO5 | perfluorooctane sulfonate |
| EPA  | U.S. Environmental Protection Agency | PFOA | perfluorooctanoic acid              | ppt  | parts per trillion        |
| LHA  | lifetime health advisory             |      |                                     |      |                           |





# Off-Base Drinking Water Well Sampling

Additional information can be found online at [www.secnave.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnave.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://go.usa.gov/xR6SX>

If you have specific questions, please contact [NavyAtlanticWater@usmc.mil](mailto:NavyAtlanticWater@usmc.mil) or 1-877-MCOLF17 (1-877-626-5317)



## LEGEND

- Developed Parcel
- Undeveloped/Vacant Parcel
- Groundwater Flow Direction

- AFFF aqueous film forming foam
- EPA U.S. Environmental Protection Agency
- LHA lifetime health advisory
- PFAS per- and polyfluoroalkyl substances

- PFOA perfluorooctanoic acid
- PFOS perfluorooctane sulfonate
- ppt parts per trillion



# What are PFAS, PFOS, and PFOA?

Additional information can be found online at [www.secnav.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://go.usa.gov/xR6SX>

If you have specific questions, please contact [allenbach.becky@epa.gov](mailto:allenbach.becky@epa.gov) or 404-562-9687

## Where Do PFAS Come From?

- Man-made compounds, no natural occurrence
- Used since 1950s in many products
- Last a long time in the environment
- Found in people, animals, and fish around the world



firefighting foam



paints and stains



stain-resistant carpets



water-repelling fabrics



nonstick cookware



food packaging

## What Is the EPA LHA for PFOS and PFOA?

- Sets a concentration of 70 ppt in drinking water
- Protects against harmful health effects to sensitive populations and the general public, even for lifetime exposure
- Compares the total concentration of both PFOS and PFOA found to the 70 ppt advisory
- Provides information to state agencies and public health officials on health effects and water treatment so they can take steps to reduce exposures
- Is non-enforceable

## How Is the EPA LHA Calculated?

- Based on studies of health effects with PFOS and PFOA in laboratory animals
- Considers information regarding health effects of people exposed to PFOS and PFOA
- Protects sensitive populations including the fetuses or nursing infants of mothers who are exposed
- Assumes 20 percent of overall exposure is from drinking water, 80 percent of exposures is from other sources

AFFF	aqueous film forming foam	LHA	lifetime health advisory
ATSDR	Agency for Toxic Substances and Disease Registry	PFAS	per- and polyfluoroalkyl substances
		PFOA	perfluorooctanoic acid
CDC	Centers for Disease Control and Prevention	PFOS	perfluorooctane sulfonate
		ppt	parts per trillion
EPA	U.S. Environmental Protection Agency		



# Exposure and Health Effects

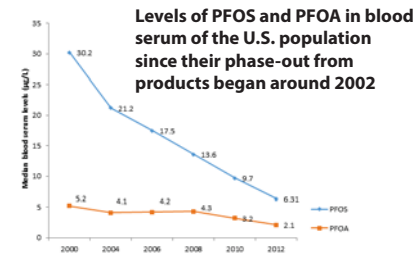
Additional information can be found online at [www.secnav.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://go.usa.gov/xR65X>

If you have specific questions, please contact [allenbach.becky@epa.gov](mailto:allenbach.becky@epa.gov) or 404-562-9687

## PFAS in People

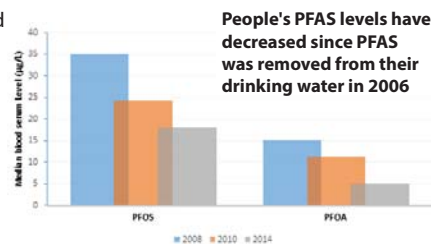
- CDC monitoring estimates that most people in the U.S. have PFAS in their bodies.
- Levels of PFOS and PFOA are going down over time following their phase-out from use.
- Some PFAS stay in the body a long time – there is no recommended medical treatment to reduce PFAS in the body.



Source: CDC National Health and Nutrition Examination Survey

## Exposures to PFAS

- Appear to be widespread around the world
- Are primarily through:
  - Ingestion of contaminated food, water, or soil
  - Breathing air that contains contaminated dust from carpets, upholstery, clothing, etc.
- Will build up in the body until exposure stops
- Reach the fetuses or nursing infants of mothers who are exposed
- Are not significant through skin contact when bathing or showering



Source: Minnesota Department of Health. Available from: <http://www.health.state.mn.us/divs/hpcd/tracking/biomonitoring/projects/emetro-landing.html>

## How To Reduce Exposure

- If water contains PFOS and PFOA above the health advisory level, you can reduce exposure by using a different water source for drinking, cooking, and brushing teeth.
- Filter PFOS and PFOA from water using certified granular activated carbon or high-pressure membrane systems, such as reverse osmosis. These systems require ongoing maintenance.

## Potential Health Effects

- More research is needed to confirm or rule out possible links between exposure and health effects.
- Animals exposed to high levels of PFAS had changes in liver, thyroid, and pancreas function; altered hormone levels; and increased rates of certain cancers.
- Based on limited evidence from studies with people, potential health effects can include:
  - Increased cholesterol levels
  - Changes in growth, learning, and behavior of the developing fetus and child
  - Immune system changes
  - Decreased fertility
  - Altered hormone function
  - Increased risk of certain types of cancer
- The levels of PFOS or PFOA in drinking water do not predict what, if any, health impact might occur as a result of exposure.

## Should I Have My Blood Tested?

ATSDR and CDC understand and acknowledge that you may want to know the level of PFAS in your body. However, there are some limitations with blood tests to consider:

- Test results will not provide clear answers for existing or possible health effects or patient care.
- Blood testing for PFAS is not a routine test that health care providers offer.

Consult with your doctor for more information.

AFFF	aqueous film forming foam	LHA	lifetime health advisory
ATSDR	Agency for Toxic Substances and Disease Registry	PFAS	per- and polyfluoroalkyl substances
		PFOA	perfluorooctanoic acid
CDC	Centers for Disease Control and Prevention	PFOS	perfluorooctane sulfonate
		ppt	parts per trillion
EPA	U.S. Environmental Protection Agency		





# Next Steps

Additional information can be found online at [www.secnav.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://go.usa.gov/xR6SX>

If you have specific questions, please contact [NavyAtlanticWater@usmc.mil](mailto:NavyAtlanticWater@usmc.mil) or 1-877-MCOLF17 (1-877-626-5317)

## The Navy will notify residents of results beginning in late November 2017.

Are the PFOS/PFOA test results **above** the health advisory level?



The Navy will provide bottled water for drinking and cooking.

Are the test results **at or below** the health advisory level?



No immediate action is needed.

**The Navy will respond in a timely manner.**

**The Navy will develop a suitable long-term solution if needed.**

### Ongoing Actions

- **We need your cooperation to access all drinking water wells.**
- Respond to PFOS and PFOA results above health advisory in drinking water.
- Continue to keep the community informed.
- Potentially expand sampling area based on sampling results.
- Continue to partner with EPA Region 4, Agency for Toxic Substances and Disease Registry, North Carolina Department of Environmental Quality, and North Carolina Division of Public Health.

AFFF aqueous film forming foam  
 EPA U.S. Environmental Protection Agency  
 LHA lifetime health advisory  
 PFAS per- and polyfluoroalkyl substances

PFOA perfluorooctanoic acid  
 PFOS perfluorooctane sulfonate  
 ppt parts per trillion



# Managing Your Private Well

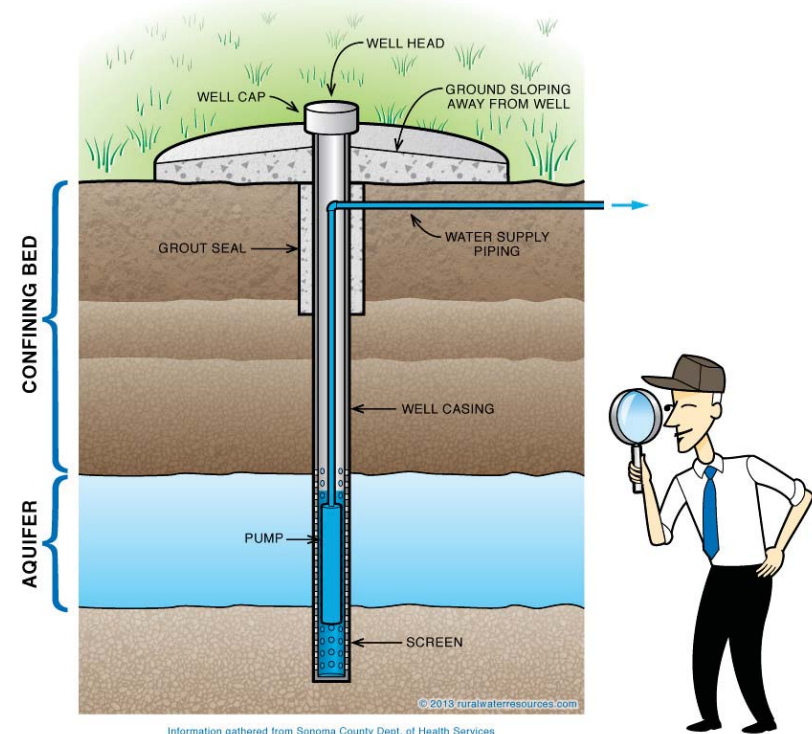
Additional information can be found online at  
<http://ehs.ncpublichealth.com/oswp/wells-resources.htm>

If you have specific questions, please contact  
[david.jenkins@carteretcountync.gov](mailto:david.jenkins@carteretcountync.gov)

## Managing the Risks

- Testing of private wells is recommended to ensure water quality.
- Bacteriological testing once a year is a good idea. Regular testing can tell you the quality of the water.
- More frequent testing is recommended if your water changes in taste, odor, or appearance or if you have recurrent incidences of gastrointestinal illness.
- The National Groundwater Association recommends you test for bacteria, nitrates/nitrites, and any other contaminants of local concern.
- If using water conditioner (aka, "water softener") equipment, it should be maintained and kept in working order.
- Do not dispose of or store hazardous materials or chemicals on your property or near your well.

## Typical Well Design





# We Need Your Cooperation – Drinking Water Sampling Process

Additional information can be found online at [www.secnav.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://go.usa.gov/xR6SX>

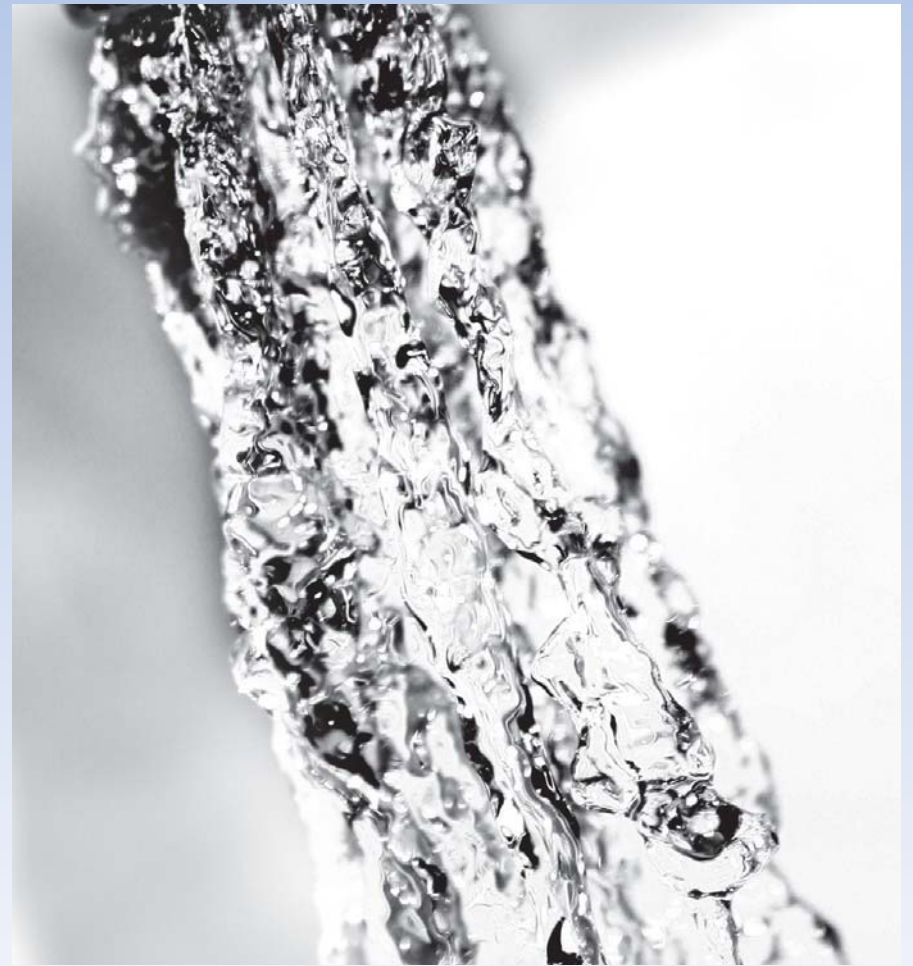
If you have specific questions, please contact [NavyAtlanticWater@usmc.mil](mailto:NavyAtlanticWater@usmc.mil) or 1-877-MCOLF17 (1-877-626-5317)

## Sampling Process

- We need your cooperation to:
  - Make your appointment (sampling will take less than an hour).
  - Review and fill out the questionnaire.
- A team of qualified professionals will:
  - Collect water from the sample point (water will run for 3–5 minutes).
  - Analyze the sample according to EPA guidelines for a sampling and analysis process that follows strict quality control and quality assurance protocols.

## Other Ways to Schedule an Appointment

To schedule an appointment for sampling a drinking water well in the designated area, please contact:  
**[NavyAtlanticWater@usmc.mil](mailto:NavyAtlanticWater@usmc.mil)** or  
**1-877-MCOLF17 (1-877-626-5317).**



AFFF aqueous film forming foam  
 EPA U.S. Environmental Protection Agency  
 LHA lifetime health advisory  
 PFAS per- and polyfluoroalkyl substances

PFOA perfluorooctanoic acid  
 PFOS perfluorooctane sulfonate  
 ppt parts per trillion





# Sign Up for Your Sampling Appointment Here

Additional information can be found online at [www.secnav.navy.mil/eie/pages/pfc-pfas.aspx](http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx)

For updates as more information becomes available, visit <https://go.usa.gov/xR6SX>

If you have specific questions, please contact [NavyAtlanticWater@usmc.mil](mailto:NavyAtlanticWater@usmc.mil) or 1-877-MCOLF17 (1-877-626-5317)

## Off-base Drinking Water Well Sampling

- The Navy is currently sampling drinking water wells in designated areas only.
- Drinking water samples will be collected **Nov 13–18, Nov 20–21, Nov 27–Dec 2, and Dec 4–9.**
- Sampling appointments are available **9 a.m.–6 p.m Monday–Friday** and **9 a.m.–1 pm on Saturdays.**
- The sampling period may be extended as necessary.
- The property owner must give permission for sampling.
- Sampling takes less than an hour.
- An adult resident (18 years of age or older) must be present during sampling. Accommodations can be made for property owners who may not be available during the regularly scheduled sampling times.

Sampling dates, November/December 2017

S	M	T	W	Th	F	S
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2
3	4	5	6	7	8	9

## Drinking Water Sampling Activity Timeline

Open House Public Meeting  
Nov 8 (Sign Up for Sampling)



Off-Base Drinking Water Well Sampling  
Nov 13–Dec 9

Off-Base Drinking Water Well Sampling Results Available beginning in late Nov

**NOVEMBER**

**DECEMBER**

**JANUARY**