RELATIVE RISK SITE EVALUATION

Stewart Air National Guard Base, New York

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. At Stewart Air National Guard Base (ANGB), an Addendum to the SI was also completed, as well as an Expanded SI. 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 Stewart ANGB 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 Stewart Int Airport, NY, then enter the AR Number 473136 in the “AR #” field for the PA. For the SI, enter the AR Number 598617. For the SI Addendum, enter 584628. For the Expanded SI, enter 602198. Then click “Search” at the bottom of the page. Click on the spy glass 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

PRL - Potential Release Location

RF – Receptor Factor

RI – Remedial Investigation

RRSE – Relative Risk Site Evaluation

SI – Site Inspection

RELATIVE RISK SITE EVALUATION, cont.

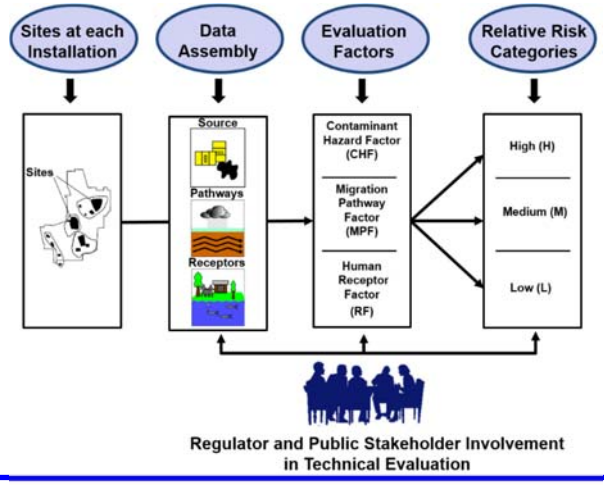
Q. What is the Relative Risk Site Evaluation (RRSE)?

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

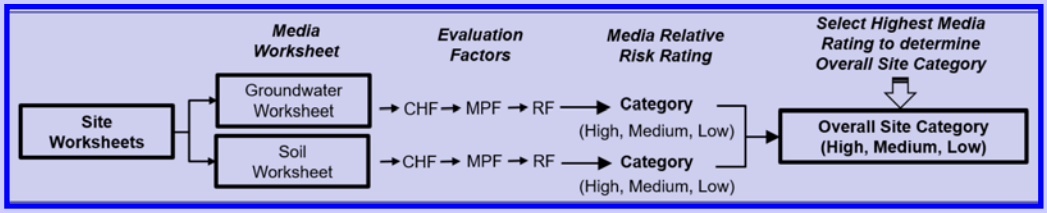


Sites at Each Installation

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 (0-2 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., 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/

POINT OF CONTACT
William Myer NGB/A4VR
240-612-8473
william.myer.2@us.af.mil

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?

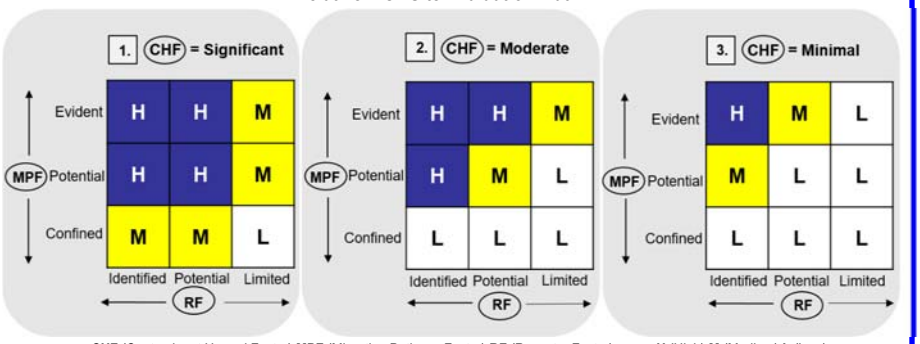
A. The **Receptor Factor (RF)** is determined by a receptor's, such as humans, potential to come into contact with contaminated media. **RFs** are designated as: identified, potential, or limited **(High, Medium, and Low). Identified** rating is given when receptors are in contact or threat of contact 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?**

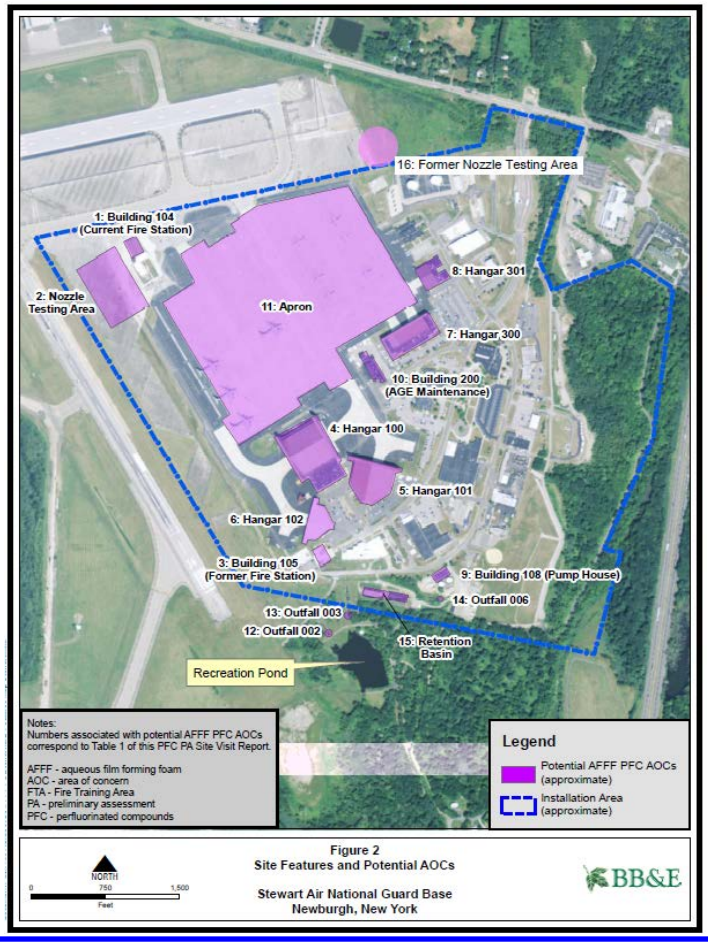
A. To offer opportunity to participate in RRSE, the Air Force announces a public comment period in your local newspaper. There is also opportunity to participate during installation Restoration Advisory Committees where active. Installation Restoration Advisory Committee meetings are also announced in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

Relative Risk Site Evaluation Summary Stewart ANGB, NY

Overall Site Category	Site Name (Sites are shown on the map below and RRSE Worksheets are attached)
HIGH	PRL 1, PRL 2, PRL 3, PRL 12, PRL 13, PRL 15
MEDIUM	PRL 6, PRL 7, PRL 8
LOW	PRL 4, PRL 5, PRL 11, PRL 16

Notes:
Figure is derived from 2016 Preliminary Assessment document.

Area of Concern (AOC) is another term for Potential Release Location (PRL).



Site Background Information			
Installation:	Stewart ANGB	**Date:**	12/14/2020
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Building 104 Current Fire Station - PRL 1	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	Building 104 was built in 2007. Bulk aqueous film forming foam (AFFF) was stored in totes and drums and was present in the fire department vehicles; the foam trailer carried 1,000 gallons of AFFF. AFFF was transferred to vehicles within the Fire Station via a pony pump on the foam trailer. If AFFF was removed from the trucks for maintenance, it was transferred to empty 55-gallon drums within the Fire Station. Any AFFF releases were typically captured by the trench drains which discharged into the storm sewer system, ultimately flowing through an oil/water separator at Building 111. Discharges from the oil water separator (OWS) were typically routed to Recreation Pond (off-site) through Outfall 002, but could be diverted to the Retention Basin through the Diversion Chamber. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart Air National Guard Base (ANGB) is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below ground surface (bgs) near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This potential release location (PRL) is the building and is surrounded by concrete and asphalt paved areas.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of per- and polyfluoroalkyl substances (PFAS) to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, Department of Environmental Conservation (DEC) determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and Department of Health (DOH) listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. The soil samples were taken outside the designated boundaries of the PRL through concrete. This PRL is adjacent to Runway 34-16.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.137	0.04	3.4
PFOA	0.0705	0.04	1.8
PFBS	0.136	40	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)	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)	H
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)	
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).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.52	0.126	4.1
PFOA	0.00405	0.126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**4.2**
CHF > 100	**H (High)**		
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**M**

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

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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Nozzle Testing Area - PRL 2	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	According to Base personnel, the concrete area west of Building 104 has been used for annual fire department (FD) vehicle nozzle testing since 2007 and is the only known location of nozzle testing. No records of nozzle testing were available. Cracks in the concrete were observed during the site visit. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is located between PRL 1 and runway 34 consisting of concrete and grassy areas. The site visit noted that the concrete area was in poor repair and provided a pathway for surface contamination to reach groundwater.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. This PRL is adjacent to Runway 34-16. Access to the Base is through a controlled gate and has a perimeter fence.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.174	0.04	4.3
PFOA	0.046	0.04	1.2
PFBS	0.0146	40	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	5.5
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)	H
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)	
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).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.000853	0.126	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.0
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:	Stewart ANGB	**Date:**	12/16/2020
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Building 105 Former Fire Station - PRL 3	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	Prior to relocation to Building 104 in 2007, the fire department (FD) was stationed in Building 105 (built in 1988). Trench drains were located on either end of the truck bays, near the overhead doors. There are no known records or personnel knowledge of AFFF releases at Building 105. Any releases within Building 105 would have been captured by the trench drains, which discharge into the industrial waste line. It is not known if vehicle nozzle testing was conducted outside of Building 105 during FD occupancy. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is the building and is surrounded by concrete and asphalt paved areas. Any releases within Building 105 would have been captured by the trench drains, which discharge into the industrial waste line which discharges into the Retention Basin.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. This PRL is adjacent to Runway 34 and access would be limited to authorized personnel. Soil samples were taken outside the designated boundaries of the PRL (Figure 3 SI) through concrete. Access to the Base is through a controlled gate and has a perimeter fence.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.714	0.04	17.8
PFOA	0.0762	0.04	1.9
PFBS	0.179	40	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**19.8**
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)	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)	H
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)	
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).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0601	0.126	0.5
PFOA	0.00203	0.126	0.0
PFBS	0.000412	126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.5**
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	
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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Hangar 100 - PRL 4	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary	
Brief Site Description:	Operation of the AFFF fire suppression system (FSS) at Hangar 100 started in 1987 and continued until 2006, when the system was retrofitted for use of high expansion foam (HEF). Prior to removal, three AFFF supply tanks (unknown capacity) for the fire suppression system were located in the boiler room. It is not known if, or how often, fire suppression systems were tested. No records of accidental AFFF releases exist, but according to Base personnel, at least one accidental release occurred at Hangar 100. A 1990 article from *The Sentinel* describes an 4,000 gallon AFFF spill from Hangar 100 that discharged directly into New Windsor's sanitary sewer system, generating plans to construct a second lagoon within the Retention Basin system. Any AFFF releases at Hangar 100 typically would enter the trench drain and building OWS through the industrial waste system and discharge to the Retention Basin. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is the building and is surrounded by concrete and asphalt paved areas. The soil samples were collected outside the designated PRL boundaries in a grass strip. Trench drains in this hangar discharge to an OWS through the industrial waste system to the Retention Basin.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is adjacent to the apron and is directly accessed by planes.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**Non Detect**
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**	**NA**

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	
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)	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	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)	H
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)	
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).	H
	Groundwater Category	**NA**

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0687	0.126	0.5
PFOA	0.00668	0.126	0.1
PFBS	0.00164	126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.6**
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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Hangar 101 - PRL 5	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary	
Brief Site Description:	Operation of the AFFF fire suppression system at Hangar 101 started in 1987 and continued until 2009, when the system was retrofitted for use of HEF. The AFFF FSS included underwing and overhead foam generators. The existing overhead foam generators were retained for reuse with HEF. Historically, AFFF storage tanks were kept on the floor of the main hangar. It is not known if, or how often, fire suppression systems were tested. No records of accidental AFFF releases exist. According to Base personnel, several accidental AFFF FSS activations occurred at Hangar 101 but never resulted in a full-system release. Trench drains in this hangar discharge to an OWS through the industrial waste system to the Retention Basin. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is the building and is surrounded by concrete and asphalt paved areas. Soil samples were collected outside the designated boundaries of the PRL. Trench drains in this hangar discharge to an OWS through the industrial waste system to the Retention Basin.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is directly accessed by planes on the apron.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**Non Detect**
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**	**NA**

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	
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)	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	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)	H
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)	
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).	H
	Groundwater Category	**NA**

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0236	0.126	0.2
PFOA	0.00503	0.126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.2**
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**	**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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Hangar 102 - PRL 6	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	Operation of the AFFF fire suppression system at Hangar 102 started in 1988 and continued until 2006, when the system was retrofitted for use of HEF. The existing overhead foam generators were retained for reuse with HEF. Two AFFF supply tanks (1,800 gallons and 700 gallons) for the FSS were located in the Electrical and Fire Protection Equipment Room (Room 115). Staining on the floor and walls was observed in Room 115 during the site visit, potentially due to an AFFF or HEF release. There are no floor drains in Room 115, but an overhead door is located near the FSS which may facilitate an outdoor release of foam if opened during FSS activation. No records of accidental AFFF releases exist. According to Base personnel, several accidental AFFF FSS activations occurred at Hangar 102 but never resulted in a full-system release. It is not known if, or how often, fire suppression systems were tested. Trench drains, located in the hangar bay, discharge to an OWS through the industrial waste system to the Retention Basin. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is the building and is surrounded by concrete and asphalt paved areas. Soil samples were collected outside the designated boundaries in a small exposed soil area.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is directly accessed by planes on the apron.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOA	0.051	0.04	1.3
PFBS	0.115	40	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**1.3**
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 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)	H
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)	
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).	H
	Groundwater Category	**MEDIUM**

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.07	0.126	0.6
PFOA	0.00452	0.126	0.0
PFBS	0.00094	126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.6**
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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Hangar 300 - PRL 7	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	Operation of the AFFF fire suppression system at Hangar 300 started in 1989/1990 and continued until 2004, when the system was retrofitted for use of HEF. One 1,800-gallon AFFF supply tank was located in the Sprinkler/Mechanical Room. It is not known if, or how often, fire suppression systems were tested. No records of accidental AFFF releases exist. Any AFFF releases during testing or accidental release within the Hangar typically would have been routed to the trench drains, which discharge to an OWS through the industrial waste system, ultimately to the Retention Basin. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is the building and is surrounded by concrete and asphalt paved areas. Soil samples were collected outside the designated boundary of the PRL in exposed soil/grass strips.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is accessed by planes directly from the apron.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFBS	0.0254	40	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.0
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 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)	H
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)	
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).	H
	Groundwater Category	MEDIUM

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00478	0.126	0.0
PFOA	0.001	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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Hangar 301 - PRL 8	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	Operation of the AFFF fire suppression system at Hangar 301 started in 1992 and continued until 2004, when the system was retrofitted for use of HEF. Two 1,300-gallon AFFF supply tanks were located in the Mechanical Room. It is not known if, or how often, fire suppression systems were tested. No records of accidental AFFF releases exist, but according to Base personnel, at least one accidental release occurred at Hangar 301. This maintenance facility is on the flight line and is used by the USMC MAG 49, Dept B for maintenance of aircraft fuel cells and for the washing and corrosion control of aircraft. Trench drains in this hangar discharge to an OWS through the industrial waste system to the Retention Basin. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is the building and is surrounded by concrete and asphalt paved areas. Soil samples were collected outside the designated PRL boundary in exposed soil/grass. Groundwater contamination could potentially occur from the former nozzle testing area as Hangar 301 is downgradient from PRL 16.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is accessed by planes directly from the apron.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOA	0.00329	0.04	0.1
PFBS	0.0108	40	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.1
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	L

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)	H
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)	
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).	H
	Groundwater Category	**MEDIUM**

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00184	0.126	0.0
PFOA	0.000661	0.126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.0**
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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	N/A
Site Name and ID:	Building 200 - PRL 10	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	**N/A**
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: N/A			

Site Summary	
Brief Site Description:	Building 200, built in 1988, consists of vehicle maintenance bays and a wash rack. Maintenance bay floor drains lead to an OWS prior to discharge to the sanitary sewer system. During equipment washing at the wash rack, a valve-operated trench grate system is opened and discharges flow to the sanitary sewer system via an OWS. Although there are no records or knowledge of known AFFF spills at Building 200, Base personnel indicated that spills may have occurred due to residual foam in the lines of FD vehicles. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is the building and is surrounded by concrete and asphalt paved areas. Soil samples were collected from areas outside the designated PRL boundaries through an asphalt covering. Discharges from Building 200 flow through the sanitary sewer via an OWS.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is adjacent to the apron.

Groundwater Worksheet

Installation: Stewart ANGB

Site ID: PRL 10 **AFFF Release Area #:** AFFF 10

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**Non Detect**
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**	**NA**

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	
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)	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	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)	H
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)	
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).	H
	Groundwater Category	**NA**

Soil Worksheet

Installation: Stewart ANGB

Site ID: PRL 10 **AFFF Release Area #:** AFFF 10

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	Non Detect
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	NA

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	NA

Site Background Information			
Installation:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Apron - PRL 11	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary	
Brief Site Description:	This area is on the west side of the flight line and is used for parking, fueling, deicing, and minor maintenance of C-17 and KC-130 aircraft. This area is completely paved and covers approximately 75 acres. The apron has a complete network of drain inlets that discharge stormwater through the storm sewer system to Outfall 002. During normal flow conditions, drainage from the aircraft parking apron goes through the Diversion Valve Chamber, an underground vault located at the southwest corner of the Base, which includes a large filtration system and control equipment. Flow diversion is accomplished by electronically activating a control valve remotely from Bldgs. 207 or 104 or manually at the Diversion Chamber. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is the apron consisting of concrete and asphalt paved areas. Soil samples were collected outside the PRL boundaries in exposed soil/grass.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is the apron and adjacent to Runway 34-16, access is limited to authorized personnel.

Groundwater Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**Non Detect**
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**	**NA**

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	
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)	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	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)	H
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)	
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).	H
	Groundwater Category	**NA**

Soil Worksheet

Installation: Stewart ANGB

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

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.158	0.126	1.3
PFOA	0.00197	0.126	0.0
PFBS	0.00825	126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**1.3**
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**	**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	
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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Groundwater
Site Name and ID:	Outfall 002 - PRL 12	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	The drainage basins of the Base discharge through a network of in-ground conveyances and grass-lined ditches to the Recreation Pond or through several points along the eastern border of the Base. There are ten drainage basins that contain the industrial activities of the Base. These basins generally slope from northwest to southeast. Each drainage basin has an associated outfall. Drainage Basin 002 includes Buildings 101, 100, 104, 200, 301, 302, 400 and Apron which drain through Outfall 002. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. Outfall 002 is located approximately 250 feet outside the Base boundaries and southwest of the Retention Basin It receives surface water from the storm water drainage system and via underground pipes from the respective OWS and discharges into Recreation Pond.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. Outfall 002 is located outside the Base boundaries but is located within a secondary fence controlled by the Port Authority of NY and NJ (PANYNJ) and is not accessible to the general public.

Groundwater Worksheet

Installation: Stewart ANGB

Site ID: PRL 12 **AFFF Release Area #:** AFFF 12

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	1.01	0.04	25.2
PFOA	0.128	0.04	3.2
PFBS	0.461	40	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**28.5**
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)	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)	H
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)	
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).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Stewart ANGB

Site ID: PRL 12 **AFFF Release Area #:** AFFF 12

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**No Data**
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**	**NA**

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	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = 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	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	
	Soil Category	**NA**

Site Background Information			
Installation:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Groundwater
Site Name and ID:	Outfall 003 - PRL 13	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	The drainage basins of the Base discharge through a network of in-ground conveyances and grass-lined ditches to the Recreation Pond or through several points along the eastern border of the Base. There are ten drainage basins that contain the industrial activities of the Base. These basins generally slope from northwest to southeast. Each drainage basin has an associated outfall. Drainage Basin 003 includes a portion of Building 101, 102, 105, 106, 107, 1107, 113, 202, 203, 204, 205, 206, 207, 208, 209, 211, 214, 300, 301, and 302 which drain through Outfall 003. Monitoring well 112 is located between outfall 002 (upgradient) and 003 (downgradient). Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. Outfall 003 is located approximately 150 feet outside the Base boundaries and southwest of the Retention Basin. It receives surface water from the storm water drainage system and via underground pipes from the respective OWS and discharges into Recreation Pond. Outfall 003 is located outside the Base boundaries and the public may have access to surface water and sediments at this PRL.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is downstream of the Retention Basin and directly discharges to Recreation Pond. Outfall 003 is located outside the Base boundaries but is located within a secondary fence controlled by the PANYNJ and is not accessible to the general public.

Groundwater Worksheet

Installation: Stewart ANGB

Site ID: PRL 13 **AFFF Release Area #:** AFFF 13

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	1.01	0.04	25.2
PFOA	0.128	0.04	3.2
PFBS	0.461	40	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**28.5**
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)	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)	H
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)	
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).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Stewart ANGB

Site ID: PRL 13 **AFFF Release Area #:** AFFF 13

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**No Data**
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**	**NA**

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	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = 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	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	
	Soil Category	**NA**

Site Background Information			
Installation:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Retention Basin - PRL 15	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	The Retention Basin is composed of two lined depressions. The eastern lagoon was built in 1986 and the western lagoon was built in 1992. Both were relined in 2011. According to Base personnel, AFFF releases on the Apron were directed to either Recreation Pond or to the Retention Basin; AFFF releases in the hangars were redirected to the Retention Basin and were either disposed off-site or trickled into the sanitary sewer system. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. The Retention Basin is located in the southwest part of the Base and receives surface water from the storm water drainage system and via underground pipes from the respective OWS. The Retention Basin is located within a secondary interior fenced area.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is controlled by an interior fence inside the perimeter fence.

Groundwater Worksheet

Installation: Stewart ANGB

Site ID: PRL 15 **AFFF Release Area #:** AFFF 15

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	14.8	0.04	370.0
PFOA	7.46	0.04	186.5
PFBS	0.423	40	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**556.5**
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)	H
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)	
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).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation: Stewart ANGB

Site ID: PRL 15 **AFFF Release Area #:** AFFF 15

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.126	0.126	1.0
PFOA	0.00182	0.126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**1.0**
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	
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:	Stewart ANGB	**Date:**	12/15/2020
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Former Nozzle Testing Area - PRL 16	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	William Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary	
Brief Site Description:	This location was not previously identified as a PRL; however, during consultation with Civil Engineering Department personnel to obtain plans and specifications for the on-Base and off-Base storm water drainage systems that discharge to Recreation Pond, it was ascertained that a former nozzle testing area was located to the northeast of PRL 11 (Apron), and extends off-Base into airport property. Fire equipment reportedly parked at the end of the concrete taxiway in this area and discharged to the grassed area to the northeast. Note: 1 part per trillion (ppt) = 1 nanogram per Liter (ng/L) = 0.001 micrograms per Liter (ug/L)
Brief Description of Pathways:	The upper layer of unconsolidated deposits consists primarily of a dense, gray, fine sand and silty glacial till, which contain numerous pebbles, cobbles, and boulders. The bedrock beneath Stewart ANGB is predominately a thinly bedded and fractured Martinsburg Shale, occurring at depths between 45 and 50 feet below grade near the base. The subsurface aquifer at Stewart ANGB consists of a dense uniform glacial till deposit over the shale bedrock which confines the aquifer. The Normanskill Formation and underlying bedrock have very low permeability and yield low volumes of groundwater. Groundwater at the site is approximately 15 to 40 feet bgs in upland areas of the Base and approximately 5-10 feet bgs at the southerly Base boundary. Groundwater flows from the northwest to the southeast generally toward Recreation Pond and the former Base landfill. Groundwater daylights in a wetland east of the Base. Shallow groundwater infiltrates into the aged stormwater outfall inverts in multiple locations throughout the base. Stormwater discharges to Recreation Pond and the surface water flows from Recreation Pond to the south/southeast towards Silver Stream which enters Moodna Creek. This PRL is located at the east end of Runway 34-16 in a grassy area outside the Base boundaries on airport property.
Brief Description of Receptors:	There are no known drinking water supply wells at the Base. The City of Newburgh's source of drinking water was Lake Washington, which did receive surface water from the Base until 2016 when a Diverter in Silver Stream began sending water southward to Moodna Creek. Due to impacts of PFAS to Lake Washington, the City of Newburgh switched to a temporary alternative drinking water source in 2016. The Town of Newburgh provides water service to the Stewart ANGB and obtains drinking water from the Delaware Aqueduct and Chadwick Lake. At least one public water system well, located to the south-southwest of the property boundary and five private wells were identified within a one-mile radius of the Base (3 total downgradient). The Town of Newburgh has transitioned to public water supply for those residents previously on private wells. On August 12, 2016, DEC determined that the Stewart Air National Guard Base is a source of PFAS to the watershed and DEC and DOH listed the base area as a Class 2 State Superfund site, identifying the U.S. Department of Defense as a potentially responsible party for the contamination detected in the area and in the public drinking water supply. Access to the Base is through a controlled gate and has a perimeter fence. This PRL is east of Runway 34-16 outside the Base boundaries but inside the airfield and access is restricted to flight line personnel.

Groundwater Worksheet

Installation: Stewart ANGB

Site ID: PRL 16 **AFFF Release Area #:** AFFF 16

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**Non Detect**
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**	**NA**

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	
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)	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	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)	H
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)	
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).	H
	Groundwater Category	**NA**

Soil Worksheet

Installation: Stewart ANGB

Site ID: PRL 16 **AFFF Release Area #:** AFFF 16

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0142	0.126	0.1
PFOA	0.00153	0.126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.1**
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**	**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	
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**