Final
Preliminary Assessment Report Brunswick Armed Forces Reserve Center, Maine

Perfluorooctane-Sulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites
ARNG Installations, Nationwide

November 2019

Prepared for:

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Acronyms and Abbreviations

ºF	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AFRC	Armed Forces Reserve Center
AOI	area of interest
ARNG	Army National Guard
bgs	below ground surface
BAFRC	Brunswick Armed Forces Reserve Center
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	conceptual site model
DoD	Department of Defense
ft	feet/foot
FTA	fire training area
IED	Installations and Environment Division
MCRC	Marine Corps Reserve Center
MEARNG	Maine Army National Guard
MRRA	Midcoast Regional Redevelopment Authority
NASB	Naval Air Station Brunswick
ng/L	nanograms per liter
NOAA	National Oceanic and Atmospheric Association
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFC	perfluorinated compounds
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SAP	Sampling and Analysis Plan
SI	Site Inspection
TACAN	Tactical Air Navigation
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency

Executive Summary

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division (IED), 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), primarily in the form of aqueous film forming foam (AFFF) released as part of firefighting activities, although other PFAS sources are possible.

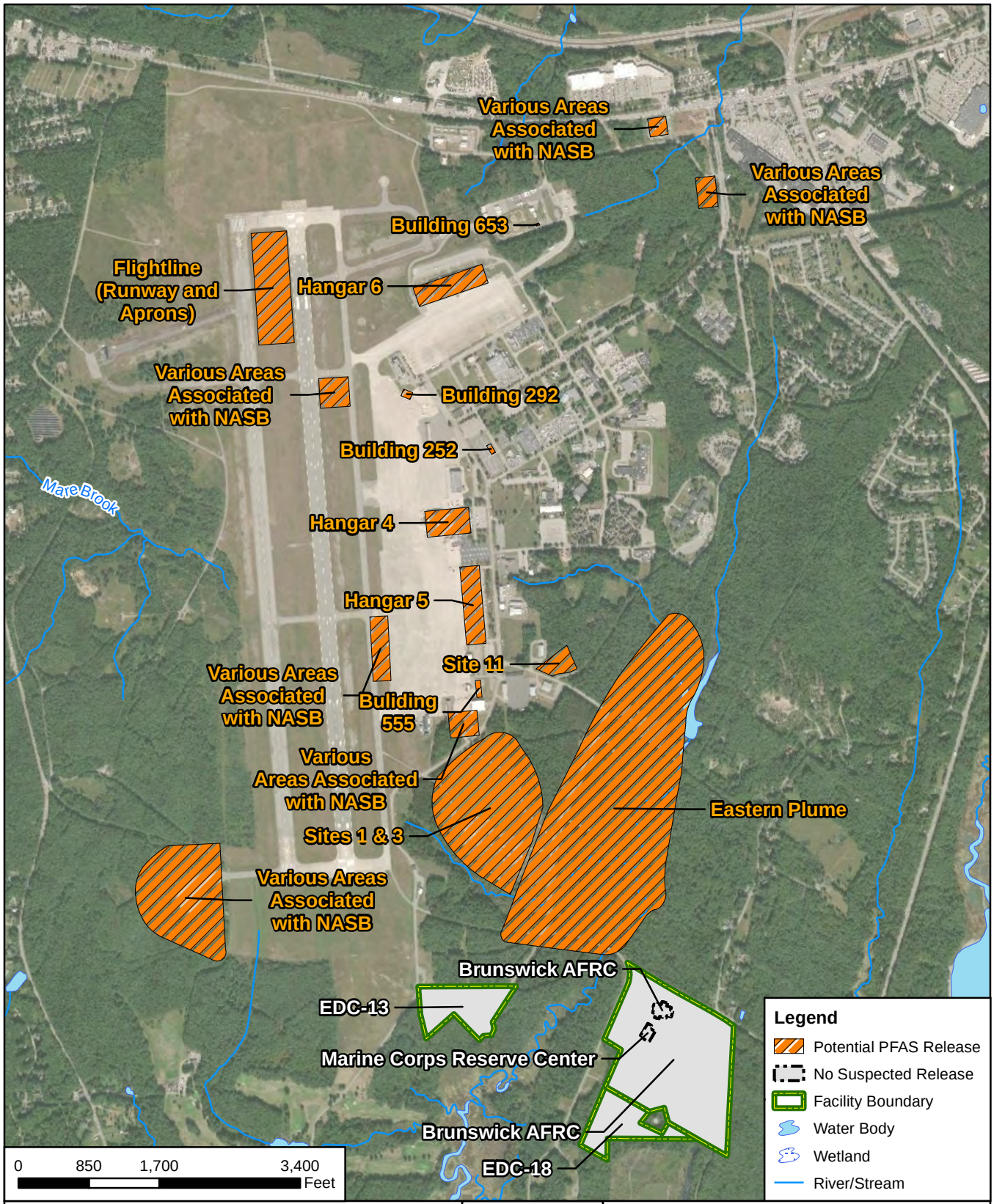
AECOM completed a PA for PFAS at Brunswick Armed Forces Reserve Center (BAFRC) in Cumberland County, Maine, to assess potential PFAS release areas and exposure pathways to receptors. The performance of this PA included the following tasks:

- Reviewed data resources to obtain information relevant to suspected PFAS releases.
- Conducted a 1-day site visit on 24 October 2018.
- Interviewed BAFRC personnel and former Naval Air Station Brunswick (NASB) personnel associated with BAFRC activities during the site visit.
- Completed visual site inspections (VSIs) at known or suspected PFAS release locations and documented with photographs.

Several adjacent off-facility potential PFAS release areas were identified in association with the Naval Air Station Brunswick (NASB), including a fire training area (FTA), flightline, hangars, a landfill, and several other maintenance and storage areas. As a result of adjacent PFAS releases, it is possible PFAS is in site media surrounding the BAFRC.

Based on the USEPA Unregulated Contaminant Monitoring Rule 3 data, it was indicated that no PFAS was detected in a public water system above the USEPA Health Advisory level within 20 miles of the facility.

No areas of interest (AOIs) related to potential PFAS release were identified at BAFRC based on information reviewed as part of this PA (**Figure ES-1**). Based on the documented absence of the use/release of PFAS-containing materials at BAFRC, evidence does not support current or former ARNG activities at the facility having contributed to PFAS contamination in soil, groundwater, surface water, or sediment at the facility or adjacent areas. The BAFRC will not move forward in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. The summary of findings is presented in **Figure ES-1**.



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Brunswick AFRC, ME			
REVISED	10/29/2019	GIS BY	MS	10/29/2019
SCALE	1:20,400	CHK BY	JW	10/29/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	10/29/2019

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Summary of Findings

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Figure ES-1

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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 (IED), 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* 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), primarily releases of aqueous film forming foam (AFFF), 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. 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. Maine does not currently have legally enforceable drinking water standards for PFAS.

This report presents findings of a PA for PFAS at Brunswick Armed Forces Reserve Center (BAFRC) in Cumberland County, Maine, 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 documents the known army aviation support facilities as well as additional locations where PFAS may have been stored or released into the environment at BAFRC. 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 24 October 2018
- Interviewed BAFRC personnel and former Naval Air Station Brunswick (NASB) personnel associated with BAFRC activities during the site visit.
- Completed visual site inspections (VSIs) at known or suspected PFAS release locations and documented with photographs
- If areas of interest (AOIs) were identified, developed a preliminary conceptual site model (CSM) to outline the potential release and pathway of PFAS 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:

- **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 potential or suspected fire training areas (FTAs) at the facility identified during the site visit
- **Section 3** – **Non-Fire Training Areas:** describes other locations of potential or suspected PFAS releases at the facility identified during the site visit
- **Section 4** – **Emergency Response Areas:** describes areas of suspected or potential 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 the facility
- **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

BAFRC is located within the southeast portion of the former NASB, southeast of the city of Brunswick in eastern Cumberland County, Maine (**Figure 1-1)**. NASB was officially closed on 31 May 2011, and most of its property was transferred to the non-Department of Defense (DoD) entity Midcoast Regional Redevelopment Authority (MRRA) under Base Realignment and Closure (BRAC) on 6 April 2010. The land had been occupied by the air station since March 1943.

On 22 September 2009, a 51-acre parcel of land was transferred to the Department of the Army for the Maine Army National Guard (MEARNG) to operate an Armed Forces Reserve Center (AFRC), provided that the Department of the Navy maintain access to operate a US Marine Corps Reserve Center (MCRC) on the property (Department of Defense, Veterans, and Emergency Management, 2009). BAFRC is located at geographic coordinates 43°52'37.42"N; 69°55'18.26"W, adjacent north of the MCRC, which is located at geographic coordinates 43°52'34.73"N; 69°55'20.28"W.

Two parcels of land, EDC-13 and EDC-18, were sold by MRRA to MEARNG with a purchase agreement dated 9 August 2013. These two parcels comprise an area of 8.9 and 11.16 acres, respectively. Parcel EDC-18 is adjoins the south side of the BAFRC. Located in the Natural Area District, parcel EDC-18 is wooded except for an abandoned Tactical Air Navigation (TACAN) tower, which was retained by MRRA. The tower may be repurposed in the future as a cell tower, or be demolished (Department of the Navy [Navy], 2012). Parcel EDC-13 lies west of BAFRC, across Mare Brook, located in both the Business & Technology Industries and Natural Area Districts. The parcel comprises two buildings surrounded by woods, Buildings 77 and 145. An

asbestos-sheathed aviation fuel pipe, which runs to Building 77, was abandoned in-place on the parcel.

1.5 Facility Environmental Setting

BAFRC is located within the New England Province of the Appalachian Highland Physiographic Region, specifically, the Seaboard Lowlands. The facility is located approximately 1 mile inland from tributary coves to Casco Bay, a large bay situated on the southern coast of Maine, in the Atlantic Ocean.

1.5.1 Geology

Locally, the bedrock underlying the site belongs to the Casco Bay Group, a synclinorium of metasedimentary and metavolcanic rocks forming a terrane that extends approximately 135 miles northeast from southern Casco Bay into central Maine. The major formations of the Casco Bay Group near the facility, in stratigraphic order are the Spring Point Formation, the Cape Elizabeth Formation, and the Cushing Formation (**Figure 1-2**) (Hussey, 1989).

Bedrock directly underlying the site is composed of the Cape Elizabeth Formation, which is approximated to be, because of heavy foliation, 350 meters thick. The Cape Elizabeth Formation is typically a phyllite or schist with interbedded quartzite but has been shown to exist as a granofels. Typical mineral assemblages include aluminosilicates as well as calc-silicates, including marble, chlorite, staurolite, garnet, and sillimanite, illustrating a wide range of metamorphic grades (Hussey, 1971).

Surficial geology in the area is comprised of marine nearshore deposits, thin drift, and silty clays of the Presumpscot formation. The Presumpscot formation is composed of grey-blue marine shale and can reach up to 200 feet thick. Deposits of thin, glacially-derived drift typically reach a thickness of no more than 10 feet. Typical surficial coverage in area surrounding the AFRC is likely no than a couple dozen feet (Weddle, T.K., 2001).

1.5.2 Hydrogeology

BAFRC is located only several hundred feet from perennial fluvial systems that flow into the coves Buttermilk and Harpswell less than 1 mile from the facility. Groundwater levels at a USGS monitoring well 5 miles to the northwest of the site show groundwater levels at an average of 29 feet (ft) below ground surface (bgs); this monitoring well is approximately 3.75 miles from the coast (USGS, 2019). Given that BAFRC is closer to the coast and nearby fluvial systems, groundwater at the facility is likely closer to the surface than the aforementioned well.

Groundwater flow is influenced by a north-south trending divide with the eastern portion of the facility draining to Buttermilk Cove and the western portion draining toward Mare Brook and Mere Creek, which are tributaries of Harpswell Cove. Principal aquifers in Cumberland County are within crystalline bedrock (USGS, 1986).

Water to BAFRC and the MCRC is provided by the Brunswick & Topsham Water District. Proposed water usage for both facilities is not expected to exceed a combined usage of 600 gallons per day during normal workdays, and 6,000 gallons per day during drill weekends. According to deed transfer documents, there is a prohibition on groundwater usage at the facility (MDEP, 2011). Wells are not to be drilled or drawn from for potable usage. A 2014 Sampling and Analysis Plan (SAP) conducted by the Navy to assess the presence of PFAS on former NASB property confirmed PFAS are present within the groundwater in the area surrounding the BAFRC (Resolution Consultants, 2014).

Geology and groundwater details for BAFRC is shown on **Figure 1-2**.

1.5.3 Hydrology

BAFRC is situated between two perennial fluvial systems (**Figure 1-3**) that correspond to the east-west groundwater divide described above; Buttermilk Cove and its tributaries lie to the east of BAFRC, while the Mare Brook-Mere Creek-Harpswell Cove drainageway system lies to the west of BAFRC, but east of parcel EDC-13. Given the proximity of the facility to the coastline, surface hydrology is likely closely connected with the underlying hydrogeology.

According to the facility Spill Prevention, Control and Countermeasure Plan (SPCC), BAFRC and the MCRC are located on an elevated parcel that slopes south and east. Surface water flow is from BAFRC and MCRC is to the west towards several wet-ponds and culverts that direct surface flow into the stormwater drains, which infiltrate to soil (MEARNG, 2018).

There are several palustrine wetlands within the areas to the east and south of BAFRC, and within the boundaries of parcel EDC-18 (National Wetlands Inventory, 2019).

Based on the USEPA Unregulated Contaminant Monitoring Rule 3 data, it was indicated that no PFAS was detected in a public water system above the USEPA Health Advisory level within 20 miles of the facility.

1.5.4 Climate

Climate data is not available for Brunswick; however, climate data is available for the nearby town of Gray, located approximately 16 miles to the west of the city of Brunswick. The summer months in Gray reach an average of 67.5 degrees Fahrenheit (°F), with July being the hottest month, averaging a maximum temperature of 79.3 °F. The winter months are near or below freezing, with an average temperature of 24.6 °F, with January being the coldest month, averaging a minimum temperature of 14.4 °F.

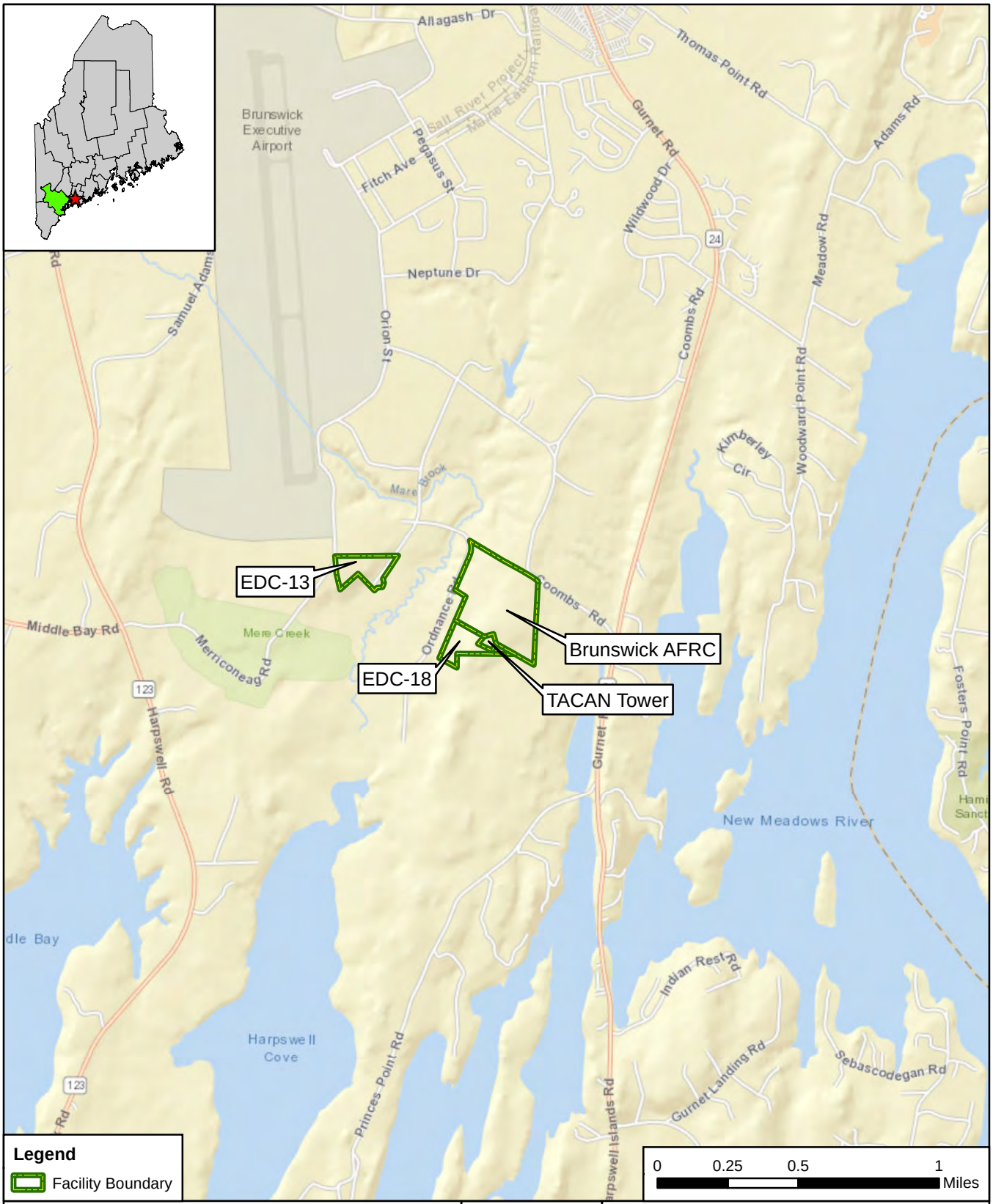
Southern Maine receives precipitation all year round, with an annual average of 47.4 inches of rainfall. Rainfall is evenly distributed year-round, with monthly averages ranging from 2.76 to 5.5 inches per month. Snowfall occurs beginning in November and continues until April, with January and February receiving the most snow, at 22.08 and 26.56 inches, respectively (NOAA, 2019).

1.5.5 Current and Future Land Use

MEARNG owns three parcels of land within the southeast section of the former NASB. The first parcel, a 51-acre section, comprises BAFRC and the MCRC and is used by the MEARNG and Marine Corps Reserve. No changes in land use are anticipated for the BAFRC.

Parcel EDC-18 is located within the Natural Area District and is used for nature conservation and training. Future use of parcel EDC-13 is not expected to change.

Parcel EDC-13's land use may change to remain consistent with its location in the Business and Technology District.



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SCALE	1:31,680	CHK BY	JW	8/19/2019
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	8/19/2019

Facility Location

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Figure 1-1

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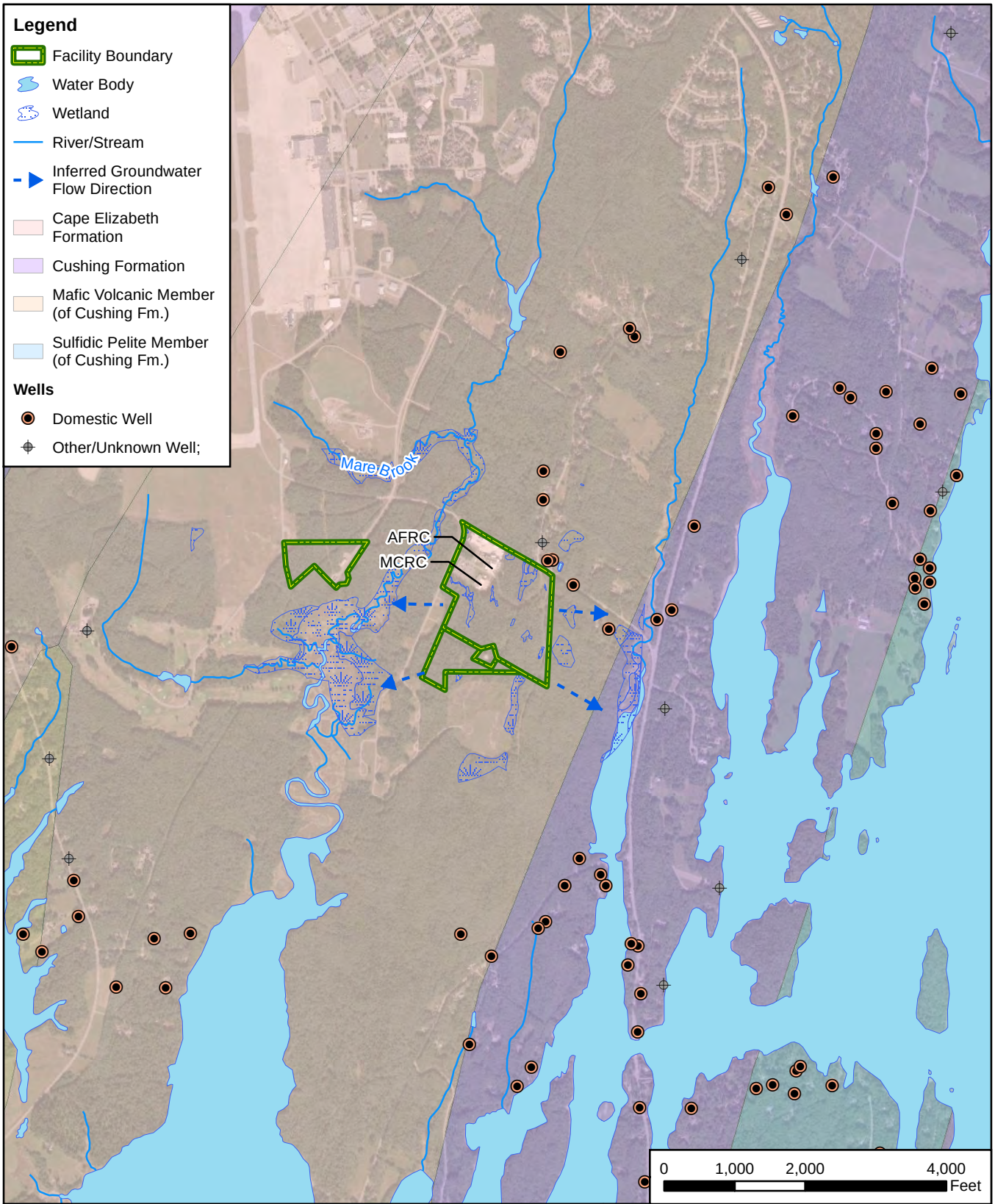

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Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	8/29/2019

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Groundwater Features

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Figure 1-2

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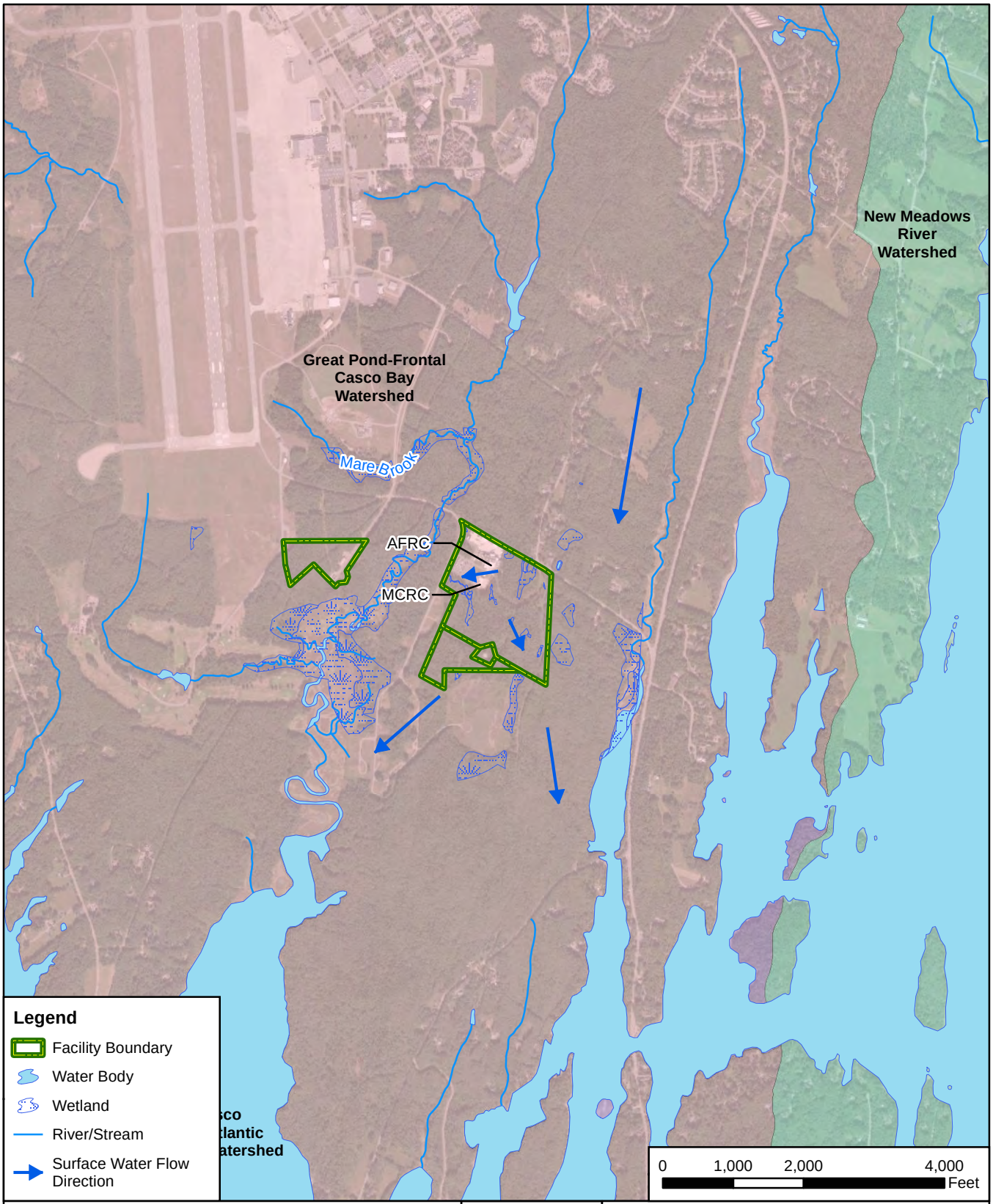

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Surface Water Features

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Figure 1-3

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2. Fire Training Areas

No FTAs were identified at BAFRC during the PA. MEARNG personnel confirmed during interviews that there are no FTAs at BAFRC. NASB maintained a Fire Department (located outside of the MEARNG AFRC facility boundaries) prior to its closure in 2011; fire protection and emergency response for BAFRC are currently provided by the City of Brunswick Fire Department.

3. Non-Fire Training Areas

Non-FTAs were investigated during the PA, but no known releases of AFFF occurred at these areas. AFFF is not procured, stored, or used for training in any of the buildings at BAFRC or within the MEARNG parcels. A description of each non-FTA is presented below, and they are shown on **Figure 3-1**, with photographs appearing in **Appendix C**.

3.1 Brunswick Armed Forces Reserve Center (BAFRC)

In 2009, a 51-acre parcel of land was transferred to the Department of the Army for MEARNG to operate an BAFRC at the former NASB.

BAFRC includes a main building that functions as an office and training facility, a maintenance bay, two cold storage buildings, a refueling bay, and a paved parking lot for military and civilian vehicles (MEARNG, 2018). The facility also includes two 1,000-gallon underground propane tanks and two 1,000-gallon above ground propane tanks.

BAFRC employs full time employees and hosts reservists on drill weekends. Water is supplied by the Brunswick & Topsham Water District; groundwater is not accessed for potable water. All fire suppression systems at the BAFRC use water, except the kitchen, which uses a dry chemical suppressant. No evidence suggests that AFFF has ever been used or stored at the BAFRC.

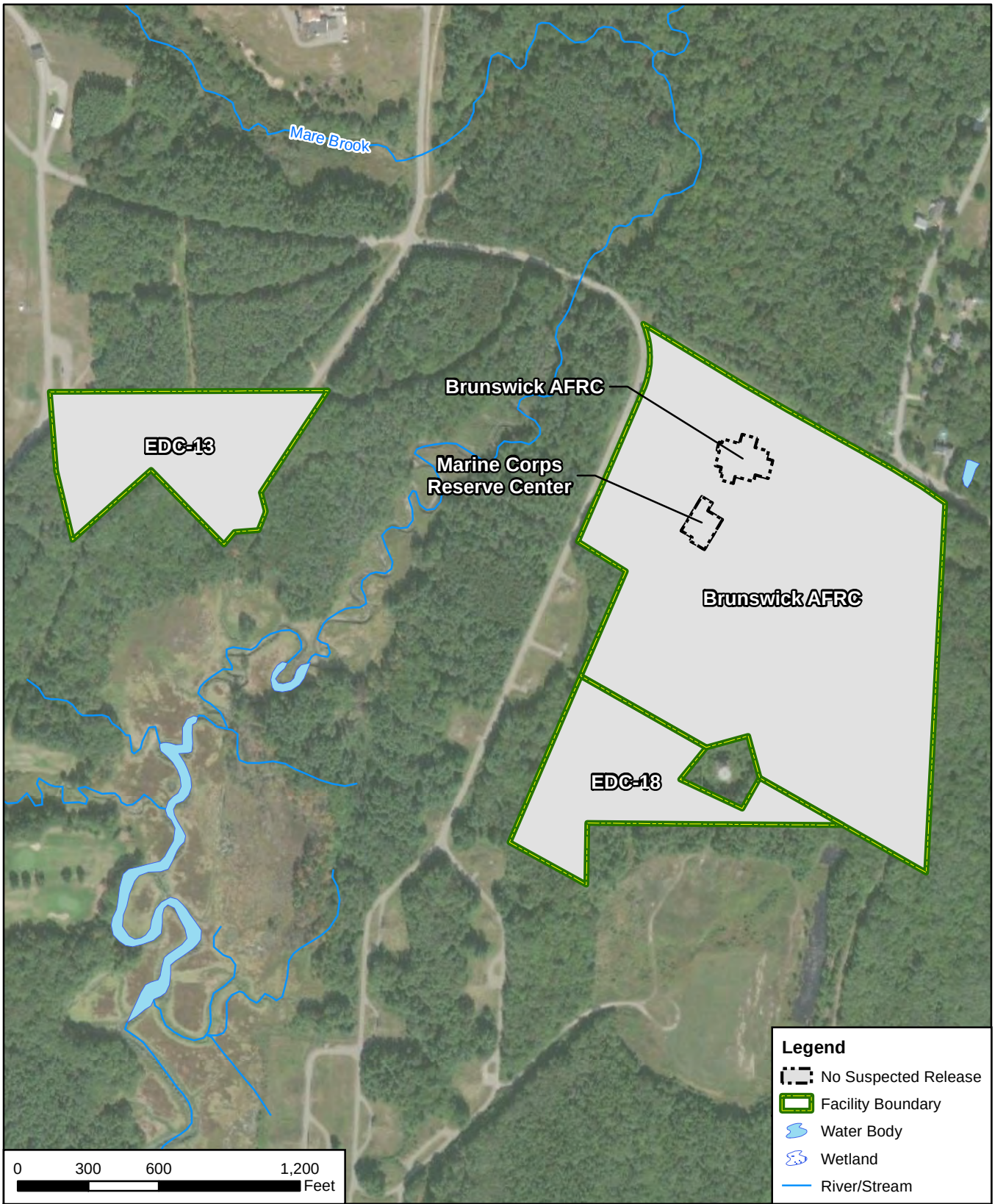
The Department of the Navy maintains an MCRC on the property to the south of BAFRC.

3.2 Parcel EDC-13

The 8.9-acre parcel EDC-13 is situated in both the Business & Technology Industries and Natural Area Districts. The parcel comprises two buildings and is surrounded by woods. These buildings are approximately 0.4 miles west of BAFRC, across Mare Brook. An asbestos-sheathed aviation fuel pipe that runs to Building 77 was abandoned in-place on the parcel. No AFFF fire suppression systems are used within Parcel EDC-13. No evidence suggests that AFFF has ever been used or stored within the parcel.

3.3 Parcel EDC-18

Parcel EDC-18 is an 11.16-acre tract of land located adjacent to the south of the 51-acre parcel in which BAFRC lies. Located in the Natural Area District, which is intended for the maintenance and enhancement of existing natural areas, parcel EDC-18 is wooded except for an abandoned TACAN tower that was retained by MRRA. The tower may be repurposed in the future as a cell tower or be demolished. No fire suppression systems are in place within Parcel EDC-18 that utilize AFFF. No evidence indicates that AFFF has ever been used or stored within the parcel.



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SCALE	1:7,200	CHK BY	JW	10/29/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	10/29/2019

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Non-Fire Training Areas

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Figure 3-1

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4. Emergency Response Areas

No instances of emergency response were identified at BAFRC during the PA based on interviews with personnel whose tenure span the entire history of the BAFRC, online research, and the Environmental Data Resource (EDR) report (EDR, 2018; **Appendix A**). Personnel interviewed during the PA site visit stated that no incidents have occurred at any parcels associated with the facility that required fire suppression (**Appendix B**). The City of Brunswick Fire Department provides emergency response for BAFRC.

5. Adjacent Sources

Several sources of PFAS releases associated with the NASB were identified adjacent to BAFRC was identified during the PA and are discussed below. **Figure 5-1** presents the location of potential adjacent PFAS sources.

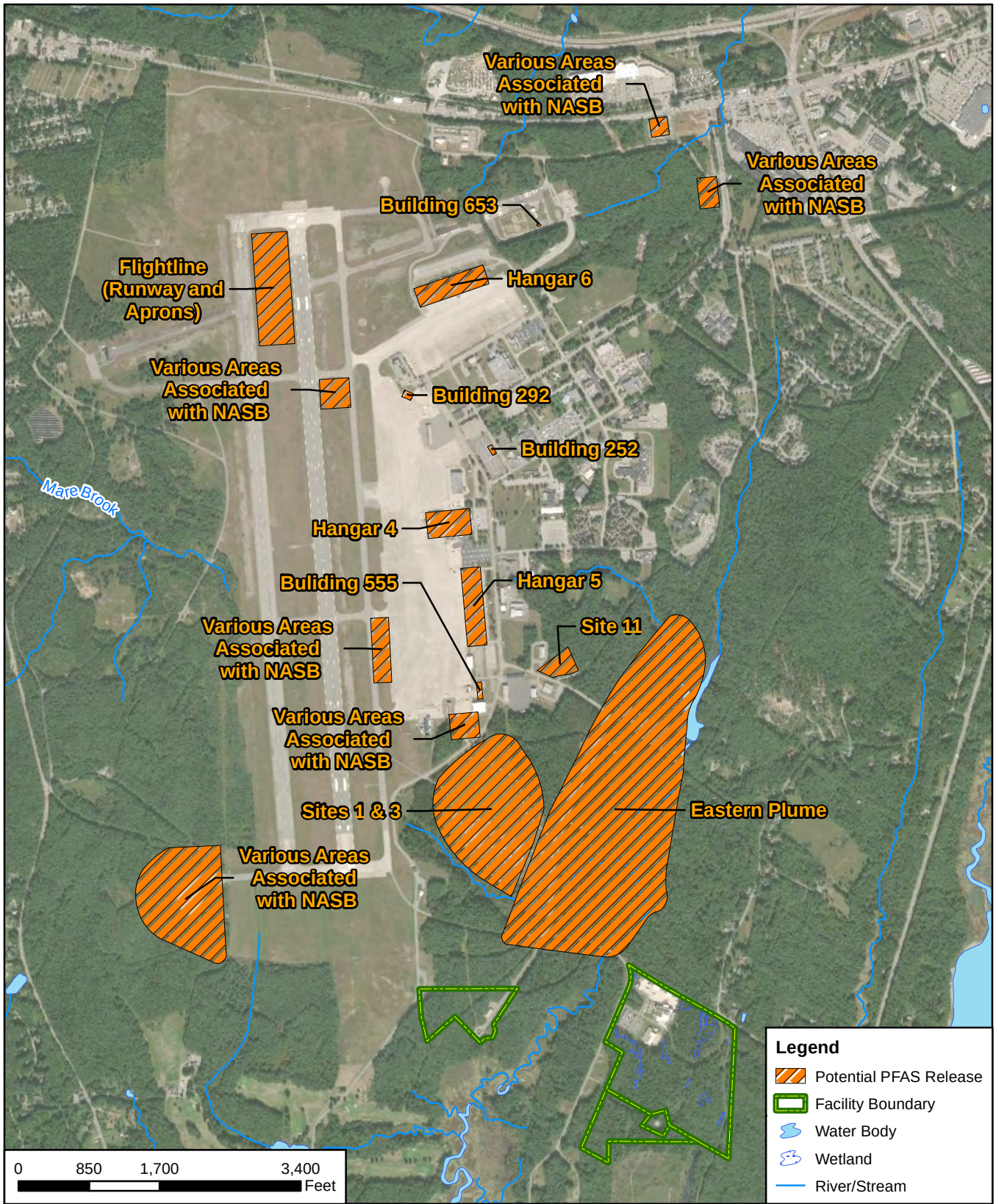
5.1 Naval Air Station Brunswick (NASB)

Fire training and other activities resulting in PFAS releases have occurred at the adjacent NASB. The NASB FTA (identified as Site 11 in previous Navy reports) hosted fire training activities for 30 years until they ceased in 1990. AFFF was phased into use at NASB sometime between the late 1970s and early 1980s according to the 2014 PFAS Sampling and Analysis Plan (SAP) (Resolution Consultants, 2014). AFFF would have been used at training sessions since its phase-in until the FTA closed in 1990; however, the frequency and volume of releases are unknown. Based on the 2014 SAP results (**Appendix A**), 12 areas at NASB were identified as potential PFAS release areas; they are identified in **Table 5-1** below.

Table 5-1: Naval Air Station Brunswick PFAS Release Locations

Potential NASB Release Area	Nature of Release or Potential Release
Site 11: Former FTA	Intentional release of AFFF for fire training over 30-year period.
Eastern Plume	Solvent plume downgradient from Site 11. Sampling efforts also reported concentrations of PFAS.
Flightline (Runway and Aprons)	Fire extinguishing activities relating to airport operations.
Sites 1 & 3: Landfill	Soil deposited here from soil remediation activities from Site 11.
Hangar 4	Two documented accidental discharges led to releases of an unknown amount and 1,450 gallons of AFFF.
Hangar 5	Three documented accidental discharges resulting in releases of 8,000, 200-300, and 20 gallons of AFFF.
Hangar 6	Two or three undocumented accidental releases from the fire suppression system.
Bldg. 252 – Public Works Vehicle Maintenance Shop	Approximately 20 – 30 gallons of AFFF was discharged to the sanitary sewer from a leaking fire vehicle.
Bldg. 292 – Fire Department	Several times a year, an unknown amount of AFFF would leak from fire vehicles during daily checks.
Bldg. 555 – Sonobuoy/Vehicle Storage	Approximately 40 gallons of AFFF were released to the oil/water separator, and likely the sanitary sewer as well.
Bldg. 653 – Foam House	AFFF was released from the fire suppression system due to lightning strike.
Various Areas associated with NASB	Expired AFFF would be discharged to various grassy areas around NASB from fire vehicles for routine maintenance.

As a result of adjacent PFAS releases at NASB, it is possible that PFAS is present in soil, groundwater, surface water, and sediment in the areas surrounding the MEARNG parcels, as well as in groundwater, surface water, and sediment within the parcels.



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Adjacent Sources

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Figure 5-1

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6. Preliminary Conceptual Site Model

Based on the PA findings, no release areas were identified at any MEARNG parcels associated with the BAFRC as a result of MEARNG actions; therefore, a preliminary conceptual site model (CSM) is not required for the facility. A CSM identifies 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. Based on the findings of this PA, there are no sources at BAFRC, thus, there is no complete pathway to potential receptors from ARNG use of PFAS sources at the facility.

7. Conclusions

This report presents a summary of available information gathered during PA efforts on the use and storage of AFFF at BAFRC. The PA findings are based on personnel interviews, environmental investigations and reports, historical documents, and the VSI. The PA findings are based on the information presented in **Appendix A**, **Appendix B**, and **Appendix C**.

7.1 Findings

No AOIs related to potential PFAS release were identified at any MEARNG parcels associated with the BAFRC based on information gathered as part of this PA (**Figure 7-1**). Based on the documented absence of the use/release of PFAS-containing materials at BAFRC, evidence does not support current or former ARNG activities at the facility having contributed to PFAS contamination in soil, groundwater, surface water, or sediment at the facility or adjacent areas.

Adjacent potential PFAS release areas were identified within the vicinity of the MEARNG BAFRC. At least twelve distinct release areas associated with the NASB were identified in a 2014 PFAS SAP (Resolution Consultants, 2014), including an FTA, flightline, hangar spaces, a landfill, and several other maintenance and storage areas. As a result of adjacent PFAS releases, it is possible PFAS is in site media surrounding the BAFRC.

The following areas discussed in **Section 2** through **Section 5** were determined to have no suspected PFAS releases to the environment (**Table 7-1**).

Table 7-1: No Suspected Release Areas

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
BAFRC	MEARNG / MCRC	No evidence indicates that AFFF has ever been stored or used at the BAFRC by the MEARNG or the MCRC.
Parcel EDC-13	MEARNG	No evidence indicates that AFFF has ever been stored or used at on Parcel EDC-13 by the MEARNG.
Parcel EDC-18	MEARNG	No evidence indicates that AFFF has ever been stored or used on Parcel EDC-18 by the MEARNG.

The summary of findings is presented in **Figure 7-1**.

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. Records were not typically kept by the ARNG on the use of PFAS in emergency response or by non-ARNG units during training events at ARNG facilities. There is no historically documented use of PFAS containing materials at BAFRC by MEARNG staff.

The conclusions of this PA are predominantly based on the information provided during interviews with personnel who have direct knowledge of the facility. Although the collective tenure of interviewees (1994-present) spans the entire history of BAFRC, their tenure does not span the entire history of the former NASB. It is possible that this PA has missed a source of PFAS prior to the establishment of the BAFRC, and prior to the tenure of interviewees. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of

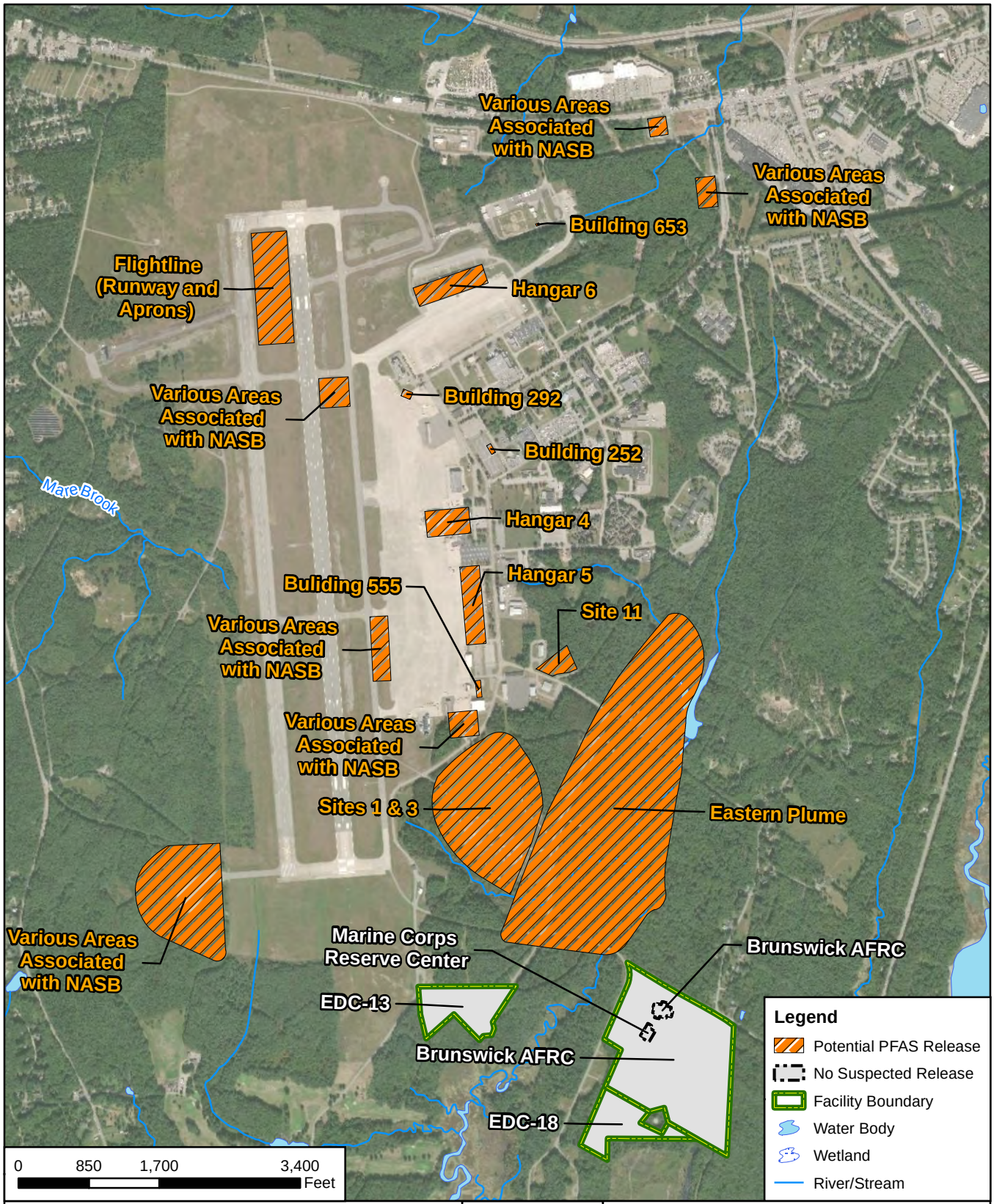
personnel with direct knowledge due to staffing changes, the time passed since PFAS was first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS storage or release locations. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves. Potential adjacent sources investigated also have data gaps and uncertainties. In many cases, the exact timeframe of release, frequency of release, location of release, volume of AFFF, and type of AFFF released at adjacent NASB release locations is unknown.

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed at adjacent sources, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected.

7.3 Potential Future Actions

Interviews (with personnel whose tenure span the entire history of the BAFRC) and records indicate that current or former ARNG activities have not resulted in PFAS releases at the BAFRC or its neighboring MEARNG parcels. Based on the absence of the use or release of PFAS-containing materials at BAFRC, no AOIs were identified during the PA.

The MEARNG BAFRC will not move forward in the CERCLA process.



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Brunswick AFRC, ME			
REVISED	10/29/2019	GIS BY	MS	10/29/2019
SCALE	1:20,400	CHK BY	JW	10/29/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	10/29/2019

N

Summary of Findings

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

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Appendix A
Data Resources

Data Resources will be provided separately on CD. Data Resources for Brunswick Armed Forces Reserve Center includes:

Brunswick AFRC Information Sources

- 2011 MEDEP Site Location of Development Act Application
- 2013 Parcel EDC-13 Phase I Environmental Site Assessment
- 2013 Parcel EDC-18 Phase I Environmental Site Assessment
- 2018 Spill Prevention, Control and Countermeasure Plan

Former Naval Air Station Brunswick Information Sources

- 2006 Environmental Baseline Survey for the Proposed Brunswick Readiness Center
- 2012 Finding of Suitability to Transfer, FOST 2012-2
- 2015-2019 Integrated Cultural Resources Management Plan Update for Site and Training Installations of the Maine Army National Guard

Real Property Documents

- 2009 Transfer and Acceptance of Military Real Property, 51-acre parcel
- 2012 Land Survey Schematic for Parcel EDC-13
- 2012 Land Survey Schematic for Parcel EDC-18
- 2013 MRRA Quitclaim Deed for 2.6-acre parcel
- 2013 MRRA Purchase and Sale Agreement for 2.6- & 8.9-acre parcels
- 2017 MRRA Quitclaim Deed for 9.1-acre parcel

Brunswick AFRC EDR Report

- 2018 Brunswick AFRC EDR Report 5479223

Previous PFAS Investigations

- 2014 Tier II Sampling and Analysis Plan for Perfluorinated Compounds in Groundwater at the Former NAS Brunswick, ME
- 2016 Naval Facilities Engineering Command Fact Sheet: Testing of Perfluorinated Compounds in Off-Base Drinking Water Wells, Former Naval Air Station Brunswick, Brunswick, Maine

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire - Other

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 13:30pm

Interviewee: Alan J Ballard **Title:** Former Resident Officer, Construction **Phone Number:** 207-522-7927 **Email:** alan.j.ballard.nfg@mail.mil	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? **Y** or N John Bond, Tom Brubaker

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

3 years as a resident officer in charge of construction, 3 years as a public works officer

1994-2000

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 builts), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?

	Known Uses
Information regarding AFFF/PFAS at the Navy facility is included in previously	Use
Written environmental reports.	Procurement
	Disposition
AFFF was and is currently stored in Hangars 4, 5 & 6. A release occurred at	Storage (Mixed)
Hangar 4, near the SaviLinx building in 1998. The release was completely contained.	Storage (Solution)
	Inventory, Off-Spec
All landfill materials at the facility are construction material waste, and are	Containment
Very unlikely to contain PFAS.	SOP on Filling
	Leaking Vehicles
The landfill cap was finished in 1995-1996.	Nozzle and Suppression System Testing
There are no other FTAs at the Navy facility.	Dining Facilities
There are no known crashes at the facility that required AFFF.	Vehicle Washing
	Ramp Washing
A fuel spill in 1993 resulted in the release of 65,000 gallons of fuel to the nearby	Fuel Spill Washing and Fueling Stations
River. The agreed upon solution was to ignite the fuel.	

PA Interview Questionnaire - Other

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 13:30pm

The MRRA website may have environmental reports available. Tom Brubaker can assist.
Navy Supply provided the AFFF at the Brunswick Navy facility.
In 1980, Hangar 5 was renovated.
It is unknown how AFFF at the facility was disposed of.
The Navy had an onsite Fire Department until 2011, when the base closed.
Fuel spill logs were recorded, and would be kept by MEDEP.

PA Interview Questionnaire - Environmental Manager

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 8:30am

Interviewee: Elizabeth Barton **Title:** Cultural Resources/Stormwater Manager **Phone Number:** 207-430-5924 **Email:** elizabeth.e.barton.nfg@mail.mil	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? **Y** or N AJ Ballard, Robert Leclerc

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

Six years with MEARNG as the Cultural Resources Manager and Stormwater Manager

2. Where can I find previous facility ownership information?

ECOP and FOST files are available at the Augusta office (Camp Keyes)

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 – **There is a maintenance area for vehicles at AFRC**
   Fire Training Areas – **No**
   Firefighting (Active Fire) – **No**
   Crash – **2 known crashes in the early 1960s**
   Fire Suppression Systems (Hangers/Dining Facilities) – **Only water and dry chemical (kitchen) used**
   Fire Protection at Fueling Stations – **No. HEMET fueling stations under cover at the AFRC.**
   Non-Technical/Recreational/ Pest Management - **None**
   Metals Plating Facility - **None**
   Waterproofing Uniforms (Laundry Facilities) - **None**
   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 MEARNG buildings at Brunswick AFRC use AFFF for fire suppression.

PA Interview Questionnaire - Environmental Manager

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 8:30am

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 fire suppression systems known to be charged with AFFF. The NCO at Brunswick AFRC can confirm.

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

AFFF is not procured. Rob Coburn procures AFFF for Bangor and may have knowledge of any

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)?

Brunswick AFRC (under MEARNG operation) has no aviation assets and has never stored or used 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?

NA

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 FTAs at Brunswick AFRC. There is a rubble pile used for rescue training at the facility. No fire training occurs there.

PA Interview Questionnaire - Environmental Manager

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 8:30am

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?

The City of Brunswick Fire Department is responsible for emergencies.

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?

Other federal units have used the rubble pile as a training area, but none have been known to use fire during training events. Dave Foss (ITAM Coordinator) may have more information regarding training by other units.

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

No off-post training known of.

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?

Unknown.

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?

Bob Leclerc may have additional information regarding crash records.

PA Interview Questionnaire - Environmental Manager

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 8:30am

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?

POL inspections are performed on a weekly basis. Andrew Moore may have additional information regarding fuel spill logs.

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 forest fire mitigation occurs on/off-post.

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?

Spill Prevention, Control, and Countermeasure (SPCC) Plan and Integrated Contingency Plan (ICP) available for the Brunswick AFRC. They may specify an formal Mutual Aid 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)?

No known storage or use locations of AFFF at the Brunswick AFRC. As a sidenote, south of the AFRC, there is a parcel with UXO hazard.

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: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 8:30am

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?

ICRMP is available and can be placed on CD.

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

ECOPS for all three parcels are available.

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?

No.

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.?

No.

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?

Not applicable.

PA Interview Questionnaire - Environmental Manager

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 8:30am

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

Yes – AJ Ballard (MEARNG), Robert LeClerc (Navy), NCO SSG Douglas Chabot

Additional Notes:

- Active monitoring is happening on the Navy property adjacent to MEARNG's parcel.
- The Brunswick AFRC has no aviation assets.
- All three parcels at Brunswick AFRC were previously owned by the Navy, and then BRAC-ed.
- Public water is supplied to all three parcels. No private drinking water wells exist at the Brunswick AFRC.

PA Interview Questionnaire - Other

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 09:00am

Interviewee: NCO SSG Douglas Chabot **Title:** Non-comissioned Officer, Staff Sargent **Phone Number:** 207-430-5457 **Email:**	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? **Y** or N MAJ Cotta or Dave Foss

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

NCO, SSG

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 builts), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?

	Known Uses
All fire suppression systems at MEARNG Brunswick AFRC use water, with the	Use
exception of the kitchen, which uses dry chemical.	Procurement
	Disposition
No fire training has occurred at the Rubble Pile training area. The area is used	Storage (Mixed)
primarily for recovery training through CST. Major Shannon Cotta is in charge	Storage (Solution)
of military training and would have more information regarding the training at	Inventory, Off-Spec
the rubble pile. Dave Foss works for MAJ Cotta and coordinates training.	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations

PA Interview Questionnaire

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 10:00

Interviewee: Robert LeClerc **Title:** Navy BRAC Caretaker **Phone Number:** 207-406-2290 **Email:** Robert.leclerc@navy.mil	Can your ~~name/~~role be used in the PA Report? Y or **N** Can you recommend anyone we can interview? **Y** or N Paul Birgio

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

Navy BRAC caretaker since 2003
Discussion centered around the Navy Facility as an adjacent source, not the MEARNG Brunswick AFRC

2. Where can I find previous facility ownership information?

Curtis Memorial Library
Paul Birgio – Environmental Manager at BEC facility in Philadelphia may have access to previous investigation documents.

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 – Unknown.
   Fire Training Areas – One FTA existed at the Navy Facility.
   Firefighting (Active Fire) – City FD relied upon
   Crash – No known crashes known.
   Fire Suppression Systems (Hangers/Dining Facilities) – Yes, at Hangars 4, 5, & 6
   Fire Protection at Fueling Stations – None known
   Non-Technical/Recreational/ Pest Management - No
   Metals Plating Facility – No
   Waterproofing Uniforms (Laundry Facilities) - No
   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?

Navy no longer stores AFFF, but other entities at the facility (under MIRA) do still store AFFF. Hangars at the airport still store AFFF.

PA Interview Questionnaire

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 10:00

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 Navy fire suppression systems actively use AFFF.

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

AFFF is no longer procured by Navy. Procurement is unknown for other entities.

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)?

Type of AFFF once used is unknown, but available in reports previously performed. No current AFFF used.

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?

No AFFF stored by Navy. AFFF is stored in hangars at the Brunswick Executive Airport by non-Navy ownership.

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?

One FTA formerly existed across the street from the Navy Caretaker office located at B53 119 Purinton Road. The FTA was abandoned in 1995-1996, and a groundwater treatment plant has been constructed and used in it's former location.

PA Interview Questionnaire

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 10:00

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?

Unknown but this information is likely included in the PA report already drafted for AFFF use/PFAS contamination at the Navy Facility.

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 known use of the MEARNG parcels for training in the past, but it is possible. Fire training is only known to have occurred at the one FTA located at the Navy facility.

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

No known off-post training by Navy staff.

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?

Unknown. The Navy interviewed their Fire Department staff around 2012 as part of a PA investigation. This information should be available in the PA report.

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?

Elizabeth Barton provided a list of crashes at MEARNG facilities. 2 crashes were reported at Brunswick AFRC in the 1960s. LeClerc does not have knowledge of the two crashes by may be able to provide crash report information.

PA Interview Questionnaire

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 10:00

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?

Fuel spill logs are kept. AFFF uses are captured in previously written reports.

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 forest firefighting occurred at the facility. No known training occurred off-post.

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?

The City of Brunswick Fire Department responds to emergencies at the facility/Brunswick Executive Ariport.

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)?

Storage of AFFF and its use at the Navy facility is captured in previously written reports.

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

No known creative uses of AFFF.

PA Interview Questionnaire

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 10:00

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?

Yes, the Navy has written several reports on PFAS at the facility. They are available at the Curtis Memorial Library. There are also reports on the "Eastern Plume," which is monitored for PFAS, VOCS, etc. There is also data available for the Landfill near the former FTA. MEDEP might be able to provide these documents as well.

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

Already stated.

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?

No.

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.?

No.

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?

Unknown. Navy Supply was used for procurement.

PA Interview Questionnaire

Facility: Brunswick AFRC
Interviewer: Joe Witte
Date/Time: 10/24/2018; 10:00

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

Iver McLeod – MEDEP
Mike Daily – EPA
Dave Foss
Paul Birgio

Additional Notes:

- The Navy is cleaning parcels of land at the Brunswick Facility, and conveying them to MRRA (Midcoast Regional Redevelopment Authority). The Navy ultimately plans to convey all properties to MRRA.
- The Town of Brunswick, South Maine Community College, and Bowdoin College all own parcels of the former facility
- The Navy has performed several PFAS investigations, including sampling. No PFAS contamination has been found in drinking water wells at the former Navy Facility or anywhere off-post. Resident wells were sampled along Coombs Road, as well as an off-facility well on an adjacent golf course. No PFAS was detected.
- The "eastern plume" appears to stop migrating south once it reaches Mare Brook, north of the MEARNG parcel. The eastern plume is mostly solvents, but does contain PFAS.
- The original treatment of the FTA in turning it into the groundwater treatment plant is unknown. It is unknown if materials were excavated from the area.
- A landfill where contaminated materials were brought from all over the facility exists north of Mare Brook, west of Picnic Grounds Access Road. The landfill was constructed approximately 20 years ago. It is horseshoe shaped, with a 90 ft wall of clay/slurry. Leachate is sampled, and does not show PFAS detections.
- The Navy facility closed in 2011.
- The military still uses Brunswick Executive Airport.
    - It is believed that MRRA owns the airport and its hangars.
- A 2012 Navy report indicates that groundwater flows east at the eastern plume, not south towards the MEARNG facility.
- PFAS in groundwater at the facility is assumed to be the result of AFFF use. PFAS in groundwater is included in Navy reports for "Site 11".
- The Navy has reduced the size of their facility by approximately 90%.

Appendix B.2
Visual Site Inspection Checklists

Facility ST
Visual Survey Inspection Log

Recorded by: Joe Witte
ARNG Contact: B. Packer
Date: 10-24-2018

Site Name / Area Name / Unique ID: Brunswick AFRC
Site / Area Acreage: approx. 8.5 acres
Historic Site Use (Brief Description): AFRC, previously undeveloped

Current Site Use (Brief Description):

1. Was AFFF used at the site/area? Y (N)
   3a. If yes, document how AFFF was used and usage time (e.g., *fire fighting training 2001 to 2014*)
   NA
2. Has usage been documented? Y (N)
   2a. If yes, keep a record (place electronic files on a disk)
   NA

Significant Topographical Features:

1. Has the infrastructure changed at the site/area? (Y) / N
   1a. If so, please describe change: (*ex. Structures structures longer exist.*)
   AFRC built on undeveloped Navy parcels
2. Is the site/area vegetated? (Y) N
   2a. If not vegetated, briefly describe the site/area composition:
   Area surrounding AFRC is forested
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 : Ponded water east of AFRC

Migration Potential:

1. Does site/area drainage flow off installation? (Y) N
   1a. If so, please note observation and location: SPCC outlines flow information
2. Is there standing water or drainage issues within the site/area? Y / (N)
   2a. If so, please note observation and location:
3. Is there channelized flow within the site/area? (Y) / N
   3a. If so, please note observation and location: Mare brook exists west of the AFRC.
4. Have man-made drainage channels been constructed within the site/area? Y (N)
   4a. If so, please note the location of the channel: SPCC would clarify.

Additional Notes

Facility ST
Visual Survey Inspection Log

Photographic Log

Photo ID/Name	Date & Location	Description	Photograph

Facility ST
Visual Survey Inspection Log

Recorded by: J. Witte
ARNG Contact: B. Packer
Date: 10-24-2018

EDC-13

Site Name / Area Name / Unique ID: Brunswick AFRC -
Site / Area Acreage: 0.65 acres
Historic Site Use (Brief Description): Undeveloped, the rescue training area

Current Site Use (Brief Description): Rubble pile training

1. Was AFFF used at the site/area? Y (N)
   3a. If yes, document how AFFF was used and usage time (e.g., *fire fighting training 2001 to 2014)* NA
2. Has usage been documented? Y (N)
   2a. If yes, keep a record (place electronic files on a disk) NA

Significant Topographical Features:

1. Has the infrastructure changed at the site/area? (Y) / N
   1a. If so, please describe change: (*ex. Structures structures longer exist.*) Rubble pile constructed
2. Is the site/area vegetated? (Y) N
   2a. If not vegetated, briefly describe the site/area composition: Forest in surrounding areas.
3. Does the site or area exhibit evidence of erosion? ~~Y/N~~
   3a. If yes, describe the location and extent of the erosion : Unknown, could not access
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 : Unknown, could not access

Migration Potential:

1. Does site/area drainage flow off installation? ~~Y/N~~
   1a. If so, please note observation and location: Unknown, SPCC may clarify
2. Is there standing water or drainage issues within the site/area? ~~Y/N~~
   2a. If so, please note observation and location: Unknown
3. Is there channelized flow within the site/area? Y / N
   3a. If so, please note observation and location: Mare Brook exists east of rubble pile
4. Have man-made drainage channels been constructed within the site/area? ~~Y/N~~
   4a. If so, please note the location of the channel: Unknown

Additional Notes

Facility ST

Visual Survey Inspection Log

Photographic Log

Photo ID/Name	Date & Location	Description	Photograph

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: Brunswick Armed Forces Reserve Center, Brunswick East, Brunswick West

Why has this location been identified as a site?

Facility is an Armed Forces Reserve Center with what appeared to be a vehicle maintenance area and training sites. AFFF may have been stored or used at the facilities.

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

Yes, former Naval Air Station Brunswick historically operated on the current MEARNG parcels and adjacent to them.

Training Events

Have any training events with AFFF occurred at this site? Not on any MEARNG parcels.

If so, how often? NA

How much material was used? Is it documented?

Specific information about releases at the adjacent former NASB can be found in the Navy SAP included in Appendix 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? Generally towards the south. Local flow on each parcel varies.

Average rainfall? 47.4 inches annually

Any flooding during rainy season? No

Direct or indirect pathway to ditches? Drainage channels follow ordnance road near the AFRC

Direct or indirect pathway to larger bodies of water? Mare Brook and Mere Creek empty into Harpswell Cove

Does surface water pond any place on site? No ponding on MEARNG parcels

Any impoundment areas or retention ponds? No

Any NPDES location points near the site? Unknown

How does surface water drain on and around the flight line? No flightline associated with MEARNG parcels

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? southerly east-west direction, with the eastern portion draining to Buttermilk Cove, and the western portion draining toward Mare Brook and Mere Creek

Depth to groundwater? Unknown

Uses (agricultural, drinking water, irrigation)? No known uses; domestic wells exist nearby

Any groundwater treatment systems? Not on MEARNG parcels

Any groundwater monitoring well locations near the site? No but domestic wells exist nearby

Is groundwater used for drinking water? Not on MEARNG parcels

Are there drinking water supply wells on installation? No

Do they serve off-post populations? NA

Are there off-post drinking water wells downgradient Yes

Waste Water Treatment Plant:

Has the installation ever had a WWTP, past or present? Not on or associated with MEARNG parcels

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

Do we understand the fate of sludge waste? NA

Is surface water from potential contaminated sites treated? NA

Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go?

NA

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?

NA

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker No PFAS releases at Brunswick AFRC, therefore, no receptors

Construction Worker

Recreational User

Residential

Child

Ecological

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

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	Brunswick Armed Forces Readiness Center	Cumberland County, Maine

Photograph No. 1

Description:

Entrance to the MEARNG Brunswick Armed Forces Readiness Center (AFRC) facility. View facing east.

24 October 2019

Photograph No. 2

Description:

Military facility south of MEARNG Brunswick AFRC. View facing south.

24 October 2019

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Brunswick Armed Forces Readiness Center	Cumberland County, Maine

Photograph No. 3

Description:

Training area on the western MEARNG Brunswick property (EDC-13), located west of the Brunswick AFRC. View facing southwest.

24 October 2019

Photograph No. 4

Description:

Training area on the western MEARNG Brunswick property (EDC-13), located west of the Brunswick AFRC. View facing southwest.

24 October 2019

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Brunswick Armed Forces Readiness Center	Cumberland County, Maine

Photograph No. 5

Description:

Entrance to landfill area on the Naval Air Station (NAS) Brunswick facility. Landfill located north of MEARNG Brunswick properties. View facing west.

24 October 2019