

Why Is the Navy Sampling Drinking Water Wells Nationwide?

The Navy is currently addressing exposure to PFOA and PFOS in drinking water near NAS Whiting Field and its outlying landing fields.

- In 2016, the EPA established a lifetime drinking water health advisory (70 ppt) for two PFAS (PFOA and PFOS).
- The Navy issued a policy to address PFOA and PFOS in drinking water.
- The main historical source of PFOA and PFOS was firefighting foam.
 - No longer used for training.
 - Currently only used in lifesaving emergency measures.
- The Navy is investigating all of our installations to identify PFOA and PFOS exposure.



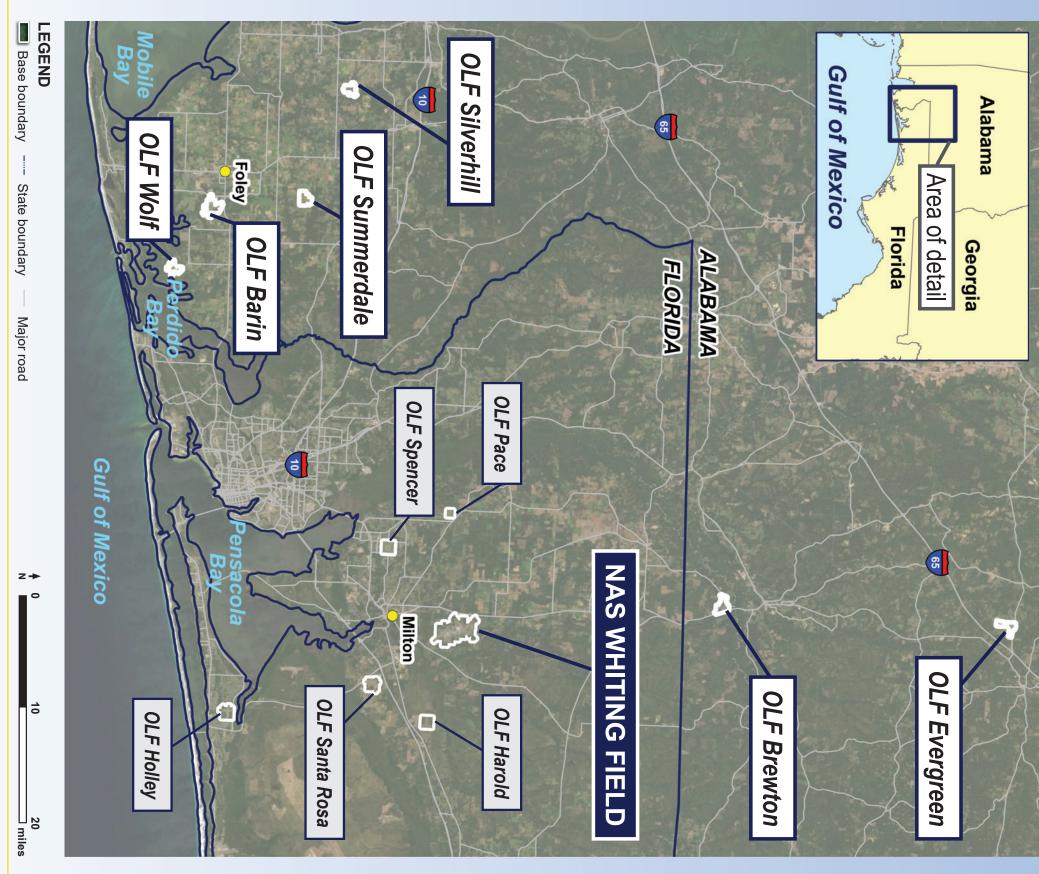


ACRONYMS & ABBREVIATIONS

EPA U.S. Environmental Protection Agency
 NAS Naval Air Station
 OLF Outlying Landing Field
 PFAS per- and polyfluoroalkyl substances

PFOA perfluorooctanoic acid
PFOS perfluorooctane sulfonate
ppt part(s) per trillion







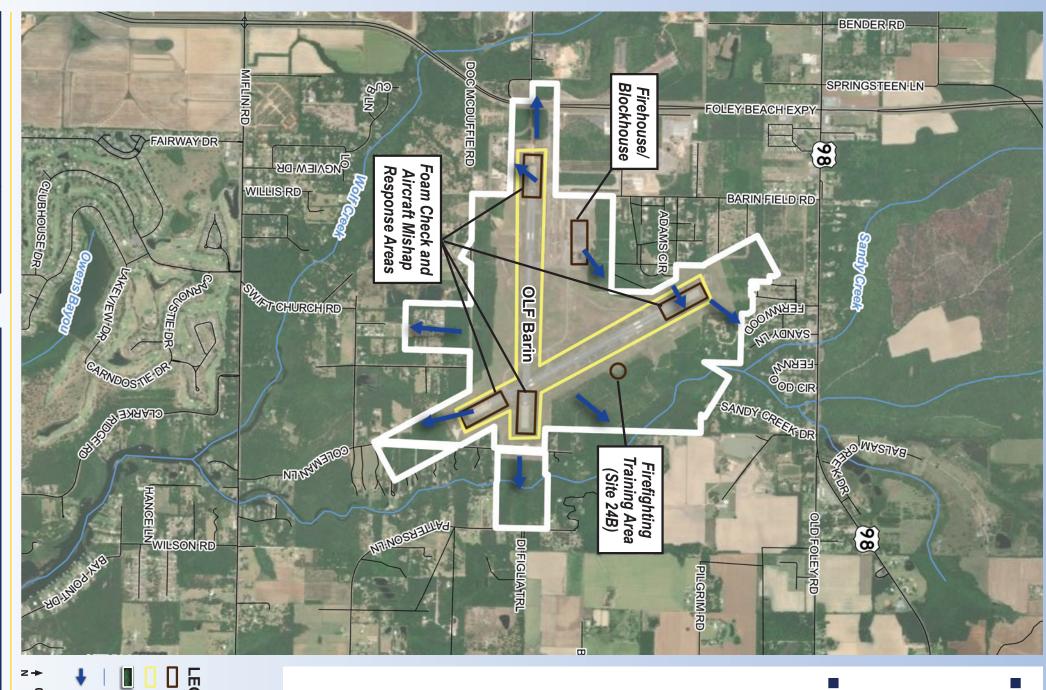


	ACRONYMS & ABBREVIATIONS	VIATIO	NS
EPA	U.S. Environmental Protection Agency	PFOA	PFOA perfluorooctanoic acid
NAS	NAS Naval Air Station	PFOS	PFOS perfluorooctane sulfonate
OLF	Outlying Landing Field	ppt	part(s) per trillion
PFA.S	PFAS ner- and polyfluoroalkyl substances		





On-Base 回 Barin PFAS Release Areas



- **PFAS** on OLF Barin. areas been identified have release
- include: on OLF release Types of PFAS areas Barin
- Runways
- Firefighting Training Area
- Firehouse/ Blockhouse
- Foam check
- response Crash

LEGEND

- PFAS release area
- Runways
- Base boundary Surface water
- Estimated groundwater flow direction

∐ mile

FOR MORE INFORMATION visit http://go.usa.gov/xAEQF or scan the QR code →



ACRONYMS & ABBREVIATIONS

NAS OLF PFAS Outlying Landing Field per- and polyfluoroalkyl substances Naval Air Station U.S. Environmental Protection Agency

> health advisory for PFOA and/or PFOS lifetime drinking water refers to the EPA Note: "Health advisory"

PFOS perfluorooctane sulfonate

part(s) per trillion

PFOA

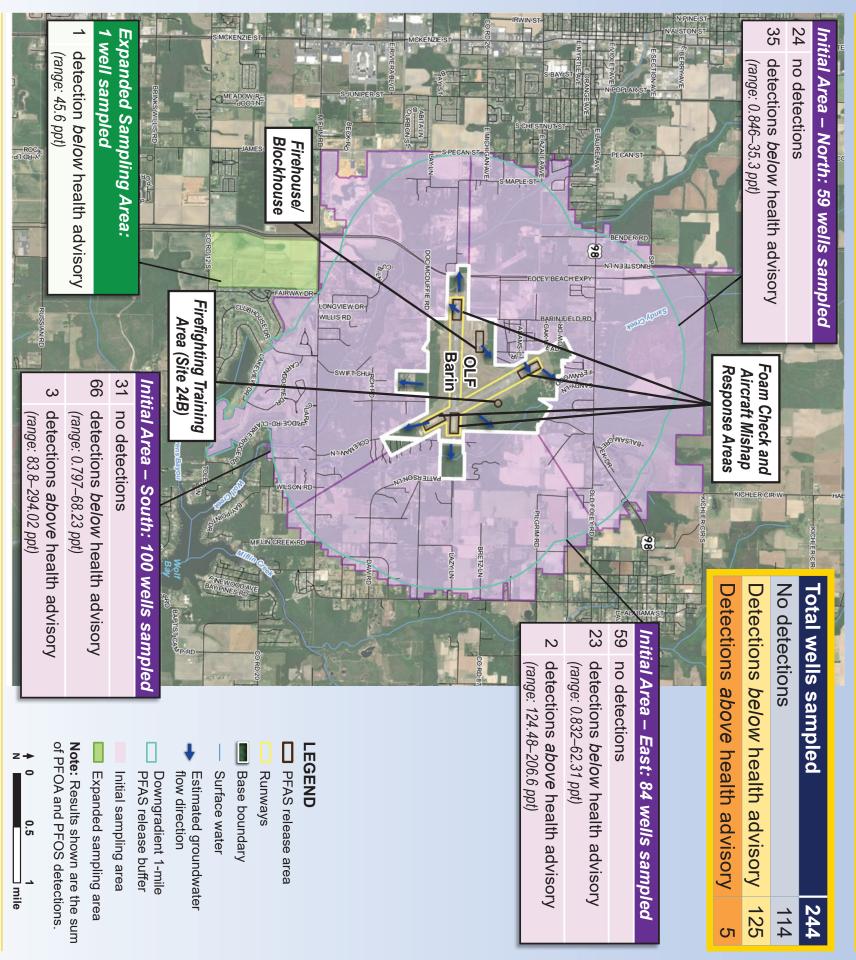
perfluorooctanoic acid





OLF Sampling Area with Barin Off-Base **PFOA and PFOS Results Drinking Water**

S D ome have cooking properties properties been until Pr with ovided <u>a</u> have long-term re Sults bottled been ab solution connected water 70 P the for S health to implemented drinking public advisory and water.



FOR MORE INFORMATION
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ACRONYMS & ABBREVIATIONS

NAS OLF PFAS EPA Outlying Landing Field per- and polyfluoroalkyl substances Naval Air Station U.S. Environmental Protection Agency

PFOS

perfluorooctane sulfonate perfluorooctanoic acid

part(s) per trillion

refers to the EPA





OLF Sampling PFOA and PFOS Results Barin Off-Base Drinking Water

Initial Area – East	Initial Area – North	Camping Cica
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above health advisory below health advisory		below health advisory

Note: The "Q"
columns identify data
qualifiers that apply
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indicates the value
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analyte is detected
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ACRONYMS & ABBREVIATIONS

NAS OLF PFAS Naval Air Station
Outlying Landing Field
per- and polyfluoroalkyl substances U.S. Environmental Protection Agency

ppt PFOA perfluorooctanoic acid
PFOS perfluorooctane sulfonate

part(s) per trillion



OLF Sampling PFOA and PFOS Results, Barin Off-Base Drinking Water continued

19.7	not detected	0.797 J	0.816 J not detected	209 not detected 0.89 J	0.975 J not detected	206 not detected 1.06 J	1.26 J not dete		1.49 J	200 2.82 not detected 201 1.52 .1 1.21 .1	1.94 J	198 not detected 3.47 J	1.18 J 2	1.28 J 2	193 not detected 4.79 194 2.9 1.09 J	2.46 2	190 3.12 2.33 191 1.16 J 4.07	4.71	not detected 6.3	186 4.8 2.65 187 4.25 2.75	3.51	3.54 4	182 6.74 1.83 J	5.91	180 6 5.07	3.34	177 6.06 7.17	6.98 6.77	174 8.94 5.36	14.1	171 13.9 4.45	9.44	16/ 21 not detected 168 7.02 12.8	9.59	165 3.71 18.7	10.1	161 12./ 14.1 162 14.9 10.7	13.7	158 15.8 13.7 159 8.45 19.9	11.1 18	7.51	154 7.98 24.2 155 13.4 18	153 2.11 36.5	34.2 o 13.8 28 2.11 36	1.21 34.2 13.8 2.11	not detected 5.1.21 J 5.34.2 13.8 2.11 3.8	57.3 not detected 1.21 J 34.2 13.8 2.11	28.2 1.13 J 6 57.3 not detected 1.21 J 5 34.2 13.8
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ACRONYMS & ABBREVIATIONS

EPA U.S. Environmental Protection Agency

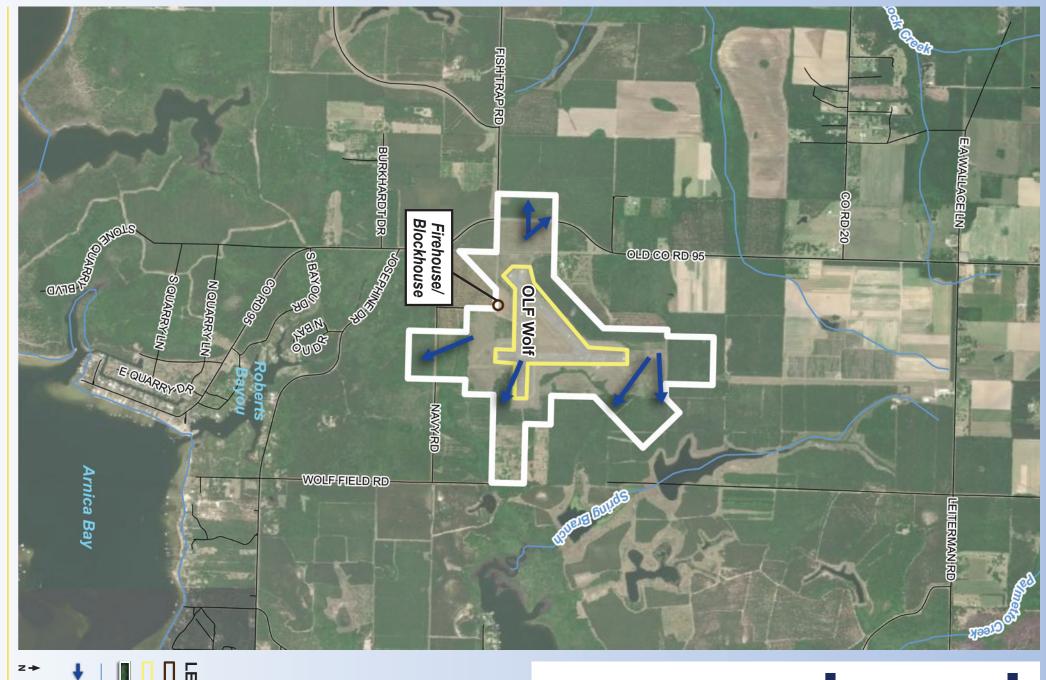
NAS Naval Air Station

OLF Outlying Landing Field

PFAS per- and polyfluoroalkyl substances

ncy PFOA perfluorooctanoic acid
PFOS perfluorooctane sulfonate
ppt part(s) per trillion

On-Base PFAS Release F Wolf Areas



- **PFAS** on OLF Wolf. areas been identified have release
- include: on OLF release areas Types of PFAS Wolf
- Runways
- Firehouse/ Blockhouse

- □ PFAS release area
- Runways
- Base boundary
- Surface water
- Estimated groundwater flow direction



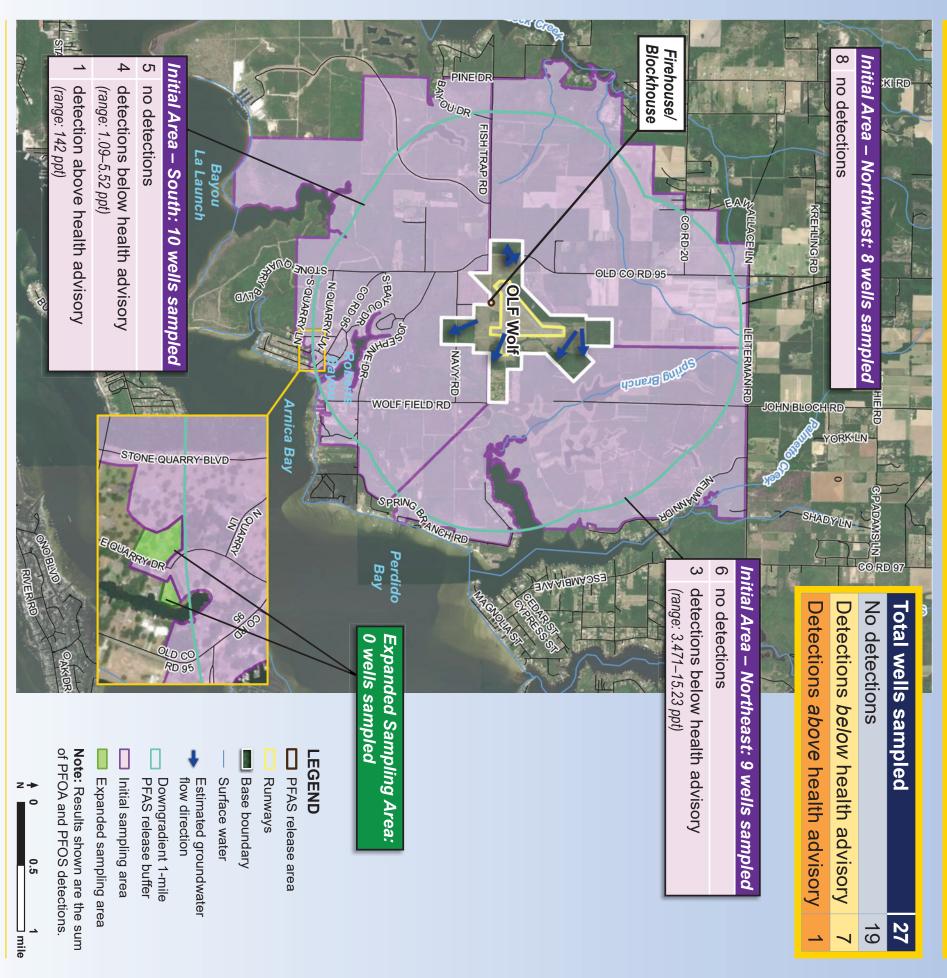


PFAS	OLF	NAS	EPA
PFAS per- and polyfluoroalkyl substances	Outlying Landing Field	Naval Air Station	U.S. Environmental Protection Agency
	ppt	PFOS	PFOA
	part(s) per trillion	PFOS perfluorooctane sulfonate	PFOA perfluorooctanoic acid

ACRONYMS & ABBREVIATIONS



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ACRONYMS & ABBREVIATIONS

EPA U.S. Environmental Protection Agency

NAS Naval Air Station

OLF Outlying Landing Field

PFAS per- and polyfluoroalkyl substances

PFOS

perfluorooctanoic acid perfluorooctane sulfonate

part(s) per trillion

PFOA



Sampling **OLF Wolf** Off-Base PFOA and Drinking Water d PFOS Results

					Initial Area - South									Initial Area – Northeast									hitial Arga – Northwest				Sampling Area
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not detected	1.09	1.31	4.79	5.52	142	not detected	not detected	3.471	8.28	15.23	not detected	not detected	not detected	not detected	PFOS + PFOA (ppt)												
not detected	below health advisory	below health advisory	below health advisory	below health advisory	above health advisory	not detected	not detected	below health advisory	below health advisory	below health advisory	not detected	not detected	not detected	not detected	Result Interpretation												

Note: The "Q" columns identify data qualifiers that apply to given results. A "J" (estimated value) indicates the value reported for the analyte is detected below the LOQ. The value reported is considered estimated.

FOR MORE INFORMATION visit http://go.usa.gov/xAEQF or scan the QR code →



ACRONYMS & ABBREVIATIONS

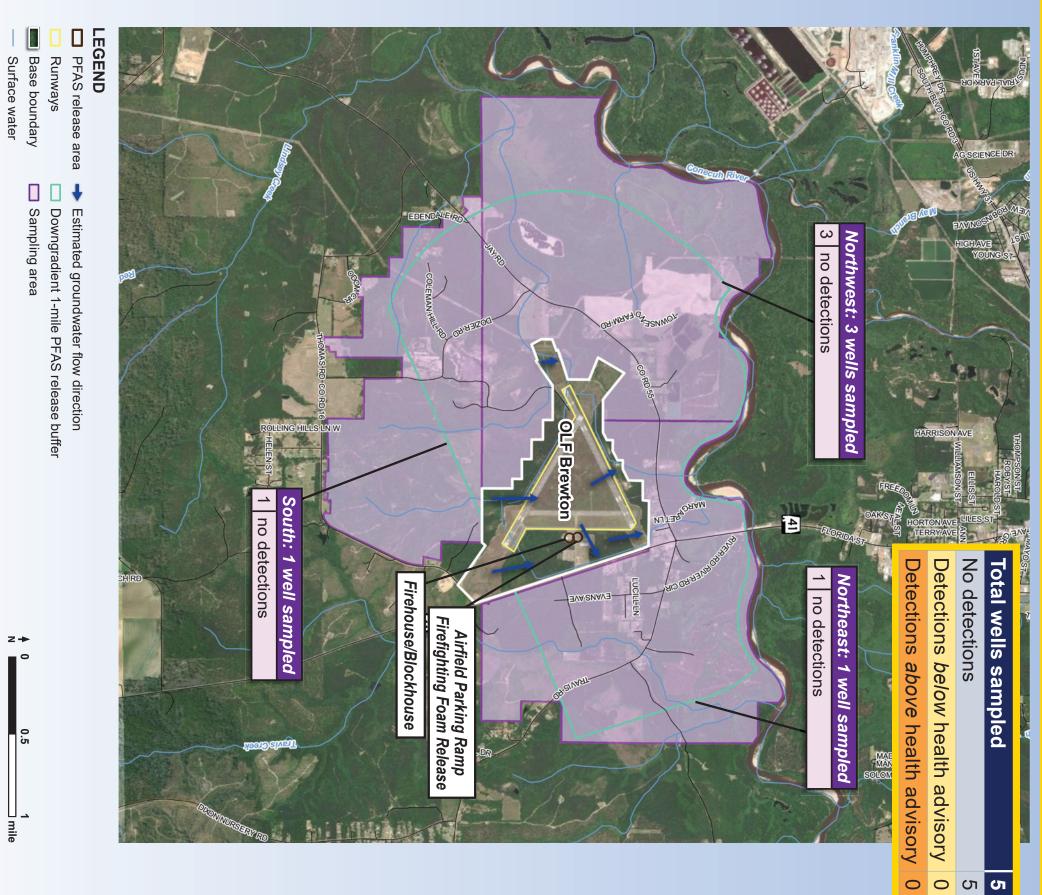
NAS OLF PFAS Naval Air Station
Outlying Landing Field
per- and polyfluoroalkyl substances U.S. Environmental Protection Agency

ppt PFOS perfluorooctanoic acid
PFOS perfluorooctane sulfonate part(s) per trillion





OLF Sampling Area with PFOA and PFOS Results **Brewton Off-Base** Drinking Water







			-	
무	<u></u> 2	Z.	EPA	
AS.	щ.	S		
PFAS per- and polyfluoroalkyl substances	OLF Outlying Landing Field	Naval Air Station	U.S. Environmental Protection Agency	ACRONYMS & ABBREVIATIONS
	ppt	PFOS per	PFOA per	VIATIO
	par	per	per	SN

PFOS perfluorooctane sulfonate

part(s) per trillion

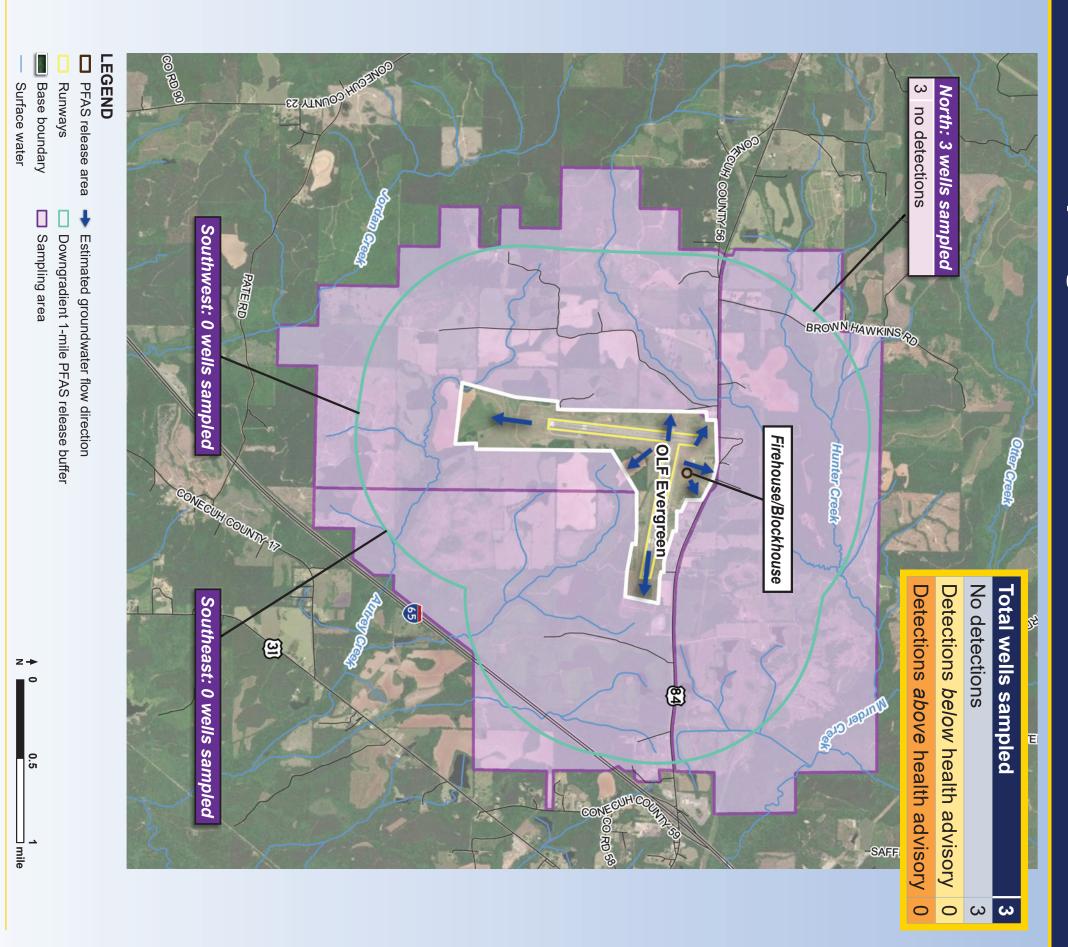
perfluorooctanoic acid Note: "Health advisory"

health advisory for PFOA and/or PFOS lifetime drinking water refers to the EPA





OLF Evergreen Off-Base Sampling Area with PFOA and PFOS Results **Drinking Water**



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PFAS per- and polyfluoroalkyl substances	PFAS	
Outlying Landing Field	OLF	
Naval Air Station	NAS	
U.S. Environmental Protection Agency	EPA	

ACRONYMS & ABBREVIATIONS

health advisory for PFOA and/or PFOS lifetime drinking water refers to the EPA Note: "Health advisory"

PFOS perfluorooctane sulfonate

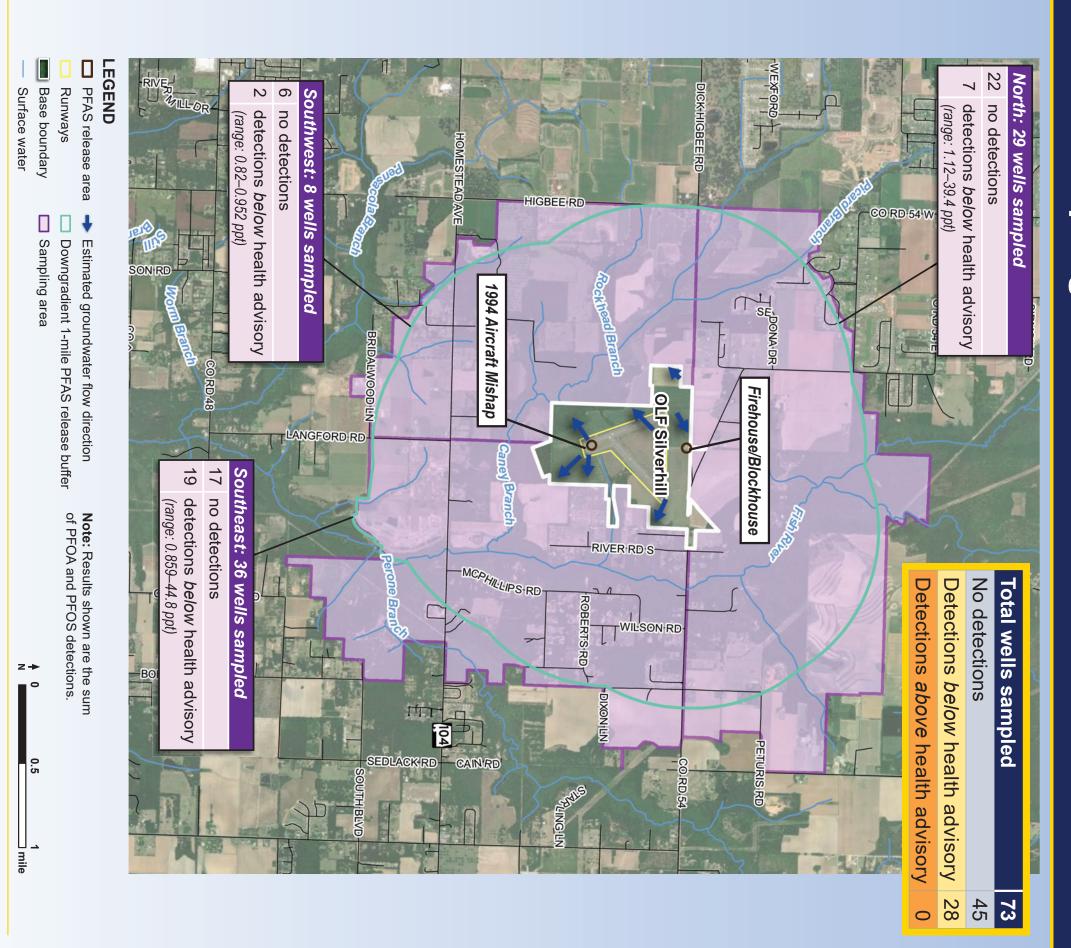
part(s) per trillion

perfluorooctanoic acid





OLF Sampling Area with PFOA and PFOS Results Silverhill Off-Base **Drinking Water**



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ACRONYMS & ABBREVIATIONS

AS S Outlying Landing Field per- and polyfluoroalkyl substances Naval Air Station U.S. Environmental Protection Agency

> **PFOS** PFOA

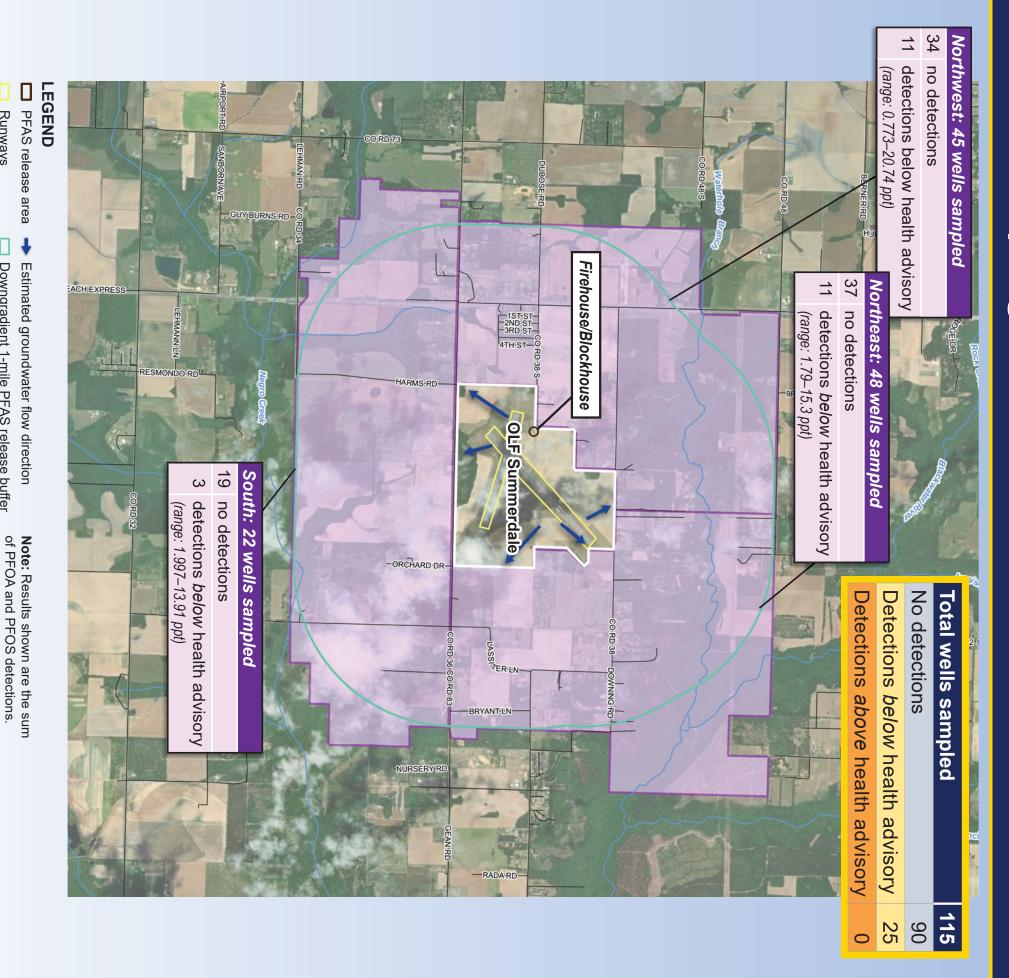
perfluorooctane sulfonate perfluorooctanoic acid

part(s) per trillion





OLF Sampling Area with PFOA and PFOS Results Summerdale Off-Base **Drinking Water**



FOR MORE INFORMATION visit http://go.usa.gov/xAEQF or scan the QR code →

Runways

Surface water Base boundary

Sampling area

Downgradient 1-mile PFAS release buffer



perfluorooctane sulfonate refers to the EPA Note: "Health advisory"

perfluorooctanoic acid

0.5

☐ mile

health advisory for PFOA and/or PFOS lifetime drinking water

part(s) per trillion





Understanding Data Packages

Example Data Report

The EPA lifetime drinking water health advisory for PFOA and/or PFOS is 70 ppt (70 ng/L).

nanogram per liter 1 ng/L П 1 ppt part per trillion

This section contains sample processing information used by the laboratory.

The result for PFBS:

PFBS was *not* detected in the sample.

This is reported as "ND" (not detected).

PFOA was detected in the sample at 162 ng/L (162 ppt). The result for PFOA:

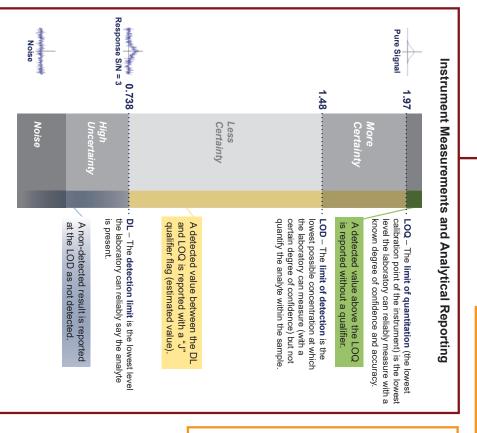
The result for PFOS

PFOS was detected in the sample at 1.54 ng/L (1.54 ppt).

The "J" qualifier means that the PFOS was detected but the amount detected is estimated.

A **surrogate** is a substance similar to the analytes of interest.

- Not found naturally in the substance. Intentionally added to the sample at a known amount to monitor the performance of the sample's preparation and analysis.



This column identifies the data qualifiers that apply to a given result. Possible laboratory qualifiers are:

- "B" (Blank) this analyte was also detected in the method blank
- "D" (Diluted Sample) dilution was required by the laboratory to obtain a sample result within the calibration range. The final result is adjusted for the dilution factor.
- the analyte is detected below the LOQ. The value reported is considered estimated. "J" (Estimated Value) – indicates the value reported for

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ACRONYMS & ABBREVIATIONS

NAS OLF PFAS EPA Outlying Landing Field per- and polyfluoroalkyl substances Naval Air Station U.S. Environmental Protection Agency

ppt PFOS PFOA perfluorooctane sulfonate perfluorooctanoic acid part(s) per trillion

Per- and Polyfluoroalkyl Substances (PFAS)

What Are PFAS?

- Family of manufactured chemicals.
- PFOA and PFOS are the most studied and understood.
- Found in the environment around the world (in air, water, soil, animals, plants, as well as in people).
- Last a long time in the environment.
- Used since 1940s in many products, such as:



firefighting foam



stain-resistant carpets and fabrics



water-resistant fabrics



personal care products



nonstick cookware



food packaging

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

- It is a combined level of PFOA and PFOS of 70 ppt in drinking water.
- It is intended to protect against harmful health effects to sensitive populations and the general public, for lifetime exposure.

How Was the EPA Lifetime Drinking Water Health Advisory Calculated?

- It is based on studies of health effects from PFOA and PFOS in laboratory animals.
- It assumes 20 percent of overall exposure is from drinking water, and 80 percent of overall exposure is from other sources.
- It considers information regarding health effects in people exposed to PFOA and PFOS, including the fetuses or nursing infants of mothers who are exposed.





ACRONYMS & ABBREVIATIONS

EPAU.S. Environmental Protection AgencyPFCNASNaval Air StationPFCOLFOutlying Landing Fieldppt

PFAS per- and polyfluoroalkyl substances

PFOA perfluorooctanoic acid
PFOS perfluorooctane sulfonate
ppt part(s) per trillion

PFAS Exposure and Health Effects

Do People Have PFAS in Their Bodies?

- CDC estimates that most people in the U.S. have PFAS in their bodies.
- PFAS can build up in the body.
- Reducing exposure to PFAS can reduce levels in the body.

How Can People Be Exposed to PFAS?

- PFAS may be in drinking water, food, indoor dust, some consumer products, and workplaces.
- Non-occupational exposures can occur by drinking water or eating food that contain PFAS.
- Exposure is minor through skin contact when bathing, showering, or swimming.
- Mothers with PFAS in their bodies can transfer PFAS to their fetuses or nursing infants.
- CDC advises that based on current science, the benefits of breastfeeding appear to outweigh the risks for infants exposed to PFAS in breastmilk.

How Can People Reduce Exposure to PFAS in Drinking Water?

- Use an alternative water source for drinking, cooking, brushing teeth, and making baby formula.
- Certain certified filters can reduce PFAS in drinking water.

FOR MORE INFORMATION
about certified PFAS filters:
visit http://www.nsf.org
or scan the QR code →



What Are the Potential Health Effects?

- Scientists are still learning about how exposure to PFAS affects people's health.
- Studies indicate possible health effects could include:
- Increased cholesterol levels.
- Changes in liver enzymes.
- Increased risk of high blood pressure and preeclampsia in pregnant women.
- Immune system effects.
- Small decrease in infant birth weight and changes in growth.
- Increased risks of certain types of cancers (testicular and kidney).
- Levels of PFAS in drinking water do not predict health impacts.

Are Blood Tests Available for PFAS?

- Blood testing for PFAS is available but is not a regular test offered by a doctor.
- Blood test results can't tell you if PFAS exposure will cause current or future health problems.
- Blood test results can't provide information on treatment.

Chemical exposures do not always lead to health effects.

FOR MORE INFORMATION
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or scan the QR code →



ACRONYMS & ABBREVIATIONS

CDC Centers for Disease Control and Prevention

EPA U.S. Environmental Protection Agency

NAS Naval Air Station

NAS Naval Air Station
OLF Outlying Landing Field

PFAS per- and polyfluoroalkyl substances
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Environmental Cleanup Process

PRIORITY: Protect Human Health and the Environment

- The structured regulatory process, shown below, is being used to identify and clean up past environmental releases at NAS Whiting Field and its outlying landing fields.
- The Alabama Department of Environmental Management is working closely with the Navy and is providing oversight at every step of the process.
- Public input is welcomed throughout the process and is formally solicited at certain points.
- From beginning to end, this process will be lengthy.

PFAS Environmental Cleanup Process

WE ARE HERE

Investigate

- Evaluate potential releases.
- Determine impacts and extent of identified releases.
- Evaluate potential exposures and risks.

Evaluate remedial options

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

Design, construct, and implement

- Put remedy in place.
- Implement active or passive treatment, as appropriate.
- Provide long-term management, as needed.

Cleanup complete

- Achieve cleanup goals.
- Implement land use controls as needed.
- Solicit public input.

FOR MORE INFORMATION /isit http://go.usa.gov/xAEQF or scan the QR code —

ACRONYMS & ABBREVIATIONS

U.S. Environmental Protection Agency NAS Naval Air Station Outlying Landing Field

PFAS per- and polyfluoroalkyl substances

PFOA perfluorooctanoic acid PFOS perfluorooctane sulfonate part(s) per trillion



Sign Up for Your Sampling Appointment

Off-Base Drinking Water Well Sampling

- The Navy will be sampling drinking water wells in the sampling areas.
- Sampling is at no cost to you.
- Drinking water samples will be collected Monday, June 13 through Saturday, June 18, 2022.
- Sampling appointments are available on these days 8 a.m.-5 p.m.

Additional times are available upon request

- The property owner must give permission for sampling and is asked to complete the questionnaire.
- Sampling takes less than an hour.
- An adult must be present at the property during sampling.

Sampling Process

- Samples will be collected by a team of experienced contractors:
 - Team will consist of two members.
 - The water sample will be collected as close to well as possible.
 - Water will run for 5 minutes prior to collection.
- Samples will be collected and analyzed according to EPA guidelines.

The Navy will provide bottled water for cooking and drinking if PFOA and/or PFOS are above the EPA health advisory (70 ppt).



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