



RAB Agenda - NAVY



- Welcome Community and RAB Members
- Environmental Restoration Status
- Five Year Review
- Perfluorinated Compounds (PFC)/Perfluoroalkyl Substances (PFAS) Status
- Questions
- Closing Remarks



What is a RAB?

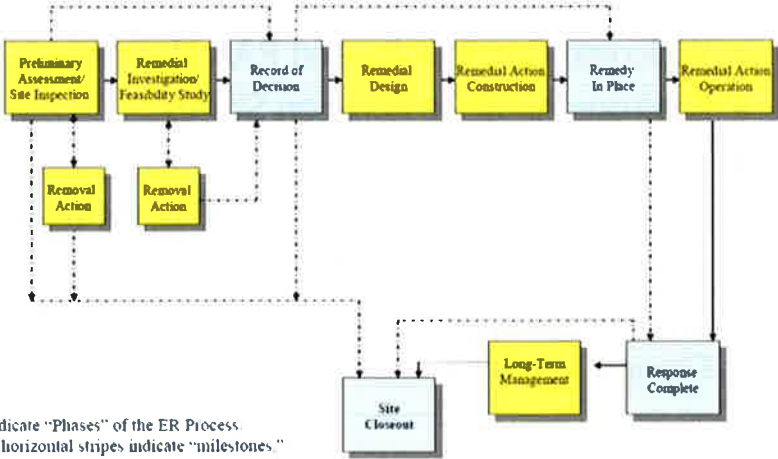


- A Restoration Advisory Board (RAB) is a stakeholder group that meets on a regular basis to discuss environmental restoration at a specific property that is either currently or was formerly owned by DoD, but where DoD oversees the environmental restoration process.
- RABs enable people interested in the environmental cleanup at a specific installation to exchange information with representatives of regulatory agencies, the installation, and the community.
- RABs may only address issues associated with environmental restoration activities.
- Health related issues are not addressed by the RAB. The Pennsylvania Department of Health will be available after the Navy and Air National Guard Environmental Restoration presentations.

Source: DoD RAB Rule Handbook



Environmental Restoration Program





NASJRB Willow Grove



Environmental Restoration Status

5

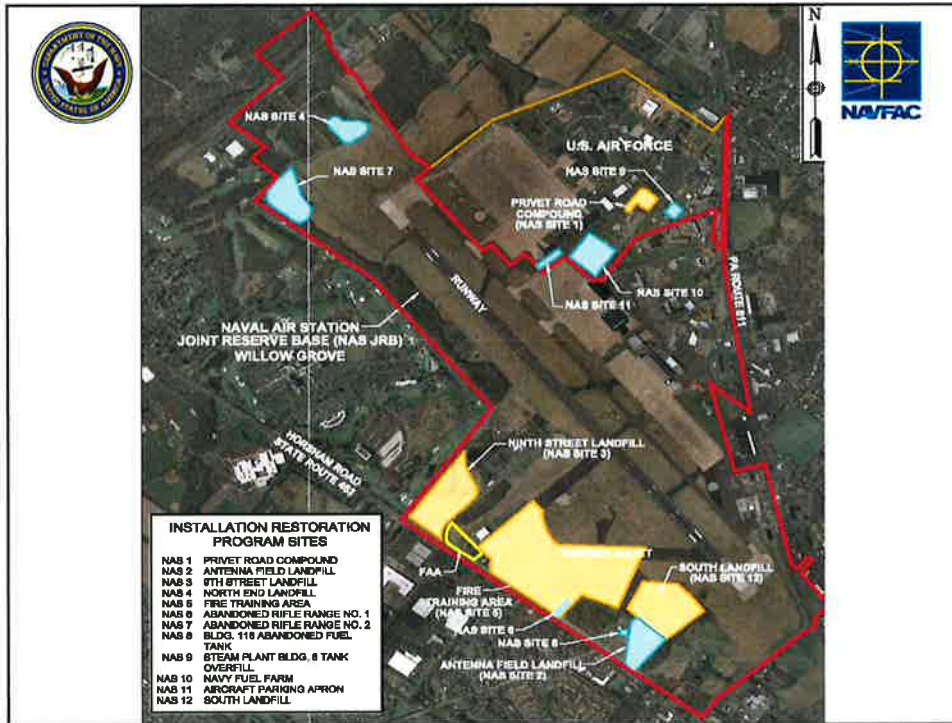


NASJRB Willow Grove Environmental Restoration Sites



Site	Name	Operable Unit (OU)	Status
2	Antenna Field Landfill	Soil - OU 5 Groundwater - OU 9	No Action ROD Signed June 17, 2010
3	Ninth Street Landfill	Soil - OU 6 Groundwater - OU 10	RI Completed Oct. 2011/FS Pending
4	North End Landfill	...	Consensus Agreement for No Action Jan. 2009
5	Fire Training Area	Soil - OU 4 Groundwater - OU 2	Soil (OU 4) NFA ROD signed Sept. 2007 Groundwater (OU 2) ROD signed Sept. 2012 Groundwater (OU 2) RACR Signed Sept. 2014 Groundwater (OU 2) Final OPS and OM&M Plan May 2015
6	Abandoned Rifle Range No. 1	...	Consensus Agreement for No Action Dec. 2007
7	Abandoned Rifle Range No. 2	...	Consensus Agreement for No Action Aug. 2008
8	Building 118 Abandoned Fuel Tank	...	NFA Agreement Oct. 2006
SSA 11	Aircraft Parking Apron	...	Eliminated From Consideration
12	South Landfill	OU 11	Final RI Feb. 2014, FS to follow
PFCs/PFAS	Perfluorinated Compounds/Per- and Polyfluoroalkyl substances	OU 12	TCRA Sept. 2015, Final PA/SI Mar. 2016, RI in progress.

6



Site 3 and Site 12 Landfills

- Both sites are former landfills used by the Base Public Works Dept.
- Remedial Investigations showed elevated levels of metals and PAHs in surface and subsurface soils
- Site 3 groundwater showed low levels of PCE
- Feasibility Studies evaluated remedial alternatives.
- EPA/PADEP have reviewed drafts of both studies. Navy is preparing responses and revising the documents.

8



Site 5 – Fire Training Area Groundwater



Site 5 Groundwater Remedial Action



- Anaerobic bioremediation system continues to operate
- Annual performance monitoring is being conducted in accordance with approved Operation, Maintenance, and Monitoring Plan
 - 2018 sampling completed May 18, 2018
- Quarterly monitoring of anaerobic conditions conducted – last round completed with annual sampling in May 2018
- Additional injections of amendments will be conducted based on monitoring results
- Results continue to show good conditions for biodegradation of volatile organic compounds (VOCs) and decreasing trends of VOCs



FIVE YEAR REVIEW



- The Second Five Year Review for Former NAS JRB Willow Grove is being prepared for completion by September 2018.
- The Five Year Review process is required under Comprehensive Environmental Response, Compensation and Liability Act (also known as Superfund) for actions at sites where contaminants remain above levels that allow for unlimited use and unrestricted exposure.
- The purpose is to ensure that implemented remedies are effectively protecting public health and the environment.



FIVE YEAR REVIEW (continued)



- The Navy and Air National Guard are assessing site conditions and conducting interviews:
 - Site 1, Privet Road Compound (Air National Guard)
 - Site 5, Fire Fighting Training Area (Navy)
- A public notice was published in "The Intelligencer" on November 22, 2017
- Public participation was encouraged and interviews with interested community members have been conducted
- A draft report will be issued for review in June



NASJRB Willow Grove



Perfluorinated Compounds (PFC) Perfluoroalkyl Substances (PFAS) Status

13



PFOA / PFOS Background



- In mid-2014, PFCs known as Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) were found in public drinking water wells near NASJRB Willow Grove through an EPA program known as the Unregulated Contaminant Monitoring Rule (UCMR).
- The health advisory levels at that time were 0.4 micrograms per liter ($\mu\text{g/L}$), or 400 parts-per trillion (ppt), for PFOA and 0.2 $\mu\text{g/L}$, or 200 ppt, for PFOS.
- PFOA/PFOS are man-made chemicals found in fire-fighting solutions known as aqueous film-forming foam (AFFF), which were used at NASJRB Willow Grove.
- In the summer of 2014, the Navy began sampling for PFOA/PFOS in private drinking water wells and worked with Horsham Water and Sewer Authority (HWSA) on the municipal drinking water wells.

14



PFOA / PFOS Background



- Bottled drinking water is provided for those above the PFOA/PFOS health advisory levels, due to Navy sources of contamination, until connections to municipal water can be made.
- In May 2016, the Environmental Protection Agency established a lifetime Health Advisory (HA) level of 70 parts-per-trillion (0.07 µg/L) for combined PFOA and PFOS.
- The Navy's priority continues to be eliminating exposure to PFOA/PFOS above health advisory levels in drinking water.
- Any health concerns should be addressed with your health professional. Weblinks to health information is provided at the end of this presentation.

15



Private Drinking Water Well Sampling



- From 2014 – mid 2017, the Navy requested support from the EPA to sample nearby private drinking water wells for PFOA and PFOS.
- Private drinking water well sampling for PFOA/PFOS and provision of bottled drinking water is now being 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@tetrattech.com**
 - **Phone: (610) 382-1170**

16

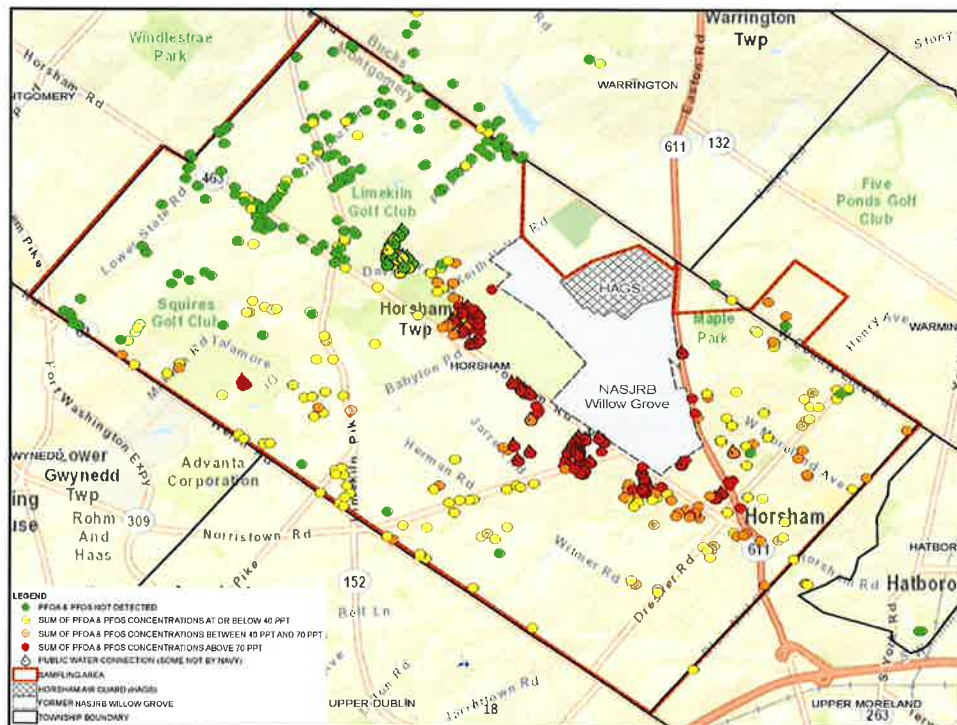


Summary of PFOA/PFOS Actions



- Private drinking water wells sampled for PFOA/PFOS near NASJRB Willow Grove:
 - Private wells sampled: ~ 500
 - Private wells above lifetime HA (>70 ppt): 96
 - Private wells remaining to be connected: 14
 - Private wells below HA/monitored (>40 ppt): 68
- The Navy has funded filtration systems at five Horsham Water and Sewer Authority (HWSA) public wells (#10, 17, 21, 26, and 40) which are above the HA. All are removing PFOA/PFOS above the HA and back to drinking water service.
- The Navy has provided funds to HWSA for filtration system costs and drinking water connections above the HA. The total funding is over \$16 million.

17





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.
- Draft RI Data Report submitted November 2016
 - Identified data gaps for further investigation
 - Additional field investigation performed in 2017
 - Source control actions are being developed from RI information

19



PFAS Investigation (cont.)



Additional Fieldwork Completed in 2017

- 18 Additional Deep Wells installed in Summer 2017.
- Sampling of new and existing wells (78 total) completed in August 2017
- Additional surface water and sediment sampling completed in August 2017
- Additional soil sampling at several locations

A Phase I RI Report will be issued in 2018

20



PFAS Stormwater Evaluation



Outfalls/Storm Sewers

- Outfall sampling conducted in August 2017 showed PFOA/PFOS concentrations in northern outfalls to Park Creek and Pennypack Creek were significantly lower after a rain event.
- Outfalls along the northern end of the base that discharge to Park Creek have been closed. The retention basin has been modified to hold additional storm water. Additional actions are being evaluated.

22



PFAS Stormwater Evaluation



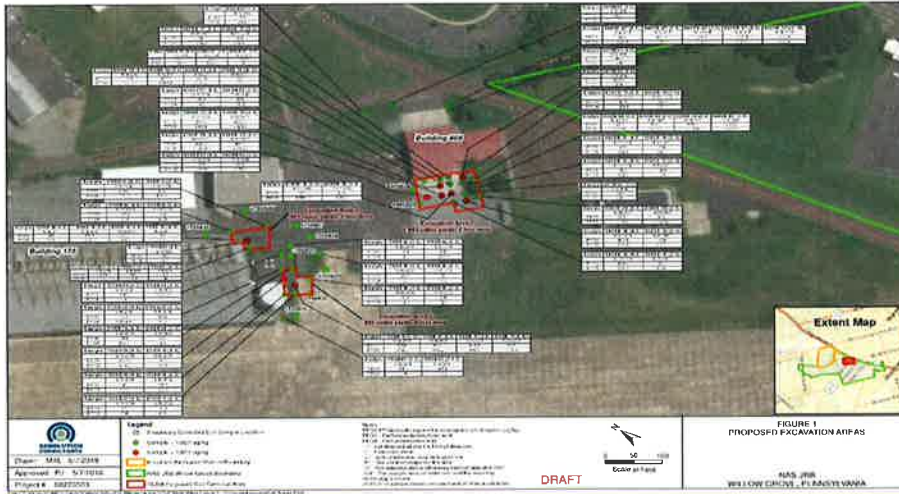
Outfalls/Storm Sewers (continued)

- Stormwater system being evaluated to locate portions where contaminated groundwater may infiltrate and discharge to local surface water. Over two miles of storm sewer lines reviewed.
- A survey of the systems identified several storm sewer lines for remote TV inspections, planned for 2018.
- A report with recommendations for possible storm sewer rehabilitation options and inlet closures planned by mid-2018.

23



PFAS Actions



A removal action to excavate soils with high levels of PFAS will be performed this summer. The time critical removal action memorandum will be available in the administrative record.



PFAS Actions (continued)



Phase II Remedial Investigation:

- Will initiate later in 2018
- Focused on source areas identified in phase I.
 - Aircraft maintenance facilities
 - Former fire training area
- The investigation includes, but not limited to:
 - Additional monitoring wells and soil sampling in source areas
 - Evaluation of groundwater extraction and treatment systems
 - Periodic surface water monitoring



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

A subscription service is available on these websites to receive e-mail notification of new information.



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/>



NAS JRB Willow Grove RAB Meeting



- Questions or comments from the RAB?
- Community questions or comments?
- Next Meetings
 - September 12, 2018 @ 6:00 p.m.
 - December 12, 2018 @ 2:00 p.m.
- Closing Navy Remarks