



# Restoration Advisory Board Biddle Air National Guard Base

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NGB/A4VR

17 July 2025

# Updates



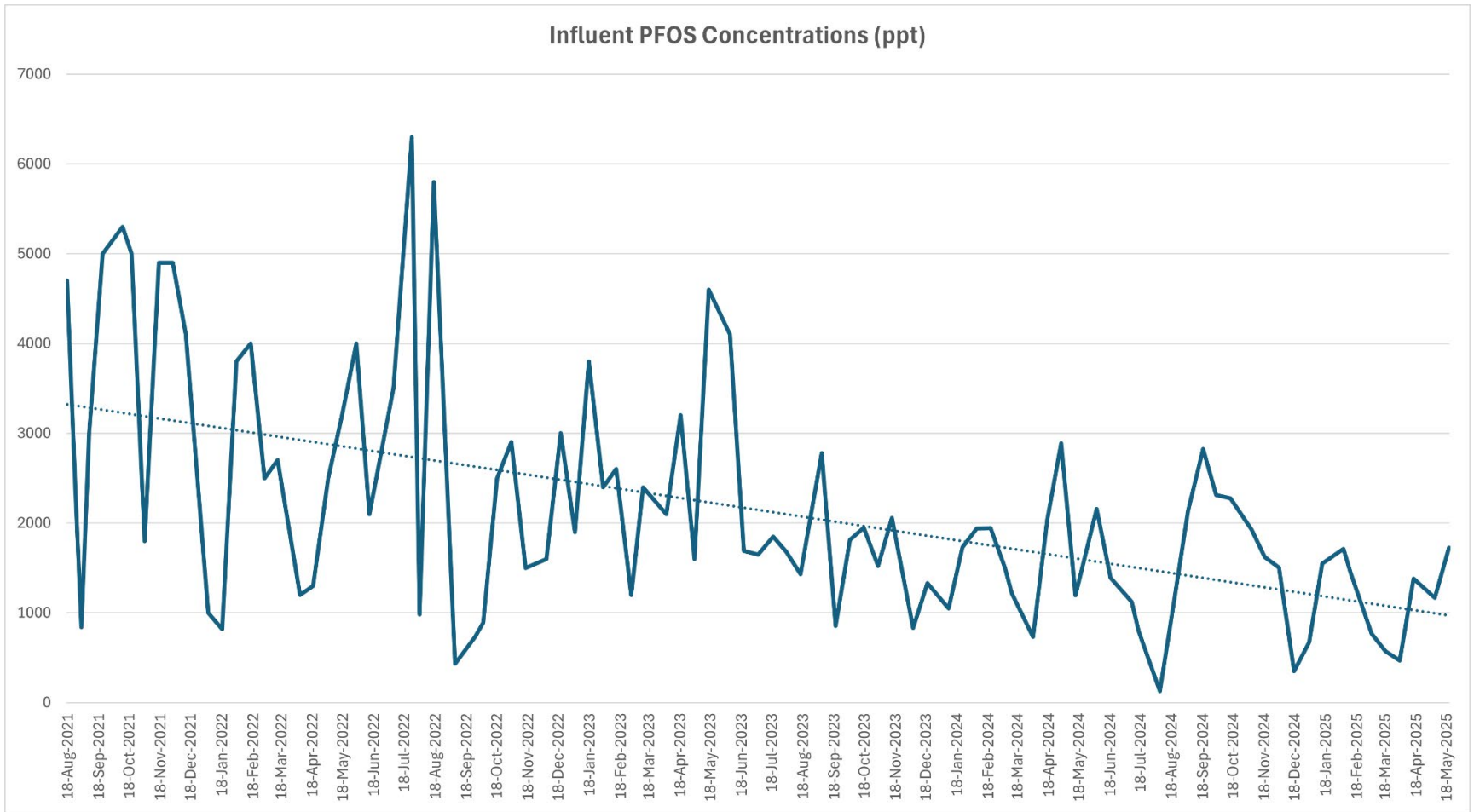
- Coordinating with EPA and PADEP on Draft Action Memorandums for Surface Water and Drinking Water Response Actions. Air Force and Air National Guard are working on a legal issue associated with NPDES and applicable and relevant requirements (ARAR) for federal facility agreement
  - Pending legal coordination for all stakeholders to discuss proposed changes and way forward
  - Will require an additional 30-day public comment once Action Memorandums are finalized
- PFAS Remedial Investigation:
  - ANG preparing to submit Final PFAS RI report. Comments were received by PADEP and US EPA Region III
- Biddle ANGB Community Involvement Plan (CIP)
  - Contractor is preparing draft CIP to submit ANG late July 2025
- Interim Groundwater Action:
  - Preparing submit Final Non-Time Critical Removal Action Engineering Evaluation (EE)/Cost Analysis (CA). ANG recently completed final legal review.
  - Preparing to submit Draft Final Action Memorandum to regulators and RAB for comment and review
  - USACE Philadelphia District is preparing to award the design contract for the interim groundwater action (targeting late July 2025)

# PFOS/PFOA Surface Water Treatment Bidle ANGB



- PFOS/PFOA has been detected in surface water leaving Bidle.
- 500 gallon per minute treatment plant began operations on 11 August 2021. Approximately 426M gallons treated through June 2025.
- 46 monthly composite samples collected from treatment plant effluent. PFOS+PFOA:
  - 1 month exceeded discharge limit - April 2023 exceeded due to algae interference, PADEP and EPA notified.
- Construction and O&M through Warminster Cooperative Agreement. Funded for an additional year of O&M (FY2026) - working on MOD.

# SWTP Influent PFOS



# NWWA Activities



- North Wales Water Authority assumed responsibility for Warrington water service area. Cooperative agreement for water system actions.
- Installation of GAC treatment for Wells 1, 2, 3, 6 and 9 complete.
- Funded for an additional year (FY2026) of O&M of GAC systems and for additional main extensions and service connections.



# Private Well Sampling



- Philadelphia USACE contract with Verina-Pars Joint Venture drinking water response actions. USACE awarding two contract options to continue response actions thru 2026
- Drinking Water Standards and OSD Action Criteria:
  - EPA MCL for PFOS 4 ppt and PFOA 4ppt; PFNA, HFPO-DA (GenX), and PFHxS (10 ppt each). It also includes a Hazard Index (HI) MCL, for a mixture of at least two or more of PFHxS, PFNA, perfluorobutane sulfonic acid (PFBS), and HPFO-DA (GenX) chemicals.
  - OSD Action Criteria: 12 ppt for PFOA or PFOS
- Verina-Pars Sampling Summary Fall 2024/Winter 2025:
  - October 2024: five residences sampled: 4 homes PFOS/PFOA >12ppt and 1 home PFOS/PFOA >4 ppt
  - November 2024: eight residences sampled: 5 homes PFOS/PFOA >12ppt; 1 home PFOS/PFOA >4 ppt and <12 ppt; and 1 home PFOS/PFOA <4ppt
  - December 2024: one resident (PFOS/PFOA >12 ppt)
  - January 2025: one resident (PFOS/PFOA >4 ppt and <12 ppt)
- Sampling contact for ANG area of responsibility: Verina-Pars, Mr. Eric White, 609-838-9414, epwhite@montrose-env.com

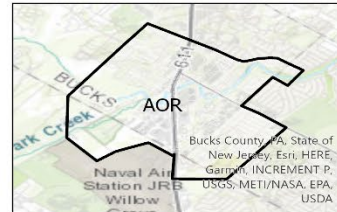
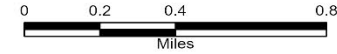


# Private Well Sampling Continued



**Legend**

- Sampling Area
- Max Containment Level
- BELOW 3X
- TO BE SAMPLED
- PUBLIC WATER
- ABOVE 3X

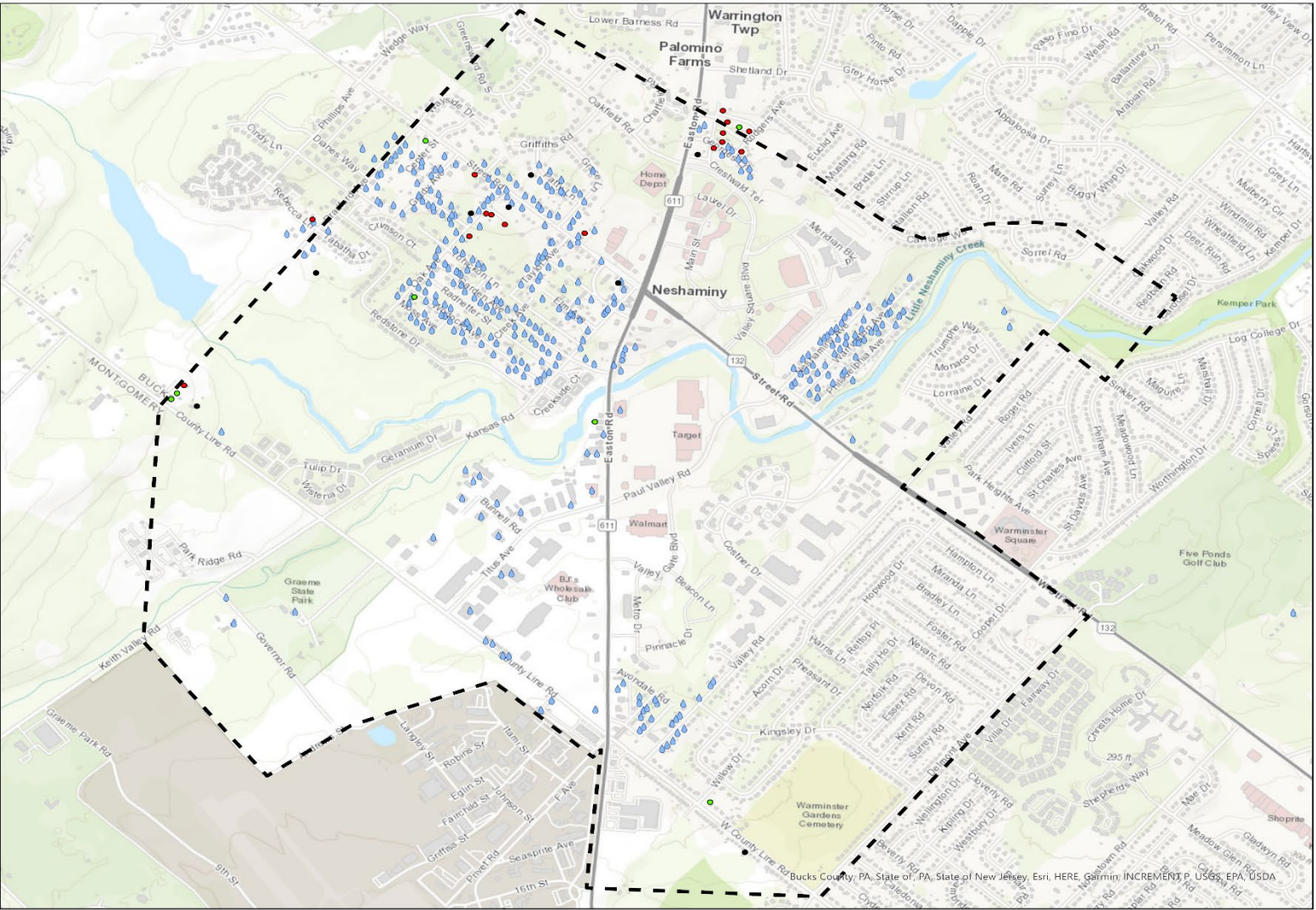


**BIDDLE  
BUCKS COUNTY  
WARRINGTON TOWNSHIP**

PARCELS WITH SAMPLE DATA  
3X OR ABOVE THE EPA MAXIMUM  
CONTAMINANT LEVEL (MCL)

**SITE OVERVIEW**

FIGURE:1      DATE: 03/19/25



# Air Force Reserve ST-01 POL



- Former Air Force Reserve Petroleum Tank Area
  - Originated from a jet fuel spill in the 1970's
  - Injections of persulfate and Epsom salt followed a biosparge system in 2016
  - Petroleum tanks were dismantled in 2016
    - Disposed 175 tons of petroleum impacted soil at licensed disposal facility
    - Confirmatory sampling In accordance with 25 Pennsylvania Code, Section 245.310, results were accepted by PADEP on 10 Sep 19
  - Soil Remedial Action Plan approved by PA DEP 08 Feb 21
  - Soil Remedial Action Completion Report approved by PADEP 13 Sep 2023
  - Groundwater monitoring underway
  - Site Closure anticipated July 2026
- POC: Margaret Patterson: [margaret.patterson@us.af.mil](mailto:margaret.patterson@us.af.mil)





# Supplemental Sources of PFAS at Multiple ANG Installations Biddle Air National Guard



## The Team

- U.S. Army Corps of Engineers (USACE), Omaha District
- Air National Guard (ANG)
- EA Engineering, Science, and Technology, Inc., PBC (under contract to USACE)



## Project Objectives

- Determine whether and where potential sources of PFAS other than AFFF, were stored, handled, used or released
- Identify if a potential PFAS release warrants further investigation or if no further PFAS investigation, study, or cleanup is warranted

### **Project Constraints:**

- **Lack of chemical and material content information for PFAS in product safety data sheets**
- **Limited knowledge of base operations due to 1991 closure**

USEPA, Federal Facilities Remedial Preliminary Assessment Summary Guide July 21, 2005; Office of the Assistant Secretary of Defense for Energy, Installations, and Environment, Report on Critical Per- and Polyfluoroalkyl Substance Uses, August 2023; Gaines, USEPA, Historical and current usage of per- and polyfluoroalkyl substances (PFAS): A literature review, December 2021



## Project Tasks

- Conduct historical records search of documents such as Environmental Baseline Surveys
- Interview personnel familiar with the history and operations of the base
- Determine if potential or identified releases of PFAS due to DAF activities require additional investigation
- Prepare research reports for each ANG installation (estimated completion by February 2026)



## Research Summary

- Over 115 shops/locations within Former Biddle ANG footprint
- Over 359 documents searched on the Admin Record, 13 primary documents evaluated
- Interviewed Biddle ANG Environmental Manager



**Assessing former shops, processes, and products purchased by DAF that potentially contained PFAS from as early as 1950\***



## Former Shops, Processes and Products with Potential PFAS

- Records search and interview focus is to
  - Determine former shops and processes that used products potentially containing PFAS
  - Identify discharges and material disposition



## Former Shops, Processes and Products with Potential PFAS

Buildings/Shops <sup>1,2</sup>	Processes	Potential Product Types
Automotive/Hobby	Descaling/cleaning parts, lubricating maintenance	Defoamer, brake fluids, hydraulic fluids, lubricants
Motor Pool	Descaling/cleaning parts, lubricating maintenance	Defoamers, brake fluids, hydraulic fluids, lubricants
Aircraft Maintenance Hangar	Descaling/cleaning parts, lubricating maintenance, replacing batteries, repairing fuel cells	Defoamer, brake fluids, hydraulic fluids, lubricants, batteries, fuel cells
Non-Destructive Inspection (may include maintenance shops such as survival inspection shop, munitions and maintenance shop, where applicable)	Descaling/cleaning parts Applying repellents and surfactants, lubricating, greasing, soldering metals, replacing batteries, repairing fuel cells,	Defoamers, brake and hydraulic fluids, lubricants, grease, batteries, fuel cells, wetting agents, water repellants
Corrosion Control Body Shop	Descaling/cleaning parts, applying repellents, surfactants and protective coatings, greasing, painting and oiling	Defoamers, surfactants, wetting agents, protective coatings, cutting oil, lubricants
Paint Stations/Booths (automotive and airplane)	Descaling/cleaning parts applying repellents and surfactants, painting	Paint, defoamers, surfactants, wetting agents, protective coatings
Chrome Plating	Finishing, plating, and restoring metals	Mist Suppressants, wetting agent, cutting oil, lubricant
Electroplating	Finishing, plating, and restoring metals	Mist Suppressants, cutting oil, lubricants
Metal Plating and Etching	Finishing, plating, and restoring metals	Mist Suppressants, cutting oil, lubricants
Housing/Dormitory	Cleaning removing and replacing carpet/floors, floor stripping, polishing and waxing activities, using personal care products, cleaning	Defoamer, surfactant, personal care products, household chemicals/cleaning products, floor wax and polish
Mess Hall and Other Buildings	Cleaning, removing and replacing carpet/flooring, floor stripping, polishing and waxing activities, packaging food, cleaning	Defoamer, stain resistant paper, household chemicals, floor wax and polish, cleaning products
Laundry/ housing laundry/ dormitory laundry	Washing/finishing, waterproofing treatment	Defoamer, water repellents, laundry detergents



## Former Shops, Processes and Products with Potential PFAS

Buildings/Shops <sup>1, 2</sup>	Processes	Potential Product Types
Carwash	Washing/finishing, waxing, and polishing	Defoamer, water repellents, detergents, waxes and polishes
Parachute/survival equipment	Washing/finishing	Defoamer, water repellents/finishing agents, laundry detergents
Housing/buildings/fuel bulk terminal and fuel dispensing with fire suppression systems (non-AFFF)	Fire extinguishing	Extinguishing agents, Halon 1211 fire extinguisher, Halon 1301 fire sprinkler suppression system
Civil Engineering -Wastewater	Collecting, pumping, and treating sewage, managing wastewater treatment, managing sludge drying beds and waste stabilization ponds, managing septic and leach fields	Sewage, sludge drying bed, or waste stabilization pond from non-industrial (e.g., Personal Care Products, cosmetics, laundry detergents, etc.) or industrial (e.g., water repellents, detergents, waxes and polishes, etc.) product types used on the former Installation; defoamers based on treatment method such as sewage clarifiers
Entomology shop	Storing, mixing, applying pesticides/herbicides/fungicides	Insecticides, herbicides, fungicides
Grounds/Golf Course Maintenance	Storing, mixing, applying Pesticides/Herbicides	Insecticides, herbicides, fungicides
Various shops (Life support Shops, Mess Hall, Housing/Dormitory, etc.)	Packaging, housing maintenance, cleaning and removing carpet, floor stripping, polishing and waxing activities	stain-resistant carpets, Personal Care Products, Cosmetics, stain resistant paper, household chemicals, floor wax and polish
Civil Engineering – Landfills	Managing and collecting waste for landfilling	Waste from products potentially containing PFAS generated on the former Installation such as Personal Care Products, cosmetics, building material, stain resistant paper and packaging, etc.

•(OSD 2022, Gaines 2022, Dewapriya et al 2023)

• <sup>1</sup>Former Buildings/Shops may include work or mishap areas such as aircraft aprons, flightlines, aircraft parking ramps, etc.

• <sup>2</sup>Installation specific Shops and processes may include other potential products containing PFAS

•Note: X-ray film was recovered and turned-in under the Precious Metal Recovery Program

•([https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodm/416021m\\_vol2.PDF#page](https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodm/416021m_vol2.PDF#page)

•=25).

•Note for installations in Military Munitions Response Program (MMRP): Excludes closed military ranges addressed under the ANG MMRP based on lack of safety data sheets, source of supply data, and current science (Department of Defense 2022; Joint Ordnance Commanders Group 2020).





## Stakeholder Input

- **Do you have any knowledge of former shops and processes where supplemental sources of PFAS were used on Biddle ANGB?**
  - **Provide your contact information at the end of the meeting if you have additional information.**

# *Questions*



*Point of Contact:*

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