



# 28th Bomb Wing



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

## Restoration Advisory Board

14 July 2015

Melody A Jensen

Ellsworth RPM

*Prepare for the Future*

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

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# Presentation Outline



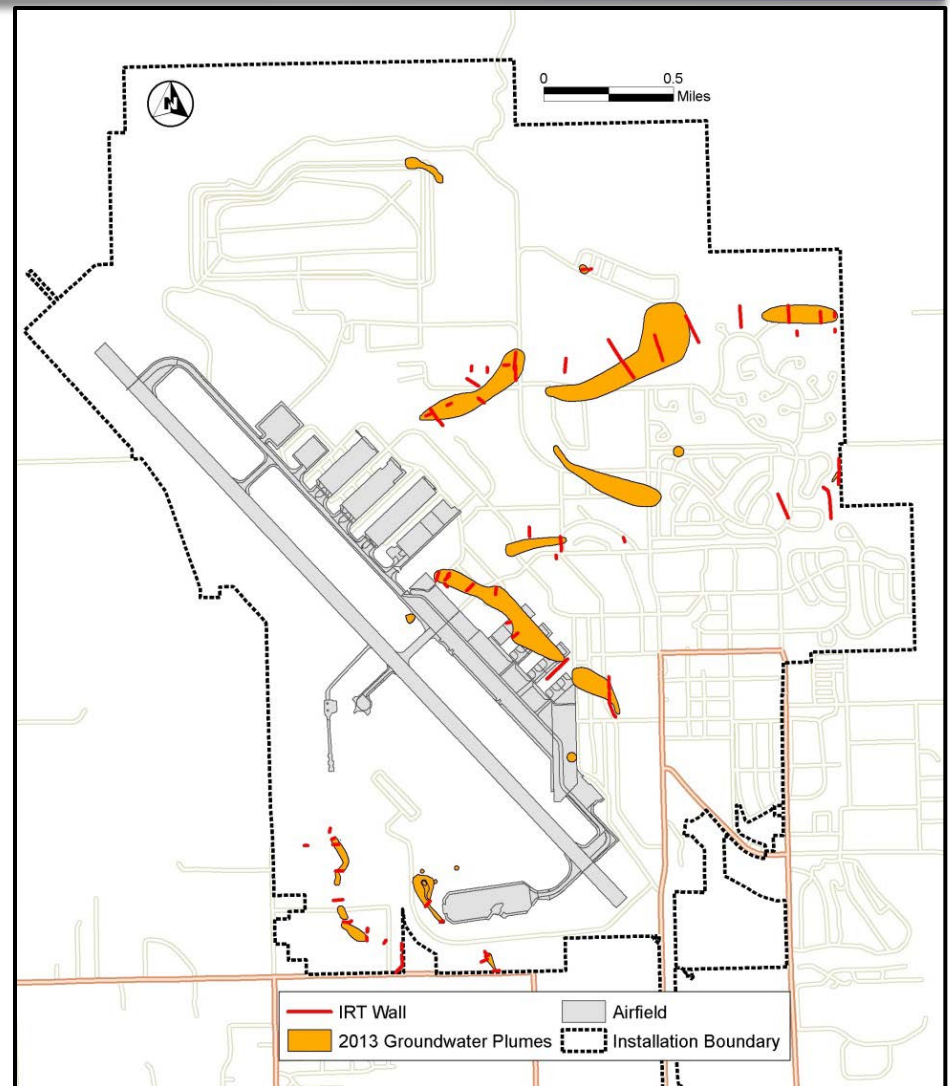
- **2015 In Situ Reductive Treatment (IRT) Injections**
- **East Off-base Plume**
- **Other Field Work Completed**
- **Upcoming Work**
- **Operable Unit 2 (OU-2) Low Level Radioactive Waste (LLRW) Burial Site RW028**
- **Military Munitions Response Program (MMRP) Overview**
- **Five Year Review**
- **Emerging Contaminants - Perfluorinated Compounds (PFCs)**
- **Future plans**



# OU-11 Basewide Groundwater



- **Record of Decision (ROD) Amendment signed in February 2012, allowed shut down of pump and treat systems**
- **Current remedy for OU-11 is In-Situ Reductive Treatment (IRT) and monitored natural attenuation (MNA)**
  - Underperforming IRT zones re-injected as needed
  - Pump and treat systems maintained as a backup option if needed





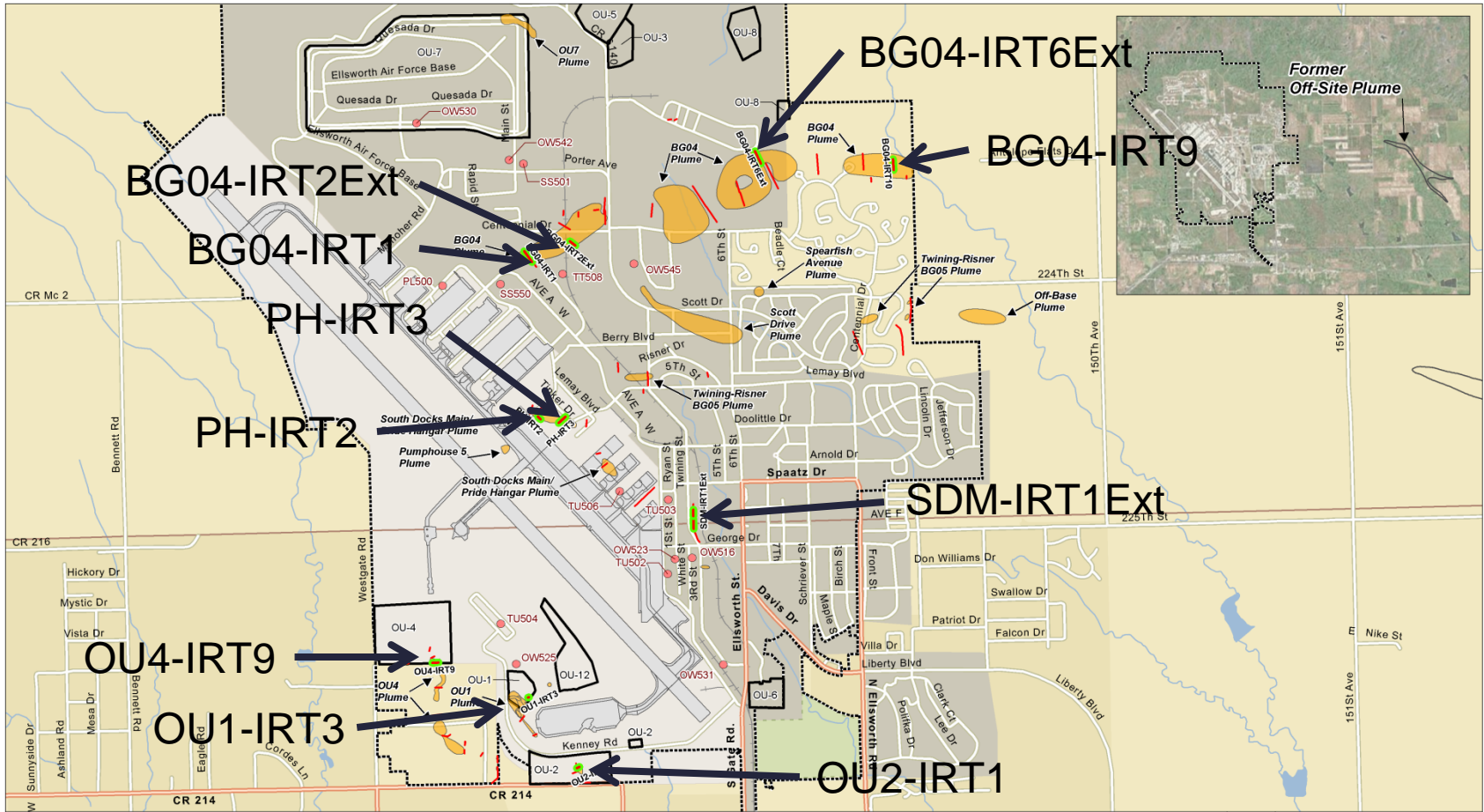
# 2015 IRT Injection



- **IRT injection in early 2015**
- **New sites included:**
  - OU1-IRT3
  - BG04-IRT6Ext
- **Reinjection sites included:**
  - OU2-IRT1
  - OU4-IRT9
  - SDM-IRT1Ext
  - PH-IRT2
  - PH-IRT3
  - BG04-IRT1
  - BG04-IRT2Ext
  - BG04-IRT9
- **Additional reinjection planned for later 2015**



# 2015 IRT Injection



- CRP/OW Site Location
- 2014 Groundwater Plumes
- IRT Wall Injected
- IRT Wall in Service
- Major Roads
- Local Traffic
- Former Off-Site Plume
- Operable Unit Boundary
- Installation Boundary



U.S. AIR FORCE  
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FIGURE NUMBER  
**2-1**

Location of Operable Units  
and Additional Sites  
Ellsworth Air Force Base, SD  
February 2015 IRT As-Built



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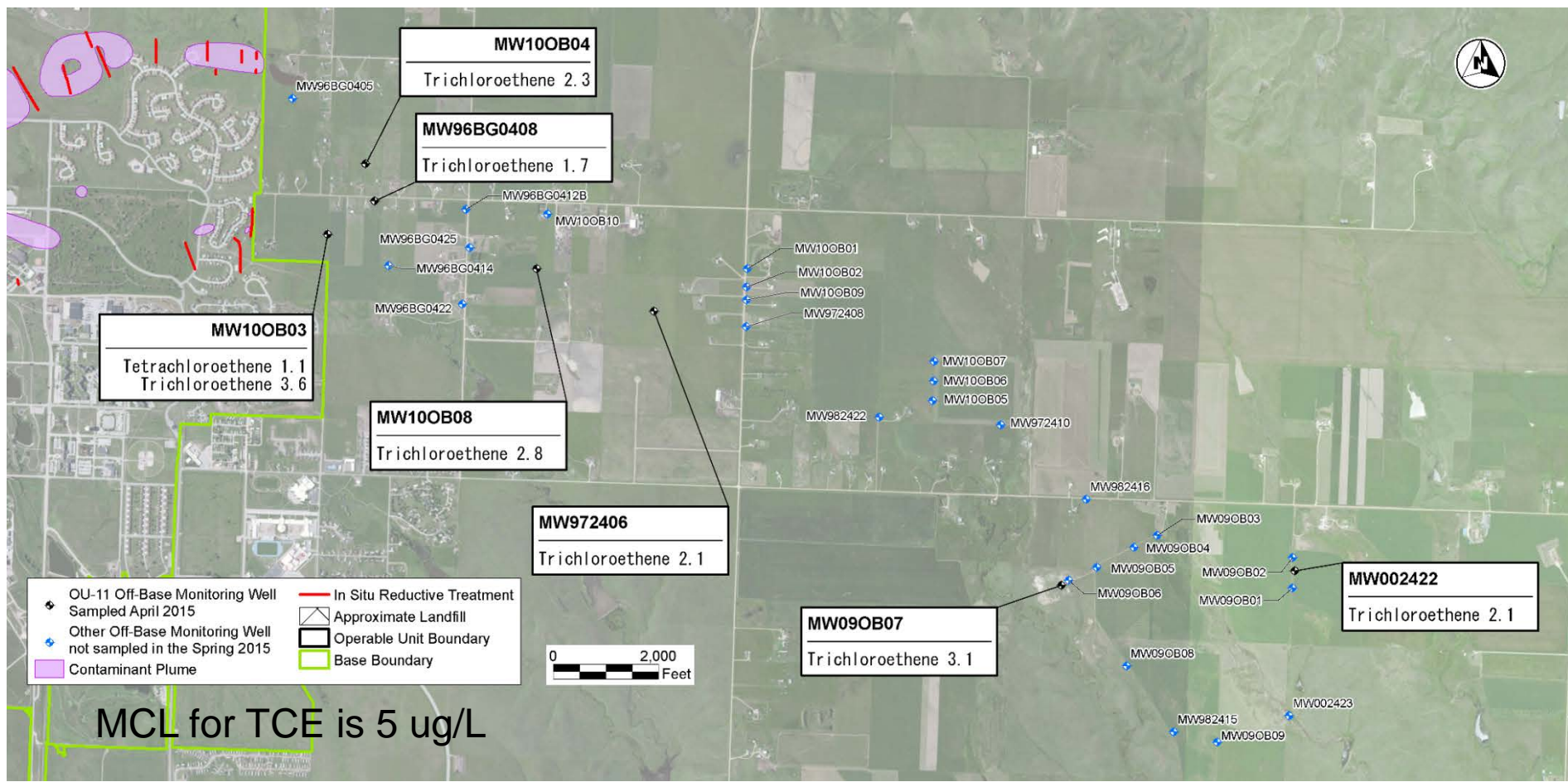
# Off Base Results for Spring 2015



- Seven wells sampled in Spring 2015
- Followed Exit Strategy with professional judgment
- Two wells sampled due to TCE concentration above MCL in 2014 (MCL for TCE is 5 ug/L)
- Two wells sampled due to increasing or no trend
- Two wells sampled due to regulatory concerns as TCE concentration was near MCL
- One well sampled since it was not sampled in 2014
- **TCE results below MCL for all seven wells in 2015**



# Off Base Results for Spring 2015



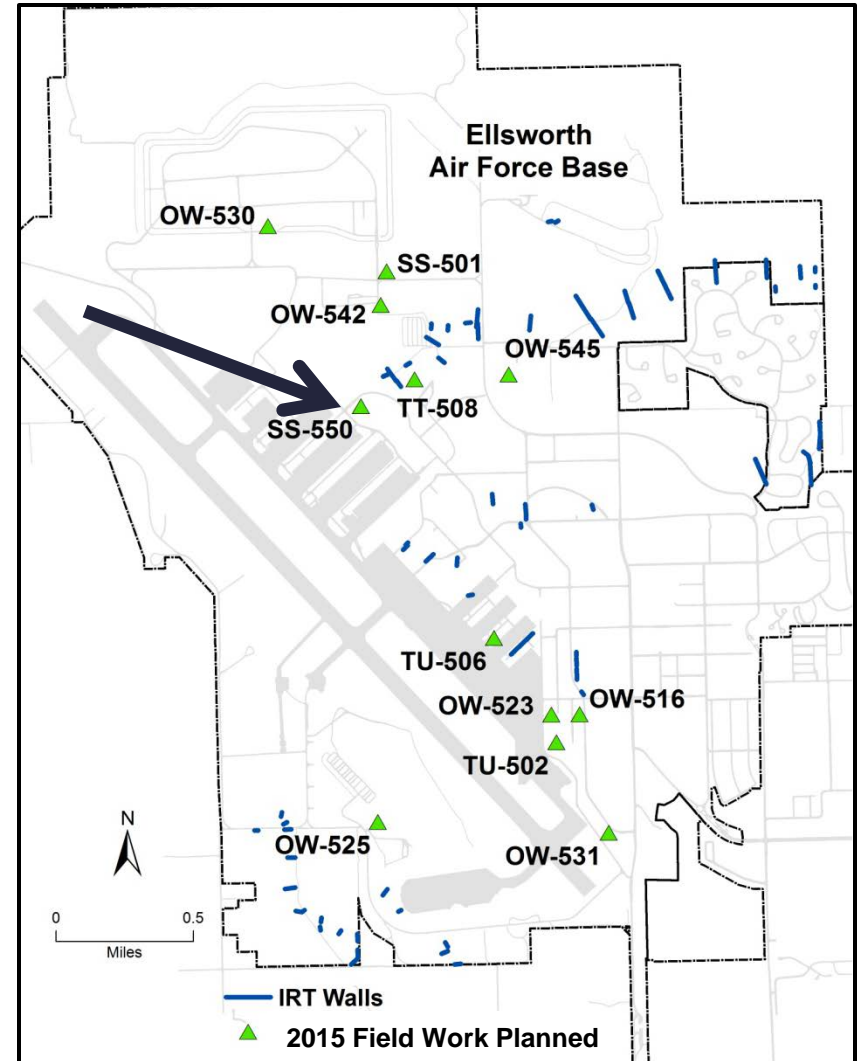


# Other Field Work Completed



## ➤ Site Investigation in April 2015 for SS550

- Investigation for a jet fuel spill
- No groundwater observed in four points
- Report under Air Force review that recommends site closeout







# Upcoming Work

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- **Five Year Review**
- **Perfluorinated Compounds (PFCs) investigation**
- **Vapor Intrusion Memo completion**
- **Scott Drive and OU-1 Data Gap Investigation**
- **OU-2 Low Level Radioactive Waste Removal Action and Investigation**
- **Investigation of multiple Underground Storage Tank and Oil-Water Separator Sites**

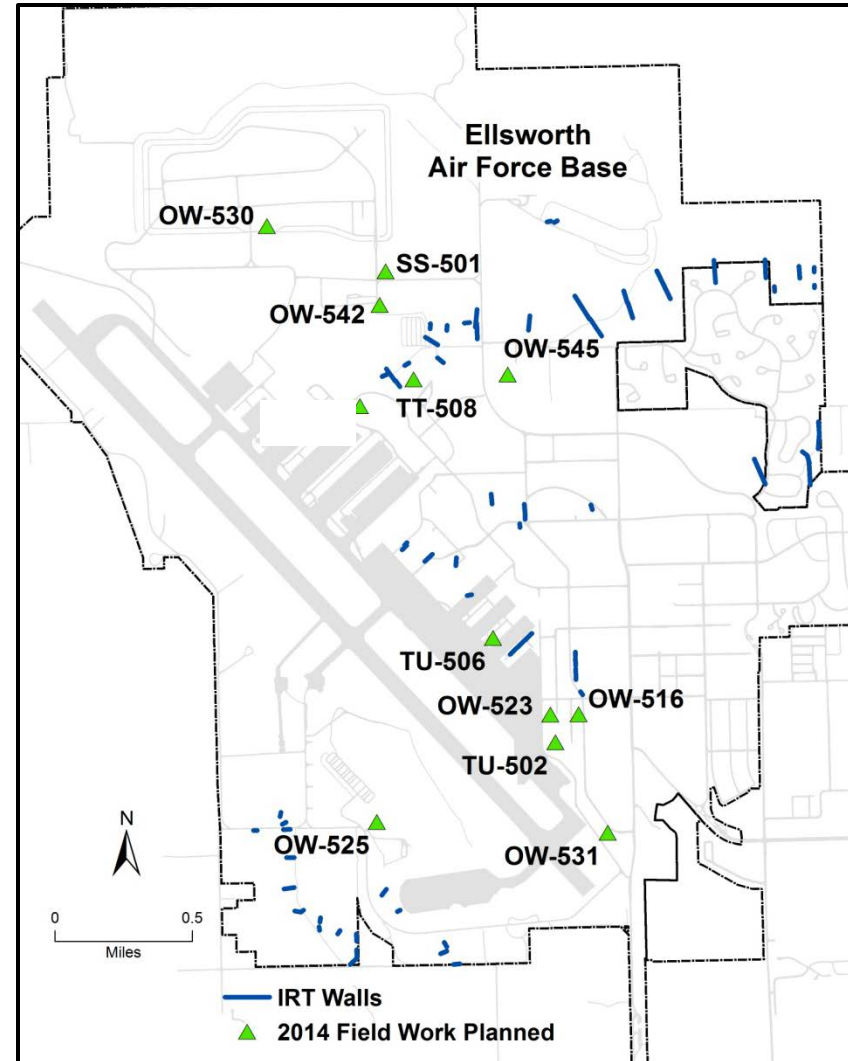


# Upcoming Field Work



## ➤ Work Plans for the following sites are in development:

- OU-11 (OT020) - IRT reinjection
- SS501 (Spill Site 88408) – Remedial Investigation (RI)
- TU502 (UST Site 605) - RI
- TU506 (UST Site 7618) - RI
- TT508 (Fuels Area D) - RI
- OW542/OW545 (Oil Water Separators (OWS) at 88409 and 8115) - Site Assessment (SA)
- OW516/OW523/OW525/OW530/OW531 - (OWS 1500, 601, 6909, 88240, 1709) - SA
- No significant affect to operations at any of these sites



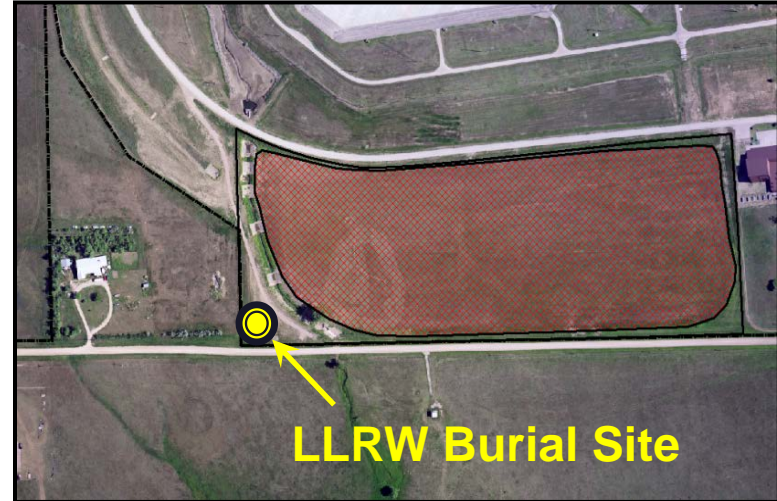


# OU-2 LLRW Burial Site (RW028)



## ➤ 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
- No indication of radiation during field monitoring by base RSO

## ➤ Interim Removal Action planned for late 2015

- Excavate the area of two potential concrete burial monoliths
- Chemical Agents not anticipated but will have safety plans
- Investigate other geophysical anomalies over 0.75 acre area



# Military Munitions Response Program (MMRP)

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## ➤ **Historical Records Review (HRR)**

- April 2011 records search identified locations on EAFB where historical use of munitions occurred
- 10 sites recommended for evaluation as potential Munitions Response Areas (MRAs)

## ➤ **Comprehensive Site Evaluation Phase I/II**

- Visual inspection of 10 sites completed 5-16 November 2012
- Soil sampled at 3 sites - former pistol range, former skeet range, and “kick out” arc around former EOD disposal area
- No UXO found
- Additional “data gap” work completed September 2014
- Recommends one site for further investigation due to previously removed expended Jet-Assisted Takeoff (JATO) bottles



# Five Year Review

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- **Ellsworth is completing its fourth 5 Year Review**
- **5 Year Reviews must be implemented in accordance with CERCLA**
- **The Purpose is to determine whether the remedies remain protective of human health, and the environment**
  - If issues that affect protectiveness are found, recommendations will be made to address them
- **The public can contribute during the review process by providing questions and comments to the base POC**
- **URS is contractor completing the Five Year Review**
  - Draft document under regulatory review
  - 5 Year Review completion date is Sept 2015



# Emerging Contaminants

## Perfluorinated Compounds (PFCs)

### ➤ Man-made compounds present in commonly used products

- Fire fighting foam
- Teflon & Stain Repellant

### ➤ Two have EPA provisional Health Advisory Levels

- Perfluorooctane Sulfonate (PFOS)  
0.4 ug/L water  
16,000 ug/Kg soil
- Perfluorooctanoate (PFOA)  
0.2 ug/L water  
6,000 ug/Kg soil

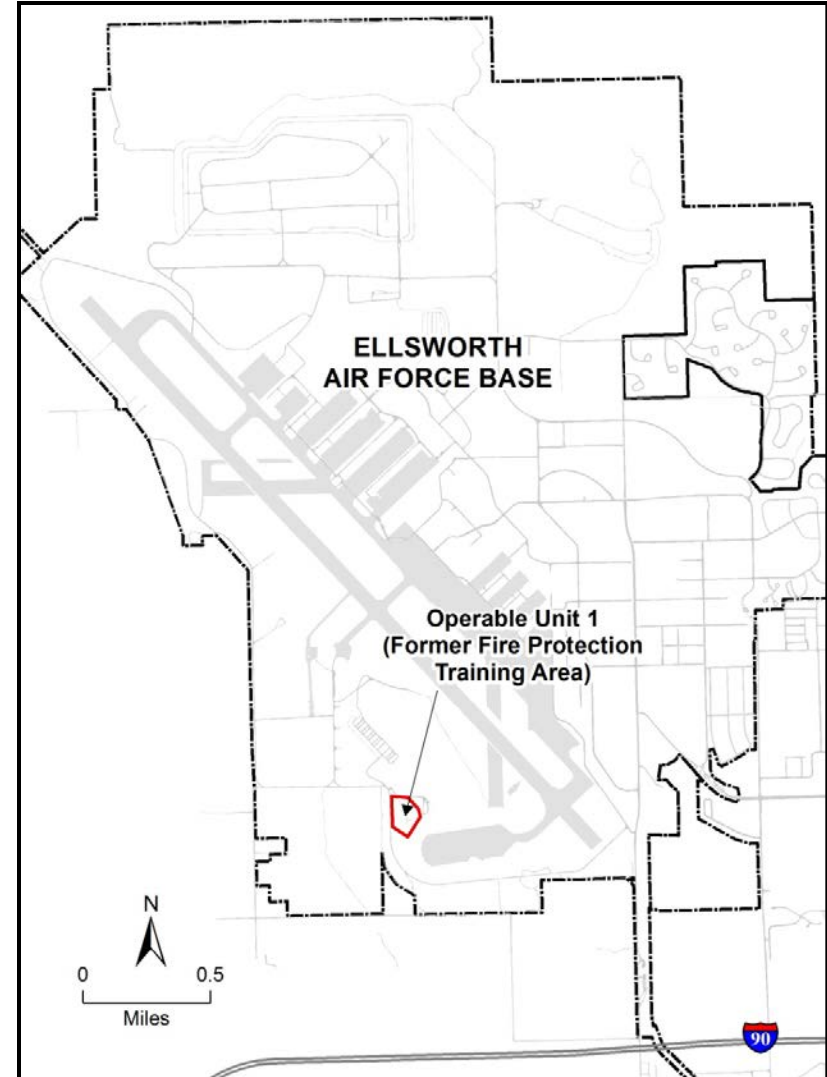




# Emerging Contaminants

## Perfluorinated Compounds (PFCs)

- PFOS and PFOA were detected in soil and groundwater at Operable Unit 1 (OU-1) above provisional health advisory levels
- A project to investigate PFOS and PFOA in soil and groundwater around OU-1 was awarded. Work to be completed in fall 2015/spring 2016 includes:
  - Delineate the extent of the plumes
  - Determine if there are off-base impacts
  - Locate off-base private wells to the south





# Emerging Contaminants

## Perfluorinated Compounds (PFCs)

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- **A Preliminary Site Investigation for PFCs was conducted in June 2014**
- **Soil and Groundwater samples were collected from 5 locations across the installation**
  - **B88240**
  - **North Docks**
  - **Outfall 3**
  - **B618**
  - **Wastewater Treatment Plant**
- **PFCs above the EPA's Provisional Health Advisory Levels were detected in groundwater samples collected at all 5 locations**
- **An installation-wide Site Investigation project is being programmed for FY17**





# Preliminary Site Investigation



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# 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

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- **Continue with basewide monitoring program and IRT reinjection as needed**
- **Complete the planned 2015 field work at the former compliance restoration sites**
- **Complete OU-2 LLRW interim removal action and investigation in 2015**
- **Implement MMRP actions**
- **Conduct OU-1 PFC investigation field work beginning this fall**
- **Complete the Five Year Review by September 2015**



# Future Plans - continued

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- **Award project to conduct an installation wide Site Investigation for PFCs**
- **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**
- **Report sample results and Exit Strategy status at future public meetings**



# Questions

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