

Subject Barnes Air National Guard Base (ANGB) Restoration Advisory Board (RAB) Training #3
Prepared by Jacobs
Location WebEx Meeting
Date/Time 22 September 2021/1500

RAB Members

Col David Halasikun, Base Co-Chair
Kathleen Hillman, Community Co-Chair
Eric Oulette, Community Co-Chair
Chris Clark
Nabil Hannoush
Kristen Mello
Rachael Morin
Kelly Pease
John Velis

Additional Meeting Participants

Bill Myer, National Guard Bureau (NGB)
John Richardson, 104th Fighter Wing (104 FW)
Environmental Manager (EM)
Lt Col Chris Ruscio, 104 FW Staff Judge Advocate
Tom Barzyk, BB&E
Amy Brand, Jacobs
Johannah Phelan, Jacobs

The purpose of this meeting was to review the comments on the RAB Operating Procedures and the technical presentation from the second RAB training meeting on 17 August 2021, allowing time for discussion and questions on each slide as needed. A copy of the presentation is attached. The agenda for the meeting was as follows:

- Introductions
- RAB Business Follow-up
 - Review RAB Operating Procedures
 - Approve draft meeting summary
- Technical Training for RAB Members
 - What is the Environmental Restoration Program?
 - Overview of the Investigation and Cleanup Process
 - What are Per- and Polyfluoroalkyl Substances (PFAS)?
 - Next Steps
- Questions and Comments

Introduction

1. The training session began at 1500 with the RAB facilitator, Amy Brand, providing a brief welcome and Bill Myer, NGB Environmental Restoration Program Manager, introducing himself to the RAB members. Amy then reviewed the virtual meeting logistics, emphasizing differences from the previous RAB training meeting: (1) RAB members would be able to take themselves off mute to speak rather than raising hands, and (2) the chat box would be used only as needed, with questions and comments being made aloud.

RAB Business Follow-Up

1. The combined meeting summary from training sessions #1 and #2 was approved with no changes.
2. Comments on the RAB Operating Procedures were received from Kristen Mello.
 - a. The team discussed having RAB materials posted to the 104 FW website for public availability. The meeting summaries will be posted once approved by the RAB members. The summaries will also be posted to the Air Force Administrative Record (<https://ar.afcec-cloud.af.mil/Search.aspx>).
 - b. Public notices for RAB meetings will be advertised in a local newspaper and on the newspaper's website. RAB members are also encouraged to share the notice on social media sites.

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- c. The RAB agreed that a statement should be added to the Operating Procedures indicating that establishment of the RAB is compliant with the Massachusetts Department of Environmental Protection (MassDEP) Contingency Plan. The Barnes ANGB Community Involvement Plan (CIP) and the RAB cover the requirements for the Public Involvement Plan (PIP). The Operating Procedures are specific to the RAB and are not intended for implementing the CIP or PIP.
- d. The meeting participants discussed when and how it is appropriate to remove disruptive meeting participants. Meeting participants that are disruptive and clearly not committed to advancing the purpose of the RAB may be removed. The meeting platform will allow RAB members the ability to chat in confidence and determine if a meeting participant should be removed. The intent of allowing removal of disruptive participants is not to inhibit debate but to prevent malicious disruption or inappropriate behavior.
- e. Amy Brand will provide a copy of the RAB Operating Procedures with proposed revisions in redline markup. Once the revisions are approved, Amy will provide a PDF of the updated Operating Procedures for members to print and sign. Once all signatures are received, a PDF of the final Operating Procedures will be sent to the members.

Technical Training for RAB Members

1. John Richardson presented the technical presentation from training meeting #2 and provided time after each slide for questions and comments. The following comments capture the discussion points during the presentation review.
 - a. Chris Clark asked if the Base is still actively using PFAS and how the Base distinguishes between legacy and recent PFAS contamination. John Richardson responded that the Base does not discharge any PFAS. He indicated that there was a discharge in April 2021, but it was below the state-required reporting level. A PFAS discharge equal to or greater than 1 pound (diluted 3%) must be reported to the MassDEP.
 - b. Foam is the preferred method to extinguish fuel fires since water sinks below the fuel, allowing the fire to continue burning. Firefighters will use water to push fire away. However, when it comes to saving lives during firefighting, foam is used. The Base provided the example of the Boeing B-17 Flying Fortress crash at Bradley International Airport in 2019.
 - c. ANG indicated that the military uses aqueous film-forming foam (AFFF) with reduced PFAS; it is not PFAS free but it contains a six hydrocarbon chain instead of an eight hydrocarbon chain.
 - d. Chris Clark indicated that the six hydrocarbon chain has a longer biological half-life than perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). The half-life for the six hydrocarbon chain is about 5 years. Chris provided the following reference:
 - i. Annunziato K.M., J. Doherty, J. Lee, J.M. Clark, W. Liang, C.W. Clark, M. Nguyen, M.A. Roy, A.R. Timme-Laragy. 2020. Chemical Characterization of a Legacy Aqueous Film-Forming Foam Sample and Developmental Toxicity in Zebrafish (*Danio rerio*). *Environ Health Perspect.* Sep;128(9):97006. (<https://pubmed.ncbi.nlm.nih.gov/32966100/>).
 - e. Kristen Mello indicated that there are PFAS-free foams that the Air Force could use but the MIL SPEC (military specifications) would need to be changed by the Department of Defense (DoD) to be able to use them.
 - f. Some Base facilities' fire suppression systems use High Expansion Foam (HEF). A RAB member asked what company manufactured the HEF; Mr. Richardson replied that it was CHEMGUARD. No foam of any type is used at Barnes ANGB in fire testing or training.
 - g. Kristen Mello asked if DoD has adopted the four additional PFAS compounds that Massachusetts has added. Lt. Col. Chris Ruscio indicated that these standards have been provided to the DoD for approval and they are hopeful that the DoD will accept the standards. Applicable or relevant and appropriate requirements (ARARs) and standards are an outcome of

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the remedial investigation (RI). To move forward with the RI, funding needs to be provided to Barnes ANGB. The U.S. Congress decides on the budget and provides funding to the DoD. The DoD allocates the funding to the military branches and ultimately to Barnes ANGB.

- h. Kristen Mello provided the names of the surface water bodies on Slide 20.
- i. Kristen Mello requested clarification for the RAB members regarding the action values on Slide 21. The action values are different for different media (soil, groundwater, etc.). There are two soil standards, three groundwater standards, and no established standards for surface water or sediment. The Expanded Site Inspection (ESI) was completed prior to the promulgated standards. The Air Force developed standards because the U.S. Environmental Protection Agency (EPA) had not established standards at that time. Samples collected during the ESI were analyzed for 24 PFAS compounds.
- j. John Richardson reviewed the RI process and indicated it can be an iterative approach. The data collected should be sufficient to understand the extent of the area that requires cleanup.
- k. Chris Clark reminded the meeting participants that even though MassDEP established maximum contaminant levels for six PFAS compounds, there are thousands of conjugant compounds that can impact toxicology.
- l. The Technical Assistance for Public Participation (TAPP) is a grant program through which RAB members can apply for funds to hire a technical advisor to assist them in understanding the technical aspects of the ESI, RI, or any part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. The Base must be in the Defense Environmental Restoration Program (DERP) for the RAB to qualify for TAPP funding.
- m. Bill Myer indicated that ANG has applied for DERP eligibility and anticipates being part of DERP in the first quarter of the new fiscal year.
- n. Kristen Mello asked if there is anything the residents can do to help ensure Barnes ANGB is slated for DERP funding. It was indicated that the Secretary of the Air Force may be responsive to inquiries from Congressional representatives. Kristen concluded that contacting their federal congressional representatives was potentially an influential measure that community members could take.
- o. It was recommended that an acronym list would be helpful to the RAB members.
- p. MassDEP has requested that the DoD accept the maximum contaminant levels for six PFAS. Bill Myer elaborated on the process used by the DoD to develop ARARs and noted that accepting state PFAS maximum contaminant levels sets a precedence, so there is great scrutiny that goes into their acceptance and the state regulatory agencies are part of the discussion.
- q. Kristen Mello asked who the ultimate decision makers were for acceptance of maximum contaminant levels by the DoD. The decision makers include Deputy Assistant Secretary of Defense Richard Kidd, who is a member of the Senior Executive Service; SEC Operations reports to the Office of the Secretary of Defense.
- r. Kristen Mello asked about PFAS concentration ranges in the ESI data. John Richardson indicated he would get back to her with an answer.
- s. Saadi Motamedi from MassDEP may not be able to participate in the RAB because of DERP funding. Col Halasikun will reach out to him and he encouraged Kristen to reach out, also.
- t. Bill Myer clarified that there is a step between the ESI and starting the RI at Barnes ANGB. ANG has completed a relative risk site evaluation (RRSE). This is a formula the Air Force uses to score the risk of each site to help sequence funding priorities and make sure that high risk sites receive funding first. Barnes ANGB is competing with hundreds of ANG and active Air Force installations for funding. The RRSE is sent out for a 30-day public comment period. The RRSE

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for Barnes ANGB has been drafted but has not gone out for public comment yet. This is how each Base competes for funding from the Air Force. The RRSE and DERP funding are the two key pieces for moving into the RI stage at Barnes ANGB.

- u. Kelly Pease clarified that once Barnes ANGB is eligible for DERP funding, then the RRSE will be reviewed to determine what areas are at risk. Barnes ANGB has a relatively high risk, so there is a good chance of receiving funding this year, and if not in 2021, then likely in 2022.
2. As a reminder to the RAB, Eric Oulette and Kathy Hillman are the co-community chairs. Kathy thanked John Richardson for slowing down during the presentation and providing an opportunity for questions and comments.

Action Items

1. Amy Brand will provide a redline markup of the RAB Operating Procedures.
2. Amy Brand will prepare an acronym list before each RAB meeting to be distributed with meeting materials.
3. Col Halasikun will reach out to Saadi Motamedi about participating in the RAB.



**Barnes Air National Guard (ANG) Base
Restoration Advisory Board
Training Meeting #3
September 22, 2021**

The meeting will begin soon.



Virtual Meeting Logistics

Amy Brand

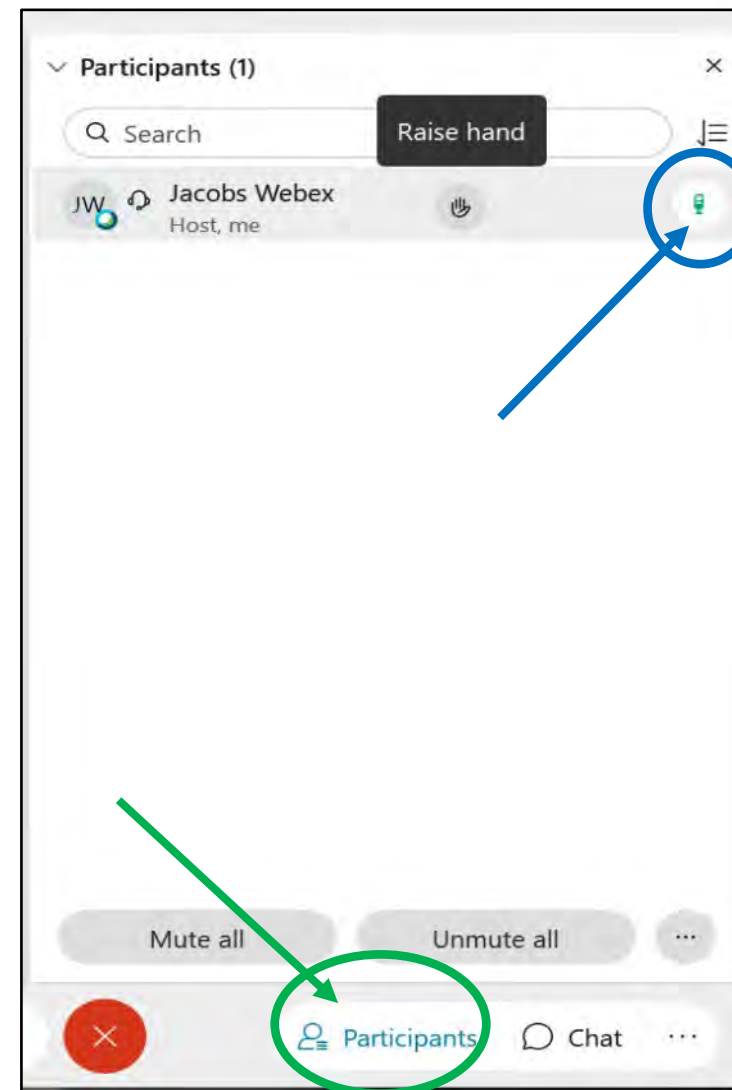
Jacobs

RAB Facilitator



Webex Basics – Computer Access Participants

- Video – Turn off to preserve bandwidth
- Participants – On the lower right, click Participants to open panel
- Mute/Unmute – Please mute yourself when not speaking
- Differences from previous training meetings:
 - Raising hands - We will NOT ask you to raise your hand to be called on to speak. Unmute and identify yourself. Please take turns and avoid speaking over others.
 - Chat box – Please ask your questions or make your comments aloud and use the chat box judiciously and only as needed (e.g., to share a website).
- Trouble? Call or text 404-502-8867





Webex Basics – Telephone Access Participants



- Follow along on emailed slide presentation
- Use your phone mute button when not speaking.
- Unmute and identify yourself when asking a question or making a comment.
- Trouble? Call or text 404-502-8867



Agenda



- Introductions
- RAB Business Follow-Up
 - Review RAB Operating Procedures
 - Approve draft meeting summary
- Environmental Restoration Program
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Process
- Per- and Polyfluoroalkyl Substances (PFAS)
- Next Steps
- Questions and Comments



RAB Business Follow-Up

Amy Brand

Jacobs Engineering Group

RAB Facilitator



Approve Draft Meeting Summary



- Meeting summary sent September 2
- No comments received except compliments
- Any additional comments?
- Approval



Review and Approve Operating Procedures



- Review of comments on draft operating procedures
 - Compliance with Mass Contingency Plan and public involvement requirements (*see proposed change*)
 - Availability of RAB meeting materials
 - Public notice of RAB meetings
 - Removal from a virtual meeting (*see proposed change*)
- Proposed changes to the operating procedures
- Approval
- Signatures



Proposed Changes to Text

- Massachusetts Contingency Plan (page 1, paragraph 2)

2. AUTHORITY

The basis and authority for these operating procedures is the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), particularly Sections 120(a) and 120(f), and 10 *United States Code* (USC) Section 2705, enacted by Section 211 of SARA. The activities of the Barnes ANG RAB follow the guidance of the RAB Rule as defined in *Code of Federal Regulations* (CFR) Title 32, Part 202, and the *Restoration Advisory Board Rule Handbook* issued by Department of Defense (DoD) in March 2007. **Establishment of a RAB is compliant with the public involvement requirements of the Massachusetts Contingency Plan (MCP), 310 Code of Massachusetts Regulations (CMR), 40.0000.**

- Meeting Operation and Discussion (page 6, section 6)

3. RAB meetings held online via video conference or teleconference will remain open to the public. ~~as practicable with security measures in place as needed.~~ **Any participant who is disruptive and clearly not participating in a manner consistent with advancing the business of the RAB may be removed by majority agreement of the RAB members in attendance.**



Technical Training for RAB Members

John Richardson

104th Fighter Wing (104 FW)

Base Environmental Coordinator



What is the Environmental Restoration Program (ERP)?



- Nationwide program to identify possible environmental contamination that may have resulted from **past** practices, accidents, or incidents at Department of Defense (DoD), including ANG, bases.
- Designed to identify and clean up past contamination from chemical and radiological contaminants, hazardous substances, and pollutants to protect human health and safety, and the environment



Overview of the Investigation and Cleanup Process

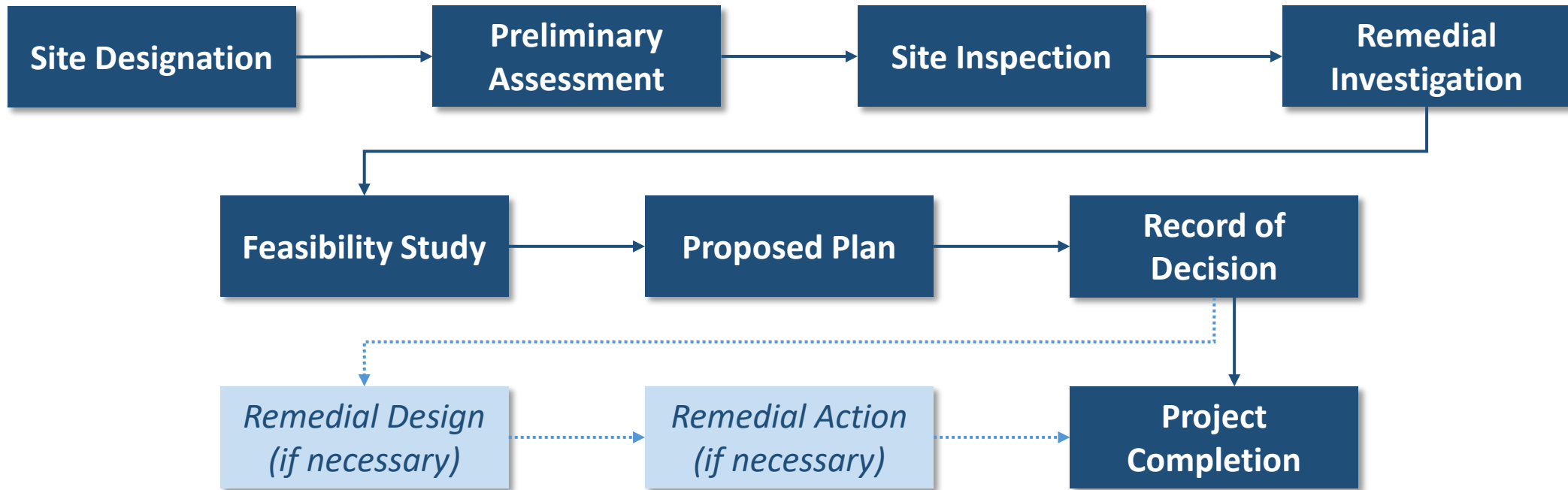


- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) created the legal mechanism for cleaning up abandoned or uncontrolled hazardous waste sites
- DoD adopted CERCLA provisions as a model for environmental cleanups by the military
- CERCLA process includes a series of activities designed to involve the public in the decision-making process
- <https://www.epa.gov/superfund/superfund-cercla-overview>



CERCLA Process

Comprehensive Environmental Response, Compensation, and Liability Act



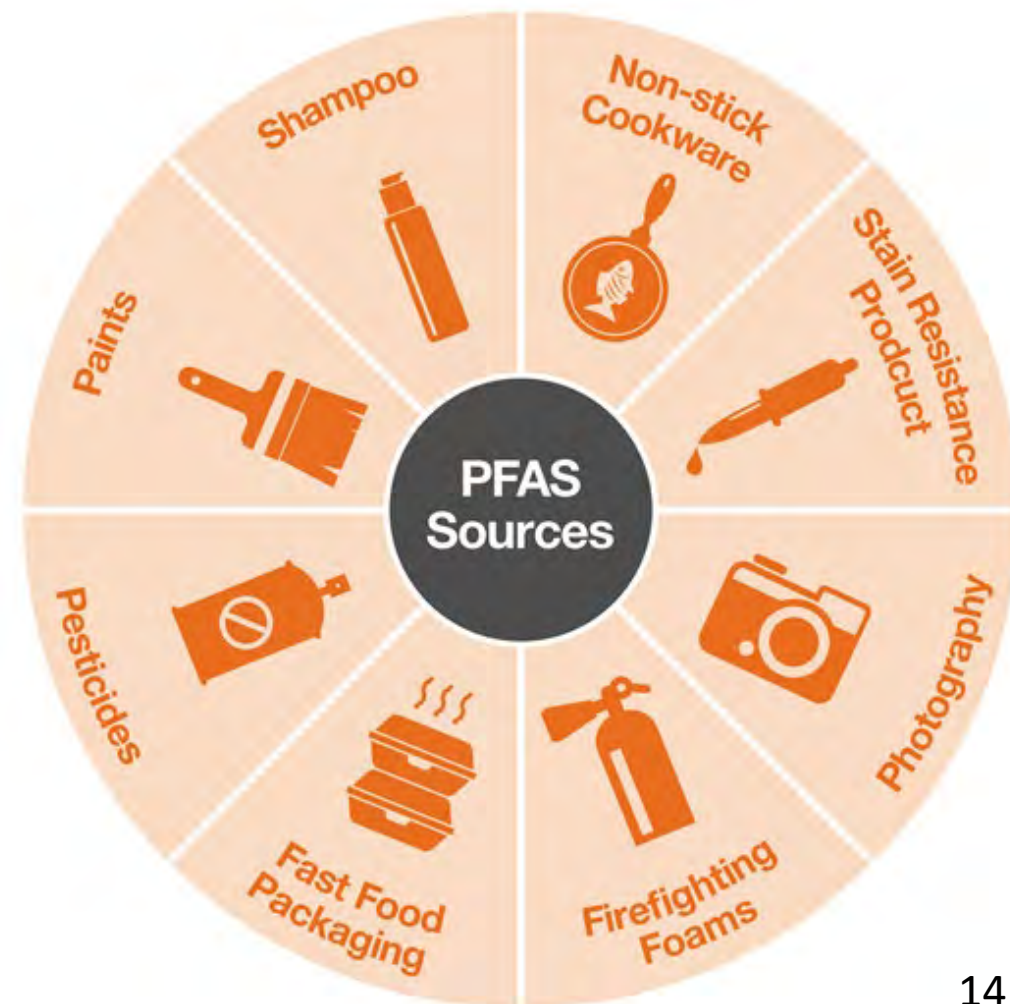
A removal action may be initiated at any time during the process if human health or the environment is in immediate danger.



What are Per- and Polyfluoroalkyl Substances (PFAS)?



- Group of manufactured chemicals
- Used in firefighting foam; used by the military and others since 1970
- In 2016, the U.S. Environmental Protection Agency set a Lifetime Health Advisory for drinking water for two PFAS compounds: perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA)
- PFOS and PFOA are called emerging chemicals of concern due to the evolving regulatory standards

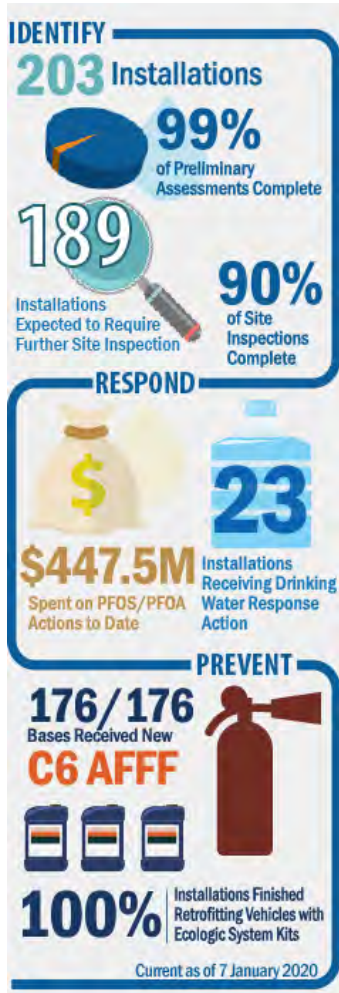




Air Force and ANG Response

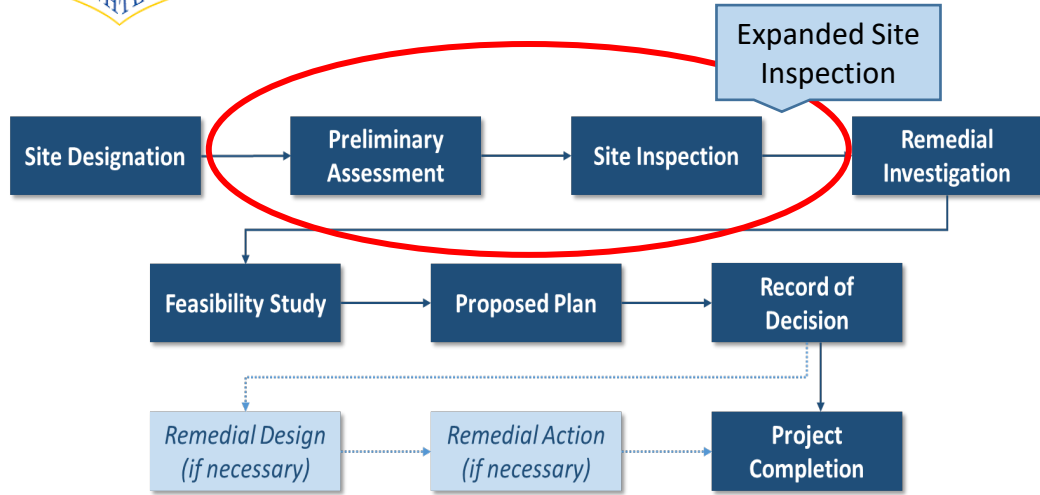
Three-step approach to assess and respond to potential PFOS or PFOA in drinking water:

- 1) IDENTIFY releases and investigate PFOS/PFOA
 - In progress at Barnes ANG Base
- 2) RESPOND to drinking water impacts
 - PFOS/PFOA drinking water impacts been identified at or near Barnes ANG Base; ANG may not be the only contributor; further investigation is required
- 3) PREVENT future releases
 - 104 FW has replaced firefighting foam with a more environmentally responsible (C6) formulation





Completed PFOS/PFOA Investigations



A removal action may be initiated at any time during the process if human health or the environment is in immediate danger.

- Preliminary Assessment

- Completed in 2016
- Identified areas to investigate further

Reviewed historical data and records to identify firefighting foam release locations and potential for drinking water impacts

- Site Inspection (SI)

- Performed in 2018

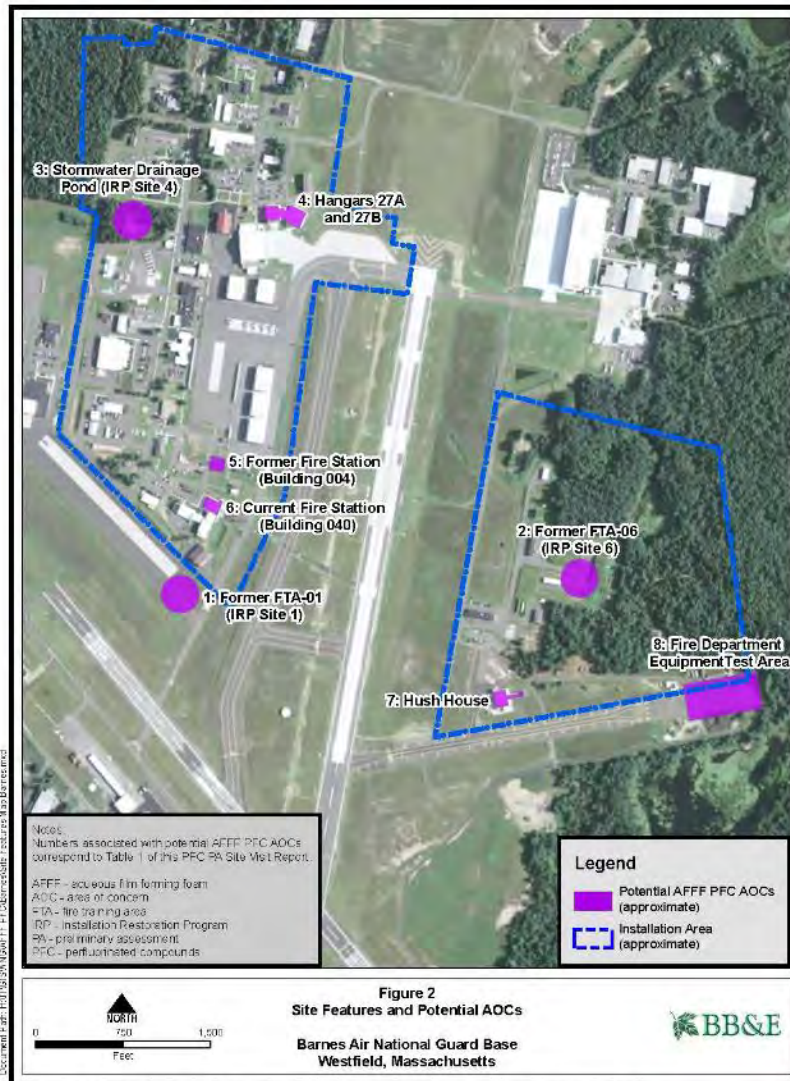
Sampled soil, sediment, groundwater, stormwater, and surface water to determine if PFOS or PFOA are present in the environment

- Expanded Site Inspection (ESI)

- Performed in 2020



Preliminary Assessment



- Eight potential aqueous film-forming foam (AFFF) areas on the Base
 - Conducted personnel interviews
 - Reviewed onsite documentation
 - Toured each potential site
- One area (No. 2) did not require additional inspection
- Seven areas were recommended to proceed to a Site Inspection



Site Inspection



PRL	Screening Criteria Exceedance		Recommendation
	Soil	GW	
PRL 1: Former FTA (IRP Site 1)	Inc.	X	Soil investigation to determine if PFCs exceed screening criteria off-Base. Groundwater (GW) investigation to determine the nature and extent of the confirmed release.
PRL 3: Stormwater Drainage Basin			NFA
PRL 4: Hangars 27A & 27B		X	GW investigation to determine the nature and extent of the confirmed PFC release.
PRL 5: Former Fire Station, Bldg. 004		X	GW investigation to determine the nature and extent of the confirmed PFC release.
PRL 6: Current Fire Station, Bldg. 040		X	GW investigation to determine the nature and extent of the confirmed PFC release.
PRL 7: Hush House		X	GW investigation to determine the nature and extent of the confirmed PFC release.
PRL 8: Fire Department Equipment Test Area	Inc.	Inc.	Soil and GW investigation to determine if PFCs exceed screening criteria off-Base.

- Seven sampling areas
- PFOS/PFOA were identified in the environment, especially in groundwater, within the base boundary
- Results indicated a need for an Expanded Site Inspection outside the base boundary

Notes:

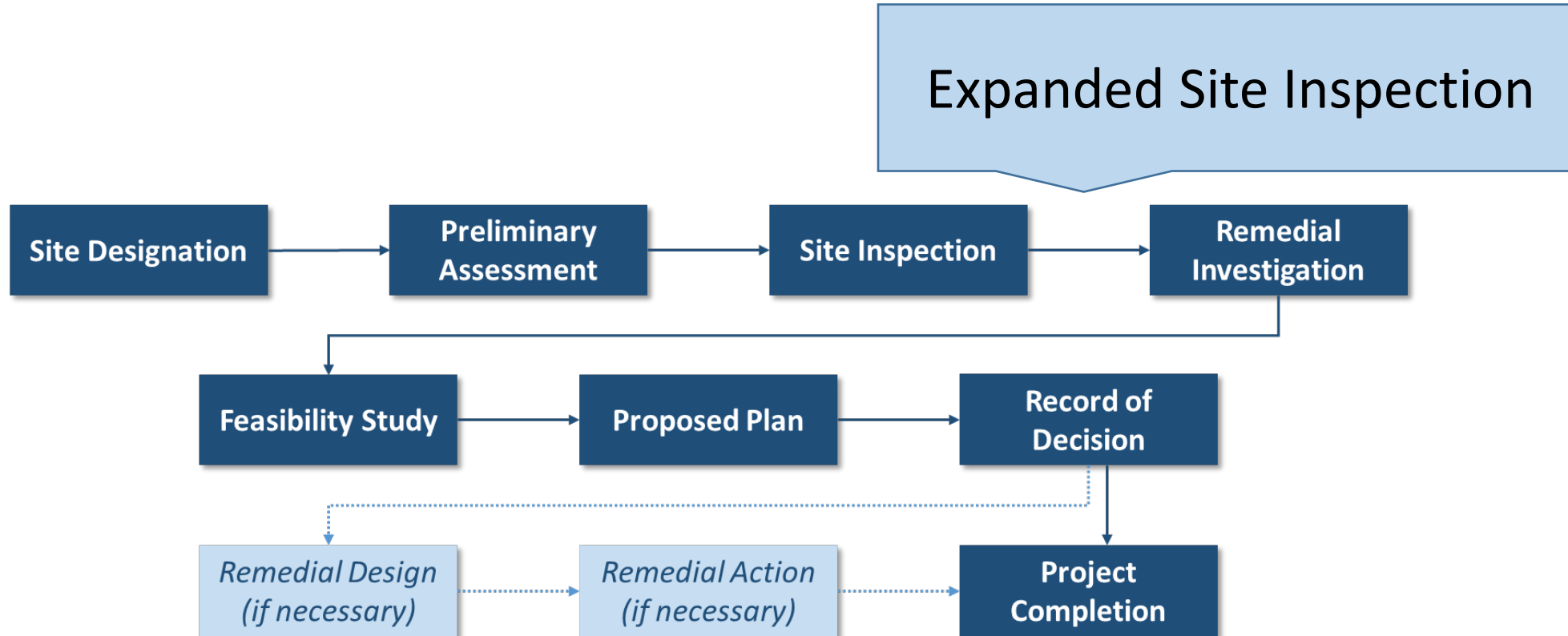
INC – Inconclusive based on results of the SI

X- Screening criteria exceedance

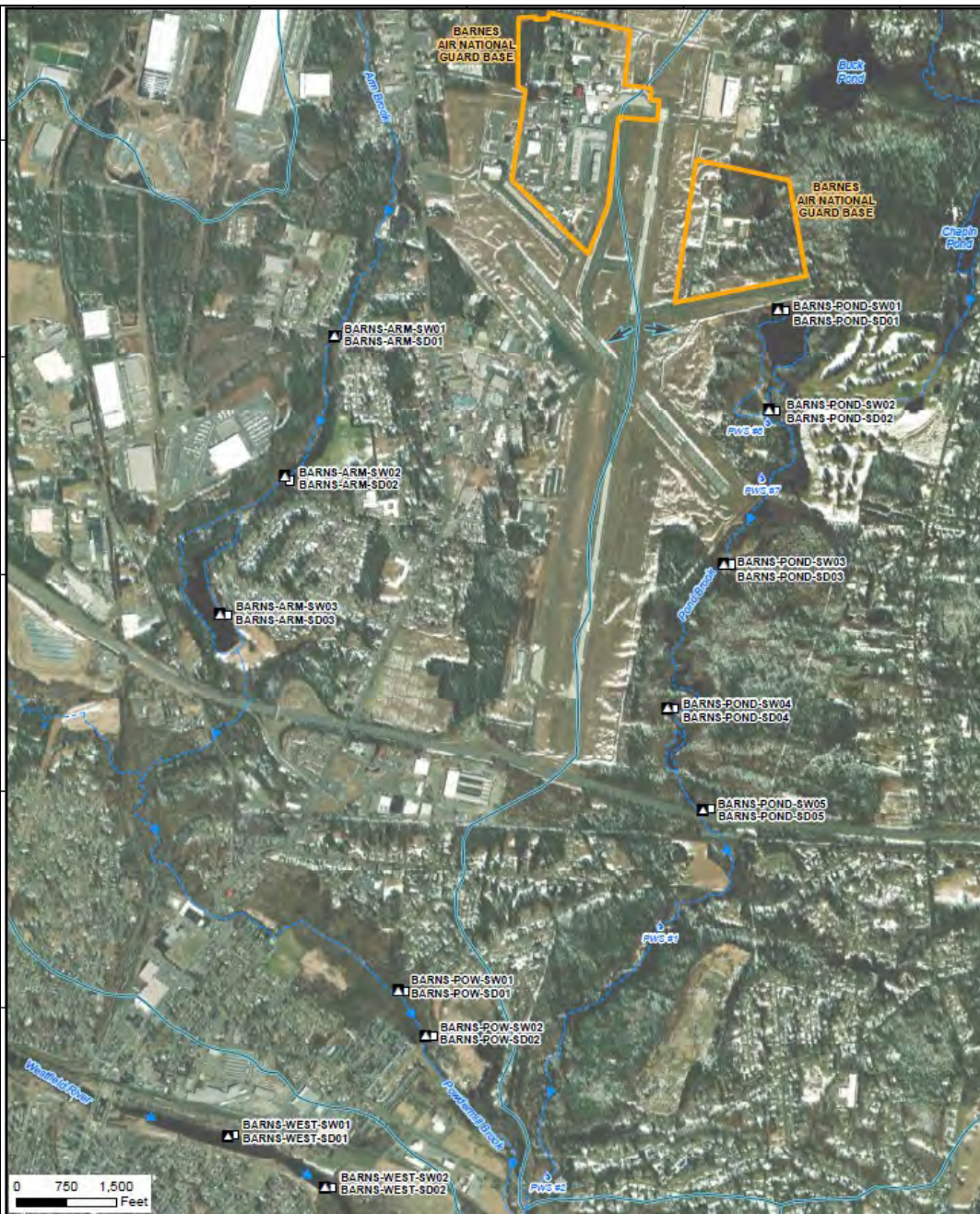


CERCLA Process

Comprehensive Environmental Response, Compensation, and Liability Act



A removal action may be initiated at any time during the process if human health or the environment is in immediate danger.



Expanded Site Inspection – Off-Base

- Received funding to collect additional samples to further investigate the extent of PFOS/PFOA in the environment and determine if there were upgradient and/or downgradient effects off-Base
- Fieldwork conducted from May to November 2019

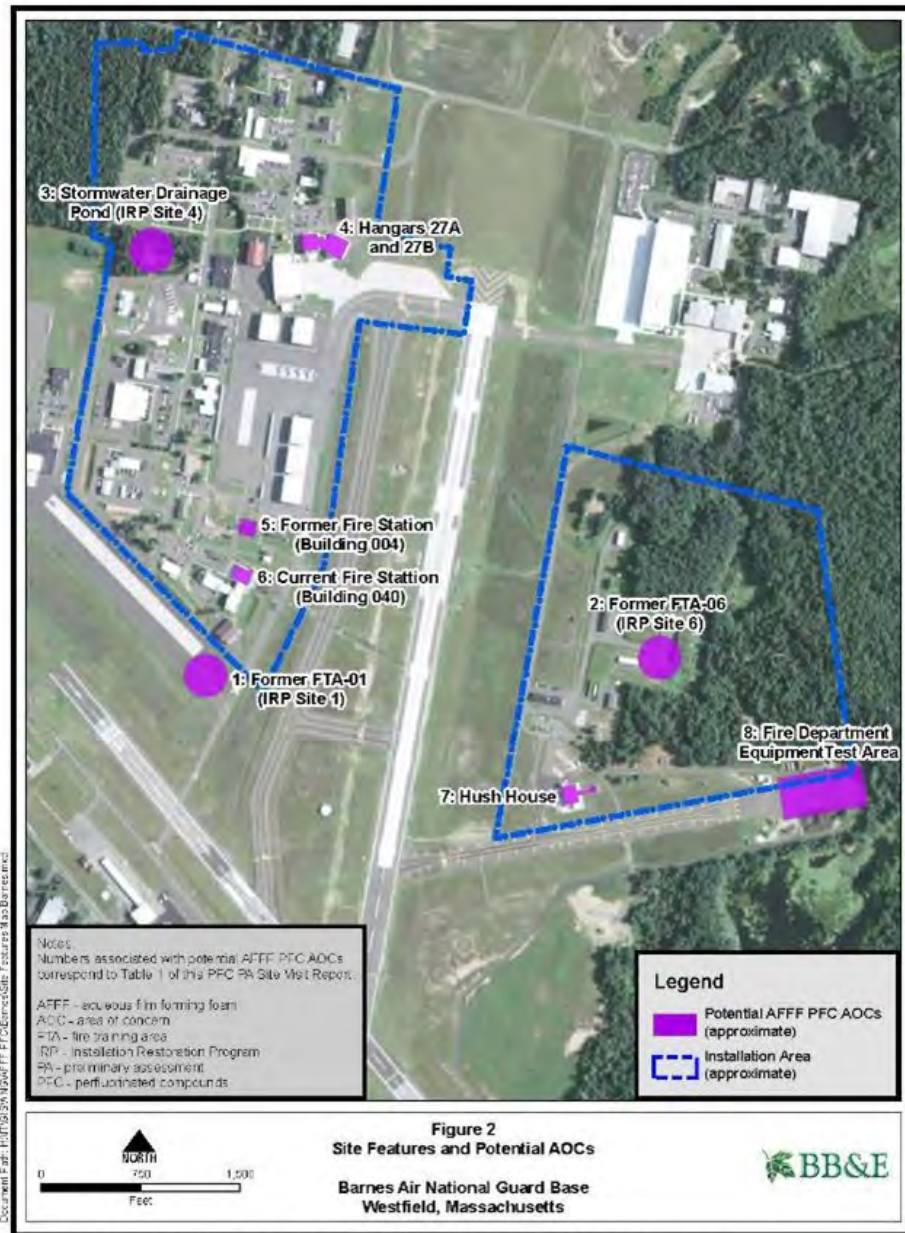


Expanded Site Inspection – Results

Summary of Project Action Level Exceedances

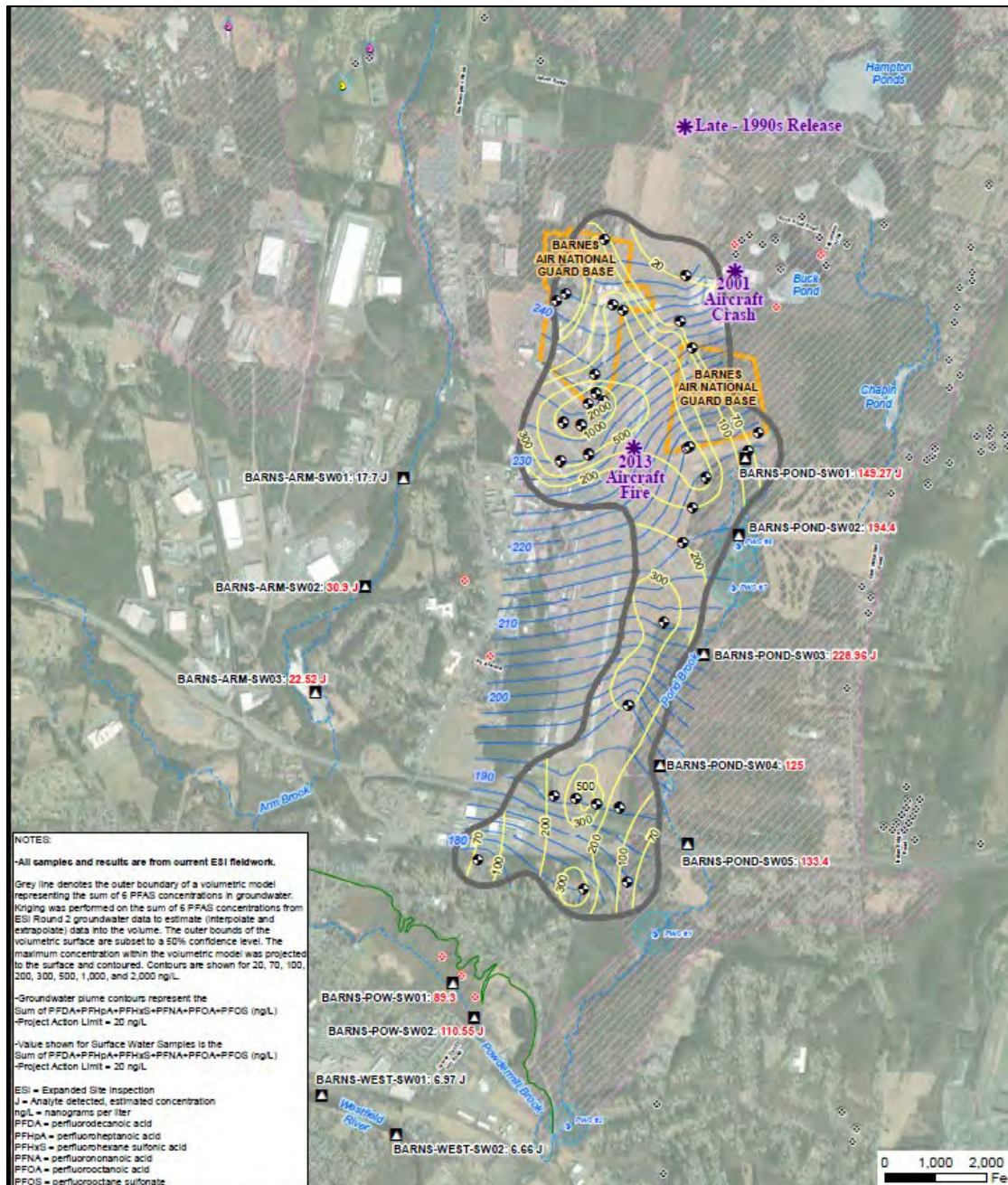
AOC	AOC Name	Project Action Level Exceedance				
		Soil	Groundwater	Surface Water	Sediment	Stormwater
1	Former FTA-01 (IRP Site 1)	Yes	Yes	--	--	No
3	Stormwater Drainage Basin (IRP Site 4)	No	Yes	--	--	--
4	Hangars 27A and 27B	--	Yes	--	--	Yes
5	Former Fire Station (Building 004)	--	Yes	--	--	Yes
6	Current Fire Station (Building 040)	--	Yes	--	--	No
7	Hush House	--	Yes	--	--	Yes
8	Fire Department Equipment Test Area	Yes	Yes	--	--	Yes
Upgradient	Not applicable	--	Yes	--	--	No
Downgradient	Not applicable	--	Yes	Yes	Yes ¹	--

Notes: Conclusions based on results from Site Inspection (Amec Foster Wheeler, 2018) and Expanded Site Inspection
 "--" indicates that samples were not collected in that area
¹ the exceedance occurred only for PFOS in one sample out of 12





Expanded Site Inspection – Off-Base Results



- Analyzed for 24 PFAS compounds in accordance with EPA Method 537
- Two compounds (PFOS and PFOA) are associated with AFFF in fire-fighting foam
- RI will determine nature and extent of PFOS/PFOA migration



MassDEP Protection Drinking Water Imminent Hazard Evaluation



- Massachusetts Department of Environmental Protection (MassDEP) established **Massachusetts Maximum Contaminant Level (MMCL) for PFAS** of 20 parts per trillion (ppt) for the sum of six PFAS compounds:
 - PFOS
 - PFOA
 - Perfluorodecanoic acid (PFDA)
 - Perfluorohexane sulfonic acid (PFHxS)
 - Perfluoroheptanoic acid (PFHpA)
 - Perfluorononanoic acid (PFNA)
- In an October 27, 2020 letter, MassDEP requested that DoD accept MMCL as **applicable or relevant and appropriate requirement (ARAR)**



Off-Base Private Well Sampling



- In response to the PFAS detections, MassDEP has sampled 75 residential drinking water wells for PFAS and is currently maintaining State installed Point of Entry Treatment (POET) systems at eight (8) residences with private wells affected by PFAS concentrations greater than the MMCL of 20 ppt.
 - Ivy Lane
 - Hopkins Road
 - Schumann Drive
 - Lewis Road
 - Buck Pond Road
 - Lower Sandy Hill Road (3)



Next Steps



- MassDEP reviewed the draft ESI Report and submitted comments via letter dated June 22, 2020
- ESI Report completed in October 2020
- Results to date are inconclusive on direct path to Westfield public and private well impact
- Next step is the Remedial Investigation
- 104 FW will continue to collaborate with the MassDEP and the City of Westfield





Questions and Comments



- Unmute yourself.
- Please take turns speaking.
- Introduce yourself at the beginning of your question or comment.



Contact Information



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Massachusetts Department of Environmental Protection

Risk Reduction/Site Discovery

Bureau of Waste Site Cleanup

Section Chief

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Websites for More Information



Environmental Restoration Program at 104th Fighter Wing

- <https://www.104fw.ang.af.mil/About/Environmental/>

104th Fighter Wing Environmental Administrative Record

- <https://ar.afcec-cloud.af.mil/Search.aspx>
- Select ANG radio button, select installation, and press search

MassDEP PFAS Information

- <https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas>

Westfield Water Department PFAS Information

- <https://www.cityofwestfield.org/672/PFCs-Information-Updates>

RAB Rule Handbook and Information on Technical Assistance for Public Participation

- <https://www.denix.osd.mil/rab/home/>

Air Force Response to PFOS and PFOA

- <https://www.afcec.af.mil/WhatWeDo/Environment/Perfluorinated-Compounds/>