



Welcome

Open House Meeting

**Actions to Address Impacts to Drinking
Water**

**From Former Naval Air Station Joint
Reserve Base Willow Grove**

**October 7, 2014
5-8:30 pm**

http://www.bracpmo.navy.mil/brac_bases/northeast/reserve_base_willow_grove.html

Horsham Water and Sewer Authority (HWSA)

Drinking water provided by the HWSA is safe to drink.

Your water continues to meet all regulatory standards.

Sampling for Unregulated Contaminants

- As part of the third Unregulated Contaminant Monitoring Rule (UCMR3), the EPA requires public water suppliers, including HWSA, to sample for up to 30 contaminants that are not regulated, but may require regulatory levels in the future
- Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) were detected in multiple wells
- HWSA Public Water Supply (PWS) Wells 26 and 40, contained PFOS above the EPA's Provisional Health Advisory (PHA) level.
- Firefighting agents used at the former NASJRB Willow Grove are a likely source of the PFOS/PFOA in groundwater.
- After EPA review of the results and consultation with the Pennsylvania Department of Environmental Protection (PADEP), **Wells 26 and 40 were taken off-line** and consumers were notified of the PFOS findings.

Horsham Water and Sewer Authority (HWSA)

Actions to Protect the HWSA Water Supply

▪ Current Actions

- Wells 26 and 40 are no longer connected to the drinking water system
- Three other HWSA wells have levels of PFOS below PHA level
 - HWSA Wells 10, 17 and 21
 - Monthly monitoring continues

The Navy intends to compensate HWSA for the temporary purchase of replacement water.

▪ Future Actions

- HWSA is evaluating options for permanent replacement of water
 - Install treatment and reconnect wells to the drinking water system
 - Abandonment of impacted wells
 - Purchase water from other sources
- HWSA and the Navy are working towards an agreement to cover HWSA costs

Private Well Sampling

Navy Requested EPA Assistance

- **Private drinking water wells near the former Willow Grove Air Station may contain PFOS/PFOA.**
- **EPA is sampling private wells on behalf of the U.S. Navy.**
 - Initial focus is on private wells in the vicinity of Public Water Supply (PWS) Wells 26 and 40.
 - EPA has reached out to approximately 200 well owners for permission to sample.
 - As of October 1, all 89 wells that EPA has permission to sample have been sampled.

Private Well Sampling

Navy Actions to Ensure Water Quality Regarding PFOS/PFOA

- **Current**
 - Wells are being tested for PFOS/PFOA and other emerging contaminants
 - Bottled water will be provided for wells with PFOS/PFOA above Provisional Health Advisory (PHA) levels
- **Future**
 - Permanent connection to public water supply (no cost to homeowner); or in house treatment (installed, monitored and maintained by the federal government)
 - Additional sampling of private wells for PFOS/PFOA below PHA levels may be conducted

Actions Private Well Owners Can Take to Ensure Water Quality

- *Agree to have your well tested for PFOS/PFOA*
- *If bottled water is provided, use it for cooking and drinking*
- *Well owners are responsible for other monitoring. For other monitoring recommendations contact Montgomery County Health Department (610-278-5517)*

The Navy will continue to fund actions required to protect water quality at private wells that were impacted by Navy contamination

Does Your Well In This Area Need Testing for PFOS/PFOA?

If you have a private well and are unsure if it should be tested for PFOS/PFOA please contact:

Stephen Jarvela, EPA On-Scene Coordinator
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215-814-3259

Or

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PFOS and PFOA

Perfluorinated Compounds

- **PFOS and PFOA are both perfluorinated compounds (PFCs) and have similar properties**
 - Man-made compounds with multiple carbon-fluorine bonds
 - Break down very slowly, which makes them useful for many home and industrial purposes, but also long-lasting in the environment

Used since the 1950s in many products because of their stain and water repellant properties

- Fire-fighting foam
- Stains, paints, and grease
- Fabric for upholstered furniture
- Carpets
- Nonstick cookware
- Floor wax,
- Food packaging (e.g., lining of microwave popcorn bags, fast food wrappers)
- **Now, widely distributed in the environment and have been detected in the blood of humans, wildlife, and fish**
- **EPA continues to investigate and work to eliminate sources**
 - 3M phased out PFOS starting in 2000
 - DuPont and others are phasing out PFOA by 2015



Example of fire fighting foam being used for fire training



Example of hangar fire suppression system being tested

PFOS and PFOA

Unregulated Contaminants

- **PFOS, PFOA and other emerging contaminants are unregulated contaminants that are being sampled for the first time in Public Water Systems**
- **EPA uses the Unregulated Contaminant Monitoring Rule (UCMR) program to collect data for contaminants suspected to be present in drinking water**
 - Monitoring is required for public water systems serving > 10,000 persons
 - Data collection began in 2013 and will continue through 2016
- **EPA is working to improve its understanding of the prevalence and toxicity of these chemicals to determine if safe drinking water regulatory limits are needed**
- **EPA issued a Provisional Health Advisory Level (*HAL*) for PFOS and PFOA in 2009**
 - The provisional HAL are reasonable health based hazard concentrations, above which actions should be taken to reduce exposure
 - Laboratories were only recently capable of analyzing for these contaminants
 - It is important to note that provisional HALs include many safety factors to protect vulnerable populations (e.g., children)

PFOS and PFOA

Health Effects

What We Know Now

- Exposure to PFOS and PFOA appears to be widespread
 - Studies have found PFOS and PFOA in the blood samples of the general human population and wildlife nationwide (ATSDR 2009; EPA 2006a)
 - Exposure through ingestion is the primary concern
- Studies on exposed human populations indicate PFOS and/or PFOA may cause elevated cholesterol levels and possibly low infant birth weight
- When animals are given large doses, they exhibit developmental, reproductive and liver effects. Other studies suggest a link with certain cancers

What We Don't Know

- Health effects from exposure to low levels of PFOS and PFOA are not well known and studies are continuing
- It is not possible to link exposures to PFOS and PFOA in water to a person's individual health issues.
- Blood tests are available, but not routinely done. The results can be inconclusive and test results do not predict health effects
- Long term exposure effects are still being investigated by EPA

Former Naval Air Station Joint Reserve Base (NASJRB) Willow Grove

Timeline

2011

- Limited sampling conducted as part of the Site 5 Record of Decision identified PFOS and PFOA in groundwater as a potential concern to be re-evaluated during the Five Year Review

2014

- Because of PFOS/PFOA contamination at former Naval Air Warfare Center (NAWC) Warminster, Navy samples monitoring wells at Willow Grove and samples Horsham Water and Sewer Authority (HWSA) Well 26
- Unregulated Contaminant Monitoring Rule results posted to EPA database
 - HWSA Wells 26 and 40 shut down
- Navy develops plan for additional sampling to determine the extent of contamination and further identify sources of PFOS/PFOA
- Navy and EPA begin sampling private wells

Current PFOS/PFOA Evaluation

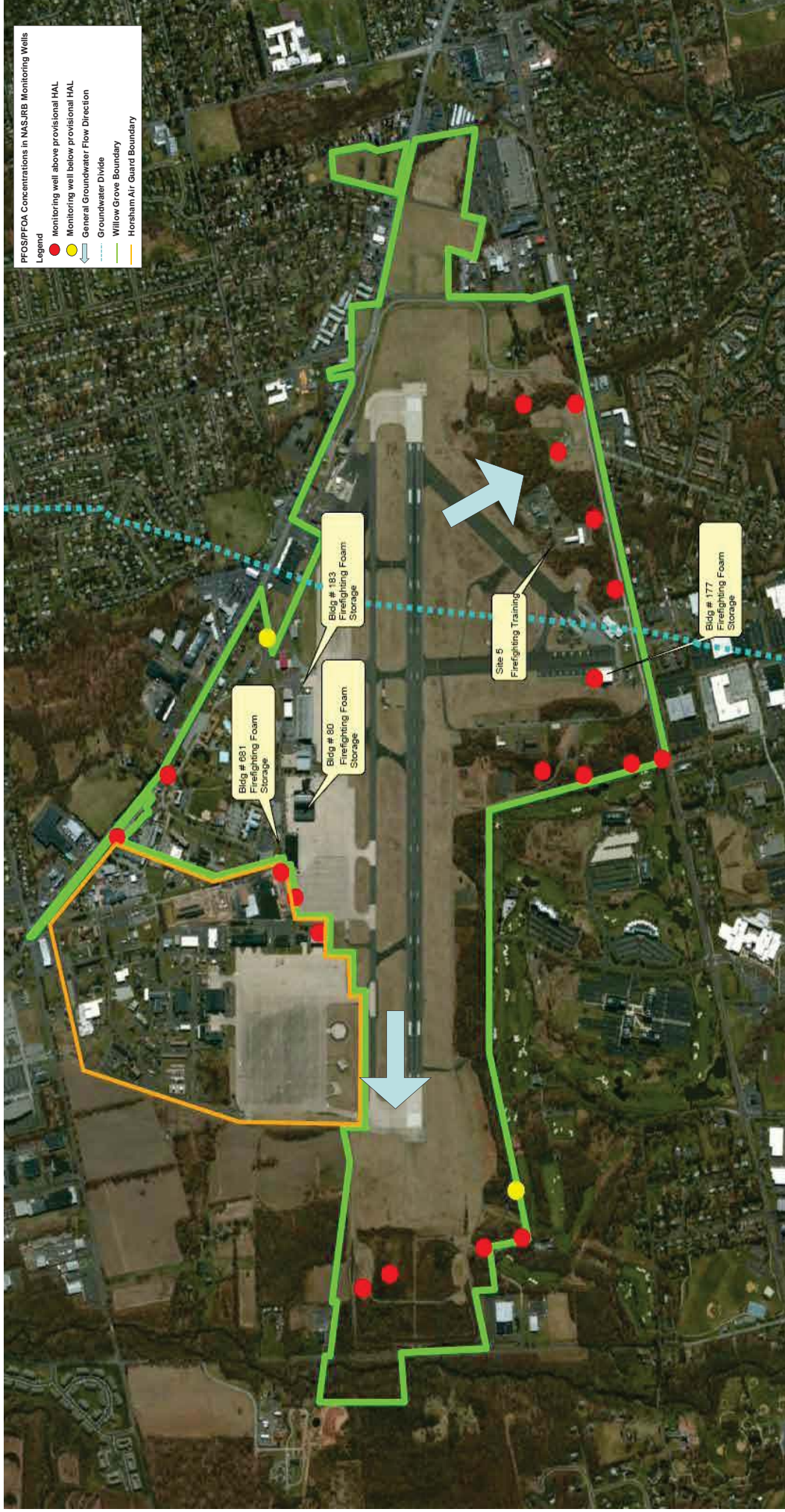
PFOS/PFOA in groundwater are suspected to be from the use of fire fighting foam.

- Site 5 is the likely source of PFOS/PFOA detected in down gradient HWSA Well 26
- Fire-fighting training activities at Site 5 used fire fighting foam
- Use of fire fighting foam on runways, plane crash sites and hangar areas may also be a potential source of PFOS/PFOA

The Navy will continue to investigate and cleanup PFOS/PFOA contamination related to Navy activities at NASJRB Willow Grove.

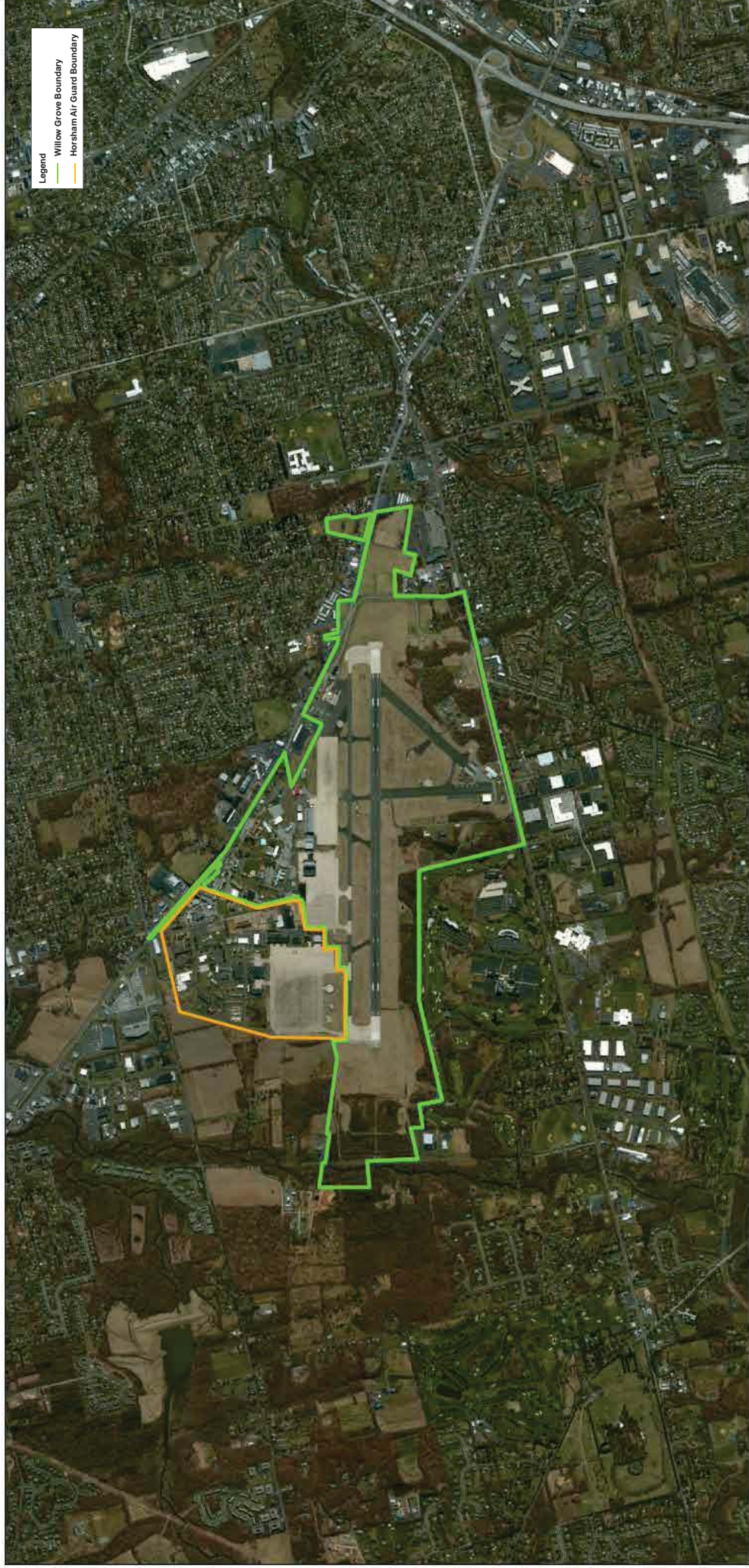
Former Naval Air Station Joint Reserve Base (NASJRB) Willow Grove

Current Navy PFOS/PFOA Monitoring Well Results and Potential Sources



Former Naval Air Station Joint Reserve Base (NASJRB) Willow Grove

Expanded View of NASJRB and Vicinity



Former Naval Air Station Joint Reserve Base (NASJRB) Willow Grove

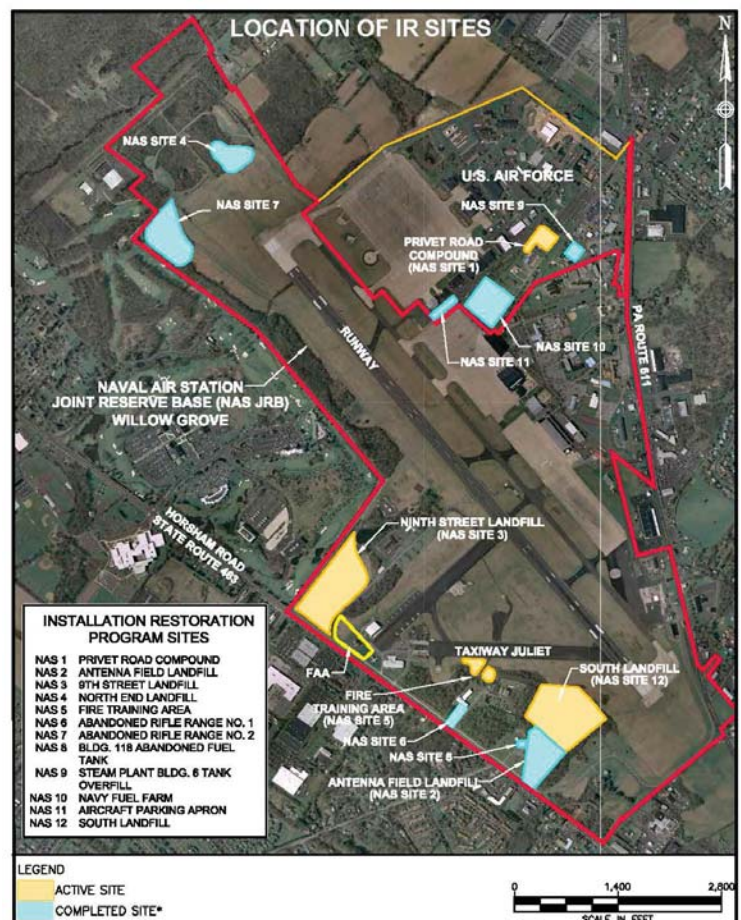
Base History and Environmental Cleanup

For over 20 years, the Navy, EPA, and PADEP have been conducting environmental cleanup at the former NASJRB Willow Grove.

- **1942 – 2011:** Used for Navy Reserve Aviation and related training and operations
- **1995:** Facility was listed on the National Priorities List (NPL) due to groundwater contamination and environmental studies begin.
- **2005:** Base closure was initiated under the DoD Base Realignment and Closure (BRAC) Program and environmental cleanup continues.
- **2011:** NASJRB is officially disestablished.
- **2011-present:** The Navy continues to investigate and cleanup the environment.

Environmental Cleanup

- **Navy has completed environmental cleanup at several sites**
 - Landfills (Sites 2 and 4)
 - Rifle Ranges (Sites 6 and 7)
 - Other Sites (Sites 8, 9, 10, 11)
- **Navy is currently actively investigating several sites**
 - Site 1 Privet Road Compound
 - Site 3 Ninth Street Landfill
 - Site 5 Fire Training Area
 - Site 12 South Landfill
- **Restoration Advisory Board (RAB) meetings occur on quarterly basis**

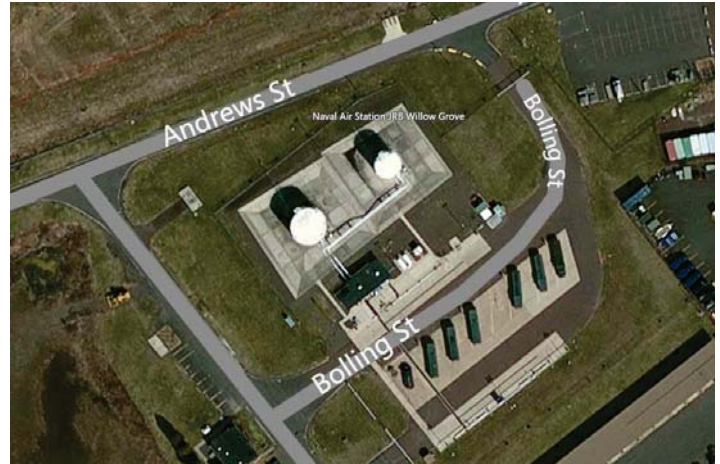


Willow Grove Air Reserve Station

Environmental Cleanup Program

■ Site ST001

- ST001 resulted from JP-4 fuel release in 1970s
- 2 cleanup parcels: 1 on base and 1 off base
- Remedial Investigation completed in 1988
- Remedial actions 1990-2011
 - Soil Vapor Extraction
 - Soil Excavations
 - In-situ chemical oxidation
 - Biosparging
- Quarterly ground and surface water monitoring, 12 wells and 3 stream locations August 2004 to present – all below PADEP drinking water Medium Specific Concentrations and surface water criteria for chemicals of concern since 2009
- Under contract with HGL to complete remedial actions and achieve Site Closure by 2019 for off base parcel
- Tank removal for on base parcel is at 35% design
 - AFCEC will evaluate further cleanup requirements after the tank demo



■ Contact Information

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