



RELATIVE RISK SITE EVALUATION



Pittsburgh Air National Guard Base, Pennsylvania

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 (ANG). Specifically, perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanesulfonic acid (PFBS) are components of legacy Aqueous Film Forming Foam (AFFF) that the Air Force began using in the 1970s as a firefighting agent to extinguish petroleum fires. The U.S. Environmental Protection Agency (EPA) issued lifetime drinking water Health Advisories (HA) for PFOS and PFOA, and health-based regional screening levels for PFBS.

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

The Pittsburgh Air National Guard Base (ANGB) PFAS PA and SI can be found at the Air Force Comprehensive Environmental Response, Compensation, and Liability Act (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 Pittsburgh Int'l Airport, PA, then enter the AR Number 469952 in the "AR #" field for the PA. For the SI, enter the AR Number 578657. 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

ANG - Air National Guard

ANGB - Air National Guard Base

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

PFOA - Perfluorooctanoic acid

PFOS - Perfluorooctane sulfonate

RCRA – Resource Conservation and Recovery Act

RF – Receptor Factor

RI – Remedial Investigation

RRSE – Relative Risk Site Evaluation

PRL - Potential Release Location

SI – Site Inspection

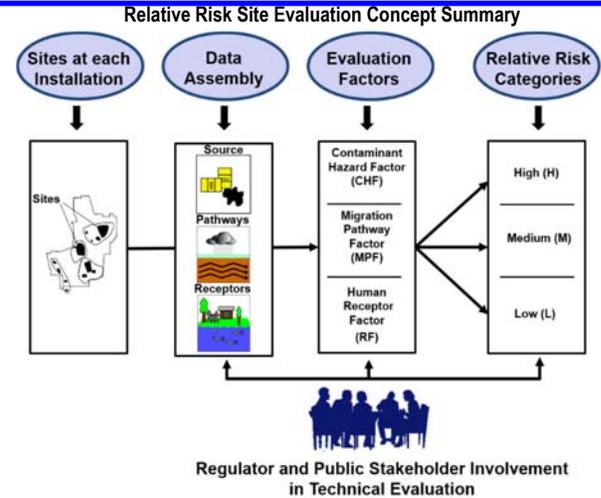
SWMU – Solid Waste Management Unit

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

A. RRSE is a methodology to sequence environmental restoration work used by the 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/>

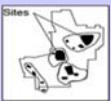
Q. What is the RRSE framework?

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 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.



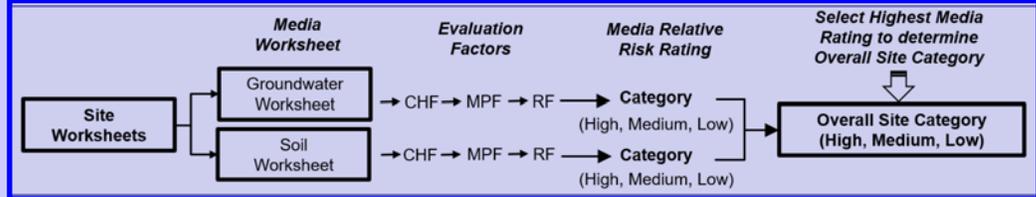
Sites at Each Installation

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

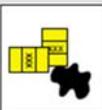


A. Restoration sites in CERCLA phases prior to remedy-in-place are evaluated in the process. Worksheets are developed for environmental media at each site. For consistency across all the Installations, only surface soil (0-1 foot deep) and groundwater media were evaluated in the RRSE.

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



How is the Contaminant Hazard Factor (CHF) determined?



A. The 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 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/>

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

A. The movement of contamination at a site is evaluated and assigned a 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 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.

POINT OF CONTACT

Bill Myer NGB/A4VR
(774) 994-7265
william.myer.2@us.af.mil

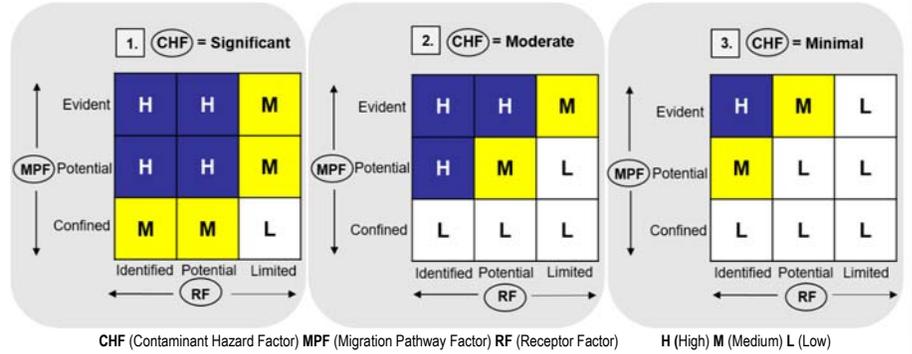
RELATIVE RISK SITE EVALUATION, cont.

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



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

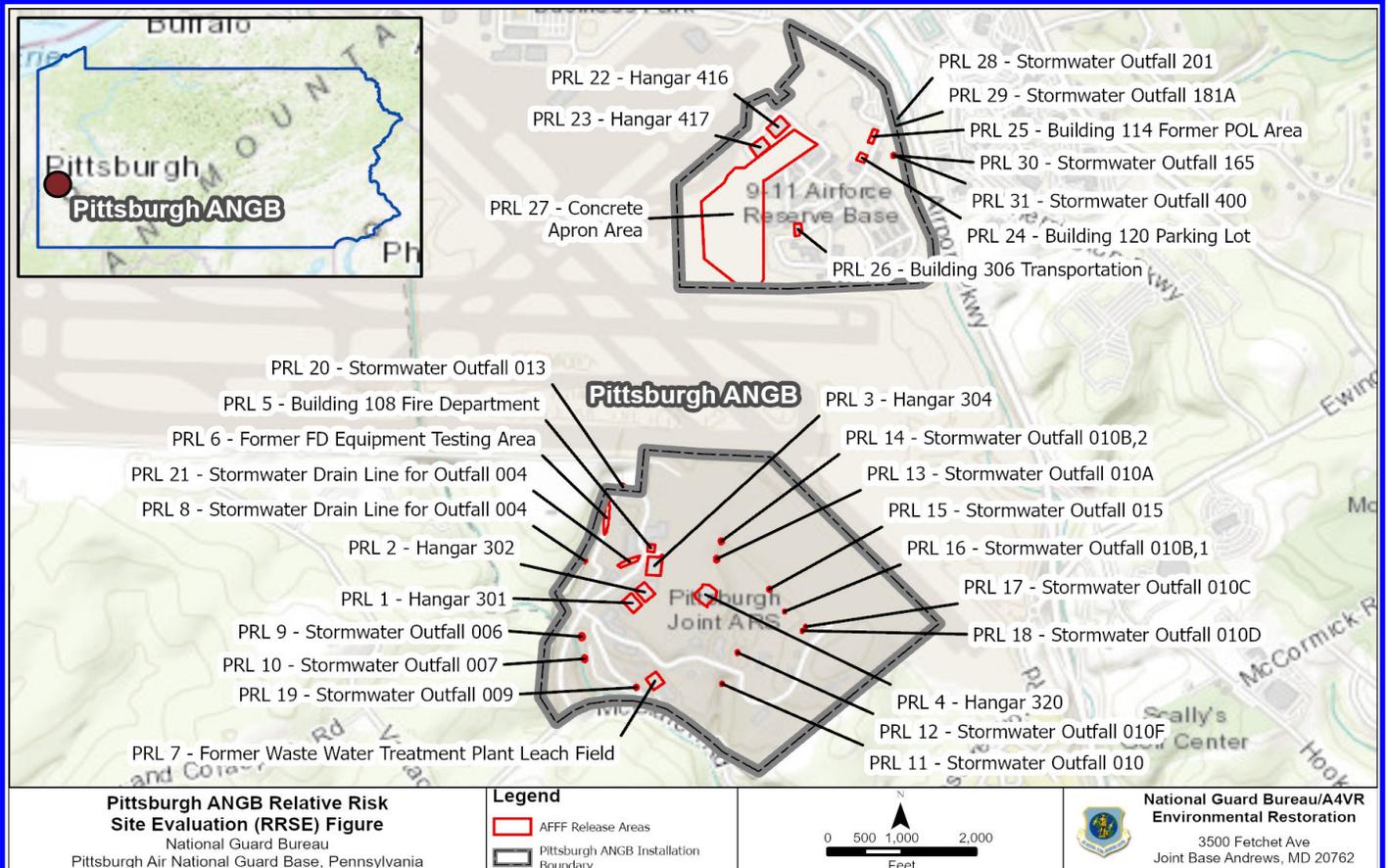
How do I participate as Stakeholder?



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 Pittsburgh ANGB, PA

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 5, PRL 6, PRL 7, PRL 8, PRL 11, PRL 15, PRL 19, PRL 20, PRL 21, PRL 22, PRL 23, PRL 25, PRL 28, PRL 29, PRL 30
MEDIUM	PRL 9, PRL 10, PRL 13, PRL 16, PRL 17, PRL 18, PRL 24, PRL 26, PRL 31
LOW	PRL 4, PRL 12, PRL 14, PRL 27



AFFF Area is another term for Potential Release Location (PRL).

Site Background Information

Installation:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Hangar 301 - PRL 1	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>Constructed in 1952, aqueous film forming foam (AFFF) at Hangar 301 is suggested to be present prior to 1970. AFFF inventory in 2014 included a 700-gallon tank and shared above ground piping with Hangar 302. Fire suppression system (FSS) testing frequency is not known and early releases of AFFF from testing were most likely hosed into the floor drains, which are connected to a sanitary sewer system via an oil-water separator (OWS) that is shared with Hangar 302. Drawings from 1970 show the sanitary sewer lines on the were connected to a waste water treatment plant (WWTP) located where current Building 213 now stands. The treated water discharged to an on-site leach field. Drawings from 1982 no longer showed the presence of the WWTP suggesting that sometime between 1970 and 1982, the sanitary sewer lines were connected to the Moon Township Publicly Owned Treatment Works (POTW). In June 2012, approximately 550 gallons of Ansilite 3% AFFF was released and mixed with water for a total of a ~8,883 gallons of which ~6,995 gallons was discharged through the hangar sanitary drains to the Moon Township POTW. 1,888 gallons of the mixture was discharged to the storm sewer system through Outfall 007, and then to McClaren's Run, where foam was observed on the surface for ~1 mile.</p>
Brief Description of Pathways:	<p>Groundwater was 5.2 ft. below ground surface (bgs) in TW01A and 8.9 ft. bgs in TW01B and flows to the S-SW. Groundwater direction was not delineated during site investigation (SI). PFOS and PFOA in groundwater was detected at the SW Pittsburgh Air National Guard Base (PANGB) boundary downgradient of PRLs 1, 2, 3, 4, 5, 7, 13, 14, 19 and 21, and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 1 is a Hangar, so infiltration is minimal, depending on the concrete condition. The floor drains are connected to the sanitary sewer which now flows to the Moon Township POTW. Runoff leaving the hangar could reach grassy areas around the hangar and infiltrate with precipitation into the soil to become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The Environmental Data Resources (EDR) Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The Moon Township Municipal Authority (MTMA) provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB. Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 11

AFFF Release Area #: AFFF 1

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0807	0.04	2.0
PFOA	0.258	0.04	6.4
PFBS	0.0527	0.602	0.1
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	8.6
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		M
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ANGB

Site ID: PRL 1

AFFF Release Area #: AFFF 1

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0187	0.126	0.1
PFOA	0.000401	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Hangar 302 - PRL 2	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>Hangar 302 was constructed in 1950. The exact date of the AFFF FSS installation is not known, but according to the Fire Chief, AFFF was present at the Base prior to 1970. No AFFF storage was noted in Hangar 302, as it is stored in Hangar 301, and the AFFF FSS is shared via aboveground piping. There are no known releases of AFFF from Hangar 302. Floor drains from Hangar 302 are connected to the sanitary sewer system via an OWS, which is shared with Hangar 301. Drawings from 1970 show that the sanitary sewer lines on were connected to a WWTP located where current Building 213 now stands. The treated water discharged to an on-site leach field. Drawings from 1982 no longer showed the presence of the WWTP suggesting that sometime between 1970 and 1982, the sanitary sewer lines were connected to the Moon Township POTW. Releases of AFFF due to testing prior to the connection to the Moon Township POTW were likely hosed down the floor drains for processing at the WWTP and eventual discharged to the leach field. If any undocumented AFFF releases occurred and entered the storm sewer system in this area, the discharges would have likely been through Outfalls 004 or 007 into a tributary of McClaren's Run.</p>
Brief Description of Pathways:	<p>Groundwater was 7.5 ft. bgs in TW02, and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater were detected at the SW PANGB boundary downgradient of PRLs 1, 2, 3, 4, 5, 7, 13, 14, 19 and 21 and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 2 is a Hangar, so infiltration is minimal, depending on the concrete condition. The floor drains are connected to the sanitary sewer which now flows to the Moon Township POTW. Runoff leaving the hangar could reach grassy areas around the hangar and infiltrate with precipitation into the soil to become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 2

AFFF Release Area #: AFFF 2

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	3.12	0.04	78.0
PFOA	0.188	0.04	4.7
PFBS	0.121	0.602	0.2
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	82.9
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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ANGB

Site ID: PRL 2

AFFF Release Area #: AFFF 2

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0329	0.126	0.3
PFOA	0.000488	0.126	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.3
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value	CHF VALUE		L
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Hangar 304 - PRL 3	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>Hangar 304 was constructed in 1974. The exact date of the AFFF FSS installation not known, but according to the Fire Chief, AFFF was present at the PANGB prior to 1970. Hangar 304 may have been constructed with an AFFF FSS, as an AFFF FSS is currently present, and a conversion to HEF is planned. Inventory of AFFF at Hangar 304 is comprised of a single 700-gallon tank. There are no known releases of AFFF from Hangar 304. Floor drains from the hangar are connected to the sanitary sewer system via an OWS. Drawings from 1970 show that the sanitary sewer lines on were connected to a WWTP located where current Building 213 now stands. The treated water discharged to an on-site leach field. Drawings from 1982 no longer showed the presence of the WWTP suggesting that sometime between 1970 and 1982, the sanitary sewer lines were connected to the Moon Township POTW. The frequency of FSS testing is not known, so releases of AFFF due to testing prior to the connection to the Moon Township POTW were likely hosed down the floor drains for processing at the WWTP, and discharged to the leach field. If any undocumented AFFF releases occurred and entered the storm sewer system in this area, the discharges would have likely been through Outfalls 004 or 006 into a tributary of McClaren's Run.</p>
Brief Description of Pathways:	<p>Groundwater was 18.8 ft. bgs in TW03, with flow to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater was detected at the SW PANGB boundary downgradient of PRLs 1, 2, 3, 4, 5, 7, 13, 14, 19 and 21 and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 3 is a Hangar, so infiltration is minimal, depending on the concrete condition. The floor drains are connected to the sanitary sewer which now flows to the Moon Township POTW. Runoff leaving the hangar could reach the grassy areas to the south of the hangar and infiltrate with precipitation into the soil to become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB. Surface soil receptors have limited access to contaminated soil due to it being underneath asphalt in which it needed to be drilled approximately 0.5 feet before actual soil was encountered. This pathway is considered confined unless there is some sort of construction activities by commercial/industrial workers that would disturb the asphalt. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 3

AFFF Release Area #: AFFF 3

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.47	0.04	11.7
PFOA	0.33	0.04	8.3
PFBS	0.029	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	20.0
-----------	-----------	-----------------------------------	-------------

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	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 Pittsburgh IAP ANGB

Site ID: PRL 3

AFFF Release Area #: AFFF 3

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00497	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Soil
Site Name and ID:	Hangar 320 - PRL 4	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary

Brief Site Description:	<p>Constructed in 1997, Hangar 320, contains an AFFF FSS, and an inventory consisting of (2) 700-gallon tanks, (41) 5-gallon containers, and (15) 55-gallon drums. Floor drains are connected to an OWS that discharges to the Moon Township POTW, and an AFFF containment vault with a shut-off valve in between. A known release of AFFF outside the hangar occurred in Nov. 2013 due to a faulty switch on the AFFF FSS that accidentally engaged. The FD reported a total of 900 gal of Ansulite 3% AFFF was released, and that 65,000 gal of water was mixed with the foam. CE estimated the volume of mixture released to the storm sewer system and a tributary of McClaren's Run was 30,600 gal, with ~418 gal being Ansulite 3% AFFF. Residual foam at Outfalls 010F and 010 was removed via vacuum and was transferred into a 20-gallon drum for later disposal. Moon Township allowed the PANGB to discharge the captured AFFF mixture for treatment through the sanitary system. AFFF FSS test activities releases would have been captured by the AFFF collection vault, and either pumped out and disposed, or discharged to the Moon Township POTW with permission.</p>
Brief Description of Pathways:	<p>One temporary monitoring well (TW04) was installed in PRL 4, but was observed to be dry and no groundwater sample could be collected.</p> <p>PRL 4 is a Hangar, so infiltration is minimal, depending on the concrete condition. The floor drains are connected an OWS which then flows to the Moon Township POTW. Runoff leaving the hangar could reach the grassy areas to the south of the hangar and infiltrate with precipitation into the soil to become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>PRL 4 (Hangar 320) is paved within a security fenced area, located on the taxiway, with most likely restricted access. The most likely receptors are commercial/industrial workers with special permission to be in a restricted area. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Soil Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 4

AFFF Release Area #: AFFF 4

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.166	0.126	1.3
PFOA	0.000568	0.126	0.0
PFBS	0.000268	1.9	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
<u>Migratory Pathway Factor</u>			
Evident	Analytical data or observable evidence that contamination is present at a point of exposure		H
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined		
Confined	Low possibility for contamination to be present at or migrate to a point of exposure		
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).		H
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Building 108 (Fire Department) - PRL 5	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>Building 108 houses the PANGB's current fire station and was constructed prior to 1970. Currently, ~525 gal of AFFF are contained within vehicles at the FD. Building 108 was locked at the time of the PA site visit and could not be assessed for observation of AFFF storage or containment. According to the Fire Chief's questionnaire response, loading of AFFF into vehicles is either done through pouring the AFFF into the vehicle storage area likely using a bayonet system, or using the apparatus siphon system through the pumping system. The Fire Chief also indicated that there is no secondary containment at Building 108 should there be an AFFF spill. A trench drain was noted outside of Building 108 that discharges to the storm sewer system. Neither the Fire Chief nor the Base EM reported any releases of AFFF from Building 108.</p>
Brief Description of Pathways:	<p>Groundwater was 4.4 ft. bgs in TW05, and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater was detected at the SW PANGB boundary downgradient of PRLs 1, 2, 3, 4, 5, 7, 13, 14, 19 and 21 and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 5 is a building, so infiltration is minimal, depending on the condition of the concrete. PRL 5 trench drains are outside the building and connected to the storm sewer system. Some runoff leaving the building could migrate down the concrete apron to the grassy areas at the south end, and infiltrate with precipitation into the soil, to become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geotrack® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 5

AFFF Release Area #: AFFF 5

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.778	0.04	19.4
PFOA	0.484	0.04	12.1
PFBS	0.0279	0.602	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	31.6
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		M
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ANGB

Site ID: PRL 5

AFFF Release Area #: AFFF 5

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0447	0.126	0.4
PFOA	0.000708	0.126	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.4
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value	CHF VALUE		L
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Former FD Equipment TA - PRL 6	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>FD equipment testing was historically conducted in a wooded area in the northwestern portion of the PANGB. AFFF was sprayed along this area and may not have been sprayed in the same location each time. Drainage from this area appears to flow toward an off-PANGB stormwater retention basin operated by the Airport Authority. These spray tests were estimated to occur from the late 1980s to early 1990s. The frequency of the tests and quantities of AFFF used are unknown. According to the Fire Chief, only water is currently used to conduct annual flow tests. These tests are conducted by a contractor.</p>
Brief Description of Pathways:	<p>Groundwater was 7.1 ft. bgs in TW06, and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater, exceeding the HA is likely migrating off PANGB at the northwestern boundary from PRLs 6, 8 and 20. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 6 is a paved road adjacent to a hillside, so migration to the adjacent grassy/woody area is probable. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geotrack® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 6

AFFF Release Area #: AFFF 6

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	3.87	0.04	96.7
PFOA	0.102	0.04	2.5
PFBS	0.0237	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	99.3
-----------	-----------	-----------------------------------	-------------

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

CHF Value	CHF VALUE	M
-----------	------------------	----------

Migratory Pathway Factor

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

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	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 Pittsburgh IAP ANGB

Site ID: PRL 6

AFFF Release Area #: AFFF 6

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.047	0.126	0.4
PFOA	0.00153	0.126	0.0
PFBS	0.00052	1.9	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.4
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value	CHF VALUE		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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Former WWTP Leach Field - PRL 7	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>The former WWTP is shown on old site plans from 1952, 1970, and 1973; the exact construction date is not known. PANGB sanitary sewer lines were tied into the former WWTP, which discharged to an on-Base leach field. The WWTP was not shown on a 1982 site plan, suggesting the sanitary sewer was connected to the Moon Township POTW sometime between 1973 and 1982. The exact demolition date is unknown. Building 213 was constructed over the former WWTP leach field in 2007/2008. The WWTP would have received AFFF discharges through the sanitary sewer system prior to the sanitary sewer connection to the Moon Township POTW which is located ~3.5 miles east of the Base. The Base EM was not aware of sludge being generated or disposed of from the historical WWTP. There are no known historical or current on-site PANGB landfills.</p>
Brief Description of Pathways:	<p>Groundwater was 5.8 ft. bgs in TW07, and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater was detected at the SW PANGB boundary downgradient of PRLs 1, 2, 3, 4, 5, 7, 13, 14, 19 and 21 and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>This area has a paved road to the building, but when it was the leach field it most likely was an open grassy field. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB. Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. *This is now Bldg 213 and may be occupied with workers throughout the course of a day, but there is no information to verify. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 7

AFFF Release Area #: AFFF 7

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	5.9	0.04	147.5
PFOA	0.173	0.04	4.3
PFBS	0.0739	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	151.9
-----------	-----------	-----------------------------------	--------------

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

CHF Value	CHF VALUE	H
-----------	------------------	----------

Migratory Pathway Factor

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

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	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 Pittsburgh IAP ANGB

Site ID: PRL 7

AFFF Release Area #: AFFF 7

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0349	0.126	0.3
PFOA	0.00133	0.126	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.3
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value	CHF VALUE		L
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 004 - PRL 8	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>There are several outfalls that receive drainage from the hangars that used AFFF. This may include Outfall 004 located in the NW portion of the PANGB. There are documented AFFF releases at Hangars 301 and 320, whose storm sewer systems are connected to Outfalls 007, 010, and 010F. In addition, Hangars 302 and 304's storm sewer systems are connected to Outfalls 007 and 006 respectively, and possibly Outfall 004.</p>
Brief Description of Pathways:	<p>Groundwater was 16.1 ft. bgs, and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater, exceeding the HA is likely migrating off PANGB at the northwestern boundary from PRLs 6, 8 and 20. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 8 is located within a woody area, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geotrack® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 8

AFFF Release Area #: AFFF 8

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.653	0.04	16.3
PFOA	0.168	0.04	4.2
PFBS	0.113	0.602	0.2

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	20.7
-----------	-----------	-----------------------------------	------

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

CHF Value	CHF VALUE	M
-----------	------------------	----------

Migratory Pathway Factor

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

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	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 Pittsburgh IAP ANGB

Site ID: PRL 8

AFFF Release Area #: AFFF 8

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0546	0.126	0.4
PFOA	0.00156	0.126	0.0
PFBS	0.00125	1.9	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.4
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value	CHF VALUE		L
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 006 - PRL 9	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	<p>There are several outfalls that receive drainage from the hangars that used AFFF. This includes Outfall 006 located in the western portion of the PANGB. In addition, Hangars 302 and 304's storm sewer systems are connected to Outfalls 007 and 006 respectively, and possibly Outfall 004.</p>
Brief Description of Pathways:	<p>Groundwater was 16 ft. bgs, and flows to the S-SW. Groundwater direction was not delineated during SI. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 9 is located within a grassy/woody area between two roadways, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 9

AFFF Release Area #: AFFF 9

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOA	0.00402	0.04	0.1
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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ANGB

Site ID: PRL 9

AFFF Release Area #: AFFF 9

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.000594	0.126	0.0
PFOA	0.00035	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 007 - PRL 10	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	<p>There are several outfalls that receive drainage from the hangars that used AFFF. This includes Outfall 007 located in the western portion of the PANGB. Documented AFFF releases at Hangars 301 and 320 whose storm sewer systems are connected to Outfalls 007, 010, and 010F. In addition, Hangars 302 and 304's storm sewer systems are connected to Outfalls 007 and 006 respectively, and possibly Outfall 004.</p>
Brief Description of Pathways:	<p>Groundwater was 13.5 ft. bgs, and flows to the S-SW. Groundwater direction was not delineated during SI. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 10 is located within a grassy/woody area between two roadways, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB. Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 10

AFFF Release Area #: AFFF 10

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0104	0.04	0.3
PFOA	0.0442	0.04	1.1
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	1.4
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value	CHF VALUE		L
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ANGB

Site ID: PRL 10

AFFF Release Area #: AFFF 10

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00344	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 010 - PRL 11	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>There are several outfalls that receive drainage from the hangars that used AFFF. This includes Outfall 010 located in the southern portion of the PANGB. Documented AFFF releases at Hangars 301 and 320 whose storm sewer systems are connected to Outfalls 007, 010, and 010F.</p>
Brief Description of Pathways:	<p>Groundwater was 2.5 ft. bgs, and flows to the S-SW. Groundwater direction was not delineated during SI. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 11 is located within a grassy/woody area, located behind a parking lot and adjacent to a roadway. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 11

AFFF Release Area #: AFFF 11

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.3	0.04	7.5
PFOA	0.117	0.04	2.9
PFBS	0.00688	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	10.4
-----------	-----------	-----------------------------------	-------------

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

CHF Value	CHF VALUE	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 Pittsburgh IAP ANGB

Site ID: PRL 11

AFFF Release Area #: AFFF 11

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00524	0.126	0.0
PFOA	0.000813	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Soil
Site Name and ID:	Stormwater Outfall 10F - PRL 12	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary

Brief Site Description:	<p>There are several outfalls that receive drainage from the hangars that used AFFF. This includes Outfall 010F located in the southern portion of the PANGB. Documented AFFF releases at Hangars 301 and 320 whose storm sewer systems are connected to Outfalls 007, 010, and 010F.</p>
Brief Description of Pathways:	<p>Temporary monitoring well TW12 was not installed in boring 12SB01 due to a lack of groundwater present (dry borehole) and a groundwater sample was not collected.</p> <p>PRL 12 is located within a grassy/woody area, located behind a parking lot and adjacent to a roadway. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system. One surface water and one sediment sample were collected for the area but not evaluated for this RRSE.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Soil Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 12

AFFF Release Area #: AFFF 12

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00105	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 10A - PRL 13	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	<p>Potential AFFF releases may have occurred at the concrete ramp located in the northern portion of the Base and drained towards several surrounding outfalls. This includes Outfall 010A located in the central northern portion of the PANGB.</p>
Brief Description of Pathways:	<p>Groundwater was 1.0 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater was detected at the SW PANGB boundary downgradient of PRLs 1, 2, 3, 4, 5, 7, 13, 14, 19 and 21 and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 13 is located within a grassy/woody area between two taxiways, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 13

AFFF Release Area #: AFFF 13

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0604	0.04	1.5
PFOA	0.0133	0.04	0.3
PFBS	0.00286	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	1.8
-----------	-----------	-----------------------------------	-----

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	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 Pittsburgh IAP ANGB

Site ID: PRL 13

AFFF Release Area #: AFFF 13

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00453	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Soil
Site Name and ID:	Stormwater Outfall 10B,2 - PRL 14	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary

Brief Site Description:	<p>Potential AFFF releases may have occurred at the concrete ramp located in the northern portion of the Base and drained towards several surrounding outfalls. This includes Outfall 010B,2 located in the central northern portion of the PANGB.</p>
Brief Description of Pathways:	<p>Temporary monitoring well TW14 was not installed in boring 14SB01 due to shallow refusal and a lack of groundwater after two attempts to offset the boring. A groundwater sample was unable to be collected.</p> <p>PRL 14 is located within a grassy/woody area between two taxiways, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Soil Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 14

AFFF Release Area #: AFFF 14

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOA	0.000294	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater
Site Name and ID:	Stormwater Outfall 015 - PRL 15	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>Potential AFFF releases may have occurred at the concrete ramp located in the northern portion of the Base and drained towards several surrounding outfalls. There are several outfalls that receive drainage from the concrete ramp. This includes Outfall 015 located just west of the northern concrete ramp at the PANGB.</p> <p>Surface soil samples were collected at this location but were non-detect.</p>
Brief Description of Pathways:	<p>Groundwater was 9.0 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 15 is located within a grassy/woody area between two taxiways, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geotrack® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 15

AFFF Release Area #: AFFF 15

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.00254	0.04	0.1
PFOA	0.0796	0.04	2.0
PFBS	0.0031	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	2.1
-----------	-----------	-----------------------------------	-----

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	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 Pittsburgh IAP ANGB

Site ID: PRL 15

AFFF Release Area #: AFFF 15

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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 010B,1 - PRL 16	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	<p>Potential AFFF releases may have occurred at the concrete ramp located in the northern portion of the Base and drained towards several surrounding outfalls. There are several outfalls that receive drainage from the concrete ramp. This includes Outfall 010B,1 located just west of the northern concrete ramp at the PANGB.</p>
Brief Description of Pathways:	<p>Groundwater was 1.2 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 16 is located within a grassy/woody area between two taxiways, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 16

AFFF Release Area #: AFFF 16

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0111	0.04	0.3
PFOA	0.0304	0.04	0.8
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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ANGB

Site ID: PRL 16

AFFF Release Area #: AFFF 16

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00229	0.126	0.0
PFOA	0.00124	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 010C - PRL 17	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	<p>Potential AFFF releases may have occurred at the concrete ramp located in the northern portion of the Base and drained towards several surrounding outfalls. There are several outfalls that receive drainage from the concrete ramp. This includes Outfall 010C located just southwest of the northern concrete ramp at the PANGB.</p>
Brief Description of Pathways:	<p>Groundwater 8.8 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 17 is located within a grassy/woody area adjacent to a taxiway, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 17

AFFF Release Area #: AFFF 17

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0143	0.04	0.4
PFOA	0.06	0.04	1.5
PFBS	0.0106	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	1.9
-----------	-----------	-----------------------------------	-----

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 Pittsburgh IAP ANGB

Site ID: PRL 17

AFFF Release Area #: AFFF 17

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0058	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 010D - PRL 18	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	<p>Potential AFFF releases may have occurred at the concrete ramp located in the northern portion of the Base and drained towards several surrounding outfalls. There are several outfalls that receive drainage from the concrete ramp. This includes Outfall 010D located just southwest of the northern concrete ramp at the PANGB.</p>
Brief Description of Pathways:	<p>Groundwater was 11.8 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 18 is located within a grassy/woody area adjacent to a taxiway, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 18

AFFF Release Area #: AFFF 18

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0179	0.04	0.4
PFOA	0.0261	0.04	0.7
PFBS	0.0122	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	1.1
-----------	-----------	-----------------------------------	-----

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 Pittsburgh IAP ANGB

Site ID:PRL 18

AFFF Release Area #: AFFF 18

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00372	0.126	0.0
PFOA	0.000298	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 009 - PRL 19	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>This outfall is located below and downgradient of the former WWTP leach field. According to the Base EM, AFFF potentially reached the area near this outfall when foam from a historical AFFF release to the sanitary lines was stirred up and came out of the manhole located directly above this area. This PRL has been added at the suggestion of the Base EM.</p>
Brief Description of Pathways:	<p>Groundwater was 2.0 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater was detected at the SW PANGB boundary downgradient of PRLs 1, 2, 3, 4, 5, 7, 13, 14, 19 and 21 and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 19 is located within a grassy area, and adjacent to a roadway. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geotrack® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 19

AFFF Release Area #: AFFF 19

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	2.22	0.04	55.5
PFOA	0.281	0.04	7.0
PFBS	0.119	0.602	0.2

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	62.7
-----------	-----------	-----------------------------------	-------------

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

CHF Value	CHF VALUE	M
-----------	------------------	----------

Migratory Pathway Factor

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

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	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 Pittsburgh IAP ANGB

Site ID: PRL 19

AFFF Release Area #: AFFF 19

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00494	0.126	0.0
PFOA	0.000427	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 013 - PRL 20	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>This outfall is in a low-lying area, downgradient and close to the area marked as the Former FD Equipment Testing Area. It is possible that AFFF used in the equipment testing area may have migrated to the Outfall 013 area. This PRL has been added at the suggestion of the Base EM.</p>
Brief Description of Pathways:	<p>Groundwater was 10.1 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater, exceeding the HA is likely migrating off PANGB at the northwestern boundary from PRLs 6, 8 and 20. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 20 is located within a heavily woody area, just north of the installation boundary, and adjacent to a Pittsburgh Int'l Airport (PIA) taxiway. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geotrack® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 20

AFFF Release Area #: AFFF 20

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	2.4	0.04	60.0
PFOA	0.235	0.04	5.9
PFBS	0.063	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	66.0
-----------	-----------	-----------------------------------	-------------

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	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 Pittsburgh IAP ANGB

Site ID: PRL 20

AFFF Release Area #: AFFF 20

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0152	0.126	0.1
PFOA	0.00043	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ANGB	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Storm Drain Line Outfall 004 - PRL 21	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>According to the Base EM, at some time in the past, the storm drain line for Outfall 004 was constructed as an above ground half-pipe in the grassy area between buildings 110, 120 and 103. Potential historical releases of AFFF (from Hangars 302 and 304) that entered this drain line could have overflowed the exposed half-pipe located in this area and infiltrated into the surrounding soil. This drain line has since been converted to a buried, fully enclosed drain pipe. This PRL was added at the suggestion of the Base EM.</p>
Brief Description of Pathways:	<p>Groundwater was 2.1 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. PFOS and PFOA in groundwater was detected at the SW PANGB boundary downgradient of PRLs 1, 2, 3, 4, 5, 7, 13, 14, 19 and 21 and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 21 is located within a grassy area, and adjacent to a roadway. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geotrack® (21 July 2015), lists three water wells and two oil/gas wells within a 1-mile radius of the PANGB. The three water wells appear on the state database, and one of them located to the SW of the PANGB is listed as a domestic well. Based on the SW groundwater flow direction this well appears to be hydraulically downgradient of the PANGB. There are currently no groundwater wells at the PANGB. There are 18 public supply wells located within four miles of PANGB at depths of approximately 200 ft. bgs. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River, and from an alluvium deposit of sand and gravel in the flood plain of, and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PANGB, which are located hydraulically upgradient of the PANGB.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ANGB

Site ID: PRL 21

AFFF Release Area #: AFFF 21

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.212	0.04	5.3
PFOA	0.159	0.04	4.0
PFBS	0.0135	0.602	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	9.3
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value	CHF VALUE		M
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ANGB

Site ID: PRL 21

AFFF Release Area #: AFFF 21

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0112	0.126	0.1
PFOA	0.00329	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Hangar 416 Maint. Dock Fuel System - PRL 22	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>Constructed in 1984, Hangar 416 (PRL 22) was equipped with an AFFF FSS and has since converted to HEF in 2009/2010. There are two known releases of AFFF at this location. On May 21, 1995 the FSS activated and 50 gallons of AFFF was discharged inside the hangar. The AFFF was hosed down into the sanitary sewer drains. On February 22, 1999 a FSS malfunction released two gallons of 6% AFFF mixture which entered the sanitary sewer drain in the mechanical room. To repair the malfunction, the entire AFFF mixture had to be released into the sanitary sewer system which was later observed seeping from a manhole in the parking lot of Building 120 several hundred yards away (downstream) from the aircraft hangars. The mixture overflowed from the sanitary sewer manhole and flowed through the parking lot into a stormwater catch basin and subsequently into the unnamed tributary of Meeks Creek which is adjacent to the PARS. It is estimated that no more than two gallons of AFFF reached the adjacent tributary due to the PARS's spill response efforts.</p>
Brief Description of Pathways:	<p>Groundwater was 11.8 ft. bgs and flows to the S-SW. Groundwater direction was not delineated during SI. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PANGB. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River. PRL 18 is located within a grassy/woody area adjacent to a taxiway, so infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 22

AFFF Release Area #: AFFF 22

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.127	0.04	3.2
PFOA	0.0334	0.04	0.8
PFBS	0.0201	0.602	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	4.0
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		M
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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: Pittsburgh IAP ARS

Site ID: PRL 22

AFFF Release Area #: AFFF 22

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00367	0.126	0.0
PFOA	0.00406	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Air Reserve Station (ARS)	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Hangar 417 ISO Dock/HQ Maintenance - PRL 23	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>Hangar 417 (PRL 23) was constructed in 1984 and was equipped with an AFFF FSS until 2009/2010 when the system was converted to HEF. There were no known releases of AFFF at this hangar. During the conversion from AFFF to HEF at Hangars 416 and 417, approximately 4,800 gallons of AFFF was given to the Allegheny County Fire Department (ACFD).</p>
Brief Description of Pathways:	<p>Groundwater was 6.5 ft. bgs and flows N-NE, based on data from ERM 1990 report. Groundwater direction was not delineated during SI. BW-05, downgradient of PRLs 22, 23, and 27 did not have groundwater concentrations of PFOS and PFOA above SI criteria. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PARS. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 23 is a Hangar, so infiltration is minimal, depending on the concrete condition. The floor drains are connected to the sanitary sewer. Runoff leaving the hangar could migrate into parking lot and onto concrete apron, or reach any grassy areas around the hangar, and infiltrate with precipitation into the soil, to possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 23

AFFF Release Area #: AFFF 23

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0539	0.04	1.3
PFOA	0.889	0.04	22.2
PFBS	0.00308	0.602	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	23.6
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		M
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ARS

Site ID: PRL 23

AFFF Release Area #: AFFF 23

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0104	0.126	0.1
PFOA	0.0017	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Building 120 Parking Lot - PRL 24	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	The Building 120 (PRL 24) parking lot was impacted by AFFF during the February 1999 release at Hangar 416 (See PRL 22).
Brief Description of Pathways:	<p>Groundwater was 6.5 ft. bgs and flows N-NE, based on data from ERM 1990 report. Groundwater direction was not delineated during SI. PFOA and PFOS in groundwater exceeding the HA, was detected at the eastern boundary PARS wells downgradient of PRLs 24, 25, 26, 27, 30 and 31, and is likely migrating off Base. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PARS. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 24 is paved, so infiltration is minimal, depending on the asphalt condition. Runoff could migrate to the grassy areas surrounding PRL 24, and infiltrate with precipitation into the soil, to possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 24

AFFF Release Area #: AFFF 24

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0383	0.04	1.0
PFOA	0.028	0.04	0.7
PFBS	0.028	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	1.7
-----------	-----------	-----------------------------------	-----

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

CHF Value	CHF VALUE	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 Pittsburgh IAP ARS

Site ID: PRL 24

AFFF Release Area #: AFFF 24

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00781	0.126	0.1
PFOA	0.00039	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Bldg 114-Former POL Area - PRL 25	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>The former petroleum oil and lubricant (POL) area, located south of current Building 114, was constructed in 1953 and was operational until the fall of 1998. JP-4 was stored in two 25,000-gal underground storage tanks (USTs) and lubrication oil was stored in one 5,000-gallon UST. On 27 December 1991, a fuel truck spilled about 20 gal of fuel. The ACFD responded, sprayed foam (presumably AFFF) onto the area, then hosed the mixture into the OWS. On June 12, 1992 in the diked area of the P-118 tank, ~6" of standing JP-4 was discovered. ACFD responded and sprayed foam (presumably AFFF) onto the area. Booms were placed downstream of Outfall 165, and a vacuum truck was called to the site, and removed 4,332 gal of fuel/foam/water from the diked area. During IRP activities, this area was excavated, and tanks were removed in November 1998. Soil excavations extended beneath the bedrock surface and the open excavations quickly filled with groundwater. Site remediation also included repair of a French drain, backfilling with coarse stone, and topsoil placement. This is now a grassy area immediately adjacent to Defense Avenue.</p>
Brief Description of Pathways:	<p>Groundwater was 4.1 ft. bgs and flows N-NE, based on data from ERM 1990 report. Groundwater direction was not delineated during SI. BW-05, downgradient of PRLs 22, 23, and 27 did not have groundwater concentrations of PFOS and PFOA above SI criteria. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PARS. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 25 is paved, so infiltration is minimal, depending on the asphalt condition. Runoff could migrate to the grassy areas around PRL 25, and infiltrate with precipitation into the soil, to possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geoscheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 25

AFFF Release Area #: AFFF 25

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.25	0.04	6.3
PFOA	0.146	0.04	3.6
PFBS	0.00921	0.602	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	9.9
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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ARS

Site ID: PRL 25

AFFF Release Area #: AFFF 25

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0121	0.126	0.1
PFOA	0.000316	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Bldg 306-Transportation - PRL 26	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	<p>Building 306 (PRL 26) is the only building on-PARS that currently houses AFFF; PARS personnel estimate the stored volume to be 50 gallons. There were no documented releases of AFFF at this building.</p>
Brief Description of Pathways:	<p>Groundwater was 8.6 ft. bgs and flows N-NE, based on data from ERM 1990 report. Groundwater direction was not delineated during SI. BW-05, downgradient of PRLs 22, 23, and 27 did not have groundwater concentrations of PFOS and PFOA above SI criteria. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PARS. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 26 is paved, so infiltration is minimal, depending on the asphalt condition. Runoff could migrate to the grassy/woody areas around PRL 26, and infiltrate with precipitation into the soil, to possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would most likely have limited access to contaminated soil due to it being underneath asphalt in which it needed to be drilled approximately 1.0 feet before actual soil was encountered. This pathway is considered confined unless there is some sort of construction activities by commercial/industrial workers that would disturb the asphalt. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 26

AFFF Release Area #: AFFF 26

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.00381	0.04	0.1
PFOA	0.0277	0.04	0.7
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.8
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		L
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ARS

Site ID: PRL 26

AFFF Release Area #: AFFF 26

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.000292	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Soil
Site Name and ID:	Concrete Apron Area - PRL 27	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary

Brief Site Description:	<p>Although there are no records or PARS personnel accounts of AFFF usage, the concrete ramp/apron area (PRL 27) located along the western boundary of the PARS and adjacent to the hangars may have been impacted by AFFF, due to the historical presence of aircraft.</p>
Brief Description of Pathways:	<p>Temporary monitoring well TW27 was not installed due to shallow refusal and lack of ground water at two attempted locations. As a result, a groundwater sample was unable to be collected.</p> <p>PRL 27 is a concrete apron, so infiltration is minimal, depending on the condition of the concrete. There is no mention of trench drains, so it appears any runoff would reach the grassy areas surrounding the apron, and infiltrate with precipitation into the soil, to possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geospatial@ dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would have limited access to contaminated soil. PRL 27 is within a controlled or restricted frequency of access area. The concrete apron is located adjacent to a taxiway and likely surrounded by a security fence. Most likely receptors are commercial/industrial workers with special permission to be within the restricted area.</p> <p>PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Soil Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 27

AFFF Release Area #: AFFF 27

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00278	0.126	0.0
PFOA	0.000443	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 201 - PRL 28	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>The man-made ditches, culverts and storm sewers route drainage to several industrial and non-industrial stormwater outfalls around the PARS, including non-industrial Outfall 201 (PRL 28). This outfall ultimately discharges to Meeks Creek. This outfall received stormwater potentially impacted with AFFF from the PARS PRLs previously listed in this RRSE. Outfall 201 is located off-PARS property.</p>
Brief Description of Pathways:	<p>Groundwater was 11.7 ft. bgs and flows N-NE, based on data from ERM 1990 report. Groundwater direction was not delineated during SI. BW-05, downgradient of PRLs 22, 23, and 27 did not have groundwater concentrations of PFOS and PFOA above SI criteria. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PARS. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 28 is located within a heavily woody area, just east of the installation boundary, and adjacent to I-376. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 28

AFFF Release Area #: AFFF 28

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	1.39	0.04	34.7
PFOA	0.0254	0.04	0.6
PFBS	0.0107	0.602	0.0
CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	35.4
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value	CHF VALUE		M
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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 Pittsburgh IAP ARS

Site ID: PRL 28

AFFF Release Area #: AFFF 28

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.000612	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
Identified	Receptors identified that have access to contaminated soil		H
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).		H
Soil Category			MEDIUM

Site Background Information

Installation:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater
Site Name and ID:	Stormwater Outfall 181A - PRL 29	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>The man-made ditches, culverts and storm sewers route drainage to several industrial and non-industrial stormwater outfalls around the PARS, including non-industrial Outfall 181A (PRL 29). This outfall ultimately discharges to Meeks Creek. This outfall received stormwater potentially impacted with AFFF from the PARS PRLs previously listed in this RRSE.</p> <p>Surface soil samples were collected at this location but were non-detect.</p>
Brief Description of Pathways:	<p>Groundwater was 8.6 ft. bgs and flows N-NE, based on data from ERM 1990 report. Groundwater direction was not delineated during SI. BW-05, downgradient of PRLs 22, 23, and 27 did not have groundwater concentrations of PFOS and PFOA above SI criteria. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PARS. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>All surface soil samples were non-detect. PRL 29 is located within a heavily woody area, just east of the installation boundary, and adjacent to I-376.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors most likely have limited access, due to the sample concentrations being non-detect. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 29

AFFF Release Area #: AFFF 29

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0803	0.04	2.0
PFOA	0.0222	0.04	0.6
PFBS	0.0062	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	2.6
-----------	-----------	-----------------------------------	-----

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	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 Pittsburgh IAP ARS

Site ID: PRL 29

AFFF Release Area #: AFFF 29

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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater
Site Name and ID:	Stormwater Outfall 165 - PRL 30	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary

Brief Site Description:	<p>The man-made ditches, culverts and storm sewers route drainage to several industrial and non-industrial stormwater outfalls around the PARS, including non-industrial Outfall 165 (PRL 30). This outfall ultimately discharges to Meeks Creek. This outfall received stormwater potentially impacted with AFFF from the PARS PRLs previously listed on this RRSE.</p>
Brief Description of Pathways:	<p>Groundwater was 6.5 ft. bgs and flows N-NE, based on data from ERM 1990 report. Groundwater direction was not delineated during SI. BW-05, downgradient of PRLs 22, 23, and 27 did not have groundwater concentrations of PFOS and PFOA above SI criteria. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PARS. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 30 is located within a heavily woody area, adjacent to a roadway. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation Pittsburgh IAP ARS

Site ID: PRL 30

AFFF Release Area #: AFFF 30

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.103	0.04	2.6
PFOA	0.0335	0.04	0.8
PFBS	0.00633	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	3.4
-----------	-----------	-----------------------------------	------------

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

CHF Value	CHF VALUE	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

Site Background Information

Installation:	Pittsburgh IAP ARS	Date:	10/4/2021
Location (State):	Pennsylvania	Media Evaluated:	Groundwater, Soil
Site Name and ID:	Stormwater Outfall 400 - PRL 31	Phase of Execution (e.g., RI, Record of Decision (ROD)):	N/A
RPM's Name:	Bill Myer	Agreement Status (e.g., Federal Facility Agreement date signed):	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary

Brief Site Description:	<p>The man-made ditches, culverts and storm sewers route drainage to several industrial and non-industrial stormwater outfalls around the PARS, including non-industrial Outfall 400 (PRL 31). This outfall ultimately discharges to Meeks Creek. This outfall received stormwater potentially impacted with AFFF from the PARS PRLs previously listed on this RRSE.</p>
Brief Description of Pathways:	<p>Groundwater was 5.5 ft. bgs and flows N-NE, based on data from ERM 1990 report. Groundwater direction was not delineated during SI. BW-05, downgradient of PRLs 22, 23, and 27 did not have groundwater concentrations of PFOS and PFOA above SI criteria. Groundwater occurs in the overlying unconsolidated alluvial deposits, generally 15-20 ft. thick, and bedrock formations in major stream valleys, including the Ohio River in the vicinity of the PARS. Alluvium generally is permeable and yields moderate to large supplies of water to wells when saturated, as regionally, the major source of groundwater occurs within the surficial deposits in floodplains, primarily along the Ohio and Allegheny Rivers. Groundwater in the shallow alluvial deposits may migrate vertically into the upper weathered bedrock and/or migrate horizontally to discharge to small tributary streams of the Ohio River.</p> <p>PRL 31 is located within a heavily woody area, adjacent to a roadway. Infiltration into the soil due to precipitation is likely, which then could possibly become part of the shallow groundwater system.</p>
Brief Description of Receptors:	<p>The EDR Radius Map™ Report with Geocheck® dated 21 September 2015, lists 14 water wells within a one-mile radius of the PARS, with four of the wells listed as domestic, and all located to the NE of the PARS. Groundwater from PARS flows to the NE. Based on the NE groundwater flow direction these wells appear to be hydraulically downgradient from the PARS. There are currently no drinking water or supply wells at the PARS. The MTMA provides drinking water to the PANGB, PARS, and the nearby community. The drinking water source is obtained from the Ohio River and from an alluvium deposit of sand and gravel in the flood plain of and beneath the river. A radial well, two vertical wells and a surface water intake are located along the southern bank of the Ohio River approx. four miles north of the PARS, which are located hydraulically downgradient of the PARS.</p> <p>Surface soil receptors would most likely have controlled or restricted frequency of access to contaminated soil, such as commercial/industrial workers. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.</p>

Groundwater Worksheet

Installation: Pittsburgh IAP ARS

Site ID: PRL 31

AFFF Release Area #: AFFF 31

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.0369	0.04	0.9
PFOA	0.00472	0.04	0.1
PFBS	0.00698	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	1.1
-----------	-----------	-----------------------------------	-----

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: Pittsburgh IAP ARS

Site ID: PRL 31

AFFF Release Area #: AFFF 31

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.000883	0.126	0.0
PFOA	0.000579	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
<u>Migratory Pathway Factor</u>			
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
<u>Receptor Factor</u>			
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