Why is the Navy Sampling Private Drinking Water Wells?

Additional information can be found online at
www.secnav.navy.mil/eie/pages/pfc-pfas.aspx

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

If you have specific questions, please contact
cran_nsa_pao.fct@navy.mil

The Navy is identifying potential exposure to unregulated compounds (PFAS) in private drinking water. The Navy is taking responsibility for our previous operations.

- In 2016, the EPA established a drinking water lifetime health advisory (70 ppt) for two currently unregulated PFAS, specifically PFOS and PFOA.
- In 2016, the Navy issued protective policy to identify and prioritize sites with the potential for exposure to PFOS and PFOA.
- The most common historical Navy use of PFOS/PFOA was in firefighting foam, which is no longer used for firefighting training.
- The Navy has initiated basewide investigations for all Navy installations to identify and address the potential for exposure to PFOS and PFOA.
- The Navy is committed to protecting our neighbors' drinking water.

EPA	U.S. Environmental Protection Agency	PFAS	per- and polyfluoroalkyl substances	PFOS	perfluorooctane sulfonate
ppt	parts per trillion	PFOA	perfluorooctanoic acid		

Off-Base Private Drinking Water Well Sampling

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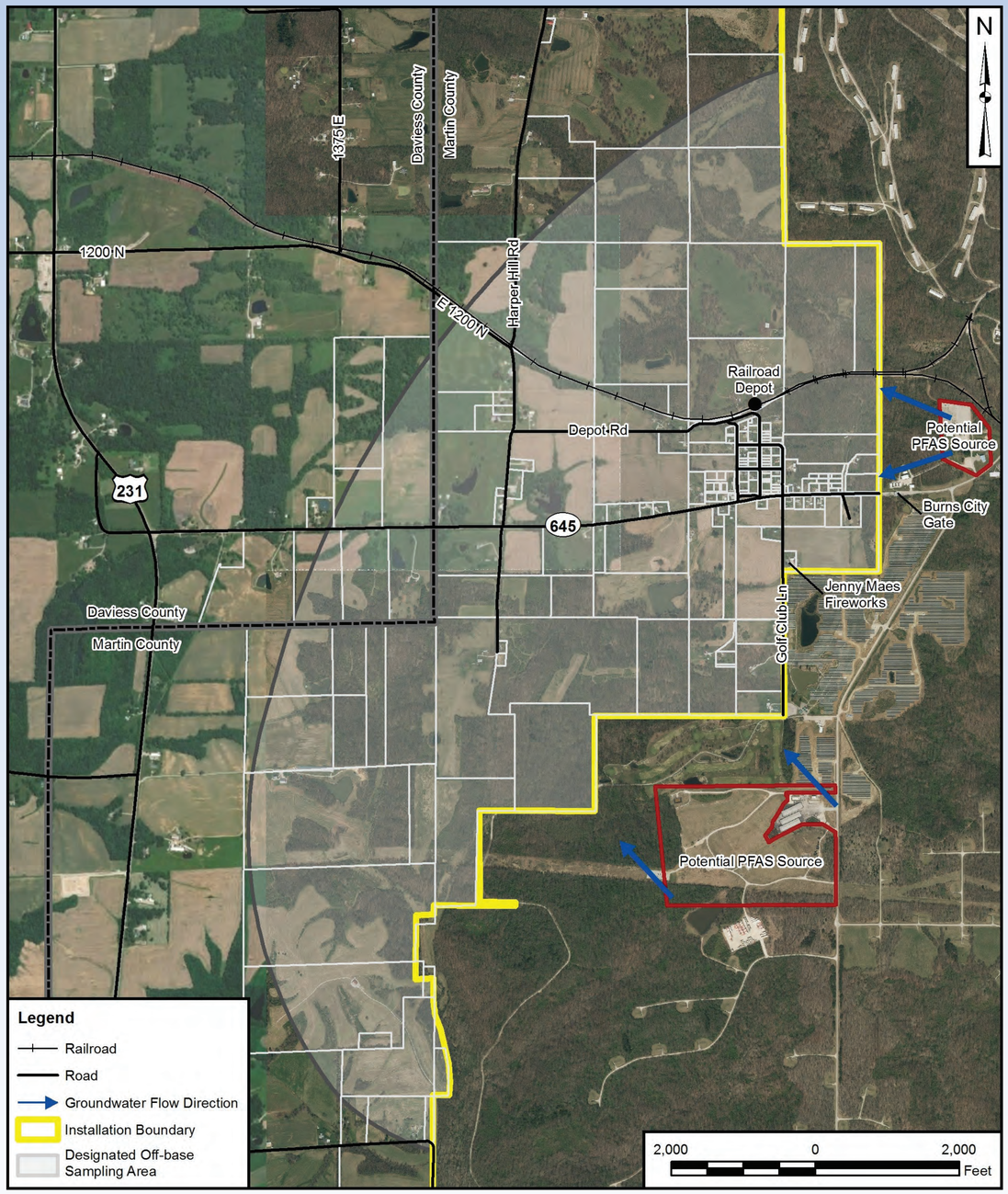
The Navy Needs Your Cooperation to Sample Your Private Drinking Water Well



- On-base investigations are underway because of previous use of firefighting foam.
- The designated sampling area is within one mile in the direction of groundwater flow from the identified sites.
- Based on the results of off-base private drinking water well sampling, the Navy may expand the sampling area.

EPA	U.S. Environmental Protection Agency	PFAS	per- and polyfluoroalkyl substances	PFOS	perfluorooctane sulfonate
ppt	parts per trillion	PFOA	perfluorooctanoic acid		

N

1375 E

Daviess County

Martin County

1200 N

E 1200 N

Harper Hill Rd

Railroad Depot

Depot Rd

Potential PFAS Source

Burns City Gate

231

645

Jenny Maes Fireworks

Golf Club Ln

Daviess County

Martin County

Potential PFAS Source

Legend

- Railroad
- Road
- Groundwater Flow Direction
- Installation Boundary
- Designated Off-base Sampling Area

2,000 0 2,000

Feet

Per- and Polyfluoroalkyl Substances (PFAS)

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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


stain-resistant carpets


water-resistant fabrics


electroplating


nonstick cookware


food packaging

What is the EPA's Lifetime Health Advisory?

- Sets a concentration of 70 ppt PFOS and PFOA 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 in drinking water 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 only an advisory and is therefore non-enforceable.

How is the EPA Lifetime Health Advisory Calculated?

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

EPA	U.S. Environmental Protection Agency	PFAS	per- and polyfluoroalkyl substances
ppt	parts per trillion	PFOA	perfluorooctanoic acid
		PFOS	perfluorooctane sulfonate

Exposure and Health Effects

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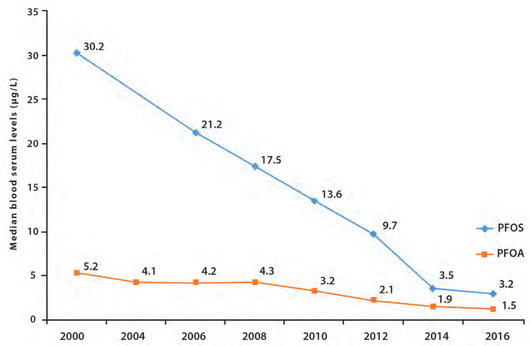
PFAS in People

- CDC monitoring estimates that most people in the U.S. have PFAS in their bodies.
- Levels of PFOS and PFOA are decreasing 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.

Levels of PFOS and PFOA in blood serum of the U.S. population since their phase-out from products began around 2002

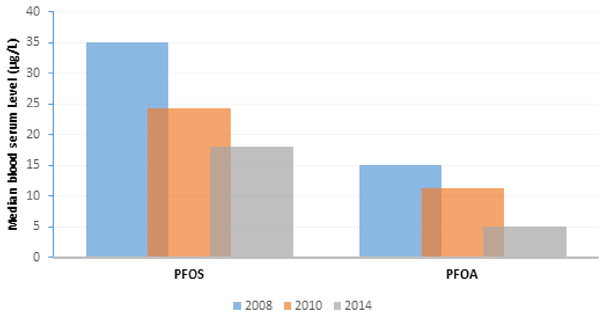


Source: CDC National Health and Nutrition Examination Survey

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

People's PFAS levels have decreased since PFAS was removed from their drinking water in 2006



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

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.

How Should I Determine My Exposure?

There are 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 health professional for more information.

The best way to determine exposure risk is to test your private drinking water well.

CDC	Centers for Disease Control and Prevention
EPA	U.S. Environmental Protection Agency
ppt	parts per trillion
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate

Environmental Cleanup Process

Additional information can be found online at
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PRIORITY: Protect Human Health & the Environment

- Structured process to identify and clean up contamination
- IDEM works closely with the Navy and provides oversight at every step of process
- Public input is welcome throughout the process and is formally solicited at certain points
- From the beginning to end, this process can be lengthy

PFAS Environmental Cleanup Process

WE ARE HERE

INVESTIGATION

- Evaluate potential sources
- Determine where and how much contamination exists
- Determine exposure pathways

EVALUATING OPTIONS & REMEDY SELECTION

- Determine appropriate technology
- Consider protectiveness, time to clean up and cost
- Solicit public input

DESIGN, CONSTRUCT, & IMPLEMENT

- Put remedy in place
- May be active or passive treatment
- Long term management, as needed

CLEANUP COMPLETE

- Cleanup goals achieved
- May involve land use controls

The on-base PFAS evaluation is in its early stages. The first step is to identify potential sources of PFOS/PFOA. The second step is to determine if PFOS/PFOA is actually present. If PFAS are not present, then no further action will be necessary.

Next Steps

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Sequence of Events

SIGN UP FOR SAMPLING → **SAMPLE WELL WITHIN 2 WEEKS** → **RECEIVE PRELIMINARY RESULTS (30 DAYS)** → **MAKE SURE DATA ARE ACCURATE (30 DAYS)**

RECEIVE PRELIMINARY RESULTS (30 DAYS) → **CONTACT HOMEOWNER (24 HOURS)** → **RESULTS GREATER THAN 70 PPT RECEIVE ALTERNATE WATER FOR DRINKING AND COOKING WITHIN 24 HOURS**

MAKE SURE DATA ARE ACCURATE (30 DAYS) → **MAIL FINAL RESULTS**

- **RESULTS GREATER THAN 70 PPT CONTINUE TO RECEIVE ALTERNATE WATER FOR DRINKING AND COOKING**
- **RESULTS LESS THAN OR EQUAL TO 70 PPT NO FURTHER ACTION AT THIS TIME**

Ongoing Actions

- Expand the sampling area if the results exceed the health advisory (70 ppt).
- Continue to communicate with residents.
- Continue on-site PFAS study.
- Continue to partner with Federal, State, and local agencies.

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ppt	parts per trillion	PFOA	perfluorooctanoic acid		

On-Base Sampling Conducted to Date

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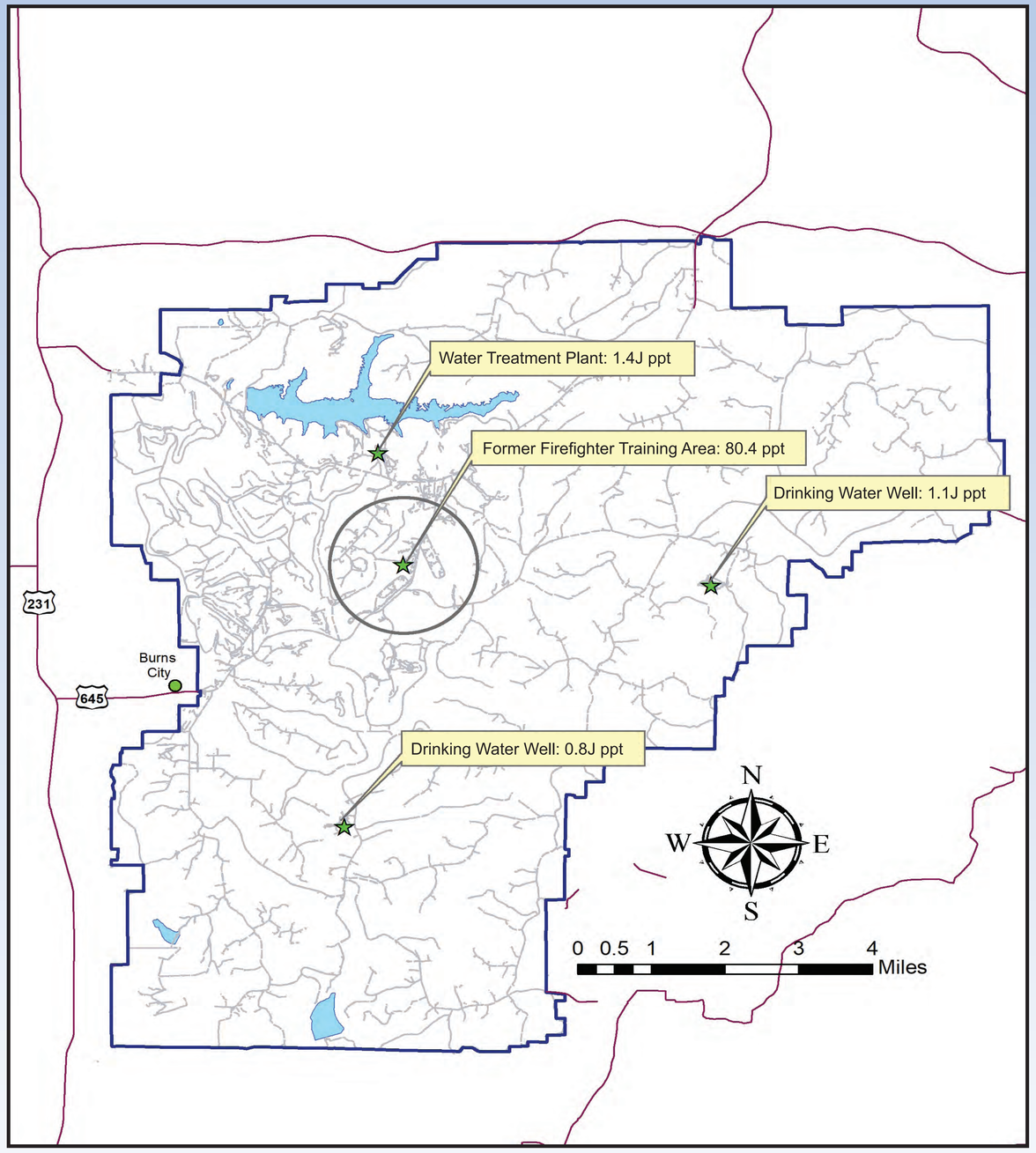

Sampling Efforts

Drinking Water Sampled: October 2016

- Public Water System: 1.4J ppt
- Drinking Water Well: 0.8J ppt
- Drinking Water Well: 1.1J ppt

Drinking Water samples did not exceed Lifetime Health Advisory (70 ppt)

NSA Crane drinking water meets all Safe Drinking Water Act standards

Former Firefighter Training Area

- 5 Monitoring Wells Sampled in May 2018
  - Well #1: No Detection
  - Well #2: No Detection
  - Well #3: No Detection
  - Well #4: 0.7J ppt
  - Well #5: 80.4 ppt

EPA	U.S. Environmental Protection Agency	PFAS	per- and polyfluoroalkyl substances	PFOS	perfluorooctane sulfonate
ppt	parts per trillion	PFOA	perfluorooctanoic acid	J	estimated concentration

Managing Your Private Well

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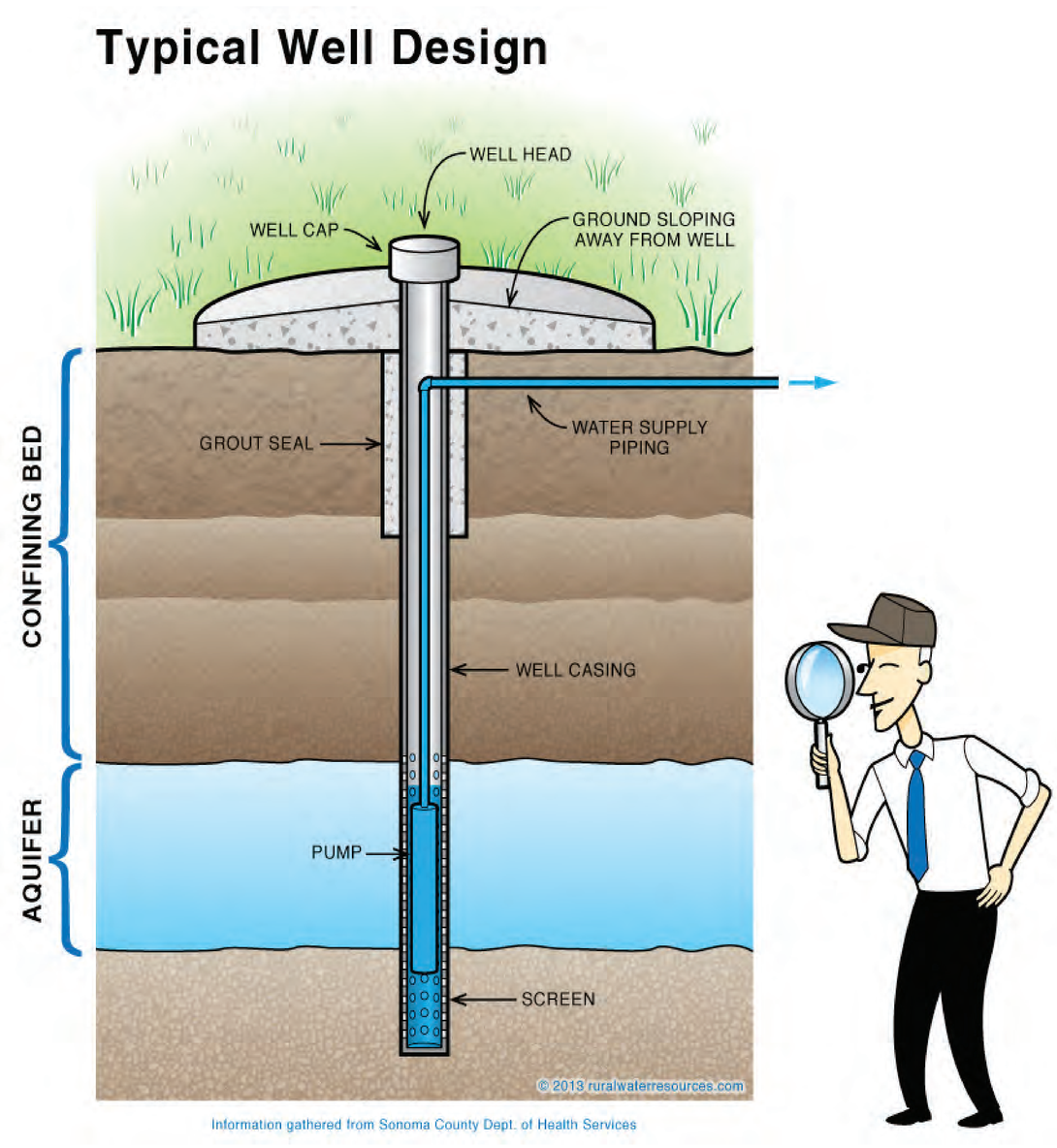
Managing the Risks

- Analytical testing of private wells is recommended to ensure water quality.
- 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, infants living in the home, or a failing septic system.
- The National Groundwater Association recommends you test for bacteria, nitrates/nitrites, and any other contaminants of local concern.
- Never connect a private well to a public water supply.
- If using water conditioner (aka, "water softener") equipment, it should be maintained and kept in working order.
- Do not dispose of hazardous materials or chemicals on your property or near your well.

Typical Well Design



https://www.in.gov/isdh/26973.htm

We Need Your Cooperation – Drinking Water Sampling Process

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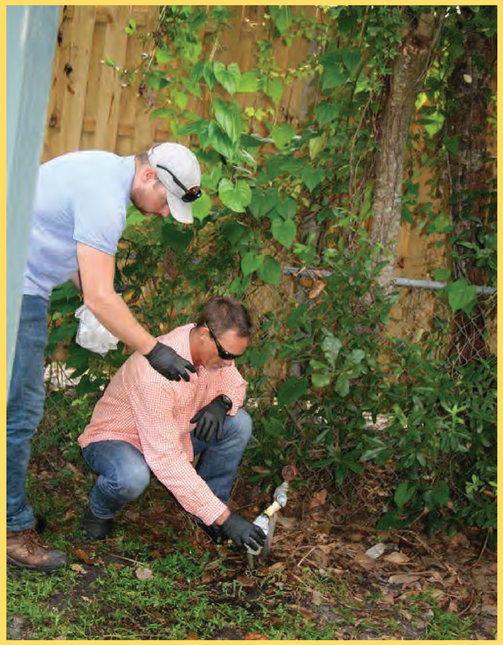
Sampling your private drinking water well is voluntary.

Sampling Process

- We need your cooperation to:
  - Make your appointment (sampling takes less than an hour).
  - Review and fill out the questionnaire prior to sampling appointment.
- Samples will be collected by a team of qualified professionals:
  - Team will consist of no more than three members (including samplers and Navy representative).
  - Water sample will be collected from sample point closest to the well.
  - Water will run for approximately 15 minutes prior to sampling.
  - Simple hand-held equipment will be used.
  - You will be notified of results within approximately 30 days.
- Samples will be collected and analyzed according to EPA guidelines for analysis following strict quality control and quality assurance protocols.

Ways to Schedule an Appointment

SCHEDULE YOUR APPOINTMENT HERE TODAY



To schedule an appointment after today, call
1-833-REQ-SAMP
(1-833-737-7267)

EPA	U.S. Environmental Protection Agency	PFAS	per- and polyfluoroalkyl substances	PFOS	perfluorooctane sulfonate
ppt	parts per trillion	PFOA	perfluorooctanoic acid		

Sign Up for Your Sampling Appointment Here

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Off-base Drinking Water Well Sampling

- The Navy will be sampling drinking water wells in the designated sampling area.
- Drinking water samples will be collected May 16 through May 24, 2019.
- Sampling appointments are available from 8:00 a.m. - 7:00 p.m. on these days.
- The homeowner must give permission for sampling and complete the questionnaire.
- Sampling takes less than one hour.
- An adult (18 years or older) must be present during sampling.

Drinking Water Sampling Activity Timeline