



Restoration Advisory Board Horsham Air Guard Station

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NGB/A4VR

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Updates Since March



- Environmental Restoration Program Sites:
 - No change
- PFAS Remedial Investigation:
 - Regulators are reviewing ANG responses to their comments on draft work plan
- PFAS surface water treatment:
 - Revised Phase III system installed
 - Basin revisions are underway to increase water retention
 - Draft NPDES Industrial Stormwater permit under review

PFOS/PFOA on Horsham AGS



- In 2015, ANG completed a Preliminary Assessment of potential PFOS/PFOA release sites at the Horsham Air Guard Station (AGS). Ten potential source areas identified in the PA include:
 - Buildings that contained foam fire suppression systems
 - Areas that may have received runoff from foam releases
 - Stormwater sediment basin
 - Former waste water treatment plant
 - Former storage area for wastewater treatment sludge
- These potential source areas were further investigated by Leidos in a PFOS/PFOA Facility Investigation and additional investigation is underway in the Remedial Investigation (RI)

Potential PFOS/PFOA Source Areas



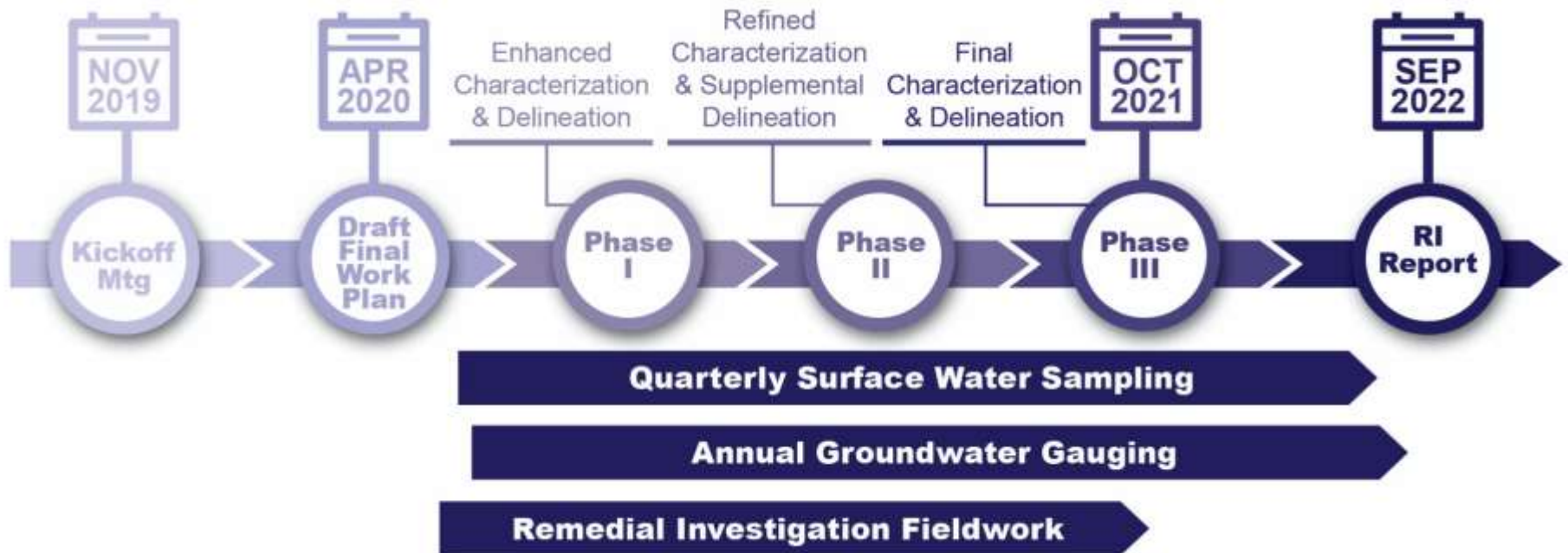


Remedial Investigation Project Objectives



- Delineate the nature and extent of PFAS contamination, the threat to human health and the environment and prepare a RI Report within 36 months.
 - Collect soil, sediment, surface water, and groundwater PFAS data on and around Horsham AGS
 - Conduct Baseline Risk Assessment (BRA)
 - Investigate link between groundwater and unnamed tributary to Park Creek
 - Obtain data required to inform future development of a Feasibility Study
 - Conduct quarterly surface water sampling for PFAS (12 quarters)
 - Conduct annual potentiometric gauging to support USGS model

General Project Steps and Schedule



Remedial Investigation Progress



- Scoping meeting for RI held with PADEP and EPA in January 2020
- Draft Final RI work plan (UFP-QAPP) submitted 10 March 2020
- Comments received and responses provided 28 May 2020
- Final work plan anticipated soon
- Field work to begin upon work plan approval
 - Surface water and sediment sampling (on/off site)
 - Soil sampling and well installation
 - Groundwater sampling

Remedial Investigation Progress



- Quarterly Surface Water Sampling
 - Conducted in collaboration with Navy and USGS
 - Navy Sampling and Analysis Plan (SAP) is finalized
 - ANG adopted the Navy SAP with ANG-specific amendments
 - ANG SAP pending approval
 - Next event tentatively planned for August

Remedial Investigation Progress



- Actions Completed
 - RI scoping meeting
 - Draft Final RI work plan
 - Draft Final SAP for surface water sampling
- Actions Planned for Next 3 Months
 - Finalize Work Plans
 - Begin Phase I investigation activities
 - Initiate quarterly surface water sampling
 - Seek access for offsite monitoring wells

PFOS/PFOA in Surface Water on Horsham AGS



- PFOS/PFOA has been detected in surface water leaving the Horsham Air Guard Station. This water flows from a stormwater detention basin on the northwest boundary of the Base to Park Creek which flows to the Little Neshaminy Creek.
 - ANG is taking actions to reduce this release of PFOS/PFOA to the Creek:
 - Revised Phase III system is in place and designed to treat 180 gallons per minute. Improvements to the stormwater basin are underway to retain some precipitation runoff to allow the system time to treat it.
 - When the NPDES permit is finalized, a permanent treatment system will be designed and built to meet the permit requirements.

PFOS/PFOA in Surface Water on Horsham AGS



- Photo of the three treatment systems now in place and operating on the storm water outfall

PFOS/PFOA in Drinking Water



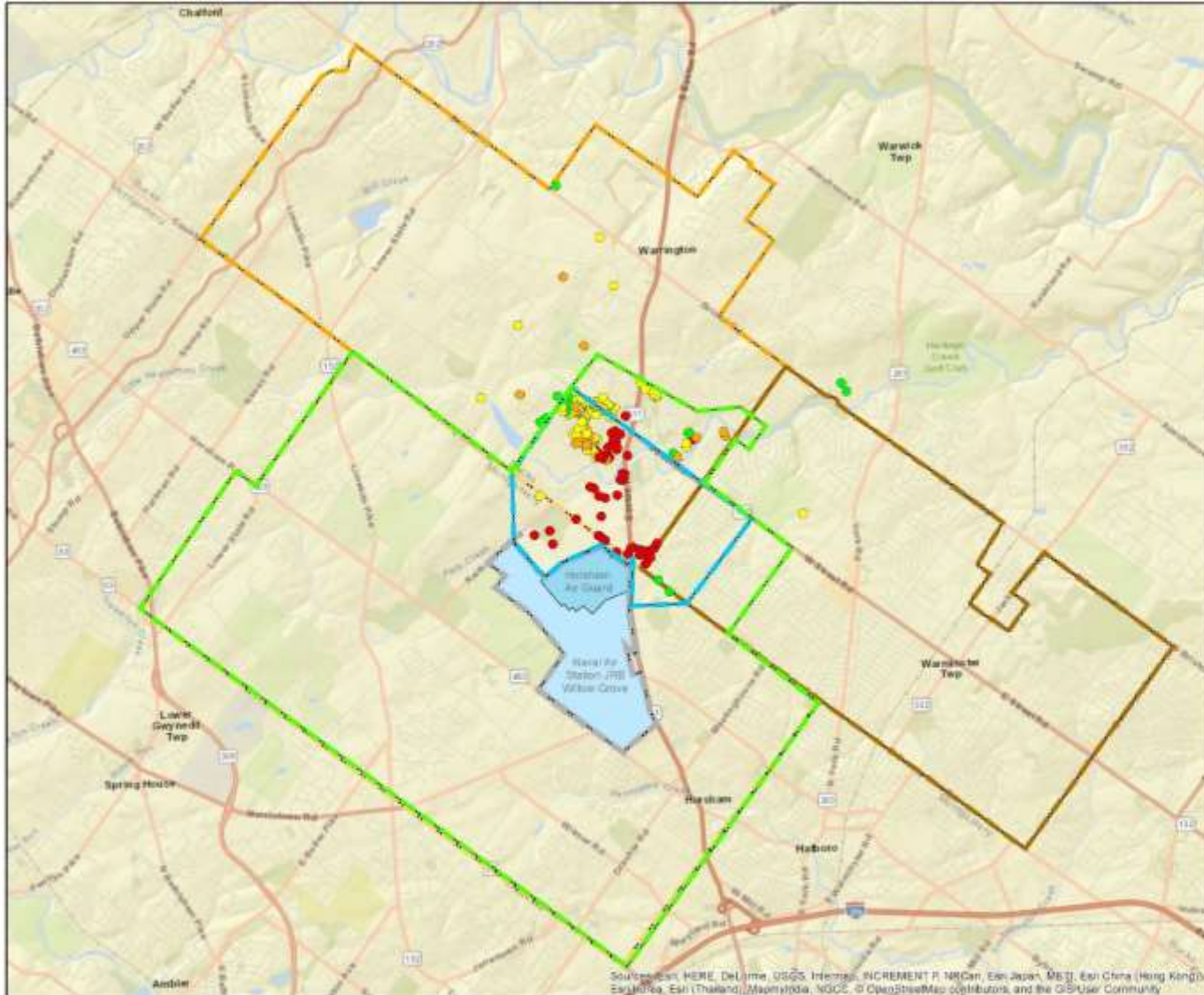
- Warrington Township sold its drinking water system to North Wales Water Authority (NWWA). ANG is negotiating with NWWA to transfer the Warrington Township cooperative agreement to them for filtration of municipal wells and connection of private homes with PFOS/PFOA Lifetime Health Advisory exceedances to municipal water. NWWA indicates connections could be accomplished this summer where water mains already exist.

Private Well Sampling



- ANG has contract in place with Wood to provide PFOS/PFOA testing of private drinking water wells and supply bottled water to properties with PFOS/PFOA at or above the lifetime health advisory level (HAL) for residents within our area of responsibility in Horsham, Warminster, and Warrington
 - The number of private wells sampled by ANG are:
 - Horsham: 5, all above HAL; 4 have been connected to municipal water (remaining one not in use)
 - Warrington: 150, 46 are above HAL; 35 have been connected
 - Warminster: 12*, 11 are above HAL; 8 have been connected
- *Some of these properties are on Valley Road with Warminster mailing addresses but are located in Warrington Township
- Private well sampling team currently using COVID-19 precautions to include only sampling from exterior spigots
 - Sampling contact for ANG area of responsibility: David Side at david.side@woodplc.com or (610) 877-6111

Private Well Sampling Map



PFC Sample Location Map
as of October 2018

Horsham Air Guard Station
Horsham and Warrington Township

Legend

Health Advisory Level (HAL)
HAL is the sum of both PFOA+PFOS (PFOA 0.070 ug/L, PFOS 0.70 ug/L)

- Sum of PFOA+PFOS concentrations above 0.070 ug/L
- Sum of PFOA+PFOS concentrations detected between 0.040 ug/L and 0.070 ug/L
- Sum of PFOA+PFOS concentrations detected at or below 0.040 ug/L
- PFOA & PFOS not detected

- Horsham Air Guard
- Former NAS JRB Willow Grove
- Sampling Area
- Air Force Administrative Order Boundary
- Horsham Township
- Warrington Township
- Warrinister Township

Notes & Sources

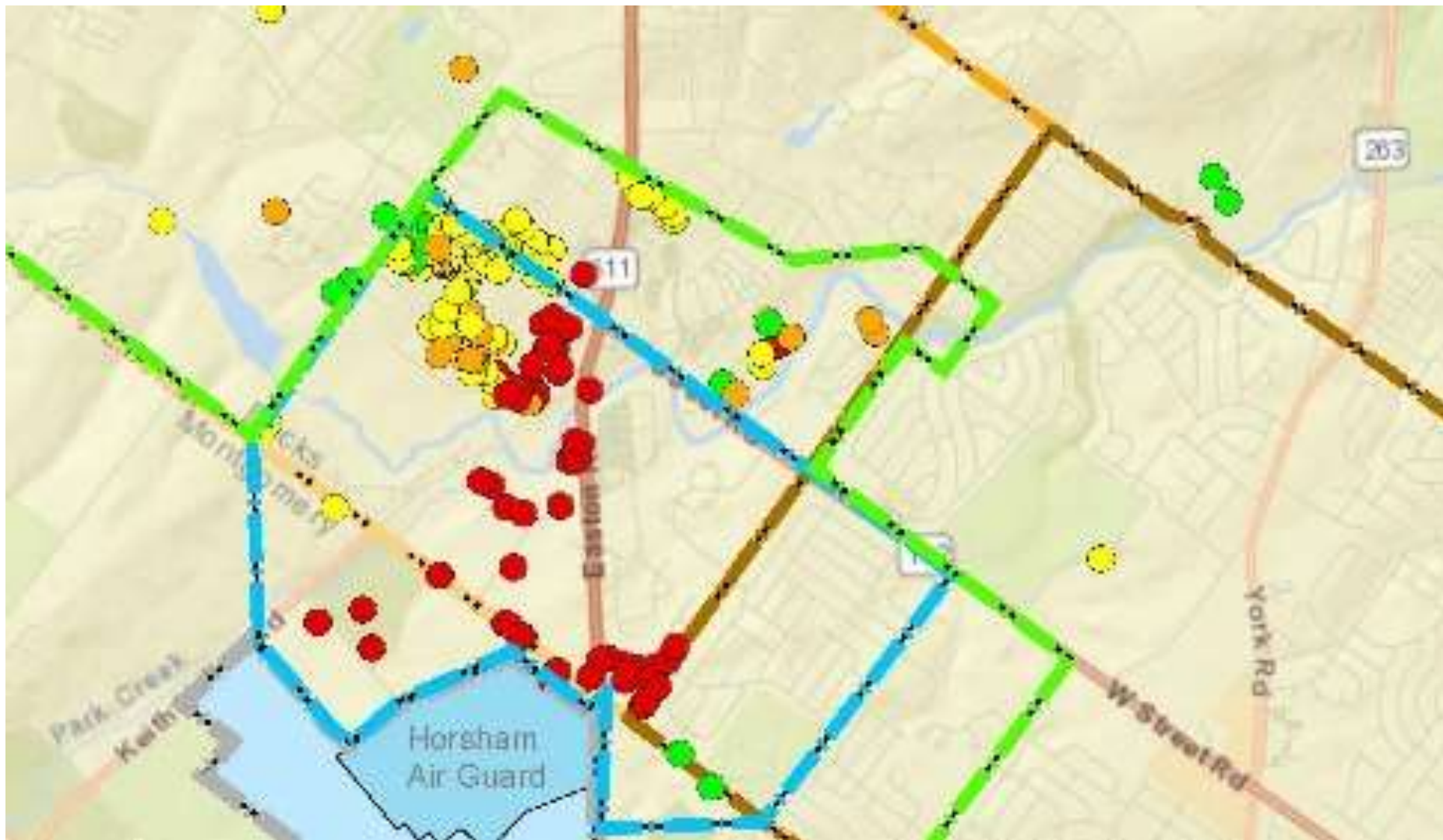
Sources:
Street Base Map hosted by ESRI.

wood.
Wood
Environment & Infrastructure, Inc.
751 Arbor Way
Blue Bell, PA 19422
(610) 628-8100

Figure
2

Source: HERE, DeLorme, USGS, Intermap, INCREMENT P, NNCC, Esri, Swis, MBT, Esri, Esri (Hong Kong), Swis, Esri (Thailand), Mapbox, Swis, NCC, © OpenStreetMap contributors, and the GIS User Community

Private Well Sampling Map



Actions Planned for Next 3 Months



- **PFAS Remedial Investigation:**
 - Finalize Work Plans
 - Begin Phase I investigation activities
 - Initiate quarterly surface water sampling
 - Seek access for offsite monitoring wells
- **Surface water treatment:**
 - Continue upgrades to retention basin
 - Draft NPDES Stormwater Permit is under review
- **Continued private well sampling**
- Please note Administrative Record has new web address:
<https://ar.afcec-cloud.af.mil/Search.aspx>



Previously Presented Data

Environmental Restoration Program Sites



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 replaced the biosparge system in 2016
 - Petroleum tanks were dismantled in 2016
 - Disposed 175 tons of petroleum impacted soil at licensed facility
 - Confirmatory sampling contract underway in accordance with 25 Pennsylvania Code, Section 245.310 of the Department of Environmental Protection (DEP)'s Rules and Regulations
- Results were provided and accepted by PADEP on 10 September 2019 in a Supplemental Remedial Investigation Report and a Site Characterization Report in accordance with:
 - Closure Requirements for Aboveground Storage Tank Systems Technical Guidance Number 263-4200-001 (PADEP, 2017)
 - Pennsylvania Code, Chapter 245-310 Site Characterization Report
- POC: Ms. Margaret Patterson: margaret.patterson@us.af.mil

Privet Road Compound



- Former waste management area for Naval Air Station Joint Reserve Base Willow Grove
- Sampling completed in 2017 indicates trichloroethene (TCE) and tetrachloroethene (PCE) exist in the groundwater but levels are below maximum contaminant levels (MCL) set by the U.S. Environmental Protection Agency for drinking water quality
- Leidos, Inc. is contracted for continued long-term monitoring. Biannual groundwater sampling and land use control inspections will continue to be conducted pending a final site remedy
- Second Five-Year Review for Privet Road groundwater contamination was finalized in September 2018 and is available on the ANG Admin Record

PFAS Investigation Update



- GW sampling event conducted in March 2018
- Joint gauging event conducted 8-9 March 2018
- Baseflow SW sampling conducted 19 March 2018
- Rain event SW sampling conducted 28-29 June 2018

- Documents available on Administrative Record
 - Final Facility Investigation Report
 - Final Groundwater Monitoring Reports for December 2017 Sampling Event
 - Final Groundwater Monitoring Reports for March 2018 Sampling Event
 - <http://afcec.publicadmin-record.us.af.mil/Search.aspx>
- Final Stormwater Study Tech Memo submitted March 2019
- Final Conceptual Design Report submitted to ANG
- NPDES stormwater permit application submitted to PADEP 28 August

Groundwater Data Update



- Gauging conducted 8-9 March 2018
 - Semi-confined multilayer aquifer system, subdivided into four zones for contouring
 - Gradients trends northwest in each zone
- Sampling event conducted 5-15 March, 2018
 - Concentrations similar to previous events
 - 78 of 85 locations exceeded 70 PPT (ng/l) (combined PFOA/PFOS)
 - Highest concentrations found in three general areas: along the southern boundary, near Building 335, and near Building 201.
 - Highest concentrations at PMW01, Zones A, B, and C: 329,500 PPT, 147,400 PPT, and 186,900 PPT, respectively.
 - Next highest concentration at IMW-06 (49,000 PPT) along the southern boundary).
 - Four wells near Buildings 201 and 335 contained concentrations above 10,000 PPT.

GW Results: March 2018

