FINAL
Preliminary Assessment Report
Albany Army Aviation Support Facility #3
Latham, New York

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

April 2020

Prepared for:

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Acronyms and Abbreviations

AASF	Army Aviation Support Facility
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AFD	Albany Fire Department
ALB	Albany International Airport
AOI	area of interest
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFD	Colonie Fire Department
CSM	conceptual site model
°F	degrees Fahrenheit
FTA	fire training area
HEF	high expansion foam
NYARNG	New York Army National Guard
NYSDEC	New York State Department of Environmental Conservation
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SI	Site inspection
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VSI	visual site inspection

Executive Summary

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division, Cleanup Branch contracted AECOM Technical Services, Inc. (AECOM) to perform *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. The ARNG is assessing potential effects on human health related to processes at facilities that used per- and poly-fluoroalkyl substances (PFAS) (a suite of related chemicals), primarily in the form of aqueous film forming foam released during firefighting activities or training, 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.

AECOM completed a PA for PFAS at the New York ARNG (NYARNG) Albany Army Aviation Support Facility (AASF) #3 in Latham, New York to assess potential PFAS release areas and exposure pathways to receptors. The Albany AASF #3 was established around 1987 and is adjacent to the southeast end of the Albany International Airport. Albany AASF #3 contains four separate buildings comprising approximately 50 acres, and a small helipad used for military training. The performance of this PA included the following tasks:

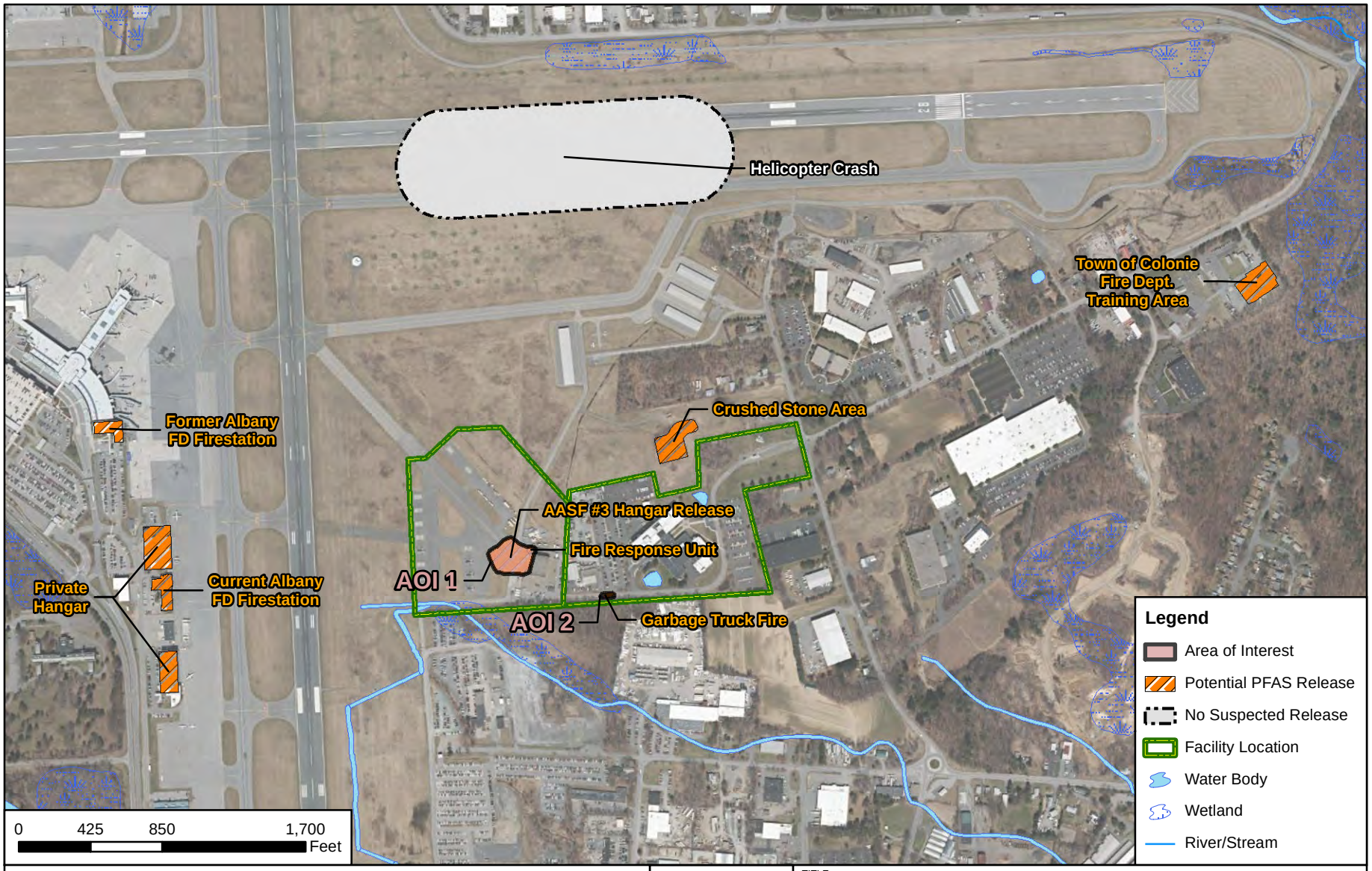
- Reviewed data resources to obtain information relevant to suspected PFAS releases
- Conducted a 1-day site visit on 12 June 2018
- Interviewed current and former NYARNG personnel during the site visit, including the Flight Facility Commander, Albany Fire Department (AFD) Chief, and former AFD Firefighter
- Completed visual site inspections (VSI) at known or suspected PFAS release locations and documented with photographs
- Developed a preliminary conceptual site model (CSM) to outline the potential release and pathway of PFAS for the Areas of Interest (AOIs) and the facility

Two AOIs related to potential PFAS releases was identified at the Albany AASF #3 during the PA. The AOIs are shown on **Figure ES-1** and described in the **Table ES-1** below.

Table ES-1: AOIs at Albany AASF #3

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	AASF #3 Hangar Release / Fire Response Unit	NYARNG	Initial testing of deluge system in 2012; emergency response unit operated1983 to 1992
AOI 2	Garbage Truck Fire	NYARNG	Fire in back of garbage truck extinguished in 2017; use of AFFF unknown

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 Albany AASF #3, which presents the potential receptors and media impacted, is shown on **Figure ES-2**.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Albany AASF #3, NY			
REVISED	1/31/2020	GIS BY	MS	1/31/2020
SCALE	1:10,200	CHK BY	MB	1/31/2020
Base Map: National Agricultural Imagery Program, 2016 Well Data: VT Dept of Envionmental Conservation, Water Resource Section; ARNG		PM	RG	1/31/2020

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TITLE

Summary of Findings

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Figure ES-1

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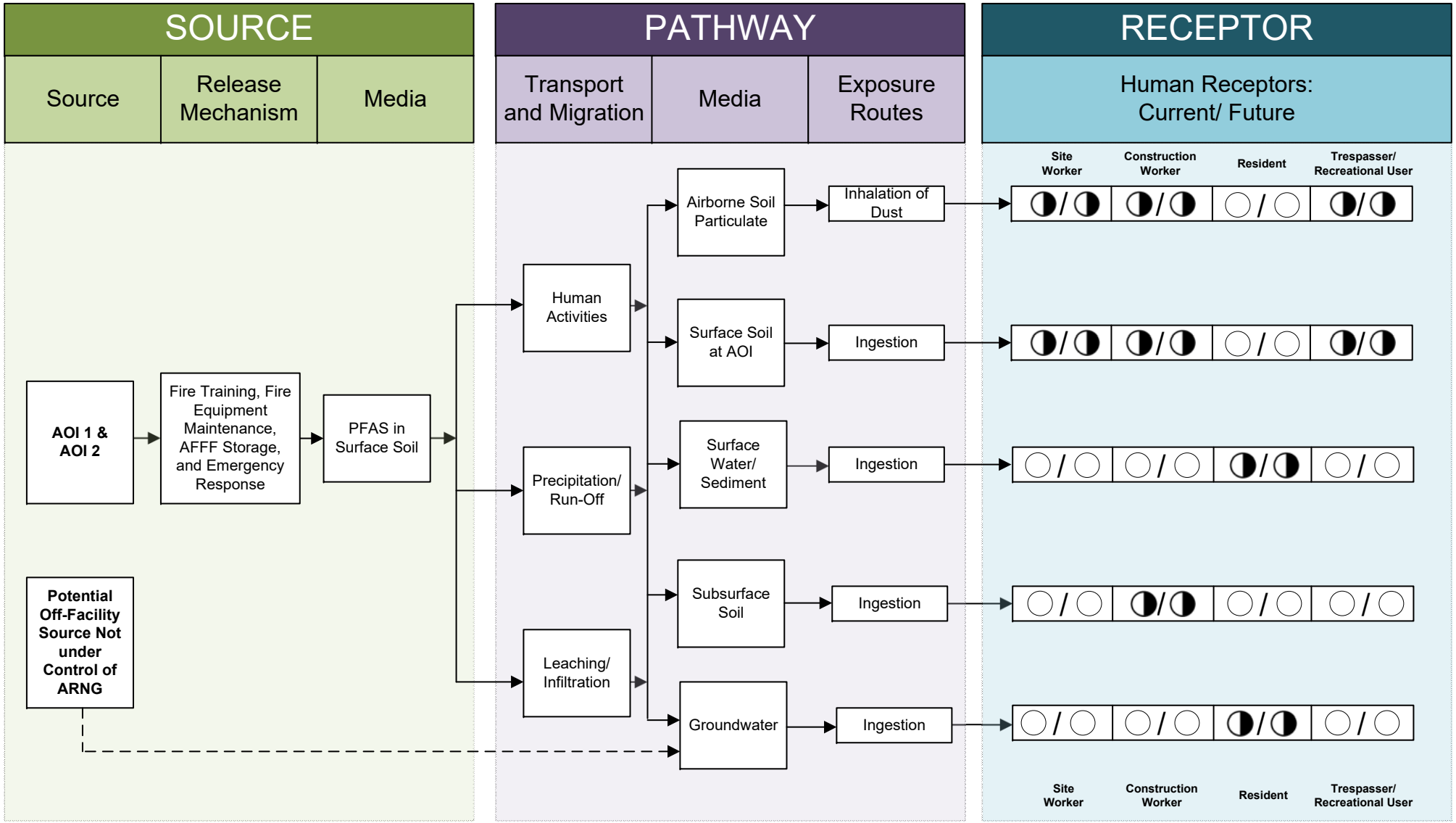


LEGEND

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

Notes:
1. The resident receptors refer to an off-site resident.
2. Dermal contact exposure pathway is incomplete for PFAS.

Figure ES-2
Conceptual Site Model
Albany AASF #3

1. Introduction

1.1 Authority and Purpose

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division, Cleanup Branch contracted AECOM Technical Services, Inc. to perform *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide* 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 their facilities that used per- and poly-fluoroalkyl substances (PFAS) (a suite of related chemicals), primarily releases of aqueous film forming foam (AFFF) released during firefighting activities or training, although other sources of PFAS 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 Health Advisories for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water. In the absence of federal maximum contaminant levels, some states have adopted their own drinking water standards for PFAS. The State of New York currently does not have promulgated standards for PFAS in drinking water.

This report presents findings of a PA for PFAS at the New York ARNG (NYARNG) Albany Army Aviation Support Facility (AASF) #3 (also referred to as the facility) in Latham, New York, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Part 300), and USACE requirements and guidance. This PA Report documents the known locations where PFAS may have been released into the environment at the facility. 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 data resources to obtain information relevant to suspected PFAS releases
- Conducted a 1-day site visit on 12 June 2018
- Interviewed current and former NYARNG personnel during the site visit including the Flight Facility Commander, Albany Fire Department (AFD) Chief, and a former AFD Firefighter
- Completed visual site inspections (VSI) at known or suspected PFAS release locations and documented with photographs
- Developed a preliminary conceptual site model (CSM) for any Area of Interest (AOI) identified during the PA

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:

- **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 PFAS releases at the facility identified during the site visit.
- **Section 4** – **Emergency Response Areas:** describes areas of AFFF release at the facility, specifically in response to emergency situations.
- **Section 5** – **Adjacent Sources:** describes sources of 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 at each AOI.
- **Section 7** – **Conclusions:** summarizes the data findings and presents the conclusions 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

The Albany AASF #3 is located in Latham, in Albany County, located in eastern New York. The facility is on Albany International Airport property and leased to the NYARNG. The facility is approximately seven miles north-northwest from the Albany city center and 0.75 miles east of the southern end of Runway 1 at Albany International Airport. Interstate 87 is 0.25 miles to the east of the facility.

Prior to 1977, the property was undeveloped. A small airplane hangar was built shortly before 1985, which the NYARNG began operating immediately. In 1987, a lease agreement for an 8.2-acre parcel of land directly northwest of the hangar expanded the current property to roughly 10 acres.

1.5 Facility Environmental Setting

The Albany AASF #3 is located in a predominantly urban area comprised of a hilly mix of deciduous and evergreen trees, with an average elevation of 354 feet above mean sea level. According to the 2010 US Census, Albany County has a population of 20,736 and comprises 533 square miles, of which only 10 are water (US Census Bureau, 2010). Approximately two miles north of the Albany AASF #3 is the Mohawk River, which trends west to east before it converges with the Hudson River roughly four miles to the northeast of AASF #3. Several towns are less than two miles from the Albany AASF #3, including the Town of Verdoy 1.25 miles to the north, and the Town of Colonie 1.75 miles to the southwest. There are also multiple industries located within a 2-mile radius of the Albany AASF #3.

1.5.1 Geology

The facility is located south of the Mohawk River, within the southeastern geological region of the Hudson-Mohawk River Lowlands, which is a segment of the Mohawk River Basin physiographic province (USGS, 2006). This region extends eastward from the Great Lakes Lowlands to the Hudson Valley through the center of the basin. The Mohawk River valley is an area of generally subdued topography shaped over multiple periods of extensive glacial advancement and recession (deglaciation).

Deglaciation is responsible for thick deposits of fluvial sand, gravel, and lacustrine clay, silt, and fine sand found throughout the region. As a result, glacially derived landforms are present near the facility, including eskers, drumlins, recessional moraines, outwash systems, and massive deposits of sand and gravel, known as kame, laid down at the periphery of ice sheets during glacial drainage (Fairchild, 1896; Isachsen et al., 2000).

The facility lies on the southernmost edge of the Colonie Channel, a north-south oriented bedrock channel that runs from the Town of Colonie up through the Town of Malta (USGS, 2002). The majority of both the surface and underlying material of the facility are Pleistocene age unconsolidated glacial deposits, recent floodplain deposits, and lacustrine delta. These sediments consist of layers of fine sands and gravel underlain by silts and clays of variable thicknesses ranging between 20 to nearly 350 feet (USGS, 1964; USGS 1981b). These sediments were deposited fluvially against glacial ice but prograded into glacial Lake Albany, distinguished by steeply dipping forest beds, which indicate deposition in standing water (USGS, 1964). The nearshore lake sediments were reworked by wind, after the lake had drained, to form well-sorted blanket lake sands and dune fields; this creates permeable dunes and blanket sands that overlie thick sequences of relatively impermeable lacustrine silt and clay (USGS, 1988).

A previous subsurface investigation by the US Department of Agriculture Soil Conservation Service, who perform the National Cooperative Soil Survey, indicated that the majority of the upper 0-12 feet of the western side of the facility subsurface material are various types of ground moraines and silt loam. This silt loam consists of low permeability, somewhat-poorly to poorly-drained fine-grained silts and clays with very slow infiltration rates. These soil layers can impede the downward movement of water, suggesting there is high surficial runoff from the facility to surrounding water body features. The central and eastern areas of the facility, however, are composed of fine sands with high infiltration rates and high permeability, causing this area to have more influence on the local groundwater flow.

Underneath the silt loam and fine-grained sands lies sedimentary bedrock such as shale, sandstone, and carbonate rocks. Many of the drinking water wells in the Mohawk River Basin come from bedrock; however, they do not yield as much as the unconsolidated sediments (USGS, 2006).

1.5.2 Hydrogeology

Based on review of USEPA's map of Sole Source Aquifers, Albany AASF #3 is not located above a sole source aquifer. Based on review of New York State Department of Environmental Conservation's (NYSDEC) Map of Principal and Primary Aquifers in New York State, the facility cantonment area is located over a primary aquifer spanning roughly 40 square miles as well as portions of two other aquifers. The unconsolidated sand and gravel units form a virtually continuous aquifer system underlying the Mohawk River Valley (USGS, 1981a). Water in the aquifer is principally under water-table conditions and in hydraulic contact with the Mohawk River, so that pumping of most wells in the area induces recharge from the river to an unknown extent (USGS, 2002).

An unconfined lacustrine sand aquifer is the most surficial aquifer, and there are also parts of the Colonie Channel aquifer, which is confined within the deepest parts of the channel and variably

confined and unconfined within the shallower peripheral channel areas and consists of thin sand and gravel. The unconsolidated sand and gravel units yield the largest supply to wells in the Mohawk River Valley, with yields as much as nine million gallons per day across the entire aquifer (USGS, 1981a). Precipitation that infiltrates the land surface is the sole source of recharge to the lacustrine sand aquifer and also recharges the alluvial aquifer and unconfined parts of the Colonie channel aquifer (USGS, 2002).

Groundwater direction in the cantonment area is generally from north towards the Mohawk River (**Figure 1-2**). There are several potable wells located within 1.5 miles to the southeast, northwest, and northeast of the facility (**Figure 1-2**). The depth to groundwater ranges between 4.5 and 150 feet below ground surface (bgs), with well depths ranging anywhere from 30 to 900 feet bgs and yield anywhere from 0.5 to 120 gallons per minute.

1.5.3 Hydrology

The facility is in the Shakers Creek-Mohawk River Watershed (**Figure 1-3**), which is a part of the much larger Mohawk River Basin. The Mohawk River Basin covers 3,500 square miles, drains over 12,000 square miles of streams, and encompasses parts of 14 counties, including all of Montgomery County, most of Schoharie and Schenectady Counties, and parts of Herkimer, Hamilton, Fulton, Greene, Oneida, Saratoga, Albany, Lewis, Madison, Ostego, and Delaware Counties. The Mohawk River is a major tributary to the Hudson River, while the Schoharie and West Canada Creeks are major tributaries to the Mohawk River (USGS, 2006). The main channel of the Mohawk River runs west to east roughly two miles north of the facility and forms a floodplain. Surface water resources near the Albany AASF #3 include natural streams, rivers, and open water features (**Figure 1-3**). All surface runoff from the facility eventually drains into the Mohawk River.

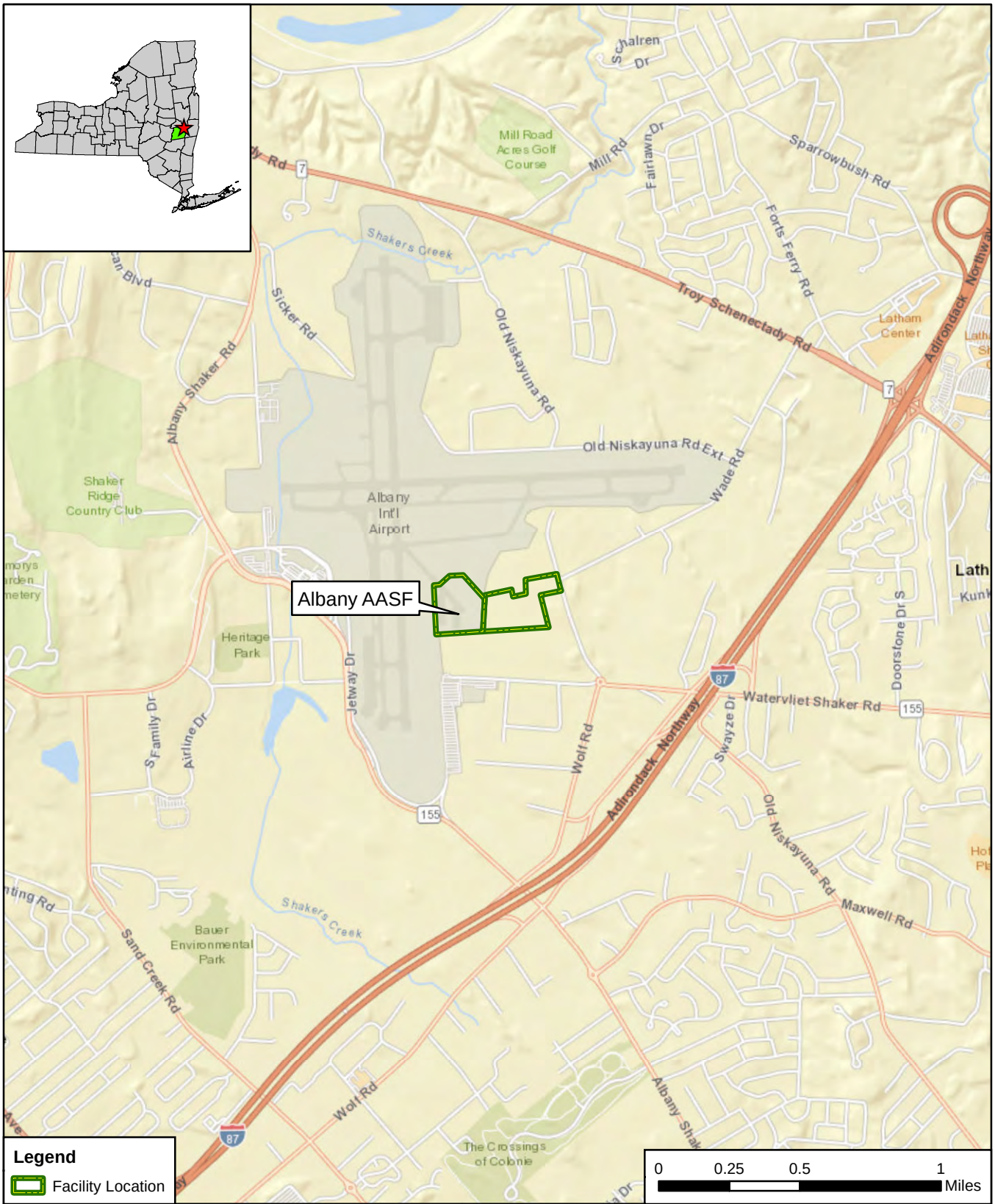
Approximately 0.75 miles west of the facility is Shaker's Creek. Shakers Creek headwaters flow south to north from Ann Lee Pond and then west to east-northeast at the end of the Runway 19 of Albany International Airport (**Figure 1-3**). A second branch of Shakers Creek flows south to north 0.75 miles east of the facility, which converges with Shaker's Creek slightly east of Runway 19. Shaker's Creek empties into the Mohawk River less than one mile after the convergence of the eastern branch. The drainage ditch on the southwestern boundary of the facility runs south below and around the southern runway (Runway 1) and flows west-northwest before converging with Ann Lee Pond (**Figure 1-3**).

1.5.4 Climate

The climate is predominately continental, with an average annual temperature of 48.2 degrees Fahrenheit (°F). Seasonally, temperatures vary from an average summer high of 68.9 °F to average winter lows of 27 °F (NOAA, 2018). The total mean annual precipitation is 34.27 inches. February is the driest month, with 1.95 inches of precipitation, while August is the wettest month, with 3.47 inches.

1.5.5 Current and Future Land Use

The facility has access through a guarded security gate off Old Niskayuna Road. The property is leased by the NYARNG, which conducts training of personnel and aircraft maintenance. There are no current expansion plans for the facility and, in general, the future land use at the facility is not expected to change. Surrounding current land use includes mostly aviation, commercial, industrial and residential uses. Besides Albany International Airport, some of the closest commercial and industrial neighbors to Albany AASF #3 include a pool manufacturer, an auto glass repair company, and an industrial equipment supplier.



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NOTES	Preliminary Assessment for PFAS at Albany AASF #3, NY			
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SCALE	1:31,680	CHK BY	MB	11/8/2019
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	11/8/2019

Facility Location

AECOM
12420 Milestone Center Drive
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Figure 1-1

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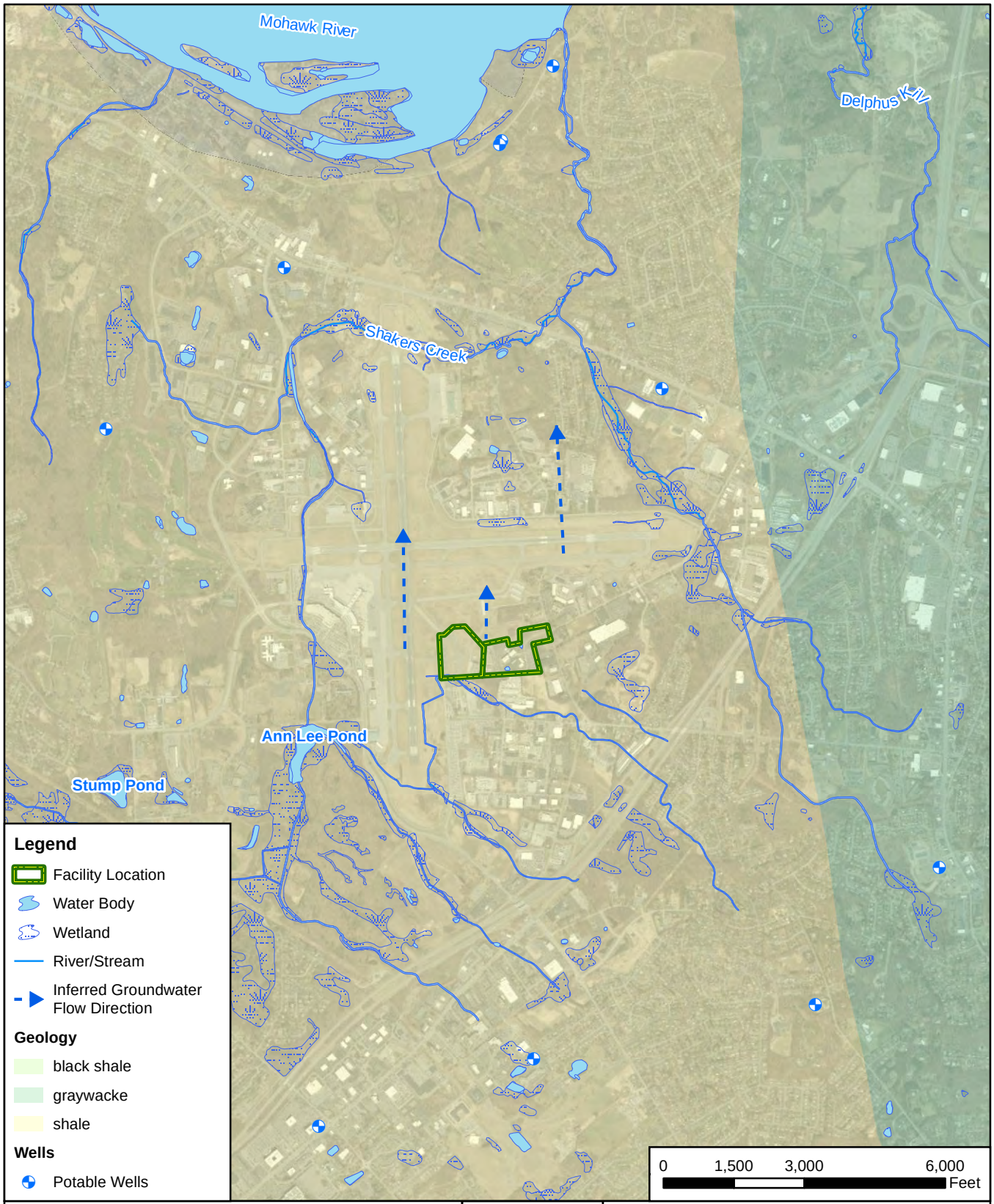

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Albany AASF #3, NY			
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SCALE	1:36,000	CHK BY	MB	1/31/2020
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	RG	1/31/2020

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Groundwater Features

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Figure 1-2

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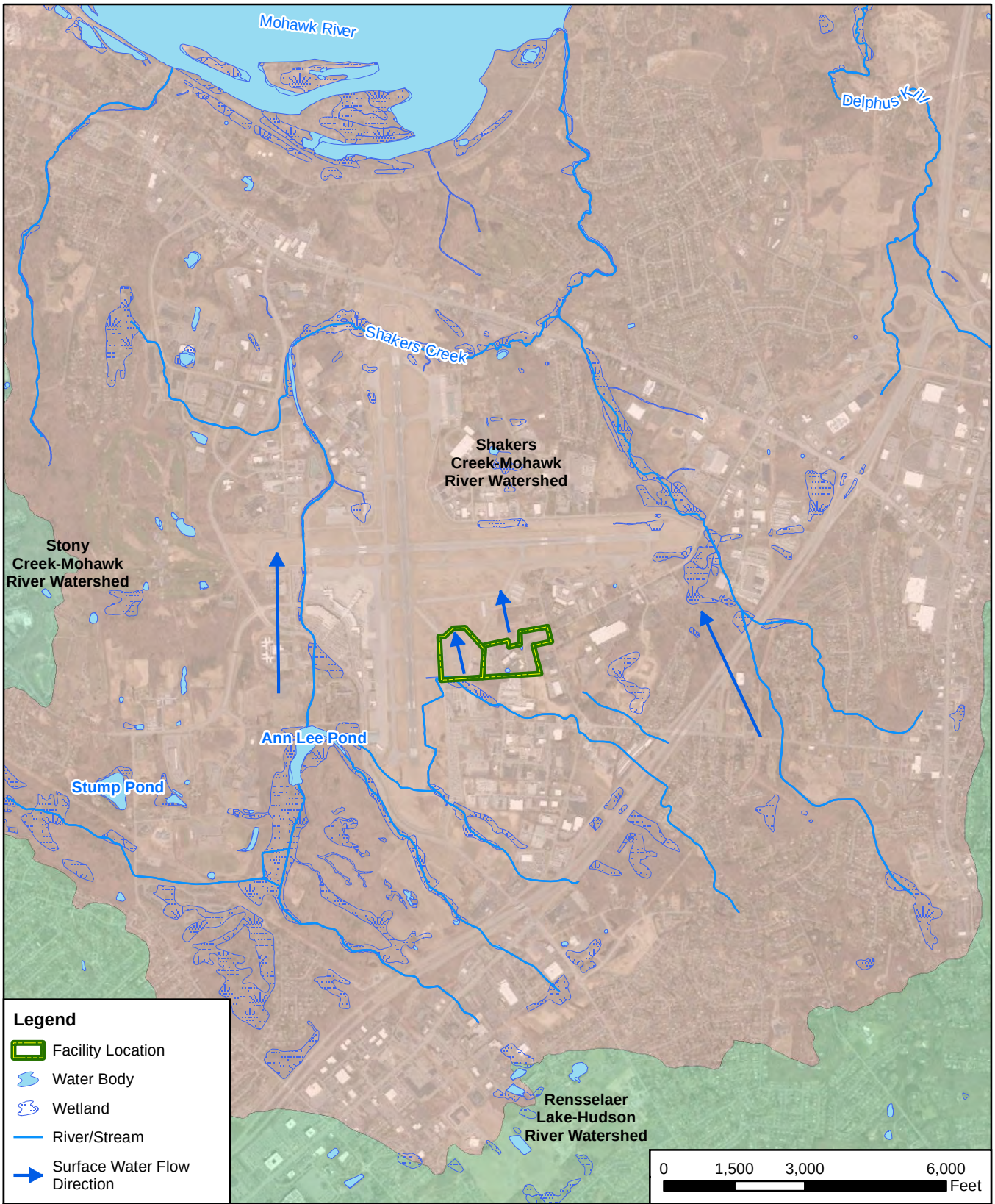

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NOTES	Preliminary Assessment for PFAS at Albany AASF #3, NY			
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SCALE	1:36,000	CHK BY	MB	1/31/2020
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Surface Water Features

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Figure 1-3

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2. Fire Training Areas

The Albany AASF #3 had a certified Fire Response Unit, for emergency firefighting and rescue scenarios, from 1983 until it was disbanded in 1992. Based on the interviewee's knowledge of facility history dating back to 1980, the Fire Response Unit did not perform any fire training activities within the Albany AASF #3 facility boundaries. The NYARNG, AFD, and Town of Colonie Fire Department (CFD) performed live burn fire training activities downgradient of Albany AASF #3.

The CFD perform fire training activities at a location approximately one mile to the northeast of Albany AASF #3 (see **Section 5.1**). Between 1983 and 1992, NYARNG Fire Response Unit and AFD conducted joint fire training activities, though these training activities occurred off facility, in the Crushed Stone Area, approximately 0.2 miles northeast of Albany AASF #3 (see **Section 5.3**). No FTAs were identified on facility during the PA based on these data.

3. Non-Fire Training Areas

Two non-FTAs were identified during the PA. A description of the non-FTAs is presented below, and the non-FTA are shown on **Figure 3-1**. Interview records appear in **Appendix B**. Photographs of the non-FTAs appear in **Appendix C**.

3.1 AASF #3 Hangar Release

The NYARNG Albany AASF #3 is located 0.45 miles southeast from the end of Runway 1, at geographic coordinates 42°44'32.16"N; 73°47'57.83"W. AASF #3 was built sometime between 1977 and 1985. A 1987 lease agreement (**Appendix A**) states the facility and an adjacent 8.2-acre parcel of land used for certain aircraft and vehicle parking was leased to NYARNG in 5-year increments for a period not to extend beyond 40 years. The AASF #3 Hangar (**Figure 3-1**) had a 3% AFFF fire suppression deluge system installed in 2012. An initial testing of the system caused AFFF to completely fill the hangar. The hangar bay doors were opened, allowing the AFFF to spill out onto the tarmac and into the grass. The release was cleaned up and disposed of by a contractor. It is unknown how much AFFF was used during the testing or spilled outside of the hangar. Annual testing of the deluge system is conducted using only water. One 35-gallon 3% AFFF tank is located inside the hangar on the southern wall (**Appendix C**).

3.2 Fire Response Unit

The former Fire Response Unit was housed in a room attached to the northern side of the AASF #3 Hangar (**Figure 3-1**). This unit existed between 1983 and 1992 and responded to all fire and emergency related incidents that occurred at the Albany AASF #3 and Albany International Airport in conjunction with the AFD. The Fire Response Unit had one firetruck with a 150-gallon dual line of 3% AFFF and water tank and a 400-gallon Purple K tank. It is unknown where the firetruck was filled, washed, or if it ever leaked within the Fire Response Unit room. This room now contains the 500 gallon 3% AFFF tank, which is connected to the hangar deluge system and sits on a raised platform against the wall (**Appendix C**). Annual testing of the deluge system is conducted using only water.

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Albany AASF #3, NY			
REVISED	1/31/2020	GIS BY	MS	1/31/2020
SCALE	1:4,800	CHK BY	MB	1/31/2020
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	RG	1/31/2020

Non-Fire Training Areas

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Figure 3-1

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4. Emergency Response Areas

One instance of emergency response was identified at the Albany AASF #3 during the PA. A description of the response area is presented below, and the location is shown on **Figure 4-1**.

4.1 Garbage Truck Fire

During the VSI, NYARNG staff stated that there was a fire in the back of a garbage truck in May 2017. The fire occurred southeast of the hangar. The CFD responded to the incident, but it is unknown if any AFFF were used during the emergency response.

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Albany AASF #3, NY			
REVISED	1/31/2020	GIS BY	MS	1/31/2020
SCALE	1:4,800	CHK BY	MB	1/31/2020
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	RG	1/31/2020

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Emergency Response Areas

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Figure 4-1

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5. Adjacent Sources

Five off-site potential PFAS sources were identified adjacent to the Albany AASF #3 during the PA interviews (**Appendix B**) and in the Environmental Data Resource Report (**Appendix A**). **Figure 5-1** presents the locations of potential adjacent source areas. Photographs of the adjacent sources appear in **Appendix C**.

5.1 Town of Colonie Fire Department Training Area

Less than one mile to the northeast of the facility is the fire training area used by the CFD. Although no one was available to interview from the CFD, interviews with NYARNG staff indicated that live fire training has historically been conducted by a dozen local fire departments with AFFF at the location shown on **Figure 5-1**. This area is downgradient from the facility, and based on northern groundwater flow direction, it is possible that potential PFAS contamination from the fire training activities are being carried into the residential and industrial areas to the north of Albany AASF #3.

5.2 Albany Fire Station – Former and Current

The AFD is located at Albany International Airport, and they are responsible for responding to all fire and emergency-related incidents occurring at Albany International Airport. The AFD performed training with the NYARNG Fire Response Unit from 1983 to 1992 at the Crushed Stone Area. The former fire station location can be seen on **Figure 5-1**. This location held one 1,500-gallon 3% AFFF storage tank and three firetrucks. Each firetruck held 3,000 gallons of water and 450 gallons of AFFF, which is filled from the storage tank. It is unclear as to when the fire station was built or when they began storing AFFF. In 2000, the AFD moved to their current location seen on **Figure 5-1**. This new location holds the 1,500-gallon storage tank and the three firetrucks from the former location. No spills or leaks have been reported inside either fire station.

5.3 Crushed Stone Area

Roughly 0.20 miles northeast of the facility is the Crushed Stone Area, where the AFD and the NYARNG Fire Response Unit conducted joint live burn fire training once per year between 1983 and 1992 (**Figure 5-1**). There is some discrepancy regarding whether diesel fuels were used for the fire; however, more than one source said fuels were used during the training events. Interviews with NYARNG and AFD staff stated that during and after fire training activities, the AFFF used for training was left to dissipate on the grass and soil. Joint nozzle testing also occurred during this period twice per year. Records indicate 20 gallons of 3% AFFF were used during the activities. The Crushed Stone Area is downgradient from the facility, and based on northern groundwater flow direction, it is possible that potential PFAS contamination from these fire training activities is being carried into the residential and industrial areas to the north of Albany AASF #3.

The AFD still performs fire training once per year and nozzle testing twice per year; however, it is unclear as to when AFFF use was discontinued. Currently, only water is used during these activities.

5.4 Private Hangars

Located on either side of the current AFD fire station are two private airplane hangars. Interviews and other institutional information were not available directly from either private entity. AFD staff stated that it was known that both private hangars currently have high expansion foam (HEF), with one hangar having HEF for at least 10 years. The type and concentration of the AFFF are unknown. The testing (if any), leakage, maintenance, or other use of AFFF that may or may not have occurred is unknown.

5.5 Helicopter Crash

A helicopter reportedly crashed sometime in the early 1980s, possibly 1983-1984, on Albany International Airport property roughly 0.45 miles north of the Albany AASF #3. The AFD responded to the incident. Based on an interview with the AFD chief, no AFFF was used at the crash site (**Appendix B**), and therefore has been identified as an area of "No Suspected Release" on **Figure 5-1**

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Albany AASF #3, NY			
REVISED	1/31/2020	GIS BY	MS	1/31/2020
SCALE	1:13,200	CHK BY	MB	1/31/2020
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	RG	1/31/2020

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Adjacent Sources

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Germantown, MD 20876

Figure 5-1

Q:\Projects\ENV\GEARS\GEO\ARNG PFAS\900-CAD-GIS\920-GIS or Graphics\MXD\NY\Albany_AASF_Figures\Albany_AASF_PA_Figures\Fig_5-1_Albany_AASF_Adjacent_Sources.mxd

6. Preliminary Conceptual Site Model

Based on the PA findings, two AOIs were identified: AOI 1 AASF #3 Hangar Release / Fire Response Unit and AOI 2 Garbage Truck Fire. AOIs were only identified at potential PFAS release locations on land licensed to the NYARNG. Potential PFAS release locations outside lands licensed to the NYARNG are not considered AOIs. The AOI locations are shown on **Figure 6-1**. The following sections describe the CSM components and the specific preliminary CSM developed for the AOIs. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, and (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 (National Ground Water Association, 2018). The preliminary CSM for Albany AASF #3 indicated which specific receptors could potentially be exposed to PFAS. The preliminary CSM for all AOIs at Albany AASF #3 is shown on **Figure 6-2**.

6.1 AOI 1: AASF #3 Hangar Release / Fire Response Unit

AOI 1 encompasses the release of AFFF from the AASF #3 Hangar and the former Fire Response Unit room. The area surrounding the AOI is predominantly paved with a few gassy areas between paved areas. A 500-gallon 3% AFFF fire suppression system is stored in the AASF #3 Hangar. The tank is located in the former Fire Response Unit building. An initial testing of the system caused AFFF to completely fill the hangar. The hangar bay doors were opened, allowing the AFFF to spill out onto the tarmac and into the grass. The release was cleaned up and disposed of by a contractor. Knowledge regarding the fire suppression system is based solely on the recollections of interviewed personnel from the AFD and NYARNG.

Albany AASF #3 had a Fire Response Unit during the 1980s that was disbanded in the early 1990's. During this time, a firetruck was reported to have been stationed in the Fire Response Unit, housed in a room attached to the northern side of the AASF #3 Hangar. This unit existed between 1983 and 1992 and responded to all fire and emergency related incidents that occurred at the Albany AASF #3 and Albany International Airport in conjunction with the AFD.

AFFF releases at AOI 1 occurred on both paved areas and grassy surfaces. Some AFFF releases occurred directly onto surface soil but may also have infiltrated subsurface soil via cracks in pavement or joints between areas that are paved with different materials. If AFFF released at the AOI infiltrated the subsurface, then ground-disturbing activities in the grassy areas as well as beneath the pavement may result in potential PFAS exposure to construction workers.

Because potential PFAS releases to surface soil at AOI 1 have occurred, PFAS may migrate from the surface soil to the groundwater via leaching. Ground disturbing activities in these areas could result in site worker, construction worker, and trespasser exposure to potential PFAS contamination via inhalation of dust or ingestion of surface soil. Ground-disturbing activities to subsurface soil could result in construction worker exposure. Therefore, the exposure pathways for inhalation of soil particles and ingestion of soil are potentially complete for these receptors.

The facility receives water from the Town of Colonie Municipal Water Utility, with the distribution plant and source water wells less than 3.5 miles northeast and downgradient of the facility. Groundwater at the facility generally flows in a north-northwest direction towards the Mohawk River. There are some private drinking water wells located immediately downgradient, north-northwest, and north-northeast of the facility (**Figure 1-2**). The ingestion exposure pathway for groundwater is potentially complete for residents that are located downgradient of AOI 1 along with residents supplied by the Town of Colonie Municipal Water Utility. Although no surface water features flow through this AOI, the stormwater network carries surface waters from the facility to

an offsite stream, which flows to Shakers Creek and on to the Mohawk River; therefore, surface water and sediment exposure pathways are potentially complete off-facility. The preliminary CSM for AOI 1 is presented on **Figure 6-2**.

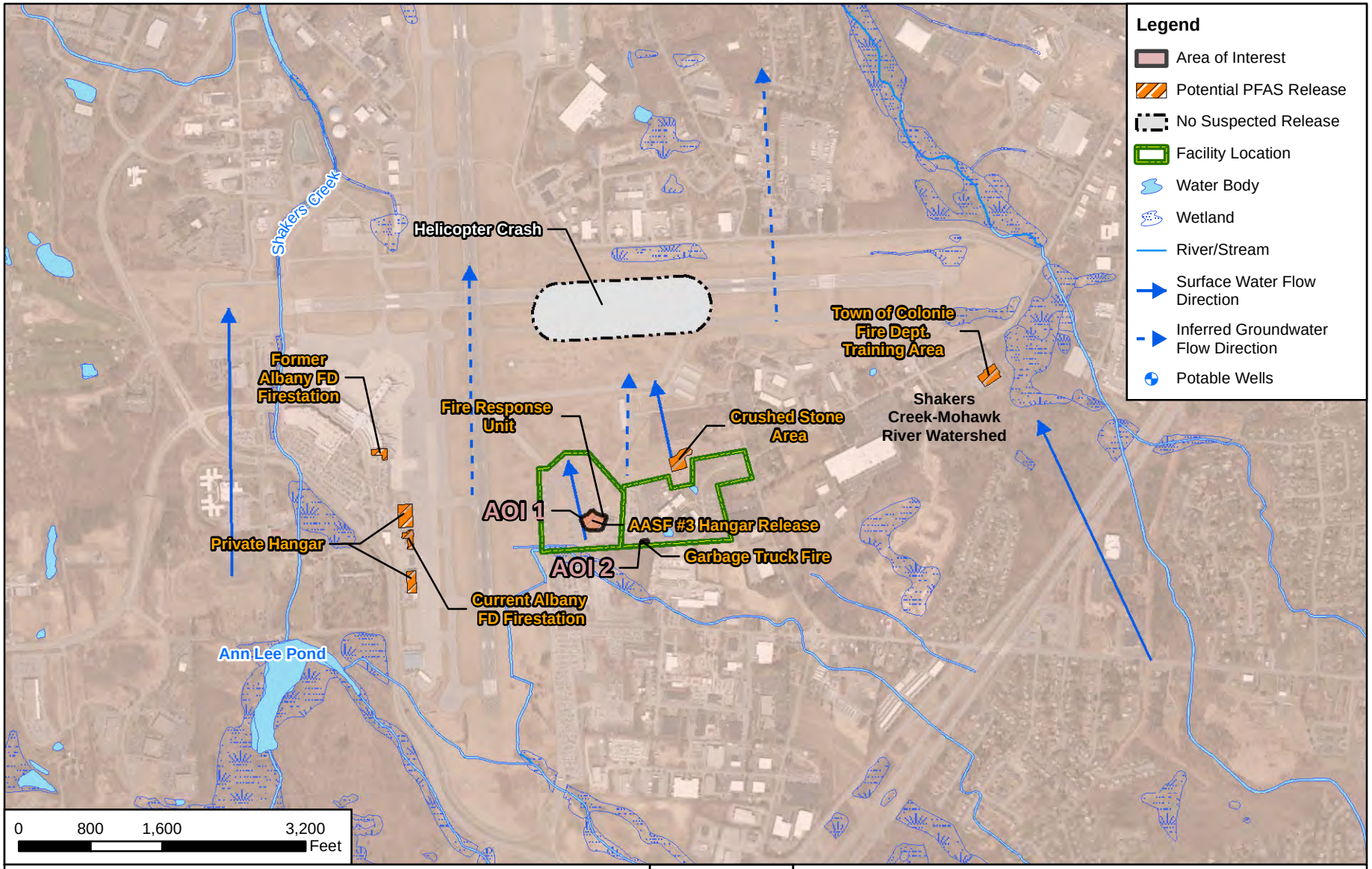
6.2 AOI 2: Garbage Truck Fire

There was a fire in the back of a garbage truck in May 2017. The fire occurred southeast of the AASF #3 Hangar. The CFD responded to the incident, but it is unknown if any AFFF were used during the emergency response.

AFFF releases at AOI 2 may have occurred on both paved areas and grassy surfaces. Some AFFF releases may have occurred directly onto surface soil but may also have infiltrated subsurface soil via cracks in pavement or joints between areas that are paved with different materials. If AFFF released at the AOI infiltrated the subsurface, then ground-disturbing activities in the grassy areas as well as beneath the pavement may result in potential PFAS exposure to construction workers.

Because potential PFAS releases to surface soil at AOI 2 have occurred, PFAS may migrate from the surface soil to the groundwater via leaching. Ground disturbing activities in these areas could result in site worker, construction worker, and trespasser exposure to potential PFAS contamination via inhalation of dust or ingestion of surface soil. Ground-disturbing activities to subsurface soil could result in construction worker exposure. Therefore, the exposure pathways for inhalation of soil particles and ingestion of soil are potentially complete for these receptors.

The facility receives water from the Town of Colonie Municipal Water Utility, with the distribution plant and source water wells less than 3.5 miles northeast and downgradient of the facility. Groundwater at the facility generally flows in a north-northwest direction towards the Mohawk River. There are some private drinking water wells located immediately downgradient, north-northwest, and north-northeast of the facility (**Figure 1-2**). The ingestion exposure pathway for groundwater is potentially complete for private well residents that are located downgradient of AOI 2 along with residents supplied by the Town of Colonie Municipal Water Utility. Although no surface water features flow through this AOI, the stormwater network carries surface waters from the facility to an offsite stream, which flows to Shakers Creek and on to the Mohawk River; therefore, surface water and sediment exposure pathways are potentially complete. The preliminary CSM for AOI 2 is presented on **Figure 6-2**.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Albany AASF #3, NY			
REVISED	1/31/2020	GIS BY	MS	1/31/2020
SCALE	1:19,200	CHK BY	MB	1/31/2020
Base Map: National Agricultural Imagery Program, 2016 Well Data: VT Dept of Envionrmental Conservation, Water Resource Section; ARNG		PM	RG	1/31/2020

N

TITLE

Areas of Interest

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

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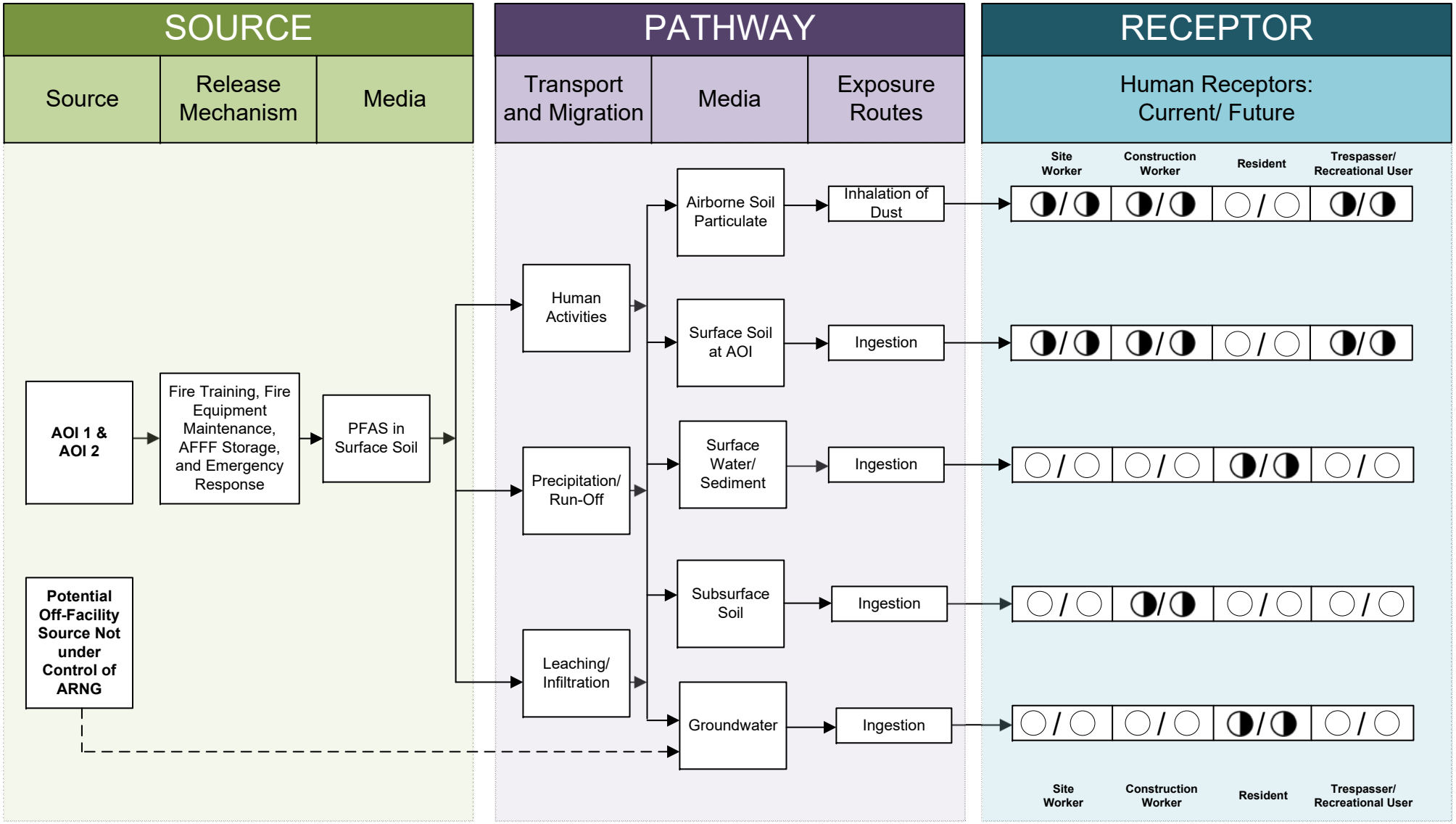


LEGEND

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

Notes:
1. The resident receptors refer to an off-site resident.
2. Dermal contact exposure pathway is incomplete for PFAS.

Figure 6-2
Conceptual Site Model
Albany AASF #3

7. Conclusions

This report presents a summary of available information gathered during PA efforts on the use and storage of AFFF at Albany AASF #3. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

7.1 Findings

Two AOIs related to PFAS releases were identified (**Table 7-1**) at Albany AASF #3 based on PA data. **Figure 7-1** presents a summary of PA Findings.

Table 7-1: AOIs at Albany AASF #3

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	AASF #3 Hangar Release / Fire Response Unit	NYARNG	Initial testing of deluge system in 2012 / Fire Response Unit was active from 1983 until 1992
AOI 2	Garbage Truck Fire	NYARNG	Fire in back of garbage truck extinguished in 2017; use of AFFF during emergency response is unknown

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 Albany AASF #3, which presents the potential receptors and media impacted, is shown on **Figure 6-2**.

7.2 Uncertainty

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, other non-traditional activities, or on its disposition.

The conclusions of this PA are predominantly based on the information provided during interviews with personnel who had direct knowledge of PFAS use at the facility. Many times, the provided information was vague or conflicted with other sources. 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 (early 1970s), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release/storage 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, current personnel from NYARNG facility were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected. **Table 7-2** summarizes the uncertainties associated with the PA.

Table 7-2: Uncertainties

Location	Source of Uncertainty
AOI 1 – AASF #3 Hangar Release / Fire Response Unit	AASF #3 Hangar records documenting the initial testing and maintenance of the deluge system were not available. A firetruck was reportedly stationed within the Fire Response Unit building that contained 3% AFFF, and it is unknown where the firetruck was filled, washed, or if the truck leaked.
AOI 2 – Garbage Truck Fire	It is unknown if AFFF were used during emergency response to a garbage truck fire.
CFD Training Area	Limited information was available on the time frame that this area was used by the CFD during fire training activities; additionally, limited information was available on the type, amount, and concentration of AFFF, if any, was used at this Adjacent Source.
AFD Fire Station - Former and Current	Limited information was available on the time frame that the former AFD fire station was in operation while using AFFF at this Adjacent Source.
Crushed Stone Area	Limited information was available on the time frame that this area was used by the AFD and NYARNG for fire training activities at this Adjacent Source.
Private Hangars	The testing, if any, leakage, maintenance, or other use of AFFF that may or may not have occurred at this Adjacent Source is unknown.

7.3 Potential Future Actions

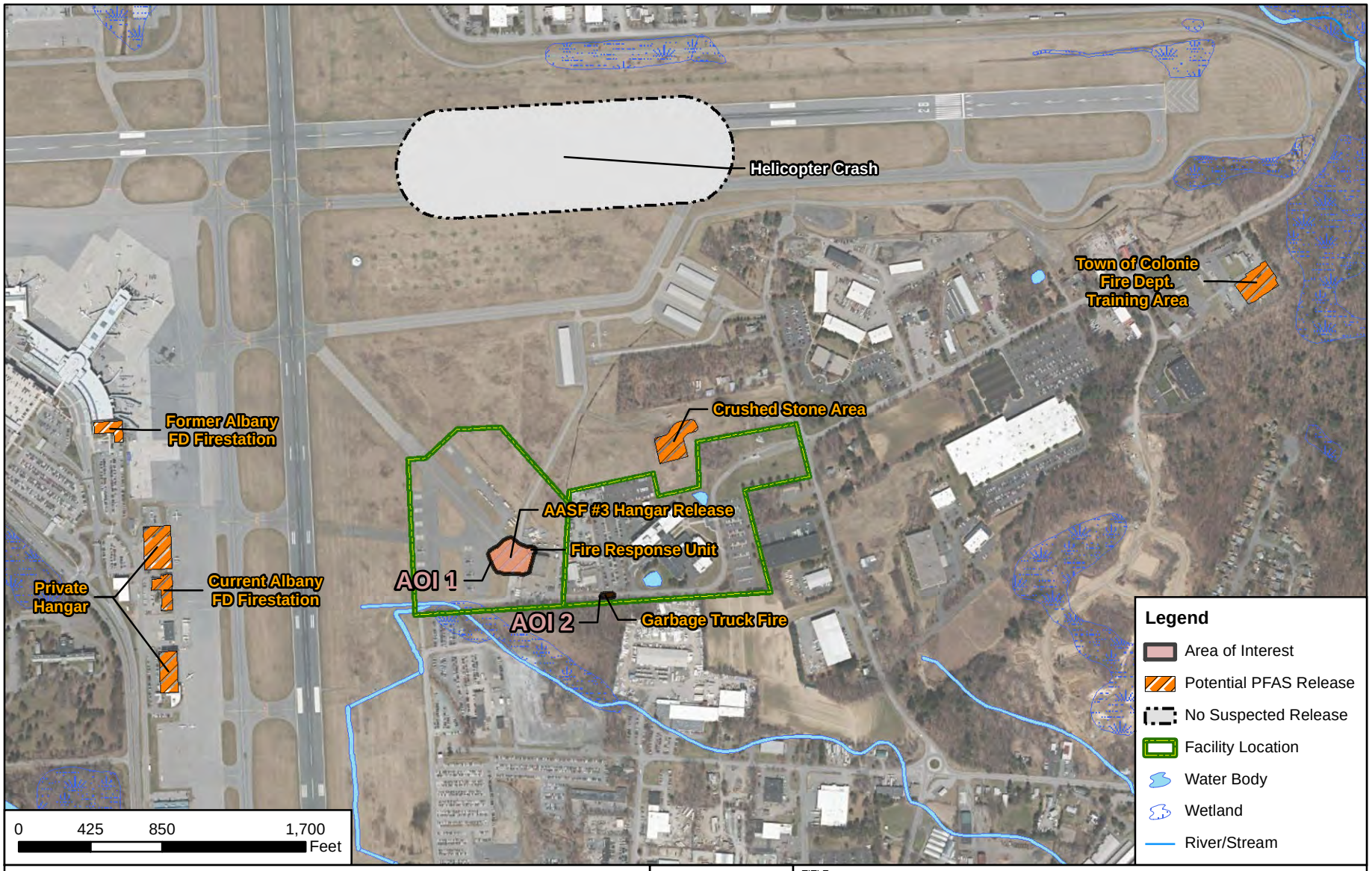
Interviews and records (covering 1980s to present) indicate that current or former ARNG activities may have resulted in potential PFAS releases at the two AOIs identified during the PA. Based on the CSM developed for the AOIs, there is potential for receptors to be exposed to PFAS contamination in soil and groundwater at the AOIs. **Table 7-3** summarizes the rationale used to determine if the AOI should be considered for further investigation under the CERCLA process and undergo a SI.

ARNG evaluates the need for an SI at Albany AASF #3 based on the presence of a PFAS release, possible receptors, and the migration of potential PFAS contamination to receptors.

Table 7-3 PA Findings Summary

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1 – AASF #3 Hangar Release / Former Fire Response Unit	42°44'32.16"N, 73°47'57.83"W	Full fire suppression system release of 3% AFFF. It is unknown if the fire truck leaked or was filled inside or outside the building.	Proceed to an SI, focus on soil and groundwater

AOI 2 – Garbage Truck Fire	42°44'30.49"N, 73°47'51.95"W	It is unknown if AFFF was used during emergency response to extinguish the garbage truck fire.	Proceed to an SI, focus on soil and groundwater



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Albany AASF #3, NY			
REVISED	1/31/2020	GIS BY	MS	1/31/2020
SCALE	1:10,200	CHK BY	MB	1/31/2020
Base Map: National Agricultural Imagery Program, 2016 Well Data: VT Dept of Envionmental Conservation, Water Resource Section; ARNG		PM	RG	1/31/2020

N

TITLE

Summary of Findings

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

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USGS, 2002. “Water-Resources Investigations Report: Ground-Water Resources of Clifton Park Area, Saratoga County, New York.”

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U.S. Census. 2010. Census Summary File 2010. U.S. Census Bureau, Revised 2012.

Appendix A
Data Resources

Data resources will be provided separately on CD. Data resources for Albany AASF #3 include:

Environmental Data Resources, Inc. Documents

- 2018, Environmental Data Resources, Inc. Aerial Images, Sanborn Map Report, and Radius Map Report for 330 Old Niskayuna Rd, Latham, NY 12110

Hydrogeology Documents

- 2019, Site Location Topographic Map for AASF #3, NY Army National Guard Aviation Support Facilities
- 2013, Existing Conditions Watershed Map, Figure 4.4.8b, CHA Consulting, Inc.

Property Documents

- 1987, Albany Lease Agreement, Lawrence P. Flynn, Major General, NYARNG, Chief of Staff to the Governor

Appendix B

Preliminary Assessment Documentation

Appendix B.1
Interview Records

Preliminary Assessment – Albany AASF, Latham NY
330 Old Niskayuna Road
Latham, NY 12110
June 12th, 2018

06/12/18 - Interview conducted with Albany Fire Department Chief Dave Cook, by AECOM and USACE personnel. Mr. Cook has been working with the Albany Fire Department since 1991. The Albany Fire Department is located directly east from the Albany AASF on the other side of the Albany International Airport runway.

Air Traffic Incidents
Mr. Cook believes there was a crash in 1983 or 1984 on the airport property but no fire suppression was used.

AFFF Usage
Live burn fire training events are conducted by the AFD once a year with AFFF. When asked about AFFF removal from fire training events, Mr. Cook indicated that the foam, "filtered through the grass and into the soil," in the fire training area. This area was indicated on a map provided by AECOM during the interview.

AFFF Procurement
Albany Fire Department - C6 AFFF is stored in a 1500 gallon tank. In the fire trucks the tanks are all poly tanks. The Albany Fire Department truck (own 3) carries 3,000 gallons of water and 450 gallons of foam.

Adjacent Facilities
Mr. Cook indicated that the airplane hangars owned by Commutair and Eclipse Aviation both have high expansion foam.

AFFF Leaks
According to Mr. Cook there is no history of AFFF leaking.

AFFF Disposal
The Albany Fire Department is scheduled to dispose of C8 and replace with C6 by the manufacturer.

Fire Training Areas
No fire training is conducted with fuels or flammables with the ArNG currently.

Testing with AFFF
Per FAA regulation, there is a nozzle test twice a year. This is conducted in the fire training area. Mr. Cook indicated the location on a map we provided. This location is northeast of the Albany AASF site.

Additional Interviews
Mr. Cook provided us with the contact of former Albany FD employee Sante Debacco. Mr. Debacco had been a longtime employee of the Albany FD and could provide a background of FTAs used by the ArNG.

Preliminary Assessment – Albany AASF, Latham NY
330 Old Niskayuna Road
Latham, NY 12110
June 12th, 2018

06/12/18 – A phone interview was conducted with 35 year Albany Fire Department firefighter Mr. Sante Debacco.

ArNG Fire Response
According to Mr. Debacco the AASF had a small fire response unit until 1991 or 1992. The response unit had a small OshKosh truck that had a, "150 gallon dual agent line of foam and water and a 400 gallon purple K tank." Mr. Debacco indicated that this fire response unit conducted combined annual live burn training with the Albany Fire Department in the "crushed stone" area near the Albany AASF. Mr. Debacco indicated that fuel was used during this live burn training. This area was indicated on a map provided by AECOM by AFD Chief Dave Cook at the time of the phone interview. Mr. Debacco could not provide any information on emergency response incidents with the ArNG fire unit.

Preliminary Assessment – Albany AASF, Latham NY
330 Old Niskayuna Road
Latham, NY 12110
June 12th, 2018

06/12/18 - Interview conducted with Lieutenant Colonel Kevin Ferreira, Flight Facility Commander by AECOM and USACE personnel. LTC Ferreira has been working at the facility as the overall manager since 2001.

AFFF Usage
According to LTC Ferreira, to his knowledge any fire training exercises are performed with water and there are no active annual AFFF discharge events. Any testing of the AFFF suppression system in th hangar is strictly water. The Hangar AFFF system was installed, "approximately 6 years ago (2012)," and is currently Ansul 3%.

AFFF Procurement
The State Superintendent has a contract to monitor the fire panel. An annual check is conducted by the Fire Chief. AFFF is stored in tanks on-site.

AFFF Disposal
The facility has a contract for removal of AFFF once it expires.

Facility Ownership Information
LTC Ferreira indicated that the facility has a 99 year lease agreement with Albany County.

Emergency Response Services
The emergency response services on-site are from Albany Crash and Rescue.

Fire Training Areas
There are no Albany NYARNG active or (to his knowledge) historic live fire training areas. No fire training is conducted off-site. All fire training is conducted with water every year.

Garbage Truck Fire
In approximately May 2017, there was a fire in the back of a garbage truck located south of the facility in the parking lot. LTC has no knowledge if AFFF was used and believes that the City of Colonie FD responded to the incident.

Testing of AFFF System
During the VSI with LTC Ferreira inside the hangar, USACE personnel asked him about an initial testing of the system. He responded, "The entire hangar was filled". This was after the installation of the system, ~6 years ago (2012).

Appendix B.2
Visual Site Inspection Checklists

Visual Survey Inspection Log

Recorded by: *AG*
ARNG Contact: *LTC Ferreira*
Date: *10/11/2018*

Source/Release Information

Site Name / Area Name / Unique ID: Albany AASF
Site / Area Acreage: Building 0001
Historic Site Use (Brief Description): AASF;

Current Site Use (Brief Description): AASF

1. Was AFFF used (or spilled) at the site/area? **Y / N**
1a. If yes, document how AFFF 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
Albany International Aiport to the immediate west, commercial/residential facilities surrounding

4. Is this site located at an airport/flightline? **Y / N**
4a. If yes, provide a description of the airport/flightline tenants:
ARNG, and Albany International Airport

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:
3% AFFF according to milspec
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?
Yes, drains are located in the hangar floor.

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? **Y / N**
1a. If so, note observation and location:

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:

4. Are surface water intakes located near the site? **Y / N**
4a. If so, please note the location:

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):
The area that housed the ARNG Fire Response Unit is now a storage room for the AFFF tanks.

Visual Survey Inspection Log

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:

Access is restricted to the airfield and the hangar.

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:

Approximately 3,000 ft to the east

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:

Additional Notes

Photographic Log

Photo ID/Name	Date & Location	Photograph Description

Appendix C
Photographic Log

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Albany AASF Hangar #3	Albany, New York

Photograph No. 1

Date 6/12/2018

Time 10:14

Description:

Image of 35 gallon 3% AFFF tank located in the AASF Hangar on the southern wall.

Orientation:

S

Photograph No. 2

Date 6/12/2018

Time 10:20

Description:

Image of 500 gallon 3% AFFF tank located inside the Fire Response Unit room, attached to the AASF Hangar.

Orientation:

N

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Albany AASF Hangar #3	Albany, New York

Photograph No. 3

Date 6/12/2018

Time 10:27

Description:

Image looking West out of the Albany AASF Hangar. The pavement and grassy area are the potential extent of the AFFF spill. In the background, the brick building is the Albany Airport FD and the private airline hangars are on either side.

Orientation:

W

Photograph No. 4

Date 6/12/2018

Time 12:08

Description:

Image of the Town of Colonie Fire Department live burn fire training area, located 0.75 miles northeast of the AASF Hangar.

Orientation:

NE