



NASJRB WILLOW GROVE

Navy Environmental Program Brief for HLRA

July 19, 2017



Presentation Agenda



- Radiological Status
- Environmental Restoration Status
- Perfluorinated Compounds Status
- Questions



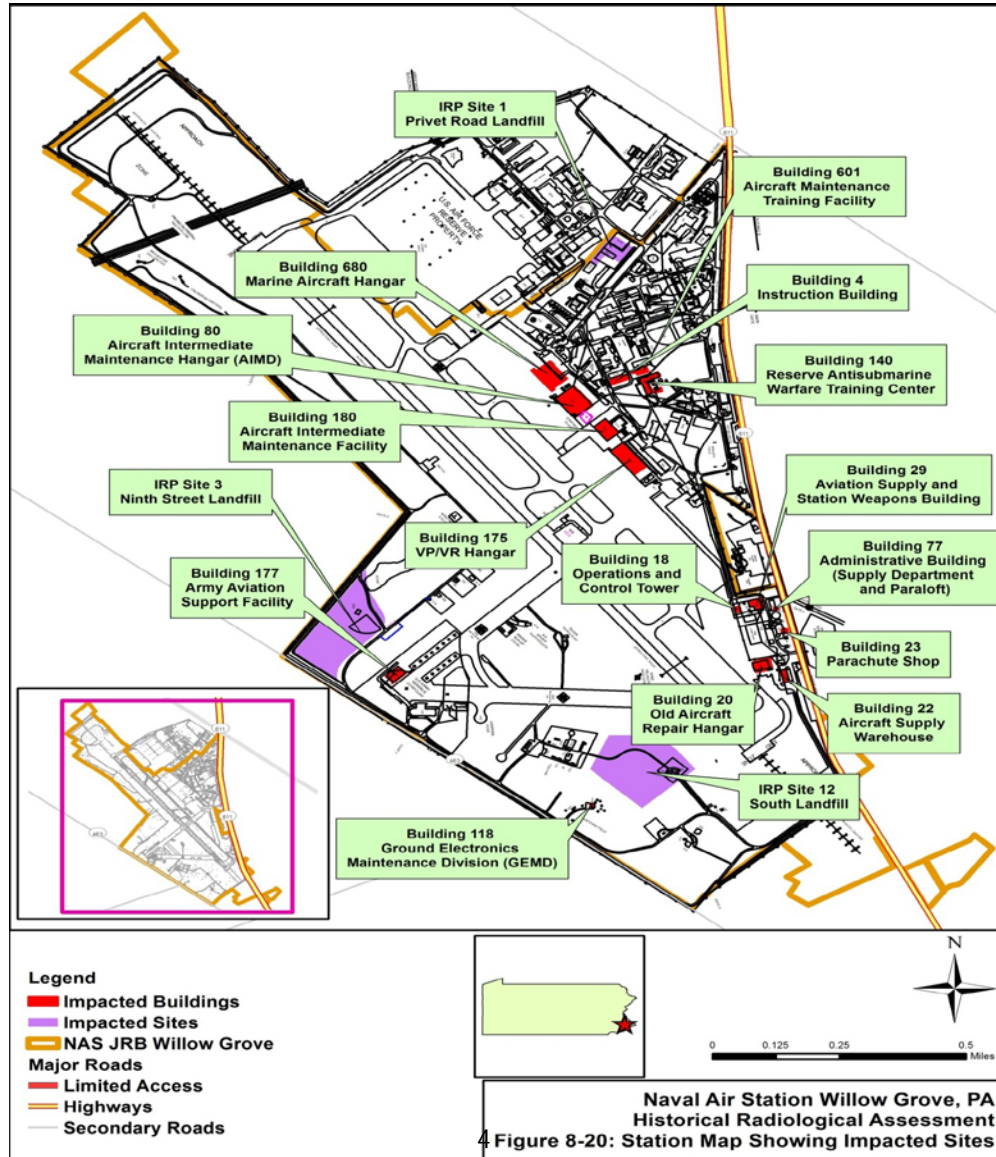
Radiological Update



- 18 potential radiological impacted sites were identified
- A scoping survey was performed as an initial evaluation to identify if radionuclide contaminants exist. All field work is complete.
- The scoping survey reports for the 18 sites were submitted to regulators for review, in three groups:
 - Building Surveys (10 Buildings)
 - Building Footprints (5 Former Buildings)
 - Landfills (3 Sites)



Radiological Investigation Potentially Impacted Sites





Radiological Update



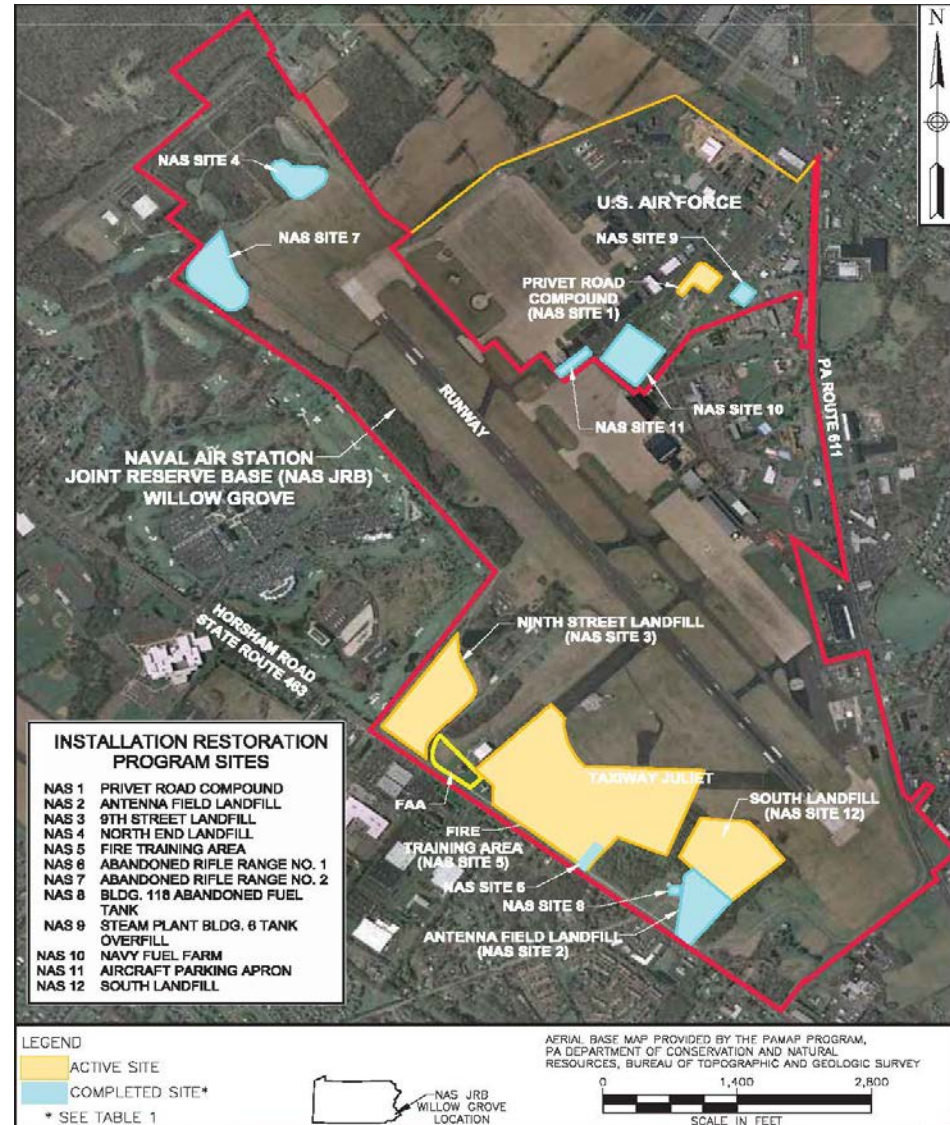
- Final Building survey reports (10 former buildings) completed in June 2016
 - No radiological concerns for future anticipated use of the buildings
- Final Landfill reports (3 locations) completed March 2017.
 - No radiological concerns for surface soils which are undisturbed
 - Results are being incorporated into Feasibility Studies currently being prepared for Site 3 and Site 12 Landfills
- Final Building Footprint survey reports (five locations) were completed in May 2017.
 - The site footprints are recommended for unrestricted use without concern for radiological contamination



Installation Restoration Sites



- Three active sites:
 - Site 3 – 9th Street Landfill
 - Site 5 – Former FFTA
 - Site 12 – South Landfill
- Eight sites with no action or no-further action
- One site transferred to Air Force (Site 1 – Privet Road Compound)





Site 3 and Site 12 Landfills



- Former landfills used by the Base Public Works Dept.
- Waste was burned and buried in trenches
- Remedial Investigations showed elevated levels of metals and PAHs in surface and subsurface soils
- Site 3 groundwater showed low levels of PCE
- Feasibility Studies in preparation to evaluate remedial alternatives



Site 5 Groundwater Remedial Action



- Anaerobic bioremediation system continues to operate successfully
- Annual performance monitoring is being conducted in accordance with approved Operation, Maintenance, and Monitoring Plan
- Additional injections of amendments will be conducted based on monitoring results
- Results continue to show good conditions for continued biodegradation of volatile organic compounds (VOCs) and decreasing trends of VOCs



PFOA / PFOS Background



- In 2016, EPA set a lifetime Health Advisory (HA) level of 70 parts per trillion ($0.07 \mu\text{g/L}$) for combined Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA).
- Per the EPA, the lifetime HA level are reasonable health based concentrations, above which actions should be taken to reduce exposure. HA levels include many safety factors to protect vulnerable populations (e.g., children).
- The Navy's priority is eliminating exposure to PFOA/PFOS above the lifetime HA levels at public and private drinking water wells.
- Anyone concerned about health effects should address with their health professionals. Weblinks to health information is provided at the end of this presentation.



NASJRB Willow Grove PFAS Actions



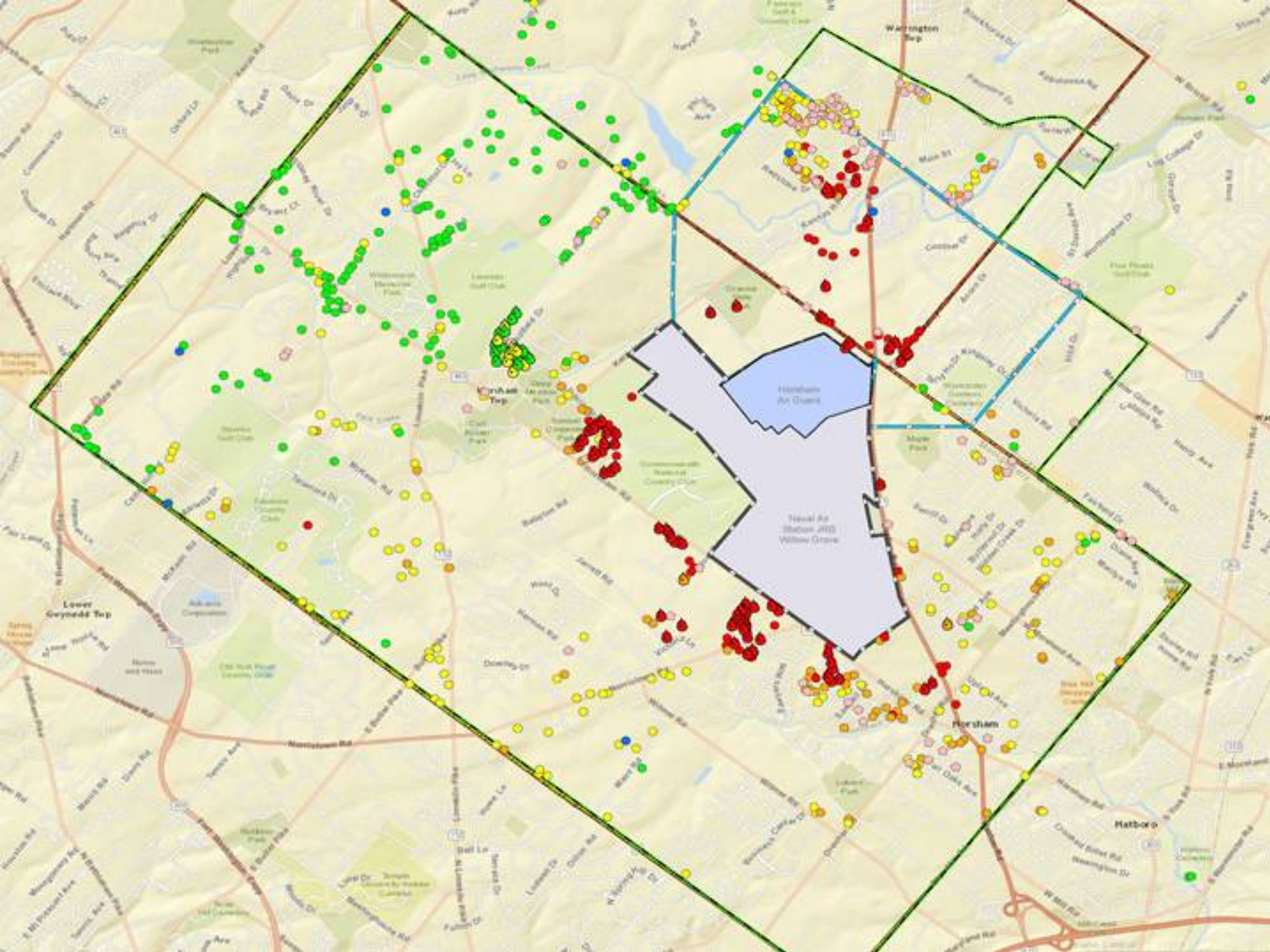
- Private drinking water wells sampled by the Navy for PFOA/PFOS (all townships) near NASJRB Willow Grove:
 - Private wells sampled: ~ 490
 - Private wells above lifetime HA (>70 ppt): 89
 - Private wells remaining to be connected: 15
 - Private wells below HA/monitored (>40 ppt): 74
- The Navy has funded carbon filtration systems at five Horsham Water and Sewer Authority (HWSA) public wells (#10, 17, 21, 26, and 40) which are above the lifetime HA. All are filtering water below the lifetime HA and back to drinking water service.
- The Navy is providing additional funds to HWSA, over \$7 million, for filtration system costs and drinking water connections above the lifetime HA. The total funding will be over \$16 million.



NASJRB Willow Grove PFAS Private Well Sampling



- In 2014, the Navy requested support from the EPA to sample nearby private wells for PFOA and PFOS.
- Private drinking water well sampling or provision of bottled drinking water for perfluoroalkyl substances (PFAS) will now be performed by Tetra Tech, a U.S. Navy contractor.
- The primary point-of-contact is:
 - Mr. Andrew Frebowitz, Tetra Tech Project Manager
 - E-mail: andy.frebowitz@tetratech.com
 - Phone: (610) 382-1170





NASJRB Willow Grove PFAS Investigation



- The Navy is performing a Remedial Investigation (RI) to better understand the nature and extent of the PFAS contamination at the Navy base. The investigation included the installation and sampling of numerous groundwater wells and sampling of soils and surface water/sediment.
- Draft RI Data Report submitted November 2016
 - Identifies data gaps for further investigation
 - Additional field investigation to be completed in 2017
 - Source control actions are developed from RI information



NASJRB Willow Grove PFAS Investigation (cont.)



Timetable for next phase of the RI:

- Additional wells installed May-June 2017 and field work in July 2017.
- Draft SAP Addendums for further ecological evaluation and migration from soil to groundwater by the end of July 2017. Field work in August/September 2017.
- Draft RI Report by the end of 2017, final in early 2018
- Feasibility Study in 2018



NASJRB Willow Grove PFAS Stormwater Evaluation



Evaluating discharge of PFOS and PFOA from outfalls.

- Outfalls along the north end of the base, 8a through 8e, that discharge to Park Creek are being sealed.
- After outfalls 8a through 8e are closed, the storm water will be retained in the Northern Ponding Area before evaporating or going to groundwater.
- Two artesian (free-flowing) wells were capped to prevent PFAS-impacted groundwater discharge to surface water.
- The stormwater system will be evaluated in Summer 2017 to determine if PFAS-impacted groundwater could be infiltrating into the storm sewers, which discharge to surface water.



PFAS Information and Resources



Department of the Navy (DON) Perfluorinated Compounds (PFC) / Perfluoroalkyl Substances (PFAS) website

<http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx#>

NAVFAC BRAC PMO Websites (includes links to environmental information and the administrative record):

- http://bracpmo.navy.mil/brac_bases/northeast/reserve_base_willow_grove/documents.html
- http://bracpmo.navy.mil/brac_bases/northeast/former_warfare_center_warminster/documents.html



PFAS Information and Resources (continued)



Environmental Protection Agency

<https://www.epa.gov/pfas>

Agency for Toxic Substances and Disease Registry

<https://www.atsdr.cdc.gov/pfc/index.html>

Pennsylvania Department of Environmental Protection

http://www.dep.pa.gov/Citizens/My-Water/drinking_water/Pages/default.aspx

Horsham Township

<http://www.Horsham.org/default.aspx>

Warminster Township

<http://warminstertownship.org/information-on-perfluorinated-chemicals-pfoa-and-pfos/>



Questions



- Questions or comments from HLRA?