FINAL
Preliminary Assessment Report
Sparta Training Area,
Sparta, Illinois

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

September 2020

Prepared for:

Army National Guard Bureau
111 S. George Mason Drive
Arlington, VA 22204

UNCLASSIFIED

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Acronyms and Abbreviations

°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	Area of Interest
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSM	conceptual site model
EDR™	Environmental Data Resources, Inc.™
FFT	Fire Fighting Team
FTA	fire training area
HA	Health Advisory
ILARNG	Illinois Army National Guard
ISGS	Illinois State Geological Survey
NCRS	Natural Resources Conservation Service
NOAA	National Ocean and Atmospheric Administration
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SI	Site Inspection
STA	Sparta Training Area
UCMR3	Unregulated Contaminant Monitoring Rule 3
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
VSI	visual site inspection

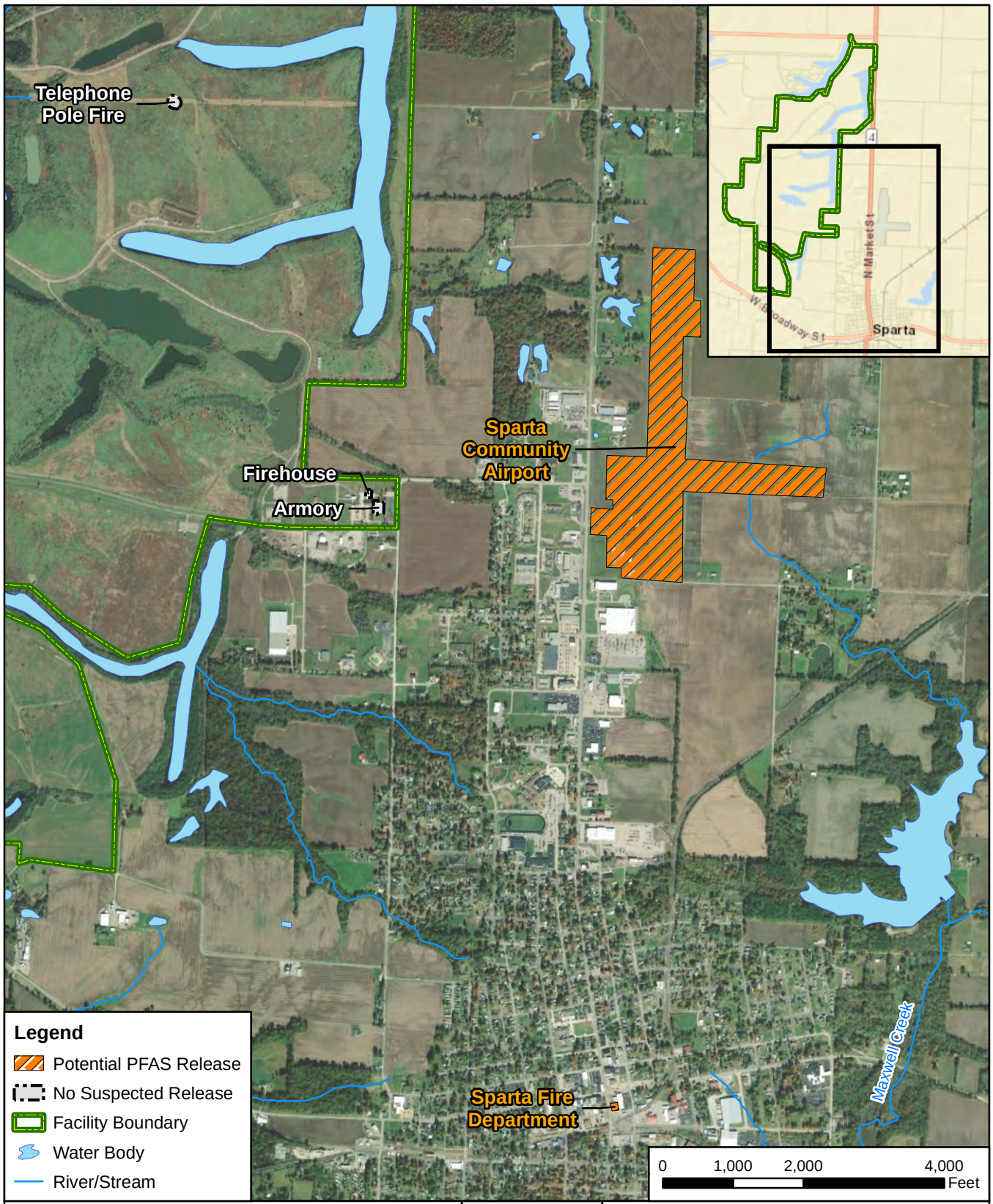
Executive Summary

The Army National Guard (ARNG) is performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. A PA for per- and polyfluoroalkyl substances (PFAS)-containing materials was completed for Sparta Training Area (STA) (also referred to as the "facility") in Sparta, Illinois to assess potential PFAS release areas and exposure pathways to receptors. STA is a state-owned property, and occupation of the property by the Illinois ARNG (ILARNG) began in 1986. The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit on 27 August 2020 and completed visual site inspections at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current ILARNG personnel and the Sparta Fire Department Fire Chief during the site visit.

No known or documented releases of PFAS to the environment were identified at the facility during the preparation of this PA report. Two adjacent sources, the Sparta Fire Department and Sparta Community Airport, were identified as potential PFAS release areas. Based on the inferred groundwater flow direction, Sparta Community Airport may be potentially upgradient from the facility, and Sparta Fire Department is cross-gradient to the facility (**Figure ES-1**).

Based on the United States Environmental Protection Agency (USEPA) Unregulated Contaminant Monitoring Rule 3 (UCMR3) data, it was indicated that no PFAS were detected in a public water system above the USEPA's lifetime Health Advisory (HA) within 20 miles of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today. Evidence does not indicate that current or former ARNG activities having contributed to PFAS contamination in soil, groundwater, surface water, or sediment at the facility or adjacent areas. No Areas of Interest related to PFAS release were identified at STA based on the PA findings.



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Sparta Training Center, IL			
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SCALE	1:24,000	CHK BY	ST	8/31/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	8/31/2020

Summary of Findings

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12420 Milestone Center Drive
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Figure ES-1

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1. Introduction

1.1 Authority and Purpose

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

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

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

This report presents the findings of a PA for PFAS-containing materials at the Sparta Training Area (STA) (also referred to as the “facility”) in Sparta, Illinois, 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 [CFR] Part 300), and Army requirements and guidance.

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

1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit on 27 August 2020 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current Illinois ARNG (ILARNG) personnel and the Sparta Fire Department Fire Chief during the site visit.

1.3 Report Organization

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

- **Section 1** – **Introduction:** identifies the project purpose and authority and describes the facility location, environmental setting, and methods used to complete the PA.
- **Section 2** – **Fire Training Areas:** describes the fire training areas (FTAs) at the facility identified during the site visit.
- **Section 3** – **Non-Fire Training Areas:** describes other locations of potential PFAS releases at the facility identified during the site visit.
- **Section 4** – **Emergency Response Areas:** describes areas of potential PFAS release at the facility, specifically in response to emergency situations.
- **Section 5** – **Adjacent Sources:** describes sources of potential PFAS release adjacent to the facility that are not under the control of ARNG.
- **Section 6** – **Preliminary Conceptual Site Model:** describes the pathways of PFAS transport and receptors for the Areas of Interest (AOIs) and 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

STA occupies approximately 2,635 acres in Sparta, Randolph County, Illinois, and it is located approximately 45 miles southeast of St. Louis, Missouri and 25 miles southeast of Scott Air Force Base. The facility's administrative buildings and parking lots are accessible along North Hillcrest Drive and Industrial Drive. **Figure 1-1** illustrates the location of the STA.

The facility was provided by the Peabody Coal Company to the Illinois Department of Military Affairs at no cost in 1986 and has been used by ILARNG since then for professional military training. Deed agreements and easements are included in **Appendix A**.

1.5 Facility Environmental Setting

The facility is located in the Central Till Plains Section of the Central Lowland physiographic province. Sparta sits in Mount Vernon Hill Country, a smaller physiographic division of the Central Till Plains, which is characterized by level to low-relief topography sloping generally southwest toward the Mississippi River (Reinertsen et al., 1992). The Mount Vernon Hill Country area was moderately glaciated during the Pleistocene Epoch, leaving a relatively thin layer of glacial till covering the region. The topography of the region is primarily governed by pre-glacial features, though lowland areas are dominated by more recent alluvial and fluvial deposition (Reinertsen et al., 1992). Elevation on the STA ranges between approximately 436 to 525 feet above mean sea level.

The facility was established on a 2800-acre reclaimed strip mine that was used to produce coal until 1992 (USACE, 2004; Illinois State Geological Survey [ISGS], 2010). Prior to mining, the area was a natural prairie. The STA is sparsely developed and is characterized by three ecosystems: riparian forest, upland plains, and lakes (USACE, 2004).

1.5.1 Geology

The City of Sparta, Illinois is located on the Sparta Shelf, a quasi-circular depositional region situated between the Missouri Ozark mountains to the west and the present-day Illinois Basin to the north and east (Reinertsen et al., 1992). Rocks of the Sparta Shelf are part of the uppermost Illinois Basin, a broad depression that once extended across much of Illinois and surrounding states; tectonic activity at the end of the Pennsylvanian period upilfted the Sparta Shelf, forming a shallow depression that eventually proved rich in oil, gas, and coal. Most of the underlying rocks at the facility are Pennsylvanian deposits dominated by shales and carbonates, with few sandstones. The uppermost bedrock is composed of three major formations (in order of deposition): the Tradewater, Carbondale, and Shelburn-Patoka formations. The earlier Tradewater Formation is primarily made of coal, with minor units of limestone and shale. The Carbondale Formation contains shale and coal units, with minor limestone. Finally, deposits of the uppermost bedrock formation, the Shelburn-Patoka, are dominated by limestone and contains minor coal and sandstone units (ISGS, 2005). These geologic units contain aquifers and are presented on **Figure 1-2**.

Glaciers covered much of the Upper Midwest during the Pleistocene, leaving glacial landforms across most of the state of Illinois. Glaciation likely removed most evidence of Tertiary deposition in Illinois, though parts of southern Illinois contain Tertiary sediments (Reinertsen et al., 1992). Due to long-term glaciation, the shallow subsurface geology near Sparta is covered by a relatively thin layer of glacial sediments, approximately 5 feet thick (Reinertsen et al., 1992). Terrestrial deposition is characteristic of Holocene sediments in this region and primarily occurs in and around major river systems.

1.5.2 Hydrogeology

Regional groundwater flow in southern Illinois appears to generally follow surface water drainage patterns. Shallow sand and gravel aquifers correlate to major fluvial systems in the region, including the Mississippi, Illinois, Kaskaskia, Little Wabash, and Embarras Rivers, all of which flow generally to the south. Shallow sand and gravel aquifers are present along extant river systems, including the Kaskaskia River to the west of the facility. Potential shallow groundwater is present less than 50 feet below ground surface (bgs) (ISGS, 2020). Major rock aquifers of the region include those associated with Pennsylvanian shales and limestones, including the Shelburn-Patoka, Carbondale, and Tradewater Formations and the Upper Pope Group. Groundwater is present at varying depths in the area around the facility, including aquifers <300 feet bgs and >500 feet bgs (ISGS, 2020). Based on topographic and hydrologic features, the inferred groundwater flow direction is to the southwest. Groundwater features are present in **Figure 1-2**.

An EDR™ report conducted a well search for a 1-mile radius surrounding the facility (**Appendix A**). Using additional online resources, such as state and local Geographic Information System databases, wells were researched to a 4-mile radius of the facility. The STA is supplied by municipal water, and there are no potable wells located on the facility. Several other/unknown type wells are located on the facility and in the surrounding area. The USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) data indicate that PFOS/PFOA were not detected in a public water system above the HA within a 20-mile radius of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low

concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.

1.5.3 Hydrology

The facility is located in the Plum Creek Watershed, which flows southwest along the northwest facility boundary (**Figure 1-3**). Plum Creek is a tributary of the Kaskaskia River and flows to the southwest, eventually draining into the Mississippi River approximately 16 miles to the southwest. Three smaller streams and several small detention ponds are present within the facility, and two off-facility ponds are located adjacent to the facility, one in the northwest and one to the southeast of the facility.

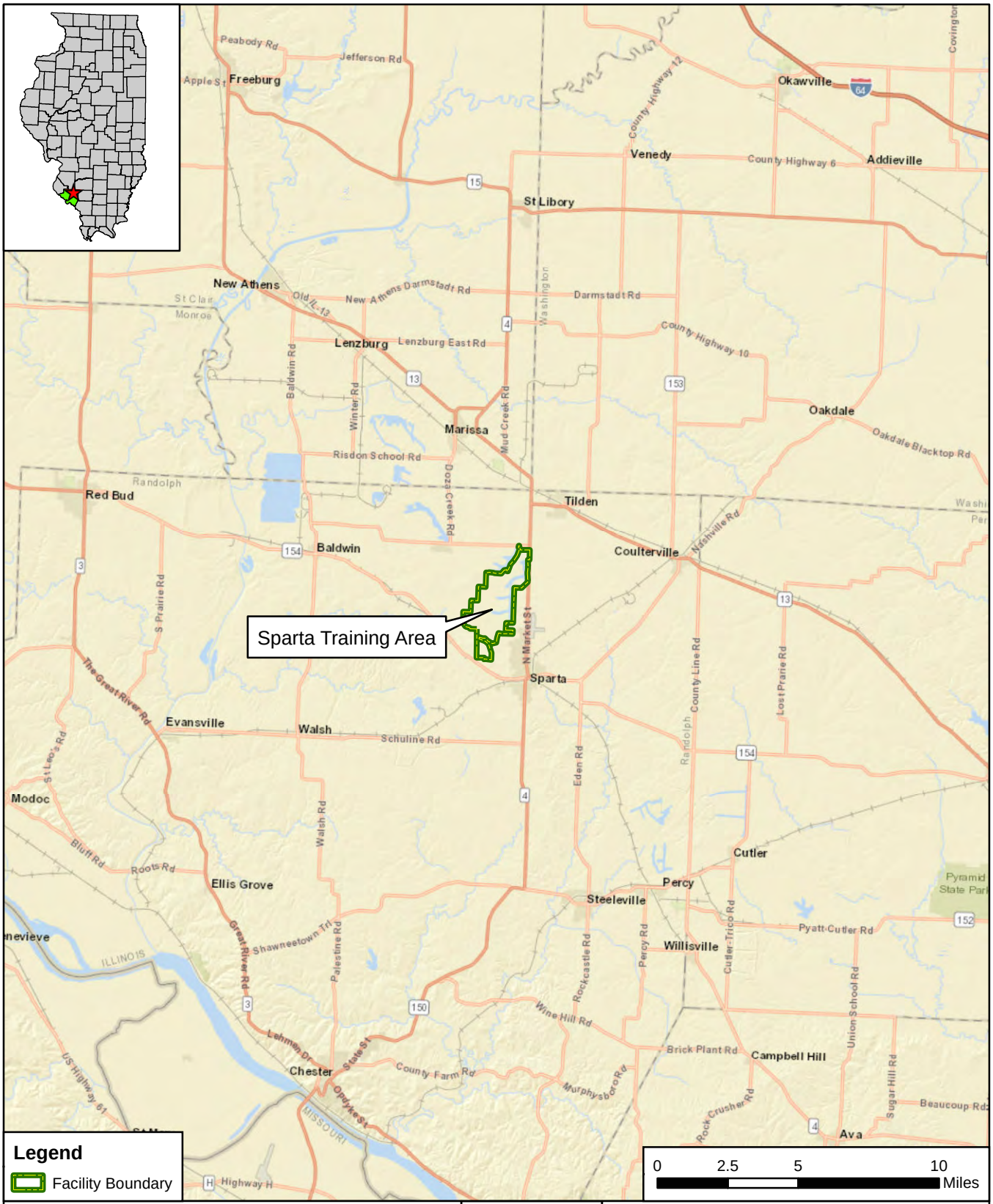
Runoff potential in the facility area is moderate. The Natural Resources Conservation Service (NCRS) classifies soils into four Hydrologic Soil groups based on runoff potential and infiltration capacity, or transmissivity (United States Department of Agriculture [USDA], 2009). Group A soils (sand-dominated) allow the least runoff and have the highest transmissivity, while Group D soils (clay-dominated) cause the most runoff and have the lowest transmissivity. The soils of the STA are primarily Group B and C, with moderately high runoff potential and moderate to somewhat low transmissivity (ILARNG, 2011). Surface water features are presented in **Figure 1-3**.

1.5.4 Climate

The STA is in a humid subtropical climate zone characterized by long, warm summers and relatively short, mild winters. Sparta sees an annual average precipitation of 44.9 inches, with most rainfall occurring during the spring months (National Ocean and Atmospheric Administration [NOAA], 2010). Summer temperatures peak in July, with an average high of 89 degrees Fahrenheit (°F) and an average low of 71 °F. Winter temperatures are lowest in January, with an average high of 40 °F and an average low of 24 °F. The Sparta area receives an average of 13 inches of snowfall annually (National Weather Service Forecast Office, 2020).

1.5.5 Current and Future Land Use

The facility was provided by the Peabody Coal Company to the Illinois Department of Military Affairs at no cost in 1986 and has been used by ILARNG for professional military training. The STA is mostly grass-covered, with some ponds and wooded areas. Development is primarily found in the southeast part of the facility. The different organizational units at the STA include the Armory and Firehouse, and areas adjacent to the facility are primarily residential and agricultural, with some industrial land use in the surrounding region (ILARNG, 2011). Reasonably anticipated future land use is not anticipated to change from the current land use.



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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	8/31/2020

Facility Location

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Figure 1-1

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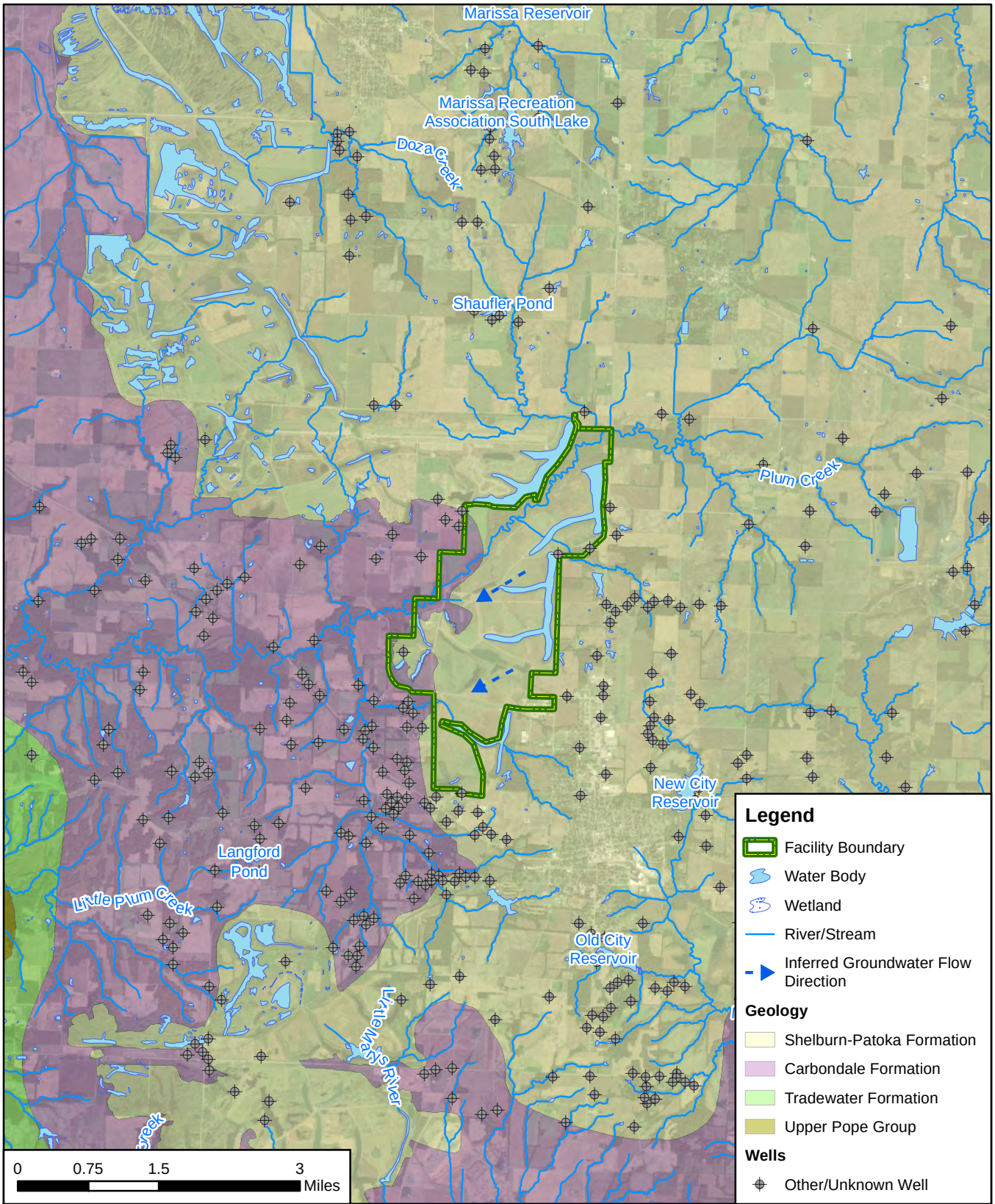

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Groundwater Features

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Figure 1-2

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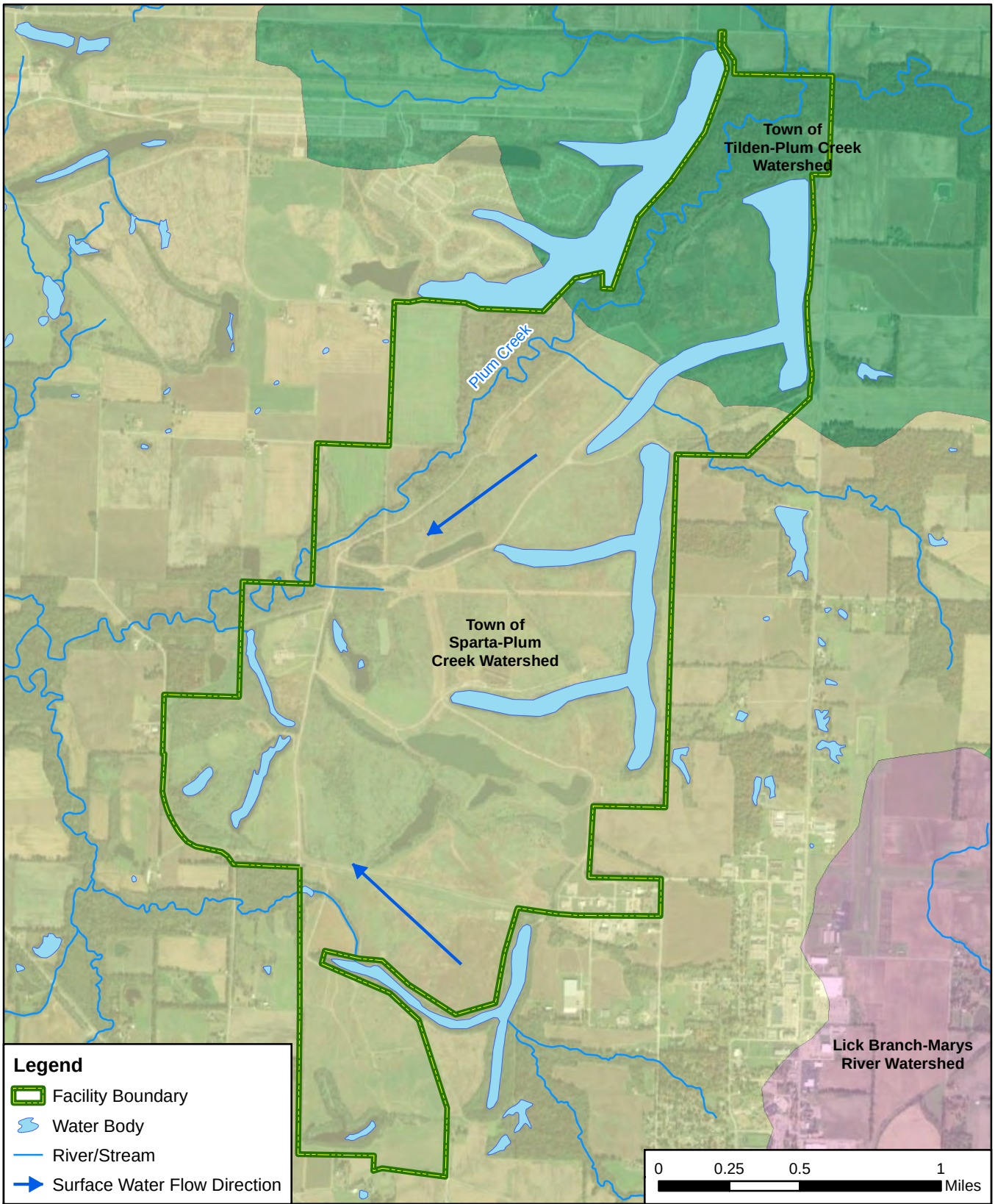

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Surface Water Features

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Figure 1-3

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2. Fire Training Areas

No FTAs where AFFF may have been potentially released were identified through record reviews and interviews during the PA. ILARNG personnel stated during interviews that they train with water only within the facility. Prescribed burn exercises are conducted annually every spring and occur all over the training areas of the facility. The prescribed burns are extinguished with water from the firetrucks, water tankers, and/or other equipment. Fire training is also conducted off-facility at the Scott Air Force Base and Marseilles Training Center, but foaming agents are never used.

3. Non-Fire Training Areas

In addition to FTAs, the PA evaluated areas where PFAS-containing materials may have been broadly used, stored, or disposed. This may include buildings with fire suppression systems, paint booths, AFFF storage areas, and areas of compliance demonstrations. Information on these features obtained during the PA are included in **Appendices A** and **B**. Two non-FTAs where AFFF was stored and/or potentially released were identified during the PA. A description of each non-FTA is presented below, and the non-FTAs are shown on **Figure 3-1**.

3.1 Armory

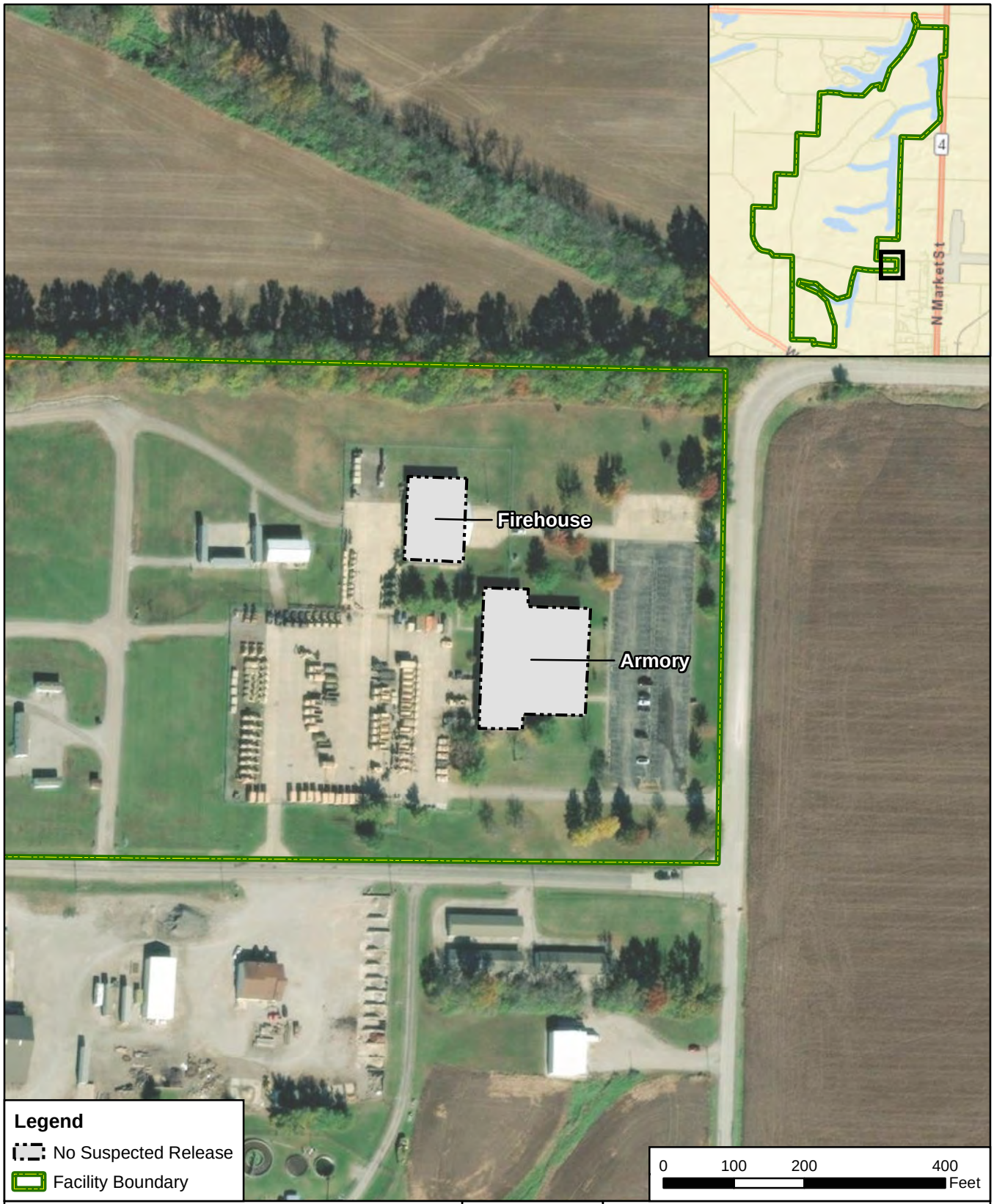
The Armory is a 26,000-square foot building constructed in 1990. The kitchen is equipped with an Ansul R-102 wet chemical fire suppression system. The wet chemical agent used in the system is composed of a mixture of organic salts and reportedly does not contain PFAS. The data sheet for the fire suppression system is included in **Appendix A**. According to the interviewed ILARNG personnel, the fire suppression system has never been triggered and is not currently in use. Only portable ABC and wet chemical fire extinguishers (non-AFFF) are stored within the Armory. The Armory is not considered to be a potential release area of PFAS.

3.2 Firehouse

The Firehouse is northwest of the Armory, and construction was completed on 3 July 2008. The Firehouse is home to the 661st and 662nd Fire Fighting Teams (FFTs). There are two firetrucks and two water tankers stored within the Firehouse. The firetrucks each have two 60-gallon foam tanks and 1000-gallon water tanks, and the water tankers each have a 2500-gallon water tank. According to ILARNG personnel, the vehicles were most likely acquired in 2008, after the Firehouse was constructed. The interviewed ILARNG personnel has been with the FFTs since the two units were established in 2007.

There has never been storage of AFFF at the facility; however, the firetrucks have a history of containing AFFF when deployed. In 2009, one firetruck was deployed to Scott Air Force Base to support an air show. The firetruck was filled with an unknown type of foam concentrate. The air show occurred without an emergency incident, and no foam was ever released through the fire hoses. The foam tank was drained and rinsed before the firetruck returned to the STA. In 2012 and 2017/2018, the FFTs utilized two firetrucks during deployment to Afghanistan and Iraq, respectively. During the deployments, the firetrucks were filled with an unknown type of foam concentrate, but the foam was never utilized. The foam tanks were drained and rinsed prior to returning to the STA.

During the VSI, trench drains were observed within the Firehouse. The drains lead to an oil-water separator before discharging into the sanitary sewer. The oil-water separator is located in the back of the Firehouse, where the fire hoses are washed and nozzle tested with water. Because AFFF has never been present within the Firehouse, the Firehouse is not considered to be a potential release area of PFAS.



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Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	8/31/2020

Non-Fire Training Areas

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Figure 3-1

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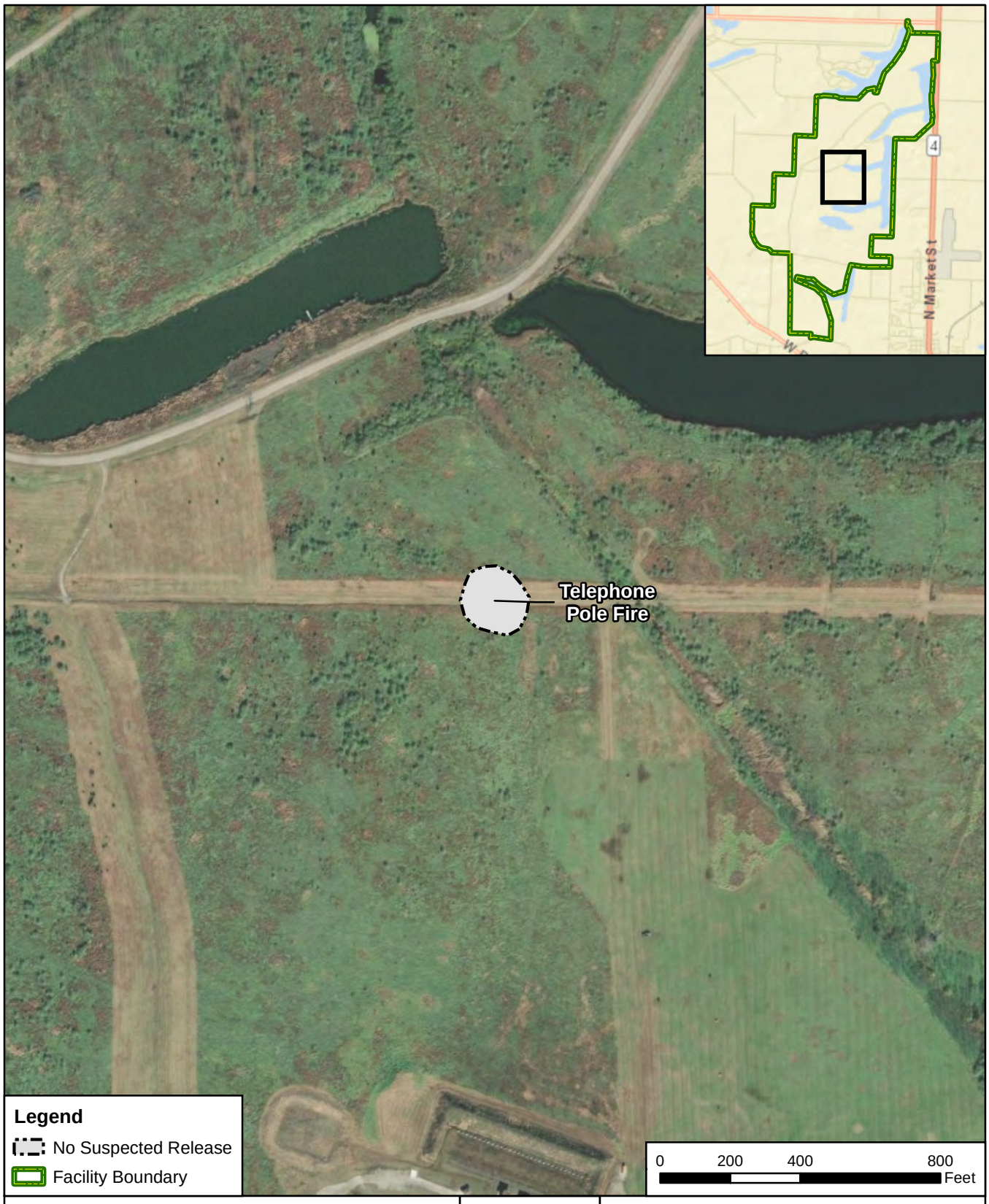
4. Emergency Response Areas

Emergency responses to crashes sometimes require flame suppression, which may result in the release of PFAS to the environment in the form of AFFF. The Sparta Fire Department provides fire emergency and first responder services to the STA. One emergency response area was identified during the PA. A description of the emergency response area is presented below and shown on **Figure 4-1**.

4.1 Telephone Pole Fire

ILARNG personnel stated that during a prescribed burn exercise, there was a single incident in the 2000s where a telephone pole accidentally caught on fire. The Sparta Fire Department was called to help respond to the emergency. ILARNG personnel could not recall the exact extinguishing agent used by the Sparta Fire Department but believed that water was likely used. The interviewed Sparta Fire Department Fire Chief was not familiar with the incident but confirmed that based on the nature of the fire, water was likely used. The Sparta Fire Department only uses AFFF for large structural fires, car fires, and oil tanker fires. The telephone line has since been removed from the area, and based on aerial imagery, this removal occurred between 2016 and 2017. The telephone pole fire is not considered to be a potential release area of PFAS.



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Emergency Response Area

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Figure 4-1

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5. Adjacent Sources

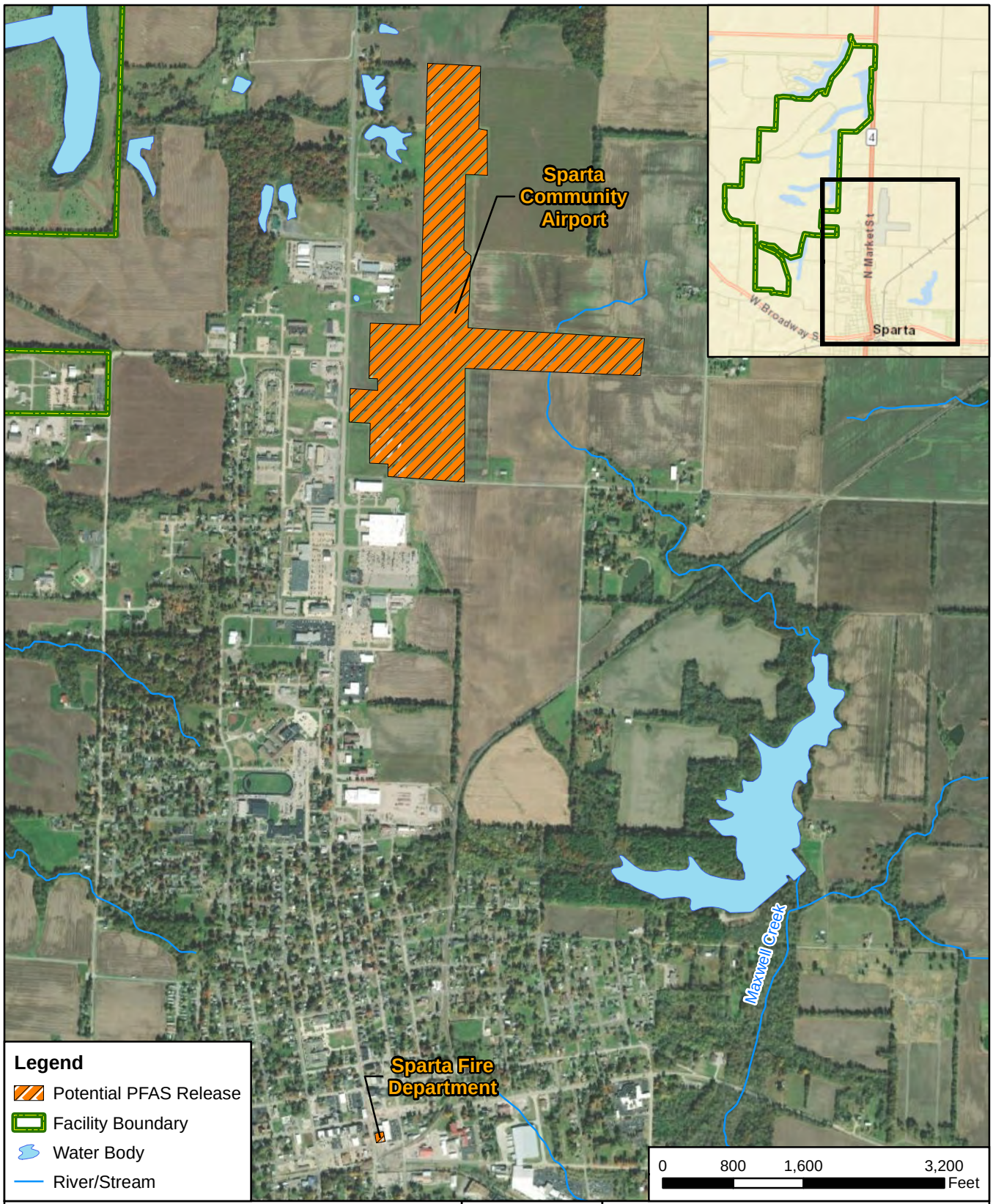
Two potential off-facility sources of PFAS adjacent to the STA, not under the control of the ILARNG, were identified during the PA. A description of each adjacent source is presented below, and the adjacent sources are shown on **Figure 5-1**.

5.1 Sparta Fire Department

The Sparta Fire Department is the local volunteer fire department with a fire station located approximately 1.7 miles southeast of the facility. The interviewed Sparta Fire Department Fire Chief stated that 3%-6% AFFF is stored within their fire station and in firetrucks. The Sparta Fire Department has used AFFF on structural fires, car fires, and oil tanker fires and perform annual training with AFFF outside the fire station. However, the Fire Chief maintains that AFFF has not been used for any emergency responses within the STA, including the telephone pole fire incident described in **Section 4.1**. The Sparta Fire Department's fire station is considered to be a potential PFAS release area due to the storage and use of AFFF at the property.

5.2 Sparta Community Airport

The Sparta Community Airport is located approximately 0.5 miles east of the facility. The airport is home to Arch Air Ambulance, which provides helicopter-based ambulance services, and Sparta Aero Services, Inc., a fixed-based operator (Sparta Community Airport, n.d.). An off-facility VSI was not conducted at the airport, and it is unknown if any fire training activities or AFFF releases have occurred. Airports have historically been sources of PFAS due to AFFF storage, mandated Federal Aviation Administration AFFF training on aircraft rescue and firefighting vehicles, and emergency responses requiring flame suppression; therefore, the Sparta Community Airport was identified as a potential PFAS release area.



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Adjacent Sources

AECOM
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Germantown, MD 20876

Figure 5-1

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6. Preliminary Conceptual Site Model

Based on the PA findings, no release areas were identified as AOIs; therefore, a preliminary conceptual site model (CSM) is not required for the facility. A CSM identifies three components necessary for potentially complete exposure pathways: (1) source, (2) pathway, and (3) receptor. If any of these elements are missing, the pathway is considered incomplete. Based on the findings of this PA, there are no PFAS sources at the STA; thus, there is no complete exposure pathway to potential receptors from ARNG use of the facility.

7. Conclusions

This report presents a summary of available information gathered during the PA on the use and storage of AFFF and other PFAS-related activities at the STA. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

7.1 Findings

No PFAS releases relating to current of historical activities at the STA were identified during this PA. **Table 7-1** summarizes the areas discussed in **Sections 3** and **4** and shown in **Figure 7-1**, which were determined to have no suspected releases.

Table 7-1: No Suspected Release Areas

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Armory	ILARNG	Only portable ABC and wet chemical fire extinguishers (non-AFFF) are stored within the Armory. The kitchen hood fire suppression system uses a wet chemical agent and has never been discharged.
Firehouse	ILARNG	AFFF has never been present at the Firehouse. Deployed equipment is emptied and cleaned prior to retuning the STA.
Telephone Pole Fire	ILARNG	Interviewees indicated that water was likely used in the emergency response incident.

Two adjacent sources, the Sparta Fire Department and Sparta Community Airport, were identified as potential PFAS release areas. Based on the inferred groundwater flow direction, Sparta Community Airport may be potentially upgradient from the facility, and Sparta Fire Department is cross-gradient to the facility.

7.2 Uncertainties

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

The conclusions of this PA are based on all available information, including: previous environmental reports, EDRs™, observations made during the VSI, and interviews. Interviews of personnel with direct knowledge of a facility generally provided the most useful insights regarding a facility's historical and current PFAS-containing materials. Sometimes, the provided information was vague or conflicted with site observations. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of personnel with direct knowledge due to staffing changes, the time passed since PFAS were first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations, dates of release, volume of releases, and the concentration of AFFF used. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

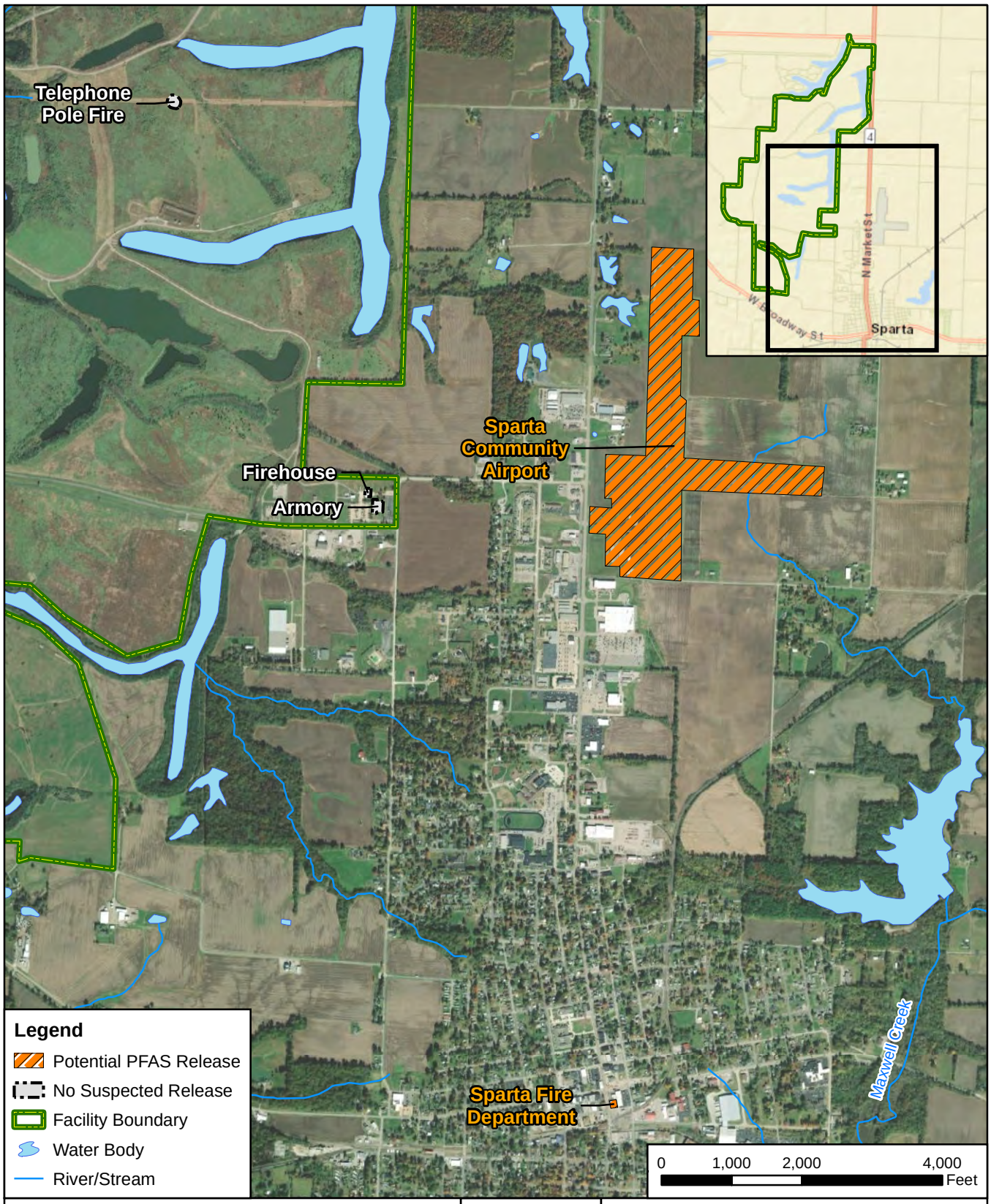
In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected. **Table 7-2** summarizes the uncertainties associated with the PA:

Table 7-2: Summary of Uncertainties

Location	Source of Uncertainty
Armory	The Armory was constructed in 1990 and has been operated by ILARNG since construction. Activities prior to 2007 (the extent of interviewee knowledge) are unknown.
Firehouse	The type of foam contained within the firetrucks when deployed is unknown.
Telephone Pole Fire	The extinguishing agent used in response to the telephone pole fire is unknown, although the Sparta Fire Department Chief maintains that water and not AFFF was likely used due to the nature of the fire.

7.3 Potential Future Actions

Based on the documented absence (2007-present) of the use or release of PFAS-containing materials at the STA, no AOIs were identified during the PA. Evidence does not indicate that current or former ARNG activities contributed to PFAS contamination to soil, groundwater, surface water, or sediment at the facility or adjacent areas. STA will not move forward in the CERCLA process.



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Sparta Training Center, IL			
REVISED	8/31/2020	GIS BY	MS	8/31/2020
SCALE	1:24,000	CHK BY	ST	8/31/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	8/31/2020

N

Summary of Findings

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\IL\Sparta_Training_Area_Figures\Sparta_Training_Area_PA_Figures\Fig_7-1_Sparta_Training_Area_Summary.mxd

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Appendix A
Data Resources

Data resources will be provided separately on CD. Data resources for Sparta Training Area include:

Environmental Data Resources, Inc.™ Geocheck Report

- 2020 Environmental Data Resources, Inc.™ Geocheck Report for Sparta Training Area, Illinois

Environmental Investigations

- 2005 Aquatic Environmental Assessment of the Sparta Illinois National Guard Training Facility
- 2006 Addendum to Environmental Baseline Survey (EBS) for Sparta Training Area, Illinois Department of Military Affairs
- 2006 Sparta EBS Addendum: Memorandum for NGB-ARI-RE from National Guard Bureau: Review of Environmental Baseline Survey for Sparta, Illinois
- 2011 ILARNG Sparta Training Area Hydrologic Analysis

Miscellaneous Information

- Ansul R-102 Restaurant Fire Suppression Systems Data Sheet
- 2006 Memorandum for the Adjutant General of Illinois from National Guard Bureau: Request for Approval to Federally Support Sparta Training Site in PRIDE
- 2006 STA Fire Station Floor Plan
- 2010 Imagery Map of Sparta Training Area

Sparta Training Area Deed Information

- 1985 Municipal Special Warranty Deed No. 90434 for Peabody Coal Co., City of Sparta, Randolph County, Illinois
- 1998 Quitclaim Deed No. 0556PG0952, City of Sparta, Randolph County, Illinois
- 2004 Special Corporate Warranty Deed No. 213423, City of Sparta, Randolph County, Illinois
- 2004 Reciprocal Easement Agreement No. 213427, City of Sparta, Randolph County, Illinois
- 2004 Sparta Training Area Easement Data, City of Sparta, Randolph County, Illinois

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire - Environmental Manager

Facility: Sparta Training Area
Interviewer: [redacted]
Date/Time: 8/27/2020

Interviewee: see below **Title:** **Phone Number:** **Email:**	Can your name/role be used in the PA Report? Y or N Can you recommend anyone we can interview? Y or N

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

[redacted] – Environmental Specialist, 10 years with facility since 2010
[redacted] – Environmental Manager, not working at Sparta but has been with ARNG environmental for 9 years

2. Where can I find previous facility ownership information?

- Armory was built in 1990 and the fire house was an addition built in 2008
- the facility is state-owned land by the Illinois Department of Military Affairs
- City of Sparta probably owned land prior
- ARNG has occupied land since 1990

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

Maintenance
Fire Training Areas
Firefighting (Active Fire)
Crash
Fire Suppression Systems (Hangers/Dining Facilities)
Fire Protection at Fueling Stations
Non-Technical/Recreational/ Pest Management
Metals Plating Facility
Waterproofing Uniforms (Laundry Facilities)
Other

Only foam ever used was during deployment of the firetrucks in Afghanistan/ Iraq. Also, during a air force show at Scott AFB. In these instances, the foam only sat in the tanks and never went through the hose. The foam tank was emptied and rinsed prior to returning to Sparta Training Area.

Two firetrucks (M1142 HEMTT) have two 60-gallon foam tanks and 1000-gallon water tank
Two water tankers (M1158 HEMTT) have 2500-gallon water tank
Both firetrucks probably acquired in 2008 when fire house was built.

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?

None

PA Interview Questionnaire - Environmental Manager

Facility: Sparta Training Area
Interviewer: [redacted]
Date/Time: 8/27/2020

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?

N/A

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

N/A. No AFFF present at facility.

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)?

Unknown what AFFF was used in foam tanks

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?

N/A

There are wall-mounted ABD fire extinguishers.

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?

Prescribed burns are conducted with water all over the training area. Training is approximately annually during the spring. They may use the firetrucks, water tankers, or other equipment in these exercises.

PA Interview Questionnaire - Environmental Manager

Facility: Sparta Training Area
Interviewer: [redacted]
Date/Time: 8/27/2020

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

N/A

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

None

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

Trained at Scott AFB and perhaps Marseilles Training Center

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?

N/A

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?

One time during a prescribed burn, a telephone pole caught on fire and the Sparta Fire Department had to come on post and put out the fire. It's unknown whether foam or water was used. Also it is unknown if the Sparta Fire Department has AFFF.

PA Interview Questionnaire - Environmental Manager

Facility: Sparta Training Area
Interviewer: [redacted]
Date/Time: 8/27/2020

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?

N/A

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

N/A

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?

Agreement is informal with Sparta Fire Department (local volunteer fire department). The facility falls within the jurisdiction of Sparta Fire Department, and they would respond in case of emergencies.

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)?

None

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

N/A

PA Interview Questionnaire - Environmental Manager

Facility: Sparta Training Area
Interviewer: [redacted]
Date/Time: 8/27/2020

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 these are available. The facility used to be an old strip mine.

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

Attached in CD

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.?

N/A

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?

N/A

PA Interview Questionnaire - Environmental Manager

Facility: Sparta Training Area
Interviewer: [redacted]
Date/Time: 8/27/2020

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

[redacted]

PA Interview Questionnaire - Other

Facility:__Sparta Training Area_
Interviewer:_[redacted]_____
Date/Time:__8/27/2020_____

Interviewee: [redacted]____ **Title:**_____Readiness NCO_____ **Phone Number:**_____ **Email:**_____	Can your name/role be used in the PA Report? Y or N Can you recommend anyone we can interview? Y or N _____

Roles or activities with the Facility/Years working at the Facility:	
Readiness NCO from 2013 – 2020 and logistics NCO recently	
Has been with firefighting unit at Sparta Training Area since 2007	
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?	
In 2009, worked with foam (unknown type) to support Scott AFB air show. The air show required foam in the firetrucks in case of emergency. Only one firetruck was used and they drained the foam before coming back on base.	**Known Uses**
The firetrucks have two 60-gallon foam tanks. No foam or water has ever flowed through the hose.	Use
In 2012, the firetrucks were deployed to Afghanistan. In 2017/2018, the firetrucks were deployed to Iraq. During the deployment, firetrucks were filled with foam but again it was never flowed through the hose, and the foam tank was emptied and rinsed before coming back to Sparta Training Area.	Procurement
No foam used during fire training. The controlled fires are put out with water from the firetrucks and water tankers.	Disposition
No emergency responses requiring foam.	Storage (Mixed)
	Storage (Solution)
	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing

PA Interview Questionnaire - Other

Facility:__Sparta Training Area_
Interviewer:_[redacted]_____
Date/Time:__8/27/2020_____

	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility:__Sparta Training Area__
Interviewer:__[redacted]_____
Date/Time:__8/27/2020_____

Interviewee: [redacted] _____ **Title:**__Fire Chief_____ **Phone Number:**__[redacted]_____ **Email:**__[redacted]_____	Can your name/role be used in the PA Report? Y or N Can you recommend anyone we can interview? Y or N _____

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

Fire chief at Sparta Fire Department. Has been with the department since 1990.

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?

The FD has a dual type foam 3%-6% AFFF (unknown brand) and the AFFF has been there since the chief can remember.	**Known Uses**
The FD will use AFFF on structural fires, car fires, oil tanker fires.	Use
They have not responded to any emergencies at Sparta Training Area with AFFF.	Procurement
The FD trains at their fire house and discharges AFFF onto the ground once a year.	Disposition
Fire chief was not present at the telephone pole fire at Sparta Training Area but does not believe they would use AFFF in that instance.	Storage (Mixed)
	Storage (Solution)
	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

Appendix B.2
Visual Site Inspection Checklists

Visual Site Inspection Checklist

Names(s) of people performing VSI: [redacted]

Recorded by: [redacted]

ARNG Contact: [redacted]

Date and Time: 8/27/20

Method of visit (walking, driving, adjacent): driving/walking

Source/Release Information

Site Name / Area Name / Unique ID: Sparta Training Area

Site / Area Acreage: 11 acres

Historic Site Use (Brief Description): Armory, fire house, training area

Current Site Use (Brief Description): Same

Physical barriers or access restrictions: fencing

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

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

2. Has usage been documented? **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

Sparta Salvage and Recycling, World Shooting and Recreational Complex, Sparta Airport, commercial

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

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

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? **N**

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

No AFFF fire suppression system but there is a R-102 chemical suppression system in kitchen of armory.

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

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

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

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? **Y**

1a. If so, note observation and location:

Plum Creek flows through facility

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

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

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

3a. If so, please note the location:

4. Are surface water intakes located near the site? **N**

4a. If so, please note the location:

5. Can wind dispersion information be obtained? **N**

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

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

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

Sparta Fire Department and Sparta Airport

6b. Will off-site reconnaissance be conducted? **N**

Visual Survey Inspection Log

Significant Topographical Features:

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

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

fire house built in 2008

2. Is the site/area vegetated? **Y**

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

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

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

many ponds leftover from strip mining

Receptor Information

1. Is access to the site restricted? **Y**

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

fencing

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:

site workers, construction workers, trespassers, ecological

3. Are residential areas located near the site? **Y**

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

South of facility ~1 mile

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

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

South of facility ~1 mile

5. Are any wetlands located near the site? **Y**

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

Many ponds on facility

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: Sparta Training Area

Why has this location been identified as a site?

Facility has two firetrucks that have historically contained AFFF

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

Local airport is nearby

Training Events

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

If so, how often? N/A

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

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

Surface Water:

Surface water flow direction? Generally west following the river

Average rainfall? 44.9 inches per year

Any flooding during rainy season? None

Direct or indirect pathway to ditches? None

Direct or indirect pathway to larger bodies of water? Yes, direct

Does surface water pond any place on site? Yes

Any impoundment areas or retention ponds? Yes

Any NPDES location points near the site? Yes

How does surface water drain on and around the flight line?

No flight line

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? Inferred southwest

Depth to groundwater? Less than 50 ft bgs

Uses (agricultural, drinking water, irrigation)? None

Any groundwater treatment systems? None

Any groundwater monitoring well locations near the site? None

Is groundwater used for drinking water? No

Are there drinking water supply wells on installation? No

Do they serve off-post populations? N/A

Are there off-post drinking water wells downgradient: No

Waste Water Treatment Plant:

Has the installation ever had a WWTP, past or present? No

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

Do we understand the fate of sludge waste? N/A

Is surface water from potential contaminated sites treated? N/A

Equipment Rinse Water

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

Yes, washed behind firehouse near oil-water separator.

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?

Yes, tested with water only periodically.

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker - yes

Construction Worker - yes

Recreational User - yes

Residential - No

Child No

Ecological - yes

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

Documentation

Ask for Engineering drawings (if applicable).

Has there been a reconstruction or changes to the drainage system? When did that occur? No

Appendix C
Photographic Log

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Sparta Training Area	Sparta, Illinois

Photograph No. 1

Date 8/27/2020

Time 9:39

Description:
Location of the oil-water separator behind the Fire-house.

Orientation:
Southeast

Photograph No. 2

Date 8/27/2020

Time 9:40

Description:
Inside the Firehouse that contains two firetrucks and two water tankers.

Orientation:
Southeast

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Sparta Training Area	Sparta, Illinois

Photograph No. 3

Date 8/27/2020

Time 9:43

Description:

Trench drains are located inside the Firehouse and lead to the oil-water separator outside.

Orientation:

Northeast

Photograph No. 4

Date 8/27/2020

Time 9:46

Description:

The Armory kitchen is equipped with an Ansul R-102 wet chemical fire suppression system.

Orientation:

Southeast

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Sparta Training Area	Sparta, Illinois

Photograph No. 5

Date 8/27/2020

Time 9:47

Description:

A wet chemical fire extinguisher (non-AFFF) is located inside the Armory.

Orientation:

Southwest

Photograph No. 6

Date 8/27/2020

Time 10:18

Description:

Approximate location of where a telephone pole caught on fire during a prescribed burn exercise. The telephone pole has since been removed.

Orientation:

Northwest