

Why Does the Navy Sample for PFOS and PFOA?

For more information, please visit
www.cnic.navy.mil/FentressInfo

If you have specific questions, please contact
fentressinfo@navy.mil or 757-433-3132

The Navy is identifying and mitigating potential exposure to unregulated compounds (PFOS and PFOA) in drinking water.

The Navy PFAS policy goes beyond the requirements of the Safe Drinking Water Act.

- In May 2016, the EPA established a drinking water lifetime health advisory of 70 ppt for two PFAS compounds, PFOS and PFOA.
- The Navy is taking action to protect our on-base personnel and civilian neighbors who may be exposed to drinking water that has PFOS and/or PFOA above the EPA lifetime health advisory.



EPA U.S. Environmental Protection Agency
GAC granular activated carbon

NALF Naval Auxiliary Landing Field
PFAS per- and polyfluoroalkyl substances

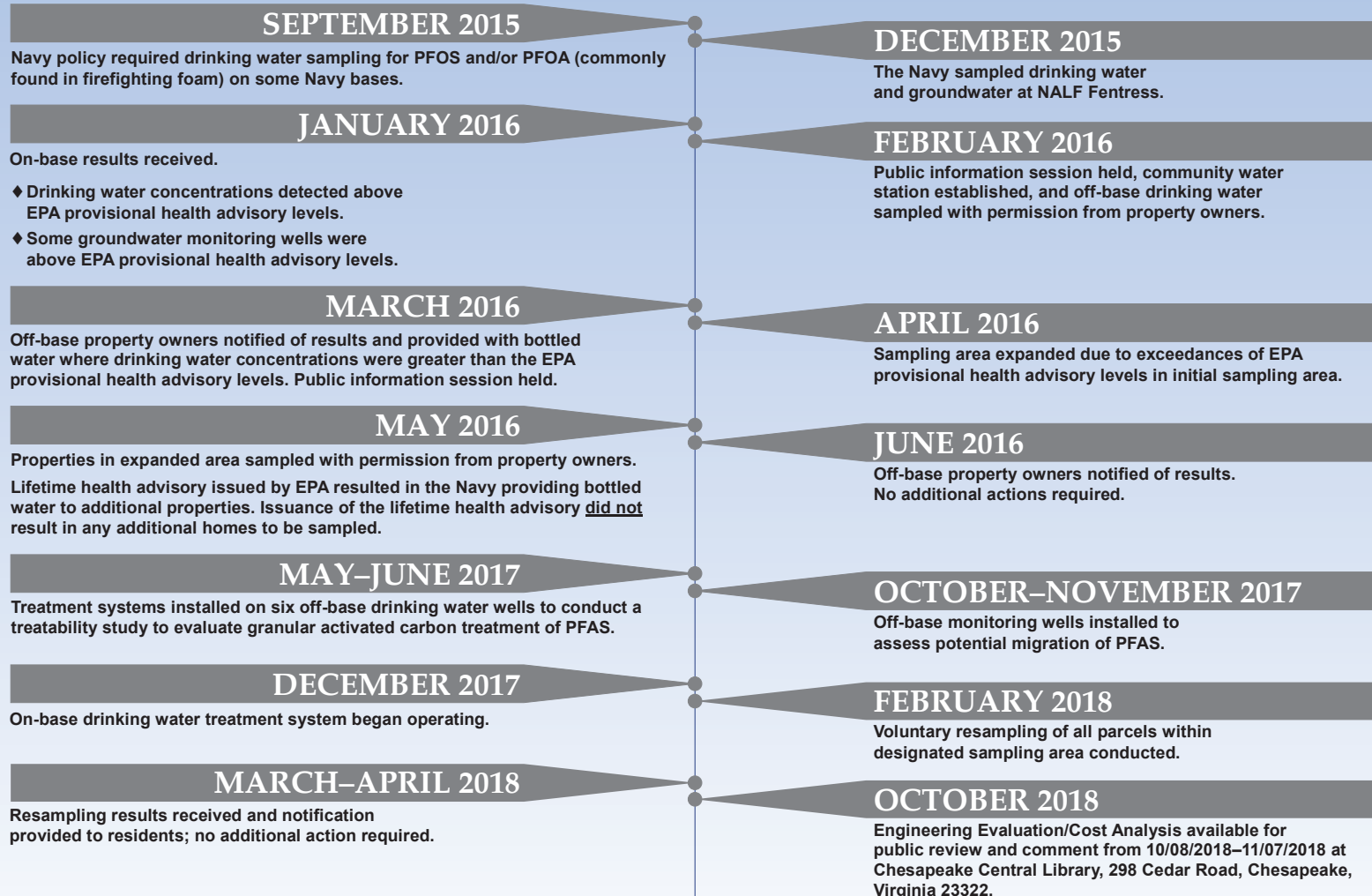
PFOA perfluorooctanoic acid
PFOS perfluorooctane sulfonate

ppt parts per trillion

NALF Fentress PFAS Investigation Timeline

For more information, please visit
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Groundwater Sampling Results

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LEGEND

- Monitoring well location with lifetime health advisory exceedance
- Monitoring well location with no lifetime health advisory exceedance

- Potential source area
- General groundwater flow direction (shallow and deep aquifer, May 2017)

- NALF Fentress boundary
- Sampling boundary - 0.5 mile of lifetime health advisory exceedance

- Extent of property boundary within the designated sample area
- City boundary

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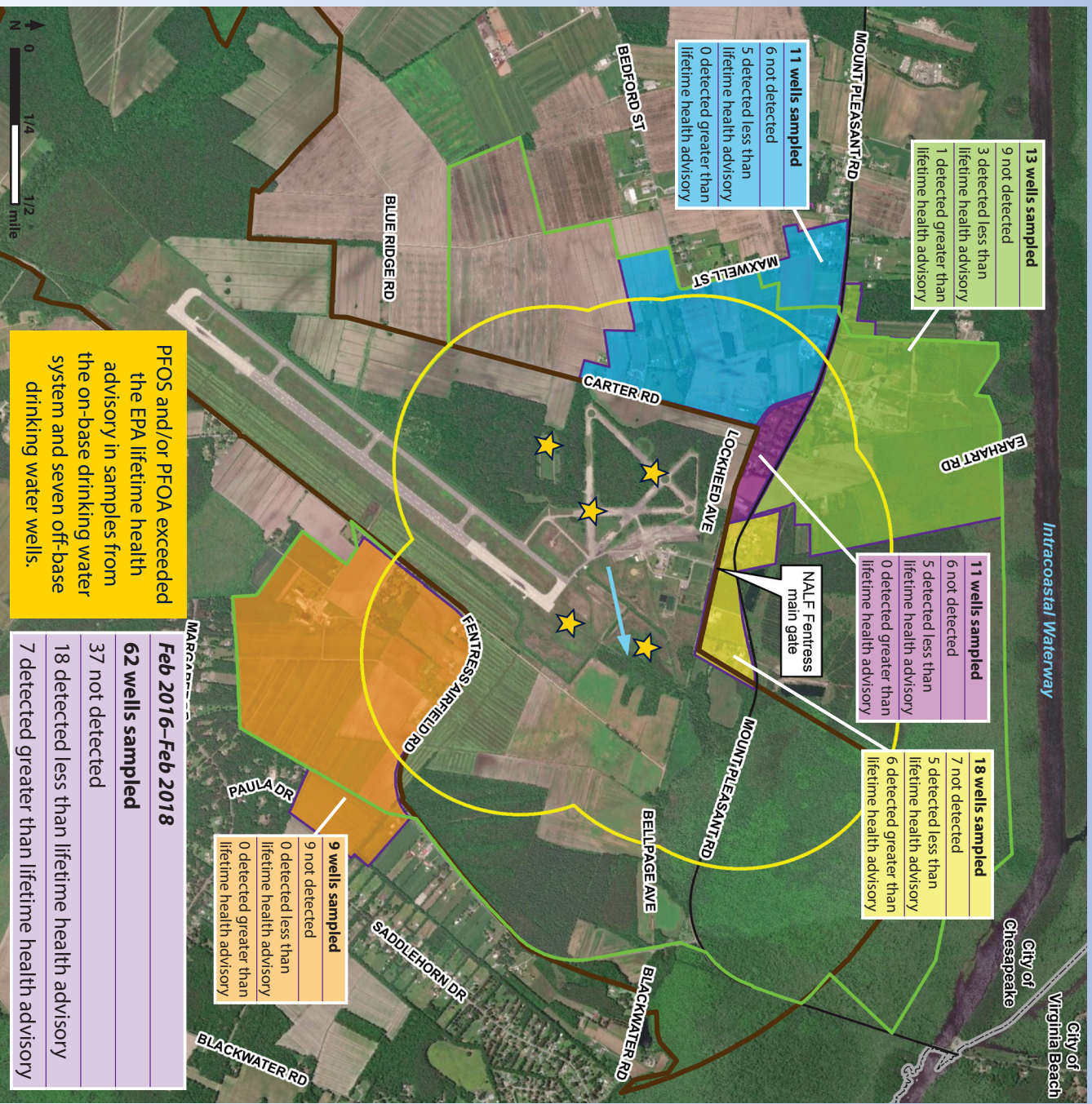
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Drinking Water Sampling Results

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LEGEND

- ★ Potential source area
- General groundwater flow direction (shallow and deep aquifer, May 2017)
- NALF Fentress boundary
- Sampling boundary – 0.5 mile of lifetime health advisory exceedance
- 2016–2018 sampling area
- Extent of property boundary within the designated sample area
- City boundary

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Engineering Evaluation/Cost Analysis – Drinking Water Long-Term Solutions

For more information, please visit
www.cnmc.navy.mil/FentressInfo

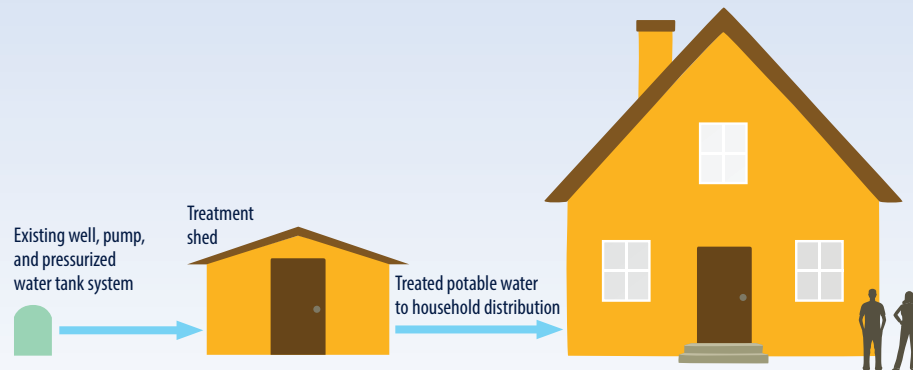
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Alternative 1 – No Further Action

- Bottled water would continue to be provided every two weeks to off-base residents with drinking water above the EPA lifetime health advisory.
- Off-base pilot granular activated carbon (GAC) treatment systems currently installed as treatability studies would be removed.
- On-base GAC treatment system would continue.

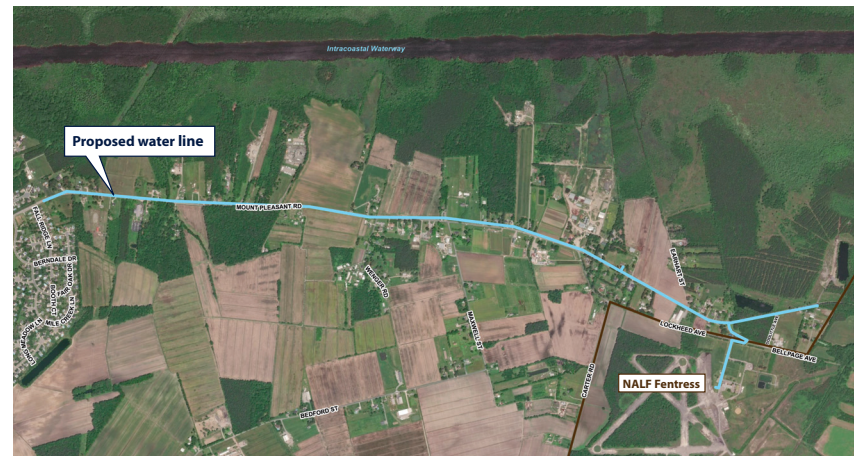
Alternative 2 – Point of Entry Treatment

- System will be maintained for continuous use.
- Alternative 2A – Removal of PFOS and PFOA using GAC.
- Alternative 2B – Removal of PFOS and PFOA using ion exchange.
- Alternative 2C – Removal of PFOS and PFOA using reverse osmosis.



Recommended Alternative (Alternative 3) – Connect to City of Chesapeake Water System

- Connect impacted properties to the City of Chesapeake water system.



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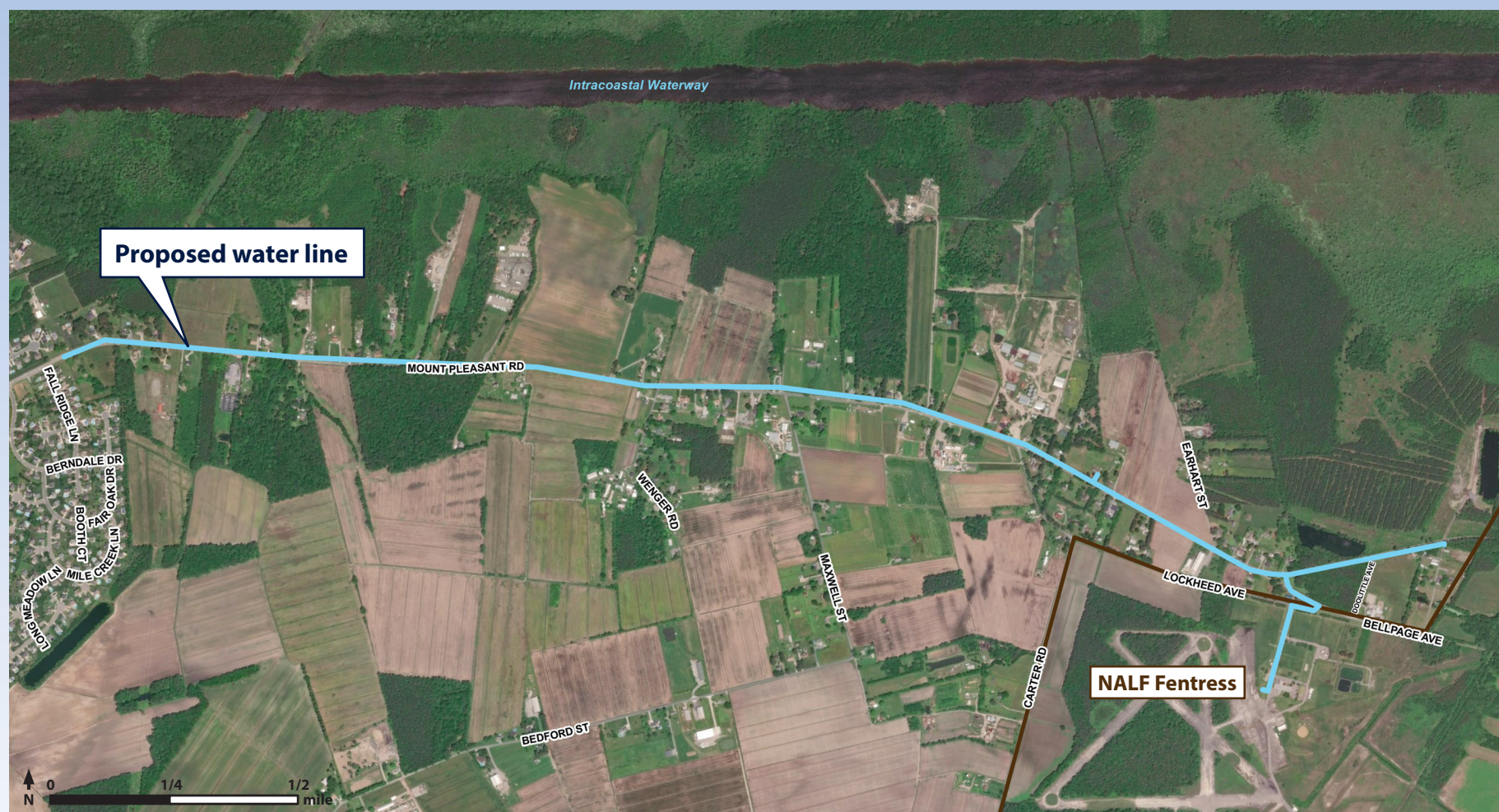
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What Are PFAS, PFOS, and PFOA?

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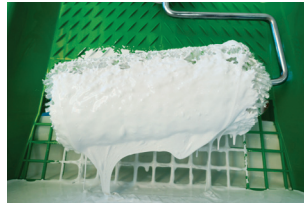
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What Are PFAS?

- Man-made compounds (not naturally occurring).
- Have been 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 an EPA Lifetime Health Advisory?

- Establishes concentrations in drinking water that are protective of the most sensitive populations and the general public, even for lifetime exposure.
- Is based on the latest available studies of lab animals and exposed human populations.
- 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.

What Is the EPA Lifetime Health Advisory for PFOS and PFOA?

- The lifetime health advisory is only for two types of PFAS – PFOS and PFOA.
- The lifetime health advisory is exceeded if the amount of PFOS and PFOA (combined or individually) is greater than 70 ppt.
- 1 ppt is equivalent to one grain of sand in an Olympic-size swimming pool.

ATSDR Agency for Toxic Substances and
Disease Registry
CDC Centers for Disease Control and Prevention
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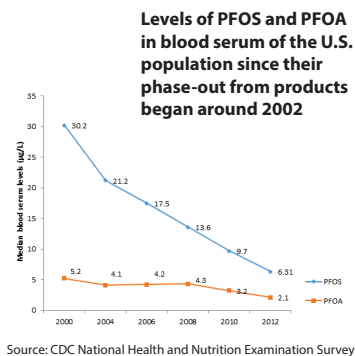
Exposure and Health Effects

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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.



Exposures to PFAS

- Appear to be widespread around the world.
- Are primarily through ingesting contaminated food, water, or soil.
- Cause PFAS to build up in the body until exposure stops.
- Cause PFAS to reach the unborn babies or nursing infants of mothers who are exposed.
- Are not significant through skin contact when bathing or showering.

Potential Health Effects

- Research is needed to learn more about the possible links between PFAS 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 available studies of people who have experienced high levels of exposure, potential health effects include:
 - Increased cholesterol levels
 - Changes in growth, learning, and behavior of the developing unborn baby 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.

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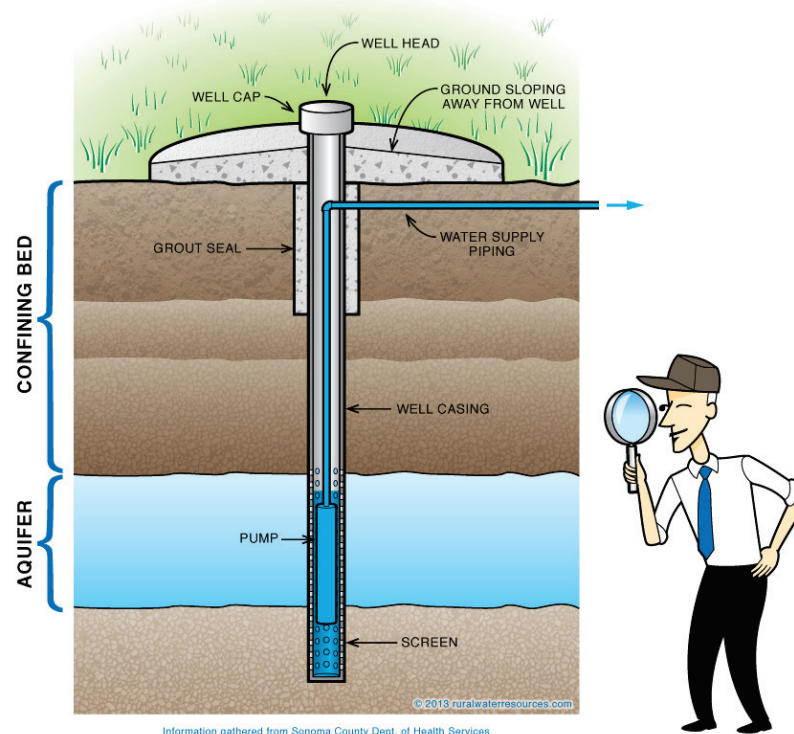
Managing Your Private Well

If you have specific questions, please contact Chesapeake Health Department
757-382-8661 | ChdEnvHlth@vdh.virginia.gov | www.vdh.virginia.gov/chesapeake

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.
- The National Ground Water Association recommends well owners test their water at least annually for contaminants, including bacteria and nitrates.
- 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 near your well.

Typical Well Design



Drinking Water Sampling Process

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Future Sampling

Beginning in February 2019, the Navy will begin twice-yearly sampling of private drinking water wells in the sampling area at no cost to the property owner. Residents within the designated sampling area will be contacted by a Navy representative to request sampling.

Sampling Process

- If you are within the designated sampling area and haven't yet been sampled, we appreciate your help to:
 - Make your appointment (sampling will take approximately 30 minutes).
 - Provide any new information such as contact information or upgrades/changes to your well.
- 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 with strict quality control and quality assurance protocols.



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