



Air Force Civil Engineer Center



Former Wurtsmith Air Force Base PFOS/PFOA Program Overview

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AFCEC/CIBE
6 DEC 17



Overview



- Objectives
- AF Approach
- AF response to PFOS / PFOA, the CERCLA Process
- AF Strategy to PFOS / PFOA, a tiered approach
- Water Well Survey and Sampling
- 2017 Activities
- Restoration Advisory Board (RAB) Status
- Summary



Objectives



The Air Force (AF) PFOS/PFOA program:

- **Protects human health**
- **Responds to identified Aqueous Film Forming Foam (AFFF) areas with PFOS/PFOA releases or threatened releases by the AF**
- **Identifies PFOS/PFOA drinking water exposures above Environmental Protection Agency (EPA) health advisory (HA)**
- **Mitigates drinking water exposures above EPA HA**
- **Fulfills commitments under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**



Former Wurtsmith AFB AF Response to PFOS/PFOA



Comprehensive Environmental Response, Compensation and Liability Act

The Air Force's investigation work and mitigation actions are guided by CERCLA, applicable state laws and the EPA's drinking water health advisory of 70 parts per trillion.

AFCEC is moving forward aggressively in accordance with the CERCLA process to identify, define and mitigate potential contamination.

The CERCLA process:

- Ensures thorough investigation work
- Leads to proper and complete removal actions
- Promotes accountability, community involvement and long-term protectiveness





Former Wurtsmith AFB PFOS/PFOA Strategy



Programming for PFOS/PFOA

- Limited to groundwater sites unless there are state-promulgated standards for other media.
- The Air Force is using a tiered-prioritization approach to classify sites with suspected legacy AFFF releases.

PFOS/PFOA STRATEGY: TIERED PRIORITIZATION

TIER 1: An Air Force release linked to contamination found in receptor drinking water > HA.

TIER 2: An Air Force release linked to groundwater contamination > HA that will likely impact receptor drinking water.

TIER 3: An Air Force release linked to groundwater contamination > HA with no drinking water receptors.

***OTHER REQUIREMENTS**, such as: applicable State requirements, meet permit or intent of permit requirements, regulatory enforcement, administrative order.



Water Well Survey and Sampling



- In 2015 and 2016, the AF surveyed and sampled 54 private and two public wells with potential PFOS/PFOA impacts
- One of 54 private wells sampled exceeded the EPA HA level
 - The AF immediately connected the well to Municipal water supply
- The two public wells adjacent to the base at Whispering Woods Trailer Park were sampled and both wells were below the EPA HA



Former Wurtsmith AFB Private Well Sampling



2015/2016

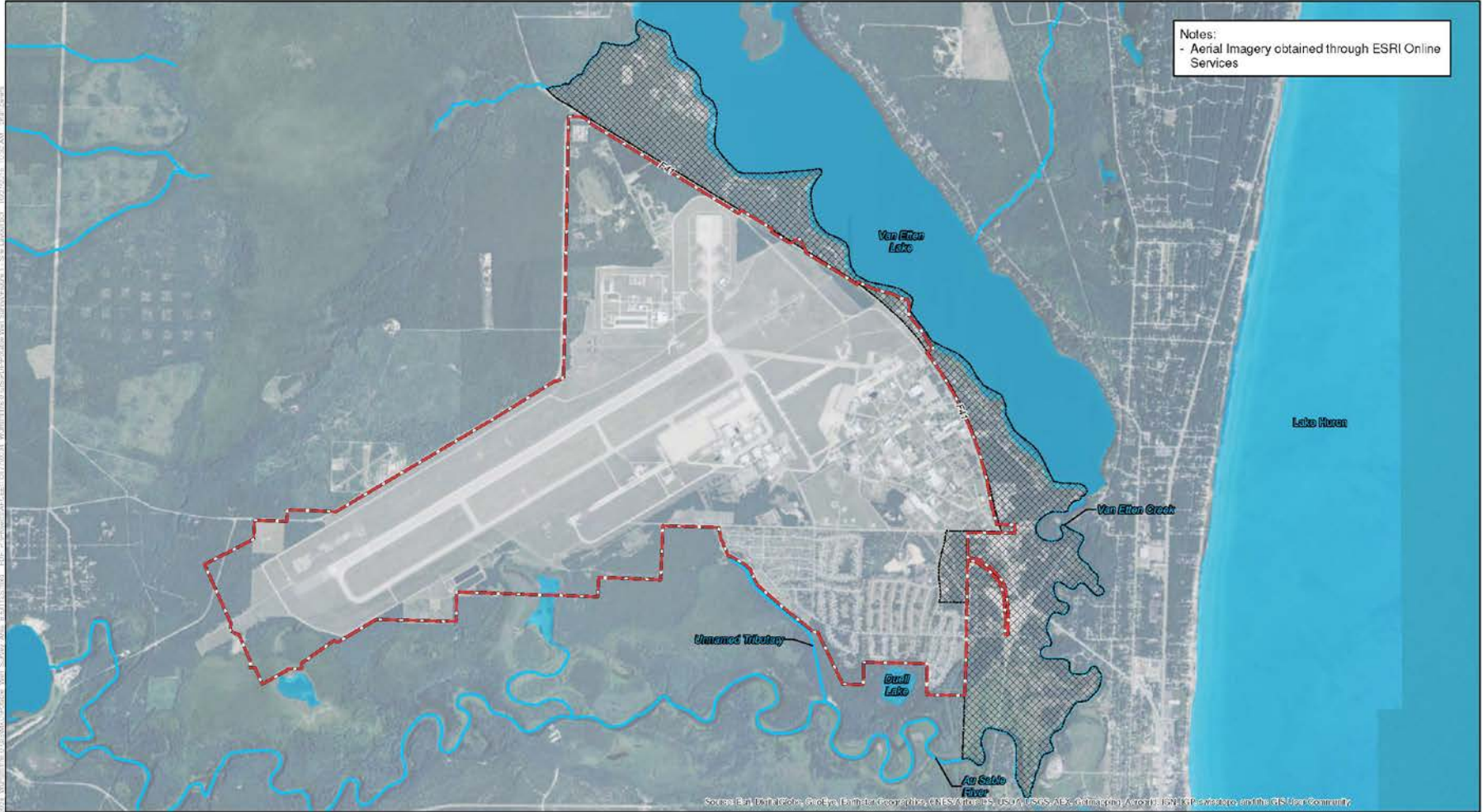
- **Samples collected December 2015 and May/June 2016**
- **Sampled 52 Private wells and 2 public supply wells**
- **1 detection above the Health Advisory (HA)**
- **Resident connected to City water supply**

2017 – Seasonal variations during peak pumping

- **Samples collected August-September 2017**
- **Sampled 43 Private wells and 2 public supply wells**
- **No Potable wells above HA**



Water Well Survey Area



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, SITA, Swire, and the GIS User Community

- Legend**
- Former Wurtsmith AFB Installation Boundary
 - Well Survey Area Boundary
 - Surface Water

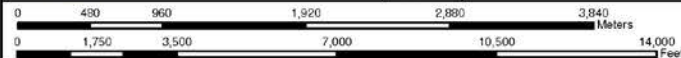


Air Force Civil Engineer Center
 2261 Hughes Avenue
 Building 171, Site 155
 JCSA Lackland, Texas 78236



FIGURE 1
Site Layout

Former Wurtsmith Air Force Base, Oscoda, Michigan



Date: 02/05/2016

PROJ: 775260218



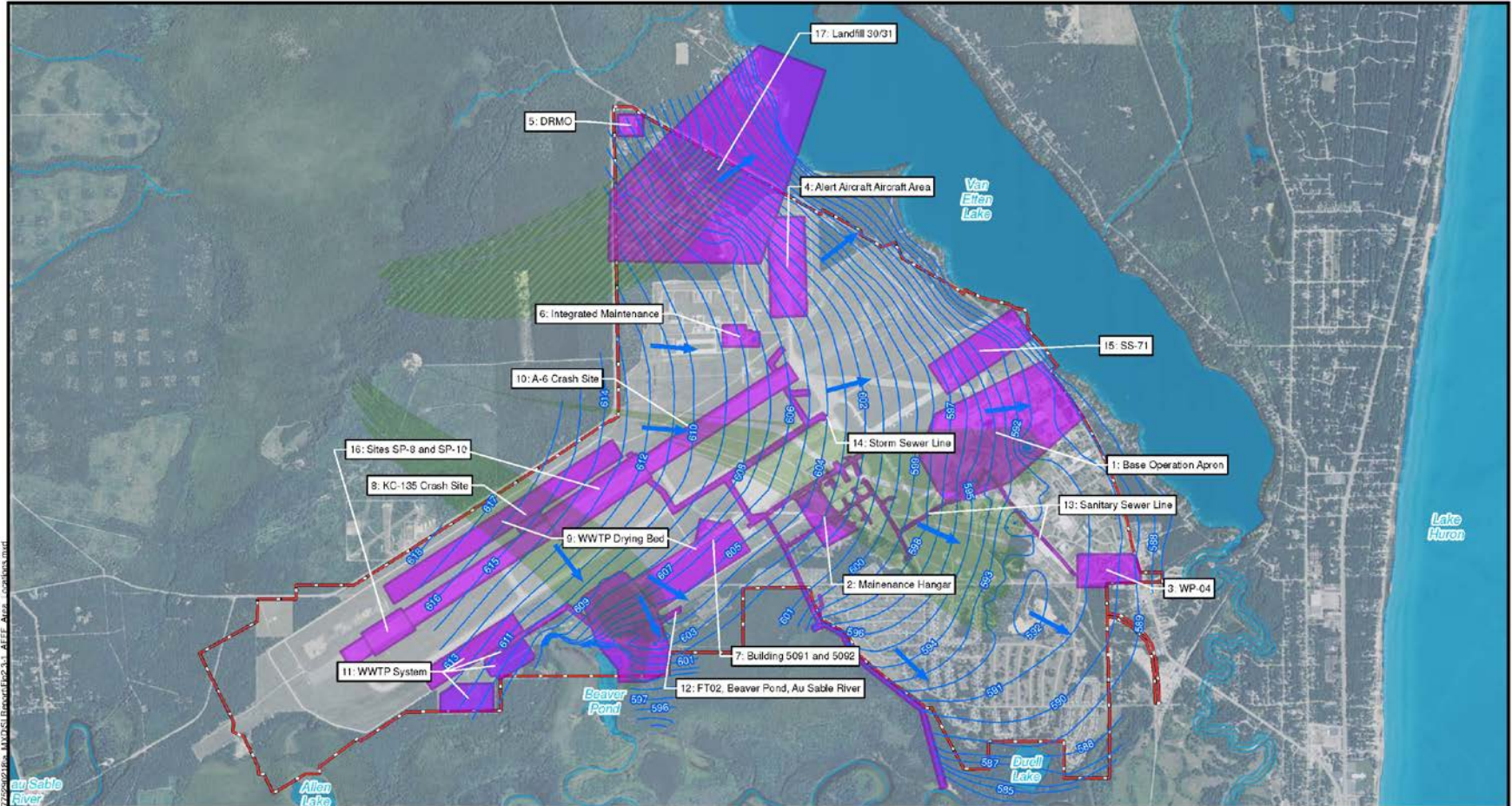
PA and SI Results



- **PA identified 17 areas with potential AFFF releases**
- **SI conducted in 2016 for presence or absence of PFOS/PFOA above the EPA HA levels**
 - **Confirmed AFFF releases at 13 of the 17 areas above the EPA HA levels**
 - **SI Report Draft Final**
 - **Supplemental Site Inspection (SSI) task order awarded Aug 2017**



PA and SI Locations



Air Force Civil Engineer Center
 2261 Hughes Avenue
 Building 171, Site 155
 JCSA Lackland, Texas 78236

Project: 775290177

By: AES Date: 03/10/2017

Scale: 0 1,000 2,000 4,000 Feet

SYMBOL KEY

- Estimated Capture Zone
- Engineered Wetland
- Estimated Groundwater Flow Direction
- Water Table Contours (November 2016)
- AFFF Area
- Former Wurtsmith AFB Installation Boundary
- Stream
- Surface Water

Disclaimer: For general reference purposes only. This is not a survey product. DO NOT USE to determine, certify, or verify map features, scale and/or other information.

Service Layer Credits: Aerial Imagery obtained through ESRI Online Services.

FIGURE 2.3-1
AFFF SI Area Locations
 Former Wurtsmith Air Force Base
 Oscoda, Michigan

Site Inspection Report for
 Aqueous Film Forming Foam (AFFF) Areas



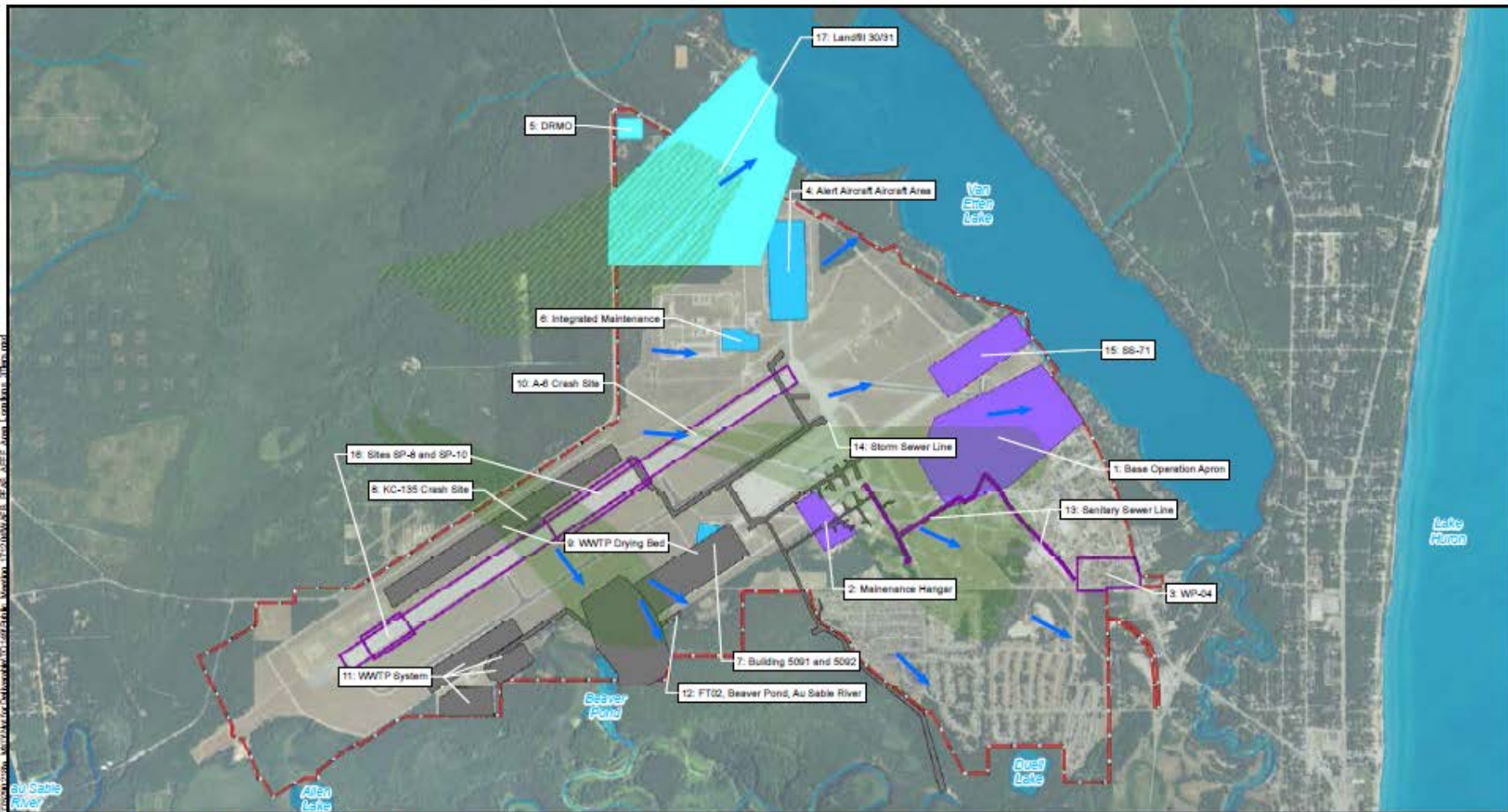
2017 Activities



- **Resample private/public wells this summer to evaluate seasonal variations**
 - The AF will take action to supply alternate sources of drinking water if PFOS/PFOA is above the EPA HA
- **Install GAC system to treat PFOS/PFOA effluent from Arrow Street and Benzene Pump and Treat Systems that discharge to Van Etten Creek**
 - Contract award date, August 2017
- **Initiate Supplemental Site Inspections to determine PFOS/PFOA nature and extent in groundwater with potential pathways to drinking water sources**
 - Initiated field work, Sept 2017
 - Completed 3 Dec 2017



2017 Supplemental Site Inspections



Air Force Civil Engineer Center
 2201 Hughes Avenue
 Building 171, Site 155
 285A Leckie, Waco, TX 76798

Project: 775290177

By: AES Date: 12/04/2017

Scale: 1:1,000, 1:2,000, 1:4,000

SYMBOL KEY

PFOA/PPOS Strategy: Tiered Prioritization

- Estimated Capture Zone
- Estimated Engineered Wetland
- Estimated Groundwater Flow Direction
- Tier 1
- Tier 2
- Tier 3
- Other Requirements
- AFFF Area Location
- Former Wurtsmith AFB Installation Boundary
- Stream
- Surface Water

Disclaimer: For general reference purposes only. This is not a survey product. DO NOT USE to determine, certify, or verify map features, scale and/or other information.

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar, GeoEye, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AFFF SI Area Locations - Tiered Prioritization
 Former Wurtsmith Air Force Base
 Oscoda, Michigan

Site Inspection Report for
 Aqueous Film Forming Foam (AFFF) Areas



Supplemental Site Inspections: Phase 1 Areas



SI Area	Name	Rationale
1,15, 2	BOA, SS-71, Maintenance Hangar(s), WP-04	<ul style="list-style-type: none">▪ PFOA and PFOS detected above HA in downgradient private water well; extent of plume not defined.▪ VAS and monitoring well sampling indicates portions of plumes captured by Arrow Street; Benzene, and Mission Drive extraction system; however, capture and vertical extent at total depth of upper aquifer not defined.
12	FT-02	<ul style="list-style-type: none">▪ Pump and Treat system reducing offsite migration to Clarks Marsh.▪ Additional data needed to better define capture of plume to below HA for optimization of system.



Summary



- **The Air Force complies with CERCLA and applicable state laws for statutory direction when responding to releases of hazardous substances, pollutants, or contaminants**
- **We take immediate action where drinking water wells are impacted with PFOS/PFOA over the EPA HA levels**
- **We are mitigating PFOS/PFOA discharges from existing treatment systems**
- **We are moving forward with the SSI in a tiered approach**

