



Win the Fight - Strengthen the Team - Prepare for the Future

Restoration Advisory Board

13 September 2017

Melody A. Jensen

Ellsworth Remedial Program Manager

Prepare for the Future

***Purpose:** Update the Public on the Status of Ellsworth's
Environmental Restoration Program*



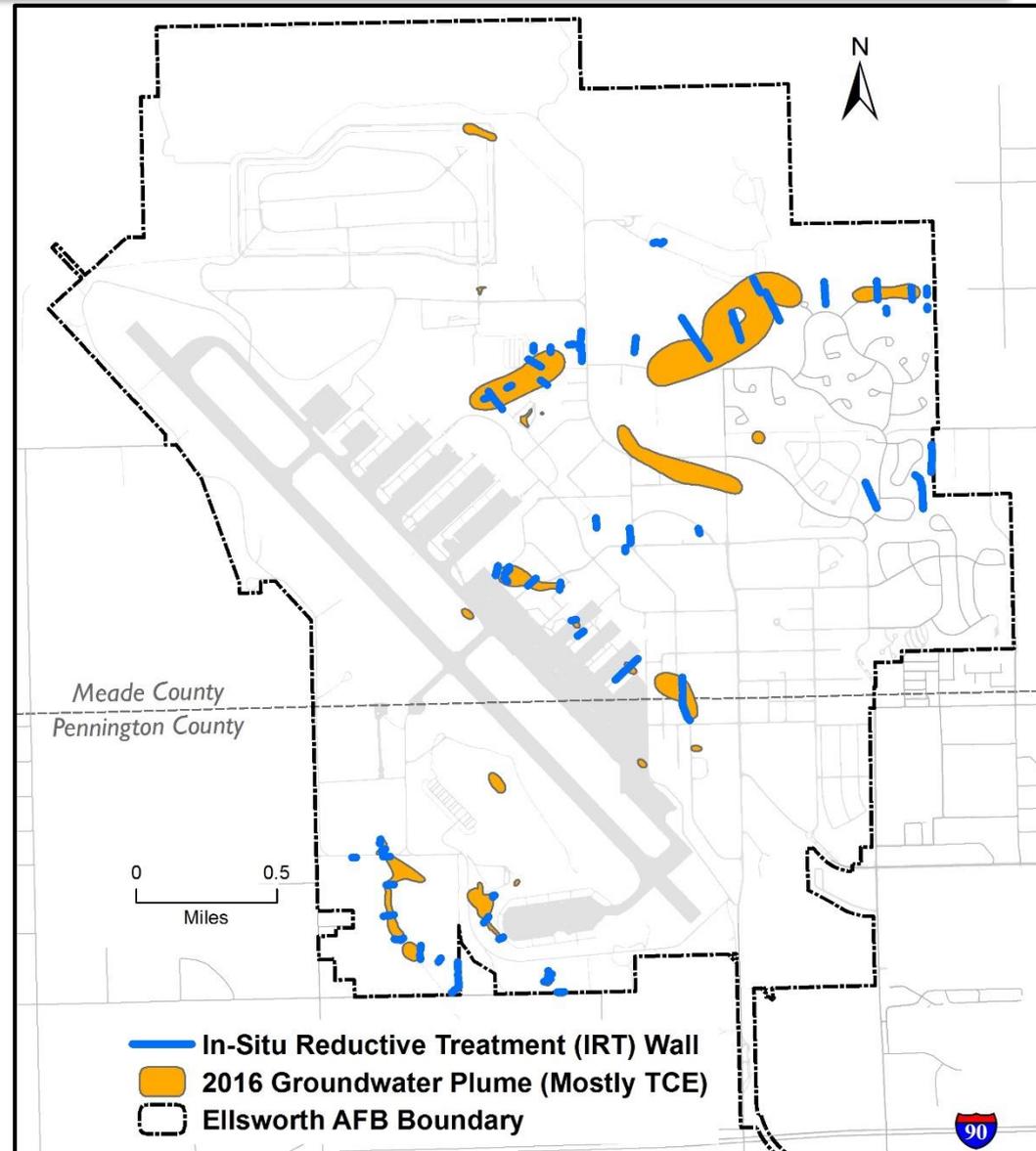
Presentation Outline

- Basewide Groundwater
- East Off-Base Groundwater
- Status of Former Compliance Restoration Program Sites
- Upcoming Field Work
- RW028 Low Level Radioactive Waste Burial Site
- Military Munitions Response Program (MMRP) Site
MB962 Remedial Investigation
- Perfluorinated Compounds (PFCs)
- Future Plans



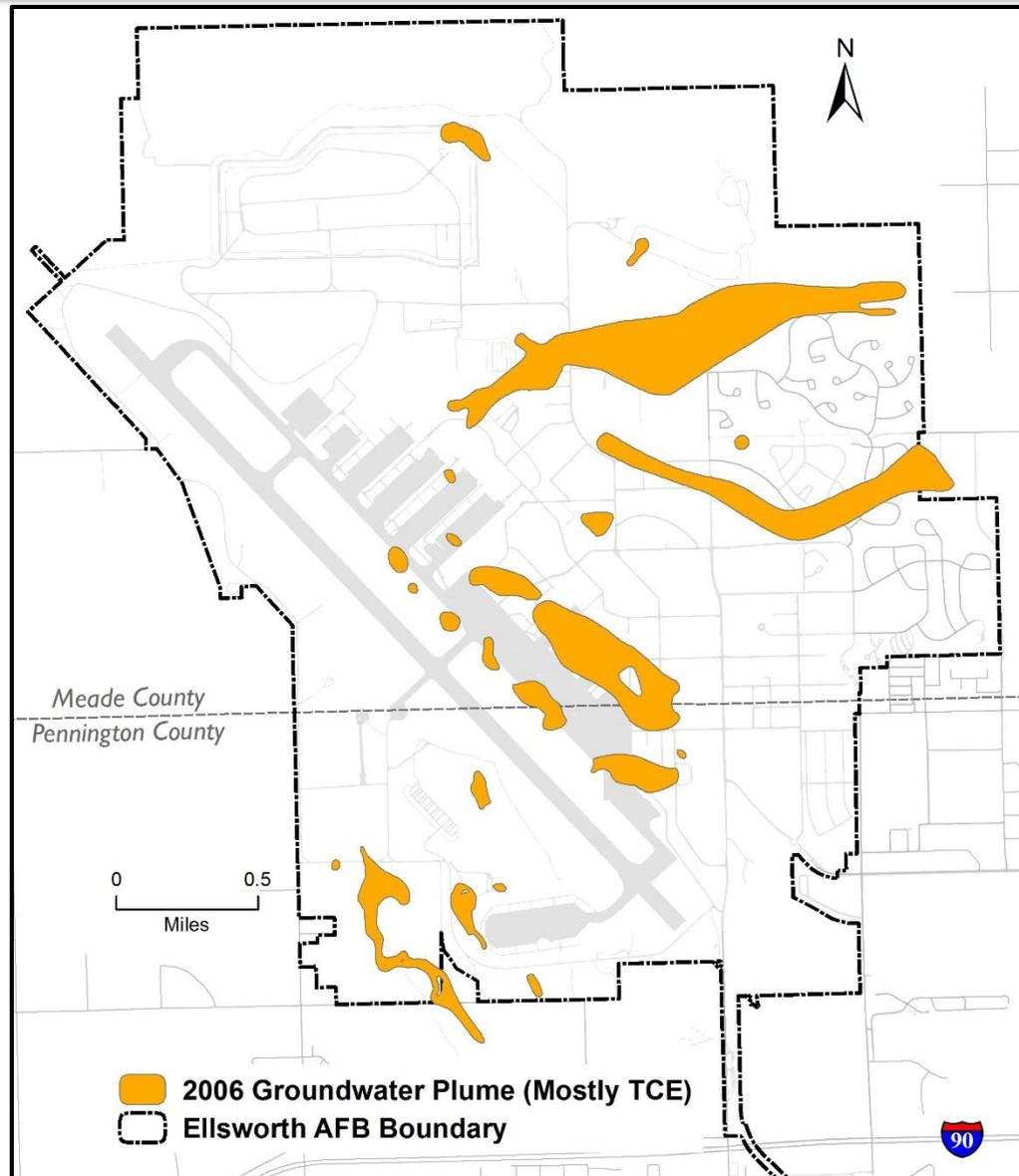
Basewide Groundwater (Mostly TCE)

- Record of Decision (ROD) Amendment signed in February 2012, allowed shut down of pump and treat systems
- Current remedy for Basewide Groundwater is in-situ reductive treatment (IRT) and monitored natural attenuation (MNA)
 - Underperforming IRT zones reinjected as needed
 - Pump and treat systems maintained as a backup option if needed



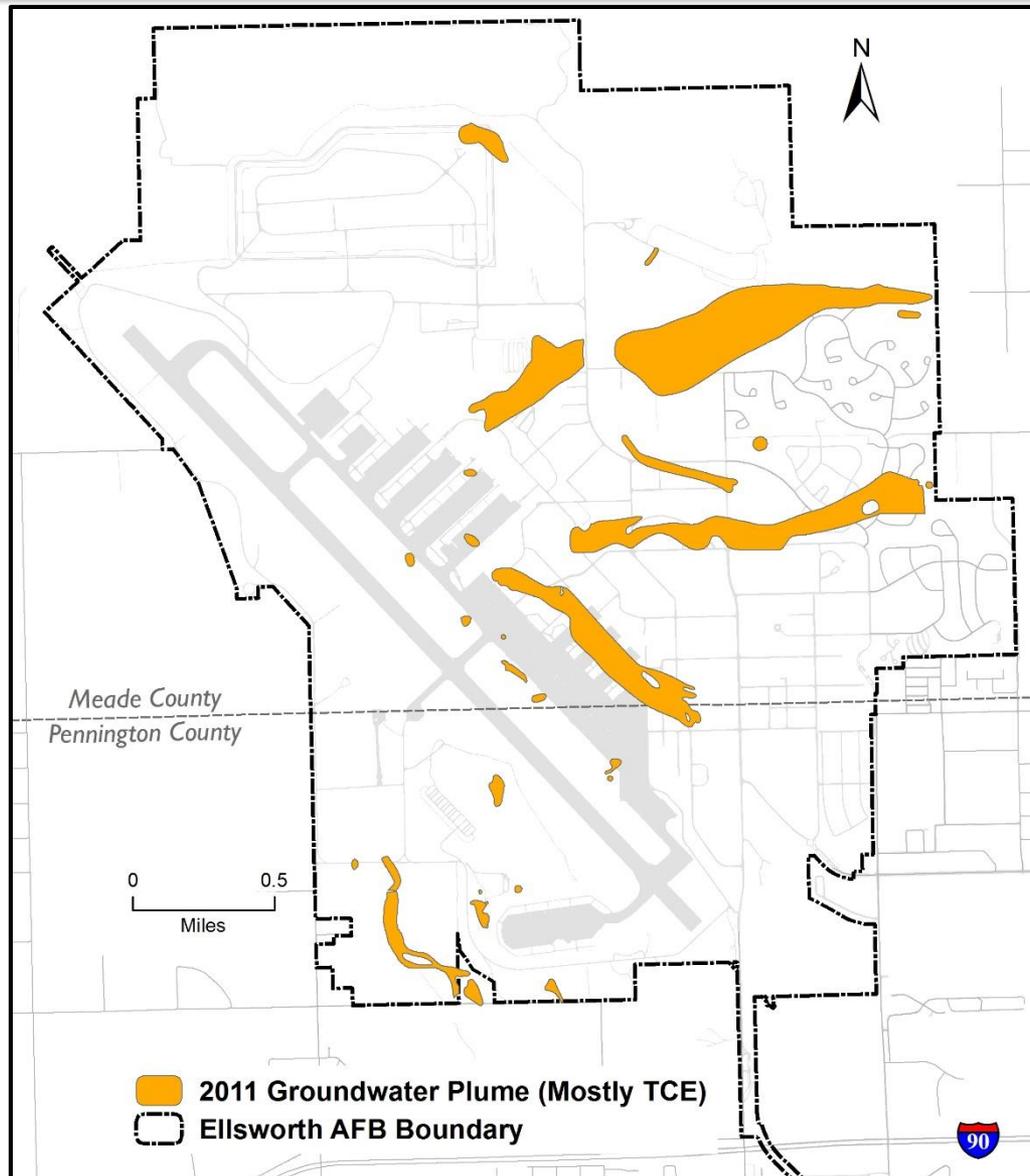


Basewide Groundwater (TCE) Plumes in 2006



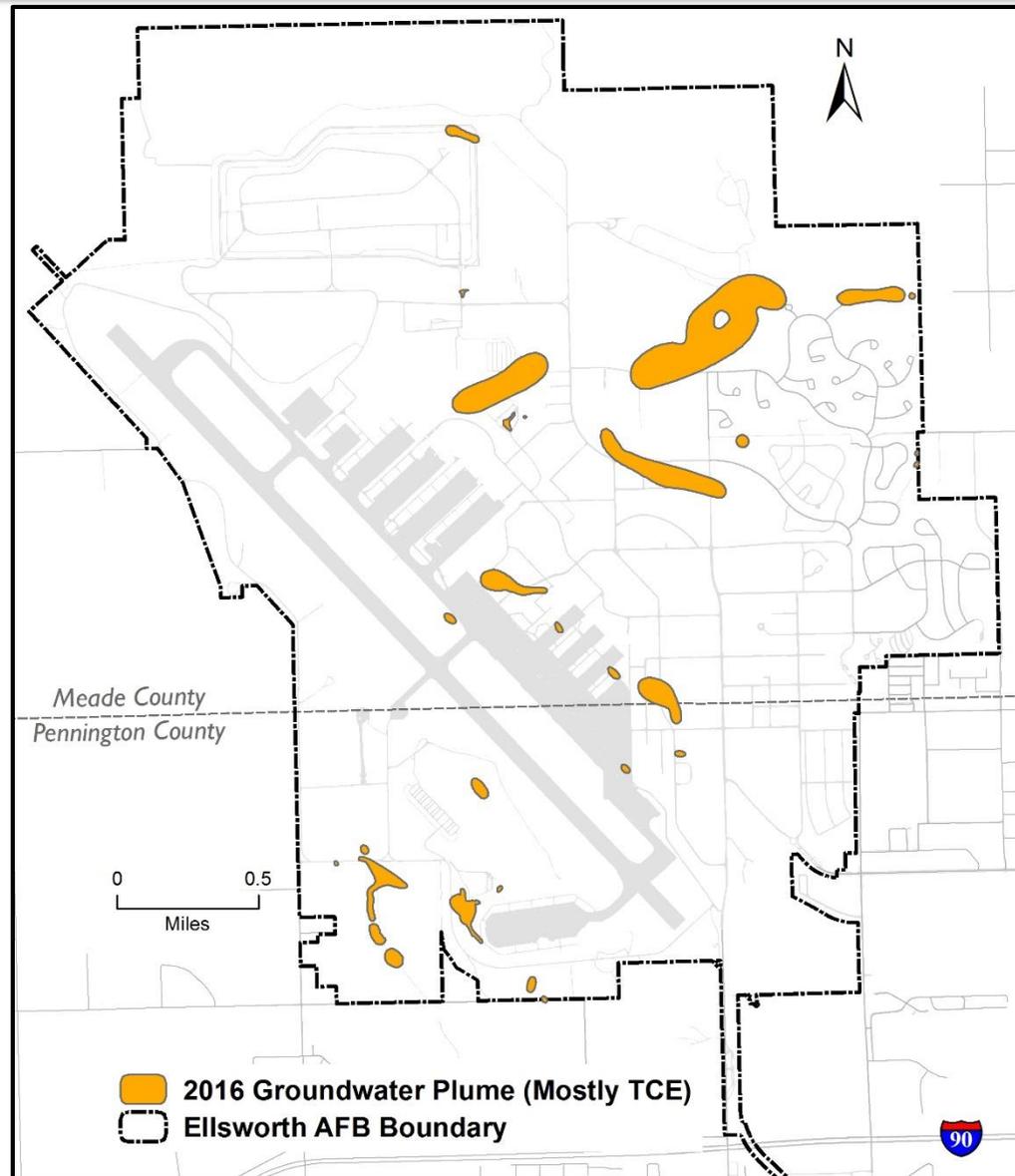


Basewide Groundwater (TCE) Plumes in 2011





Basewide Groundwater (TCE) Plumes in 2016





Basewide Groundwater (TCE) 2017 IRT Injections



- IRT injection in late 2017, RAWP – Addendum 9 & SS501 (Spill Site 88408)
- New sites to include:
 - SDM-IRT5
 - SS501 (Spill Site 88408)
- Reinjection sites include:
 - OU2-IRT1, OU2-IRT2
 - SDM-IRT1Ext
 - PH-IRT2
 - BG04-IRT10, BG04-IRT11
 - BG05-IRT3Ext



2017 IRT Injection



SS501

PH-IRT2

BG04-IRT10

BG04-IRT11

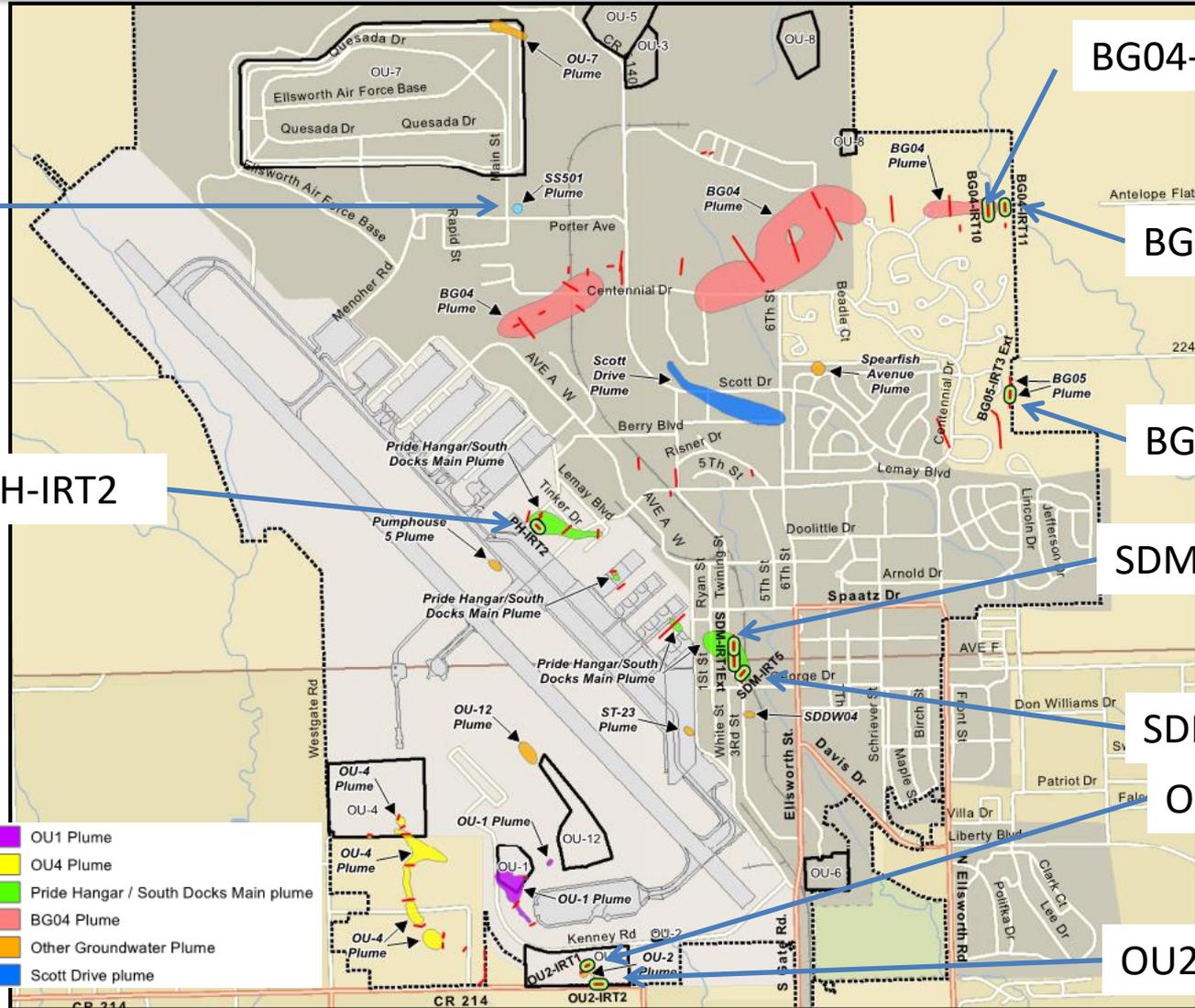
BG05-IRT3Ext

SDM-IRT1Ext

SDM-IRT5

OU2-IRT1

OU2-IRT2



- IRT Wall in Service
- IRT Wall Selected for Injection
- Major Roads
- Local Traffic
- Operable Unit Boundary
- Installation Boundary

- OU1 Plume
- OU4 Plume
- Pride Hangar / South Docks Main plume
- BG04 Plume
- Other Groundwater Plume
- Scott Drive plume



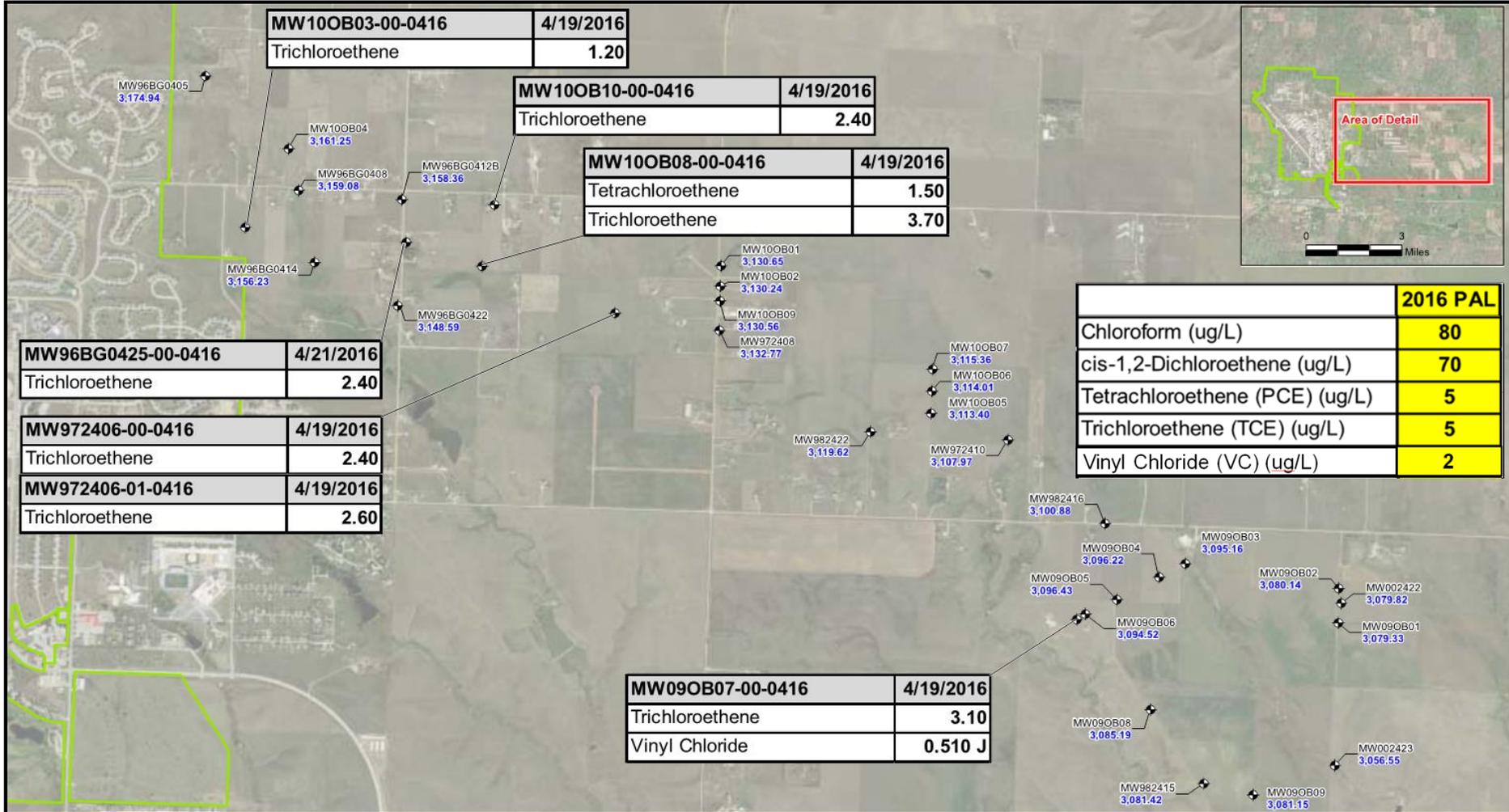
East Off-Base Groundwater 2016 – 2017 Results



- Six wells sampled in 2016 and three wells in 2017
- Followed Exit Strategy with professional judgment
- Two wells sampled due to TCE concentration above MCL in 2014 (MCL for TCE is 5 ug/L)
- Other wells sampled due to increasing TCE concentrations or regulatory concerns as TCE concentration was near MCL
- **TCE results below MCL for all wells in 2016 & 2017!**

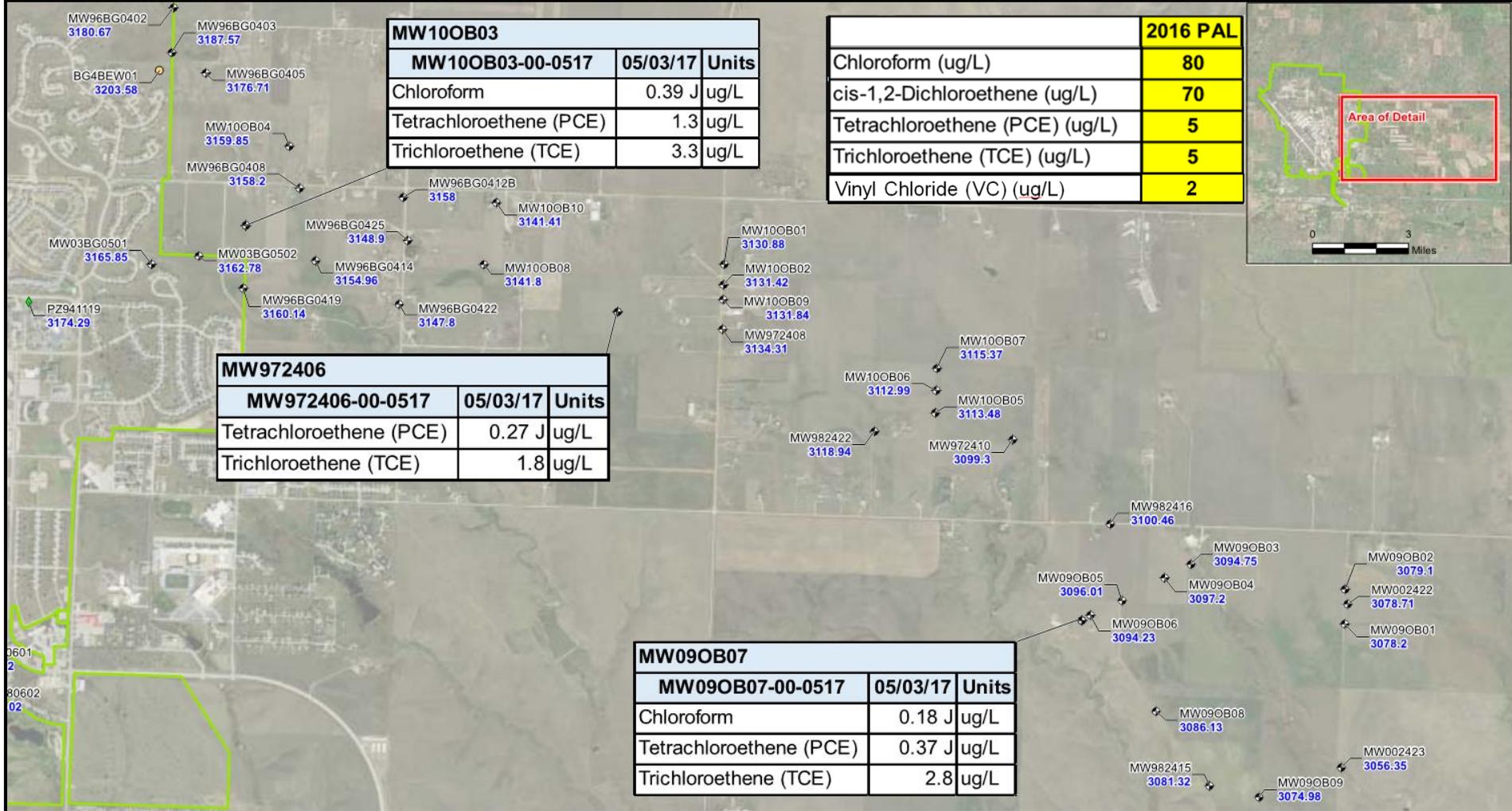


East Off-Base Groundwater 2016 Results





East Off-Base Groundwater 2017 Results



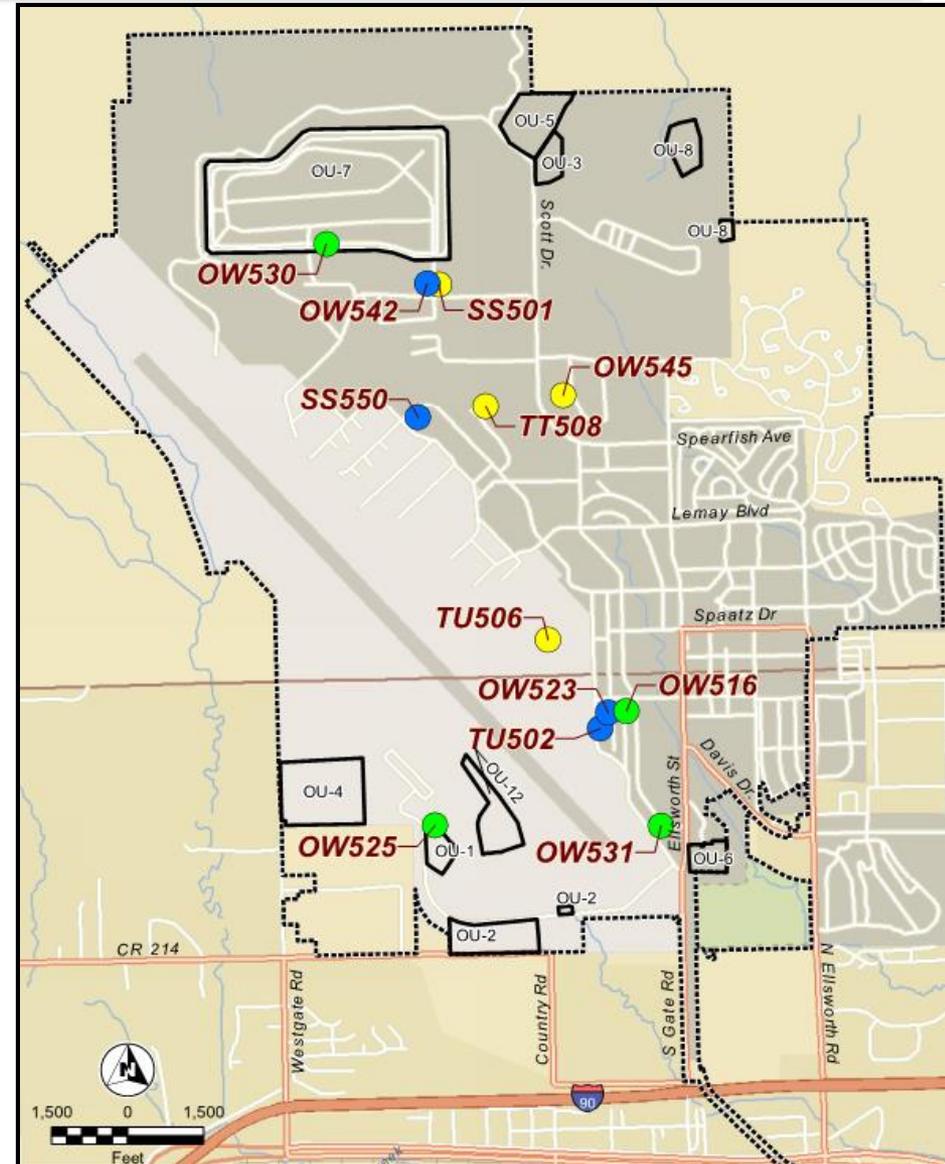


Status of Former



Compliance Restoration Program Sites

- Closed 2015 to 2017 ●
 - TU502 (UST Site 605)
 - OW523 (OWS 601)
 - OW542 (OWS 88409)
 - SS550 (Building 7253 JP-8 Spill)
- Final reports under review ●
 - OW516 (OWS 1500)
 - OW525 (OWS 6909)
 - OW530 (OWS 88240)
 - OW531 (OWS 1709)
- Additional field work ●
 - OW545 (OWS 8115)
 - TT508 (Fuels Area D)
 - TU506 (UST Site 7618)
 - SS501 (Spill Site 88408)





Upcoming Field Work

- RAWP – Addendum 9 and SS501 (Spill Site 88408) IRT Injections
- TT508 (Fuels Area D) and TU506 (UST Site 7618) Injections
- RW028 Low Level Radioactive Waste Burial Site Removal Action and Investigation
- Complete Remedial Investigation for PFCs at the former fire training area
- Basewide Site Inspection for PFCs

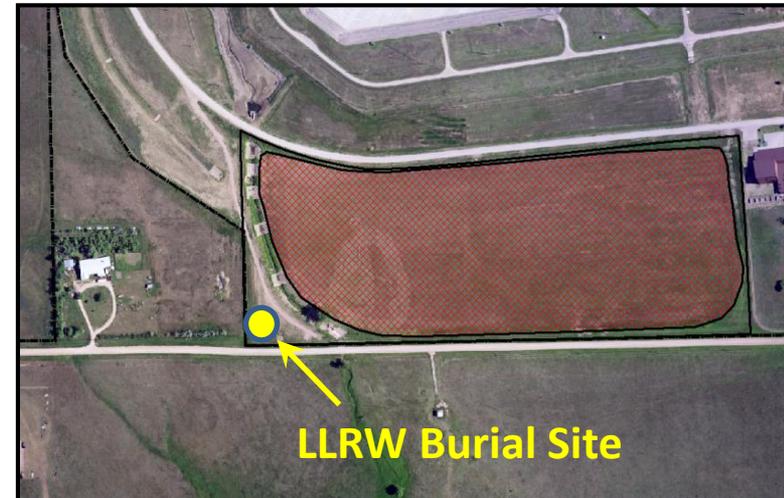


RW028



Low Level Radioactive Waste Burial Site

- 1997 Removal Action
 - Two concrete burial monoliths presumed to contain Low-Level Radioactive Waste
 - Chemical Agent Identification Sets (training aids)
 - No soil contamination
- 2011 Geophysical Investigation identified one and potentially a second concrete burial monolith
- Removal Action planned for Fall 2017
 - Excavate the area of two potential concrete burial monoliths
 - Chemical Agents are not anticipated but a safety plan will be in place
 - Investigate other geophysical anomalies over 0.75 acre area



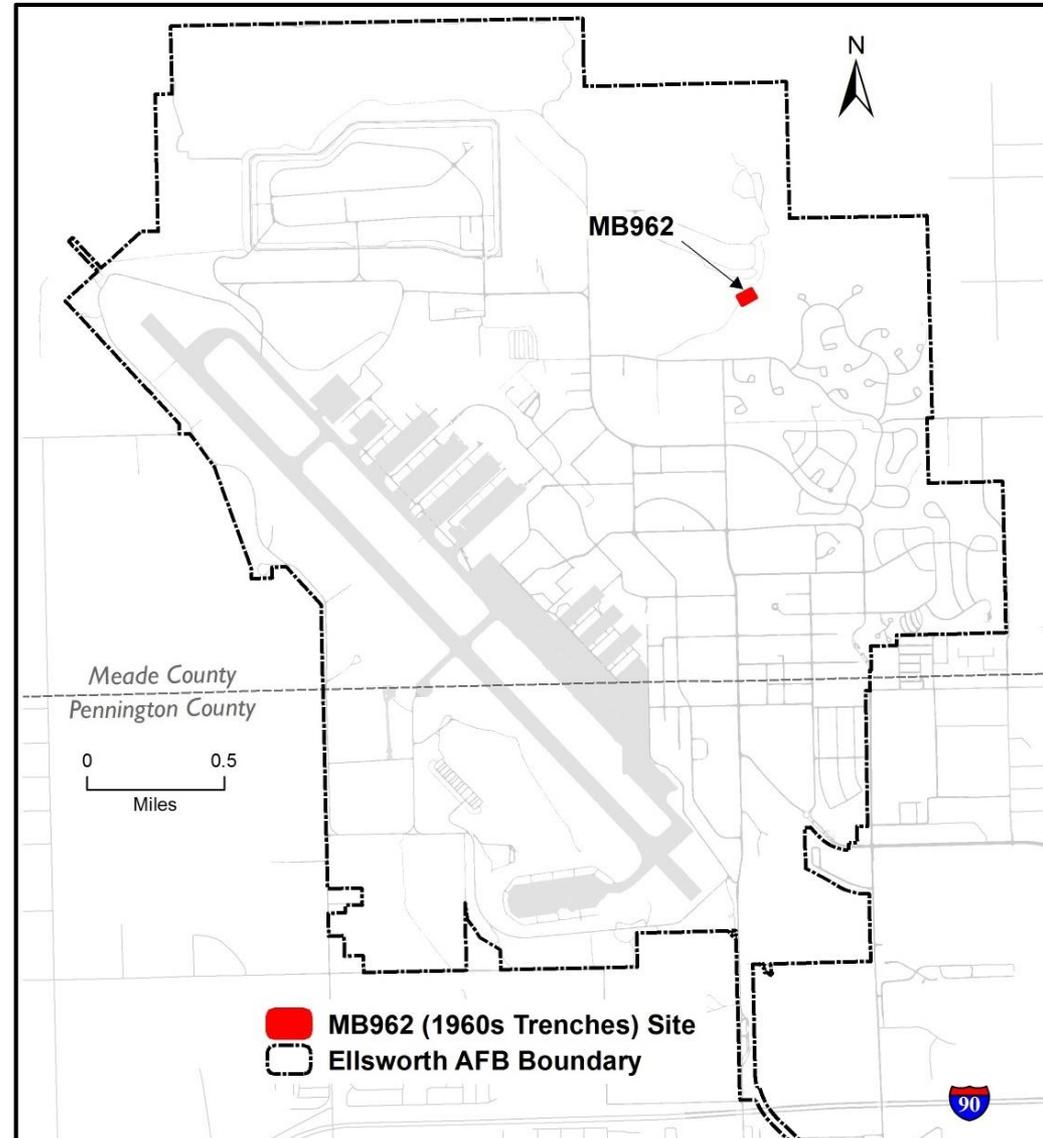


Military Munitions Response Program

Jet-Assisted Take-Off Bottle Site MB962



- Upcoming remedial investigation of Site MB962
 - Burial trenches visible in 1960s era photograph
 - Nine empty jet-assisted takeoff (JATO) bottles were removed in 2004





Perfluorinated Compounds (PFCs)

➤ Man-made chemicals found in commonly used products

- Fire fighting foam
- Nonstick cookware (Teflon)
- Stain-resistant fabric/carpet
- Some food packaging

➤ In 1970, the Air Force began using aqueous film forming foam, or AFFF



➤ Two PFCs have Health Advisories for Drinking Water

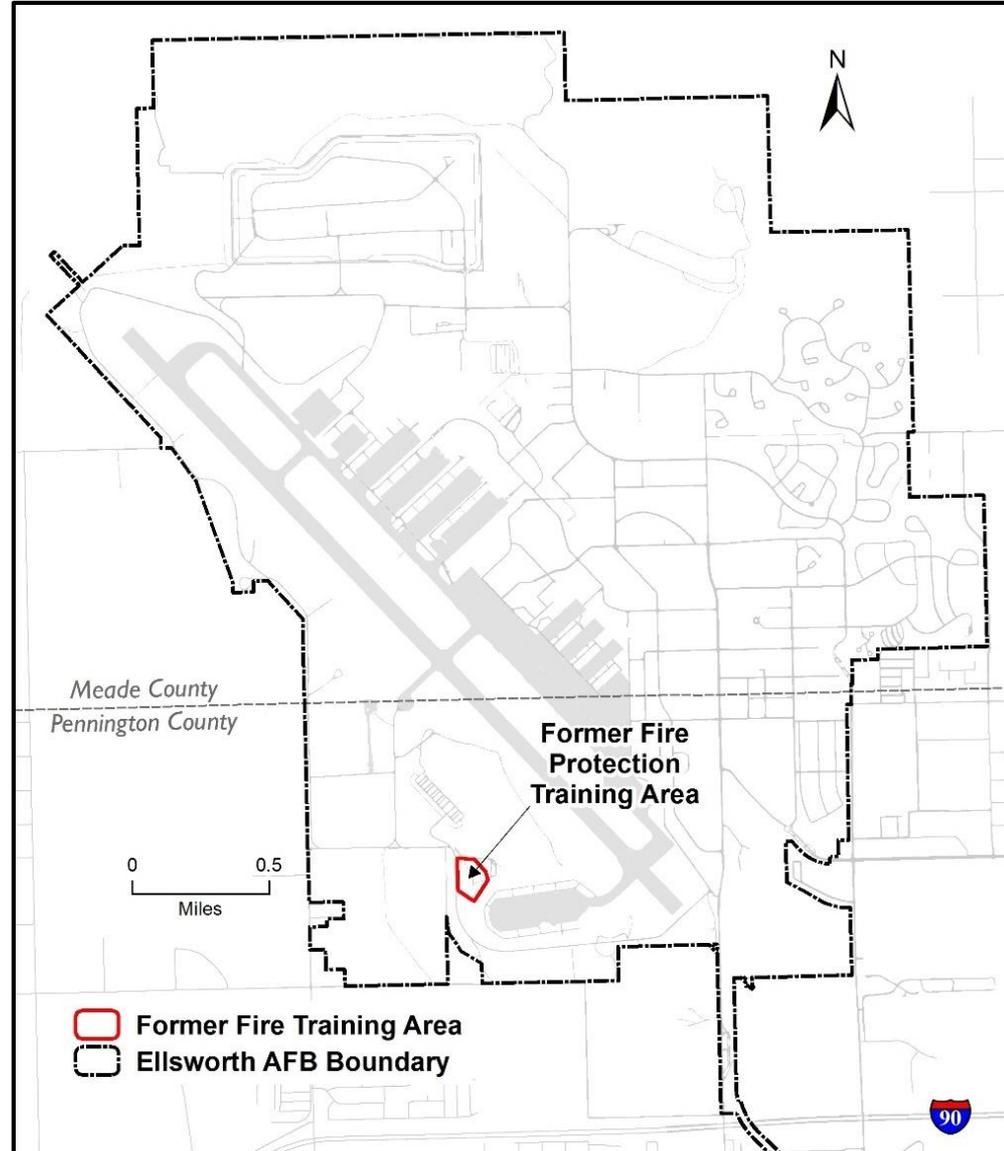
- Perfluorooctane Sulfonate (PFOS)
- Perfluorooctanoic acid (PFOA)

➤ On May 19, 2016, the Environmental Protection Agency established lifetime health advisory levels of 70 parts per trillion for PFOS and PFOA (combined)



PFCs – Remedial Investigation

- PFOS and PFOA were first detected in soil and groundwater in 2012 at the former fire training area
 - Stage 1 of the Remedial Investigation was completed in 2016
 - Upcoming Stage 2 will delineate the extent of the affected area



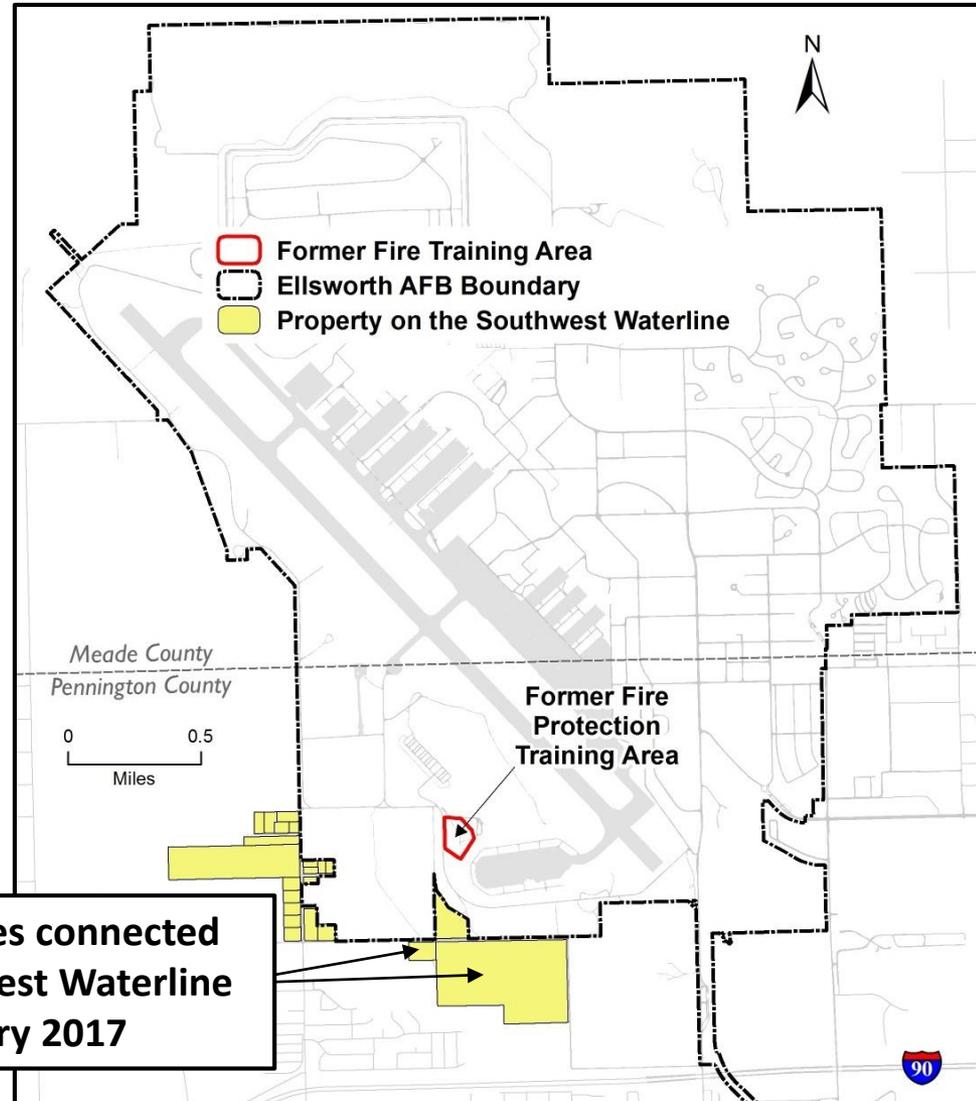


PFCs – Rapid Response

New Waterline Hookups



- In 2016, the combined PFOS/PFOA concentration at an off-base private well exceeded the health advisory level of 70 parts per trillion
- In January 2017, two properties located south of the base were connected to the existing Southwest Waterline



Two properties connected to the Southwest Waterline in January 2017



PFCs – Rapid Response

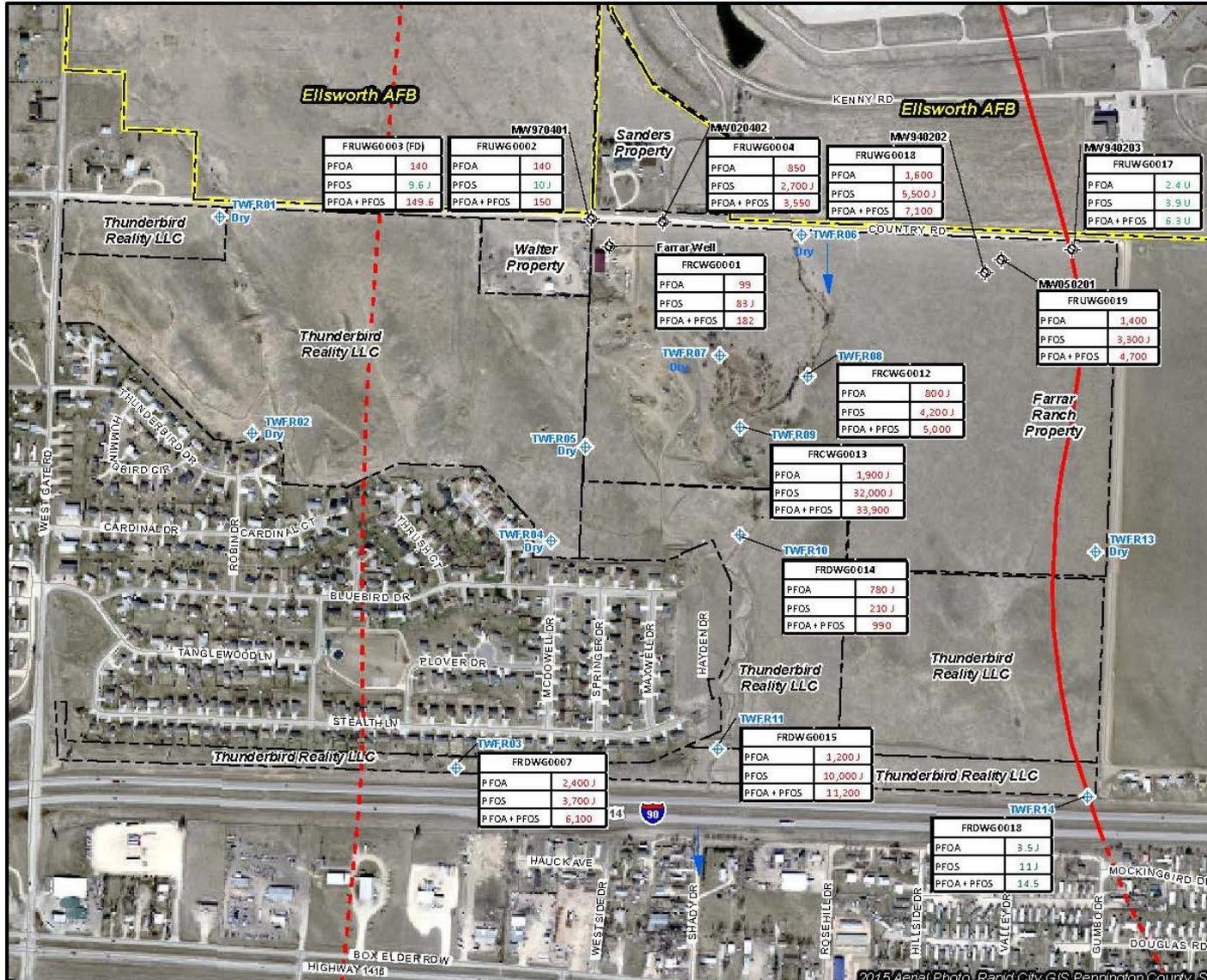


Sample Activities South of the Base

- Samples collected May-June 2017
 - Soil
 - Sediment
 - Groundwater
 - Surface water
- All soil and sediment sample results are below screening levels
- PFOS and PFOA were detected in groundwater and surface water
 - Highest groundwater detection (combined PFOS/PFOA) = 33,900 parts per trillion
 - Highest surface water detection (combined PFOS/PFOA) = 24,800 parts per trillion



PFCs – Rapid Response Groundwater Results



➤ Samples collected May-June 2017

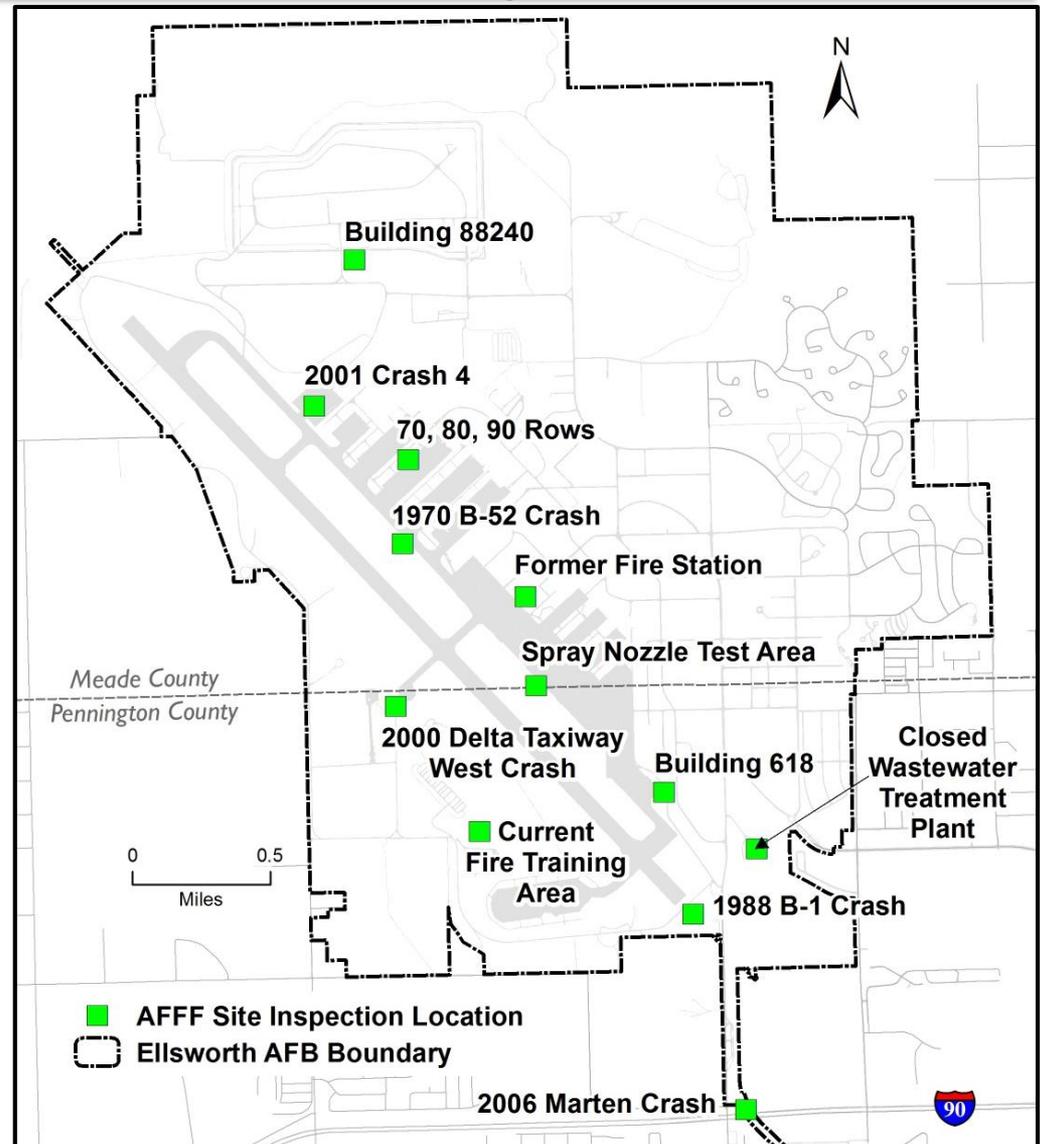
Well ID	PFOA	PFOS	PFOA + PFOS
FRUWG0003 (FD)	140	9.6 J	149.6
FRUWG0002	140	10 J	150
FRUWG0004	850	2,700 J	3,550
FRUWG0012	1,600	5,500 J	7,100
FRUWG0017	2.4 U	3.9 U	6.3 U
FRCWG0001	99	83 J	182
FRCWG0012	300 J	4,200 J	5,000
FRCWG0013	1,900 J	32,000 J	33,900
FRDWG0014	780 J	210 J	990
FRDWG0015	1,200 J	10,000 J	11,200
FRDWG0018	3.5 J	11 J	14.5
FRUWG0019	1,400	3,300 J	4,700
FRDWG0007	2,400 J	3,700 J	6,100



Perfluorinated Compounds (PFCs) Upcoming Basewide Site Inspection



- 12 locations were identified for further investigation in the 2015 Preliminary Assessment
- The upcoming Basewide Site Inspection will investigate the 12 locations





Web Based Administrative Record

- Ellsworth's administrative records are now available electronically *
- The online database is easily accessible to the public from a computer with internet access

<http://afcec.publicadmin-record.us.af.mil>

*A hard copy of the administrative record is still maintained at Ellsworth and available to the public by contacting Ellsworth AFB



Future Plans

- Continue with basewide groundwater monitoring program and IRT reinjections as needed
- Inject sites SS501, TT508, & TU506
- Complete RW028 LLRW Interim Removal Action and investigation
- Complete Jet Assisted Take-Off Bottle Site MB962 Remedial Investigation
- Complete Remedial Investigation for PFCs at the former fire training area
- Complete a basewide Site Inspection for PFCs



Future Plans - continued

- Complete 1,4-Dioxane Remedial Investigation
- Complete Vapor Intrusion Study
- Release the 2015 Five Year Review
- Continue to update MOAs when requested by landowners in the east off base plume
- Continue to monitor the east off-base plume using the approved Exit Strategy as a guide; all 30 wells to be sampled in 2018
- Report sample results and Exit Strategy status at future public meetings



Questions?