

# FINAL Preliminary Assessment Report Fixed Wing Army Aviation Training Site, Bridgeport, West Virginia

Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA)  
Impacted Sites  
ARNG Installations, Nationwide

August 2020

Prepared for:



Army National Guard Bureau  
111 S. George Mason Drive  
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UNCLASSIFIED

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## Acronyms and Abbreviations

°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	Area of Interest
ARNG	Army National Guard
BAA	Benedum Airport Authority
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSM	conceptual site model
DRMO	Defense Reutilization and Marketing Office
EDR™	Environmental Data Resources, Inc.™
FTA	fire training area
FWAATS	Fixed Wing Army Aviation Training Site
gal	gallon
HA	Health Advisory
HAZMAT	hazardous materials
NPDES	National Pollutant Discharge Elimination System
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
ppt	parts per trillion
SI	Site Inspection
UCMR 3	Unregulated Contaminant Monitoring Rule 3
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VSI	visual site inspection
WMS	Waste Management Solutions
WVARNG	West Virginia Army National Guard
WVDEP	West Virginia Department of Environmental Protection
WVGES	West Virginia Geologic and Economic Survey
WWTP	wastewater treatment plant



## Executive Summary

The Army National Guard (ARNG) is performing Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide. A PA for per- and polyfluoroalkyl substances (PFAS)-containing materials was completed for Fixed Wing Army Aviation Training Site (FWAATS; also referred to as the “facility”) in Bridgeport, West Virginia, to assess potential PFAS release areas and exposure pathways to receptors. FWAATS is constructed on a parcel of land leased from the Benedum Airport Authority (BAA). According to the lease document, the terms are for 50 years beginning 12 July 1994.

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)<sup>TM</sup> report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit on 1 October 2019 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current and retired FWAATS personnel, including environmental managers and operations staff, during the site visit;
- Identified Areas of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential PFAS source-pathway-receptor linkages for each AOI.

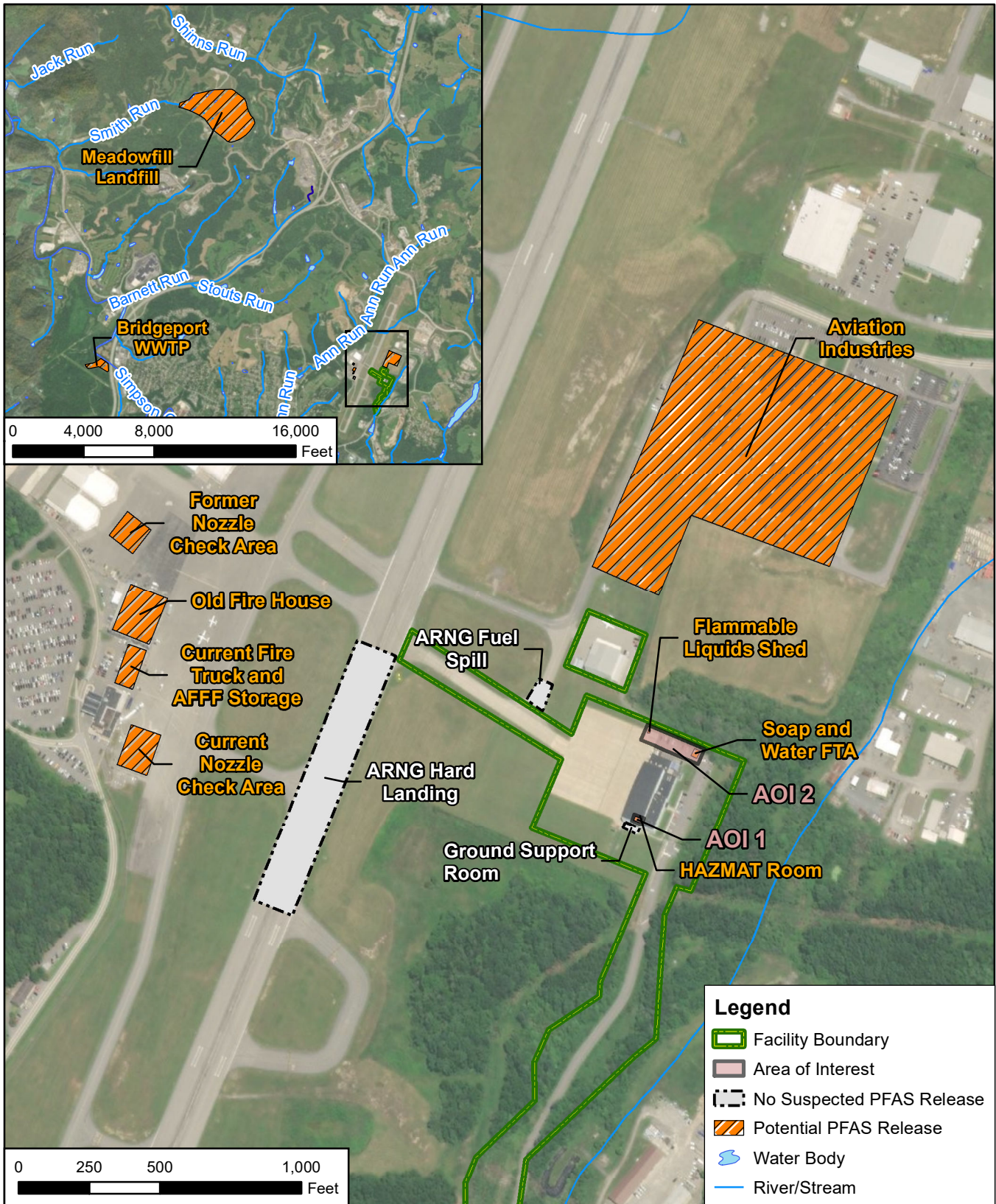
Two AOIs (referred to as “AOI 1” and “AOI 2”) related to potential PFAS release were identified at FWAATS during the PA. AOI 1 and AOI 2 are shown on **Figure ES-1** and described in **Table ES-1** below.


**Table ES-1: AOIs at FWAATS**

Area of Interest	Name	Used by	Potential Release Date
AOI 1	HAZMAT Room	FWAATS Personnel	1996-2019
AOI 2	Flammable Liquids Shed and Soap and Water FTA	FWAATS Personnel	1996-2019

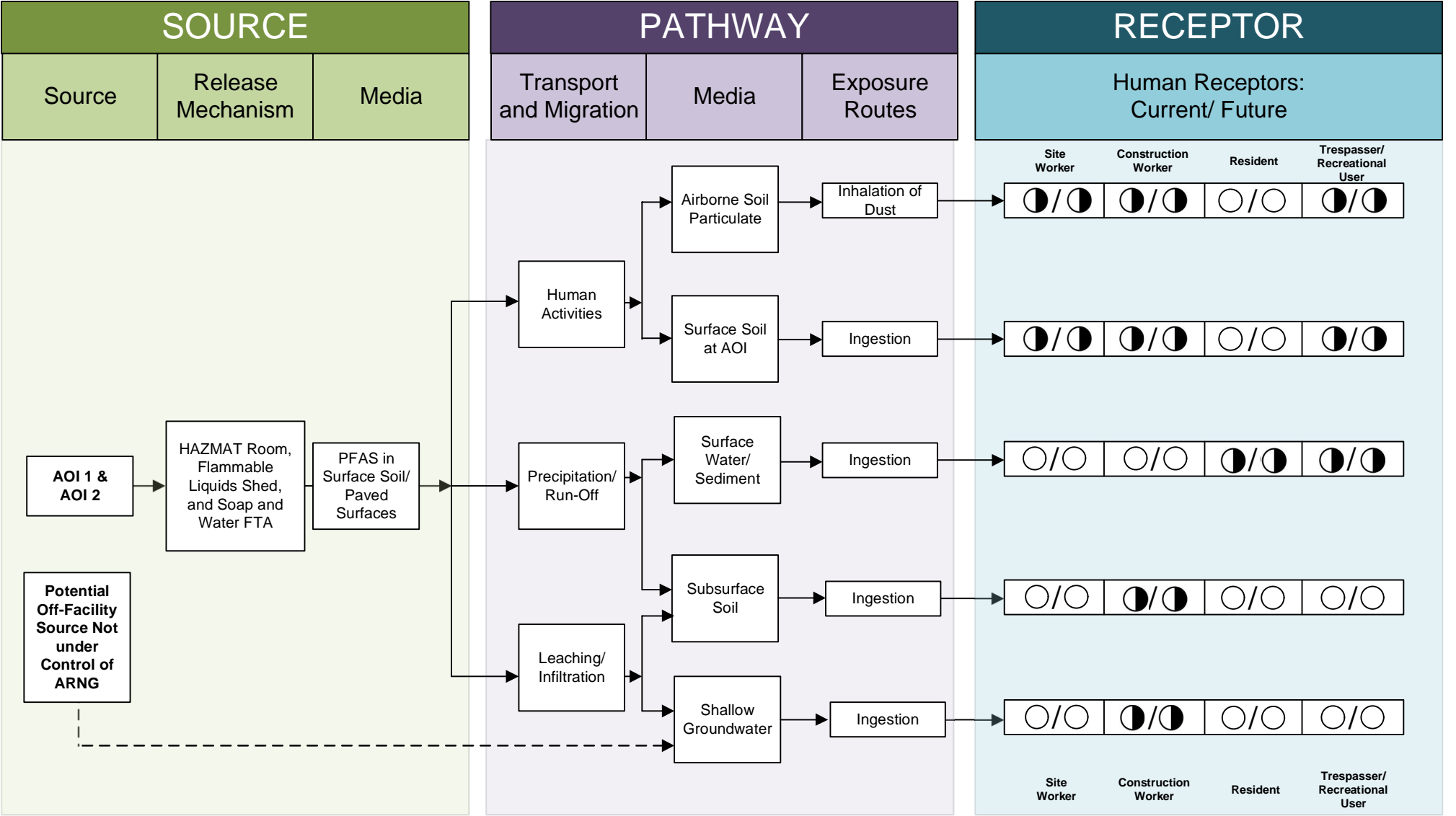
Based on potential PFAS releases at these AOIs, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for the AASF, which presents the potential receptors and media impacted, is shown on **Figure ES-2**. The North Central West Virginia Airport, located west of FWAATS, and aviation industries located immediately north of FWAATS, were identified as potential off-facility, adjacent sources of PFAS.

Based on the US Environmental Protection Agency (USEPA) Unregulated Contaminant Monitoring Rule 3 (UCMR 3) data, no PFAS were detected in a public water system above the USEPA lifetime Health Advisory (HA) within 20 miles of the facility (USEPA, 2017). The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR 3 but might be detected if analyzed today.



CLIENT		ARNG				<div>N</div> 	Summary of Findings	
NOTES Preliminary Assessment for PFAS at Fixed Wing Army Aviation Training Site, WV							<div><div><div>AECOM</div><div>12420 Milestone Center Drive Germantown, MD 20876</div></div><div>Figure ES-1</div></div>	
REVISED	7/7/2020	GIS BY		GC	7/7/2020			
SCALE	1:6,000	CHK BY		MM	7/7/2020			
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM		RG	7/7/2020			

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LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

Notes:  
1. The residential receptor refers to an off-facility receptor.  
2. Human consumption of fish potentially affected by PFAS from the downgradient river is possible.

Figure ES-2  
Preliminary Conceptual Site Model  
FWAATS, West Virginia



# 1. Introduction

## 1.1 Authority and Purpose

The Army National Guard (ARNG) G9 is the lead agency in performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) at Impacted Sites at ARNG Facilities Nationwide*. This work is supported by the United States (US) Army Corps of Engineers (USACE) Baltimore District and their contractor AECOM Technical Services, Inc. (AECOM) under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017.

The ARNG is assessing potential effects on human health related to processes at facilities that used per- and poly-fluoroalkyl substances (PFAS), primarily in the form of aqueous film forming foam (AFFF) released as part of firefighting activities, although other PFAS sources are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of PFAS compounds in the environment varies. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued drinking water lifetime Health Advisories (HAs) for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water (USEPA, 2016a; USEPA, 2016b). The HA is 70 parts per trillion (ppt) for PFOS and PFOA, individually or combined.

This report presents the findings of a PA for PFAS-containing materials at Fixed Wing Army Aviation Training Site (FWAATS; also referred to as the “facility”) in Bridgeport, West Virginia, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; USEPA, 1980), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations [CFR] Part 300; USEPA, 1994), and Army requirements and guidance.

This PA documents potential locations where PFAS may have been released into the environment at FWAATS. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components of AFFF.

## 1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)<sup>TM</sup> Report packages to obtain information relevant to potential PFAS releases, such as drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit on 1 October 2019 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current and retired FWAATS personnel, including environmental managers and operations staff, during the site visit;
- Identified Areas of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential PFAS source-pathway-receptor linkages for each AOI.

## 1.3 Report Organization

This report has been prepared in accordance with the USEPA *Guidance for Performing Preliminary Assessments under CERCLA* (USEPA, 1991). The report sections and descriptions of each are as follows:

- **Section 1 – Introduction:** identifies the project purpose and authority and describes the facility location, environmental setting, and methods used to complete the PA.
- **Section 2 – Fire Training Areas:** describes the fire training areas (FTAs) at the facility identified during the site visit.
- **Section 3 – Non-Fire Training Areas:** describes other locations of potential PFAS releases at the facility identified during the site visit.
- **Section 4 – Emergency Response Areas:** describes areas of potential PFAS release at the facility, specifically in response to emergency situations.
- **Section 5 – Adjacent Sources:** describes sources of potential PFAS release adjacent to the facility that are not under the control of ARNG.
- **Section 6 – Preliminary Conceptual Site Model:** describes the pathways of PFAS transport and receptors for the AOIs and the facility.
- **Section 7 – Conclusions:** summarizes the data findings and presents the conclusions and uncertainties of the PA.
- **Section 8 – References:** provides the references used to develop this document.
- **Appendix A – Data Resources**
- **Appendix B – Preliminary Assessment Documentation**
- **Appendix C – Photographic Log**

## 1.4 Facility Location and Description

FWAATS occupies 6.87 acres in Bridgeport, West Virginia, within Harrison County (**Figure 1-1**). The facility is located approximately 0.3 miles southeast of the North Central West Virginia Airport. Land to the north, south, and east of the facility is primarily forested. To the facility's west is the City of Bridgeport, which is more densely populated with homes and businesses.

FWAATS sits on land leased from the Benedum Airport Authority (BAA), which owns the North Central West Virginia Airport. Terms of the lease are for 50 years beginning 12 July 1994. FWAATS has operated as a military facility since 1996, following the completion of construction. Prior to the facility's construction, the West Virginia ARNG (WVARNG) in Bridgeport operated out of the adjacent airport's former firetruck hangar.

## 1.5 Facility Environmental Setting

FWAATS is located on part of the Western Allegheny Plateau (West Virginia Department of Environmental Protection [WVDEP], 2013). The Western Allegheny Plateau is a section of the Appalachian Plateau, characterized by steep hills with narrow ravines (Herb et al., 1981). The facility is approximately 1,020 feet above mean sea level (US Climate Data, 2019). The land on which FWAATS was constructed was formerly the far end of North Central West Virginia Airport's Runway 13. The facility is located within the Headwaters Simpson Creek Watershed, which is part of the larger West Fork Watershed, which is composed of 73% forested land, 15%

cultivated/planted land, 15% developed land, and 3.6% impervious surface (WVDEP, 2013). The two closest tributaries to the facility are Peddler Run and Simpson Creek, shown on **Figure 1-3**.

### 1.5.1 Geology

The facility is located within Unglaciaded Allegheny Plateau section of the Appalachian Plateau physiographic province (BAA, 2014). On the eastern side of Harrison County, the geology is primarily of the Paleozoic era and Pennsylvanian period (West Virginia Geologic and Economic Survey [WVGES], 2011). The facility is underlain by Pennsylvanian sedimentary units. The youngest and stratigraphically uppermost unit is the Conemaugh Group, which is composed of cyclic sequences of red and gray shale, siltstone, and sandstone with thin limestones and shales. The Conemaugh Group is underlain by the Allegheny Formation, which comprises cyclic sequences of sandstone, siltstone, shale, limestone, and coal (Cardwell et al., 1968). The geology at the facility is shown on **Figure 1-2**.

### 1.5.2 Hydrogeology

The Pennsylvanian-aged Conemaugh Group and Allegheny Formation form the uppermost aquifers underlying the facility. In Harrison County, two wells screened in the Conemaugh Group aquifer had depths of 50 and 86 feet with well yields of 6.7 and 3 gallons per minute, respectively (Kozar and Mathes, 2001). Information on the depth to groundwater at FWAATS was not available at the time of the PA.

Groundwater flow in this region is inferred to follow topography to the northwest, as elevation decreases from east to west, and shallow groundwater likely follows the same path as surface water (**Figure 1-2**). Immediately around the facility, groundwater is inferred to follow topography southwest before joining regional surface water flow to the northwest. The facility is served by the public water supply. Harrison County does not use groundwater for public water supply (WVDEP, 2013). The public water supply for the City of Bridgeport is purchased from the Clarksburg Water Board, which uses surface water from the West Fork River (City of Bridgeport, 2017).

An EDR™ Report conducted a well search for a 1-mile radius surrounding the facility (**Appendix A**). Using additional online resources, such as state and local GIS databases, wells were researched to a 4-mile radius of the facility. Based on the EDR™ Report, there are no private or public potable water wells within 1 mile of the facility (EDR™, 2019). According to the United States Geological Survey (USGS) National Water Information System Mapper, there are 10 inactive USGS monitoring wells within a 4-mile radius of the facility, four to the east and six to the west (USGS, 2020). Additional GIS data for wells located within a 4-mile radius of the facility was unavailable at the city, county, state, and national levels. Therefore, it is possible that additional unidentified public or private wells may be located within 4 miles of the facility.

Sanitary effluent from the facility is to the City of Bridgeport's sanitary sewer system. FWAATS has a National Pollutant Discharge Elimination System (NPDES) permit in place that allows the facility to discharge pollutants to the Bridgeport wastewater treatment plant (WWTP) located 2.6 miles west of the facility. The wastewater approved for acceptance from FWAATS is runoff from engine washing, exterior plane washing, and plane and equipment deicing. Runoff is first treated by an oil-water separator before continuing to the Bridgeport WWTP.

Based on the USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR 3) data, no PFAS were detected in a public water system above the HA within 20 miles of the facility (**Appendix A**). The HA is 70 ppt for PFOS and PFOA, individually or combined. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR 3 but might be detected if analyzed today.

### 1.5.3 Hydrology

FWAATS resides in the West Fork Watershed (WVDEP, 2013). The West Fork Watershed and the area surrounding the facility, including parts of West Virginia, Maryland, and Pennsylvania, are part of the larger Monongahela River basin (Herb et al., 1981). Surface water from the facility drains downhill to the southwest to Simpson Creek, then continues with the regional flow direction northwest to the West Fork River and the Monongahela River (WVDEP, 2013). The Monongahela River is used for recreational activities. In Harrison County, 100% of the drinking water comes from surface water. There are currently three public water supply facilities within the West Fork Watershed: the Clarksburg Water Board (approximately 7 miles southwest of the facility), Lumberport Water (approximately 9 miles northwest of the facility), and West Virginia American Water – Weston (approximately 23 miles southwest of the facility) (WVDEP, 2013). The exact locations of the surface water intakes for each public water supply facility was not available.

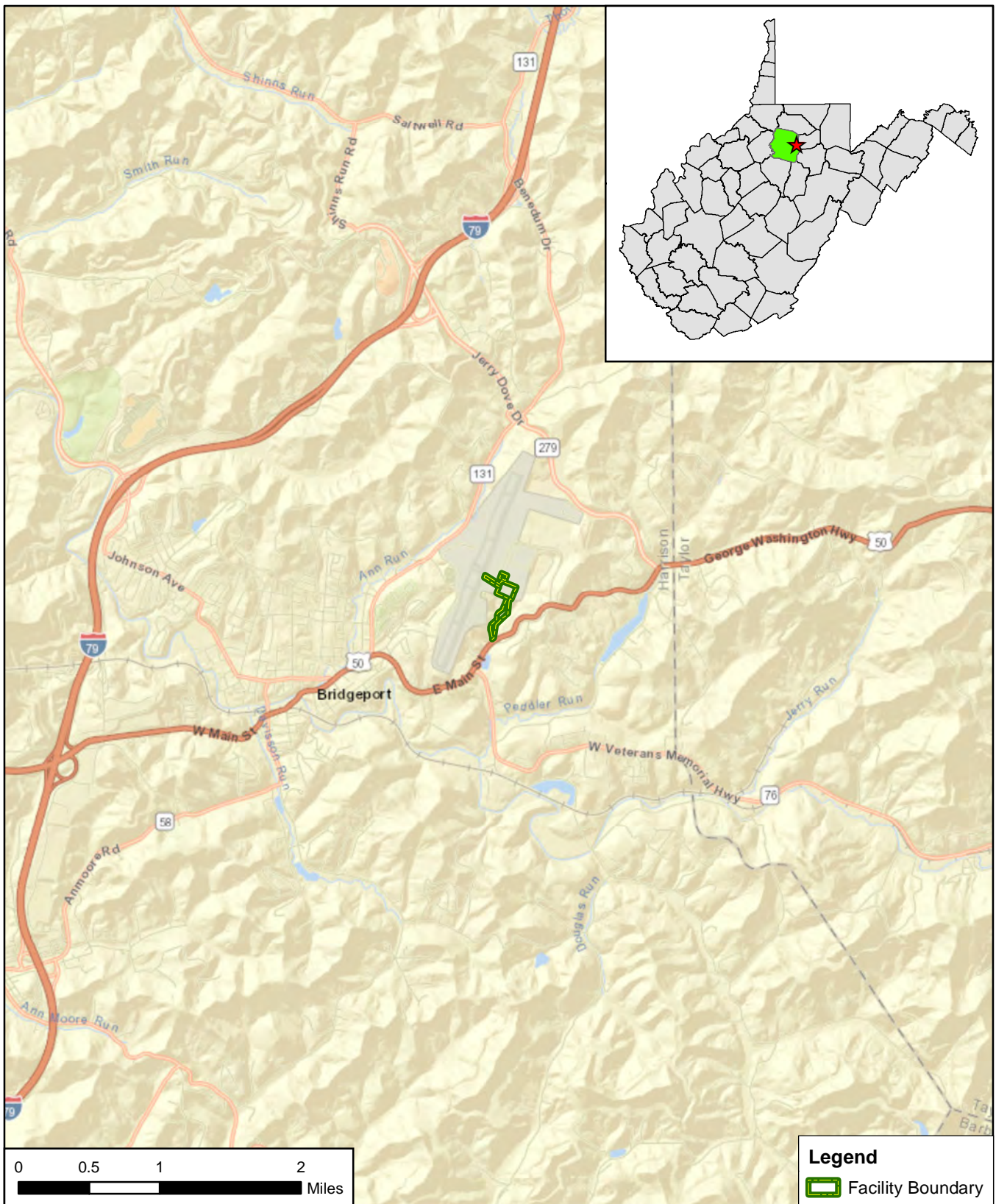
### 1.5.4 Climate

In the area of West Virginia where FWAATS is located, precipitation is evenly distributed throughout the year, with somewhat higher amounts in the spring and summer (Herb et al., 1981). The amount of snow varies by elevation, but the average annual rainfall is 45.9 inches (US Climate Data, 2019). Bridgeport has a temperate climate with four distinct seasons (City of Bridgeport, 2020). The annual average high temperature for Bridgeport is 63.1 degrees Fahrenheit (°F), and the average low temperature is 42.1°F. Elevation is a significant influence on climatic variations and temperature in West Virginia (US Climate Data, 2019). The region including Bridgeport, West Virginia is generally a few degrees cooler than the western side of West Virginia due to higher elevation.

### 1.5.5 Current and Future Land Use

FWAATS currently resides on a portion of land leased from the BAA under the terms of a 50-year lease, which started on 12 July 1994. The facility is currently and has historically been used for fixed wing training instruction for Active Duty, Reserve, and National Guard Aviators. Future land use is not anticipated to change.





CLIENT		ARNG			
NOTES Preliminary Assessment for PFAS at Fixed Wing Army Aviation Training Site, WV					
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SCALE	1:63,360	CHK BY	MM	12/9/2019	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	12/9/2019	



## Facility Location

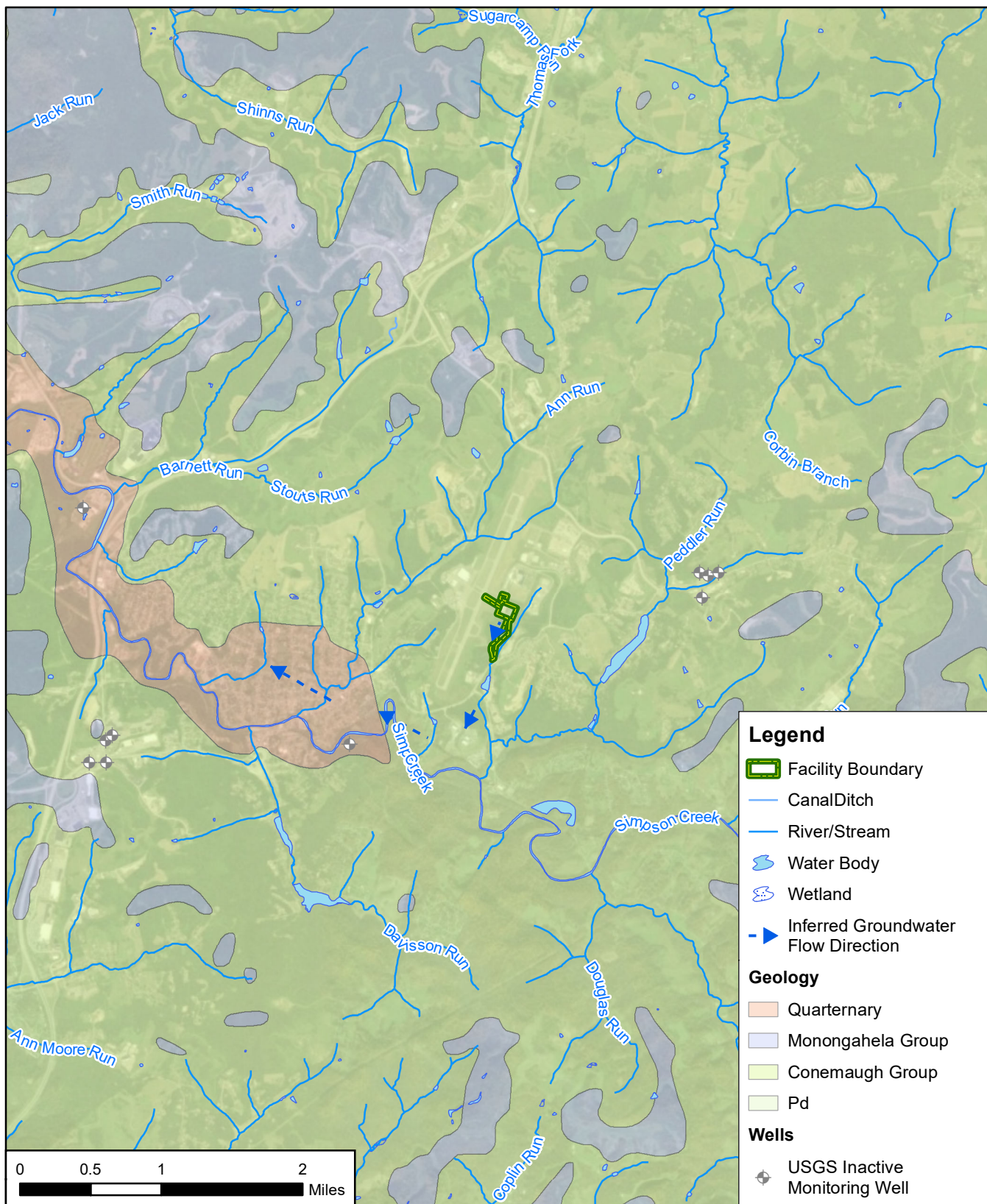
**AECOM**



12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 1-1**

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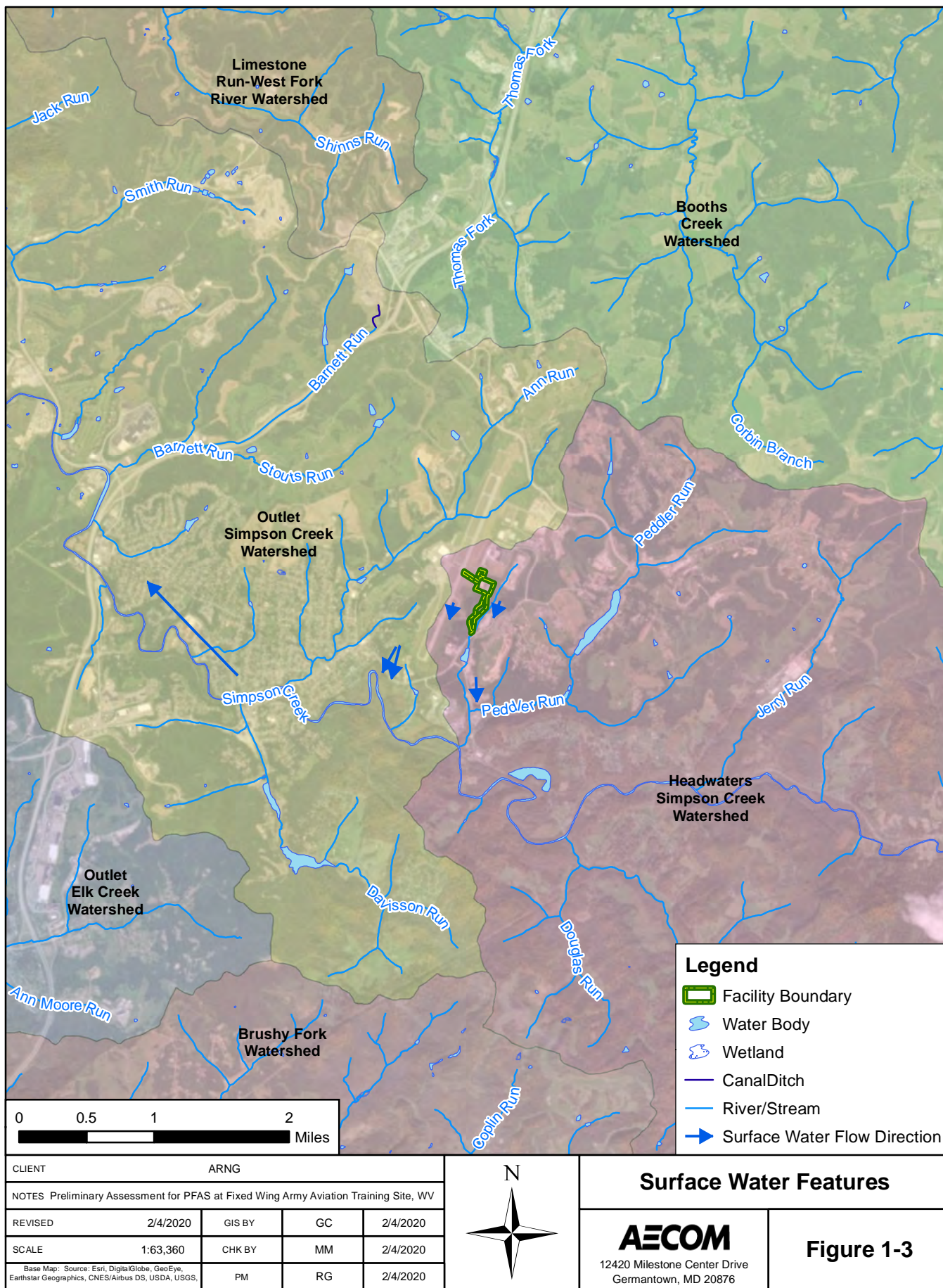




CLIENT ARNG						Groundwater Features	
NOTES Preliminary Assessment for PFAS at Fixed Wing Army Aviation Training Site, WV						 12420 Milestone Center Drive Germantown, MD 20876	Figure 1-2
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Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	6/16/2020			

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## 2. Fire Training Areas

One previous FTA was identified during the PA through interviews. There are no current FTAs at FWAATS, and there have been no fire training activities on facility property since 2016. Though AFFF was stored on-site from the time it was acquired in 1996 until the last 5-gallon (gal) buckets were removed in 2019, interviewees stated AFFF has never been used in fire training at the facility.

### 2.1 Soap and Water FTA

The Soap and Water FTA is located in the parking lot in the northeast corner of the facility (**Figure 2-1**). According to interviewees, the training consisted of filling an empty Tri-Max™ extinguisher with a soap and water solution to demonstrate use of a Tri-Max™ extinguisher. However, due to the potential for residual PFAS in the Tri-Max™ extinguishers and lack of documentation, the FTA is considered a potential PFAS release area.

There were no live fire training events at the facility. To interviewee recollection, which dates back to 1996, there have never been off-facility fire training events conducted by FWAATS personnel, nor have any outside entities come on-facility for fire training.

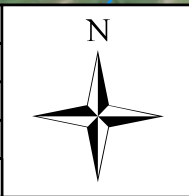




**Legend**

- Facility Boundary
- Potential PFAS Release
- River/Stream

CLIENT		ARNG			
NOTES Preliminary Assessment for PFAS at Fixed Wing Army Aviation Training Site, WV					
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SCALE	1:3,000	CHK BY		MM	4/14/2020
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM		RG	4/14/2020



**Fire Training Areas**

**AECOM**

12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 2-1**

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### 3. Non-Fire Training Areas

In addition to FTAs, the PA evaluated areas where PFAS-containing materials may have been broadly used, stored, or disposed. This may include buildings with fire suppression systems, paint booths, AFFF storage areas, and areas of compliance demonstrations. Information on these features obtained during the PA are included in **Appendices A** and **B**. Three potential non-FTAs where AFFF may have been stored were reviewed during the PA. Descriptions of the non-FTAs are presented below, and the locations of the non-FTAs are shown on **Figure 3-1**.

#### 3.1 Ground Support Room

The Ground Support Room is located on the southern side of the FWAATS hangar. The FWAATS hangar utilizes a non-AFFF fire suppression system (**Appendix C, Photograph #1**). Initial interviews indicated that while AFFF was kept at FWAATS, 5-gal buckets were stored in the Ground Support Room. However, a follow-up interview revealed that AFFF was in fact never stored in the Ground Support Room. Therefore, the Ground Support Room is not considered a potential PFAS release area. The location of the room is shown on **Figure 3-1** and a photograph is included in **Appendix C, Photograph # 3**.

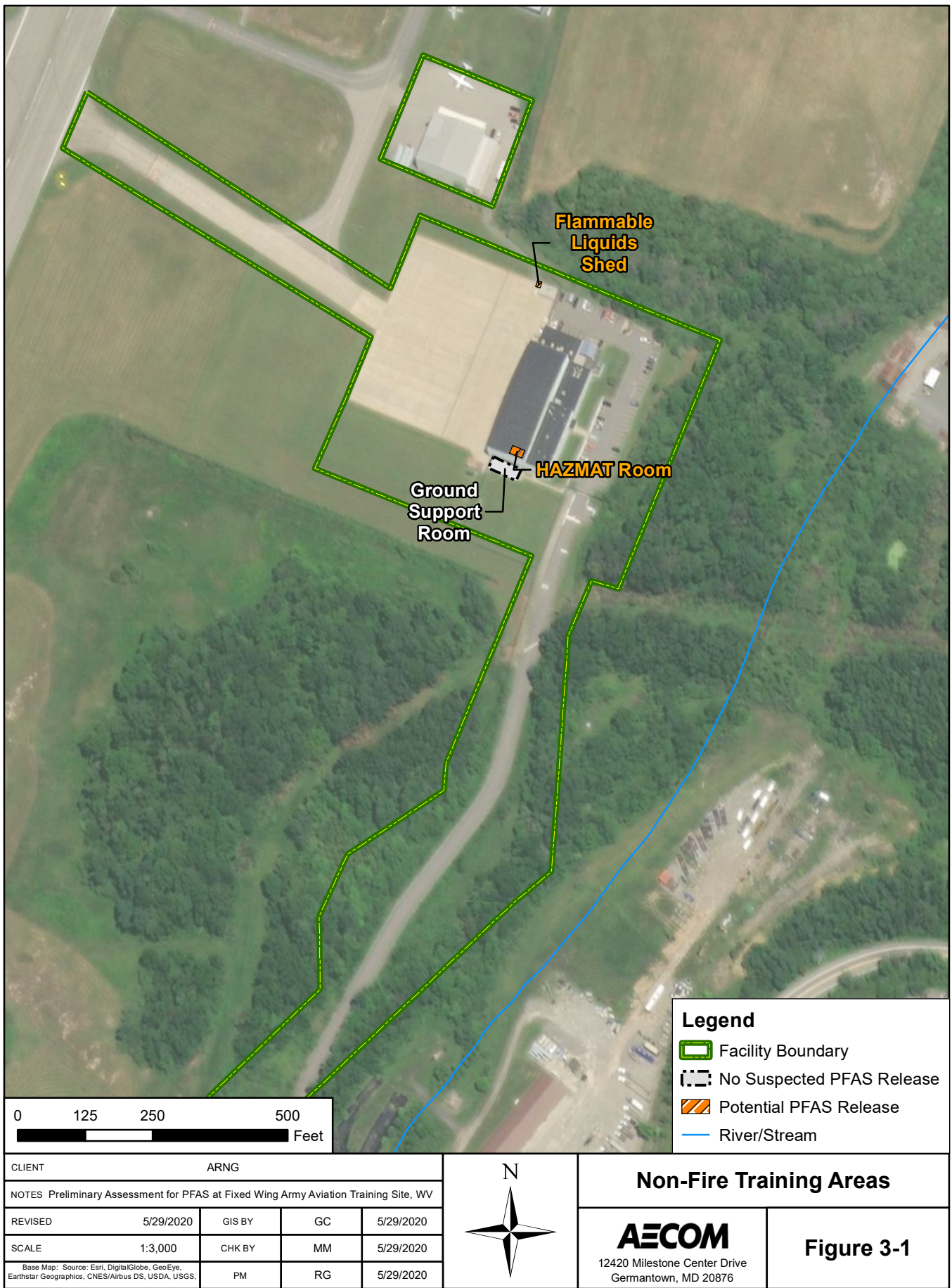
#### 3.2 Flammable Liquids Shed

The Flammable Liquids Shed is located on the northern side of the property (**Figure 3-1**). While AFFF was kept at FWAATS (beginning in 1996), 5-gal buckets were stored in the Flammable Liquids Shed. One 5-gal bucket of AFFF was found in the Flammable Liquids Shed in 2019, which was subsequently disposed of by the Defense Reutilization and Marketing Office (DRMO). The non-hazardous waste manifest for the container removed in 2019 is provided in **Appendix A**. There are no known spill or releases of AFFF at this location. However, due to gaps in knowledge regarding AFFF storage at the facility, the Flammable Liquids Shed is considered a potential PFAS release area. The Flammable Liquids Shed is shown in **Appendix C, Photograph #5**.

#### 3.3 HAZMAT Room

During interviews with FWAATS personnel, the hazardous materials (HAZMAT) room was identified as another location where AFFF was known to be stored from 1996 until 2019. The HAZMAT Room is on the southern side of the FWAATS hangar adjacent to the Ground Support Room (**Figure 3-1**). Two 5-gal containers of AFFF were discovered in the HAZMAT Room in 2019, which were subsequently disposed of by the DRMO along with the one 5-gal container from the Flammable Liquids Shed. The non-hazardous waste manifest for the two containers removed in 2019 is provided in **Appendix A**. Interviewees had no recollection of spills or releases of AFFF at this location. However, due to gaps in knowledge regarding AFFF storage, the HAZMAT Room is considered a potential PFAS release area. The HAZMAT Room is shown in **Appendix C, Photograph #2**.





## 4. Emergency Response Areas

Two emergency response areas were identified at FWAATS during the PA through interviews. Firsthand knowledge of interviewees extends to 1993, prior to the construction of FWAATS, when the unit was operating out of a hangar in the North Central West Virginia Airport. If need for emergency response at the facility arises, the airport's fire department is the primary response unit. The City of Bridgeport Fire Department is the secondary response unit.

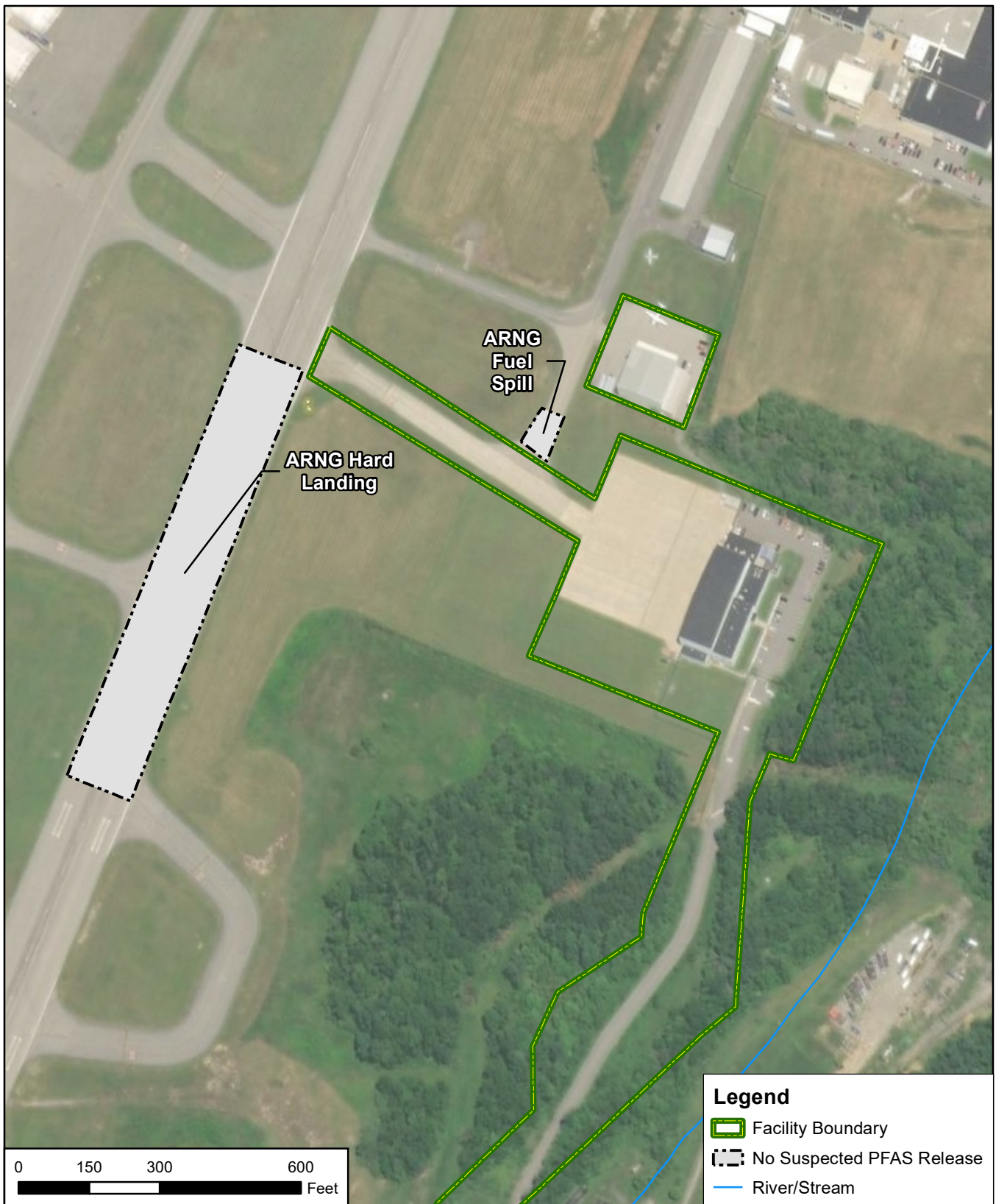
### 4.1 ARNG Fuel Spill



During training in 2014, an airplane was noted to have a fuel leak during a change in student operation of the plane. The aircraft was shut down after notifying Fit Operations and maintenance, and maintenance responded with spill kits and 5-gal buckets to capture the fuel. The aircraft was towed to the airplane wash pad, and the diverter valve was opened to direct fuel to the oil-water separator instead of stormwater drainage pathways. The fuel that was not collected went to the oil-water separator. No AFFF was used, which is occasionally a safety procedure enacted during fuel spills, to prevent ignition of fuel during the spill. Documentation of the event, including photographs, is included in **Appendix A**. This location, shown on **Figure 4-1**, has no suspected PFAS release.

### 4.2 ARNG Hard Landing

In 2010, an ARNG aircraft had a landing gear issue and had a hard landing. Since the airport's fire department is the primary response unit for FWAATS, it responded to the incident. According to interviewees, there was no emergency action necessary as there was no resulting fire or fuel leak, and AFFF was not used during the event. This location, shown on **Figure 4-1**, has no suspected PFAS release.





CLIENT ARNG						Emergency Response Areas	
NOTES Preliminary Assessment for PFAS at Fixed Wing Army Aviation Training Site, WV							
REVISED	5/29/2020	GIS BY	GC	5/29/2020		 12420 Milestone Center Drive Germantown, MD 20876	Figure 4-1
SCALE	1:3,600	CHK BY	MM	5/29/2020			
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	5/29/2020			

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## 5. Adjacent Sources

Seven potential off-facility sources of PFAS located adjacent to FWAATS, not under the control of ARNG, were identified during the PA through interviews. A description of each potential adjacent source is presented below, and the adjacent sources are shown on **Figure 5-1**.

### 5.1 Aviation Industries

Northrop Grumman and Pratt & Whitney aerospace companies are located directly north of FWAATS (**Figure 5-1**). Pratt & Whitney is an aircraft engine repair company and Northrop Grumman is an aircraft manufacturer. It is unknown if PFAS-containing substances are used at these facilities, and personnel of these companies were not interviewed as part of the PA. However, because PFAS are common in substances used in the aviation industry, this location is considered a potential adjacent PFAS release area.

### 5.2 North Central West Virginia Airport

The North Central West Virginia Airport is located to the west of FWAATS and seen in **Figure 5-1**. Several potential adjacent sources are located at the airport.

#### 5.2.1 Former Nozzle Check Area

The airport currently has two firetrucks: one equipped with AFFF, which replaced the former AFFF firetruck discussed in **Section 5.2.2**, and one equipped to handle only water. Airport personnel are required to perform nozzle checks once per month to ensure the AFFF firetruck is in working order, should there be an event requiring emergency response with AFFF. Nozzle checks formerly took place on the pavement in the rear of the Old Fire House (**Figure 5-1**). Nozzle checks were performed at this location until 2006. Following the nozzle check, during which a small amount of AFFF was released, the AFFF was left to sit on pavement and dissipate, therefore, this area is considered a potential adjacent PFAS release area.

#### 5.2.2 Old Fire House

The airport's former AFFF firetruck was kept in the Old Fire House from 1992 to 1996 (**Figure 5-1**). It is unknown what year the former firetruck was removed. The AFFF was stored in 55-gal drums in the rear of the firetruck. The airport purchases 3% AFFF from Oshkosh and initially had four drums to refill the AFFF firetrucks with, which have been reduced to two with use in nozzle checks and off-spec AFFF removal over time by J.T. Martin Fire & Safety. The firetruck had a pour-fill system to refill the AFFF tank. While airport personnel do not recall any spills or releases of AFFF, there is a possibility that unintended releases occurred during refilling while the previous firetruck was in service. Therefore, the Old Fire House is considered a potential adjacent PFAS release area.

#### 5.2.3 Current Firetruck and AFFF Storage

The current AFFF firetruck has been stored in a building directly south of the Old Fire House since it was acquired in 2006 (**Figure 5-1**). The current firetruck has a pump filling system for the AFFF to prevent spills while filling with AFFF. The AFFF is currently stored behind the AFFF firetruck in 55-gal drums labeled as Oshkosh 3% AFFF. It is unknown whether the truck is decontaminated following nozzle checks. Due to the potential for unintended spills or releases of AFFF, this area is considered a potential adjacent PFAS release area.

### 5.2.4 Current Nozzle Check Area

After 2006, the airport began conducting nozzle checks at a new location south of the current firetruck and AFFF storage area and east of the main airport building (**Figure 5-1**). Nozzle checks have been conducted monthly in this location since 2006. The AFFF released during the nozzle checks is not rinsed away and is left on the tarmac to dissipate. AFFF in surface runoff from this area may enter the drain running along the tarmac to the east of the nozzle check area, and from there, it would be directed to the public sanitary sewer system. This location is considered a potential adjacent PFAS release area.

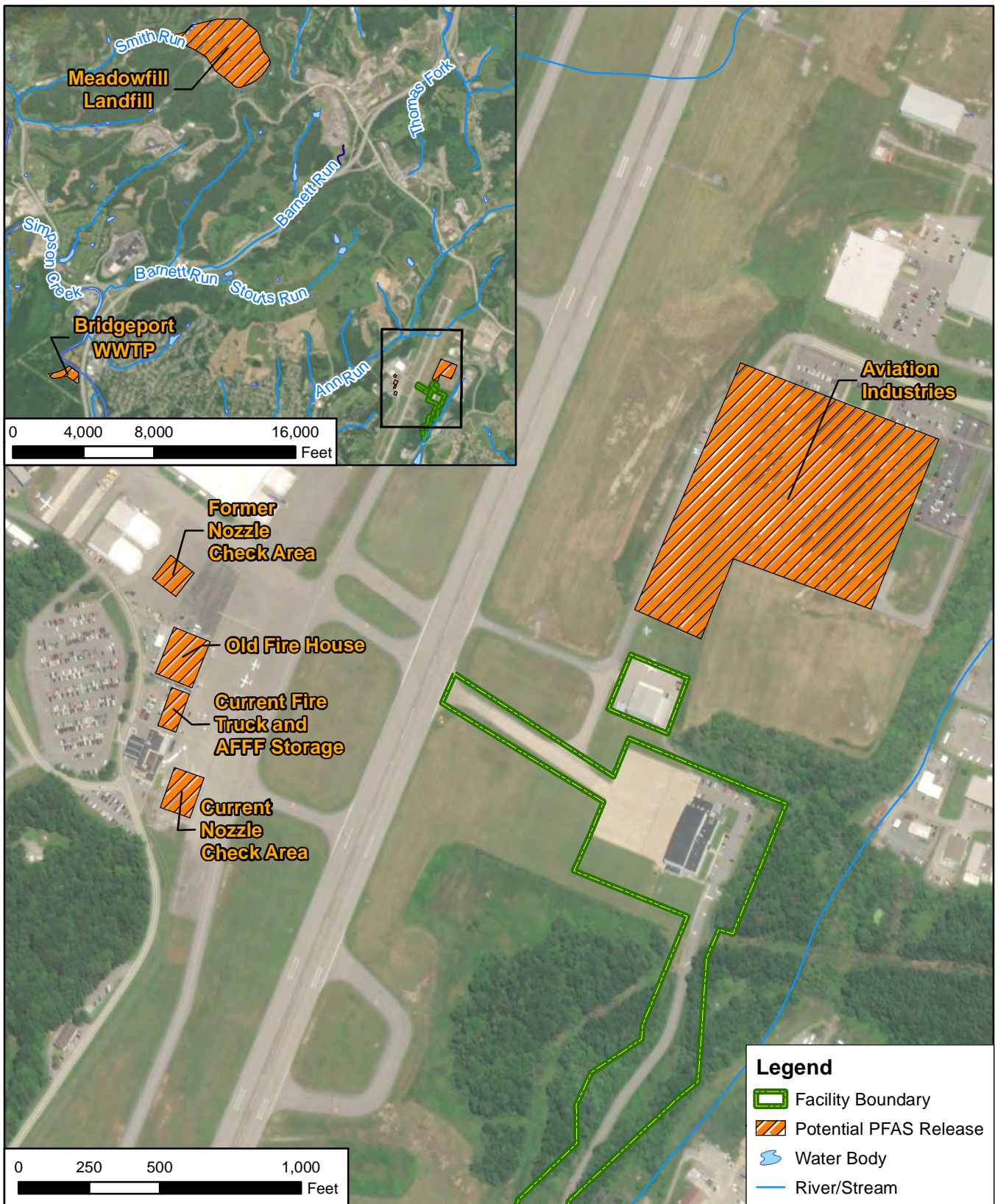
## 5.3 Meadowfill Landfill


The Meadowfill Landfill is located approximately 3 miles north-northwest of the facility (**Figure 5-1**). Details of the facility provided by Waste Management Solutions (WMS) indicate the site accepts waste including industrial waste and municipal solid waste, both of which may include PFAS-containing products (WMS, 2020). Though the landfill does not accept hazardous waste, PFAS were not historically considered hazardous. Therefore, there is a potential for PFAS-containing products to be included in materials within the landfill. As such, the Meadowfill landfill is considered a potential adjacent, off-facility PFAS release area.

## 5.4 Bridgeport WWTP

The Bridgeport WWTP is located 2.6 miles west of the facility, on a parcel of land owned by the City of Bridgeport (**Figure 5-1**). The WWTP is owned and operated by the city of Bridgeport and is considered a potential adjacent source of PFAS. The WWTP treats wastewater for the City of Bridgeport's 25,000 residents before releasing it via an outfall to Simpson Creek. Surface water from Simpson Creek flows to the West Fork River where it is collected by the Clarksburg Water Board for public supply. The Clarksburg Water Board provides water for the City of Bridgeport.

Wastewater treatment facilities are not usually considered primary potential release areas of PFAS, but sludges and liquids treated at wastewater treatment plants may create a secondary source of contamination if they receive PFAS-impacted waste from other release areas, personal care products, and other household waste. PFAS releases that may have occurred within the city of Bridgeport could have resulted in the migration of PFAS in water to the Bridgeport WWTP. Sludge generated at wastewater treatment facilities is typically removed and disposed of at an off-site location; the location of sludge disposal for the Bridgeport WWTP is unknown. Due to the potential for PFAS releases to have occurred elsewhere in the city of Bridgeport sanitary sewer system, the WWTP is considered a potential adjacent, off-facility PFAS release area.



CLIENT				ARNG				<div><div>N</div></div>	Adjacent Sources					
NOTES Preliminary Assessment for PFAS at Fixed Wing Army Aviation Training Site, WV									<div><div><div><b>AECOM</b></div><div>12420 Milestone Center Drive Germantown, MD 20876</div></div><div>Figure 5-1</div></div>					
REVISED		4/7/2020		GIS BY		GC							4/7/2020	
SCALE		1:6,000		CHK BY		MM							4/7/2020	
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,				PM		RG		4/7/2020						

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## 6. Preliminary Conceptual Site Model

Based on the PA findings, two AOIs were identified at FWAATS. AOI 1 is the HAZMAT Room, AOI 2 is the Flammable Liquids Shed and Soap and Water FTA. The AOI locations are shown on **Figure 6-1**. The following sections describe the CSM components and the specific preliminary CSMs developed for AOI 1 and AOI 2. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

In general, the potential PFAS exposure pathways are ingestion and inhalation. Human exposure via the dermal contact pathway may occur, and current risk practice suggests it is an insignificant pathway compared to ingestion; however, exposure data for dermal pathways are sparse and continue to be the subject of PFAS toxicological study. Receptors at FWAATS include site workers, construction workers, trespassers, recreational users, and off-site residents. The preliminary CSM for FWAATS indicates which specific receptors could potentially be exposed to PFAS (**Figure 6-2**).

### 6.1 AOI 1: HAZMAT Room

AOI 1 is the HAZMAT Room (**Appendix C, Photograph #2**). Interviewees indicated there were no known spills or releases of AFFF at this location while AFFF was stored in the HAZMAT room from 1996 to 2019. However, due to gaps in knowledge about AFFF storage at the facility, it is considered a potential PFAS release area. The HAZMAT Room is on the southern end of the FWAATS hangar (**Figure 3-1**).

In the event that a release occurred at this location, it is possible that the AFFF traveled either to one of the two the hangar ramp drains or off-property, following the same route as on-site surface water runoff. Surface water runoff would first encounter the gray hangar ramp drain (**Appendix C, Photograph #6-Right**) associated with the airplane wash pad and would either be led to the oil-water separator or the nearby creek, Peddler Run. The route water takes from the airplane wash pad drain is dependent on the drain's valve position. Under normal operations, the valve is closed and water is discharged to Peddler Run. During airplane washing or a spill, the valve is opened and water goes to the oil-water separator and then transported to the Bridgeport WWTP. Coordinates provided by the ARNG in the facility's NPDES permit show the WWTP is located 2.6 miles west of the facility on the bank of Simpson Creek (**Appendix A**). The WWTP discharges water to Simpson Creek, which converges with the West Fork River 4 miles north of the plant and continues to the Monongahela River. The second, larger drain, seen in **Appendix C, Photograph #6-Left**, is a stormwater drain that discharges to Peddler Run. Surface water drainage at the facility that does not enter the stormwater drain on the hangar ramp would travel east along paved and unpaved surfaces to the edge of the property. From there, the runoff would meet drainage from the hangar ramp at Peddler Run. Drainage discharging to Peddler Run follows the creek to its confluence with Simpson Creek. AFFF would continue along the previously-stated surface water pathways to the Monongahela River. Therefore, the exposure pathway for surface water and sediment is considered potentially complete for off-facility residents and recreational users. Additionally, human consumption of fish potentially affected by PFAS is possible.

The potential migration of contaminants across unpaved surfaces at the facility creates potentially complete pathways for inhalation via airborne soil particulates and ingestion of surface soil to site workers, construction workers, and trespassers in this area. Additionally, if PFAS infiltrated subsurface soil, a potentially complete pathway via ingestion exists for construction workers.

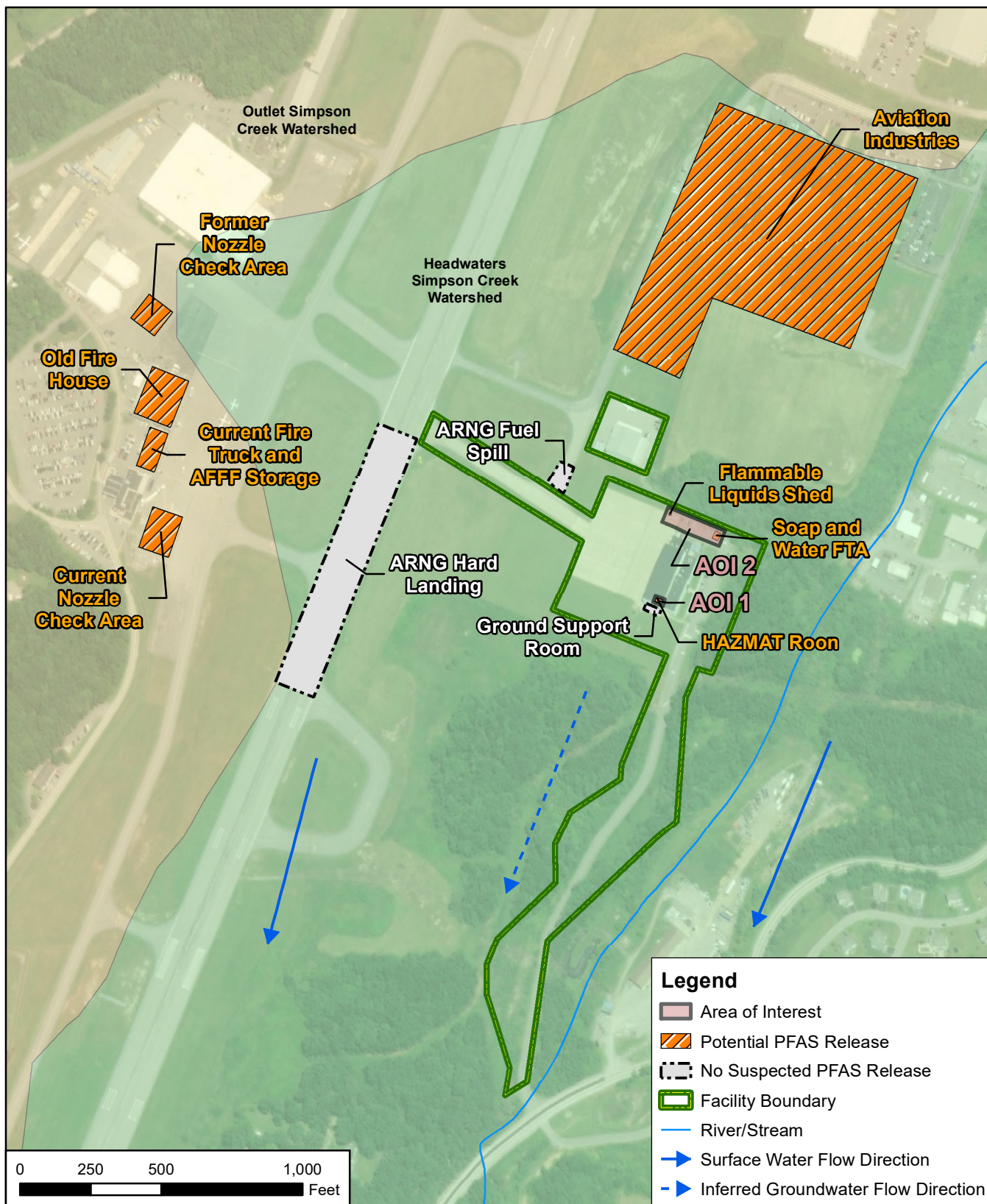
Though PFAS are water soluble and can migrate readily from soil to groundwater via leaching, there are no known private or public potable water wells within 4 miles downgradient of the facility and facility is served by the public water supply. Due to the unknown depth of groundwater at the


facility, there is a potential for groundwater to be encountered during construction activities. Therefore, the groundwater ingestion pathway is considered potentially complete for construction workers. The preliminary CSM diagram for AOI 1 is shown in **Figure 6-2**.

## 6.2 AOI 2: Flammable Liquids Shed and Soap and Water FTA

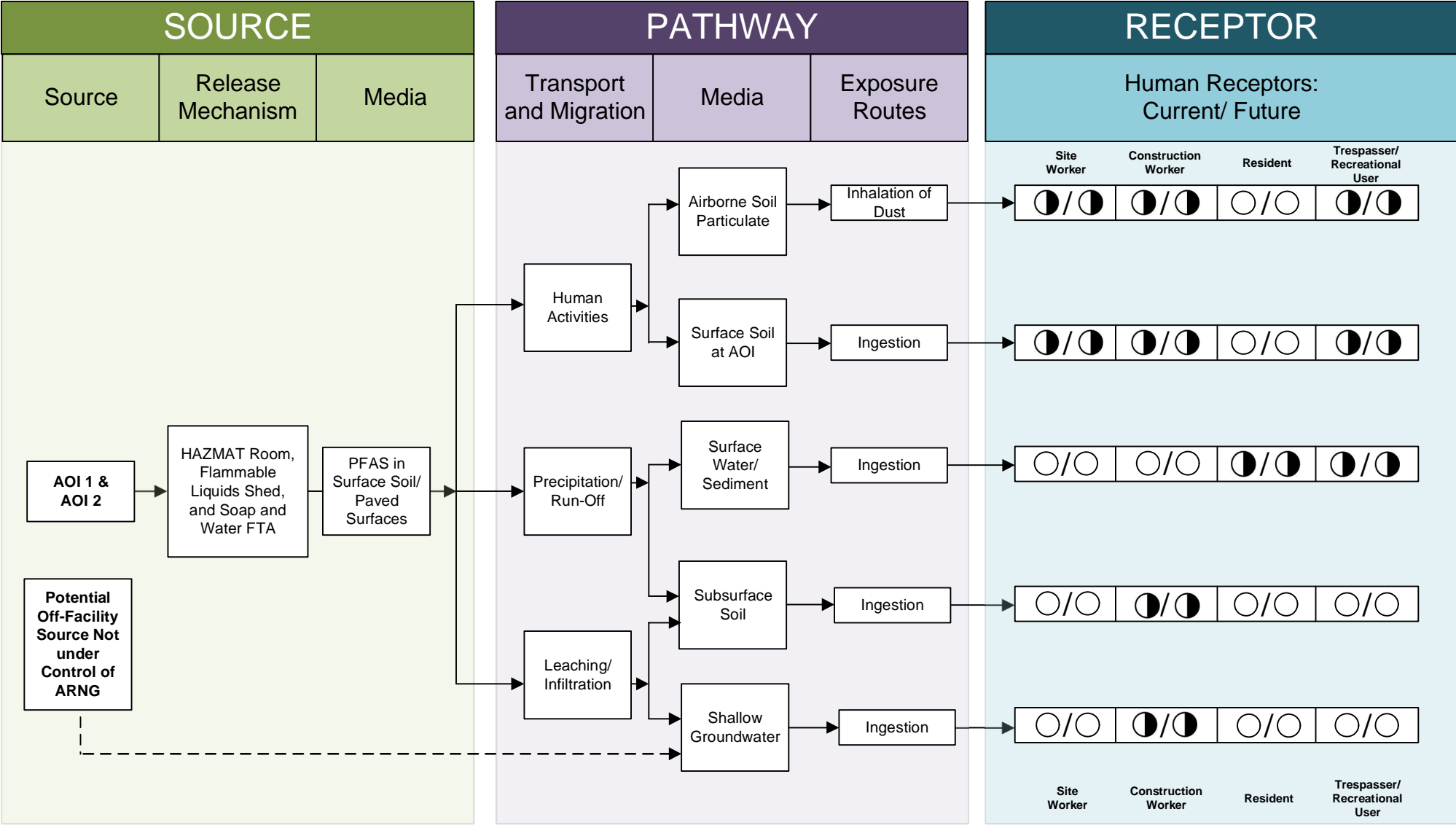
AOI 2 is the area of the Flammable Liquids Shed and Soap and Water FTA. The Flammable Liquids Shed was used to store 5-gal buckets of AFFF from 1996 to 2019. The Soap and Water FTA was used to demonstrate the use of Tri-Max™ extinguishers prior to 2016 utilizing soap instead of AFFF foam. Interviewees did not recall spills or leaks occurring at this location during the time AFFF was kept at the facility; however, due to data gaps, it is being considered a potential release location and AOI.

If a release occurred at AOI 2, it would have entered soil surrounding the AOI or entered one of the hangar ramp drains at the facility. Contaminants, if present, would migrate west across paved surfaces and first encounter the airplane wash pad drain (**Appendix C, Photograph #6-Right**). Depending on the position of the wash pad drain valve, contaminants would either discharge into Peddler Run or continue to the oil-water separator. Contaminants entering the oil-water separator would subsequently be taken to the Bridgeport WWTP, released to Simpson Creek, and continue through regional surface water pathways. If contaminants were released to Peddler Run from either the stormwater hangar ramp drain (**Appendix C, Photograph #6-Left**) or airplane wash pad drain, they would follow those surface water pathways to Simpson Creek and Monongahela River. These pathways, similar to those of AOI 1, creates potentially complete pathways for airborne soil particulates through inhalation and ingestion of surface soil for site workers, construction workers, and trespassers. Ingestion of surface water and sediment have potentially complete pathways to off-facility residents and recreational users. Ingestion of subsurface soil and groundwater have potentially complete pathways for construction workers. The preliminary CSM diagram for AOI 2 is shown in **Figure 6-2**.



CLIENT		ARNG				<div>N</div> 	Areas of Interest	
NOTES Preliminary Assessment for PFAS at Fixed Wing Army Aviation Training Site, WV							<div><b>AECOM</b></div> <div>12420 Milestone Center Drive Germantown, MD 20876</div>	<div>Figure 6-1</div>
REVISED	7/7/2020	GIS BY	GC	7/7/2020				
SCALE	1:6,000	CHK BY	MM	7/7/2020				
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	7/7/2020				

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LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

Notes:  
1. The residential receptor refers to an off-facility receptor.  
2. Human consumption of fish potentially affected by PFAS from the downgradient river is possible.

Figure 6-2  
Preliminary Conceptual Site Model  
AOI 1 and AOI 2



## 7. Conclusions

This report presents a summary of available information gathered during the PA on the use of AFFF at FWAATS. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

### 7.1 Findings

Two AOIs related to potential PFAS release (**Table 7-1**) were identified at FWAATS during the PA through interviews with facility personnel (**Figure 7-1**).

**Table 7-1 AOIs at FWAATS**

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	HAZMAT Room	FWAATS Personnel	1996-2019
AOI 2	Flammable Liquids Shed and Soap and Water FTA	FWAATS Personnel	1996-2019

Based on potential PFAS releases at the AOIs, there is a potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for FWAATS, which presents the potential receptors and media impacted, is shown on **Figure 6-2**.

The following areas, shown in **Table 7-2** and discussed in **Section 3**, were determined to have no suspected release.

**Table 7-2 No Suspected Release Areas**

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
ARNG Fuel Spill	FWAATS	No AFFF was released in response to the fuel spill. Only spill kits were used.
ARNG Hard Landing	FWAATS	No AFFF was released in response to the hard landing. No firefighting actions were necessary.
Ground Support Room	FWAATS	No AFFF was stored at this location.

Additionally, seven potential adjacent sources of PFAS were identified near FWAATS during the PA.

### 7.2 Uncertainties

A number of information sources were investigated during this PA to determine the potential for PFAS-containing materials to have been present, used, or released at the facility. Historically, documentation of PFAS use was not required because PFAS were considered benign. Therefore, records were not typically kept by the facility or available during the PA on the use of PFAS in training, firefighting, or other non-traditional activities, or on its disposition.

The conclusions of this PA are based on all available information, including: previous environmental reports, EDR™ Reports, observations made during the VSI, and interviews.



Interviews of personnel with direct knowledge of a facility generally provided the most useful insights regarding a facility's historical and current PFAS-containing materials. Sometimes, the provided information was vague. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of personnel with direct knowledge due to staffing changes, the time passed since PFAS were first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations, dates of release, volume of releases, and the concentration of AFFF used. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, retired and current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected. **Table 7-3** summarizes the uncertainties associated with the PA.

**Table 7-3 Uncertainties**

Area of Interest	Source of Uncertainty
AOI 1: HAZMAT Room	There are gaps in knowledge of AFFF stored in this location. Two buckets of AFFF were discovered after it was believed that all AFFF had been removed from the facility.
AOI 2: Flammable Liquids Shed and Soap and Water FTA	There are gaps in knowledge of AFFF AOI. One bucket of AFFF was discovered after all AFFF was believed to have been removed from the facility. It is also unknown if the Tri-Max™ unit contained AFFF before being used at the Soap and Water FTA.

It is also unknown whether or to what degree the potential off-facility PFAS release areas may affect FWAATS.

### 7.3 Potential Future Actions

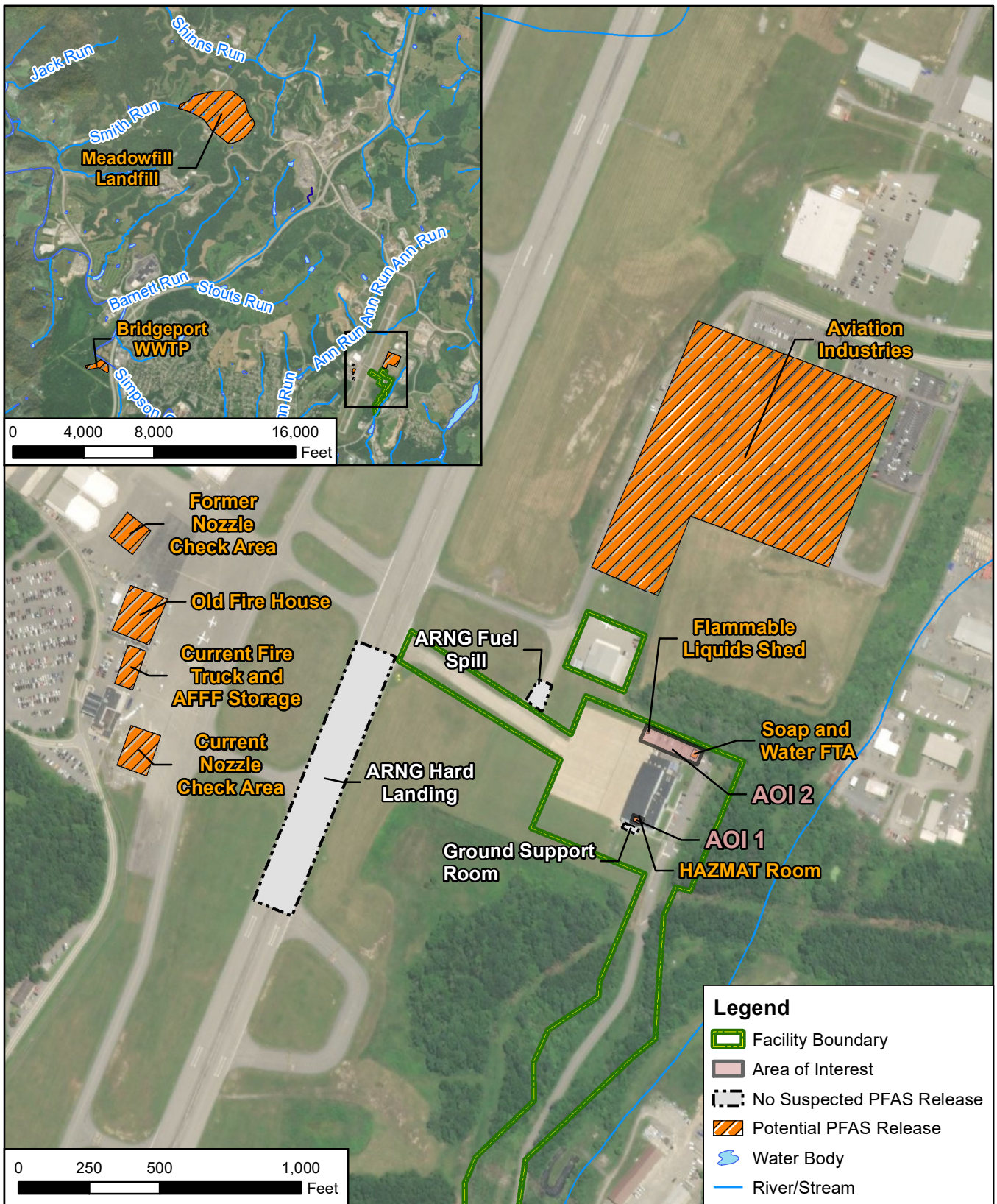
Based on the presence (1996-2019) of the potential release of PFAS-containing materials in the HAZMAT Room, Flammable Liquids Shed, and Soap and Water FTA, evidence indicates that WVARNG activities in this area may have contributed PFAS contamination to media at and around the facility. It is recommended that these areas move forward in the CERCLA process.

Interviews (covering 1996-2020) indicate that non-fire training activities associated with AOIs may have introduced PFAS into the environment, thus, there is potential for receptors to be exposed to PFAS as shown in the preliminary CSM in **Section 6**. **Table 7-4** summarizes the rationale used to determine if the AOIs should be considered for further investigation under the CERCLA process and undergo SIs.

ARNG will evaluate the need for an SI at FWAATS based on the potential receptors, the potential migration of PFAS contamination off the facility, and the availability of resources.

**Table 7-4 PA Findings Summary**

Areas of Interest	AOI Location	Rationale	Potential Future Action
AOI 1 HAZMAT Room	39°17'43.756"N, 80°13'28.211"W	Possible AFFF leak or spill.	Proceed to an SI, focus on soil, surface water, and sediment
AOI 2 Flammable Liquids Shed and Soap and Water FTA	39°21'46.111"N, 80°13'27.45"W	Possible AFFF leak, spill, or release during fire training.	Proceed to an SI, focus on soil, surface water, and sediment



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REVISED	7/7/2020	GIS BY	GC	7/7/2020
SCALE	1:6,000	CHK BY	MM	7/7/2020
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	7/7/2020



## Summary of Findings

**AECOM**

12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 7-1**

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## 8. References

- BAA. 2014. *Benedum Airport Authority Groundwater Protection Plan*. May.
- Cardwell, D. H., Erwin, R. B., and Woodward, H.P. 1968. *Geologic Map of West Virginia*. West Virginia Geologic and Economic Survey.
- City of Bridgeport. 2020. *Climate*. Accessed 15 January 2020 at <http://www.bridgeportwv.com/index.cfm/departments/economic-development-304-842-8209/community-profile/climate/>.
- City of Bridgeport. 2017. *Annual Drinking Water Quality Report 2016*. 3 March 2017.
- EDR™. 2019. *The EDR™ Radius Map™ Report with GeoCheck®; Aerial Photo Decade Package; and Certified Sanborn® Map Report; Fixed Wing Army Aviation Training Site, 15 Emerald Dr, Bridgeport, WV 26330*. 8 October.
- Kozar, M. D., and Mathes, M. V. 2001. *Aquifer-Characteristics Data for West Virginia*. United States Geological Survey. Water-Resources Investigations Report 01-4036.
- Herb, W.J., Shaw, L.C., and Brown, D.E.. 1981. *Hydrology of Area 5, Eastern Coal Province, Pennsylvania, Maryland, and West Virginia*. United States Geological Survey. Open-File Report 81-538.
- US Climate Data. 2019. *Climate Bridgeport – West Virginia*. Accessed 22 October 2019 at <https://www.usclimatedata.com/climate/parkersburg/west-virginia/united-states/uswv0572>.
- USEPA. 1980. *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*.
- USEPA. 1991. *Guidance for Performing Preliminary Assessments under CERCLA*. EPA/540/G91/013.
- USEPA. 1994. *National Oil and Hazardous Substances Pollution Contingency Plan (Final Rule)*. 40 CFR Part 300; 59 Federal Register 47384. September.
- USEPA. 2016a. *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)*. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-005. May.
- USEPA. 2016b. *Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS)*. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-004. May.
- USEPA. 2017. *UCMR 3 (2013-2015) Occurrence Data by State. Occurrence Data for the Unregulated Contaminant Monitoring Rule*. Accessed 9 July 2019 at <https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule>. January.
- USGS. 2020. *National Water Information System: Mapper*. Accessed 11 June 2020 at <https://maps.waterdata.usgs.gov/mapper/index.html>
- WMS. 2020 *Meadowfill Landfill Management Facility (Disposal)*. Accessed 8 April 2020 at <https://www.wmsolutions.com/locations/details/id/242>.

- WVDEP. 2013. *West Virginia Watersheds: A Closer Look*. Accessed 22 October 2019 at <https://dep.wv.gov/WWE/wateruse/WVWaterPlan/Documents/WatershedACloserLookNovember2013.pdf>. November.
- WVDEP. 2013. *West Virginia Water Resources Management Plan*. Accessed 22 October 2019 at [http://dep.wv.gov/WWE/wateruse/WVWaterPlan/Documents/WV\\_WRMP.pdf](http://dep.wv.gov/WWE/wateruse/WVWaterPlan/Documents/WV_WRMP.pdf). 22 November.
- WVGES. 2011. *Geologic Map of West Virginia: Map 25A*. Accessed 22 October 2019 at [http://www.wvgs.wvnet.edu/www/maps/Geologic\\_Map\\_of\\_West\\_Virginia-Map25A\\_lowres.pdf](http://www.wvgs.wvnet.edu/www/maps/Geologic_Map_of_West_Virginia-Map25A_lowres.pdf). March.

## **Appendix A**

### **Data Resources**

Data Resources will be provided separately on CD. Data Resources for FWAATS includes:

#### **FWAATS Site Background Documents**

- 2014, Benedum Airport Authority, Groundwater Protection Plan, May 2014
- 2017, City of Bridgeport, Annual Drinking Water Quality Report 2016, March 3, 2017

#### **FWAATS Site Property Documents**

- 1994, FWAATS Initial Lease Document, July 29, 1994
- 2014, FWAATS Spill Report June 12, 2014
- 2016, FWAATS National Pollutant Discharge Elimination System Permit, June 30, 2016
- 2018, FWAATS Lease Addendum, September 28, 2018
- 2019, Signed Manifest for AFFF, August 2019

#### **Environmental Data Resources, Inc.<sup>TM</sup> Reports**

- 2019, Aerial Photo Decade Package, Environmental Data Resources, Inc.<sup>TM</sup>, October 8, 2019
- 2019, Certified Sanborn Map Report, Environmental Data Resources, Inc.<sup>TM</sup>, October 8, 2019
- 2019, Radius Map Report with Geocheck, Environmental Data Resources, Inc.<sup>TM</sup>, October 8, 2019

## **Appendix B**

### **Preliminary Assessment Documentation**



## **Appendix B.1**

### **Interview Records**

# PA Interview Questionnaire – Fire Station

Facility: FWAATS  
 Interviewer: [REDACTED]  
 Date/Time: 10/1/19 1100

Interviewee: <span style="background-color: black; color: black;">[REDACTED]</span> Title: Maintenance Supervisor Phone Number: <span style="background-color: black; color: black;">[REDACTED]</span> Email: <span style="background-color: black; color: black;">[REDACTED]</span>	Can your name/role be used in the PA Report? Y or N <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">N</span> Can you recommend anyone we can interview? (Title only in report) Y or N _____
---	--

1. Roles or activities with the Facility/years working at the Facility.  
 Years at FWAATS/AT airport: 1994 – Present  
 Maintenance Supervisor - Benedum Airport Fire Department (VI)

2. What can you tell us about the history of AFFF at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.

☐ Maintenance (e.g., ramp washing)  
☐ Fire Training Areas  
☐ Firefighting (Active Fire)  
☐ Crash  
☐ Fire Suppression Systems (Hangers/Dining Facilities)  
☐ Fire Protection at Fueling Stations  
☐ Non-Technical/Recreational/ Pest Management

3. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing at the AFFF/suppression systems?  
 None w/ AFFF FSS

4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?  
 N/A

5. How is AFFF procured? Do you have an inventory/procurement system that tracks use?  
 J T Martin swaps old & new AFFF.

PA Interview Questionnaire – Fire Station

Facility: \_\_\_\_\_  
Interviewer: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

6. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)? Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

55 gallon drums for truck AFFF system from Oshkosh (3%)  
Initially 4 drums-down to 2 now from (off-spec being taken & nozzle checks)

7. Is AFFF formulated on base? If so, where is the solution mixed, contained, transferred, etc.?

Not formulated at airport. AFFF truck is filled with drum contents.

8. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

AFFF previously stored in the old firehouse. Currently stored in hangar where AFFF truck sits.

9. How is the AFFF transferred to emergency response vehicles, suppression systems, flightline extinguishers? Is/was there a specified area on the facility where vehicles are filled with AFFF and does this area have secondary containment in case of spills? How and where are vehicles storing AFFF cleaned/decontaminated?

- The <sup>old</sup> AFFF truck ~~was~~ a pour-fill system. No spills of AFFF since they ~~ve~~ had it. Filled where truck ~~was~~ stored (AFFF ~~was~~ stored behind truck) Old truck: 1992-1996 in old hangar  
- Current truck ~~has~~ a valve system for filling - no spills ~~1996~~

10. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located?

• 1 AFFF fire truck - Previously in old fire house, currently in hangar ~~where~~ shown on figures. Tr  
• only other fire truck is H<sub>2</sub>O only

11. Any vehicles have a history of leaking AFFF? Do you/did you test the vehicles spray patterns to make sure equipment is working properly? How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?

No history of AFFF leaks from vehicles. Nozzle spray tests conducted 1x a month. Locations on map. Spray tests were done in 2 locations, current location is since 2006.

PA Interview Questionnaire – Fire Station

Facility: \_\_\_\_\_  
Interviewer: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

12. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

No FTAs with AFFF at airport

13. What types of fuels/flammables were used at the FTAs?

N/A

14. What was the frequency of AFFF use at each location? When a release of AFFF occurs during a fire training exercise, now and in the past, how is/was the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

For FTAs: N/A

For Nozzle checks: Foam is directed to drain leading to sanitary system

15. Are there mutual aid/use agreements between county, city, local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement? Can you recall specific times when city, county, state personnel came on-post for training? If so, please state which state/county agency, military entity? Do you have any records, including photographs to share with us?

Airport FD is first response for airport, municipal FD is backup.

16. Did individual units come on-post with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

N/A - this form is being used for Airport FD in this instance



**PA Interview Questionnaire – Fire Station**

Facility: \_\_\_\_\_  
Interviewer: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

17. Did military routinely or occasionally fire train off-post? List units that you can recall used/trained at various areas.

N/A

18. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

No emergency response use of AFFF at airport to interviewee knowledge. Not during interviewee's time at airport.

19. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

No use of AFFF for spills

20. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

Unknown

21. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

Only stored in previous & current truck locations, only used at previous & current nozzle test areas.

**PA Interview Questionnaire – Fire Station**

Facility: \_\_\_\_\_  
Interviewer: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

22. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

No creative uses at airport

23. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

JT Martin swaps off-spec AFFF with new.

24. Do you recommend anyone else we can interview? If so, do you have contact information for them?

# PA Interview Questionnaire - Environmental Manager

Facility: FWAATS

Interviewer:

Date/Time: 10/1/19 1030 (phone)

Interviewee: CNS

Title: Safety & Environmental Compliance Officer

Phone Number

Email:

Can your name/role be used in the PA Report? Y or N

Can you recommend anyone we can interview?

Y or N

1. Roles or activities with the Facility/years working at the Facility.

Safety & Environmental Compliance Officer 2006-Aug 2009  
(present for 2014 Spill) 2019

2. Where can I find previous facility ownership information?

3. What can you tell us about the history of PFAS including aqueous film forming foam (AFFF) at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.

Maintenance

Fire Training Areas

Firefighting (Active Fire)

Crash

Fire Suppression Systems (Hangers/Dining Facilities)

Fire Protection at Fueling Stations

Non-Technical/Recreational/ Pest Management

Metals Plating Facility

Waterproofing Uniforms (Laundry Facilities)

Other

4. Fill out CSM Information worksheet with the Environmental Manager.

5. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems?

What are the AFFF/suppression system test requirements? What is the frequency of testing the AFFF/suppression system? Do you have "As Built" drawings for the buildings?

- No AFFF dispensing systems. Water deluge system in hangar.
- There were annual visual inspections of AFFF extinguishers
- Extinguishers stored at fueling stations. Now BC in same location.

**PA Interview Questionnaire - Environmental Manager**

Facility: \_\_\_\_\_  
Interviewer: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

6. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam? If retrofitted, when was that done?

No

7. How is AFFF procured? Do you have an inventory/procurement system that tracks use?

JT Martin Fire and Safety disposed of them.  
Not sure where they were procured from.

8. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)? Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

3% AFFF

9. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

Was stored in old tractor shed and in  
Hazmat shed. Stored as mixed solution (3%).

10. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

No fire training on this facility. None in past with AFFF;  
only soap and water solution in a tri-max extinguisher.



**PA Interview Questionnaire - Environmental Manager**

Facility: \_\_\_\_\_  
Interviewer: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

11. When a release of AFFF occurs during a fire training exercise, now and in the past, how is the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

N/A

12. Can you recall specific times when city, county, and/or state personnel came on-post for training? If so, please state which state/county agency or military entity? Do you have any records, including photographs to share with us?

No-one came on-post for training.

13. Did military routinely or occasionally fire train off-post? List the units that you can recall used/trained at various areas.

No one trained off-post.

14. Did individual units come with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

No outside units came for training. No AFFF used for training

15. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

No. No emergency response on-site.

**PA Interview Questionnaire - Environmental Manager**

Facility: \_\_\_\_\_  
Interviewer: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

16. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires? Spills never washed away with AFFF. One spill with larger amount of fuel:

2014, taxiway, spill happened during student change, responded w/ spill kit, fuel stayed on concrete, fuel captured in 55-gallon drums, airplane towed to wash rack & fuel went to oil/water separator, No sheen of fuel in creek, No AFFF used

17. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

No

18. Are there mutual aid/use agreements between county, city, and local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement?

19. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste treatment plants, and AFFF ponds)?

Stored in old tractor shed and Hazmat shed. AFFF never released or used.

20. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

None

**PA Interview Questionnaire - Environmental Manager**

Facility: \_\_\_\_\_  
Interviewer: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

21. Are there past studies you are aware of with environmental information on plants/animals/groundwater/soil types, etc., such as Integrated Cultural Resources Management Plans or Integrated Natural Resources Management Plans?

None that Mr. [REDACTED] remembers.

22. What other records might be helpful to us (environmental compliance, investigation records, admin record) and where can we find them?

23. Do you have or did you have a chrome plating shop on base? What were/are the years of operation of that chrome plating shop?

None on base or nearby

24. Do you know whether the shop has/had a foam blanket mist suppression system or used a fume hood for emissions control? If foam blanket mist suppression was used, where was the foam stored, mixed, applied, etc.?

Has never had a foam blanket mist suppression system or fume hood.

25. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

J T Martin collected off-spec AFFF while still full. Manifest in site-supporting documents

# PA Interview Questionnaire - Other

Facility: FWAATS  
 Interviewer: [REDACTED]  
 Date/Time: 10/1/19 0800

Interviewee: <u>LIC [REDACTED]</u>	Can your <u>name/role</u> be used in the PA Report? <u>Y</u> or N
Title: <u>FWAATS Commander</u>	Can you recommend anyone we can interview?
Phone Number: _____	Y or N _____
Email: _____	

## Roles or activities with the Facility/Years working at the Facility:

FWAATS Commander since ~~2016~~ 1 September 2018  
(Lieutenant Colonel)

**PFAS Use:** Identify accidental/intentional release locations, time frame of release, frequency of releases, storage container size (maintenance, fire training, firefighting, buildings with suppression systems (as built), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?

- <u>No fire training since 2016 on-site.</u>	Known Uses
- <u>No fire training with AFFF on-site to historically to interviewee's knowledge</u>	Use
	Procurement
	Disposition
	Storage (Mixed)
	Storage (Solution)
	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing



# PA Interview Questionnaire - Other

Facility: FWAATS  
 Interviewer: [REDACTED]  
 Date/Time: 10/1/19 0830

Interviewee: <u>[REDACTED]</u> Title: <u>Caretaker at FWAATS (past)</u> Phone Number: <u>[REDACTED]</u> Email: <u>[REDACTED]</u>	Can your <del>name</del> <u>role</u> be used in the PA Report? <input checked="" type="radio"/> or N Can you recommend anyone we can interview? <input checked="" type="radio"/> or N <u>[REDACTED]</u>
<b>Roles or activities with the Facility/Years working at the Facility:</b>	
<u>Years at FWAATS : Dec 1996-2013</u>	
<u>Past caretaker (Maintenance, prepared tanks for fire extinguisher training)</u>	
<b>PFAS Use: Identify accidental/intentional release locations, time frame of release, frequency of releases, storage container size (maintenance, fire training, firefighting, buildings with suppression systems (as builds), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?</b>	
<u>- No AFFF in training ever.</u>	<b>Known Uses</b>
<u>• Used water and dishwashing soap in empty Tri-max containers</u>	<b>Use</b>
<u>- No foam fire suppression system in any building or hangar</u>	<b>Procurement</b>
<u>• Only water deluge system</u>	<b>Disposition</b>
<u>- No laundry / Metal plating facilities (present or historical)</u>	<b>Storage (Mixed)</b>
<u>- No firetruck with AFFF on FWAATS property</u>	<b>Storage (Solution)</b>
<u>- No <del>other</del> spills</u>	<b>Inventory, Off-Spec</b>
<u>- 2010 hard landing: Colonel sandy crash landing/hard landing. Landing gear problem: Responded to by airport fire department</u>	<b>Containment</b>
<u>- At retirement of Aviators, shot water out of hose when they landed (no AFFF or soap solution)</u>	<b>SOP on Filling</b>
	<b>Leaking Vehicles</b>
	<b>Nozzle and Suppression System Testing</b>
	<b>Dining Facilities</b>
	<b>Vehicle Washing</b>
	<b>Ramp Washing</b>
	<b>Fuel Spill Washing and Fueling Stations</b>
	<b>Chrome Plating or Waterproofing</b>

# PA Interview Questionnaire - Other

Facility: FWAATS  
 Interviewer: [REDACTED]  
 Date/Time: 10/1/19 0900

Interviewee: <u>SFC [REDACTED]</u> Title: <u>FWAATS Instructor/Safety NCO</u> Phone Number: <u>[REDACTED]</u> Email: <u>[REDACTED]</u>	Can your <u>name/role</u> be used in the PA Report? <u>(Y)</u> or N Can you recommend anyone we can interview? Y or N _____
<b>Roles or activities with the Facility/Years working at the Facility:</b>	
<u>Years at FWAATS: Aug 2008-Present</u>	
<u>Sergeant First Class</u>	
<b>PFAS Use: Identify accidental/intentional release locations, time frame of release, frequency of releases, storage container size (maintenance, fire training, firefighting, buildings with suppression systems (as builds), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?</b>	
<u>- FWAATS was built in 1996</u>	<b>Known Uses</b>
<u>- JT Martin Fire and Safety took old tri-max's to dispose of in 2011</u>	<b>Use</b>
<u>• Replaced with BC dry chemical extinguishers by JT Martin</u>	<b>Procurement</b>
<u>- JT Martin conducts Annual checks on extinguishers (visual inspections)</u>	<b>Disposition</b>
<u>- Pratt and Whitney aircraft engine manufacture is nearby (on map)</u>	<b>Storage (Mixed)</b>
<u>- 3 5-gallon buckets found in 2019. 1 in flammable liquids shed, 2 in a maintenance room that was the old tractor room. They were taken by JT Martin.</u>	<b>Storage (Solution)</b>
	<b>Inventory, Off-Spec</b>
	<b>Containment</b>
	<b>SOP on Filling</b>
	<b>Leaking Vehicles</b>
	<b>Nozzle and Suppression System Testing</b>
	<b>Dining Facilities</b>
	<b>Vehicle Washing</b>
	<b>Ramp Washing</b>
	<b>Fuel Spill Washing and Fueling Stations</b>
	<b>Chrome Plating or Waterproofing</b>

# PA Interview Questionnaire - Other

Facility: FWAATS  
 Interviewer: [REDACTED]  
 Date/Time: 10/1/19 1000

Interviewee: <u>[REDACTED]</u> Title: <u>Site lead for Dyn Corp International</u> Phone Number: <u>[REDACTED]</u> Email: <u>[REDACTED]</u>	Can your name <u>(role)</u> be used in the PA Report? <u>(Y)</u> or N (roll only) Can you recommend anyone we can interview? Y or N _____
<b>Roles or activities with the Facility/Years working at the Facility:</b>	
- Years @ FWAATS: <u>1993-present (contractor at FWAATS)</u> <u>Aircraft Mechanic, Lead Man</u>	
- Started working at <u>Clarkburg-Bendorn airport in ARNG</u> <u>hangar before FWAATS was built (1993-1996)</u>	
<b>PFAS Use: Identify accidental/intentional release locations, time frame of release, frequency of releases, storage container size (maintenance, fire training, firefighting, buildings with suppression systems (as built), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?</b>	
- DuPont is nearby along the Ohio River (Parkersburg)	<b>Known Uses</b>
- There were 2 previous runways/taxiway (on map)	Use
- ARNG opened October 1992 at adjacent airport, operated out of hangar with the old fire truck from '92-'96, then moved to current location.	Procurement
- May have sprayed extinguisher hose when an Aviator retired (not sure if foam or water)	Disposition
- Doesn't recall off-site training in his time at FWAATS	Storage (Mixed)
	Storage (Solution)
	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility: FWAATS  
 Interviewer: [REDACTED]  
 Date/Time: 10/1/2019 1700  
 EC

Interviewee: [REDACTED] Title: (Retired) FWAATS Safety Officer Phone Number: [REDACTED] Email: _____	Can your name/role be used in the PA Report? Y or <input checked="" type="radio"/> N Can you recommend anyone we can interview? Y or N _____
<b>Roles or activities with the Facility/Years working at the Facility:</b>	
Safety Officer at FWAATS - 1998-2011	
PFAS Use: Identify accidental/intentional release locations, time frame of release, frequency of releases, storage container size (maintenance, fire training, firefighting, buildings with suppression systems (as built), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?	
• AFFF procured from the factory in Redding, CA in 1996 and brought right to FWAATS	<b>Known Uses</b>
	Use
	Procurement
	Disposition
• AFFF Never used in training because it was corrosive and expensive	Storage (Mixed)
	Storage (Solution)
• Fire training on-site was visual instruction on Tri-Max extinguisher that had only soap & water. Purpose was to make people generally aware of how to use it.	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
• No off-facility training	Dining Facilities
	Vehicle Washing
	Ramp Washing
• No large fuel spills - only spill kits had to be used. Never any AFFF	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing



## **Appendix B.2**

### **Visual Site Inspection Checklists**

## Visual Site Inspection Checklist

Names(s) of people performing VSI: \_\_\_\_\_

Recorded by: \_\_\_\_\_

ARNG Contact: \_\_\_\_\_

Date and Time: 10/1/19

Method of visit (walking, driving, adjacent): \_\_\_\_\_

### Source/Release Information

Site Name / Area Name / Unique ID:

FWAATS

Site / Area Acreage:

6.87 acres

Historic Site Use (Brief Description):

Provides Army Aviation instruction for non-standard fixed wing aircraft. Land leased from airport.

Current Site Use (Brief Description):

Aviator training for nonstandard fixed wing aircraft

Physical barriers or access restrictions:

Gated entryway with badge access

1. Was PFAS used (or spilled) at the site/area?

Y/N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

2. Has usage been documented?

Y/N

2a. If yes, keep a record (place electronic files on a disk):

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

Commercial Aviation industries

4. Is this site located at an airport/flightline?

Y/N

4a. If yes, provide a description of the airport/flightline tenants:

Adjacent to Benedum Airport (North Central West Virginia Airport)

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y ☒ N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

### Transport / Pathway Information

#### Migration Potential:

1. Does site/area drainage flow off installation?

☒ Y ☒ N

1a. If so, note observation and location:

Surface water goes to adjacent creek on eastern boundary  
(bottom of hill)

2. Is there channelized flow within the site/area?

Y ☒ N

2a. If so, please note observation and location:

3. Are monitoring or drinking water wells located near the site?

Y ☒ N

3a. If so, please note the location:

Not within 1 mi of facility (EDR)

4. Are surface water intakes located near the site?

Y ☒ N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y ☒ N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

☒ Y ☒ N

6a. If so, please note the source and location.

Adjacent municipal

airport

6b. Will off-site reconnaissance be conducted?

☒ Y ☒ N

No photographs permitted  
though.

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y / ☒ N

1a. If so, please describe change (ex. Structures no longer exist):

2. Is the site/area vegetated?

Y / ☒ N

2a. If not vegetated, briefly describe the site/area composition:

3. Does the site or area exhibit evidence of erosion?

Y / ☒ N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y / ☒ N

4a. If yes, describe the location and extent of the ponding:

### Receptor Information

1. Is access to the site restricted?

☒ Y / N

1a. If so, please note to what extent:

Gated entry w/ badge access

2. Who can access the site?

☒ Site Workers / ☒ Construction Workers / ☒ Trespassers / ☐ Residential / Recreational Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

☒ Y / N

3a. If so, please note the location/distance:

To Southeast immediately down the hill

4. Are any schools/day care centers located near the site?

Y / N

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site?

Y / ☒ N

5a. If so, please note the location/distance/type:

No significant wetland area



## **Appendix B.3**

### **Conceptual Site Model Information**

## Preliminary Assessment – Conceptual Site Model Information

Site Name: FWAATS

Why has this location been identified as a site? 5-gallon AFFF tanks were kept on property and trimax units were kept there before switching to BC extinguishers (dry chem)

Are there any other activities nearby that could also impact this location?

Yes, commercial ~~airports~~ aviation industries (engine manufacturing, etc.) and adjacent Airport

### Training Events

Have any training events with AFFF occurred at this site? No

If so, how often? N/A

How much material was used? Is it documented? N/A

**Identify Potential Pathways:** Do we have enough information to fully understand over land surface water flow, groundwater flow, and geological formations on and around the facility? Any direct pathways to larger water bodies?

### Surface Water:

Surface water flow direction? East off of site → South to tributary, then Northeast regionally

Average rainfall? Annual average rainfall: 45.9"

Any flooding during rainy season? No

Direct or indirect pathway to ditches? Indirect: On-site SW released over hill to creeks via drainage

Direct or indirect pathway to larger bodies of water? Indirect - follows SW paths to creeks/rivers

Does surface water pond any place on site? No

Any impoundment areas or retention ponds? No

Any NPDES location points near the site? Yes

How does surface water drain on and around the flight line? Drain spanning width of flight line. This leads to oil/water separator. Then discharges to Simpson Creek

## Preliminary Assessment – Conceptual Site Model Information

### Groundwater:

Groundwater flow direction? NW to West Fork/Monongahela Rivers

Depth to groundwater? ~120 feet bgs

Uses (agricultural, drinking water, irrigation)? None on-site

Any groundwater treatment systems? No

Any groundwater monitoring well locations near the site? No 5 at airport according to their GPP

Is groundwater used for drinking water? No

Are there drinking water supply wells on installation? No

Do they serve off-post populations? No

Are there off-post drinking water wells downgradient? No

### Waste Water Treatment Plant:

Has the installation ever had a WWTP, past or present? No, just O/W separator. O/W separator goes to Bridgeport WWTP

If so, do we understand the process and which water is/was treated at the plant?

Do we understand the fate of sludge waste?

Is surface water from potential contaminated sites treated? Surface water flows to adjacent creeks and joins West Fork watershed path.

### Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go? N/A no firefighting here

2. Are nozzles tested? How often are nozzles tested? Where are nozzles tested? Are nozzles cleaned after use? Where does the rinse water flow after cleaning nozzles? No Nozzle testing at FWAATS

3. Other?

## Preliminary Assessment – Conceptual Site Model Information

### Identify Potential Receptors:

Site Worker Yes, following spills (potential)

Construction Worker \_\_\_\_\_

Recreational User No

Residential \_\_\_\_\_

Child \_\_\_\_\_

Ecological \_\_\_\_\_

Note what is located near by the site (e.g. daycare, schools, hospitals, churches, agricultural, livestock)?

Schools 1.6 mi SW, Hospital 2.2mi NW, Farm 1 mi SW

### Documentation

Ask for Engineering drawings (if applicable). \_\_\_\_\_



Has there been a reconstruction or changes to the drainage system? When did that occur? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Appendix C

### Photographic Log



## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	FWAATS	Bridgeport, West Virginia
<p><b>Photograph No. 1</b></p> <p><b>Description:</b></p> <p>FWAATS non-AFFF fire suppression system in the hangar.</p> <p>Photo Date: 10/1/2019</p>		
<p><b>Photograph No. 2</b></p> <p><b>Description:</b></p> <p>HAZMAT Room that previously held 5-gallon buckets of AFFF.</p> <p>Photo Date: 10/1/2019</p>		

## APPENDIX C – Photographic Log

**Army National Guard, Preliminary  
 Assessment for PFAS**

**FWAATS**

**Bridgeport, West Virginia**

### Photograph No. 3

#### Description:

Ground Support Room.  
 Follow-up interviews  
 indicated that AFFF was  
 never stored in this  
 location.

Photo Date: 10/1/2019



### Photograph No. 4

#### Description:

The type of fire extinguisher  
 currently utilized at the  
 facility. All extinguishers are  
 now dry chemical.

Photo Date: 10/1/2019






## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	FWAATS	Bridgeport, West Virginia
<p><b>Photograph No. 5</b></p> <p><b>Description:</b></p> <p>The Flammable Liquids Shed, which formerly held 5-gallon buckets of AFFF. One 5-gallon bucket was found here in 2019.</p> <p>Photo Date: 10/1/2019</p>		
<p><b>Photograph No. 6</b></p> <p><b>Description:</b></p> <p>Drains extending across the facility flight line and leading to the oil-water separator. (Left - large drain for stormwater, which always drains to nearby surface water. Right - The larger drain is the same as described for the left photograph. The smaller gray drain on the right is the airplane wash pad drain that leads to a valve. Under normal conditions, the valve discharges to goes to the nearby creek. If the valve is turned for plane washing or a spill, the valve leads to an oil-water separator and then the nearby wastewater treatment plant.)</p> <p>Photo Date: 10/1/2019</p>		

## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS		FWAATS	Bridgeport, West Virginia
<b>Photograph No. 7</b>			
<b>Description:</b>			
<p>FWAATS hangar drain. This drain always leads to the oil-water separator and then to the wastewater treatment plant.</p> <p>Photo Date: 10/1/2019</p>			