FINAL
Preliminary Assessment Report
Camp Roberts, California

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

November 2019

Prepared for:

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Table of Contents

Tables

Figures

Appendices

Acronyms and Abbreviations

AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	area of interest
ARNG	Air National Guard
bgs	below ground surface
CA ARNG	California Army National Guard
CCRWQCB	Central Coast Regional Water Quality Control Board
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIRPAS	Center for Interdisciplinary Remotely-Piloted Aircraft Studies
CR FD	Camp Roberts Fire Department
CSM	conceptual site model
°F	degrees Fahrenheit
FTA	fire training area
IED	Installations and Environment Division
MATE	Mobilization and Training Equipment Site
msl	mean sea level
ng/L	nanograms per liter
NPS	Naval Postgraduate School
NTL	Nacimiento Tributary Landfill
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFTeA	Perfluorotetradecanoic acid
ppt	parts per trillion
SI	Site Inspection
TUAS	Tactical Unmanned Aerial Systems
TFFT	tactical firefighting truck
US	United States
USACE	United States Army Corps of Engineers

USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VSI	visual site inspection
WWTP	Waste Water Treatment Plant

Executive Summary

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

AECOM completed a PA for PFAS at the California Army National Guard (CA ARNG) Camp Roberts in Monterey and San Luis Obispo Counties, California, to assess potential PFAS release areas and exposure pathways to receptors. The performance of this PA included the following tasks:

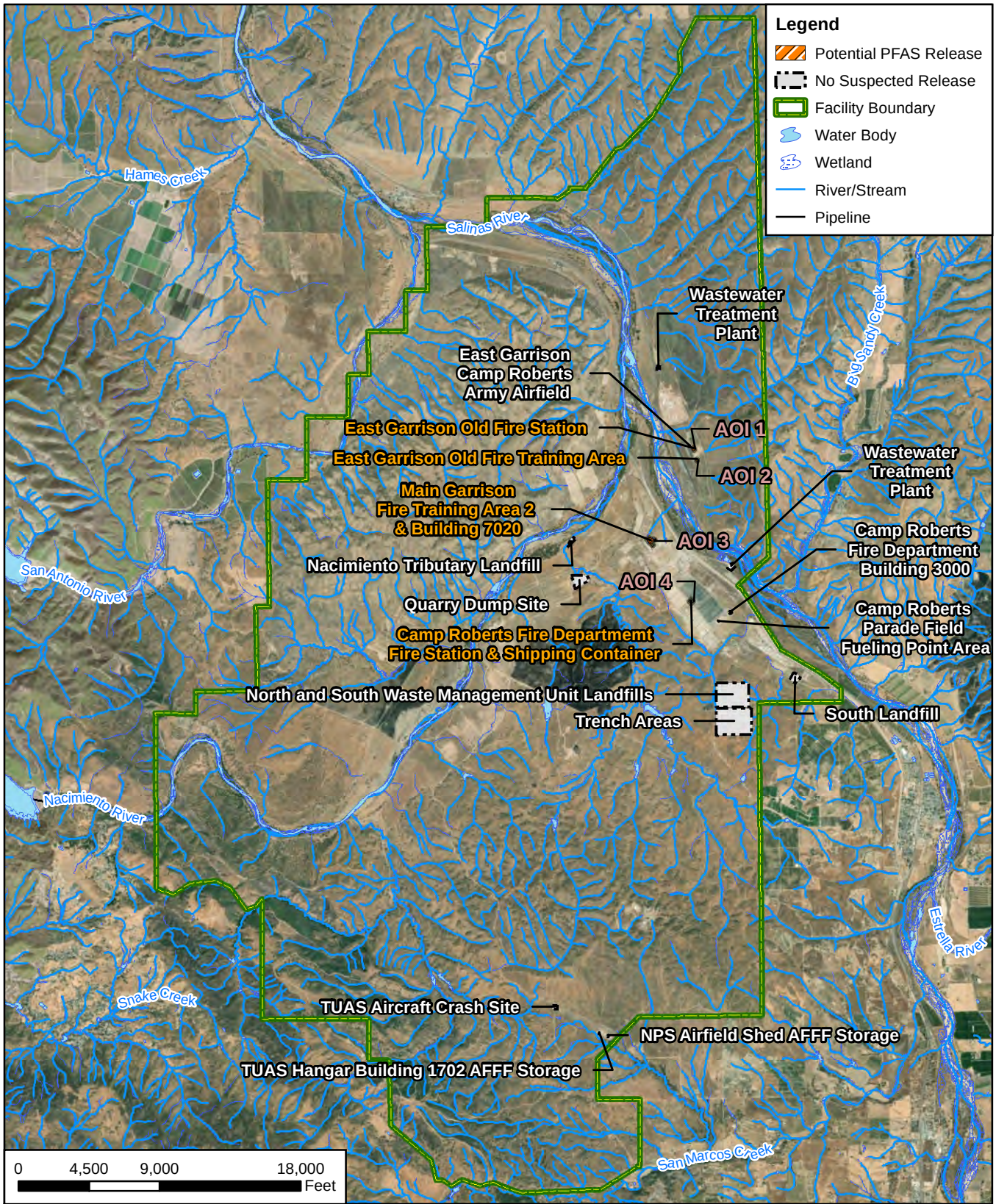
- Reviewed available administrative record documents and Environmental Data Resources, Inc. report packages to obtain information relevant to potential PFAS releases
- Conducted a 2-day site visit on 23 and 24 May 2018
- Interviewed current Camp Roberts personnel during the site visit including the CA ARNG Senior Environmental Scientist and other facility operations staff; and, Camp Roberts Fire Department Chief and Captain
- Completed VSIs at known or suspected PFAS release locations and documented with photographs
- Identified areas of interest (AOI) and developed a conceptual site model (CSM) to summarize potential Source-Pathway-Receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI

Four AOIs related to potential PFAS releases were identified at Camp Roberts during the PA. The AOIs are shown on **Figure ES-1** and described below:

Area of Interest	Name	Used by	Release Dates
AOI 1	East Garrison Old Fire Station	CA ARNG Camp Roberts Fire Department	Potentially as early as 1976
AOI 2	East Garrison Old Fire Training Area	CA ARNG Camp Roberts Fire Department	Potentially as early as 1976
AOI 3	Main Garrison Fire Training Area 2 and Building 7020	CA ARNG Camp Roberts Fire Department	Prior to 2001
AOI 4	Camp Roberts Fire Department Fire Station and Shipping Container	CA ARNG Camp Roberts Fire Department	Unknown

Based on information obtained during the PA at these AOIs, there is potential for exposure to PFAS contamination in surface soil and intermittent surface water and sediments to site workers, construction workers, residents, recreational users, and trespassers via ingestion and inhalation;

subsurface soil to site and construction workers via inhalation; and groundwater to all receptors via ingestion. The CSM for Camp Roberts is shown on **Figure ES-2**.



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NOTES	Preliminary Assessment for PFAS at Camp Roberts, CA			
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SCALE	1:108,000	CHK BY	GR	2/22/2019
Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI,		PM	RG	2/22/2019

Summary of Findings

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Figure ES-1

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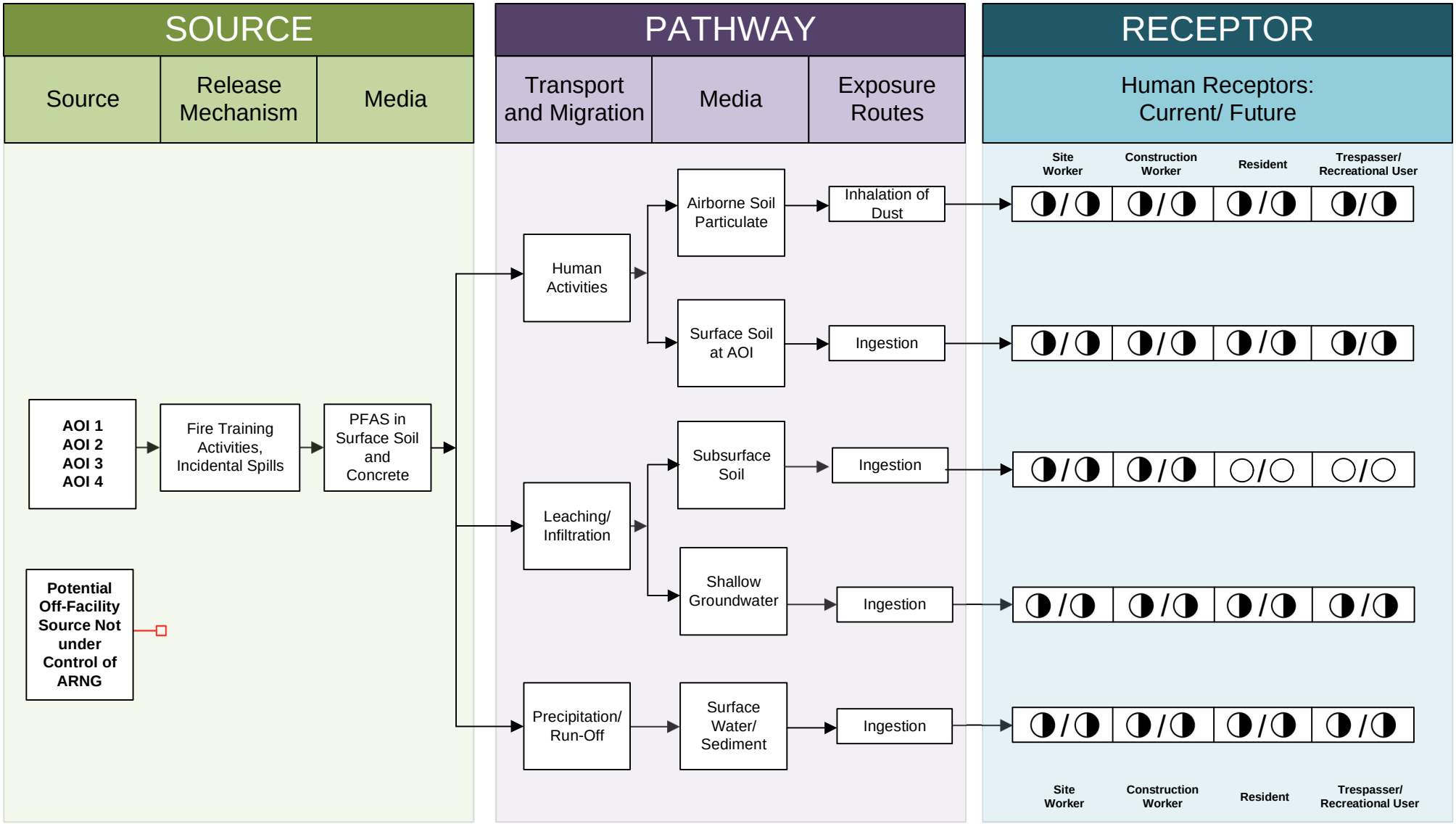


LEGEND

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

Figure ES-2
Conceptual Site Model
Camp Roberts

1. Introduction

1.1 Authority and Purpose

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division, Cleanup Branch contracted AECOM Technical Services, Inc. (AECOM) to perform Preliminary Assessments (PAs) and visual site inspections (VSIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017. The ARNG is assessing potential effects on human health related to processes at their facilities that used per- and poly-fluoroalkyl substances (PFAS) (a suite of related chemicals), primarily releases of aqueous film forming foam (AFFF) although other sources of PFAS are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of these PFAS compounds in the environment will vary. 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. On 13 July 2018, under the authority of the Deputy Director of the Division of Drinking Water, California issued drinking water notification levels of 14 parts per trillion (ppt) for PFOA and 13 ppt for PFOS. Notification levels are nonregulatory health-based advisory levels established for contaminants in drinking water for which maximum contaminant levels have not been established.

This report presents findings of a PA for PFAS at California Army National Guard (CA ARNG) at Camp Roberts in Monterey and San Luis Obispo Counties, California, 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 fire training areas (FTAs) as well as additional locations where PFAS may have been released to the environment at Camp Roberts. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components AFFF.

1.2 Preliminary Assessment Methods

- Reviewed available administrative record documents and Environmental Data Resources, Inc. report packages to obtain information relevant to potential PFAS releases
- Conducted a 2-day site visit on 23 and 24 May 2018
- Interviewed current Camp Roberts personnel during the site visit including the CA ARNG Senior Environmental Scientist and other facility operations staff; and, Camp Roberts Fire Department Chief and Captain
- Completed VSIs at known or suspected PFAS release locations and documented with photographs

- Identified areas of interest (AOIs) and developed a conceptual site model (CSM) to summarize potential Source-Pathway-Receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment 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 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** – **Conceptual Site Model:** describes the pathways of PFAS transport and receptors at each AOI.
- **Section 7** – **Conclusions:** summarizes the data findings and presents the conclusions of the PA.
- **Section 8** – **References:** provides the references used to develop this document.
- **Appendix A** – Data Resources
- **Appendix B** – Preliminary Assessment Documentation
- **Appendix C** – Photographic Log

1.4 Facility Location and Description

Camp Roberts is in southern Monterey and northern San Luis Obispo Counties in central California. It is situated along the eastern foothills of the Santa Lucia Mountains in the valley of the Salinas River, which flows towards the northwest through the property. The facility is about 12 miles north of Paso Robles and 25 miles east of the Pacific Ocean (**Figure 1-1**). The latitude, longitude and surface elevation at the main gate of the facility are 35 47’53”; 120 44’40” and, 620 feet above mean sea level (msl), respectively.

Camp Roberts occupies 42,784 acres of land and is bordered on the west by the unincorporated community of Heritage Ranch and on the east by the unincorporated community of San Miguel. Camp Roberts includes three main types of use areas including cantonment areas, training areas, and airfield operational areas. Facilities at Camp Roberts are concentrated in two cantonment areas. The Main Garrison and East Garrison are located in the northeastern portion of Camp Roberts near the facility’s main gate and are separated by the Salinas River and US Route 101. Training areas include weapons ranges and impact areas, open areas for heavy and light maneuver training, and land navigation areas. These areas are in the southern, central, and northern portion of the property. Firing ranges occupy areas in the western and central portions of Camp Roberts. The three airfield operational areas include McMillan Airfield, located at the

southernmost end of Camp Roberts, the East Garrison Airfield, located towards the northern end of the facility, north of U.S Route 101, and the Parade Field, which is also used as a landing field for rotary wing aircraft.

Camp Roberts was originally developed as an Army replacement training center in 1941 (Environmental Resources Management Inc. [ERM], 1995). The facility was inactivated and then reverted to caretaker status from 1946 to 1950. After 1950, Camp Roberts was reactivated during the Korean Conflict. Camp Roberts was again inactivated and reverted to caretaker status from 1954 until it was officially closed by the Army in 1970. Although the facility was active during the Vietnam War, it was never officially brought out of inactive status. On 2 April 1971, the CA ARNG received control of the site under a license from the Army to establish a Reserve Component Training Center.

1.5 Facility Environmental Setting

Camp Roberts is in a region of rolling hills and steep mountainous valleys between the Pacific Ocean and the Santa Lucia Mountains. Much of the facility is grasslands and oak woodlands. The area surrounding the facility is a mix of agriculture, rural residential, recreation, and open spaces. Surface elevations at Camp Roberts range from 600 feet msl in the area where higher plains meet the Nacimiento River Basin area to 1,800 feet msl, in steep slope areas of the southwestern portion of the training area. The Nacimiento River traverses through the Main Garrison and meets the Salinas River near US Route 101, within the boundaries of Camp Roberts. Ephemeral tributary streams of the Nacimiento River are located in the northern portion of the facility.

1.5.1 Geology

Camp Roberts is situated in the southern portion of the California Coast Ranges section of the Pacific Border physiographic province, which stretches over 400 miles from the Klamath Mountains in Humbolt County to the Traverse Ranges in Santa Barbara County (FPM, 2008). The topography of Camp Roberts is characteristic of the Coast Ranges, with terrain varying from low plains and river valleys to steep hills. A series of folds and faults follow a northwest trend as a result of mountain forming episodes that occurred from the late Pliocene into the mid Pleistocene.

The most prevalent geologic units at Camp Roberts are composed of Quaternary or Late Tertiary semi- to unconsolidated layers of sand, gravel, sandstone, and conglomerate deposits that are consistent with stream deposition environments. The low and high plains are composed of Quaternary (Recent and Late Pleistocene) alluvium and the Paso Robles Formation, respectively. The Paso Robles Formation accumulated extensively after withdrawal of the Tertiary Sea and is mainly a mixture of semi- to unconsolidated alternating layers of conglomerate and sandstone, with smaller amounts of mudstone (US Geological Survey [USGS], 1974). Other units residing beneath the lower hills in the northern portion of Camp Roberts include alternating layers of massive- to thinly-bedded Tertiary mudstones, shales, and sandstones of the Pancho Rico, Santa Margarita and Tierra Redonda Formations, and an unnamed Cretaceous marine unit (Chemistry Systems Laboratory [CSL], 1983).

The southern Salinas Valley lies mainly on the Salinian block, a structural basement comprised of granitic and high-grade metamorphic rocks (USGS, 1974). The Salinian block is bounded by the San Andreas and Rinconada fault zones, which are approximately 17.5 and 8 miles northeast and west of Camp Roberts, respectively. Both faults are active, right-lateral slip faults capable of generating significant earthquakes.

1.5.2 Hydrogeology

Camp Roberts lies within the Salinas Valley Groundwater Basin, which is subdivided into the Paso Robles Area Subbasin and the Upper Valley Aquifer Subbasin. Camp Roberts is situated within

the Paso Robles Area Subbasin, which is bordered on the north by the Upper Valley Aquifer Subbasin, on the east by the Temblor Range, on the south by the La Panza Range, and on the west by the Santa Lucia Range (California Department of Water Resources [DWR], 2004). The limited amounts of groundwater used from the basin are from mostly unconfined Holocene age alluvium deposits found as deep as 130 feet below ground surface (bgs), but generally less than 30 feet bgs. Although permeability is considered high, limited amounts of groundwater are extracted for use. The most important source of groundwater in the basin is found in Pleistocene age Paso Robles Formation, which reaches a thickness of 2,000 feet (DWR, 2004). Groundwater recharging the basin is provided by infiltration, seepage from streams, and return flow from irrigation. The estimated annual recharge rate for the Paso Robles Area Sub-basin is 47,000 acre-feet, and specific yield values in the Paso Robles Area Subbasin range from 7-11 percent, with an average yield of 9 percent. The estimated usable storage capacity of the Paso Robles Area Subbasin is estimated to be 1.7 million acre-feet (DWR, 2004).

Groundwater from the Paso Robles Area Subbasin is the main source of water for the facility. Groundwater supply wells located throughout the Salinas Valley region have typical intake depths of over 200 feet (DWR, 2004). Groundwater features are presented on **Figure 1-2**.

Camp Robert's potable water is sourced from groundwater wells situated within the boundaries of the facility. The primary source of drinking water for the facility is provided from wells located in the Main Garrison. These wells include Well Numbers C-3-A, C-4A, and C-5A, which are active wells situated adjacent to the Nacimiento River. Well depths range from 350 to 450 feet bgs. Information about Camp Robert's water wells is tabulated and included in **Appendix A**.

From a 2012 Site Investigation, the water table at the northwest end of the Main Garrison and at the East Garrison ranged from approximately 82 to 85 feet bgs. At the southwest end of the Main Garrison, the water table was encountered at 29 to 36 feet bgs (American Integrated Services, Inc., 2012). Several logs for wells installed near McMillian Airfield recorded static water levels ranging from 60 to 78 feet bgs.

In the southeast area of Camp Roberts, there are three wells, two public supply wells, and one potable well at the Satellite Communication. The Satellite Communication is a US Army enclave that is surrounded by Camp Roberts but administratively distinct.

In March 2017, groundwater from the majority of Camp Roberts' well network was analyzed for PFAS. PFAS is a large group of related chemicals including PFOA, PFOS, and Perfluorotetradecanoic acid (PFTeA). The samples were collected at spigots from various facilities at Camp Roberts. The spigots are associated with the wells identified below, however, no information regarding the precise locations of spigots sampled was available. The results of the analyses are presented below, and a tabulated data set is provided in **Appendix A**.

- Water from a spigot associated with Well C-5A had PFTeA at a concentration of 2.25 nanograms per liter (ng/L)
- Water from a spigot associated with Well C-4A had PFTeA at a concentration of 1.84 ng/L
- Water from a spigot associated with Well C-3A had PFTeA at a concentration of 1.47 ng/L
- Water from a spigot associated with McMillan Airfield had PFTeA at a concentration of 2.41 ng/L
- Water from a spigot associated with the Tactical Unmanned Aerial Systems (TUAS) facility had PFTeA at a concentration of 1.9 ng/L

The specific chemicals PFOA and PFAS were not detected in any sample.

The lead regulatory agency for Camp Roberts is the Central Coast Regional Water Quality Control Board (CCRWQCB).

1.5.3 Hydrology

Waters flowing through or collecting on land surfaces within the boundaries of Camp Roberts drain through four watersheds including the Kemp Canyon-San Antonio, Portuguese Canyon-Salinas River, San Marcos Creek, and the Nacimiento River Watersheds. The Nacimiento River watershed occupies the largest portion of surface areas within Camp Robert's property boundary. Surface water features are presented on **Figure 1-3**.

The major water courses that pass through the cantonment areas of Camp Roberts are the Salinas and the Nacimiento Rivers. All surface water draining from Camp Roberts flows to the Salinas River or one of its tributaries which include the San Antonio and Nacimiento Rivers and San Marcos Creek. Waters in the Salinas River flow through Monterey County to the Monterey Bay National Marine Sanctuary in the Pacific Ocean.

The Nacimiento River drains approximately 70 percent of the land surfaces covering Camp Roberts (CSL, 1983). The river flows in a northeastern direction along the north side of the Main Garrison's developed area and joins the Salinas River approximately 2 miles north of the facility's main gate. Surface waters from the Main Garrison, the southern portion of Camp Roberts, and McMillan Airfield drains into the Nacimeinto River and its smaller tributaries. The River is ephemeral and periodically dries up in the summer months.

Surface waters originating in the East Garrison drain to the Salinas River and its smaller tributaries. The Salinas River is more than 175 miles long and flows from the southeast to the northwest in the vicinity of Camp Roberts. The Salinas River is designated by the National Marine Fisheries Service as a critical habitat for steelhead.

Several seasonal wetlands that include clay flats and vernal pools supporting a fairy shrimp population are situated within Camp Roberts boundaries. There are approximately 64 acres of ponds and reservoirs, of which about 35, 24 and 10 acres are classified as wetlands, seasonal wetlands and clay flats, respectively (Science Applications International Corporation [SAIC], 2011). Furthermore, the majority of stream bank areas situated along the Salinas River are classified as wetlands.

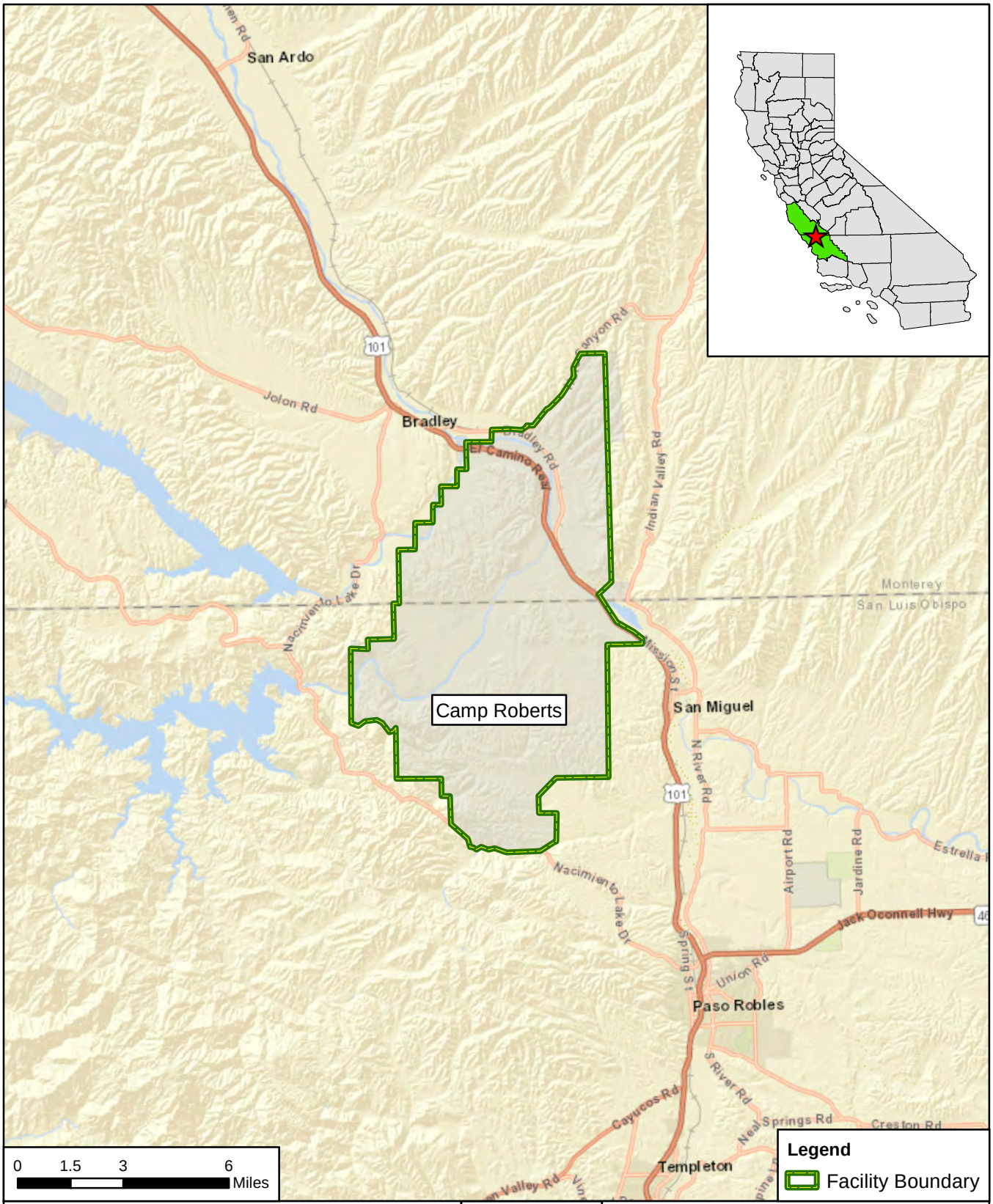
1.5.4 Climate

Camp Roberts is in a Mediterranean climate zone characterized by warm, dry weather from June through September, and mild, rainy weather from November through March. The average annual rainfall is approximately 14 inches, with the majority of the rainfall occurring between late fall and early spring (ERM, 1995). Summer temperatures average 87 degrees Fahrenheit (°F) to 94ºF, and the daily high temperature can frequently exceed 110ºF. Winter temperatures range from 57ºF during the day to 30º F at night. Snowfall is rare, but frost occurs occasionally.

1.5.5 Current and Future Land Use

Camp Roberts serves as a year-round training site for the CA ARNG. The cantonment area of the facility is developed with numerous buildings and related infrastructure including paved and unpaved roadways and parking areas. The cantonment area occupies a small percentage of the total area controlled by the CA ARNG. The other, much larger lands are occupied by and used as training ranges. The ranges are generally in vegetated sloping areas, mostly to the west of the cantonment areas. Access to lands under Camp Robert's purview is restricted and inaccessible to the general public in most areas.

The mission of Camp Roberts is to provide training, administrative, and logistical site support to US forces including units from the National Guard and reserve components of the US 60th Army area (CA ARNG, 2004). Camp Roberts also provides emergency support services for the State of California in the event of an emergency or disaster. Reasonably anticipated future land use is not expected to change from the current land use described above.



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Camp Roberts Facility Location

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Figure 1-1

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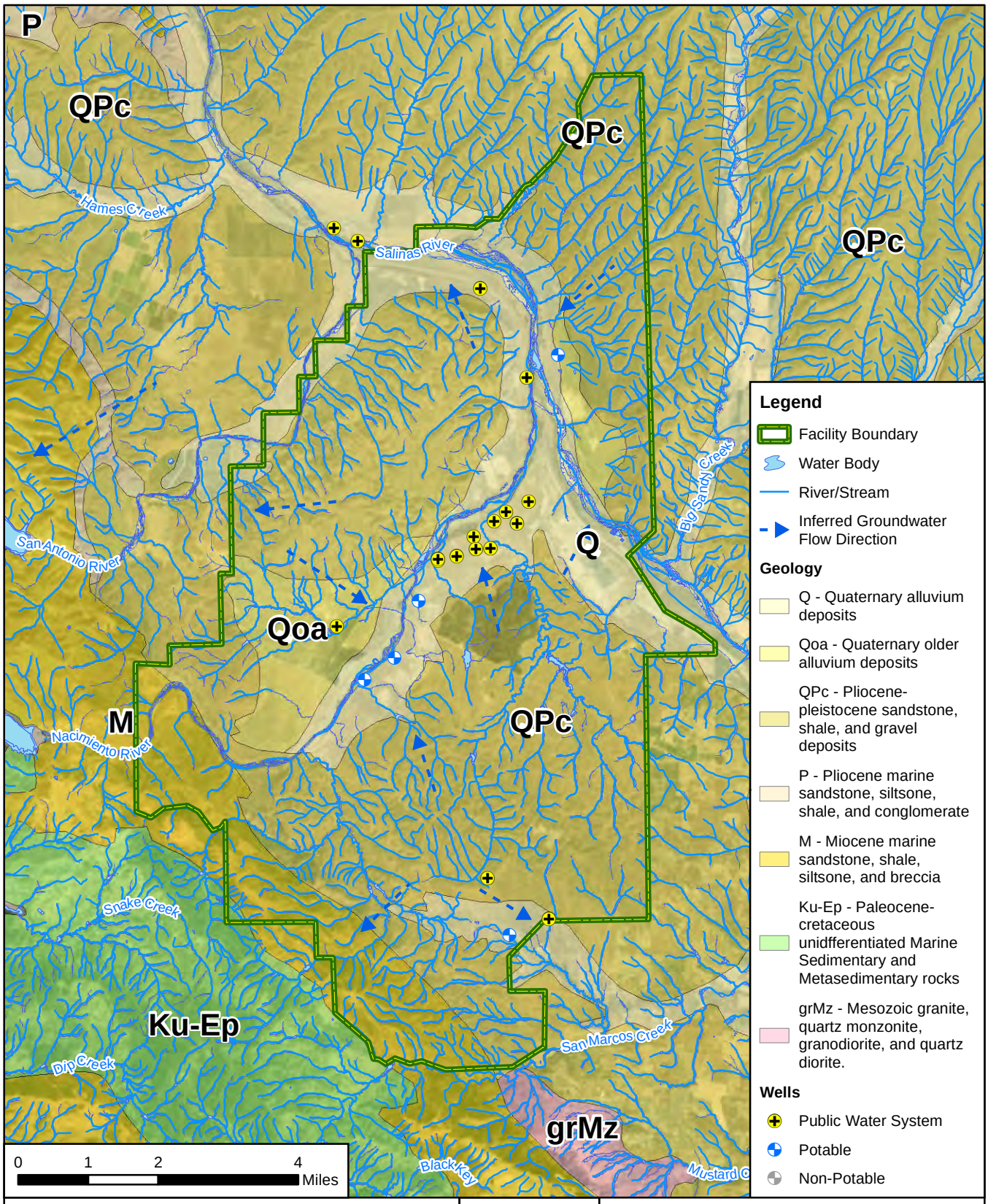

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Groundwater Features

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Figure 1-2

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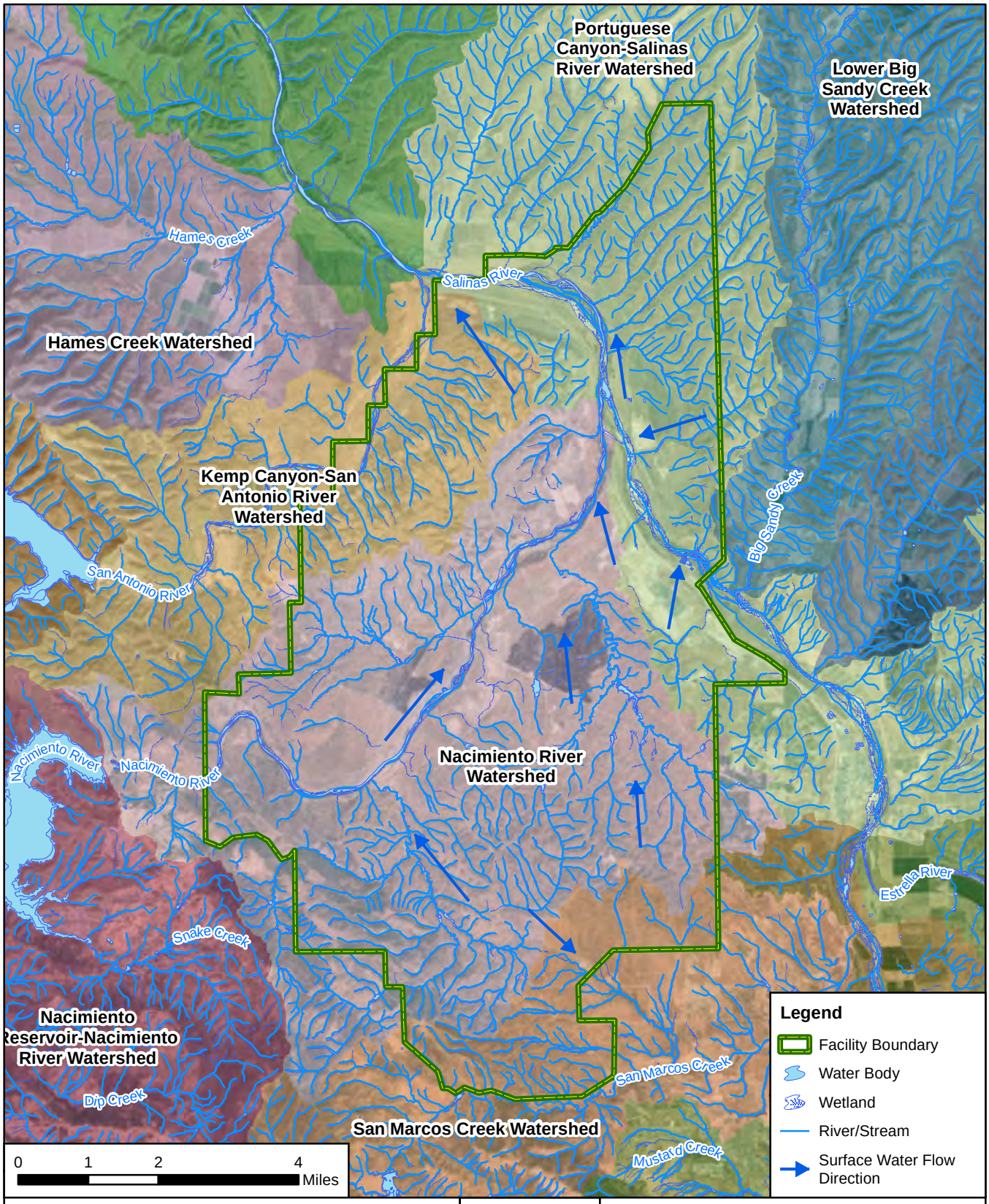

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Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	11/9/2018

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Surface Water Features

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Figure 1-3

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2. Fire Training Areas

Two former FTAs were identified through record reviews during the PA. A description and the location of the FTAs are shown on **Figure 2-1**. PA interview and VSI documents and photographs are included in **Appendix B** and **Appendix C**, respectively. Per interview with a Staff Sergeant at range control, the Range Facility Management Support System database contained no information on fire training activities at any of the range areas. The fire department chief and captain had knowledge spanning back 4 and 22 years, respectively.

2.1 East Garrison Old Fire Training Area

The Old FTA is located in the East Garrison cantonment area of Camp Roberts to the east of US Route 101, the Salinas River, and the airfield (**Figure 2-1**). Per a 2003 Site Inspection Report, the Old FTA is across the road from the southeast corner of the airfield parking apron (Forsgren Associates/Brown and Caldwell, 2003). The approximate geographic coordinates and elevation of the general area are 35°48'57.085”N; 120°44'28.714"W, and 636 feet msl, respectively. A photograph of the general area of the Old FTA is included in **Appendix C**.

2.1.1 Description and Operational History

Various sets of aerial photographic images from 1949 through to 2017 were reviewed for this PA. The earliest available photographs show the Old FTA to be occupied by about one dozen structures. Sometime between 1971 and 1976, the majority of the structures were removed, with only a few concrete building pads visible in a 1976 photograph. In 1994, one rectangular shape concrete pad was visible adjacent to O Street, and in 2015, two structures were visible that occupied the pad. Subsequent photographs reviewed through to 2017 indicate that land use remained generally consistent from 2015 to 2017.

The Camp Roberts Fire Department (CR FD) reportedly used an area in the East Garrison for fire training exercises (CA ARNG, 2004). Based on historical drawings of Camp Roberts, the Old FTA was located directly south of Building 27211, at the former foundation of Building 27210 (SAIC, 2011). The area used was reported to consist of a concrete pad associated with a former mess hall that had a small wash rack, where drums of combustibles were ignited (CSL, 1983). Diesel fuel and gasoline were reportedly used during the training (ERM, 1995). Additionally, there was a Fire and Rescue Station associated with the Old FTA (CA ARNG, 2004) and is discussed in **Section 3**. The demolished Fire Station (Building 27110) was located about 700-800 feet north of the Old FTA, as shown in the 2003 Site Inspection Report. The former Fire Station did not have floor drains leading to the waste water treatment plant (WWTP).

According to the CR FD and airfield operations staff interviewed for this PA, no interviewees during their tenure at Camp Roberts recalled the use of the Old FTA nor did they have knowledge of AFFF use in the area.

During subsequent review of the historic aerial photographs, another area (500 to 600 feet south of the Old FTA) in the East Garrison was identified to have features that may be indicative of an FTA. In a 1976 photograph, a circular berm feature is seen occupying the area, and in a 1981 photograph, ground disturbance is visible near the center of the feature. In the same photo, small portions of land directly to the north of the area appear black, possibly burned due to fire. In a 1989 photograph, the circular feature is no longer visible. However, two square shaped berm features are visible directly south of Avenue 54. These two features are approximately 50-by-50 feet in dimension. The features do not appear to be related to two structures that were previously removed, as their historic locations do not orient with the locations of the former structures. Subsequent photographs reviewed through to 2017 indicate that land use remained generally

consistent from 1989 to 2017. Since 1949, the area has been kept as open space, and no structures were visible in the historical aerial photographs.

2.1.2 Previous Investigations

In the late 1990s, the California Department of Toxic Substances Control requested that surface soil be sampled at the Old FTA to locate any hot spots of soil contaminated with fuels and solvents that may have been used as the combustion source (US Army Center for Health Promotion and Preventative Medicine [US CHPPM], 1996). In May 2000, four soil samples were collected from two locations near the wash rack associated with the mess hall and analyzed for volatile organics, petroleum hydrocarbons, and metals (CA ARNG, 2011). No significant detections in the shallow soil sampled were noted.

2.1.3 Surface Water and Groundwater

Surface water and groundwater flow to the west, towards the Salinas River in the East Garrison and within the vicinity of the airfield. The river is situated approximately 0.3 miles to the west of O Street. The nearest groundwater well is Well Number (No.) B-3, located hydraulically downgradient and approximately 1 mile north of the Old FTA, north of the Mobilization and Training Equipment Site (MATE) facility and WWTP. Information about the wells at Camp Roberts is tabulated and included in **Appendix A**.

2.2 Main Garrison Fire Training Area 2

The Main Garrison FTA 2 is located in the northwestern portion of the Main Garrison cantonment area, on the east side of Utah Avenue and north of the former CR FD Fire Station Building 7020 (**Figure 2-1**). The approximate geographic coordinates and elevation of the area is 35°48'06.16"N; 120°45'07.15"W and 640 feet msl. Photographs of the area are included in **Appendix C**.

2.2.1 Description and Operational History

Aerial photographs from 1949 to 2017 were reviewed for this PA. The earliest available photograph shows the FTA 2 occupied by numerous square features that appear to be bivouacs. By 1956, the bivouacs were removed, and the area appeared as open grassy fields. A few dirt trails converging near the center of the FTA 2 are visible in a 1971 photograph. By 1978, an increase in surface disturbance was noted near the center of the area. The area remained generally unchanged through 1989, with exception of a building that had been constructed to the east of FTA 2. Subsequent photographs reviewed through 2017 indicate that land use remained generally consistent from 1989 to 2017.

Contaminated waste fuels were reported to have been used in fire training operations, and reportedly, waste fuels were either directly disposed on the ground surface or burned in 55-gallon drums (CA ARNG, 2002). Burns occurred directly on the ground in a bermed area, with a disturbed area northwest of Building 7020 approximately 150 by 250 feet in dimension (SAIC, 2011).

According to CR FD, CA ARNG, and Camp Roberts museum staff interviewed for this PA, no interviewees during their tenure at Camp Roberts recalled the use of FTA 2 and had no knowledge of AFFF use in the area. No documents reviewed indicate if AFFF was used during fire training exercises. The duration of use for fire training purposes is also not known.

2.2.2 Previous Investigations

In September 2002, sixteen boreholes were advanced randomly within a 200-foot grid in FTA 2. Shallow soil samples were collected from depths less than 7 feet and analyzed for solvents,

petroleum hydrocarbons and metals. Low and non-detect concentrations of constituents analyzed in soil were reported, with no reported concentrations above action levels used (SAIC, 2011).

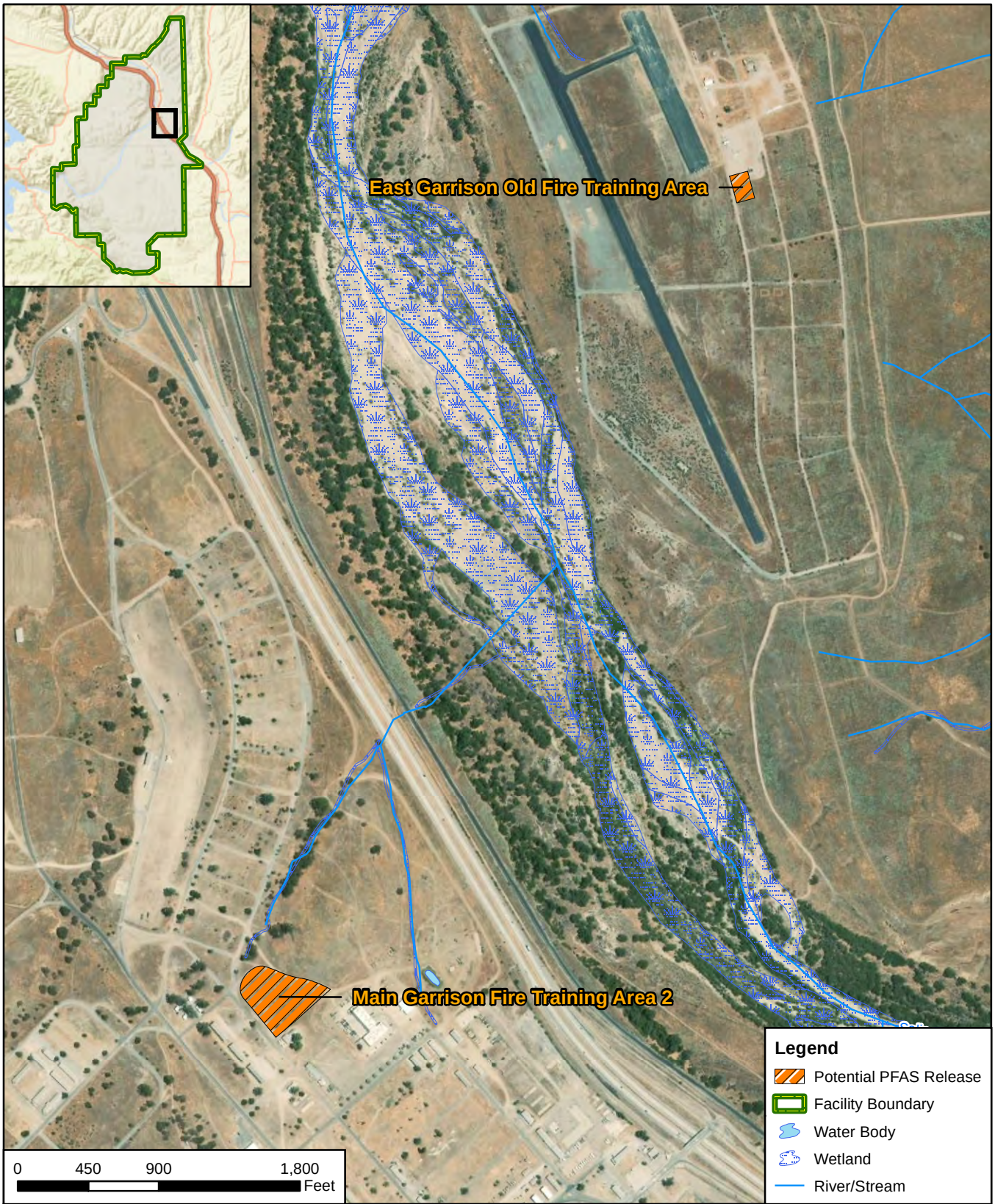
2.2.3 Surface Water and Groundwater

Surface water and groundwater flow to the east towards a small drainage ditch which captures and carries water towards the northeast and eventually to the Salinas River within the vicinity of FTA 2. The river is located approximately 0.5 miles to the east of area. The nearest groundwater well to FTA 2 is Well No. C-1. The well is located hydraulically cross-gradient and to the east of the area. The well is listed as inactive. Information about the wells at Camp Roberts is tabulated and included in **Appendix A**.

2.3 Prescribed Range Burns and Various Building Burns at East and Main Garrisons

Based on interviewee recollection, up to four buildings were burned in the Main Garrison, during which structure fire training took place. The buildings reported to have been burned included a building at the south end of the parade ground, a couple of barracks buildings, and a building for the service club. Water was reportedly used during the structure fire training sessions. The precise locations of the various buildings burned are not known.

Various buildings were also historically burned in the East Garrison. The state Division of Forestry, in connection with the demolition of the buildings in the East Garrison, obtained permits from the state for limited burning (CSL, 1983). The permit was effective from October to December 1980. Based on aerial photographs reviewed for this PA, the majority of structures to the west of the airfield in the East Garrison were removed between the early 1970s to about 1977. It is not known if fire training was involved during demolition of the buildings, and it is not known if AFFF was used in the East Garrison areas.



CLIENT	ARNG			
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Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI,		PM	RG	2/21/2019

Fire Training Areas

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-1

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3. Non-Fire Training Areas

The following sections describe non-FTA areas where AFFF was stored and potentially released, and where other features of interest that may be sources of PFAS were identified during the PA. The locations of the non-FTAs are shown on **Figure 3-1**.

3.1 McMillan Airfield

McMillan Airfield is located in a high plains area in the southern portion of Camp Roberts, between East Perimeter Road and Generals Road. The geographic coordinates and elevation of the approximate center of the airfield runway are 35°43'05.86"N and 120°46'06.32"W, and 908 feet msl, respectively (**Figure 3-1**). The airfield and related facilities are accessible only to facility operations staff and personnel.

McMillan Airfield was constructed in 1986 by the Air National Guard to serve as a landing strip for C-130s. In 1998, the facility was leased by CA ARNG to the US Navy's Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS), a division of the Naval Postgraduate School (NPS). The CIRPAS facility is used as a field laboratory for NPS students participating in research and design opportunities. The facility is also used by TUAS, a division of the CA ARNG. In early 2014, the TUAS facility opened and is a 10,000-square foot complex where CA ARNG staff can perform launch, recovery, maintenance, and flight operations of TUAS aircraft. McMillan Airfield is used as a takeoff and landing strip for the TUAS aircraft.

Surface water and groundwater flow to the south/southwest into tributaries of San Marcos Creek, which eventually empties to the Salinas River within the vicinity of McMillan Airfield. No stormwater drainage infrastructure was observed in the areas visited during the PA at McMillan Airfield.

3.1.1 NPS Airfield Shed AFFF Storage

During the PA site visit, AFFF was observed to be stored in a metal shed located on the east end of the runway. The geographic coordinates of the shed are 35°42'55.38"N and 120°45'47.61"W (**Figure 3-1**). The shed is used and maintained by the NPS. One 5-gallon bucket of Cold Fire 302 manufactured by FIREFREEZE Worldwide, Inc. was observed. The product is a Class A:B:D:K fire suppressing agent. A material safety data sheet of the product is included in **Appendix A**. The plastic bucket was observed to be stored on the shed's concrete building slab. According to NPS staff interviewed, the bucket was given to the NPS by the manufacturer and has been stored in the shed for a long period of time and has never been used.

3.1.2 TUAS Hangar Building 1702 AFFF Storage

The CA ARNG TUAS division operates a hangar, designated as Building 1702, where they perform TUAS aircraft maintenance. The geographic coordinates of the hangar are 35°42'56.93"N and 120°45'54.64"W (**Figure 3-1**). During the PA site visit, two Tri-Max 30 crash fire rescue carts were observed to be stored in the hangar. Photographs of the carts are included in **Appendix C**. Labels on the carts indicated that they contained either 2 quarts of Class A, 1 gallon of Class B 3% or 2 gallons of Class B 6% foam. The TUAS staff indicated that the crash carts have never been used and further stated that no AFFF has been used at McMillan Airfield based on their recollection. Attempts were made via post-site visit follow-up requests to ascertain more information about the Tri-Max units, such as: whether the solution was changed out periodically, who would use these units in the case of an emergency, and who is responsible for maintaining the Tri-Max. No additional information was made available.

The NPS and TUAS facility is supported by a domestic well and septic sewer system. Photographs of the TUAS well head are included in **Appendix C**. The well was installed in 2012 to a depth of 400 feet bgs. The well is listed as active and serves individual facilities only, including toilets and sinks. The well is not connected to the drinking water system. Water from the well was reported to have not been analyzed for PFAS.

3.1.3 McMillan Airfield Wildfires

Three wildfires have burned at or within the vicinity of McMillan Airfield since it was constructed. According to NPS and CR FD staff interviewed during the PA, all fires were extinguished with water or Class A extinguishing agents, which do not contain PFAS.

3.2 East Garrison Camp Roberts Army Airfield

The Camp Roberts Army Airfield is located in the East Garrison, which is east of the Salinas River and US Route 101 and includes a 2,760-foot paved runway. The approximate geographic coordinates and elevation of the center of the airfield runway are 35°48'51.44"N; 120°44'36.44"W, and 630 feet msl, respectively. The location of the Airfield is shown on **Figure 3-1,** and photographs of the area are presented in **Appendix C**.

At the time of the PA site visit, operational facilities observed included an airfield operations Building (Building 27109) located to the east of the Airfield. The Airfield was constructed sometime between 1956 and 1967 based on historical aerial photographs reviewed. Currently, the Airfield is only used as a landing field for rotary wing aircraft.

During the PA site visit, four Tri-Max 30 crash fire rescue carts were observed to be stored at the Airfield in an area historically used for parking aircraft. Photographs of the carts are included in **Appendix C**. Labels on the carts indicated that they contained either 2 quarts of Class A, 1 gallon of Class B 3% or 2 gallons of Class B 6% foam. Two of the carts were observed to be without compressed air tanks and cannot be used to dispense AFFF. The Airfield operations control staff that were interviewed indicated that the crash carts were charged but never used, and no AFFF has been used at or within the vicinity of the Airfield. If service was needed, it was provided by an off-site vendor.

On the west side of the Airfield, little is known regarding Buildings 27011, 27013, and 27015 except that they were wash racks and fuel storage. They are demolished, with only concrete slabs remaining. None of the buildings had drains connected to the WWTP.

Surface water and groundwater flow to the west, towards the Salinas River in the East Garrison. No stormwater drainage infrastructure was observed in the areas visited during the PA within the vicinity of the Airfield.

3.3 East Garrison Old Fire Station

A Fire and Rescue Station was associated with the Old FTA (CA ARNG, 2004). The demolished Fire Station (Building 27110) was located about 700-800 feet north of the Old FTA, as shown in the 2003 Site Inspection Report. This Fire Station did not have floor drains leading to the WWTP. According to the CR FD and Airfield operations staff interviewed for this PA, no interviewees during their tenure at Camp Roberts recalled any details regarding the use of the Old Fire Station located in the East Garrison; therefore, it is not known if AFFF was used or stored at this location (35°49'3.959"N; 120°44'31.157"W).

3.4 Camp Roberts Parade Field Fueling Point Area

The Camp Roberts Parade Field, which is also used as a landing field for rotary wing aircraft, is situated in the central portion of the Main Garrison cantonment area. The approximate geographic coordinates and elevation of the center of the field are 35°47'28.68"N; 120°44'27.18"W, and 634 feet msl, respectively. The location of the airfield is shown on **Figure 3-1,** and photographs of the area are presented in **Appendix C**.

During the PA site visit, one Tri-Max 30 crash fire rescue cart was observed in the southern end of the field within a fuel point area. Photographs of the cart are included in **Appendix C**. Labels on the carts indicated that they contained either 2 quarts of Class A, 1 gallon of Class B 3% or 2 gallons of Class B 6% foam. Based on interviewee recollection, the cart has not been used, tested, or maintained. Any service needed would have been provided by an off-site vendor.

Surface water and groundwater flow to the east/northeast, towards the Salinas River in the area of the fueling port. No stormwater drainage infrastructure was observed in the area where the crash cart is stored during the PA .

3.5 Camp Roberts Fire Departments

The CR FD has historically operated out of several buildings at Camp Roberts since the early 1940s.

3.5.1 Fire Station Building 7020

In the Main Garrison, the former CR FD Fire Station was Building 7020 (35°48'3.979"N; 120°45'4.894"W), adjacent to FTA 2 (**Figure 3-1**). Little information was available to indicate whether AFFF was used or stored here. Building 7020 was boarded up and not entered during the PA site visit. This building does not have floor drains leading to the WWTP.

3.5.2 Camp Roberts Fire Department Fire Station and Shipping Container

Currently, the CR FD uses Building 4050 as their Fire Station and Building 3000 as a warehouse structure used mostly for storage purposes. The location of the two buildings is shown on **Figure 3-1,** and photographs of the two areas are presented in **Appendix C**.

The Fire Station building is located mid-way along the southwest facing boundary of the Parade Field on Arizona Boulevard between Avenue 11 and Avenue 12. The approximate geographic coordinates are 35°48'51.44"N; 120°44'36.44"W. The Building 3000 Warehouse is located in the southeast corner of the Parade Field, near the intersection of Montana Boulevard and Wyoming Avenue. The approximate geographic coordinates of the warehouse are 35°47'20.45"N; 120°44'05.39"W.

The CR FD is a federal facility that is state managed. The CR FD moved into Building 4050 in 2001, however, the building itself was constructed sometime around 1980. The CR FD responds to most fire and medical incidents occurring at Camp Roberts. The San Miguel Fire Department serves as first alarm for structure-related fires on Camp Roberts. According to the CR FD staff interviewed, the majority of responses involve wildland fire suppression, with occasional response to vehicle accidents on US Route 101.

Two fire engines, two Humvee Brush Fire trucks, and one tactical firefighting truck (TFFT) were observed at the CR FD station building during the PA site visit. According to CR FD staff, the fire engines and brush trucks carry only Class A fire extinguishing agents. The TFFT is equipped to carry up to 2,500 gallons of a mixture of water and foam, of which 65 gallons constitute Class B AFFF.

A steel storage container located adjacent to Building 4050 is used for storing and servicing Tri-Max 30 crash fire rescue carts and for storing AFFF. The geographic coordinates of the storage container are 35°47'28.97"N, 120°44'36.19"W (**Figure 3-1**).

During the PA site visit a total of 20 Tri-Max 30 crash fire rescue carts were observed to be stored in or just outside of the container. According to CR FD staff interviewed, none of the carts are used, as they are designated as out-of-service due to various issues. Additionally, numerous 5-gallon plastic containers of various brands of AFFF were observed to be stored in the container. The inventory of AFFF stored included: 12 containers of Phos-Chek WD881 Class-A Foam Concentrate, one container of FireAde 2000 3% AFFF Liquid Foam Concentrate, five containers of Eco-Foam 3% AFFF, and one container of US First Strike 3% AFFF Liquid Foam Concentrate. Material safety data sheets of the various AFFF products are included in **Appendix A**.

According to CR FD staff interviewed (whose tenure covers the last 22 years), the crash carts were historically filled with AFFF in an area outside the door of the container. Staff that were interviewed indicated that incidental leaks and spills may have occurred, however, details specific to the filling of carts were not recalled.

The area was observed to be gravel covered and relatively flat, with no discernable surface water flow direction. Groundwater beneath the area flows towards the east/northeast. No stormwater drainage infrastructure was observed in the immediate vicinity of the shipping container.

3.5.3 Camp Roberts Fire Department Building 3000

Building 3000 is used by the CR FD mostly for storing training equipment and supplies. During the PA site visit, 19 5-gallon plastic containers of various brands of AFFF were observed to be stored on shelves in the eastern corner of the building. The inventory of AFFF stored included 15 containers of Ansulite 6% AFFF and 4 containers of Chemguard 6% AFFF. Material safety data sheets of the AFFF products stored in the building are included in **Appendix A**. The approximate geographic coordinates of the approximate center of the area are 35°46'13.06"N; 120°44'02.49"W (**Figure 3-1**).

According to CR FD staff interviewed, the AFFF stored is purchased through Services Supply and has not been used since the early 2000s. Staff that were interviewed could not recall if there were any incidental spills or leaks of AFFF in the building.

Much of the area around Building 3000 is not paved, and a drainage ditch originates near the building's north corner. This ditch flows north and would ultimately discharge into the Salinas River.

The floor of the warehouse is concrete. No interior drainage infrastructure was observed in the concrete floor of the warehouse. Groundwater flows to the east/northeast, towards the Salinas River.

3.6 Landfills, Trench Areas, Disposal Pits and Quarry

Several landfills, trench areas, a quarry dump site, and disposal pits were used for the landfilling and disposal of industrial, sanitary, and solid wastes at Camp Roberts since the 1940s. Each of the disposal areas operated at various times within the facility's boundaries. Camp Roberts currently operates one active landfill. The other disposal areas are listed as closed. The lead regulatory agency for landfills at Camp Roberts is the CCRWQCB.

Landfills are not usually a primary source of PFAS, however, materials disposed of in landfills containing PFAS may leach the compounds to the environment over time. Such materials may

include residual sludge wastes from WWTP operations, used AFFF storage containers, or products associated with waterproofing such as uniforms or boots.

None of the landfilled areas discussed below were observed during the PA site visit. No information obtained during the PA efforts indicates PFAS-containing materials were disposed of in the several landfilling areas that operated at the facility; however, the dates during which some of the landfilling-related activities were conducted coincide with the years during which AFFF was in use at the facility.

A discussion of the areas used for landfilling purposes is presented in the below sections

3.6.1 North and South Waste Management Unit Landfills

The permitted North and South Waste Management Units at Camp Roberts are located to the east of East Perimeter Road, south of the Main Garrison cantonment areas. The approximate geographic coordinates of the approximate center of the area are 35°46'13.06"N; 120°44'02.49"W (**Figure 3-1**). The units are comprised of a 14.3-acre permitted solid waste disposal site, 4.4 acres of which were a canyon fill area. Sanitary waste generated, which included general domestic waste such as foodstuffs, paper, plastic, wood, and cardboard was disposed of in the permitted active canyon fill area from 1972 to 2004 (SAIC, 2011).

3.6.2 Trench Areas

A series of closed waste disposal areas are located to the southeast of the Main Garrison cantonment area, to the east of the East Perimeter Road off Sanitary Fill Road. The approximate geographic coordinates of the approximate center of the area, at a distance of about 1,000 feet east of Sanitary Fill Road, are 35°46'13.06"N; 120°44'02.49"W (**Figure 3-1**).

The canyon fill area was a 9.9-acre permitted inactive area where domestic trash and construction debris waste materials were reportedly disposed of in trench fills during a period between 1977 to 1984 (SAIC, 2011). The disposal areas are not lined and without leachate collection systems. Additionally, six inactive trench fills operated to the south of the permitted area during the 1940s to 1966 (SAIC, 2011). The volume and nature of the wastes disposed of are unknown. The thickness and the permeability of the cover material for the trenches are unknown.

3.6.3 South Landfill

The South Landfill covers 4 acres and is located in the southern portion of the Main Garrison, in between San Miguel Avenue and US Route 101. The approximate geographic coordinates and elevation of the landfill are 35°46'38.56"N; 120°43'16.63"W, and 626 feet msl, respectively (**Figure 3-1**). Waste disposal into the landfill is believed to have started in 1941 and ended sometime in the 1970s, at which time an intermediate cover was constructed (Star Resources Corp [Star], 2017). No additional information is available regarding the wastes disposed of at the landfill. The landfill is currently capped and has drainage control, and gas and groundwater continue to be monitored on an annual basis.

Surface water and groundwater flow to the northeast, through subdued swales and towards the Salinas River within the vicinity of the aforementioned landfill sites. The river is situated approximately 1.3 miles from the intersection of East Perimeter Road and Sanitary Fill Road and 0.3 miles to the northeast of the South Landfill. There are no potable wells hydraulically downgradient of the landfill areas, however, numerous monitoring wells associated with the landfill sites are in the area. Information about Camp Robert's water wells is tabulated and included in **Appendix A**.

3.6.4 Nacimiento Tributary Landfill

The Nacimiento Tributary Landfill (NTL) is located within a north facing stream bank of an unnamed tributary of the Nacimiento River. The approximate geographic coordinates and elevation of the NTL are 35°48'06.85"N; 120°46'07.66"W, and 552 feet msl, respectively (**Figure 3-1**).

The NTL was discovered by facility personnel in October 1999, during which buried, burned material was observed to be exposed in the streambed. The material was reported to contain burned medical debris, glassware, flatware, and ash. Subsequent to discovery, surface soil samples were collected at the site and chemically analyzed for petroleum aromatic hydrocarbons and metals. Lead concentrations were noted in particular to be elevated. In 2002 and 2003, approximately 1,000 cubic yards of ash and soil were excavated, treated, and disposed of off-facility (SAIC, 2011). Confirmation samples collected subsequent to the excavation of the landfill indicated that constituents analyzed were below screening values used. The dates of operation of the landfill are not known.

The NTL is situated directly adjacent to a tributary of the Nacimiento River. Surface and groundwater flow to the north. No active potable wells are located downgradient of the NTL.

3.6.5 Quarry Dump Site

A former quarry east of the Main Garrison and south of Perimeter Road was later used for various storage and landfilling purposes. The approximate geographic coordinates and elevation of the quarry are 35°47'43.15"N; 120°45'59.34"W, and 577 feet msl, respectively (**Figure 3-1**).

After the quarry was used in the 1940s, the area was repurposed in the mid-1970s for storage and disposal of building rubble generated during the demolition of a Camp Roberts hospital (SAIC, 2011). Sanitary wastes were reported to have been disposed of in the quarry. This practice was stopped, and the waste was reportedly removed from the quarry and relocated to the Camp Roberts sanitary landfill. Stored materials were reported to have been occasionally burned. Burned materials included wood debris, household municipal garbage and other building materials, and tires.

Soil samples were collected in 1990 and analyzed for petroleum hydrocarbons, volatile compounds, and metals. Concentrations of constituents analyzed were below screening levels used.

The former quarry site is situated near a tributary of the Nacimiento River. Surface and groundwater flow to the north. Base Well No. C3-A is located to the west and hydraulically cross-gradient of the area. The well is listed as active and used as a potable water source for Camp Roberts. Base Well No. C-01 is situated to the northeast and hydraulically cross-gradient of the quarry. The well is active, however, and more recently, water is contaminated at times with coliform, and its use becomes limited. Information about Camp Roberts' water wells is tabulated and included in **Appendix A**.

3.6.6 Other Camp Roberts Dumping Grounds

In addition to the known landfill areas, several areas at Camp Roberts were used to dump solid waste. These areas are located throughout training areas on the Main Garrison and south of MATES at the former Army Airfield on the East Garrison.

Observed debris at these locations includes appliances, scrap wood, and metal debris. A larger solid waste dumpsite is located approximately 1,800 feet south of Nacimiento Road and 4,000 feet east-northeast of Range Control (SAIC, 2011). The dumpsite is located behind a former range

berm and covers approximately 1 and 2 acres. Materials dumped at this location include wooden utility poles, scrap metal, and miscellaneous paper and wood debris. The current disposition of these areas is not known, and they were not observed during the PA site visit.

3.6.7 Prescribed Burns

Camp Roberts has a history of prescribed burns for wildfire containment purposes and for building removal. Local fire departments including San Miguel, Bradley, and Paso Robles perform annual controlled burns, mostly in the range areas of Camp Roberts. According to CR FD staff interviewed and during their tenure, AFFF was not used for wildland fire or prescribed burn operations.

3.7 Wastewater Treatment Plant

Camp Roberts operates a WWTP consisting of two components which are located adjacent to the Salinas River and on the east side of US Route 101. The geographic coordinates of settling ponds located in the northern portion of the East Garrison cantonment area are 35°47'48.93"N, 120°44'4.17"W. The coordinates of clarifiers located southeast of the main entrance to Camp Roberts are 35°47'49.22"N, 120°44'03.95"W (**Figure 3-1**).

Constructed in 1941, the WWTP provides secondary treatment for industrial and sanitary wastewaters generated by Camp Roberts' operations. The WWTP's discharge is to groundwater through percolation ponds, the activity of which is permitted through the CCRWQCB.

Buildings located outside the Cantonment Area use septic systems and leaching fields for wastewater disposal. Septic systems are currently located throughout various areas at Camp Roberts including the shooting ranges, the TUAS and CIRPAS facilities, and along Nacimiento and East Perimeter Roads.

No storm drains on the site are plumbed to the WWTP, as all storm drains flow to the Salinas River.

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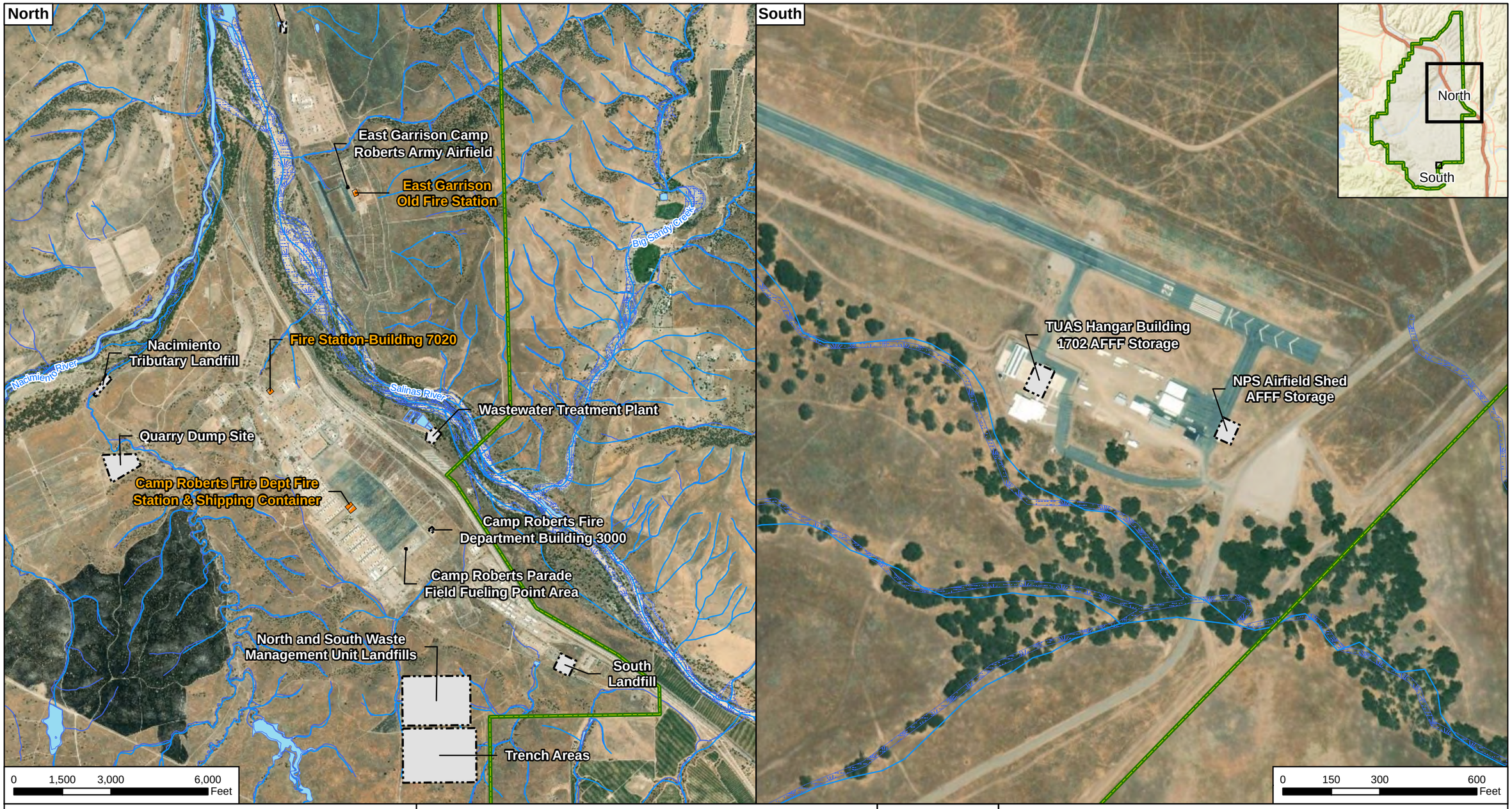

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Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, ©		PM	RG	2/21/2019

Legend

- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- Wetland
- River/Stream

N

Non Fire Training Areas

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-1

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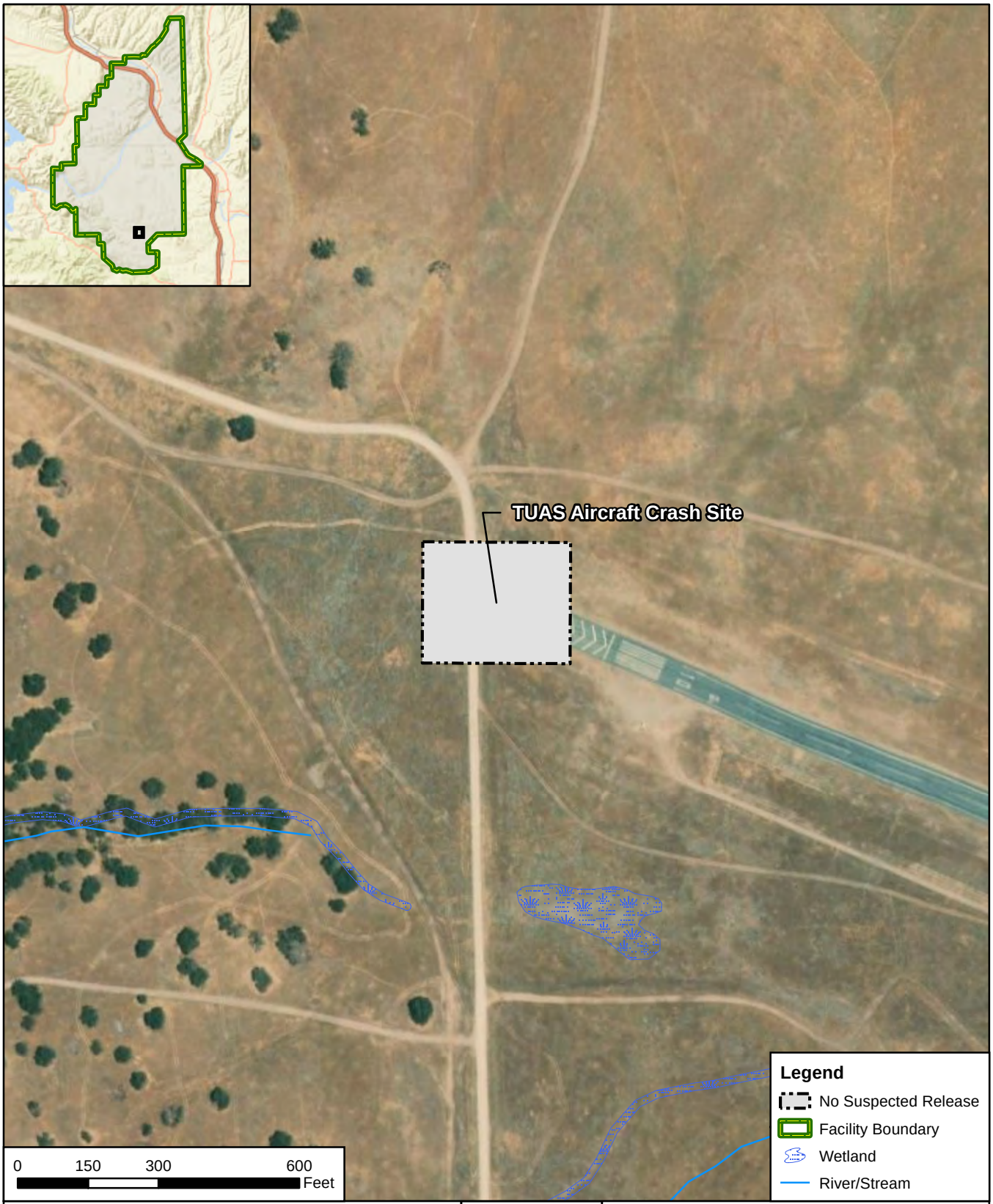
4. Emergency Response Areas

TUAS aircraft were reported to have crashed on two occasions at or within the vicinity of McMillan Airfield. The location of one of the crash sites is shown on **Figure 4-1**. The approximate geographic coordinates of the one crash site are 40°26'53.9"N, 76°32'42.2"W. The location of the second crash is not known.

4.1 TUAS Aircraft Crash Sites

In the late 1990s or early 2000s, a TUAS aircraft crashed near the end of the McMillan Airfield runway. TUAS aircraft at McMillan airfield are operated by the TUAS division of the CA ARNG. During the crash, the lithium ion battery was damaged and caused a fire that spread to about three acres in size. According to the NPS and CR FD staff interviewed, the fire was extinguished with water by the CR FD.

A second crash incident occurred that also involved a TUAS aircraft. The aircraft was reported to have crashed in a high ridge area near Camp Roberts. Other information related to the crash was not recalled by those interviewed.



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Emergency Response Area

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 4-1

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5. Adjacent Sources

The USEPA collects occurrence data for potential contaminants that may be present in drinking water, but do not have enforceable drinking water standards under its Unregulated Contaminant Monitoring program. For this PA, the Third Unregulated Contaminant Monitoring Rule 3 (UCMR3) data for water purveyors within a 10-mile radius of Camp Roberts was searched for PFAS-specific data. **Appendix A** includes the UCMR3 2013 tabulated data set.

According to the UCMR3 2013-2015 occurrence data database search (USEPA, 2017), the Atascadero Mutual Water Company detected PFOA at one of their treatment buildings on 30 October 2013. The detection of PFOA was above the laboratory's 0.02 nanogram per liter (ng/L) method reporting limit at a concentration of 0.028 ng/L. The exact location of where the water was sampled is not known. The southern-most developed portion of the City of Atascadero is located southeast of Camp Roberts and hydraulically upgradient of Camp Roberts. The City of Atascadero is situated adjacent to the Salinas River, upstream of Camp Roberts.

5.1 Vehicle Incidents on US Route 101

According to the CR FD staff interviewed, less than six responses to vehicle incidents on US Route 101 were reported during their tenures. The incidents were reported to have occurred several miles away from Camp Roberts. Fewer than 5 gallons of AFFF were used during the incidents to extinguish vehicle/tractor trailer fires. The precise quantity, exact locations, and final disposition of AFFF used were not recalled by CR FD staff interviewed.

No other off-site PFAS sources adjacent to Camp Roberts were identified during the PA.

6. Conceptual Site Model

Based on the PA findings, there were three areas where fire training occurred and four areas where AFFF may have been incidentally spilled or leaked to the ground surface. As such, these AOIs may be potential PFAS source areas. The AOIs and CSM for the AOIs are shown on **Figure 6-1** and **Figure 6-2**, respectively, and summarized below.

Although the use of AFFF could not be confirmed, the following AOIs were identified that could be PFAS source areas include:

- AOI 1 - East Garrison Old Fire Station
- AOI 2 - East Garrison Old Fire Training Area
- AOI 3 - Main Garrison Fire Training Area 2 and Building 7020
- AOI 4 - Camp Roberts Fire Department Fire Station and Shipping Container,

Vehicle incidents on US Route 101 were reported to have been responded to by the CR FD. Fewer than 5 gallons of AFFF were expelled during each incident. The various response locations are not known.

The following sections describe the CSM components and the specific CSMs developed for each AOI. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

In general, the potential PFAS exposure pathways are ingestion and inhalation. Dermal contact is not considered to be a potential exposure pathway, as studies have shown very limited absorption of PFAS through the skin (National Ground Water Association, 2018). Receptors for Camp Roberts include site workers, construction workers residents, recreational users, and trespassers. Groundwater is too deep in the region for direct exposure however it is used as water supply. The CSMs for each AOI indicate which specific receptors could potentially be exposed to PFAS.

6.1 AOI 1: East Garrison Old Fire Station and AOI 2 East Garrison Old Fire Training Area

AOI 1 is the East Garrison Old Fire Station near Camp Roberts Army Airfield, and to its south is AOI 2, the East Garrison Old Fire Training Area. Although the use of AFFF could not be confirmed, more substantial fire training activities occurred as early as 1976, and the AOIs could be a potential PFAS source. The timeframe during which the training activities occurred is commensurate with the use of AFFF for fire training purposes.

AOI 1 and AOI 2 lie within the Salinas River watershed, and all surface water is drained by tributaries to the Salinas River. PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. If PFAS releases to surface and subsurface soil occurred, it is possible that PFAS migrated from surface soil at AOI 1 and AOI 2 to groundwater and waters in the Salinas River. Drinking water is supplied by potable wells in the Main Garrison, and two active potable water wells are located downgradient of the East Garrison. In addition, precipitation infiltrating into the gravelly covered areas at the AOIs may cause the migration of PFAS from surface and subsurface soil to groundwater and surface water.

Ground-disturbing activities to soil at AOI 1 or AOI 2 could result in site and construction worker exposure to potential PFAS contamination via inhalation of dust or ingestion of surface soil. Ground-disturbing activities to subsurface soil could result in site and construction worker

exposure via ingestion of subsurface soil. Therefore, the inhalation and ingestion pathways for these receptors are considered potentially complete. Based on an assumed northwestern groundwater flow direction, the AOIs are upgradient of potable wells. Because the drinking water supply wells may be impacted by potential PFAS releases at the AOIs, the exposure pathway for groundwater to all receptors is potentially complete. Site workers, construction workers, and trespassers at the facility may be exposed to PFAS via ingestion of surface water and sediment in the Salinas River and its tributaries. Similarly, farmers, residents, and recreational users may be exposed to PFAS in surface water and sediment off-facility. The CSM for AOI 1 and AOI 2 is shown on **Figure 6-2**.

6.2 AOI 3 Main Garrison Fire Training Area 2 and Building 7020

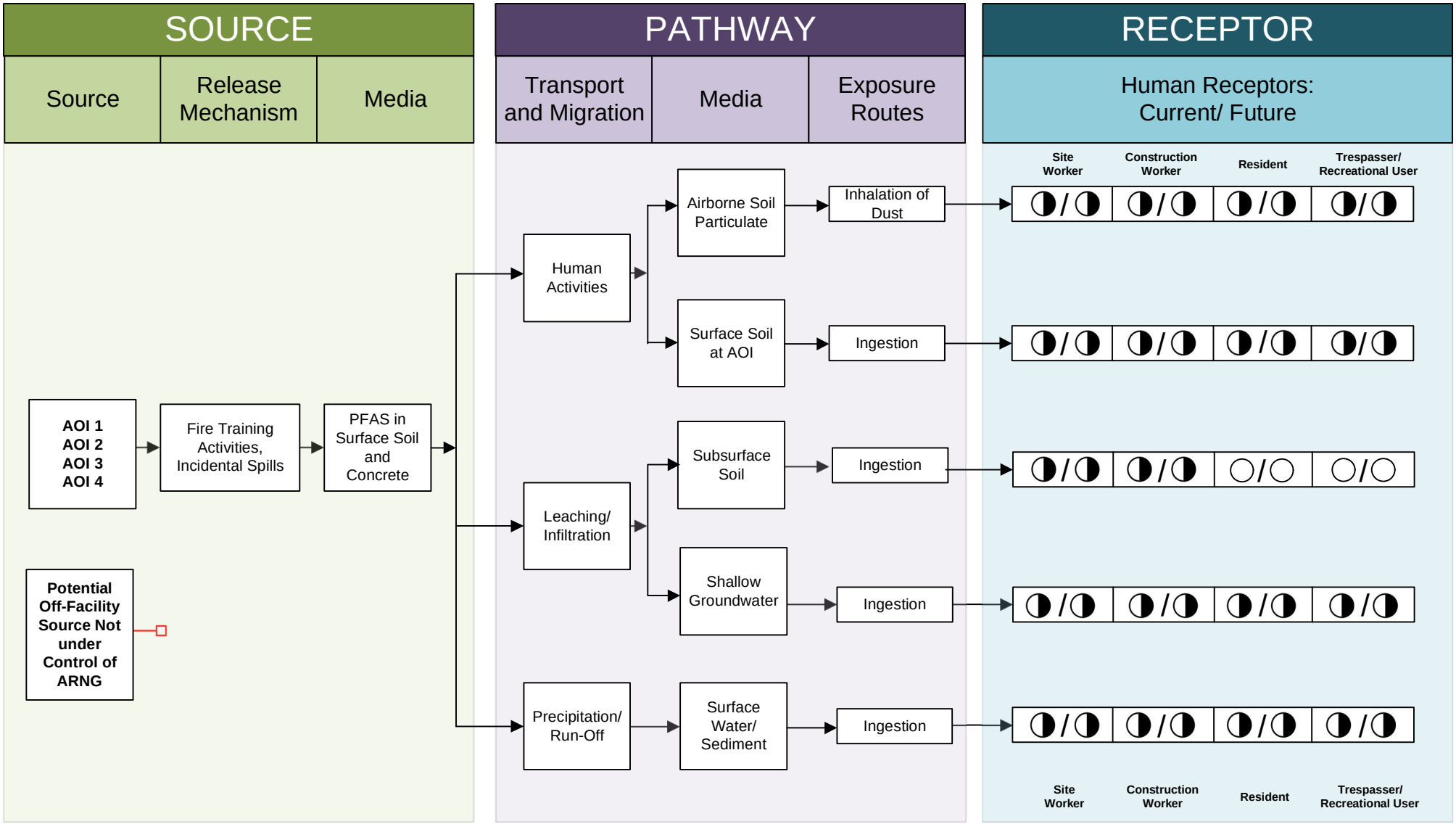
AOI 3 is the Main Garrison FTA 2 area, including the former CR FD Fire Station Building 7020. Although the use of AFFF could not be confirmed, more substantial fire training activities occurred prior to 2001 and as such, the area could be a potential PFAS source.

Surface water at AOI 3 flows to the southeast, towards a small drainage ditch which captures and carries water towards the Salinas River. The river is located approximately 0.5 miles to the east of AOI 3. If PFAS were released to surface soil at AOI 3, they had potential to migrate from surface soil to surface water via run-off and to groundwater via leaching. The nearest groundwater wells to AOI 3 are to the west of the AOI. With groundwater flow to the northwest, the supply wells are potentially downgradient of the AOI. The pathways and receptors for AOI 3 are the same as described in **Section 6.1**. The CSM for AOI 3 is shown on **Figure 6-2**.

6.3 AOI 4 Camp Roberts Fire Department Fire Station and Shipping Container

A steel storage container located adjacent to the CR FD Building 4050 is used for storing and servicing Tri-Max 30 crash fire rescue carts and for storing AFFF. According to CR FD staff interviewed, the crash carts were historically filled with AFFF in an area outside the door of the container. Staff that were interviewed indicated that incidental leaks and spills may have occurred, however, details specific to the filling of carts were not recalled. The area was observed to be gravel covered.

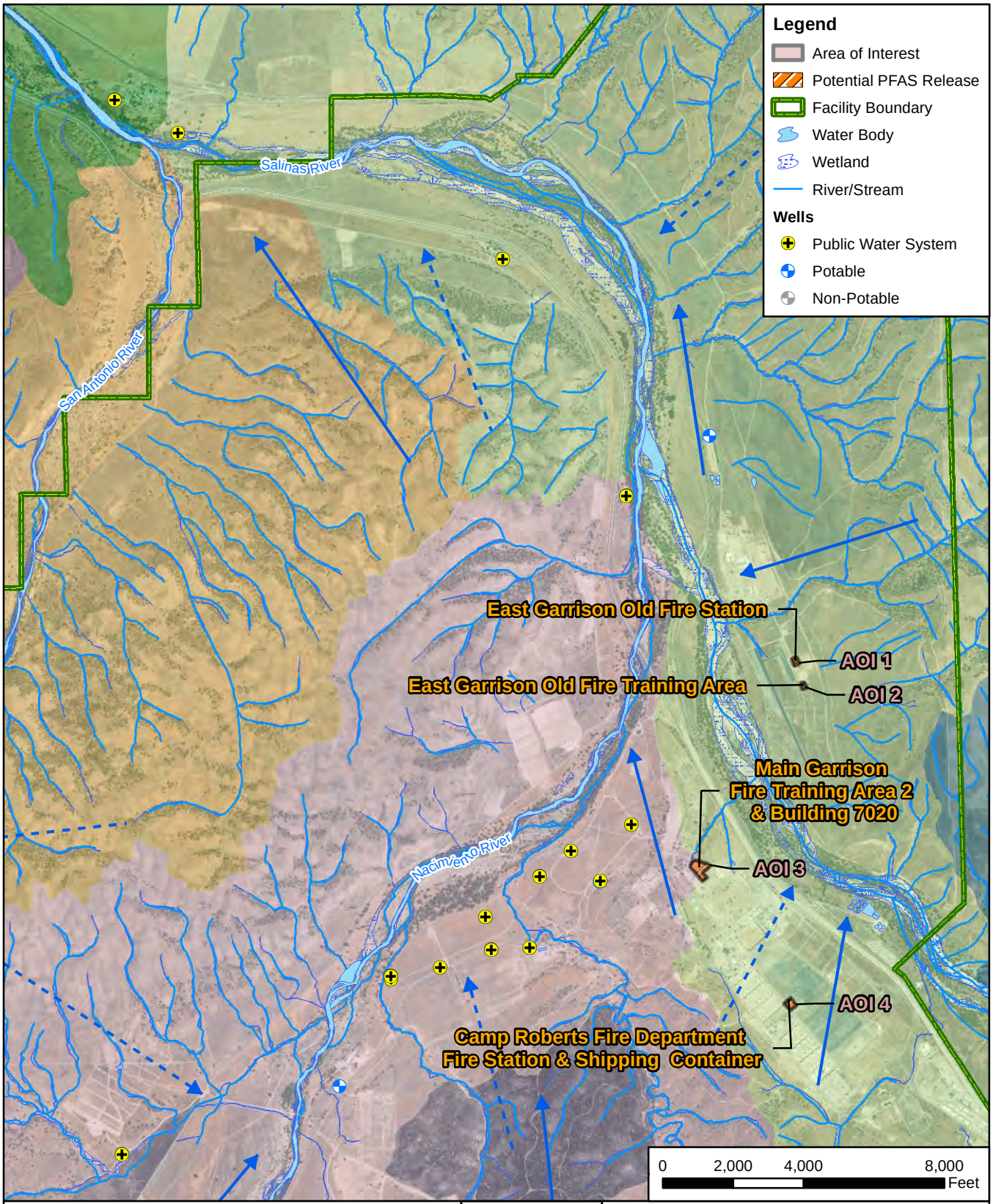
Incidental spills of AFFF could migrate through gravel covered areas into surface soil and subsurface soil to groundwater via leaching. Nearby tributaries may have been impacted by surface water run-off from AOI 4. Surface and groundwater flow is to the north/northeast, towards the Salinas River. The pathways and receptors for AOI 4 are the same as described in **Section 6.1**. The CSM for AOI 4 is shown on **Figure 6-2**.



LEGEND

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

Figure 6-2
Conceptual Site Model
Camp Roberts AOIs



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Camp Roberts, CA			
REVISED	2/21/2019	GIS BY	MS	2/21/2019
SCALE	1:48,000	CHK BY	GR	2/21/2019
Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI,		PM	RG	2/21/2019

Areas of Interest

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

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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 Camp Roberts. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

7.1 Findings

Four AOIs related to potential PFAS release were identified (**Table 7-1**) at Camp Roberts during the PA (**Figure 7-1**).

Table 7-1: AOIs at Camp Roberts

Area of Interest	Name	Used by	Release Dates
AOI 1	East Garrison Old Fire Station	Division of Forestry and CA ARNG Camp Roberts Fire Department	Potentially as early as 1976
AOI 2	East Garrison Old Fire Training Area	Division of Forestry and CA ARNG Camp Roberts Fire Department	Potentially as early as 1976
AOI 3	Main Garrison Fire Training Area 2 and Building 7020	CA ARNG Camp Roberts Fire Department	Prior to 2001
AOI 4	Camp Roberts Fire Department Fire Station and Shipping Container	CA ARNG Camp Roberts Fire Department	Unknown

Based on information obtained during the PA at these AOIs, there is potential for exposure to PFAS contamination in surface soil and intermittent surface water and sediments to site workers, construction workers, residents, recreational users, and trespassers via ingestion and inhalation; subsurface soil to site and construction workers via inhalation; and groundwater to all receptors via ingestion.

Water analyzed for PFAS from spigots that are associated with potable wells at various locations had PFTeA detections. These included:

- Water from a spigot associated with Well C-5A had PFTeA at a concentration of 2.25 ng/L
- Water from a spigot associated with Well C-4A had PFTeA at a concentration of 1.84 ng/L
- Water from a spigot associated with Well C-3A had PFTeA at a concentration of 1.47 ng/L
- Water from a spigot associated with McMillan Airfield had PFTeA at a concentration of 2.41 ng/L
- Water from a spigot associated with the TUAS facility had PFTeA at a concentration of 1.9 ng/L.

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

Table 7-2: No Suspected Release Areas at Camp Roberts

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Prescribed Range Burns and Various Building Burns at East and Main Garrisons	Division of Forestry and Camp Roberts Fire Department	Fire training activities were reported to have occurred within the East and Main Garrisons. It was reported that only water was used during more recent structural fire training activities. Various other fires and burns occurred at the facility although detailed information was not available.
NPS Airfield Shed AFFF Storage	CIRPAS/NPS	One 5-gallon bucket of Cold Fire 302 was stored in the airfield shed. The bucket was full and reported to have not been used.
TUAS Hangar Building 1702 AFFF Storage	CA ARNG	Two Tri-Max 30 crash fire rescue carts containing AFFF were observed in the hangar. Interviewees reported that the carts were never used.
McMillan Airfield Wildfires	CA ARNG	Wildfires have burned at or within the vicinity of the airfield. According to those interviewed, fires were fought with water or Class A extinguishing agents, which do not contain PFAS.
East Garrison Camp Roberts Army Airfield	CA ARNG	Four Tri-Max 30 crash fire rescue carts containing AFFF were observed at the airfield. Interviewees reported that the carts were never used.
Camp Roberts Parade Field	CA ARNG	One Tri-Max 30 crash fire rescue cart containing AFFF was observed at the south end of the parade field, at the fueling port. Interviewees reported that the cart was never used.
Camp Roberts Fire Department Building 3000 Warehouse	CA ARNG	Numerous 5-gallon buckets of AFFF were stored in the warehouse. Interviewees could not recollect whether the buckets have been used or whether there had been spills or leaks from the buckets.
Landfills, Trench Areas, Disposal Pits and Quarry	CA ARNG	None of the landfills, trench areas, disposal pits, quarry, and/or dumping grounds had reported materials disposed containing PFAS. Most operated during a time inconsistent with AFFF use.
Wastewater Treatment Plant	CA ARNG	No known storm drains were identified in the areas of the facility visited during the PA. As such, PFAS was likely not introduced to the WWTP
Tactical Unmanned Aerial Systems Aircraft Crash Sites	CA ARNG	Two crashes involving TUAS aircraft occurred. According to those interviewed, fires were fought with water or Class A extinguishing agents, which do not contain PFAS

7.2 Uncertainties

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

The conclusions of this PA are predominantly based on the information provided during interviews with personnel who had direct knowledge of PFAS use at the facility. Sometimes, the provided information was vague or conflicted with other sources. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of personnel with direct knowledge due to staffing changes, the time passed since PFAS was first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations, dates of release, volume of releases, and the concentration of AFFF used. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

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

The following **Table 7-3** summarizes the uncertainties associated with the PA.

Table 7-3: Uncertainties

Area of Interest	Source of Uncertainty
East Garrison Old Fire Training Area	It is not known if AFFF was used for fire training purposes.
East Garrison	It is not known if fire training was involved during building demolition and if so, whether AFFF was used.
Main Garrison Fire Training Area 2 in Vicinity of Building 7020	It is not known if AFFF was used for fire training purposes.
Camp Roberts Fire Department Fire Station Shipping Container	The area outside of the steel container was reportedly used for the filling and servicing of firefighting equipment (TriMax units). The amount and type of AFFF released during servicing, if any, is not known.
General	Some facility operations are not well defined given the limitation of interviewee knowledge. FD operations were better understood as the recently retired Fire Captain had been at Camp Roberts for 22 years and the current Chief has been at the facility for 4 years.

7.3 Potential Future Actions

Based on the documented absence (1997-present) of the use or release of PFAS-containing materials at the areas listed in **Table 7-2**, evidence does not indicate that current or former ARNG

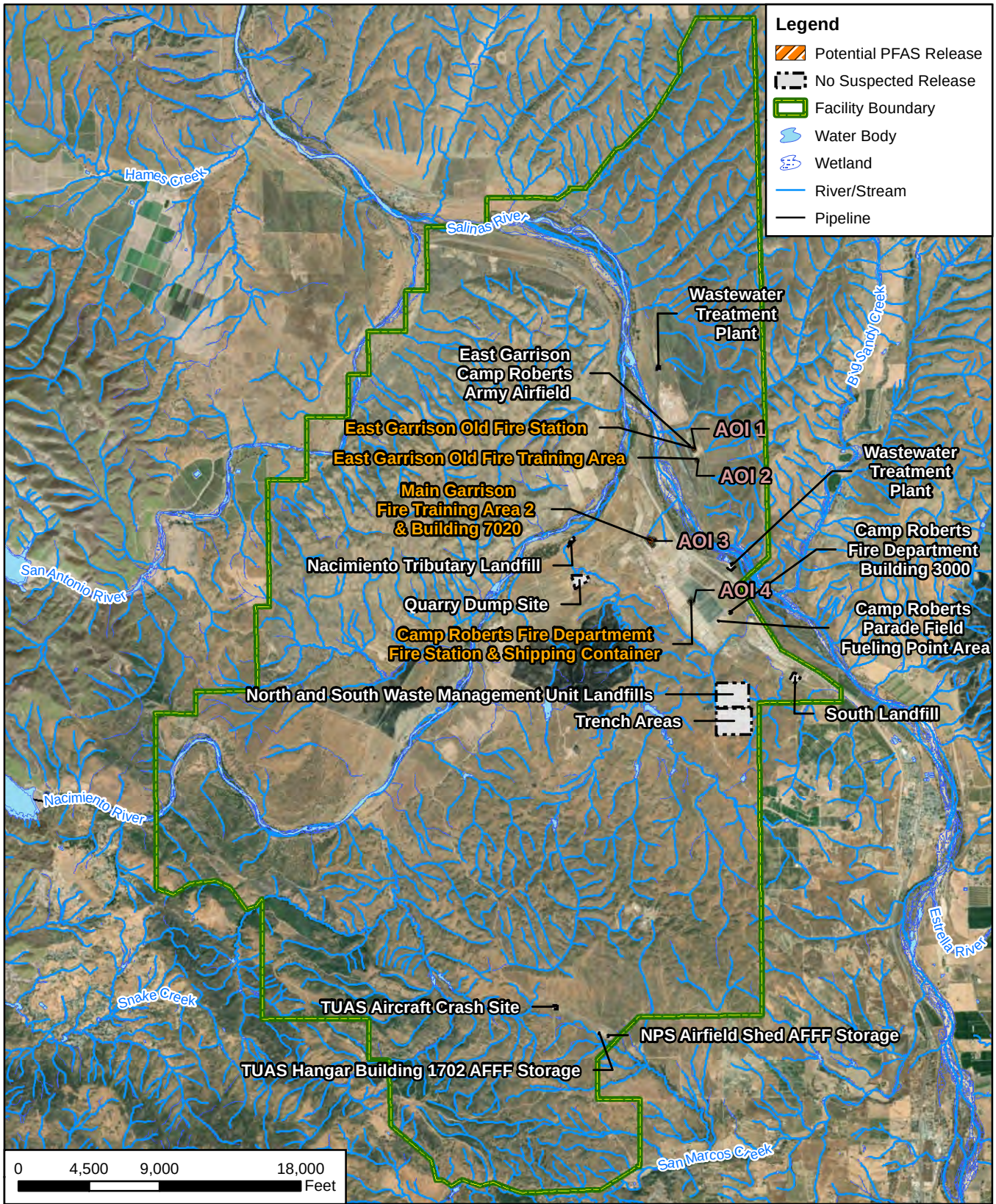
activities contributed PFAS contamination to soil, groundwater, surface water, or sediment in these locations, and they will not move forward in the CERCLA process.

Interviews and records (covering 1997 to present) indicate that current or former ARNG activities may have resulted in potential PFAS releases at the four AOIs identified during the PA. Based on the CSMs developed for the AOIs, there is potential for receptors to be exposed to PFAS contamination in soil, groundwater, surface water, and sediment at these AOIs. **Table 7-4** summarizes the rationale used to determine if the AOI should be considered for further investigation under the CERCLA process and undergo a Site Inspection (SI).

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

Table 7-4 PA Findings Summary

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1 East Garrison Old Fire Station	35°49'3.959"N; 120°44'31.157"W	Presumptive storage of AFFF; no interviewee had direct knowledge of this area	Proceed to an SI, focus on soil, groundwater, surface water, sediment
AOI 2 East Garrison Old Fire Training Area	35°48'57.085"N; 120°44'28.714"W	Presumptive use of AFFF; no interviewee had direct knowledge of this area	Proceed to an SI, focus on soil, groundwater, surface water, sediment
AOI 3 Main Garrison Fire Training Area 2 and Building 7020	35°48'06.16"N; 120°45'07.15"W	Known AFFF use	Proceed to an SI, focus on soil, groundwater, surface water, sediment
AOI 4 Camp Roberts Fire Department Fire Station and Shipping Container	35°47'28.97"N, 120°44'36.19"W	Known storage of AFFF	Proceed to an SI, focus on soil, groundwater, surface water, sediment



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Camp Roberts, CA			
REVISED	2/21/2019	GIS BY	MS	2/21/2019
SCALE	1:108,000	CHK BY	GR	2/21/2019
Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI,		PM	RG	2/21/2019

Summary of Findings

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

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Appendix A
Data Resources

Appendix A - Data Resources provided separately on CD. Data Resources for Camp Roberts includes:

Camp Roberts Well Information

- Water System Summary for Camp Roberts
- Well Completion Report 0962099
- Well Permit Applications and Well Completion Report e012542
- Well Construction and Testing Report for Well C-5A, Army National Guard, Camp Roberts California

Previous Investigations Completed at Camp Roberts

- 1983 - Installation Assessment of Camp Roberts, Calif., Report No. 196A.
- 1995. Preliminary Assessment Report for Camp Roberts, California.
- 2004 - FY 2004 Camp Roberts Installation Action Plan.
- 2008 - Historical Records Review/Site Inspection Report, Camp Roberts – Camp Roberts, California.
- 2017 - 2017 Annual Groundwater Monitoring Report – South and Closed Landfills (CPRO-31 and CPRO-29)
- **Camp Roberts Stored AFFF Documentation**
- 2006 Material Safety Data Sheet Ansul Ansulite 6% AFFF (AFC-3)
- 2006 Material Safety Data Sheet Chemguard 3% AFFF C-303
- 2006 Material Safety Data Sheet Chemguard 6% AFFF C-601MS
- 2008 Material Safety Data Sheet FireAde 2000 - Fire Fighting Agent
- 2015 Material Safety Data Sheet PHOS-CHEK® WD881 Class A Foam Concentrate
- First Strike™ 3%-6% ATC/AFFF Concentrate (US-FCAR36) Technical Data Sheet

Camp Roberts EDR Report

- 2018 Camp Roberts EDR Reports 5326783, 5326788, 5329246 and 5329261

Laboratory Analytical Data

- 2017 Lab Report: Subcontract Analysis for FGL Lab No. CC 1684318
- Camp Roberts Tabulated PFAS Analytical Data

Real Estate Transactions

- Acquisition of Camp Roberts
- Summary of Outgrants

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire - Other

Facility: MCMILLAN AIRFIELD
Interviewer: GUS R.
Date/Time: 5/24/18

Interviewee: GREG A, TROY H, MITCHELL Y. Title: NPS SITE MANAGER & ASSISTANT Phone Number: TUAS CAMPING PERSONNEL. 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:

NPS (NAVY POST-GRAD SCHOOL) SITE MANAGER & ASSIST. (CIRPAC)
1998 NPS OCCUPATION OF SITE
SYSTEMS TRAINING SITE FOR TUAS AREA

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
NPS/CIRPAC, → R&D/LABORATORY · SHED/HANGAR/OFFICES	Use
TUAS - UNMANNED AERIAL SYSTEMS · MAINT. & FLIGHT	Procurement
RUNWAY (FOR C-130's - USED FOR UAS's)	Disposition
HANGAR AND OFFICES; NO FIRE SUPPRESS.	Storage (~~Mixed~~)
WELL C-24 → (2) TRI-MAX WATER CARTS CHARGED	Storage (Solution) Y
LATRINES — NEVER USED; SERVICED BY O.S.	Inventory, Off-Spec
VENDOR / "SERVICES SUPPLY"	Containment
NPS SHED - (1) 5GAL COLDFIRE TACTICAL - NOT USED; WAS	SOP on Filling
GIVEN BY MANUFACTURER	Leaking Vehicles
F.D.	Nozzle and Suppression System Testing
RAMP ROBBERS RESPONDS	Dining Facilities
(2) UAS CRASHES; 1 BURNED 3 ACRES (AT END OF R.W.)	Vehicle Washing
OTHER CRASHED IN SURROUNDING HILLY AREA	Ramp Washing
*NO FOAM REPORTED TO HAVE BEEN USED.	Fuel Spill Washing and Fueling Stations
(3) WILDFIRES HAVE BLOWN INTO AREA - USED WATER TO	Chrome Plating or Waterproofing
EXTINGUISH (C.I.R. F.D. RESPONDED)	

PA Interview Questionnaire - Other

Facility: MCMILLAN AIRFIELD
Interviewer: S.L.R.
Date/Time: 5/24/18

PURPLE K (DRY CHEM.) CLASS D & ABC's AT FACILITY
USED TO TRAIN WITH; NOT FOAM
~ ALSO TRAIN W/ WATER

PA Interview Questionnaire – Fire Station

Facility: C.R. FIRE DEPARTMENT
Interviewer: G/S R.
Date/Time: 5/24/18

Interviewee: NIELSON, JOHNSTONE **Title:** CHIEF, CAPT. F.D. **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.

   CHIEF & CAPT OF F.D.. BASE & WILD/BRUSH FIRES

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

   Maintenance (e.g., ramp washing) NOTES FOR MAINT.
   Fire Training Areas- NOT DURING INTERVIEWS EMPLOY.
   Firefighting (Active Fire) NO FOAM RECALLED BEING USED
   Crash NO FOAM RECALLED BEING USED
   ~~Fire~~ Suppression Systems (Hangers/Dining Facilities)
   Fire Protection at Fueling Stations TRI-MAX 30's (FUELING PORT) E.G. @
   ~~Non~~-Technical/Recreational/ Pest Management

   ~ OFF FACILITY. DEFOLIATION THAT FOAM MAY HAVE BEEN USED FOR VEHICLE E.R. ON 101; GENERAL MILES FROM BASE (LESS THAN 6 E.R.'s ON HWY 101) (LESS THAN 5 GALS FOAM USED PER INCIDENT)

3. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing at the AFFF/suppression systems?

   N/A · NO BLDG.'S W/ AUTO FIRE SUPPRES. SYSTEMS THAT USE FOAM.

4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam? TRI-MAX 30's STORED - MOST NEED SERVICE/NOT IN USE (20 COUNT) (STORED IN SHIPPING CONT.)

   "SERVICES SUPPLY" - BUT SOME MAY HAVE COME FROM A ARNG FACILITY IN ARIZONA

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

   ~ INVENTORY LIST AVAIL. • SEE APPENDIX. A.

PA Interview Questionnaire – Fire Station

Facility: C.R. FD.
Interviewer: G.K.R.
Date/Time: 5/24/18

NO * INTERVIEWEES STORED (NO RECOLLECTION OF USE OF FOAM/AFFF)

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

SHIPPING CONT.
5 GAL CONT. (12) PHOS-CHEK WD881 CLASS A FOAM
(1) FIRE-AIDE 2000 3%
(5) ECO-FOAM 3%. (1) US FIRSTSTRIKE 3%.

BUILDING 3000
5 GAL CONT. (15) ANSULITE 6%
(4) CHEMGUARD 6%

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

NO

FILLED TRI-MAX's OUTSIDE OF SHIPPING CONTAIN. (FUNNEL OBSERVED IN CONT.)

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

~ C.R.F.D SHIPPING CONTAINER & BUILDING 3000 HANGAR
~ 5 GAL. BUCKETS ON SHELVING
~ STORED AS CONCENTRATE 3% & 6%

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

~ NOT RECALLED THAT FOAM USED/TRANSFERRED TO TFT's.
~ TRI-MAX's FILLED OUTSIDE SHIPPING CONT.

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

TFT's STOPPED CARRYING FOAM ← TFT CAN CARRY FOAM (ONE TFT OBSERVED; OSH-KOSH)
IN 2012/2014 HUMVEES CARRY ONLY CLASS A - USED FOR WILDLAND FIRES
(2) OBSERVED
@ FIRING RANGE/PRESCRIBED (BRUSH) WILDLAND BURN AREAS

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

NONE RECALLED - TFTs STOPPED CARRYING FOAM 2012/2014
CLASS A FOAM USED SINCE EARLY 2000's

PA Interview Questionnaire – Fire Station

Facility: CR. F.D.
Interviewer: ELE.
Date/Time: 5/24/16

12. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them? 2 FTA's KNOWN (HISTORIC BEFORE CHIEF'S/CAPT'S TIME)

1) EAST GARRISON AIRFIELD FTA
2) MAIN GARRISON FTA 2

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

UNK.

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

UNK.

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

- AIRCRAFT FIRES HANDLED BY C.R. F.D
- STRUCTURE FIRES 1ST ALARM TO SAN MIGUEL F.D.

16. Did individual units come on-post with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances? NO OFFBASE F.D.'s RECALLED TO HAVE RESPONDED W/AFFF DURING INTERVIEWEES TENURE.

PA Interview Questionnaire – Fire Station

Facility: C.R.F.D.
Interviewer: G & R.
Date/Time: 5/24/18

17. Did military routinely or occasionally fire train off-post? List units that you can recall used/trained at various areas. NO TRAINING RECALLED

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

19. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires? THESE PRACTICES NOT RECALLED

20. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved? NO RECOLLECTION OF USING AFFF FOR THESE PURPOSES.
ONLY RECALL USING CLASS A FOAM
~ OFFPOST USE OF AFFF = VEHICLE ACCIDENT ON HWY 101
<6 INCIDENTS ; <5 GALS AFFF USED
~CANT RECALL IF AFFF USED ON EVERY INCIDENT

21. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?
STEEL STORAGE CONTAINER & BLDG. 3000 WAREHOUSE

PA Interview Questionnaire – Fire Station

Facility: C.R.F.D.
Interviewer: Gus R.
Date/Time: 5/24/18

22. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved? NONE RECALLED

23. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L? "SERVICES SUPPLY" & VENDORS DEAL W/ TRIMARK-CRASH TRUCKS
AFFF WOULD HAVE BEEN DISPOSED BY SERVICES SUPPLY

24. Do you recommend anyone else we can interview? If so, do you have contact information for them?
ALL AVAIL./PRESENT - (1) RETIREE WOULDN'T WANT TO BE CALLED

Appendix B.2
Visual Site Inspection Checklists

Visual Site Inspection Checklist

Names(s) of people performing VSI: GUS R./LORIEL H.

Recorded by: GUS R./LORIEL H.

ARNG Contact: JOHN M. & REUBEN S.

Date and Time: 5/24/18

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

Source/Release Information

Site Name / Area Name / Unique ID: EAST GARRISON AREA: EAST GARRISON OLD FTA & AIRFIELD & WWTP (PONDS) & MATES

Site / Area Acreage:

Historic Site Use (Brief Description): AIRFIELD & FTA, SEWAGE (WASTE WATER) TREATMENT & MAINT (HEAVY EQUIP.)

Current Site Use (Brief Description): HOUSING FOR BASE PERSON.; AIRFIELD, FORMER FIRE ST.

Physical barriers or access restrictions: BASE ESCORT

1. Was PFAS used (or spilled) at the site/area? (Y) N — AT OLD FTA

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

NO AFFF RELEASE REPORTED AT MATES, AIRFIELD, & WWTF

2. Has usage been documented? Y (N)

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

HISTORIC. REPORTED FTA USE; DURATION/QUANT. NOT KNOWN (BEFORE INTERVIEWEES TIME)

3. What types of businesses are located near the site? **Industrial / Commercial / Plating / Waterproofing / Residential**

3a. Indicate what businesses are located near the site

NONE

4. Is this site located at an airport/flightline? (Y) N

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

AIR TRAFFIC CONTROL, MATES (BOTH CA ARNG)

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? Y (N)

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

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

N/A

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

N/A

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

N/A

NO SURFACE DRAINAGE FEATURES NOTED @ EAST GARRISON.

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y) N

1a. If so, note observation and location:

TO SALINAS RIVER

2. Is there channelized flow within the site/area? Y (N)

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

3. Are monitoring or drinking water wells located near the site? (Y) N

3a. If so, please note the location:

WELL B-3; DISCONNECTED

4. Are surface water intakes located near the site? Y (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y (N)

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

6. Does an adjacent non-ARNG PFAS source exist? Y (N)

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

6b. Will off-site reconnaissance be conducted? Y (N)

Visual Survey Inspection Log

Significant Topographical Features:

1. Has the infrastructure changed at the site/area? Y (N)

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

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

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

YES, DEVELOPED AREAS COVERED W/CONC. (ROADS/RUNWAY)
UNDEVELOPED AREAS - GRASSES & LOW-LYING SHRUBS

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:

WITH EXCEPT. TO WWTF SETTLING PONDS

Receptor Information

1. Is access to the site restricted? (Y) / N

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

2. Who can access the site? **(Site Workers) / (Construction Workers) / Trespassers / Residential / Recreational Users / Ecological**

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

3. Are residential areas located near the site? Y (N)

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

4. Are any schools/day care centers located near the site? Y (N)

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

5. Are any wetlands located near the site? (Y) / N

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

ALONG BANKS OF SALINAS RIVER

Visual Survey Inspection Log

Additional Notes AIRFIELD HAD (4) TRI-MAX 30 CRASH CARTS - (1) APPEARED OUT OF SERVICE (NO TANKS)
NO OBSERVABLE EVIDENCE OF FTA - GRASSY FIELD - SEVERAL AIRFIELD USED FOR ROTARY WING AIRCRAFT MOSTLY
MATES; MAINT. ON FIRE TRUCKS; NO HANDLING OF FOAM CONEX BOXES & PORTA POTTIES OCCUPY AREA
WWTP - ONE OF TWO AERATION PONDS APPEARS FULL

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
#1	5/24/18 EAST GARRISON	OLD FTA - VIEW TO EAST
#6	" "	TRI-MAX 30 CRASH CARTS AT AIRFIELD
#15	" "	WWTP AERATION/SETTLING PONDS

Visual Site Inspection Checklist

Names(s) of people performing VSI: GUS R./LORIEL H.

Recorded by: GUS R./LORIEL H.

ARNG Contact: JOHN M. & REUBENS.

Date and Time: 5/24/18

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

Source/Release Information

Site Name / Area Name / Unique ID: MAIN GARRISON FTA 2

Site / Area Acreage: COUPLE ACRES

Historic Site Use (Brief Description): FTA

Current Site Use (Brief Description): OPEN FIELD

Physical barriers or access restrictions: BASE PERSONL. ONLY

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

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

BASED ON PREV. KNOWL.

2. Has usage been documented? Y (N)

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

3. What types of businesses are located near the site? **Industrial / Commercial / Plating / Waterproofing / Residential**

3a. Indicate what businesses are located near the site

NONE

4. Is this site located at an airport/flightline? Y (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? Y (N)

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

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

N/A

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

N/A

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

N/A.
NO STORM DRAIN INFRASTRUCT. NOTED

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y) N

1a. If so, note observation and location:

SFC. WATER FLOWS TO NORTH/NORTHEAST

2. Is there channelized flow within the site/area? (Y) N

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

TO NORTH; DITCH EAST OF FTA FLOWS NORTH (DRY CURRENTLY)

3. Are monitoring or drinking water wells located near the site? Y (N)

3a. If so, please note the location:

4. Are surface water intakes located near the site? Y (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y (N)

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

6. Does an adjacent non-ARNG PFAS source exist? Y (N)

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

6b. Will off-site reconnaissance be conducted? Y (N)

Visual Survey Inspection Log

Significant Topographical Features:

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

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

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

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

GRASS COVERED

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

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

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

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

Receptor Information

1. Is access to the site restricted? Y / N

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

BASE PERSONL. ONLY / WORKERS

2. Who can access the site? **Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / ~~Ecological~~**

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

3. Are residential areas located near the site? Y / N

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

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

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

5. Are any wetlands located near the site? Y / N

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

WETLANDS ASSOCIATED W/ SALINAS RIVER APPROX. 2,500' TO NE.

Visual Survey Inspection Log

Additional Notes FTA ADJACENT TO OLD FIREHOUSE NO LONGER IN USE

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
#3	5/24/18 MAIN GARRISON	FTA 2. VIEW TO NW
#2	" "	OLD FIRE HOUSE ADJACENT TO FTA 2

Visual Site Inspection Checklist

Names(s) of people performing VSI: GUS R./LORIEL H.

Recorded by: GUS R./LORIEL H.

ARNG Contact: JOHN M. & REUBEN S.

Date and Time: 5/23/18

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

Source/Release Information

Site Name / Area Name / Unique ID: MC MILLAN AIRFIELD (TUAS/NPS)

Site / Area Acreage: AIRFIELD + SUPPORT HANGARS & OFFICES

Historic Site Use (Brief Description): OPENFIELD HISTORICALLY

Current Site Use (Brief Description): DESIGNED/USE FOR C-130 AIRSTRIP. CURRENTLY USED FOR TUAS & USED BY CAARNG & CIRPAS

Physical barriers or access restrictions: BASE PERS. ONLY - ESCORT REQ'D.

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

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

AFFF STORED - 1 (5) GAL BUCKET GOLDFIRE
(2) TRIMAV CRASH CARTS

2. Has usage been documented? Y / N N/A

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

NO NEARBY FACILITIES

4. Is this site located at an airport/flightline? (Y) / N

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

CAARNG & CIRPAS (NAVY)
POSTGRAD. SCHOOL (NPS)

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? Y (N)

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

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

N/A

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

N/A

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

N/A

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? Y (N)

1a. If so, note observation and location:

2. Is there channelized flow within the site/area? (Y) N

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

DRAINAGE DITCH TO SOUTH ADJ. TO ROADWAY

3. Are monitoring or drinking water wells located near the site? (Y) N

3a. If so, please note the location:

POTABLE
USED FOR LATRINE/WATER IS FROM SATCOM WELL C-24

4. Are surface water intakes located near the site? Y (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y (N)

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

6. Does an adjacent non-ARNG PFAS source exist? Y (N)

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

6b. Will off-site reconnaissance be conducted? Y (N)

Visual Survey Inspection Log

Significant Topographical Features:

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

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

BUILDINGS 17001 & 17002 OPEN FIELD PRIOR TO 1986 (YEAR OF AIRFIELD CONSTRUCT.)
HANGAR & GARAGE BUILT IN 1998

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

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

RUNWAY = ASPHALT
LOW-LYING GRASSES SURROUNDING AREA

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

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

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

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

Receptor Information

1. Is access to the site restricted? Y / N

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

BASE PERS. ONLY

2. Who can access the site? **Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / Ecological**

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

3. Are residential areas located near the site? Y / N

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

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

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

5. Are any wetlands located near the site? Y / N

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

Visual Survey Inspection Log

Additional Notes NPS SINCE 1998 → R&D/ACADEMIA UAV/UAS - FIELD LAB
(2) TUAS CRASHES; ONE @ END OF RUNWAY; OTHER IN SURROUNDING HILLSIDE
NPS 3 ACRES BURNED - CAMP ROBERTS FD RESPONDS TO FACILITY
HAS (1) BUCKET (5-GAL) FOAM; NEVER USED - GIVEN BY FOAM MANUFACTURER
ADSI COLD FIRE TACTICAL ; ALSO, PURPLE-K (NOT FOAM)
ANY FIRE TRAINING = ANNUAL = ONLY USE ABC DRY CHEM. EXTINGV.

Photographic Log

Photo ID/Name	Date & Location	Photograph Description

Visual Site Inspection Checklist

Names(s) of people performing VSI: GUS R./LORIEL H.

Recorded by: GUS R./LORIEL H.

ARNG Contact: JOHN M. & REUBEN S.

Date and Time: 5/24/18

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

Source/Release Information

Site Name / Area Name / Unique ID: CAMP ROBERTS FIRE DEPARTMENT (PARADE FIELD FUELING PORT BUILDING 1450 & BUILDING 3000 +SHIPCONTAIN. WAREHOUSE STRUCTURE)

Site / Area Acreage:

Historic Site Use (Brief Description): BLDG. 1450 USED SINCE 2001

Current Site Use (Brief Description): FIRE STATION (OFFICES/FIRE TRUCK PARKING ETC.); SHIPPING CONT. = STORAGE BLDG. 3000 = STORAGE/TRAINING EQUIP. & SUPPLIES, PARADE FIELD FUELING PORT

Physical barriers or access restrictions: BASE PERSON. ONLY / ESCORT REQD.

1. Was PFAS used (or spilled) at the site/area? (Y) N — AT SHIPPING CONT. (LEAKS/SPILLS FILLING AFFF)

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):
NO AFFF RELEASES REPORTED @ F.S. WAREHOUSE & SHIPPING CONT. AFFF STORAGE

2. Has usage been documented? Y (N)

2a. If yes, keep a record (place electronic files on a disk): AFFF STORAGE (12) PHOSCHEK (19) 5 GAL BUCKETS
(19) 5-GAL BUCKETS → (1) FIREADE 3% (15) ANSULITE 6%
(5) ECO-FOAM 3%
(1) US FIRST STRIKE 3% (4) CHEMGUARD 6%

3. What types of businesses are located near the site? **Industrial / Commercial / Plating / Waterproofing / Residential**

3a. Indicate what businesses are located near the site
NONE N, W, E COMMERCIAL TO S.

4. Is this site located at an airport/flightline? (Y) N

4a. If yes, provide a description of the airport/flightline tenants:
F.S. ADJACENT TO PARADE GROUNDS (USED FOR ROTARY WING AIRCRAFT)

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? Y (N)

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

(20) TRI-MAX30L RASH CARTS STORED IN SHIPPING CONTAINER

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

MOST OF ABOVE CARTS INOPERABLE; IN NEED OF SERVICING

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

UNK.

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

NO FLOOR DRAINS OBSERVED DURING PA

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y) N

1a. If so, note observation and location: SFC. W. FLOW TO E./NE → TOWARDS SALINAS RIVER

2. Is there channelized flow within the site/area? Y (N)

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

3. Are monitoring or drinking water wells located near the site? Y (N)

3a. If so, please note the location:

4. Are surface water intakes located near the site? Y (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y (N)

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

6. Does an adjacent non-ARNG PFAS source exist? Y (N)

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

6b. Will off-site reconnaissance be conducted? Y (N)

Visual Survey Inspection Log

Significant Topographical Features:

1. Has the infrastructure changed at the site/area? Y / (N)

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

2. Is the site/area vegetated? (Y) / N

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

PARADE FIELD = GRASS
OTHER SITES = CONCRETE (PAVED)

3. Does the site or area exhibit evidence of erosion? Y / (N)

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

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

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

Receptor Information

1. Is access to the site restricted? (Y) / N

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

2. Who can access the site? **Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / ~~Ecological~~**

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

3. Are residential areas located near the site? Y / (N)

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

4. Are any schools/day care centers located near the site? Y / (N)

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

5. Are any wetlands located near the site? (Y) / N

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

STREAM BANK AREAS ALONG THE SALINAS RIVER

Visual Survey Inspection Log

Additional Notes FLAT AREAS; GRASSES & CONC. · EW FLOW IS TO EAST/NORTHEAST

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
#7	5/24/18 - FUELING PORT	VIEW TO SW OF TRIMAX 30 CRASHCART
#8	5/24/18 - SHIPPING CONT. @ F.D.	VIEW TO N. OF C. ROBERTS F.S. SHIPPING CONT.
#9	5/24/18 "	VIEW OF AFFF
#10	5/24/18 "	VIEW OF AFFF
#11	5/24/18 "	VIEW OF TRI-MAX 30 CRASH CARTS
#12	5/24/18 "	VIEW TO WEST OF SHIPPING CONT.
#13	5/24/18 BUILDING 3000	INTERIOR VIEW OF WAREHOUSE
#14	5/24/18 "	VIEW OF STORED AFFF

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: ***Camp Roberts, California***

Why has this location been identified as a site?

Previous reports have indicated that fire training areas were used during the period that AFFF was in use (late 60's to early 2000's). The facility has three flightlines.

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

No PFAS sources were identified in the area surrounding Camp Roberts however, vehicle incidents on US Route 101 were responded to with use of AFFF.

Training Events

Have any training events with AFFF occurred at this site? *Possibly as FTA's were used during the time period AFFF was available for use*

If so, how often? *Unknown/not recalled by interviewees (before their tenure)*

How much material was used? Is it documented? *Unknown. Less than 5-gals used for vehicle crash fire suppression*

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? *Yes – topographic and geology maps avail. Groundwater inferred.*

Surface Water:

Surface water flow direction? *Surface waters drain to the Salinas and Nacimiento Rivers*

Average rainfall? *14inches annually on average*

Any flooding during rainy season? *Yes*

Direct or indirect pathway to ditches? *Yes*

Direct or indirect pathway to larger bodies of water? *Yes (two Rivers that drain eventually to Pacific)*

Does surface water pond any place on site? *Yes*

Any impoundment areas or retention ponds? *Yes*

Any NPDES location points near the site? *Treated sewage discharged to groundwater*

How does surface water drain on and around the flight line? *Various. McMillan Airfield surface water drains to southeast. East Garrison Airfield surface water drains to west. Parade Field surface water drains generally to the east.*

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? *Regional is to west. Localized is various – in direction of closest stream/river*

Depth to groundwater? *Unknown*

Uses (agricultural, drinking water, irrigation)? *Potable water, latrines*

Any groundwater treatment systems? *One WWTP – two components (settling/aeration ponds and clarifiers- pipeline in between)*

Any groundwater monitoring well locations near the site? *Yes*

Is groundwater used for drinking water? *Yes (mostly 4 wells used for potable – C-01, C3-A, C-4A, C-5A)*

Are there drinking water supply wells on installation? *Yes, located in the Main Garrison Area*

Do they serve off-post populations? *No*

Are there off-post drinking water wells downgradient *"Municipal"*

Waste Water Treatment Plant:

Has the installation ever had a WWTP, past or present? *Yes*

If so, do we understand the process and which water is/was treated at the plant? *Yes – settling/aeration ponds to clarifiers*

Do we understand the fate of sludge waste? *Final disposition of sludge waste not known. Treated sewage water discharged to groundwater*

Is surface water from potential contaminated sites treated? *Unknown*

Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go? *Little to no storm water infrastructure observed. Oil water separators used at MATES*

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? *None of above recalled*

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker

Construction Worker

Recreational User

Residential

Child

Ecological

Note what is located near by the site (e.g. daycare, schools, hospitals, churches, agricultural, livestock)?
Open fields to north, east and west. Commercial buildings/activities to south.

Documentation

Ask for Engineering drawings (if applicable).

Has there been a reconstruction or changes to the drainage system? When did that occur? *None recalled*

Appendix C
Photographic Log

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Roberts	California

Photograph No. 1

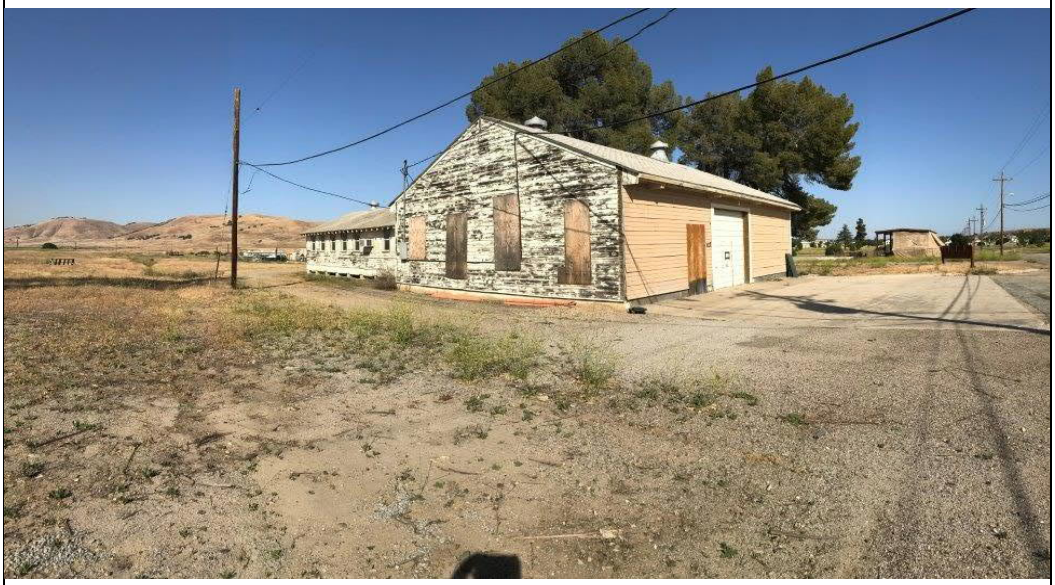
Description:

View of East Garrison Old Fire Training Area in vicinity of Camp Roberts Army Airfield. View to the west.

Photograph No. 2

Description:

View of old Fire Station Building 7020 adjacent to Main Garrison Fire Training Area 2. View to the northeast.



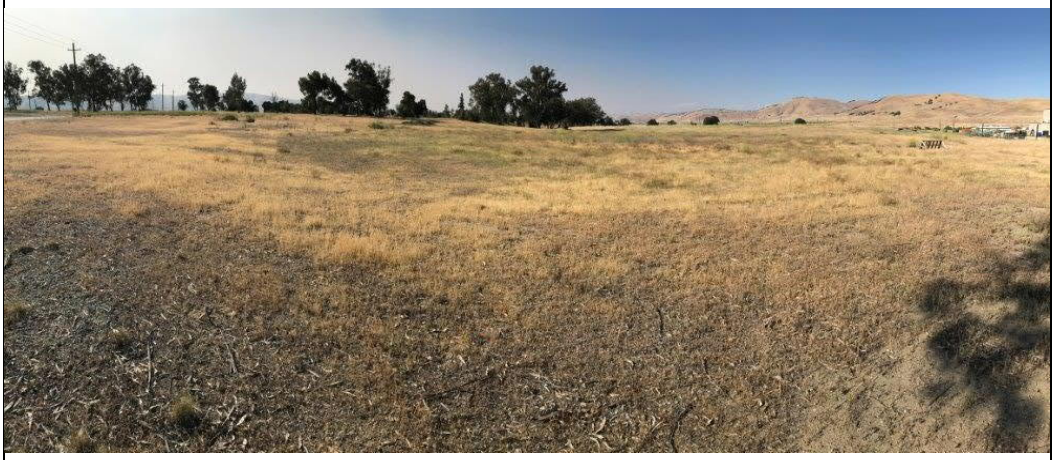
APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Roberts	California

Photograph No. 3

Description:

View of Main Garrison Fire Training Area 2 in vicinity of Building 7020. View to the northwest



Photograph No. 4

Description:

View of TUAS Hangar Building 1702 of Tri-Max 30 crash fire rescue carts.

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Roberts	California

Photograph No. 5

Description:

View of Tri-Max 30 crash fire rescue cart label. Cart is stored in TUAS Hangar Building 1702.

Photograph No. 6

Description:

View of East Garrison Camp Roberts Army Airfield Tri-Max 30 crash fire rescue carts stored adjacent to rotary wing landing field. View to the east.

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Roberts	California

Photograph No. 7

Description:

View of Tri-Max 30 crash fire rescue cart stored at a fueling depot situated at the south end of the Camp Roberts Parade Field. View to the southwest.

Photograph No. 8

Description:

View of Camp Roberts Fire Department shipping container used at the fire station. View to the north.

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Roberts	California

Photograph No. 9

Description:

View of various AFFF brands stored in a shipping container situated to the west of the Camp Roberts Fire Department station.

Photograph No. 10

Description:

View of AFFF stored in a shipping container situated to the west of the Camp Roberts Fire Department station.

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Roberts	California

Photograph No. 11

Description:

View of Tri-Max 30 crash fire rescue carts stored in a shipping container situated to the west of the Camp Roberts Fire Department station.

Photograph No. 12

Description:

View to the west of the shipping container used by the Camp Roberts Fire Department for storage purposes.

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Roberts	California

Photograph No. 13

Description:

View of the interior of the Building 3000 warehouse used for equipment storage by the Camp Roberts Fire Department. AFFF was observed during the PA to be stored on the bottom of the shelf situated in the right-center portion of photograph.

Photograph No. 14

Description:

View of various brands of AFFF stored in the Building 3000 warehouse used by the Camp Roberts Fire Department.

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Roberts	California

Photograph No. 15

Description:

View of the Waste Water Treatment Plant settling/aeration ponds located in the East Garrison. View to the east.