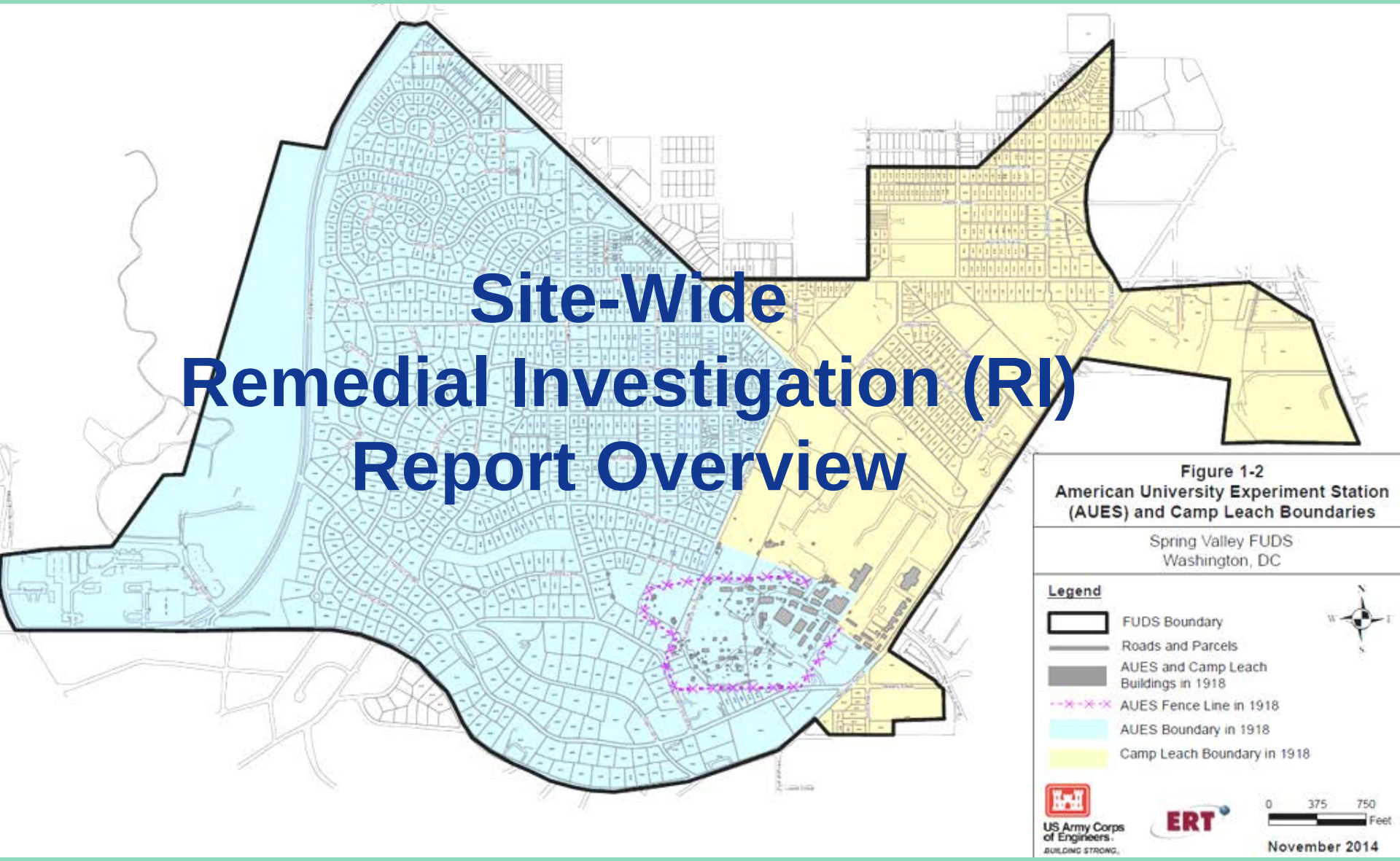
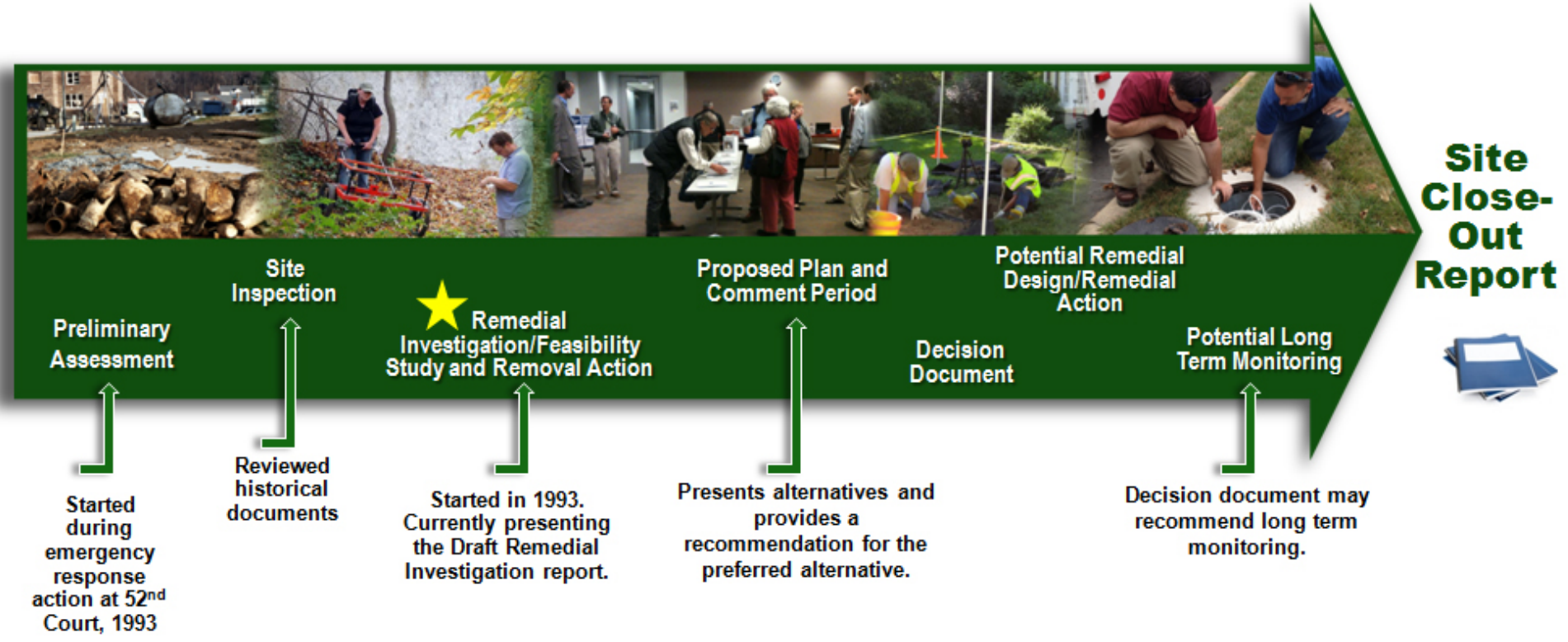
USACE Updates

Site-Wide Remedial Investigation (RI) Report Overview



CERCLA Process



Spring Valley FUDS
Site-Wide RI Table of Contents

Two primary guidance documents were followed in preparing the Site-Wide Remedial Investigation (RI) Report:

- **The Army MMRP RI/FS Guidance**
- **The EPA Guidance for Conducting RI/FS.**

Each document provides a suggested Table of Contents to address the topics required for an RI report.

A review of the development of the Table of Contents for the SVFUDS RI was presented at the March 2014 RAB meeting.

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Site-Wide RI Report Organization

Table of Contents:

- **Executive Summary**
- **Section 1** – Introduction
- **Section 2** – Physical Characteristics
- **Section 3** – RI Objectives and Conceptual Site Models (CSMs)
- **Section 4** – Field Activities
- **Section 5** – Investigation Results
- **Section 6** – Contaminant Fate and Transport
- **Section 7** – Risk Assessment
- **Section 8** – Summary and Conclusions
- **Appendices** – A through G

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Site-Wide RI Executive Summary

The Executive Summary provides a detailed overview of the whole RI report.

- Two subjects to note:
  - 4825 Glenbrook Road was designated as a separate site. However, the Site-Wide RI discusses 4825 Glenbrook Road as needed to provide the history and investigations in context.
  - The groundwater study will have its own stand alone RI. However, a summary of current groundwater sampling data will be provided in Appendix G once it is complete.

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Site-Wide RI Section 1: Introduction

This RI is notably different from traditional RIs because no singular set of objectives or work plan was established.

- While typical RIs follow the CERCLA sequence of events, this RI is an extremely complex site involving several ongoing and concurrent activities over many years, focusing on different potential hazards and/or investigation types or locations, as well as time-critical and non-time critical removal actions.
- Each of these ongoing and concurrent activities resulted in completed standalone reports documenting the findings.

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Site-Wide RI Section 1: Introduction

- Previous efforts are organized by the following key activities types:
  - Initial investigation and characterization
  - Follow-on investigation and characterization
  - Geophysical investigations
  - Removal actions
- Tables list the key finalized standalone documents that provide a summary of previous site activities, describing when and why they were performed.
- Includes definitions and Primary Units of Investigation:
  - Operable Units (OUs)
  - Points of Interest (POIs)
  - Areas of Interest (AOIs)
  - Range Fan
  - Munitions Response Sites (MRSs)

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Site-Wide RI Section 2: Physical Characteristics

- Describes the physical characteristics and surface features of the region, and the tools used to support and plan investigation and characterization activities in the SVFUDS.
- Key topics covered:
  - **GIS:** how it was developed and applied to investigation planning.
  - **Ground Scars:** how they were mapped and used to guide sampling and investigation.
  - **Cut and Fill Maps:** how they were developed and used to help determine topography changes relative to circa 1918 conditions.
  - **Environmental Setting:** including regional and local geology, soils and the relevance of saprolite, hydrology, hydrogeology, ecology, and demographics.

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Site-Wide RI Section 3 and 4

- Section 3: RI Objectives and Conceptual Site Models (CSMs)
  - Describes the RI objectives of characterizing nature and extent of any potential hazardous and toxic waste (HTW)/munitions constituents (MC)/ chemical warfare materiel (CWM) contamination or MEC hazards within the SVFUDS resulting from the past Department of Defense (DOD) activities.
  - CSMs communicate the current knowledge about risks at the site. These CSMs discuss the primary sources, release mechanisms, interactions, and receptors within the SVFUDS.

- Section 4: Field Activities
  - Provides a description of the technical procedures used to perform the RI field activities.
  - Field activity processes covered include:
    - Sampling and data collection
    - Removal operations
    - High and low probability intrusive investigations
    - Phytoremediation efforts
    - Soil excavations

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Site-Wide RI Section 5: Investigation Results

- Organized per the four previously discussed activity types.
- Summarizes the results of all the investigations and place them into the context of the nature and extent of contamination discussion.
- Presents the rationale for each key event and summarizes findings to provide a more complete characterization
- Further references are provided in the appropriate RI appendix.

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Site-Wide RI Section 6: Contaminant Fate & Transport

- Discusses the fate and transport mechanisms potentially affecting releases and distribution of constituents and examines how these mechanisms affect migration of the constituents.

- Key topics include:
  - Potential contaminant sources;
  - Routes of migration;
  - Migration and persistence; and
  - The focus on SVFUDS constituents, including arsenic, mustard, lewisite, CWM agent breakdown products, metals, and PAHs.

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Site-Wide RI Section 7: Risk Assessment

- Integrates multiple risk-related issues to obtain a comprehensive understanding of risks/hazards remaining within the SVFUDS.
- Section 7 includes the following key elements:
  - Quantitative Human Health Risk Assessments (HHRAs);
  - Review of previously completed HHRAs and risk screening procedures;
  - Arsenic derivation and protectiveness of 20 mg/kg arsenic as the soil cleanup goal, and arsenic potentially remaining in soil beneath city streets;
  - External health-related studies;
  - MEC Hazard Assessment (MEC HA) and MRS Prioritization Protocol (MRSPP);
  - Screening Level Ecological Risk Assessment; and
  - Uncertainty discussions focusing on the sufficiency of the existing sampling to characterize risk, DGM (geophysics) limitations, and the potential for remaining disposal areas or burial pits.

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Site-Wide RI Section 7: Risk Assessment

- The overall HHRA strategy included:
  - Review of the older (pre-2005) standalone HHRAs to see whether their conclusions were still protective in light of updated EPA guidance.
  - Analysis of supplemental sampling based on AOI Task Force recommendations (potential AOIs not previously addressed, or potential data gaps, etc.)
- The result was identification of exposure units (EUs) that integrated those older HHRA samples with the more recent supplemental samples, and re-screening the EU based on the combined single data set.

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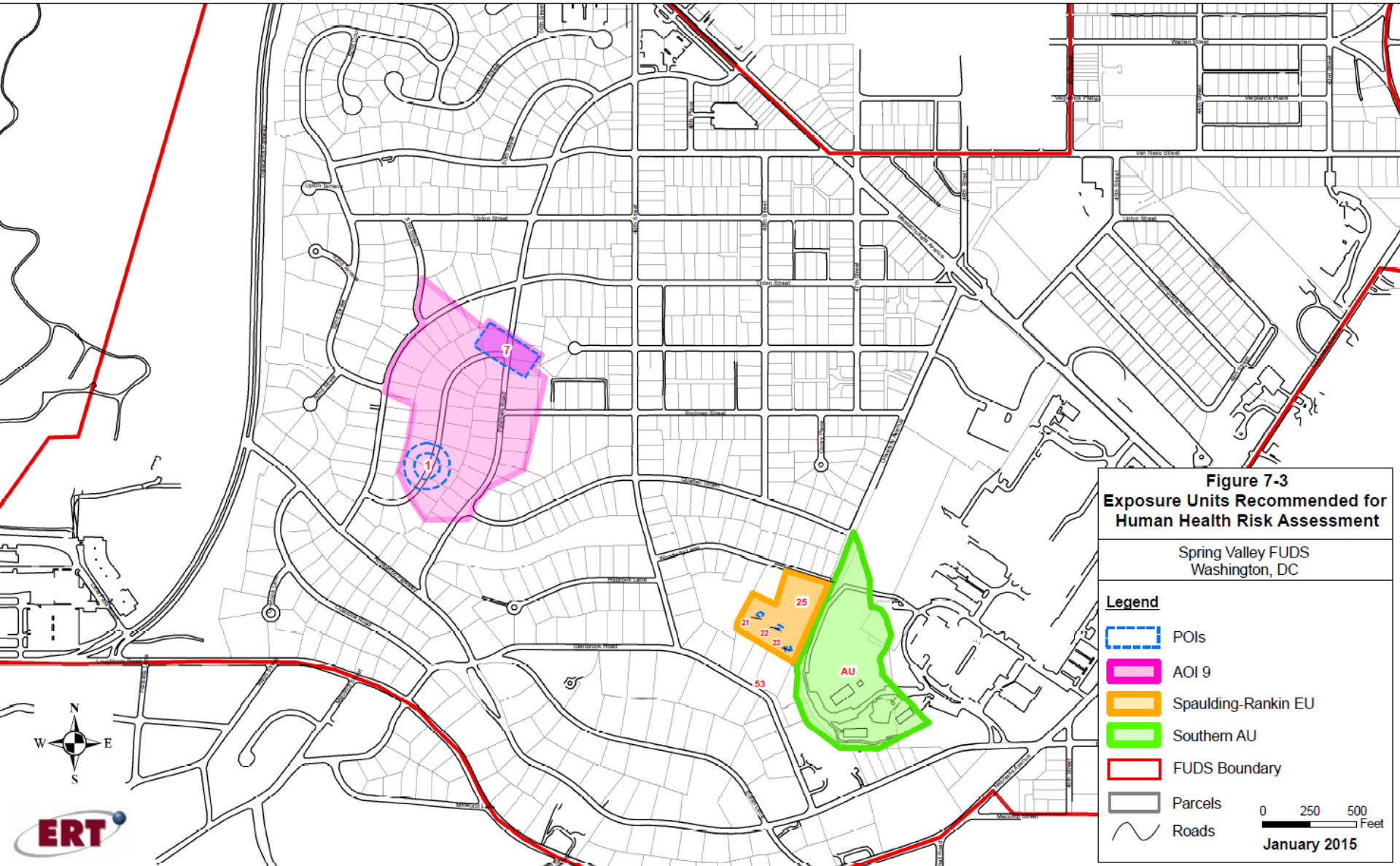
Site-Wide Human Health Risk Assessment



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Site-Wide RI MEC Hazard Assessment Summary

- MEC HA is a qualitative hazard assessment that looks at the acute explosive hazards associated with remaining MEC at a site.
  - Analyzes site-specific conditions that affect the likelihood that a MEC accident will occur.
- At SVFUDS, the MEC HA was organized around three primary activities:
  - **Ballistically Fired Testing** (e.g., Range Fan);
  - **Statically Fired Testing** (e.g., Circular Trenches); and
  - **Disposal** (e.g., 52nd Court, Lot 18).
    - Disposal is further divided into ‘known’ and ‘possible’ disposal areas.

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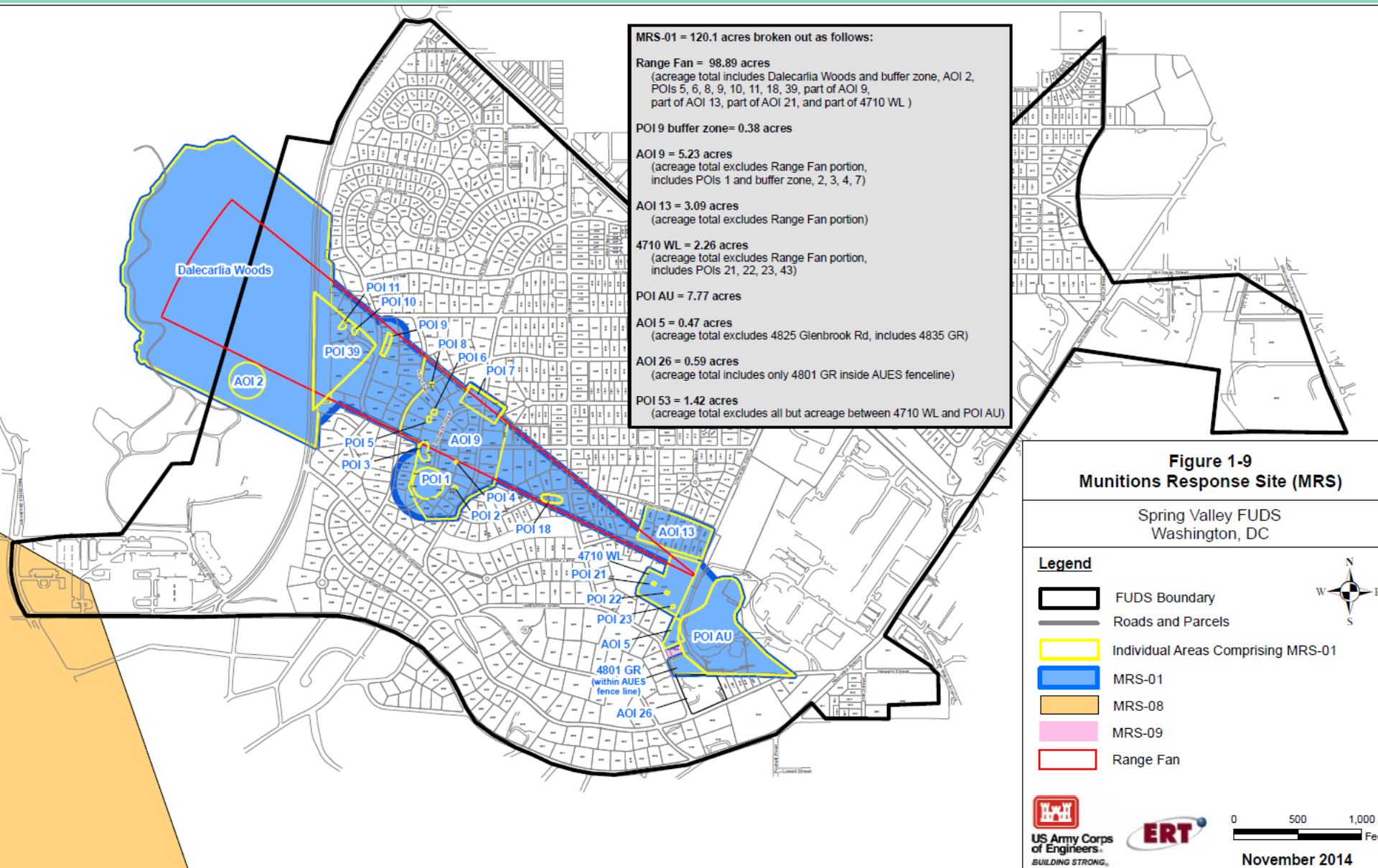
Site-Wide RI Munitions Response Site (MRS)



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Site-Wide RI MEC Hazard Assessment Summary

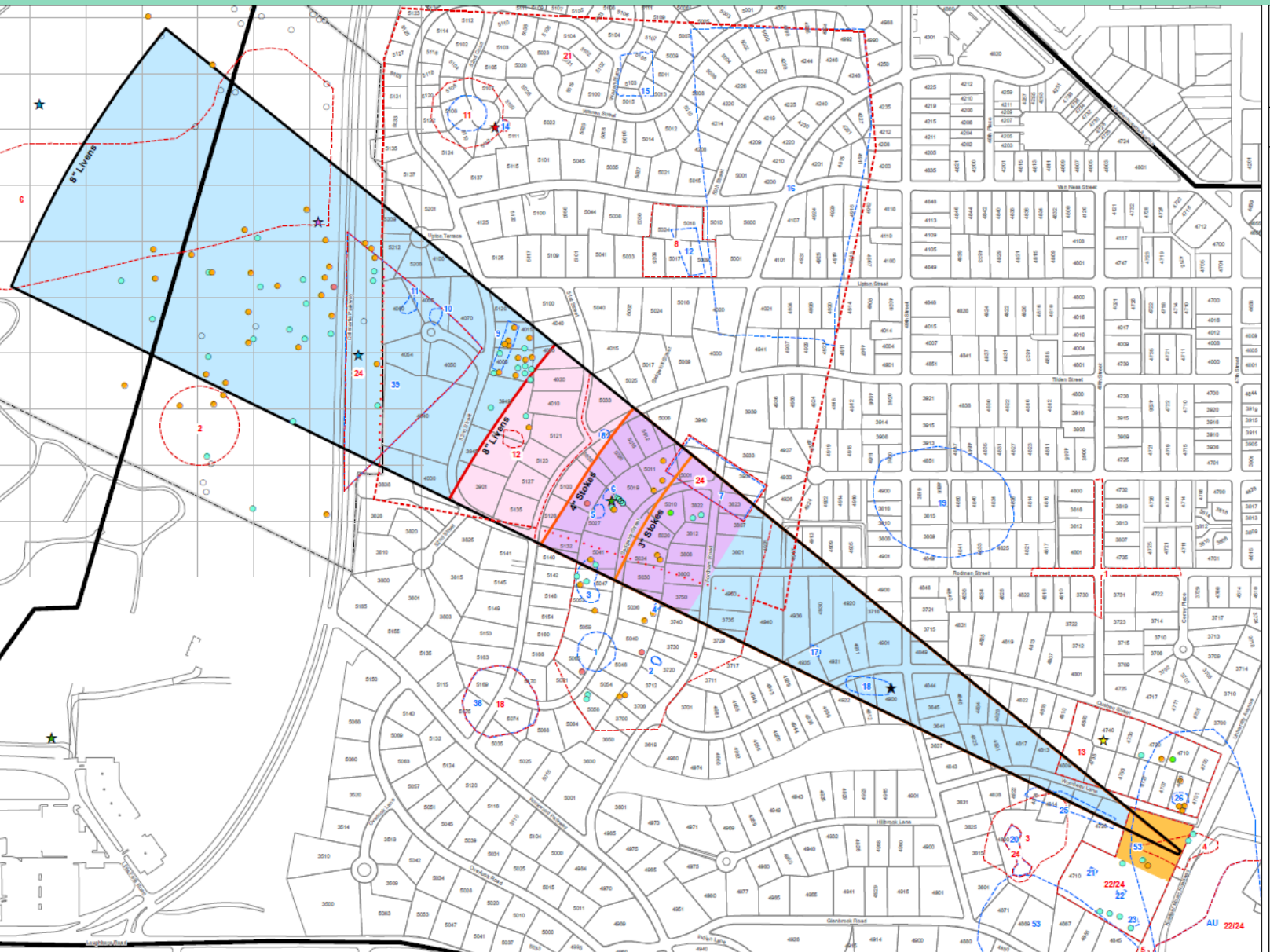

Figure 7-6
Ballistically Fired Testing Areas (MEC HA)

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Washington, DC

Legend

Range Fan Component Areas
- Function Test Range (3-4")
- Function Test Range (8")
- Range Safety Buffer
- Firing Point

Items
- Livens Projectile (MEC)
- Stokes Mortar (MEC)
- 75 mm Projectile (MEC)
- Thermite Grenade (MEC)
- Pipe with Explosives (MEC)
- Disposal Area (MEC/CWM)
- 75 mm MD
- Livens MD
- Stokes Mortar MD
- MD (miscellaneous)
- Non-AUES MD

Range Fan
- 3" Stokes Yards
- 4" Stokes Yards
- 8" Livens Yards
- Area of Interest (AOI)
- Point of Interest (POI)
- Parcels
- FUDS Boundary

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Site-Wide RI MEC Hazard Assessment Summary

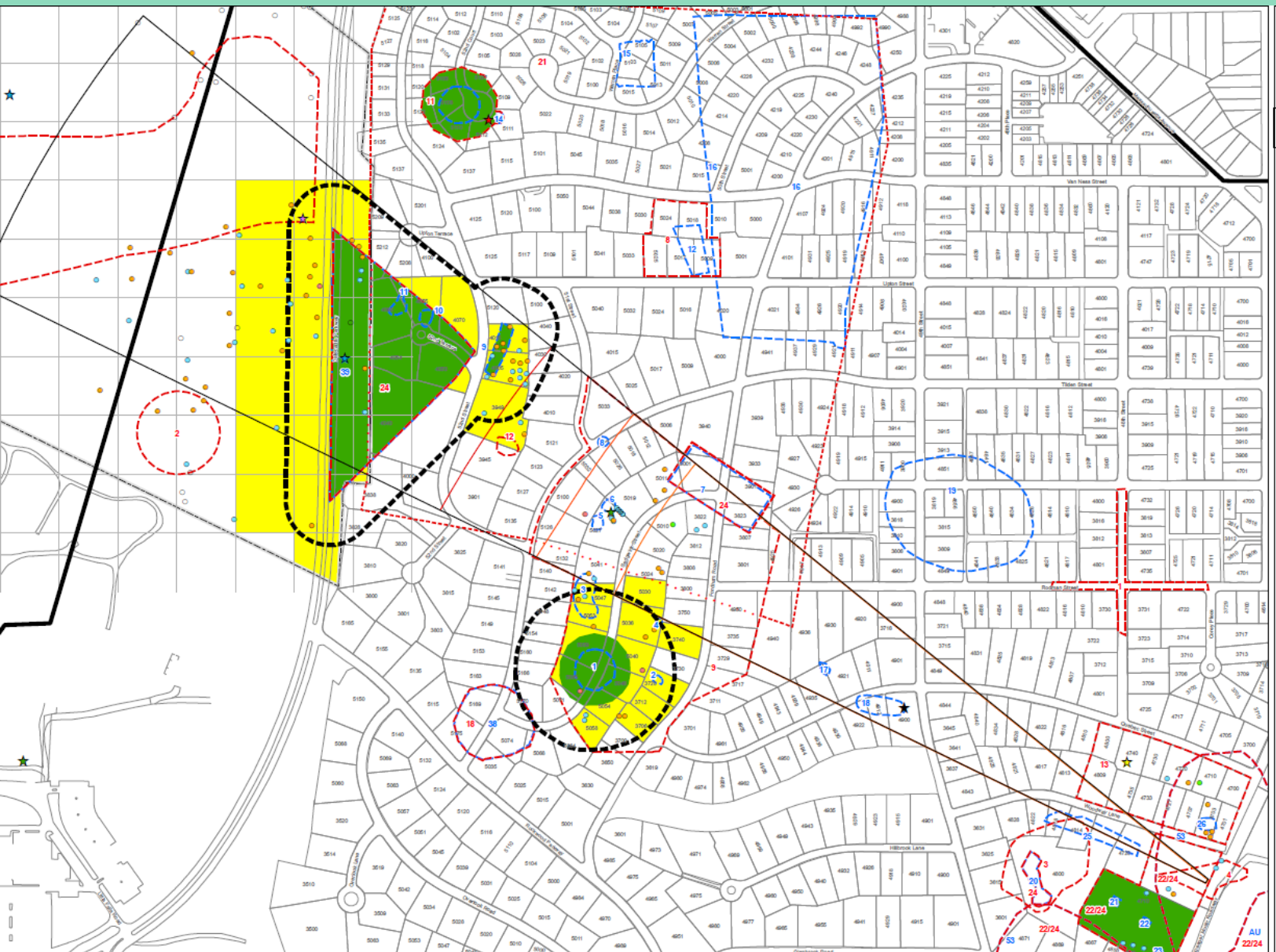

Figure 7-7
Statically Fired Testing Areas (MEC HA)

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Washington, DC

Legend

Statically Fired Testing Areas
- Discrete Static Testing Area
- Potential DMM Disposal Investigation Area (150 foot)
- Geophysical Coverage

Items
- Livens Projectile (MEC)
- Stokes Mortar (MEC)
- 75 mm Projectile (MEC)
- Thermite Grenade (MEC)
- Pipe with Explosives (MEC)
- Disposal Area (MEC/CWM)
- 75 mm MD
- Livens MD
- Stokes Mortar MD
- MD (miscellaneous)
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Range Fan
- 3" Stokes Yards
- 4" Stokes Yards
- 8" Livens Yards
- Area of Interest (AOI)
- Point of Interest (POI)
- Parcels
- FUDS Boundary

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Site-Wide RI MEC Hazard Assessment Summary

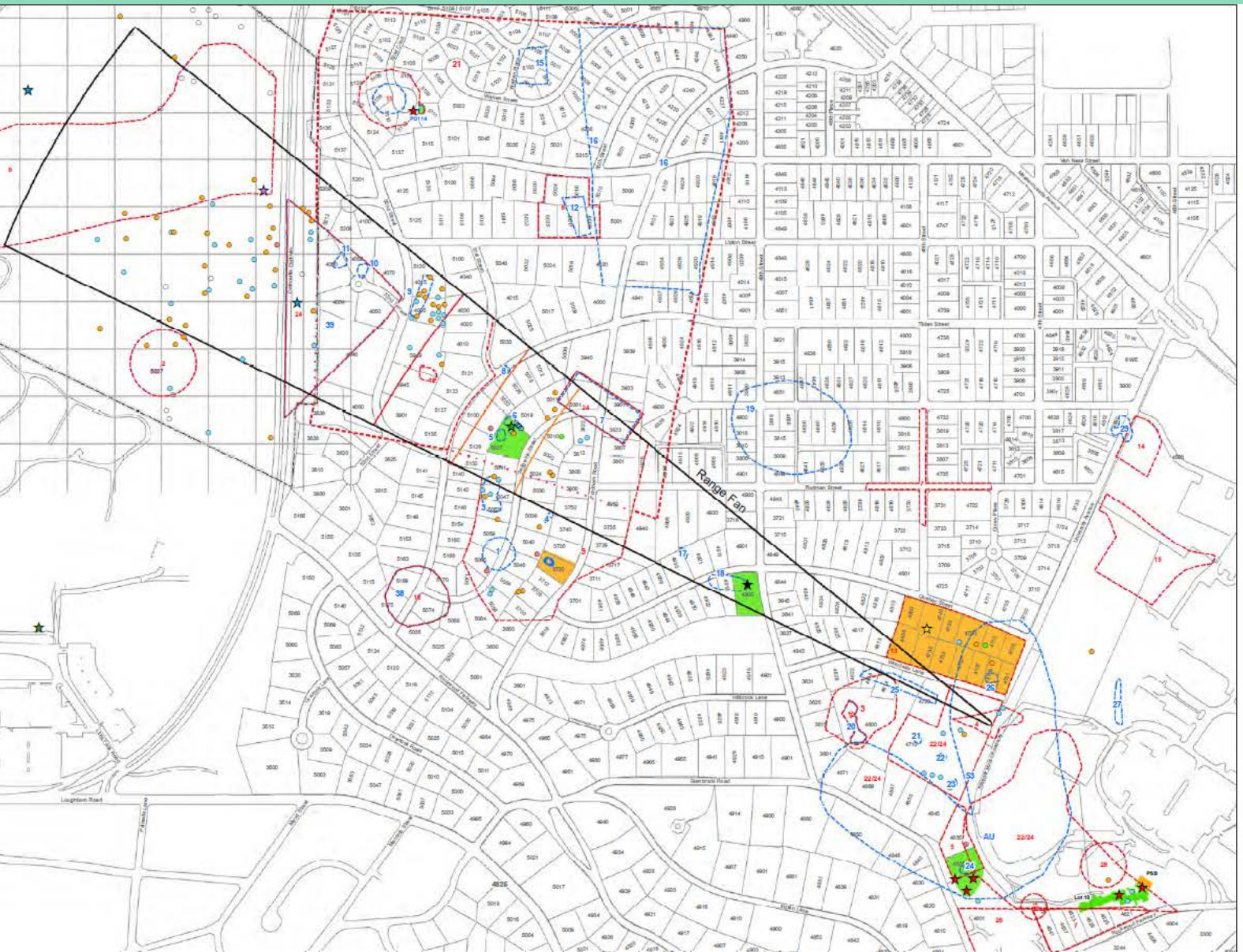

Figure 7-8
Known and Potential Disposal Areas (MEC HA)

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Washington, DC

Legend

Known Disposal Area
Possible Disposal Area

Items
- Livens Projectile (MEC)
- Stokes Mortar (MEC)
- 75 mm Projectile (MEC)
- Thermite Grenade (MEC)
- Pipe with Explosives (MEC)
- Disposal Area (MEC/CWM)
- 75 mm MD
- Livens MD
- Stokes Mortar MD
- MD (miscellaneous)
- Non-AUES MD

Range Fan
- 3" Stokes Yards
- 4" Stokes Yards
- 8" Livens Yards

Area of Interest (AOI)
Point of Interest (POI)
Parcels
FUDS Boundary

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Site-Wide RI Conclusions and Appendices

- **Conclusions:**
  - Dr. Peter DeFur plans to present his evaluation of the RI conclusions at the March 10th RAB meeting.

- **Appendices:**
  - A) All Figures
  - B) Technical Memos and Signed Documents of Record
  - C) Key Investigation or Removal Reports
  - D) Completed HHRAs and Screening Documents
  - E) HHRAs for Residential and AU Exposure Units
  - F) MEC HA Score sheets and MRSPP Score sheets
  - G) Groundwater Summary Report (available at a later date)

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Tentative Schedule for Site-Wide RI Report

January 13	USACE gives RAB overview of the RI document.
February 10	End of Interagency Partner's 60-day review. Partnering meeting to discuss RI review, adequacy and conclusions of the Draft-Final RI document.
February - March	USACE contacts homeowners, who may be directly effected by the RI report, ahead of public release.
March 10	USACE and Dr. Peter DeFur brief the RI conclusions at the RAB meeting. Tentative start of the formal 45-day public comment period.
Mid-April	Community meeting to brief the community on the RI document's content and conclusions.
Late-April	Public comment period ends. USACE addresses public comments and finalizes the report.
Next Steps	Feasibility Study to be conducted to evaluate alternatives for addressing any unacceptable risks or hazards identified in the Final RI Report.