RELATIVE RISK SITE EVALUATION

Peoria International Airport, Illinois

Introduction

The Department of Defense (DoD) identified certain per- and polyfluoroalkyl substances (PFAS) as emerging contaminants of concern which affected installations across the Air Force. When the term "Air Force" is used in this fact sheet, it includes Air National Guard. Specifically, perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanesulfonic acid (PFBS) are components of legacy Aqueous Film Forming Foam (AFFF) that the Air Force began using in the 1970s as a firefighting agent to extinguish petroleum fires. The U.S. Environmental Protection Agency (EPA) issued lifetime drinking water Health Advisories (HA) for PFOS and PFOA, and health-based regional screening levels for PFBS.

The Air Force has systematically evaluated potential AFFF releases on all Installations and former Installations. It began with the Preliminary Assessments, or PAs, that identified potential release areas. First responders, fire chiefs, and hangar staff were interviewed to determine where a release or a spill may have occurred on an Installation (for example, aircraft crash site or an accidental hangar AFFF release). Once the information in the PA was collected, we began Site Inspections, or SIs, to take soil and water samples and analyzed the media for PFAS compounds at the potential release areas. The intention of the SI was to determine if a release had occurred and to determine the impacts to soil and/or groundwater. The next step in the process is called the Relative Risk Site Evaluation, or RRSE, which is a tool used to sequence Sites/Installations to begin a Remedial Investigation, or RI. Air Force Installations are at the beginning of the more detailed investigative stage, the RI, to determine, where action is needed and to identify remedial technologies.

The Peoria International Airport PFAS PA and SI can be found at the Air Force CERCLA Administrative Record (AR): https://ar.afcec-cloud.af.mil/ Scroll to the bottom of the page and click on “Continue to site”, then select Air National Guard (e.g., Active, ANG, BRAC), scroll down the Installation List and click on Peoria Int Airport then enter the AR Number 471730 in the “AR #” field for the PA. For the SI, enter the AR Number 605630. Then click “Search” at the bottom of the page. Click on the eye to view the document.

More information on the Air Force response to PFOS and PFOA can be found at: https://www.afcec.af.mil/WhatWeDo/Environment/Perfluorinated-Compounds/

Acronyms

AFFF - Aqueous Film Forming Foam

AST – Aboveground Storage Tank

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

CHF – Contaminant Hazard Factor

DoD - Department of Defense

EPA – US Environmental Protection Agency

FTA – Fire Training Area

HA – Health Advisory

MPF – Migration Pathway Factor

PA – Preliminary Assessment

PFAS - Per-and polyfluoroalkyl substances

PFBS – Perfluorobutanesulfonic acid

PFOS - Perfluorooctane sulfonate

PFOA - Perfluorooctanoic acid

RCRA – Resource Conservation and Recovery Act

RF – Receptor Factor

RI – Remedial Investigation

RRSE – Relative Risk Site Evaluation

PRL - Potential Release Location

SI – Site Inspection

SWMU – Solid Waste Management Unit

RELATIVE RISK SITE EVALUATION, cont.

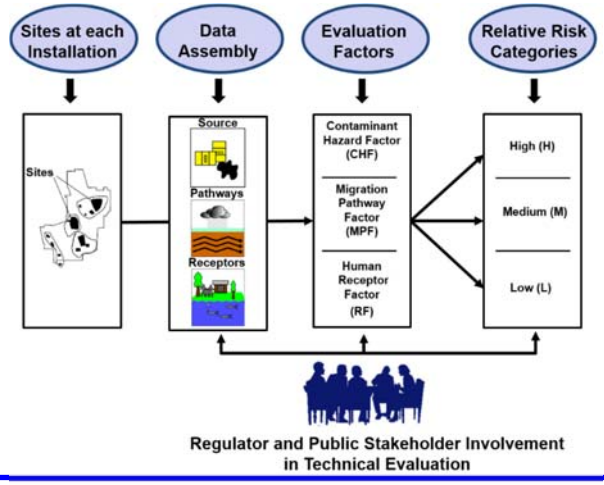
Q. What is the Relative Risk Site Evaluation (RRSE)?

A. RRSE is a methodology to sequence environmental restoration work used by the Department of Defense (DoD). The RRSE process is used to evaluate the relative risk posed by an environmental restoration site in relation to other sites. The DoD fundamental premise in site prioritization is "worst first," meaning the DoD Component shall address sites that pose a relatively greater potential risk to public safety, human health, or the environment before sites posing a lesser risk. Relative risk is not the sole factor in determining the sequence of environmental restoration work, but it is an important consideration in the priority setting process. The methodology is described in the DoD, Relative Risk Site Evaluation Primer, Summer 1997 Revised Edition: https://denix.osd.mil/references/dod/policy-guidance/relative-risk-site-evaluation-primer/

Q. What is the RRSE framework?

A. The RRSE framework provides a DoD-wide approach for evaluating the relative risk to human health and the environment posed by contamination present at sites. The **Relative Risk Site Evaluation Concept Summary** (shown in the figure) illustrates the selection of sites, evaluation of the site data using three evaluation factors, and placement into high, medium, and low categories. The relative risk site evaluation framework is based on information fundamental to risk assessment: sources, pathways, and receptors to sequence restoration work. The RRSE is not a baseline risk assessment or health assessment in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. Regulators and public stakeholders in the environmental restoration process are provided the opportunity to participate in the process in accordance with the DoD Defense Environmental Restoration Program.

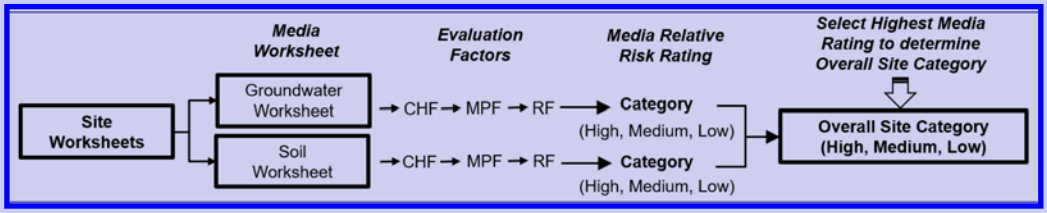
Relative Risk Site Evaluation Concept Summary



Sites at Each Installation

Q. What restoration sites are required to be evaluated in the RRSE process?

A. Restoration sites in CERCLA phases prior to remedy-in-place are evaluated in the process. Worksheets are developed for environmental media at each site. For consistency across all the Installations, only surface soil (0-1 foot deep) and groundwater media were evaluated in the RRSE.



The figure shows the process for a media to be evaluated using the contaminant hazard factor (CHF), the migration pathway factor (MPF), and the receptor factor (RF). Each media is scored to obtain a relative risk rating of High, Medium, or Low. The highest media rating determines the Overall Site Category.

Q. How is the Contaminant Hazard Factor (CHF) determined?

A. The Contaminant Hazard Factor (CHF) is determined by dividing the maximum level for a contaminant at each site by the approved screening values (i.e., risk-based comparison values). Contaminant concentration ratios are totaled to arrive at a **Contaminant Hazard Factor (CHF).** A CHF sum of greater than 100 earns a **Significant (High)** ranking. **Moderate (Medium)** is when the total is 2 to 100. **Minimal (Low)** is when a CHF is less than two.

FOR MORE INFORMATION

Air Force Civil Engineer Center
Environmental Restoration Program
www.afcec.af.mil

AFCEC CERCLA
Administrative Record (AR)
https://ar.afcec-cloud.af.mil/

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Q. How is the Migration Pathway Factor (MPF) determined?

A. The movement of contamination at a site is evaluated and assigned a **Migration Pathway Factor (MPF)** rating.

Ratings for MPFs are designated as: **evident**, **potential**, or **confined** (for **High, Medium, and Low**). **Evident** exposure means the contamination is at a point where exposure to humans or the environment can occur, such as at a drinking water well. **Potential** ratings are given to sites where exposure may happen. A **confined** rating is given to sites where a low possibility for exposure may occur.

Q. How is the Receptor Factor (RF) determined?

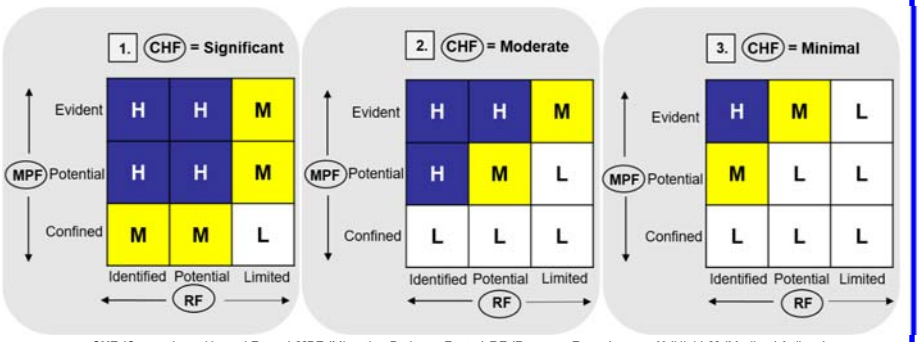
A. The **Receptor Factor (RF)** is determined by a receptor's, such as humans, potential to come into contact with contaminated media. **RFs** are designated as: identified, potential, or limited **(High, Medium, and Low). Identified** rating is given when receptors are in contact or threat of contact with contaminated media. **Potential** is given when receptor may contact contaminated media. **Limited** is given when there is little or no contact with contaminated media.

RELATIVE RISK SITE EVALUTION, cont.

Media Relative Risk Rating

Q. How is the media relative risk rating determined?
A. Use the chart to determine the relative risk rating for each media evaluated. Start by choosing the **CHF** result of the evaluation. If the **CHF** is **Significant**, use **box 1.**; if **Moderate**, use **box 2.**; if **Minimal**, use **box 3.** Then find the **MPF** and **RF** results and move to the square where the results meet. That square indicates the media relative risk rating. For example, if the **CHF** is **Significant (go to box 1.)**, the **MPF** is **Potential** and the **RF** is **Identified**, then the rating is High (**H**).

Relative Risk Site Evaluation Matrix



CHF (Contaminant Hazard Factor) **MPF** (Migration Pathway Factor) **RF** (Receptor Factor) **H** (High) **M** (Medium) **L** (Low)

Overall Site Category

Q. How do I determine the Overall Site Category?
A. The highest relative risk media rating becomes the **Overall Site Category** for the site. For example, if a site has a groundwater relative risk rating of **High**, and soil relative risk rating of **Low**, then the Overall Site Category rating for the site is **High**.

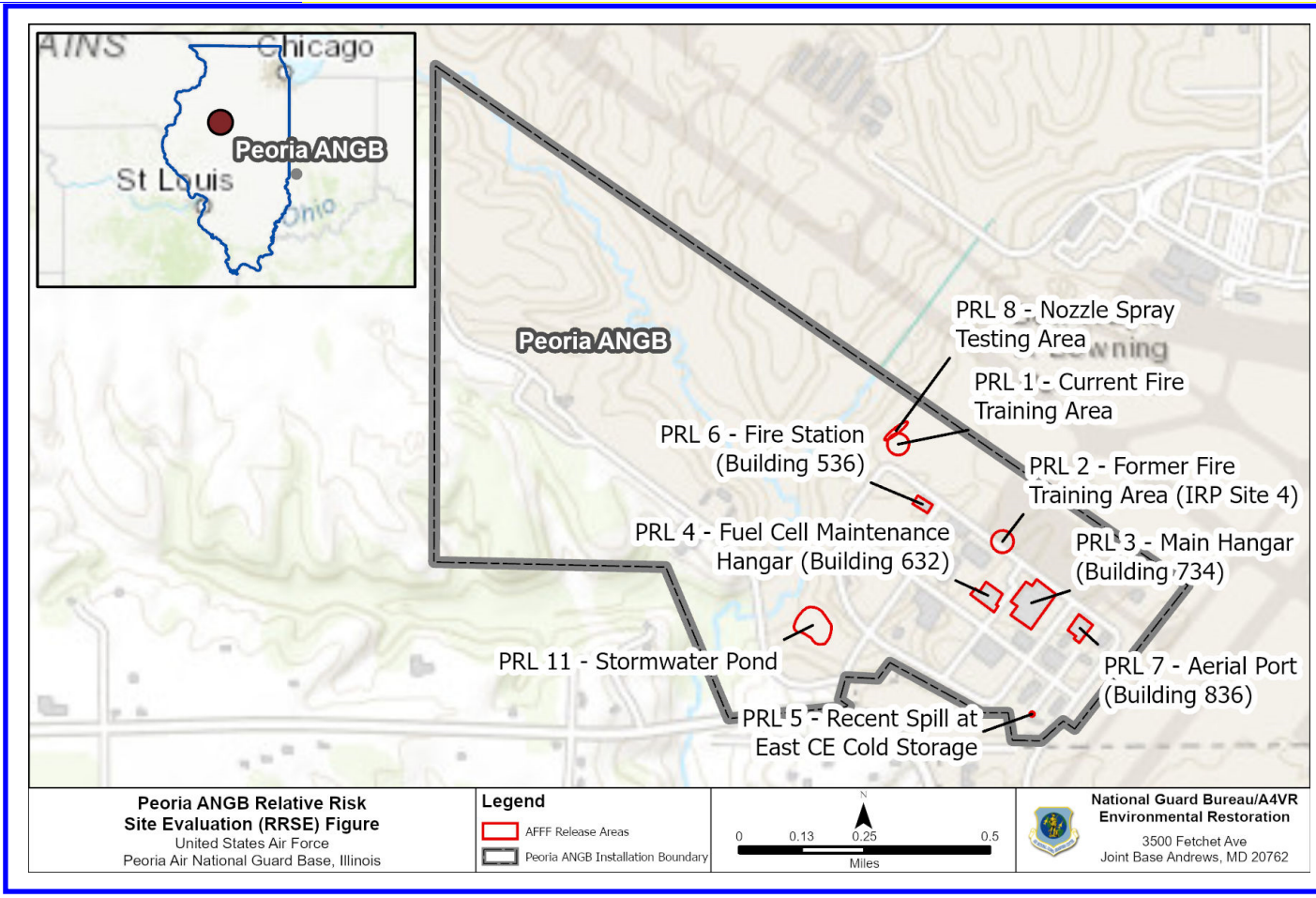
Regulatory and Stakeholder Involvement

Q. **How do I participate as Stakeholder?**

A. To offer opportunity to participate in RRSE, the Air Force announces a public comment period in your local newspaper. There is also opportunity to participate during installation Restoration Advisory Committees where active. Installation Restoration Advisory Committee meetings are also announced in your local newspaper.

Relative Risk Site Evaluation Summary Peoria International Airport, IL

Overall Site Category	Site Name (Sites are shown on the map below and RRSE Worksheets are attached)
HIGH	PRL 1, PRL 3, PRL 4, PRL 5, PRL 8
MEDIUM	PRL 2, PRL 6, PRL 7, PRL 11
LOW	None



Site Background Information			
Installation:	Peoria Air National Guard Base (ANGB)	**Date:**	09/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Current Fire Training Area - PRL 1	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	The Current Fire Training Area (FTA) was constructed in approximately 1990 and consists of two concentric concrete curbed rings separating two areas filled with gravel; the inner ring is designed to fill with water. During fire training exercises, fuel is added to the water and ignited. According to facility personnel, Aqueous Film Forming Foam (AFFF) was used approximately once per year for fire training exercises. Both inner and outer rings are drained by manual valves and can be directed through an OWS to the storm sewer or through a different OWS to the sanitary sewer. During winter months (November-April), when FTA activities are not conducted, the valve is left open to the storm system. Typically, the inner ring is only drained once per year to the sanitary system.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the base to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow zone. Groundwater flow generally reflects surface topography with a flow to the south. However, it should be noted that groundwater flow direction at the Base has not been verified and groundwater is thought to flow west at PRLs 1 and 8. There are grassy areas and bare ground in the vicinity of PRL1, however the FTA itself is a lined basin with a outer ring that acts as a catchment area.
Brief Description of Receptors:	There are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. Ilinois EPA (IEPA) has requested sampling of private drinking water wells. PRL 1 is within the lined FTA and would be accessed by fire-training personnel and ground maintenance staff. PFAS including perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), and perfluorobutanesulfonate (PFBS) have been detected at multiple on-site monitoring wells at varying concentrations.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 1 **AFFF Release Area #:** AFFF 1

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	41	0.04	1025.0
PFOA	2.87	0.04	71.7
PFBS	4.67	0.602	7.8

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	1104.5
CHF > 100	H (High)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	H

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	H
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Peoria ANGB

Site ID: PRL 1 **AFFF Release Area #:** AFFF 1

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.218	0.126	1.7
PFOA	0.00075	0.126	0.0
PFBS	0.000535	1.9	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**1.7**
CHF > 100	**H (High)**		
100 > CHF > 2	**M (Medium)**	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**L**

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	H
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**

Site Background Information			
Installation:	Peoria ANGB	**Date:**	9/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Former FTA - PRL 2	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	The former FTA (Installation Restoration Program (IRP) Site 4) was used from approximately 1953 until 1988. The FTA was used when the Air National Guard was located at the former Base location on the northeast side of the Airport. Use of the FTA was discontinued to allow for construction of the current base. The exact area of the former FTA is unknown, but is likely underneath the current ramp based upon a review of historical photos. FTA activities included filling the training pit with 1,000 to 1,500 gallons of water, adding various combinations of jet fuel, alcohol, aviation gasoline, and kerosene, and igniting and extinguishing the fire. Between 10,000 and 15,000 gallons of fuels were burned in this manner. In 1988, the area was investigated as IRP Site 4. Based upon this investigation, it was determined that remedial action was necessary. The remedial action consisted of excavation and off-site disposal of impacted soil. A second section of soil (free of hydrocarbons) was used for fill material in the parking lot between Building 730 & 734.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the base to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow zone. Groundwater flow generally reflects surface topography with a flow to the south at an average hydraulic gradient of 0.013. However, it should be noted that groundwater flow direction at the Base has not been verified and groundwater is thought to flow at south at PRL 2. PRL 2 is mostly paved, but with an adjacent area of exposed soil.
Brief Description of Receptors:	There are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. IEPA requested sampling of private drinking water wells. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site monitoring wells at varying concentrations. PRL 2 is on base and is between a buidling and active aircraft parking area. Exposed soils could be contacted by base personnel and construction workers.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 2 **AFFF Release Area #:** AFFF 2

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.17	0.04	4.3
PFOA	0.366	0.04	9.1
PFBS	0.0502	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	13.5
CHF > 100	H (High)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	M

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**MEDIUM**

Soil Worksheet

Installation: Peoria ANGB

Site ID: PRL 2 **AFFF Release Area #:** AFFF 2

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00775	0.126	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.1
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	LOW

Site Background Information			
Installation:	Peoria ANGB	**Date:**	9/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Main Hangar - Bldg 734 - PRL 3	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	Building 734 is the Main Hangar and has an AFFF Fire Suppression System (FSS) in place and utilizes a 1,000 gallon aboveground storage tank (AST) of AFFF. The FSS was historically tested every three years. The hangar is equipped with internal trench drains that drain to the sanitary sewer via an OWS. Historically, when the FSS is triggered, an automatic valve switches the drainage to a smaller system of drain pipes that is intended to slow the foam's entrance into the sanitary system. In the past, the foam was manually pushed out of the building to the storm drains due to the slow building drainage. In addition, it was noted that one of the foam cannons was previously directed so it would spray foam out of the open hangar doors. This caused a reportable release of foam in November of 2011. Foam was observed in the Lamarsh Creek following this release. The suppression system is locked out to prevent discharge and is currently scheduled for replacement with a water only system.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the base to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow zone. Groundwater flow generally reflects surface topography with a flow to the south. However, it should be noted that groundwater flow direction at the Base has not been verified and groundwater is thought to flow south at PRL 3. Soils near the main hangar are primarily covered by asphalt, with the exception of small grass lawns and landscaped areas.
Brief Description of Receptors:	There are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. IEPA requested sampling of private drinking water wells. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site monitoring wells at varying concentrations. The main hangar and associated areas are accessible by base personnel.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 3 **AFFF Release Area #:** AFFF 3

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	52.1	0.04	1302.5
PFOA	0.481	0.04	12.0
PFBS	0.537	0.602	0.9

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	1315.4
CHF > 100	H (High)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	H

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Peoria ANGB

Site ID: PRL 3 **AFFF Release Area #:** AFFF 3

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0406	0.126	0.3
PFOA	0.000392	0.126	0.0
PFBS	0.000523	1.9	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.3**
CHF > 100	**H (High)**	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**L**

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**LOW**

Site Background Information			
Installation:	Peoria ANGB	**Date:**	9/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Fuel Cell Hangar - Bldg 632 - PRL 4	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	The Fuel Cell Maintenance Hangar (Building 632) has an AFFF FSS in place and utilizes a 500-gallon AST of AFFF. The building was constructed in approximately 1998. The system was historically tested every three years. The hangar is equipped with internal trench drains that drain to the sanitary sewer via an OWS. When the suppression system is triggered, an automatic valve switches the drainage to a smaller system of drain pipes that is intended to slow the foam's entrance into the sanitary system. In the past, the foam was manually removed from the building to the storm drains north of the building due to the slow building drainage. Base personnel noted that AFFF had been washed into the stormwater catch basin located east of the mechanical room containing the AFFF foam tank. The suppression system is locked out to prevent discharge and is currently scheduled for replacement.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the base to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow zone. Groundwater flow generally reflects surface topography with a flow to the south. However, it should be noted that groundwater flow direction at the Base has not been verified and the direction of groundwater flow is south at PRL 4. Soils are either covered by asphalt or are small grassy lawns and landscaped areas.
Brief Description of Receptors:	There are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. IEPA requested sampling of private drinking water wells. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site monitoring wells at varying concentrations.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 4 **AFFF Release Area #:** AFFF 4

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	7.82	0.04	195.5
PFOA	0.128	0.04	3.2
PFBS	0.214	0.602	0.4

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	199.1
CHF > 100	H (High)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	H

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Peoria ANGB

Site ID: PRL 4 **AFFF Release Area #:** AFFF 4

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00418	0.126	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.0
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**LOW**

Site Background Information			
Installation:	Peoria ANGB	**Date:**	9/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Recent Spill - East CE Cold Storage - PRL 5	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	In August 2015, a 55-gallon drum of AFFF was tipped over while moving it to the area to await disposal. AFFF was released onto the pavement under the storage lean-to and the grassy area located north of the lean-to. Following the release, the foam was left in the area to dissipate. Staining on the pavement and dead grass was observed at the time of the site visit. A storm drain is located just north of the spill area; no AFFF was observed in the drain. In 2015, at the time of the preliminary assessment (PA), no report regarding this spill was available.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the site to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow zone. Groundwater flow generally reflects surface topography with a flow to the south. However, it should be noted that groundwater flow direction at the Base has not been verified and groundwater flow is west towards the stormwater retention pond at PRL 5. Soil samples were collected from an grassy area and are exposed at PRL 5.
Brief Description of Receptors:	There are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. IEPA requested sampling of private drinking water wells. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site monitoring wells at varying concentrations.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 5 **AFFF Release Area #:** AFFF 5

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	5.78	0.04	144.5
PFOA	0.319	0.04	8.0
PFBS	1.11	0.602	1.8

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	154.3
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

CHF Value	CHF VALUE	H

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	H
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Peoria ANGB

Site ID: PRL 5 **AFFF Release Area #:** AFFF 5

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.286	0.126	2.3
PFOA	0.00223	0.126	0.0
PFBS	0.000777	1.9	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**2.3**
CHF > 100	**H (High)**		
100 > CHF > 2	**M (Medium)**	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**M**

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	H
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**HIGH**

Site Background Information			
Installation:	Peoria ANGB	**Date:**	9/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	(Former) Fire Station - Bldg 536 - PRL 6	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	Building 536 is the former Base Fire Station. At the time of the PA site visit in 2015, vehicles containing AFFF are stored in the engine bay of this building. Vehicles include three crash trucks (p-34 with 56 gallons, P-23 with 500 gallons, and TI-1500 with 210 gallons), and one foam trailer (1,000 gallons). The foam trailer was historically stored full outside of the Fire Station to the northeast. According to facility personnel, vehicles are washed and refilled with AFFF in the engine bay. There are trench drains located inside the engine bay that drain to the sanitary sewer system via an OWS. According to Base personnel, no known releases have occurred at the Fire Station.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the site to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow aquifer at depths ranging from 3 to 12 ft. bgs. Groundwater flow generally reflects surface topography with a flow to the south at an average hydraulic gradient of 0.013. However, it should be noted that groundwater flow direction at the Base has not been verified and groundwater is thought to flow west at PRLs 1 and 8. Soil samples were collected from an area with bare soil and grassy areas.
Brief Description of Receptors:	There are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. IEPA requested sampling of private drinking water wells. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site monitoring wells at varying concentrations.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 6 **AFFF Release Area #:** AFFF 6

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.367	0.04	9.2
PFOA	0.0786	0.04	2.0
PFBS	0.0805	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	11.3
CHF > 100	H (High)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	M

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**MEDIUM**

Soil Worksheet

Installation: Peoria ANGB

Site ID: PRL 6 **AFFF Release Area #:** AFFF 6

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.011	0.126	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.1
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**LOW**

Site Background Information			
Installation:	Peoria ANGB	**Date:**	9/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Aerial Port - Bldg 836 - PRL 7	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	Building 836 was formerly used as the fuel cell maintenance hangar and previously had an AFFF suppression system that was removed from service in approximately 1995. Prior to that time, the system was tested according to the AFFF suppression system maintenance procedure. Base personnel believe the suppression system was not tested more than twice. The building utilizes a trench drain which until approximately 2014 discharged to sanitary through an OWS. Currently the trench drains discharge directly to sanitary as the OWS has been removed.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the site to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow aquifer at depths ranging from 3 to 12 ft. bgs. Groundwater flow generally reflects surface topography with a flow to the south. However, it should be noted that groundwater flow direction at the Base has not been verified and groundwater is thought to flow south at PRL 7. PRL 7 soils are covered by asphalt.
Brief Description of Receptors:	There are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. IEPA requested sampling of private drinking water wells. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site monitoring wells at varying concentrations.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 7 **AFFF Release Area #:** AFFF 7

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.186	0.04	4.7
PFOA	0.02	0.04	0.5
PFBS	0.0104	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	5.2
CHF > 100	H (High)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	M

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**MEDIUM**

Soil Worksheet

Installation: Peoria ANGB

Site ID: PRL 7 **AFFF Release Area #:** AFFF 7

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.000372	0.126	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.0
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	L
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**

Site Background Information			
Installation:	Peoria ANGB	**Date:**	9/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Nozzle Spray Area - PRL 8	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	At the time of the 2015 PA, Nozzles were tested utilizing AFFF on an annual basis in the grassy area that is north-northwest of the active FTA. Historically, testing occurred in this area from 1990 - 2013. Following testing, the foam is left in the area to dissipate. There are no stormwater catch basins in the immediate area. The grassy area slopes to the north/northwest towards a wooded area.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the site to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow aquifer at depths ranging from 3 to 12 ft. bgs. Groundwater flow generally reflects surface topography with a flow to the south at an average hydraulic gradient of 0.013. However, it should be noted that groundwater flow direction at the Base has not been verified and groundwater is thought to flow west at PRLs 1 and 8. There are grassy areas and bare ground in the vicinity of PRL 8.
Brief Description of Receptors:	There are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. IEPA requested sampling of private drinking water wells. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site monitoring wells at varying concentrations.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 8 **AFFF Release Area #:** AFFF 8

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	152	0.04	3800.0
PFOA	4.48	0.04	112.0
PFBS	18.1	0.602	30.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	3942.1
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

CHF Value	CHF VALUE	H

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	H
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Peoria ANGB

Site ID: PRL 8 **AFFF Release Area #:** AFFF 8

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	2.41	0.126	19.1
PFOA	0.00887	0.126	0.1
PFBS	0.00334	1.9	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**19.2**
CHF > 100	**H (High)**		
100 > CHF > 2	**M (Medium)**	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**M**

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	H
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**HIGH**

Site Background Information			
Installation:	Peoria ANGB	**Date:**	9/03/2021
Location (State):	Illinois	**Media Evaluated:**	Groundwater
Site Name and ID:	Stormwater Pond - PRL 11	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Macrina Xavier	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	Stormwater from the south portion of the Base, including the Fuel Cell Maintenance Hangar (Building 632) and the Fire Station (Building 536) drain to the Stormwater Pond located southwest of the Base. Base personnel noted that foam had been observed in the Stormwater Pond previously, but no dates were given. Surface water from PRL 5 also drains to the stormwater pond.
Brief Description of Pathways:	Regional groundwater occurs in two primary aquifer systems, located within the Pleistocene- and Paleozoic-aged aquifers. The most important aquifer for municipal and industrial use in Peoria County is the Kansan Sankoty Sand, which is typically first encountered between 15 and 20 ft. bgs. This aquifer comes within approximately 1.5 miles of the site to the east of the airport. Groundwater in the area also can be obtained from wells as deep as 350 ft. bgs in Pennsylvanian aged sandstone, coal, and fractured shale; however, wells are generally not drilled into these rocks due to the poor water quality and high mineral content. Groundwater near the Base occurs in a shallow aquifer at depths ranging from 3 to 12 ft. bgs. Groundwater flow generally reflects surface topography with a flow to the south at an average hydraulic gradient of 0.013. However, it should be noted that groundwater flow direction at the Base has not been verified and groundwater is thought to flow west at PRLs 1 and 8 and south in other portions of the base. Groundwater at PRL-11 may flow to Lamarsh Creek.
Brief Description of Receptors:	TThere are 25 wells within 1-mile of the base and appear to be private wells utilized for agricultural or domestic use. No public water supply system wells were identified within 1 mile of the Peoria ANGB. Drinking water is predominantly supplied to the Peoria ANGB and surrounding residential population by the Illinois American Water Company. The Illinois American Water Company obtains drinking water from wells located approximately 3 miles east of the airport. These drinking water wells obtain water from the Sankoty aquifer. This aquifer, approximately 50 to 150-ft. thick and semi-confined, is in the Illinois River and Kickapoo Creek Valleys. IEPA requested sampling of private drinking water wells. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site monitoring wells at varying concentrations.

Groundwater Worksheet

Installation: Peoria ANGB

Site ID: PRL 11 **AFFF Release Area #:** AFFF 11

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.461	0.04	11.5
PFOA	0.0845	0.04	2.1
PFBS	0.0495	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	13.7
CHF > 100	H (High)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	M

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	M
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Groundwater Category	**MEDIUM**