Ellsworth Air Force Base Restoration News

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U.S. AIR FORCE
ELLSWORTH AFB, S.D.

Next RAB Meeting

The next Restoration Advisory Board meeting will be held in the fall of 2016.

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- **Upcoming Five Year Review Announcement**

RW028 Low Level Radioactive Waste Burial Site

In 1997, two concrete burial monoliths presumed to contain low-level radioactive waste were removed from the burial site located at the southern boundary of the Base (see Figure 1). The monoliths were thought to contain luminous instrument dials and markers, electronic tubes, valve knobs and handles, and various experimental items. Chemical Agent Identification Sets (training aids) were unexpectedly discovered during the removal action.

In 2011, one, and possibly two additional presumed monoliths were discovered and are planned for removal in 2017. Chemical Agents are not anticipated but a contingency plan is being developed in the event they are found.

Perfluorinated Compounds (PFCs)

Perfluorinated compounds (*PFCs*) are man-made compounds present in commonly used products like non-stick coatings (Teflon), food packaging, and stain repellents (Scotchgard). PFCs are also present in fire-fighting foams.

There are many PFCs, but the two with U.S. Environmental Protection Agency (*EPA*) provisional health advisory levels are perfluorooctane sulfonate (*PFOS*) and perfluorooctanoic acid (*PFOA*).

Former Fire Protection Training Area

During a research project at the Former Fire Protection Training Area at Ellsworth in 2011, PFOS and PFOA were detected in soil and groundwater above provisional health advisory levels. Fire fighting foam was used at the site starting in approximately 1970.

The Air Force recently finalized the remedial investigation work plan to investigate the extent of PFCs in soil and groundwater at the Former Fire Protection Training Area, including possible off-Base impacts to the south. Stage 1 sampling was completed in March 2016 and Stage 2 sampling is scheduled for fall 2016.

Other Areas at Ellsworth

The Air Force completed a Preliminary Assessment in 2014 and PFCs were detected in groundwater at 5 other areas on Base. A Site Inspection is scheduled for October 2016 to collect additional samples at other areas where PFCs may have been released to the environment.

Emerging Contaminant 1,4-Dioxane

1,4-Dioxane is found at many federal facilities because of its widespread use as a solvent stabilizer. Groundwater samples at Ellsworth were first analyzed for 1,4-dioxane in 2009 and all results were well below the EPA tap water screening level of 6.1 micrograms per liter (*µg/L*).

The EPA lowered the tap water screening level to 0.78 µg/L and additional groundwater samples were analyzed for 1,4-dioxane in 2014. One sample located south of the Base boundary (see Figure 1) was reported with a detection of 0.56 µg/L that was below the screening level.

The EPA lowered the tap water screening level again in 2015 to 0.46 µg/L. Therefore, the 1,4-dioxane detection from 2014 is above the new screening level. The Air Force is currently planning to determine the extent of 1,4-dioxane in groundwater above the new 2015 screening level.

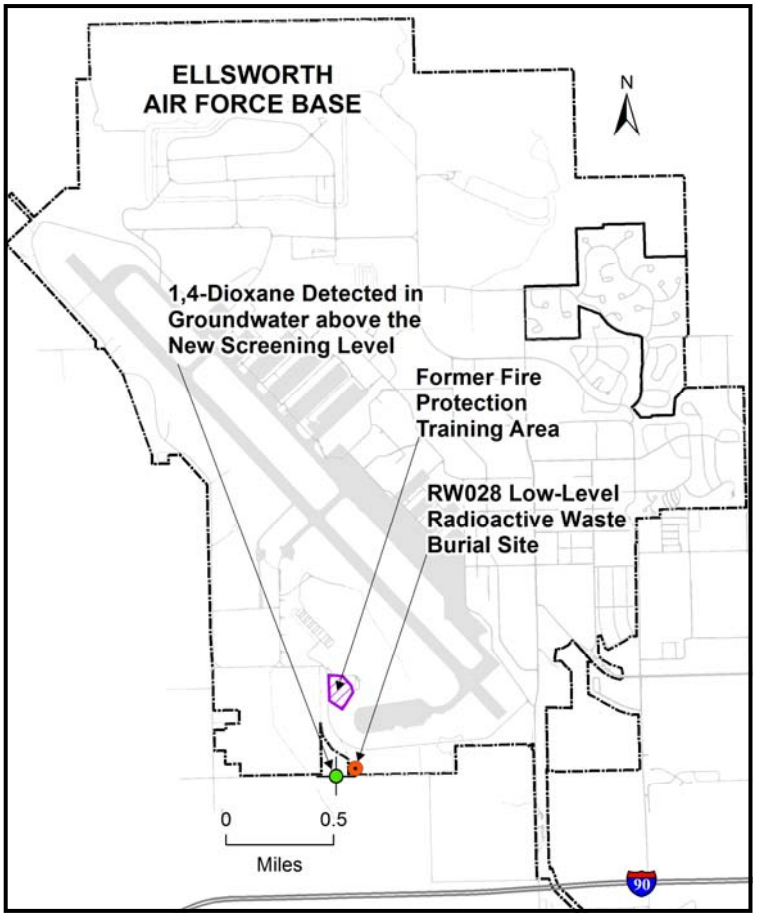
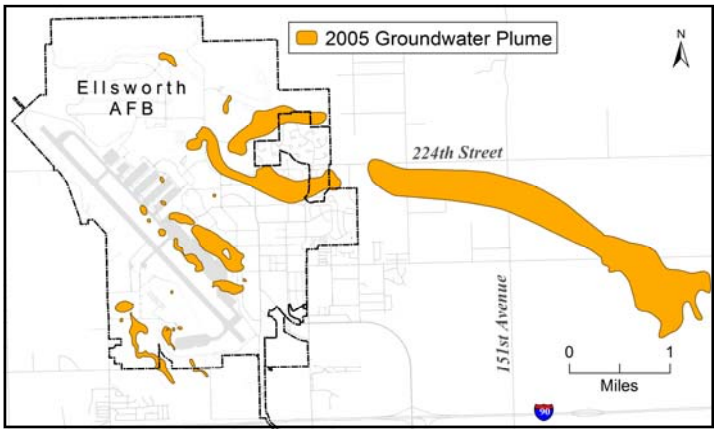
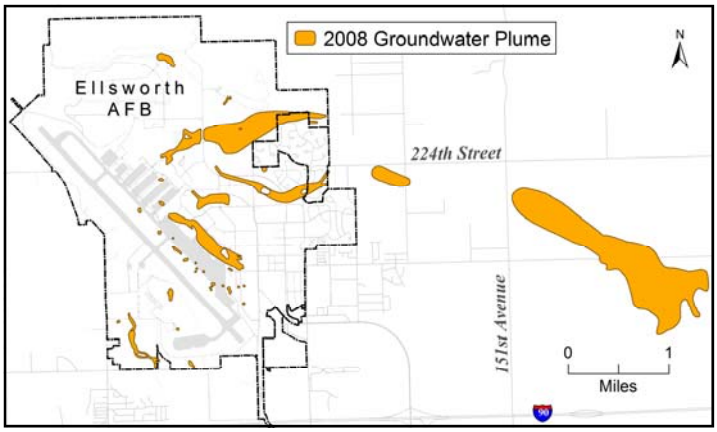
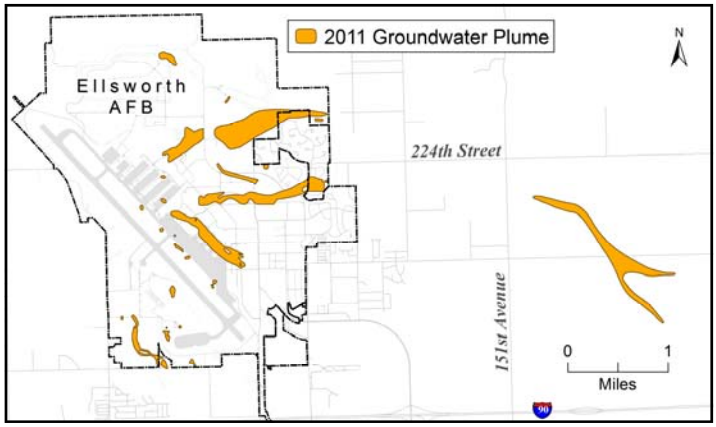
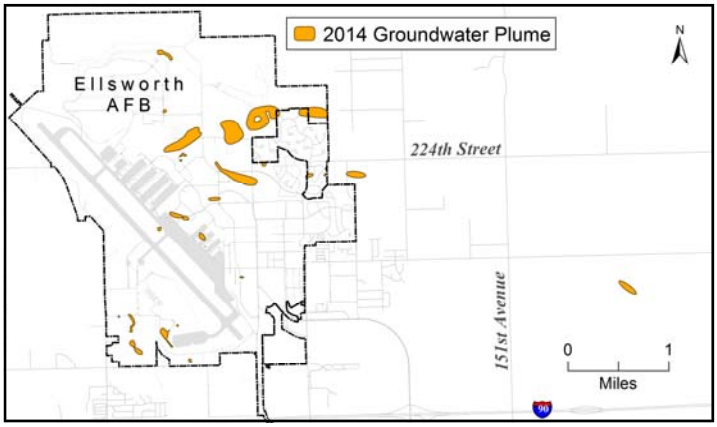


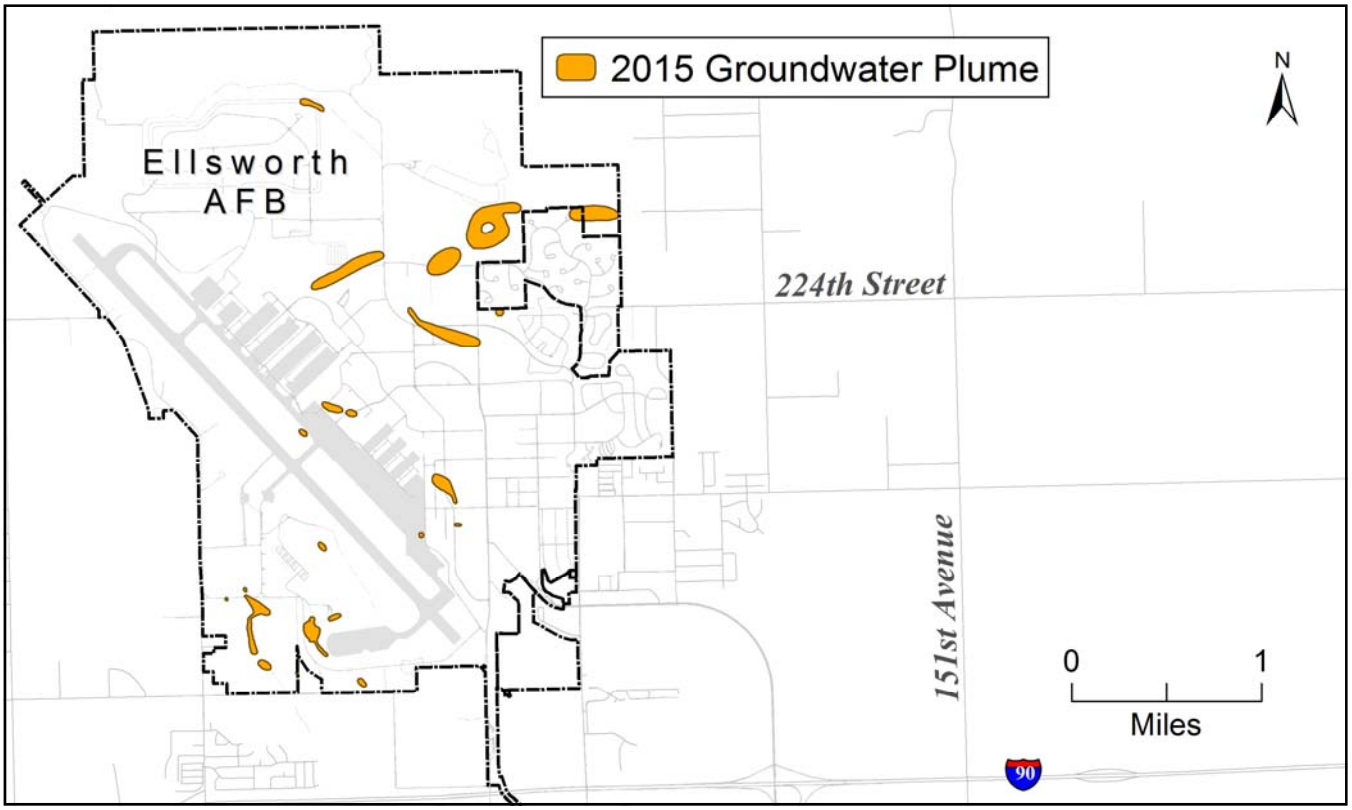
FIGURE 1. Locations of the PFC Investigation, the RW028 Site, and the 2014 1,4-Dioxane Detection in Groundwater











These figures show the groundwater contaminant plumes (mostly trichloroethylene or *TCE*) decreasing in size since treatment began in the 1990s. Removing the source at the Base boundary has allowed the East Off-Base plume to rapidly decline, or naturally attenuate. After the source of contamination was removed, natural processes of dilution, dispersion, and degradation continue to reduce the small amount of contamination that remains in the groundwater. The last detection of TCE above the maximum contaminant level (*MCL*) in the East Off-Base area was in 2014.