



Restoration Advisory Board Biddle Air National Guard Base

Bill Myer
NGB/A4VR
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Updates Since 7 December 2023



- Environmental Restoration Program Sites:
 - Willow Grove Site 1 (Privet Road):
 - Draft Final Sampling LTM report submitted to regulators for review Feb 2024
 - Completed groundwater sampling 31 January 2024 (2nd sampling event for EA on LTM contract)
- Coordinating with SAF IEE on signing amendment to Navy Federal Facility Agreement
 - Air Force and Navy have an issue with of the language outlined FFA. Waiting for Navy proposal/response on new language. Pending legal coordination for all stakeholders to discuss proposed changes
- PFAS Remedial Investigation:
 - Hosted four Phase III scoping meetings with US EPA Region III and PADEP:
 - 19 Dec 2023 Risk Assessment Human and Ecological Risk
 - 28 February 2024 Phase III soil delineation
 - 4 March 2024 Phase III monitoring wells/additional hydrogeologic data
 - 21 March 2024 Phase III surface water/sediment additional characterization
 - Continued development of groundwater flow model
- Biddle ANGB Community Involvement Plan
- Interim Groundwater Action:
 - Completed pre-pilot test groundwater sampling event
 - April 2024 draft pilot test report due to ANG
 - Allonia preparing and coordinating AFFF foam fractionation pilot test effort (Jason Speicher Defense Innovation Unit presentation)



3 Month Forecast of Activities



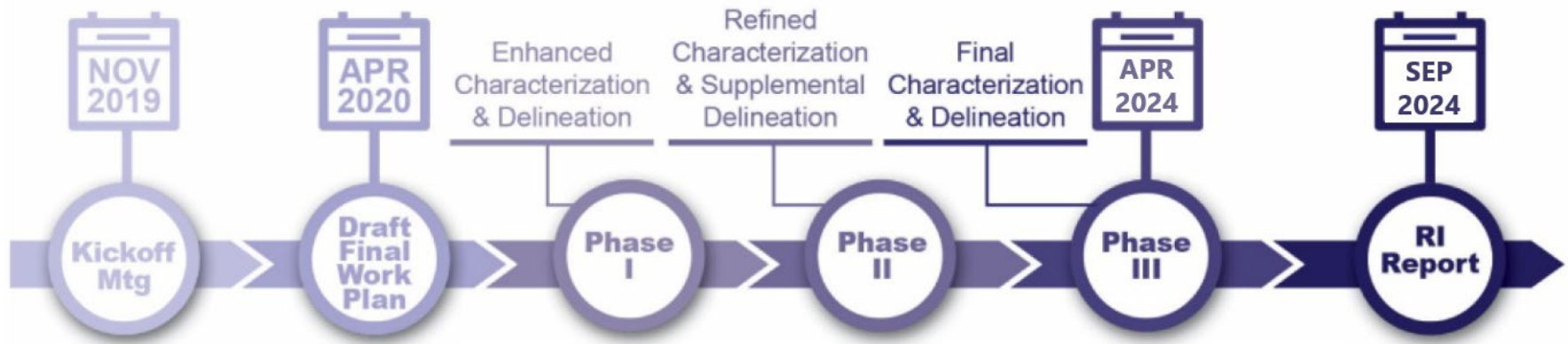
- Sign Navy Federal Facilities Agreement June 2024:
 - Complete Surface Water Response Action Memorandum
 - Complete Residential Drinking Water Action Memorandum
- Continued drinking water response actions (sampling, bottled water, and coordination with North Wales Water Authority (NWWA) and Warminster
- Baseline Human Health and Eco-risk assessment
- Biddle ANGB collect surface water sample SW-026 per US EPA Region III and PADEP direction/agreement
- Begin Phase III RI activities March 2024
- Draft Groundwater Modelling Technical Memorandum
- Continued storm water treatment operations (Warminster)
- Long Term Monitoring Groundwater Sampling June 2024 Site 1 Privet Road
- Draft Pilot Test Report April 2024 to ANG (Draft Final Report June 2024)



Remedial Investigation Project Objectives



Remedial Investigation Objective: Delineate the nature and extent of PFAS contamination, the threat to human health and the environment and prepare a Remedial Investigation Report.





Remedial Investigation Progress



- Phase I – complete
 - Work performed between July 2020 and March 2021
 - Installed 10 shallow monitoring wells and three multiport wells (shallow to deep intervals)
 - Collected soil and groundwater at each new well location
 - Performed on-site surface water and sediment sampling
- Phase II – complete
 - Work performed between 2021 and June through December 2023
 - Collected off-site surface water and sediment sampling in the unnamed tributary leaving the Base
 - Installed 6 shallow and 9 intermediate wells to investigate 6 data gap areas
 - Collected site-wide groundwater samples in April 2021 and November/December 2023
 - Performed a 1 month long, automated groundwater level monitoring event involving 30 wells that will be used for groundwater modeling purposes



Remedial Investigation Progress



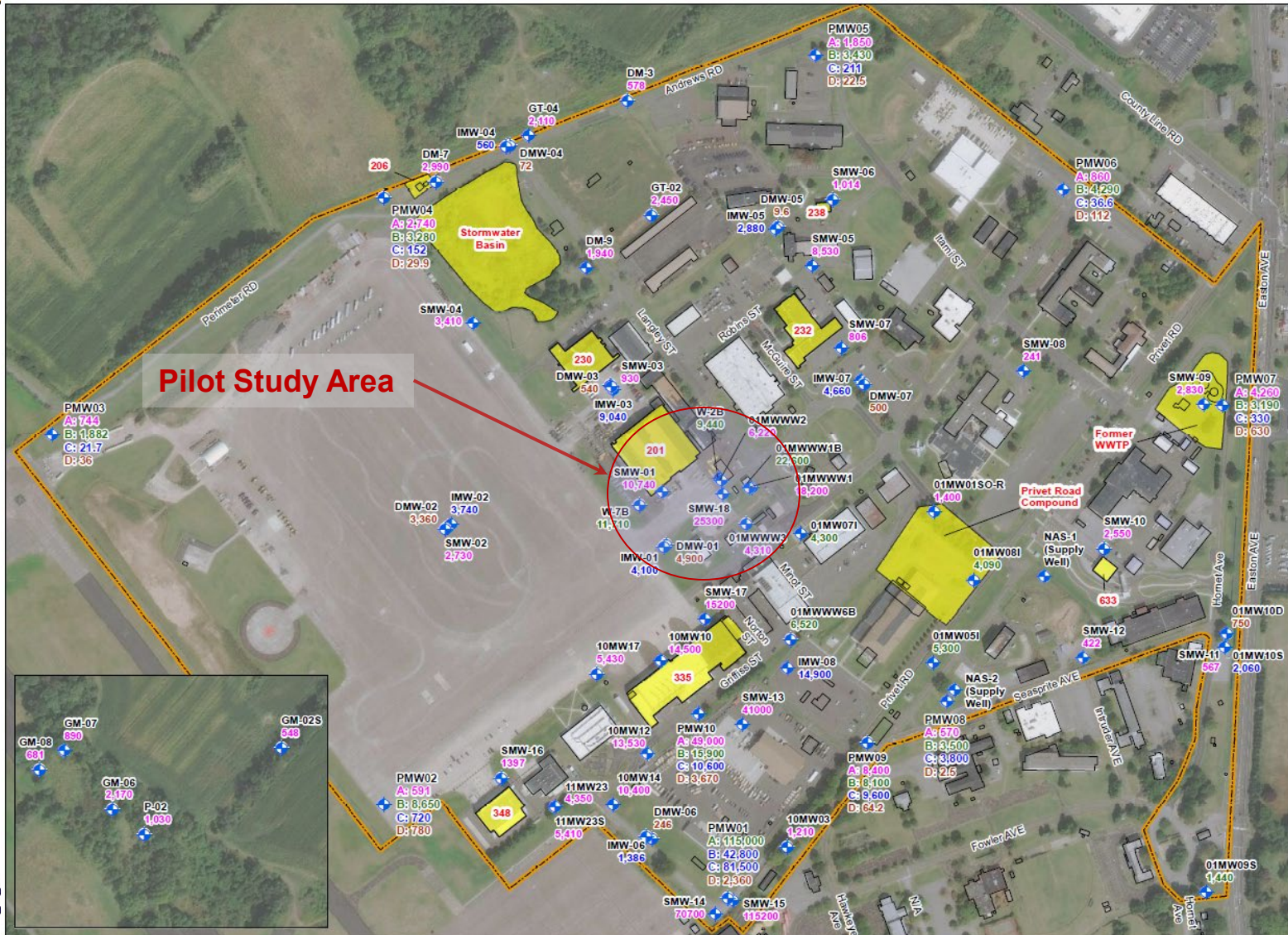
- Phase III Activities – since last RAB
 - Hosted 4 scoping meetings with EPA Region III and PADEP to evaluate Phase II results and build Phase III sampling approach for:
 - Human Health and Ecological Risk Assessments
 - Additional on-site soil, groundwater, and surface water/sediment characterization
- Phase III Activities – planned
 - Phase III soil investigation began 25 March 2024
 - Shallow well installation and sampling is anticipated to begin April/May 2024
 - Further surface water /sediment sampling is pending the results of the 21 March 2024 agency meeting
- Remedial Investigation Report September 2024



Groundwater Pilot Study Overview



- ANG conducted a Pilot Study to inform plans for subsequent interim groundwater action
- Pilot Study included the design, construction, operation of 30-day pilot test to evaluate feasibility of hydraulic containment of groundwater plume near Building 201
- Pilot Study included a series of variable rate step-tests, followed by series of constant rate pump tests with hydraulic and chemical monitoring throughout 30-day period performed between 1-30 November 2023





Groundwater Pilot Study Overview



- The results are presently being analyzed data to determine aquifer properties which are being used to evaluate design needs and update the groundwater flow model.
- Results, conclusions, and recommendations will be compiled in Technical Memorandum
 - Draft Pilot Test Technical Memorandum to ANG April 2024
- Pilot Study will inform plans for full-scale interim action(s)

PFOS/PFOA Water Treatment

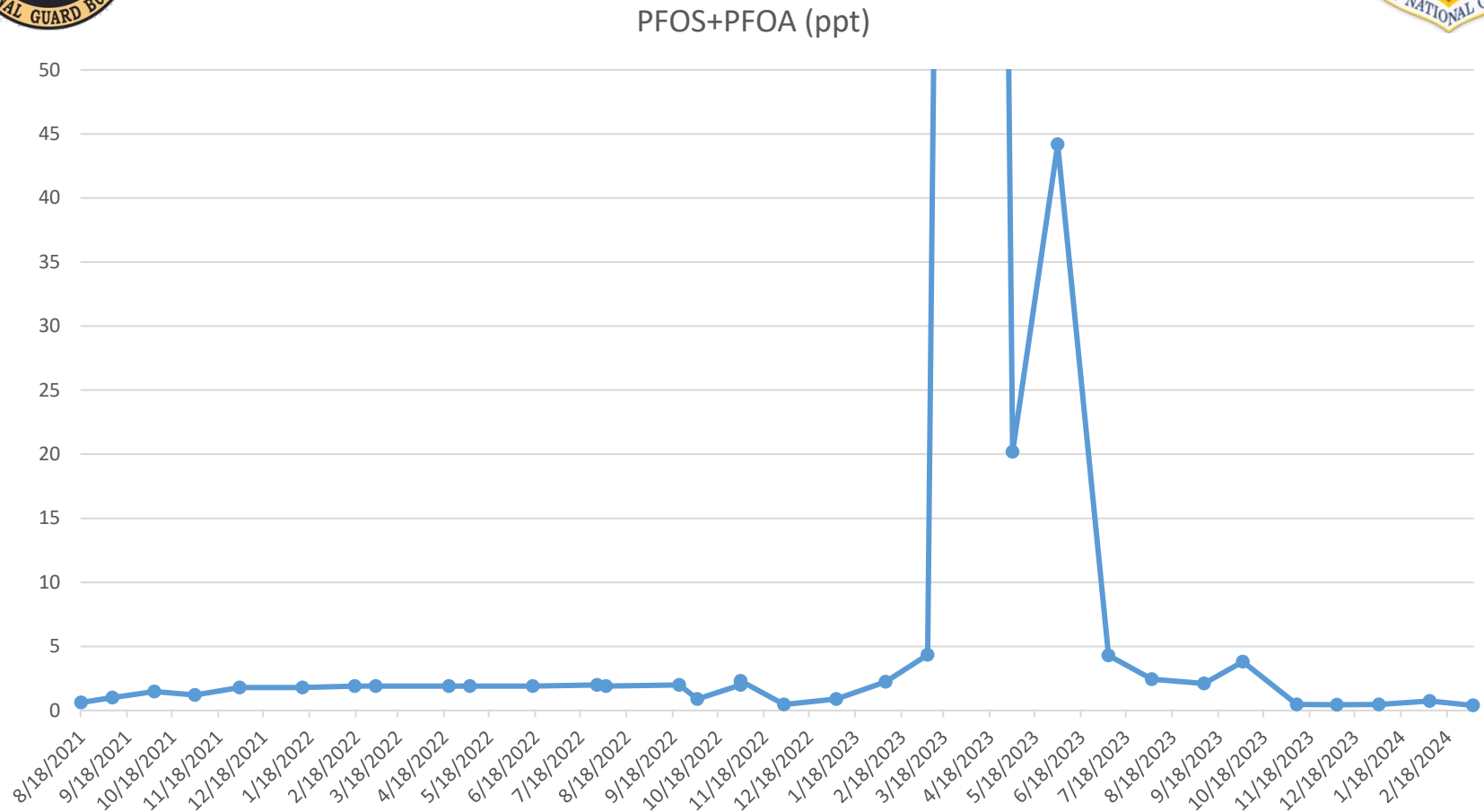
Biddle ANGB



- PFOS/PFOA has been detected in surface water leaving Biddle.
- 500 gallon per minute treatment plant began operations on 11 August 2021. Approximately 290M gallons treated through February 2024.
- 33 monthly composite samples collected from treatment plant effluent. PFOS+PFOA:
 - 16 months not detected
 - 16 months with detections - average 6 ppt
 - 1 month exceeded discharge limit - April 2023 exceeded due to algae interference, PADEP and EPA notified.
- Both treatment trains = sand, Filter Ag Plus, GAC, cartridge filter, Resin
- Pilot of Cyclopure DEXSORB – resin type material that is supposed to be resistant to biofouling.
- Construction and O&M through Warminster Cooperative Agreement.



PFOS+PFOA Data – Biddle SWTP





SWTP Components



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.
- Operating permits obtained by NWWA to bring the wells back into service.
- Possible additional main extensions and service connections for properties that exceed the State PFAS standards.

Private Well Sampling



- Week of 18 September 2023 Weston sampled 6 residences in the area
- Philadelphia USACE contract with Verina-Pars Joint Venture drinking water response actions for next 4 years.
- Verina-Pars week of 4 March 2024 conducted a recon for 25 properties to verify presence of water well and offer sampling. The 25 properties include the six sampled in September 2023.
- Four of the six residents sampled in September 2023 allowed for a quarterly sample to be collected. Two residents receiving bottled water (part of the six sampled in September 2023) refused re-sampling



Private Well Sampling



- ANG has contract in place with Weston to provide PFOS/PFOA testing of private drinking water wells and supply bottled water to properties with PFOS/PFOA at or above the EPA Health Advisory level (HA) for residents within our area of responsibility in Horsham, Warminster, and Warrington.
 - Horsham:
 - 6 wells sampled
 - 5 were above HA
 - 4 have been connected to municipal water
 - 1 well abandoned by Wood
 - Warrington:
 - 156 well sampled
 - 53 are above HA
 - 6 are below State MCL
 - 68 have been connected



Private Well Sampling (cont.)



- Warminster: 12* wells sampled
 - 11 are above HA
 - 10 have been connected municipal water
 - 1 residence above HA not connected
 - * Some of these properties are on Valley Road with Warminster mailing addresses but are located in Warrington Township
 - * wells sampled using the US EPA 2016 Health Advisory standards, 70 part per trillion (ppt) for PFOA and PFOS
- Sampling contact for ANG area of responsibility: Transitioning to Verina-Pars, Mr. Eric White, 609-838-9414, epwhite@montrose-env.com