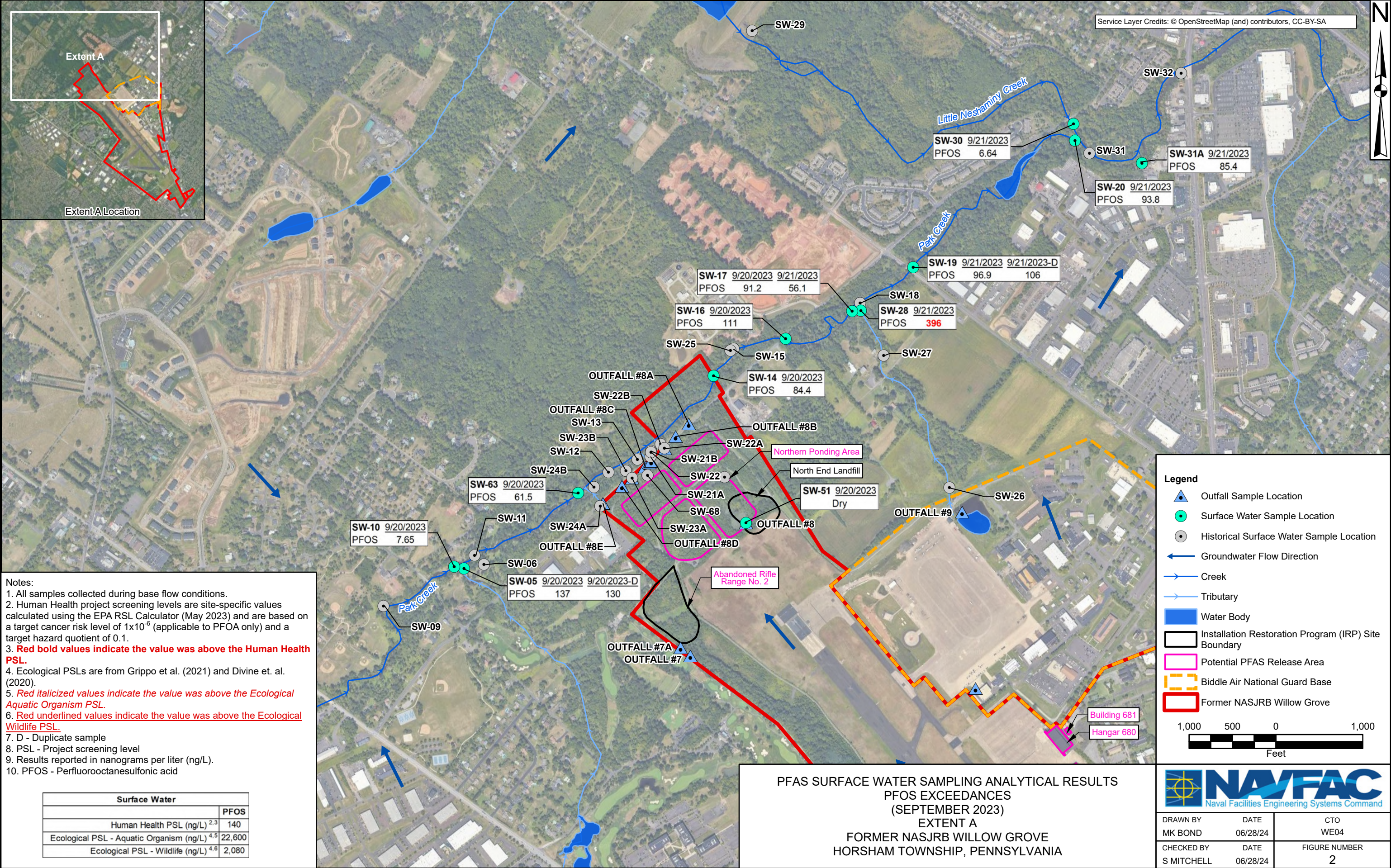


SURFACE WATER SAMPLING AREAS  
EXTENT LOCATION MAP  
FORMER NASJRB WILLOW GROVE  
HORSHAM TOWNSHIP, PENNSYLVANIA



DRAWN BY MK BOND	DATE 06/28/24	CTO WE04
CHECKED BY S MITCHELL	DATE 06/28/24	FIGURE NUMBER 1









Notes:

1. All samples collected during base flow conditions.
2. Human Health project screening levels are site-specific values calculated using the EPA RSL Calculator (May 2023) and are based on a target cancer risk level of  $1 \times 10^{-6}$  (applicable to PFOA only) and a target hazard quotient of 0.1.
3. **Red bold values indicate the value was above the Human Health PSL.**
4. Ecological PSLs are from Grippo et al. (2021) and Divine et. al. (2020).
5. **Red italicized values indicate the value was above the Ecological Aquatic Organism PSL.**
6. **Red underlined values indicate the value was above the Ecological Wildlife PSL.**
7. D - Duplicate sample
8. PSL - Project screening level
9. Results reported in nanograms per liter (ng/L).
10. PFOS - Perfluorooctanesulfonic acid

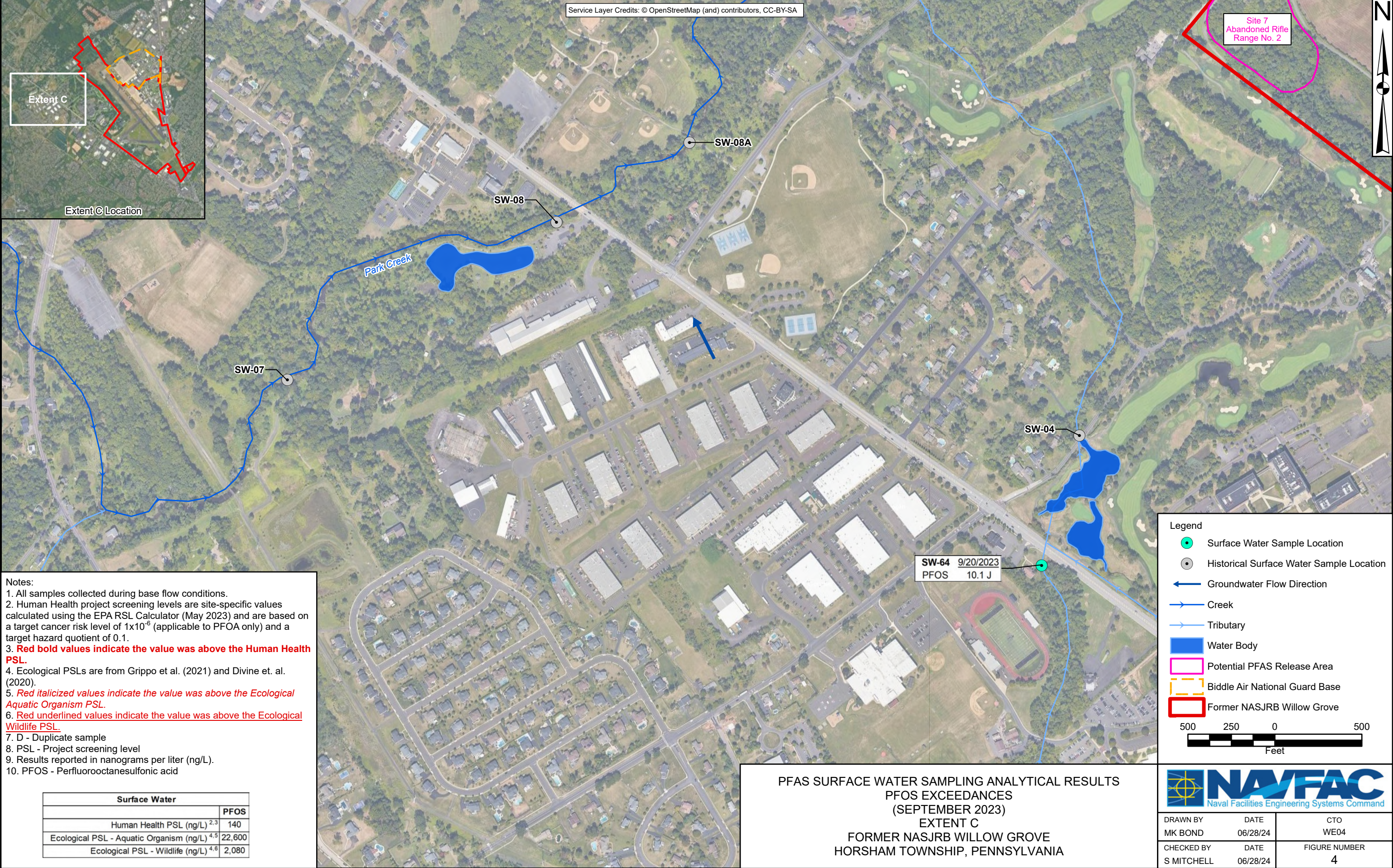
Surface Water	
	PFOS
Human Health PSL (ng/L) <sup>2,3</sup>	140
Ecological PSL - Aquatic Organism (ng/L) <sup>4,5</sup>	22,600
Ecological PSL - Wildlife (ng/L) <sup>4,6</sup>	2,080

PFAS SURFACE WATER SAMPLING ANALYTICAL RESULTS  
PFOS EXCEEDANCES  
(SEPTEMBER 2023)  
EXTENT B  
FORMER NASJRB WILLOW GROVE  
HORSHAM TOWNSHIP, PENNSYLVANIA

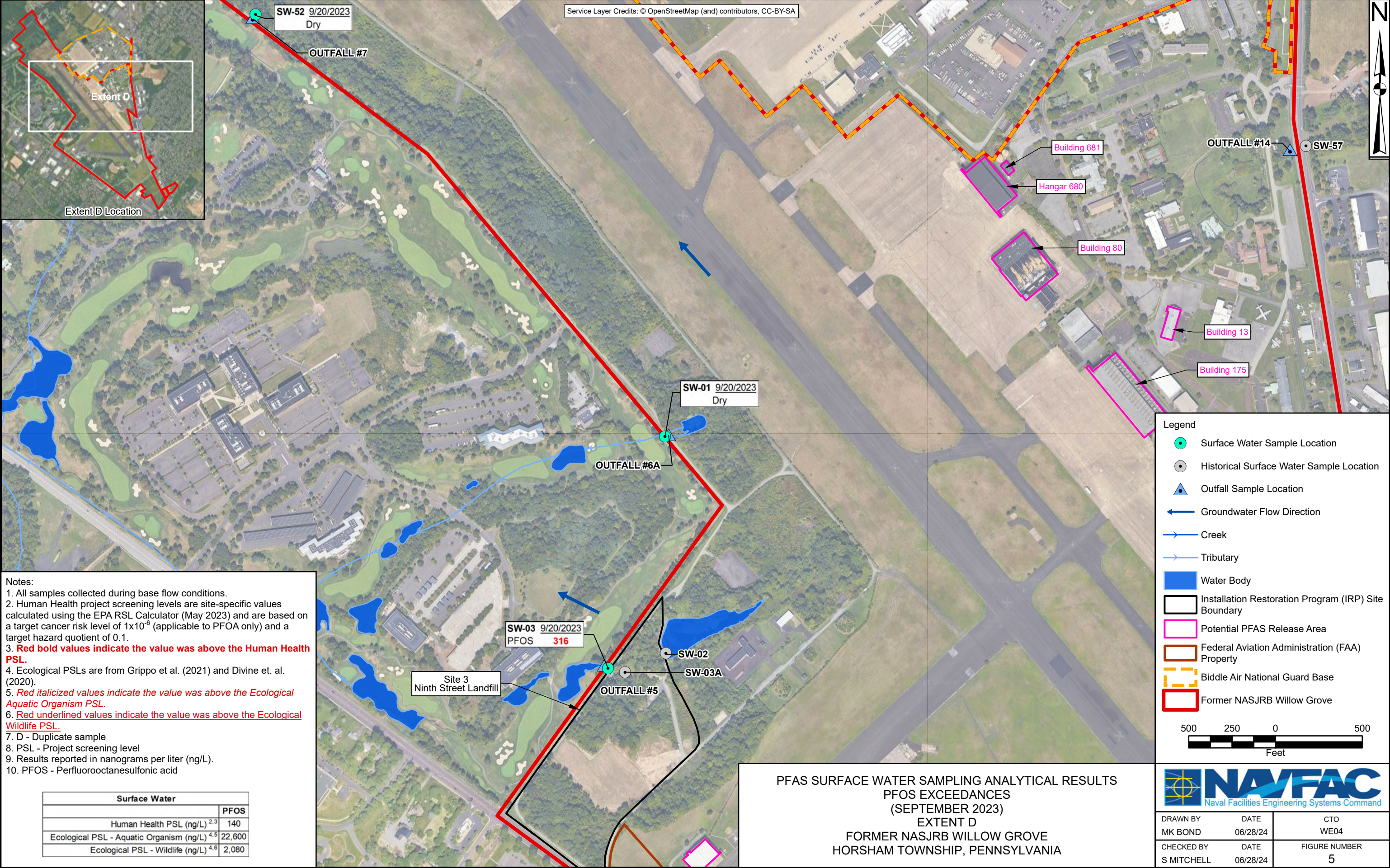


DRAWN BY MK BOND	DATE 06/28/24	CTO WE04
CHECKED BY S MITCHELL	DATE 06/28/24	FIGURE NUMBER 3

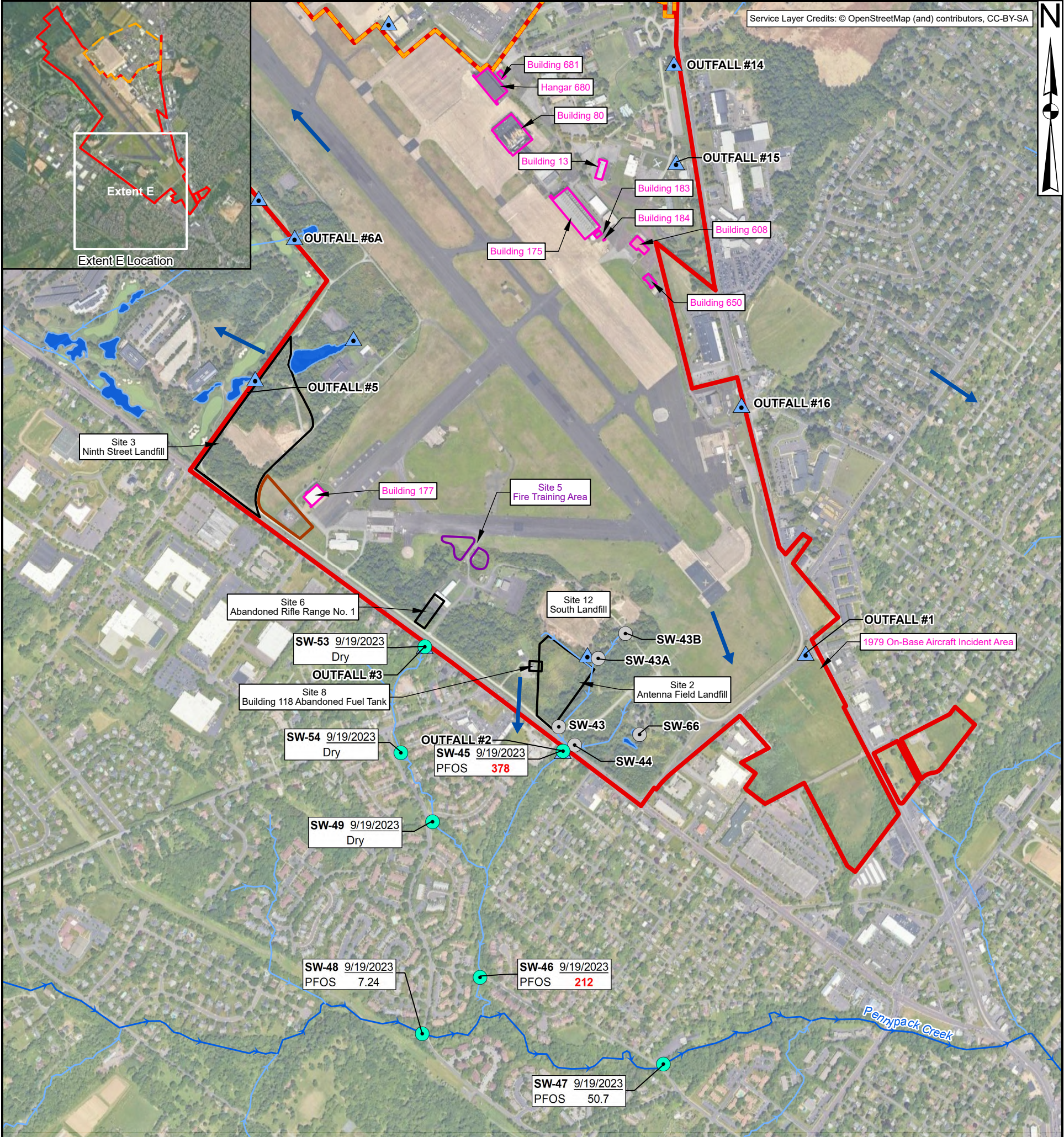












Notes:

1. All samples collected during base flow conditions.
2. Human Health project screening levels are site-specific values calculated using the EPA RSL Calculator (May 2023) and are based on a target cancer risk level of  $1 \times 10^{-6}$  (applicable to PFOA only) and a target hazard quotient of 0.1.
3. **Red bold values indicate the value was above the Human Health PSL.**
4. Ecological PSLs are from Grippo et al. (2021) and Divine et. al. (2020).
5. *Red italicized values indicate the value was above the Ecological Aquatic Organism PSL.*
6. Red underlined values indicate the value was above the Ecological Wildlife PSL.
7. D - Duplicate sample
8. PSL - Project screening level
9. Results reported in nanograms per liter (ng/L).
10. PFOS - Perfluorooctanesulfonic acid


Surface Water	
	PFOS
Human Health PSL (ng/L) <sup>2,3</sup>	140
Ecological PSL - Aquatic Organism (ng/L) <sup>4,5</sup>	22,600
Ecological PSL - Wildlife (ng/L) <sup>4,6</sup>	2,080

PFAS SURFACE WATER SAMPLING ANALYTICAL RESULTS  
PFOS EXCEEDANCES  
(SEPTEMBER 2023)  
EXTENT E  
FORMER NASJRB WILLOW GROVE  
HORSHAM TOWNSHIP, PENNSYLVANIA

Legend

- Surface Water Sample Location
- Historical Surface Water Sample Location
- ▲ Outfall Sample Location
- Groundwater Flow Direction
- Creek
- Tributary
- Water Body
- Installation Restoration Program (IRP) Site Boundary
- Potential PFAS Release Area
- Confirmed PFAS Release Area
- Federal Aviation Administration (FAA) Property
- Biddle Air National Guard Base
- Former NASJRB Willow Grove

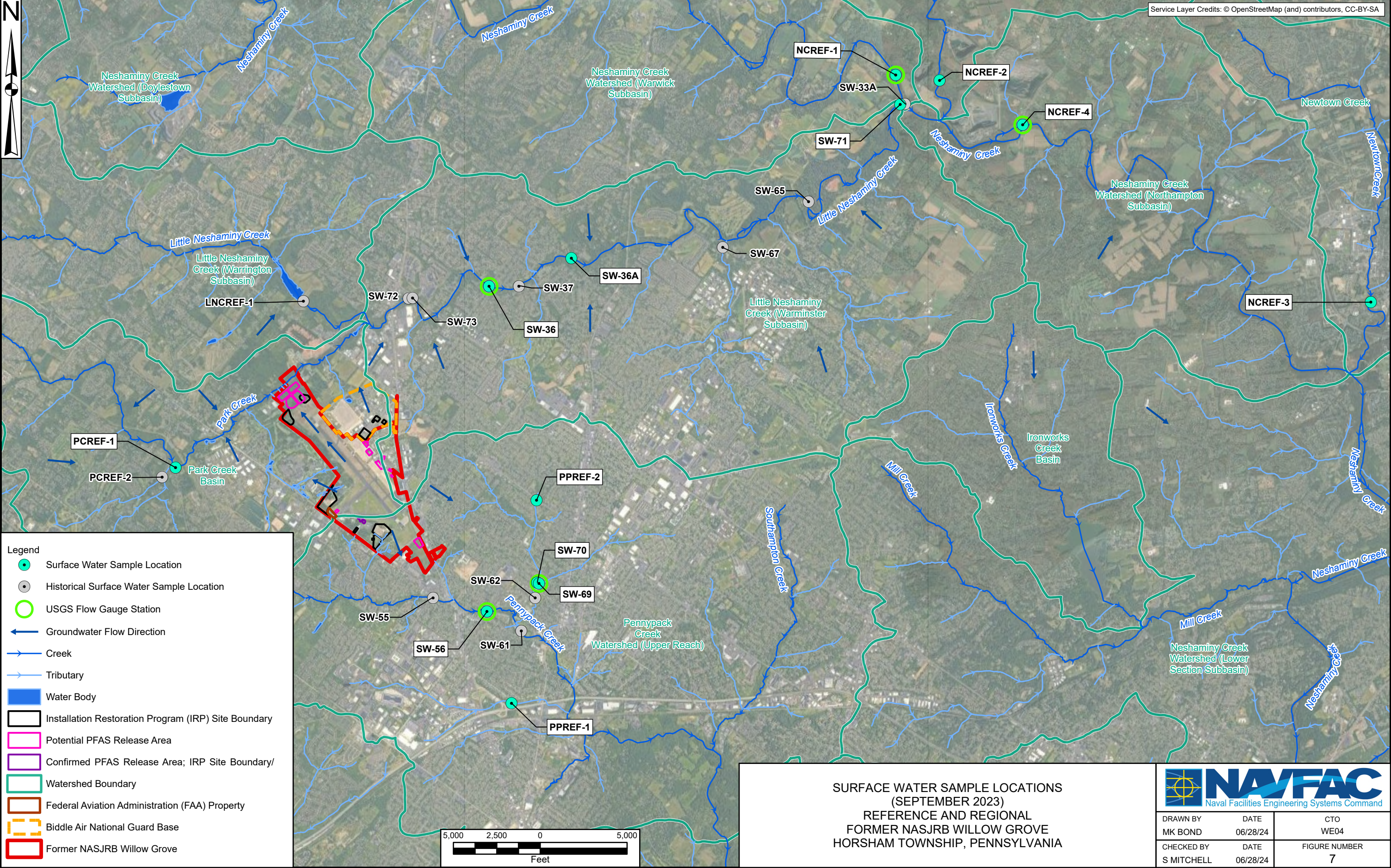
1,000 500 0 1,000  
Feet



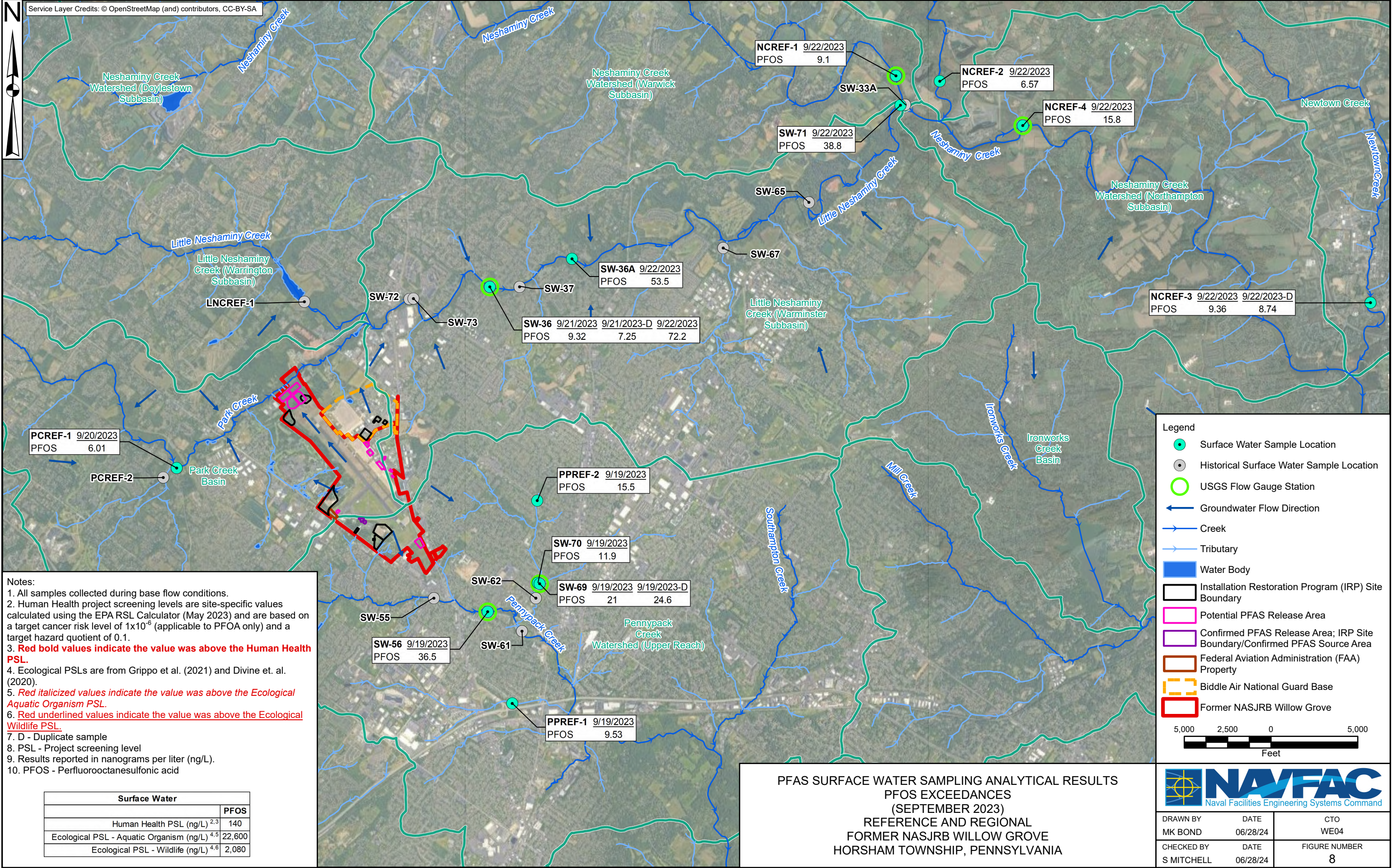
Naval Facilities Engineering Systems Command

DRAWN BY MK BOND	DATE 06/28/24	CTO WE04
CHECKED BY S MITCHELL	DATE 06/28/24	FIGURE NUMBER 6

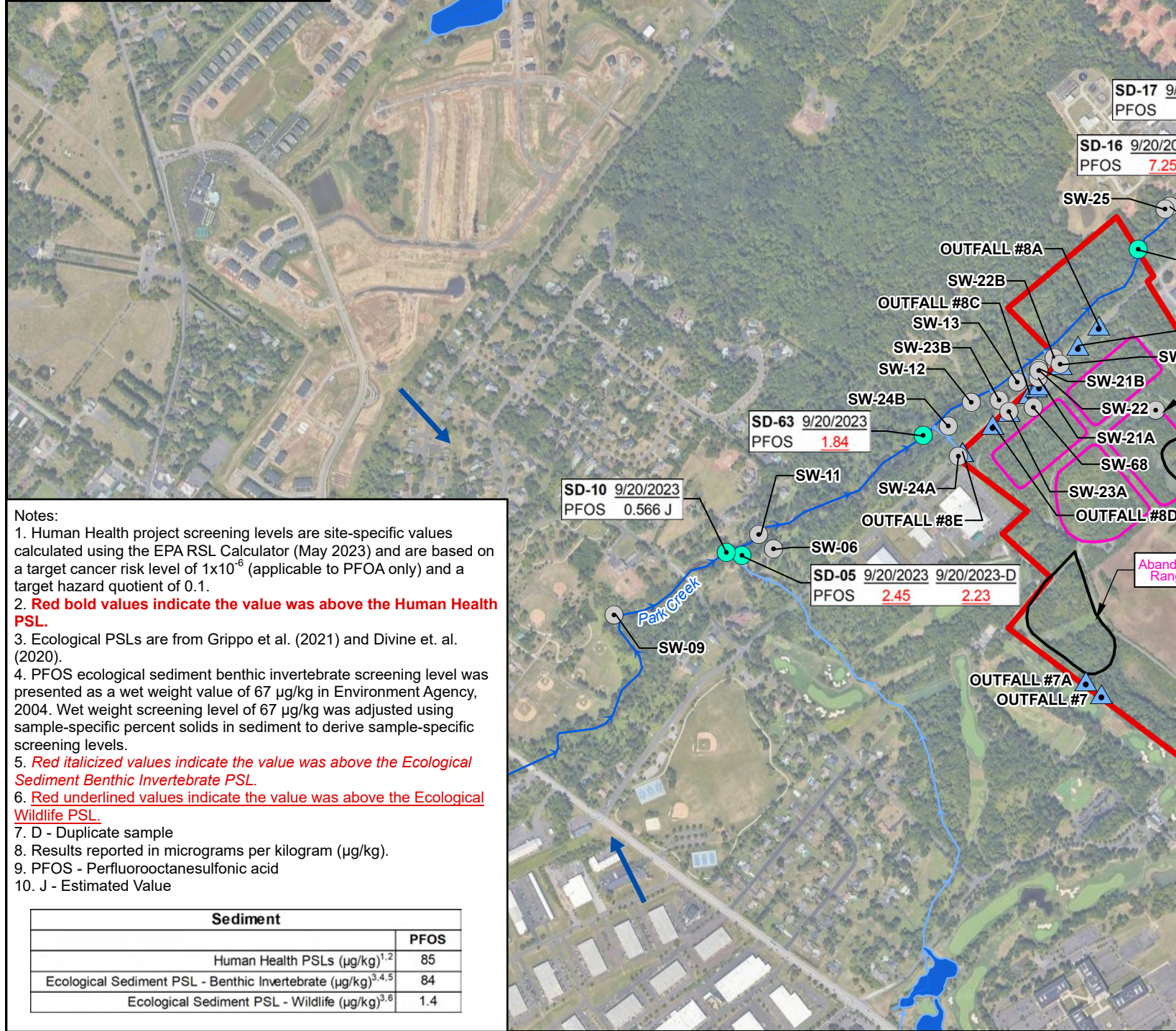


























Sediment		PFOS
Human Health PSLs (µg/kg) <sup>1,2</sup>		
Ecological Sediment PSL - Benthic Invertebrate (µg/kg) <sup>3,4,5</sup>		85
Ecological Sediment PSL - Wildlife (µg/kg) <sup>3,6</sup>		84
		1.4

PFAS SEDIMENT SAMPLING ANALYTICAL RESULTS  
PFOS EXCEEDANCES  
(SEPTEMBER 2023)  
EXTENT A  
FORMER NASJRB WILLOW GROVE  
HORSHAM TOWNSHIP, PENNSYLVANIA


**Legend**

-  Surface Water Sample Location
-  Historical Surface Water Sample Location
-  USGS Station
-  Outfall Sample Location
-  Groundwater Flow Direction
-  Creek
-  Tributary
-  Water Body
-  Installation Restoration Program (IRP) Site Boundary
-  Potential PFAS Release Area
-  Federal Aviation Administration (FAA) Property
-  Biddle Air National Guard Base
-  Former NASJRB Willow Grove

1,000      500      0      1,000

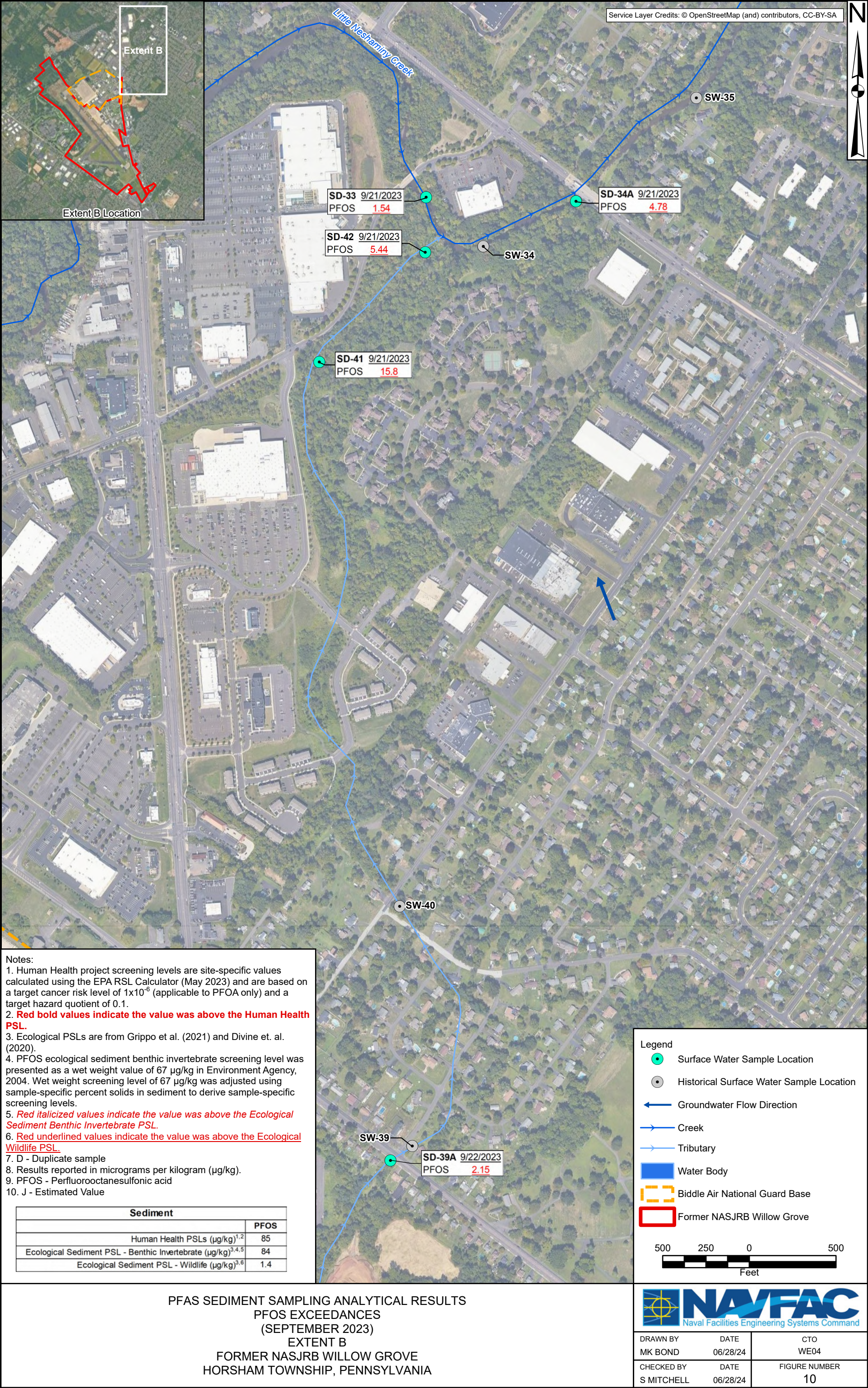


Feet

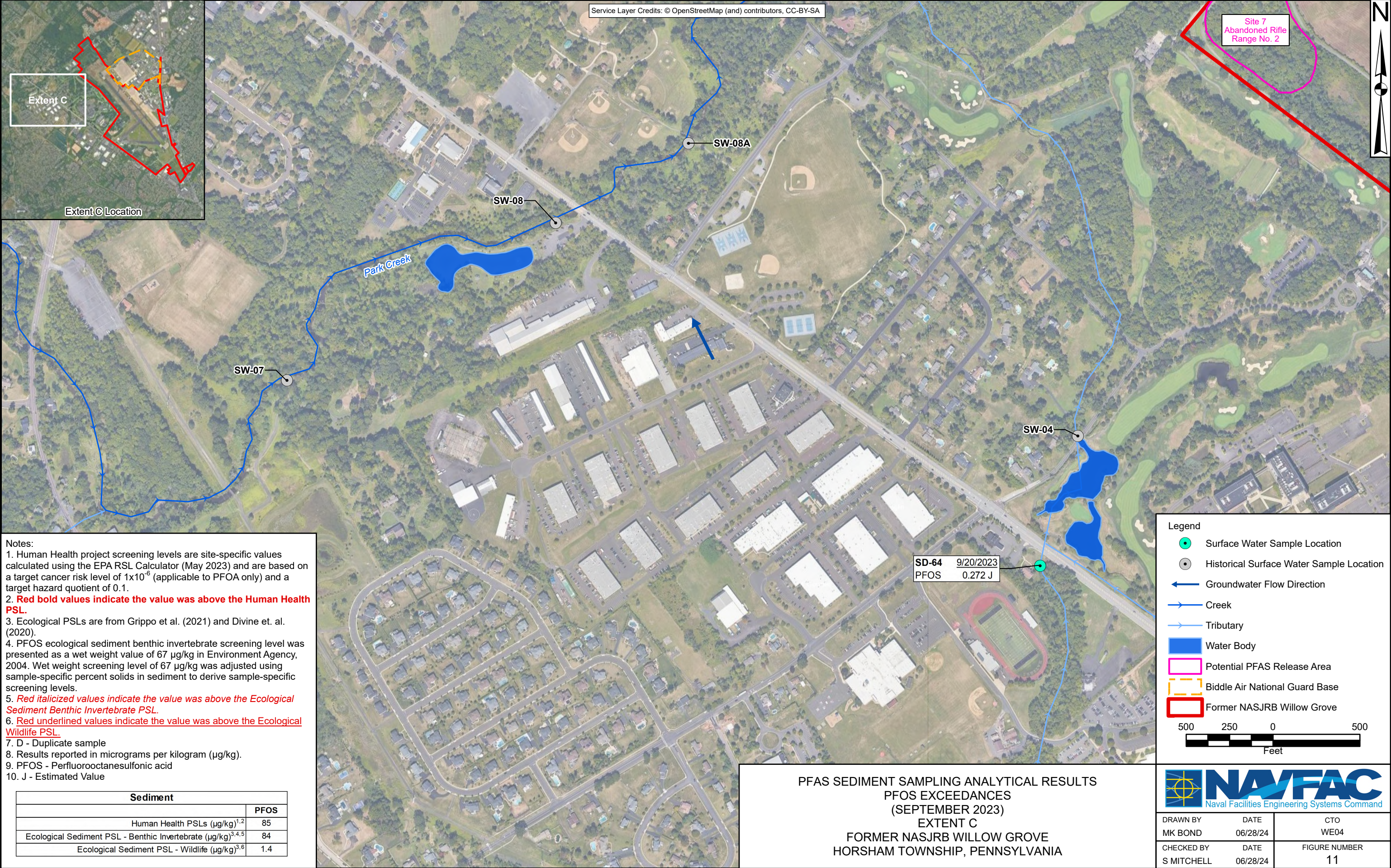


DRAWN BY MK BOND	DATE 06/28/24	CTO WE04
CHECKED BY S MITCHELL	DATE 06/28/24	FIGURE NUMBER 9

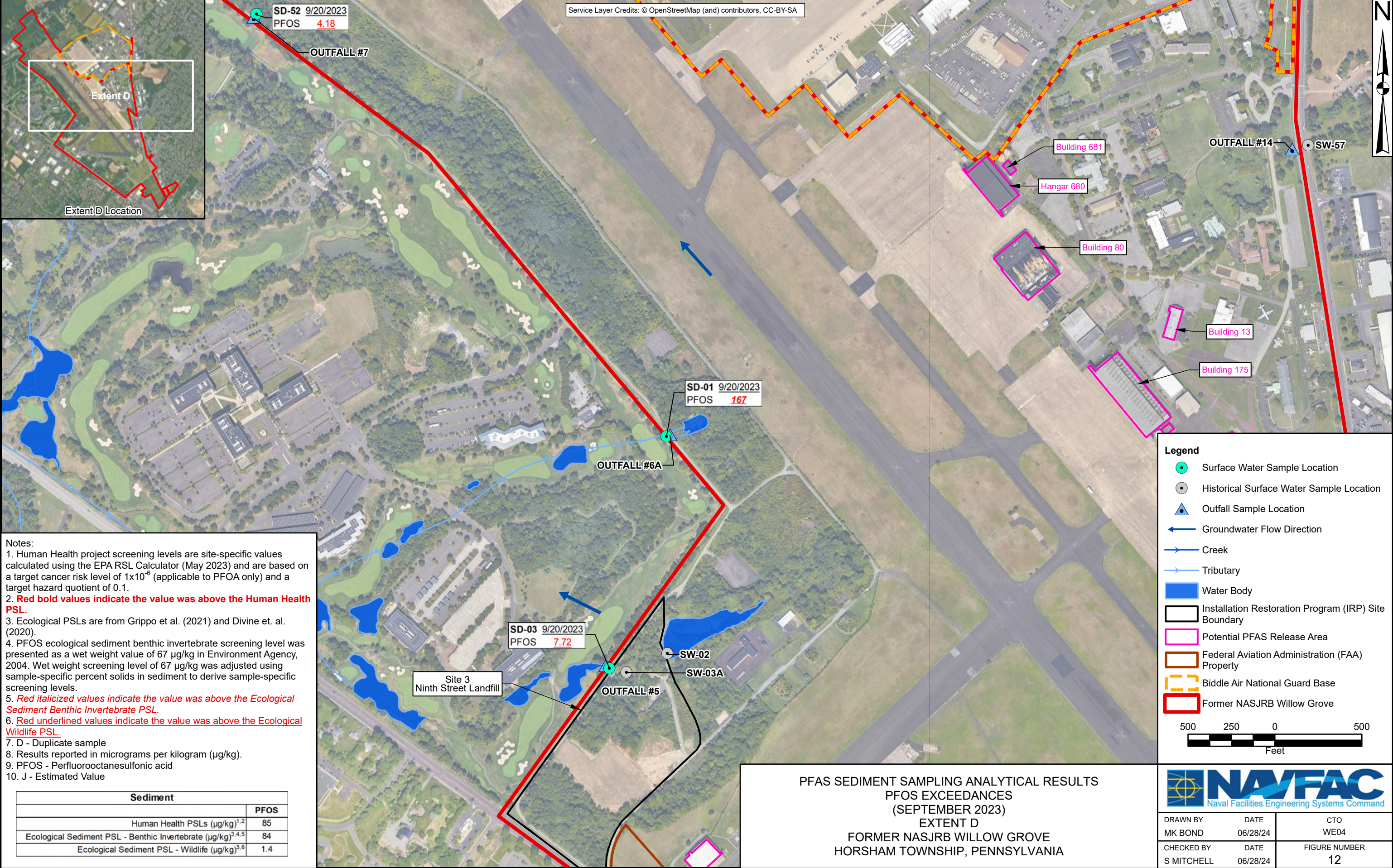




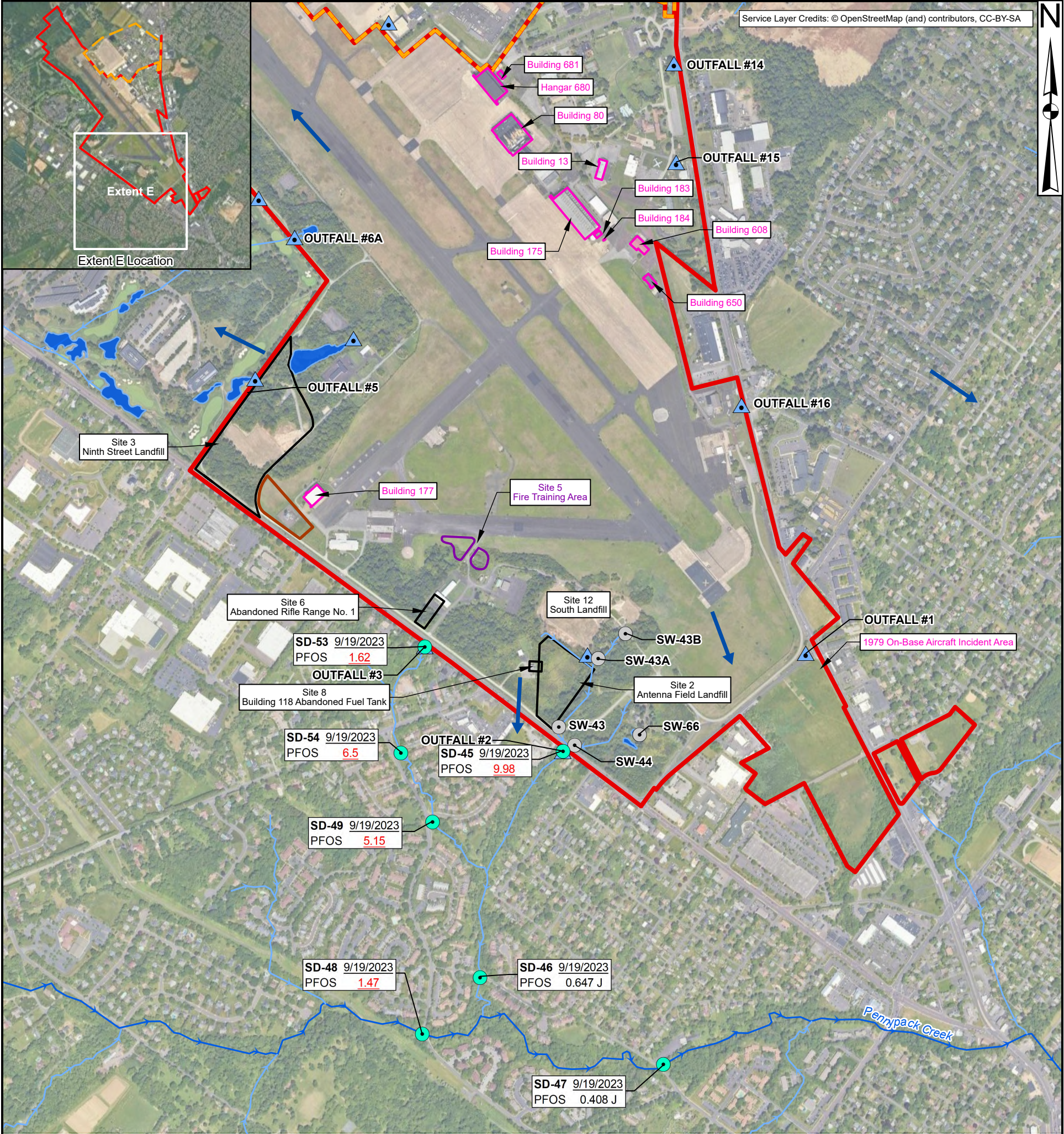












Notes:

1. Human Health project screening levels are site-specific values calculated using the EPA RSL Calculator (May 2023) and are based on a target cancer risk level of  $1 \times 10^{-6}$  (applicable to PFOA only) and a target hazard quotient of 0.1.
2. **Red bold values indicate the value was above the Human Health PSL.**
3. Ecological PSLs are from Grippo et al. (2021) and Divine et. al. (2020).
4. PFOS ecological sediment benthic invertebrate screening level was presented as a wet weight value of  $67 \mu\text{g/kg}$  in Environment Agency, 2004. Wet weight screening level of  $67 \mu\text{g/kg}$  was adjusted using sample-specific percent solids in sediment to derive sample-specific screening levels.
5. **Red italicized values indicate the value was above the Ecological Sediment Benthic Invertebrate PSL.**
6. **Red underlined values indicate the value was above the Ecological Wildlife PSL.**
7. D - Duplicate sample
8. Results reported in micrograms per kilogram ( $\mu\text{g/kg}$ ).
9. PFOS - Perfluorooctanesulfonic acid
10. J - Estimated Value

Sediment	
	PFOS
Human Health PSLs ( $\mu\text{g/kg}$ ) <sup>1,2</sup>	85
Ecological Sediment PSL - Benthic Invertebrate ( $\mu\text{g/kg}$ ) <sup>3,4,5</sup>	84
Ecological Sediment PSL - Wildlife ( $\mu\text{g/kg}$ ) <sup>3,6</sup>	1.4


**Legend**

- Surface Water Sample Location
- Historical Surface Water Sample Location
- Outfall Sample Location
- Groundwater Flow Direction
- Creek
- Tributary
- Water Body
- Installation Restoration Program (IRP) Site Boundary
- Potential PFAS Release Area
- Confirmed PFAS Release Area
- Federal Aviation Administration (FAA) Property
- Biddle Air National Guard Base
- Former NASJRB Willow Grove

1,00050001,000

Feet

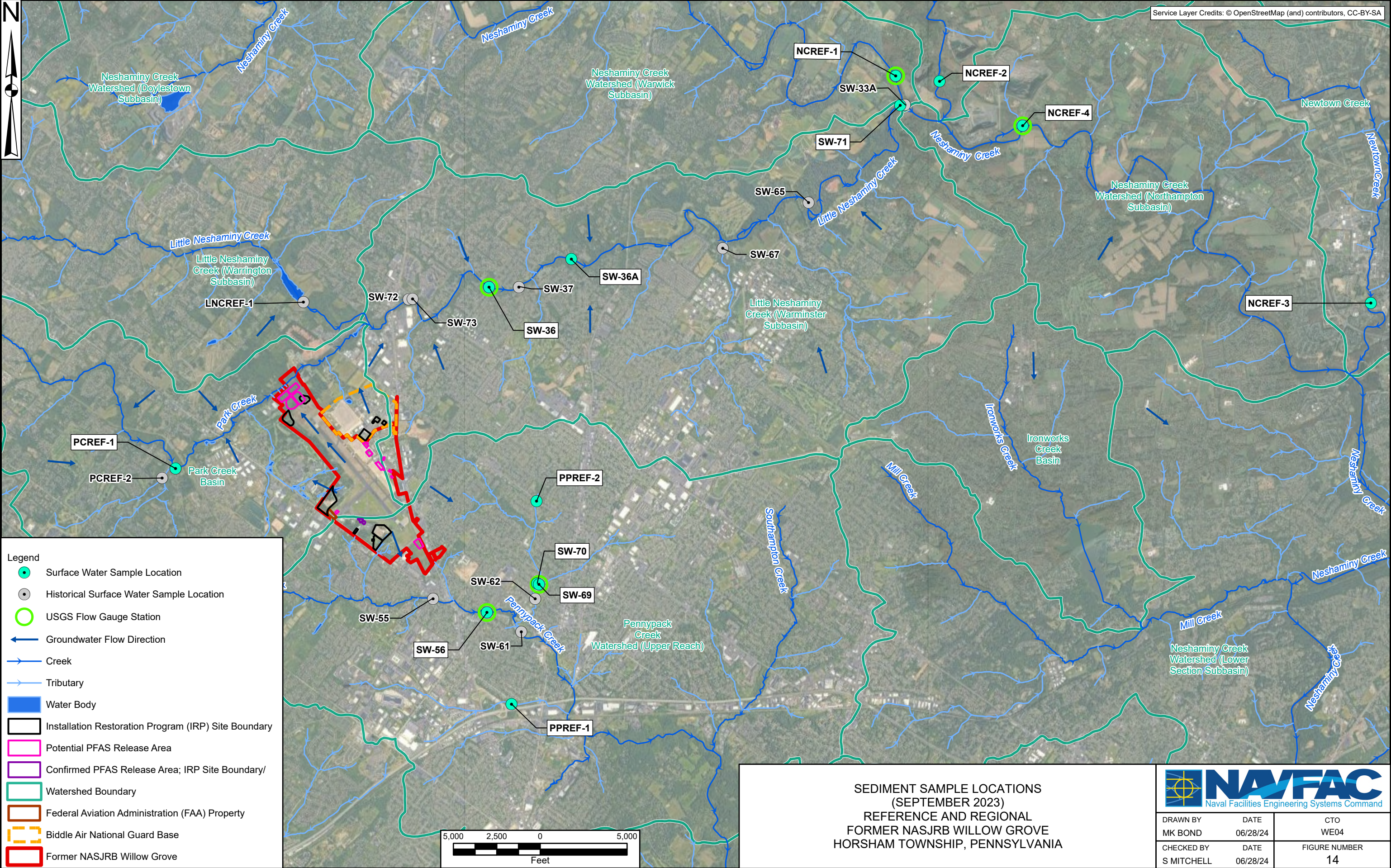
PFAS SEDIMENT SAMPLING ANALYTICAL RESULTS  
PFOS EXCEEDANCES  
(SEPTEMBER 2023)  
EXTENT E  
FORMER NASJRB WILLOW GROVE  
HORSHAM TOWNSHIP, PENNSYLVANIA



Naval Facilities Engineering Systems Command

DRAWN BY MK BOND	DATE 06/28/24	CTO WE04
CHECKED BY S MITCHELL	DATE 06/28/24	FIGURE NUMBER 13





SEDIMENT SAMPLE LOCATIONS  
(SEPTEMBER 2023)  
REFERENCE AND REGIONAL  
FORMER NASJRB WILLOW GROVE  
HORSHAM TOWNSHIP, PENNSYLVANIA



DRAWN BY	DATE	CTO
MK BOND	06/28/24	WE04
CHECKED BY	DATE	FIGURE NUMBER
S MITCHELL	06/28/24	14



