SPRING VALLEY FORMERLY USED DEFENSE SITE PROJECT
Monthly RAB Meeting

February 14, 2012
7:00 – 8:55 p.m.

BASEMENT MEETING ROOM
ST. DAVID'S EPISCOPAL CHURCH
5150 MACOMB ST NW, WASHINGTON, DC

Agenda

7:00 p.m. **I.** **Administrative Items**

Co-Chair Updates
- Announcements, Introductions

Task Group Updates

7:10 p.m. **II.** **USACE Program Updates**

Arsenic Soil Removal
Groundwater Study
Military Munitions Response Program
- Controlled Detonation Chamber
- Anomaly Investigations

4825 Glenbrook Road
- Decision Document
- Remedial Design and Remedial Action Work Plan
- U.S. Department of Health's Agency for Toxic Substances and Disease Registry (ATSDR) Health Consultation

8:10 p.m. **III.** **Community Items**

AUES Fence Line Study & the Sergeant Maurer Burial Pit
Presented by Dan Noble, USACE Project Manager

Spring Valley Follow-On Health Study Update
Presented by Dr. Mary Fox, Johns Hopkins University Bloomberg School of Public Health

8:35 p.m. **IV.** **Open Discussion & Future RAB Agenda Development**

Possible Upcoming Meeting Topics*:
- 4825 Glenbrook Road Remedial Design
- 4825 Glenbrook Road Health Consultation Update
- Spring Valley Follow-On Health Study Update
- Review of 2011/2012 Quarterly Sampling Results

8:45 p.m. **V.** **Public Comments**

8:55 p.m. **VI.** **Adjourn**

**** RAB meetings are not held in August or December***

Spring Valley
Formerly Used Defense Site

Restoration Advisory Board Meeting

February 14, 2012

"The USACE Mission in Spring Valley is to identify, investigate and remove or remediate threats to human health, safety or to the environment resulting from past Department of Defense activities in the area."

US Army Corps of Engineers
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Agenda Review

- Co-Chair & Task Group Updates
  - Introductions, Announcements
- USACE Updates
  - Arsenic Soil Removal
  - Groundwater Study
  - Military Munitions Response Program
  - 4825 Glenbrook Road
- Community Items
  - Fence Line Study & Sgt. Maurer Pit
  - JHU Health Study Update
- Open Discussion & Agenda Development
- Public Comments

Co-Chair Updates

Introductions

Co-Chair Updates

- **Announcements**
  - **Website:**
    - **Overall Site update: NEW URL:**
      - ✓ http://www.nab.usace.army.mil/Projects/SpringValley
      - ✓ New look with more photos, 4825 Glenbrook Road dedicated page, new buttons/links
    - **Updates:**
      - ✓ Controlled Detonation Chamber News Release
      - ✓ November 2011 RAB and Partnering meeting minutes (No RAB or Partnering meetings in December)
      - ✓ November 2011 Groundwater Partnering meeting minutes
      - ✓ January 2012 Monthly Project Summary
  - In process: Locating 1999-2000 Inter-Agency Meeting Minutes (Not Partnering Meeting minutes)

New Website Layout

US Army Corps of Engineers
Baltimore District
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Home | About Us | News | Business | Contact | Careers | USACE | Resources

Baltimore District Home > Projects > Spring Valley > Spring Valley, Washington, DC - Formerly Used Defense Site

Spring Valley, Washington, DC
Formerly Used Defense Site

Spring Valley Project Monthly Update
January 2012
(Posted February 8, 2012)

This monthly Spring Valley Formerly Used Defense Site project summary is provided by the U.S. Army Corps of Engineers (USACE), Baltimore District, as part of its ongoing efforts to make information regarding the neighborhood investigation more accessible to community members, elected officials, Restoration Advisory Board members, and other interested stakeholders. Specifically, the monthly update is produced to provide those who follow the project with a current snapshot of regulatory partnering, planning and field activities, and is not designed to provide historical information or an overview of the project. Those individuals interested in broader project information, or who have follow-up questions regarding this update, are invited to contact our Community Outreach Team at 410-962-0157. You may also contact our project regulatory partners, James Sweeney (DDOE) at 202-535-2289 or Steven Hirsh (US EPA) at 215-814-3352.

Latest News:

Army Corps to destroy World War I conventional munitions *(read more)*

4825 Glenbrook Road Information Page

CONTACT US

Additional Information

Communications/Updates

- Archived Updates
- Community Newsletters
- Fact Sheets
- News Releases

Coordination

- Associated Meetings, Minutes & Presentations
- Associated Organizations
- Restoration Advisory Board

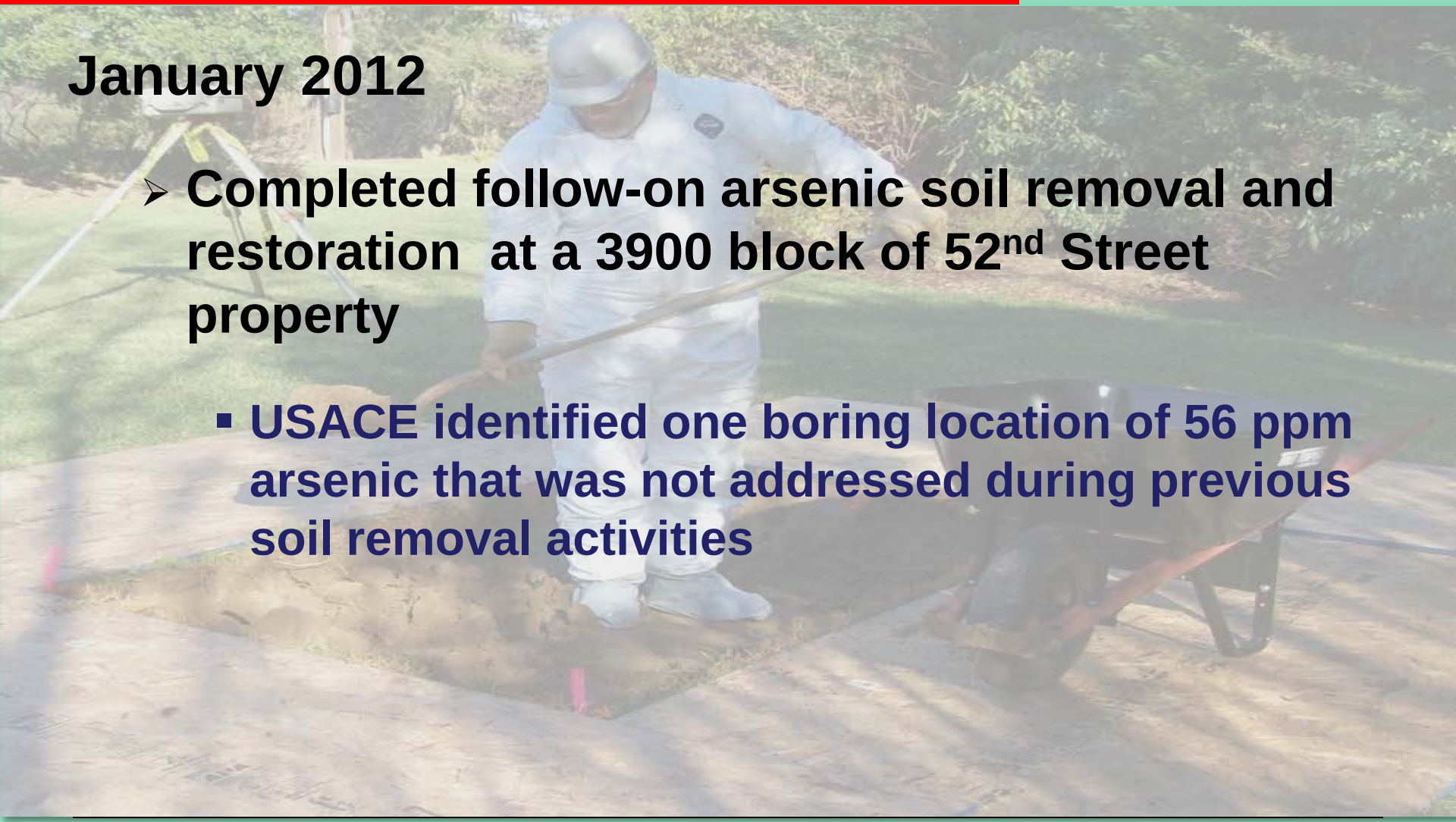
Project Documents

- 4825 Glenbrook Road (fomerly known as the Pit 3 Area)
- Project Maps

Task Group Updates

- **Membership Committee**
  - **One RAB member position still open**

Arsenic Soil Removal
Follow-On Efforts



January 2012

- **Completed follow-on arsenic soil removal and restoration at a 3900 block of 52nd Street property**
  - **USACE identified one boring location of 56 ppm arsenic that was not addressed during previous soil removal activities**

Soil Boring Excavation
3900 block of 52nd Street

Soil Boring Restoration
3900 block of 52nd Street

Arsenic Soil Removal
Follow-On Efforts

- **Identified two other properties with soil boring locations greater than 20 ppm arsenic**
  - **5100 block of Tilden Street, 22.8 ppm (5 ft. depth)**
  - **American University (Lot 44), 20.6 ppm, (3 ft. depth)**

  - **Not previously addressed because surface soil sampling results were <12.6 ppm**
  - **Outreach Team is contacting property owners to determine next steps**

Groundwater Study

Completed 4th quarterly sampling effort week of February 6th

- **21 existing groundwater monitoring wells**
- **14 surface water locations**

Installation of the custom-made sampling liners for the two deep wells (Rockwood Parkway and Glenbrook Road locations) started TODAY

Expected duration: 1-2 days per well

Groundwater Study
4th Quarterly Sampling

4900 block of
Loughboro Road

5000 block of
Macomb Street

Groundwater Study
Installation of Sampling Liner

4900 block of Rockwood Parkway

Groundwater Study

Upcoming:

- **Installation of last deep well on AU campus near Kreeger Hall, pending permit approval**
  - Planned for the week of March 12th, during AU's Spring Break

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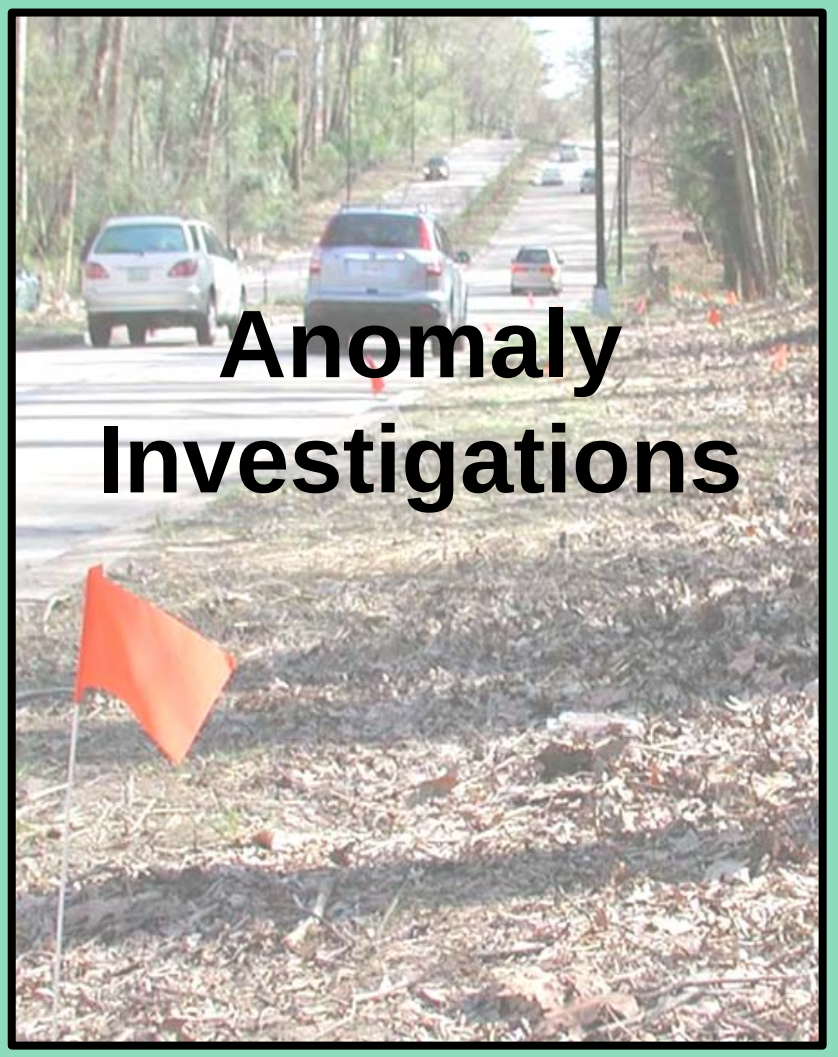
Spring 2012: Isotopic analysis of perchlorate

Military Munitions Response Program (MMRP)



Military Munitions Response Program (MMRP)
Controlled Detonation Chamber

Operation is planned for Friday, February 17th

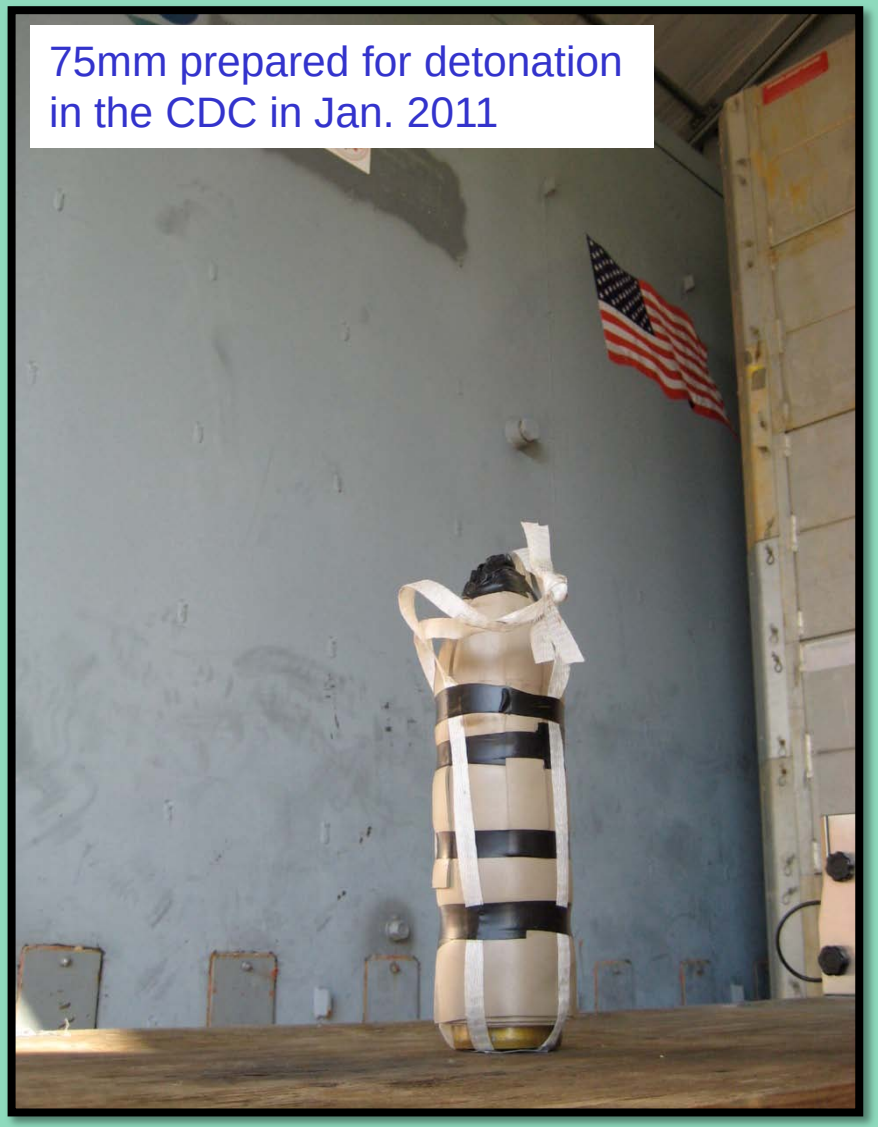
- **2 conventional (non-chemical) 75mm munitions will be safely and securely destroyed**
  - **Recovered during recently completed anomaly investigations in the Dalecarlia Woods geophysical investigation area**
- **Operation will last 2-3 hours**

The sound from the detonation is similar to a car backfiring and will last a fraction of a second

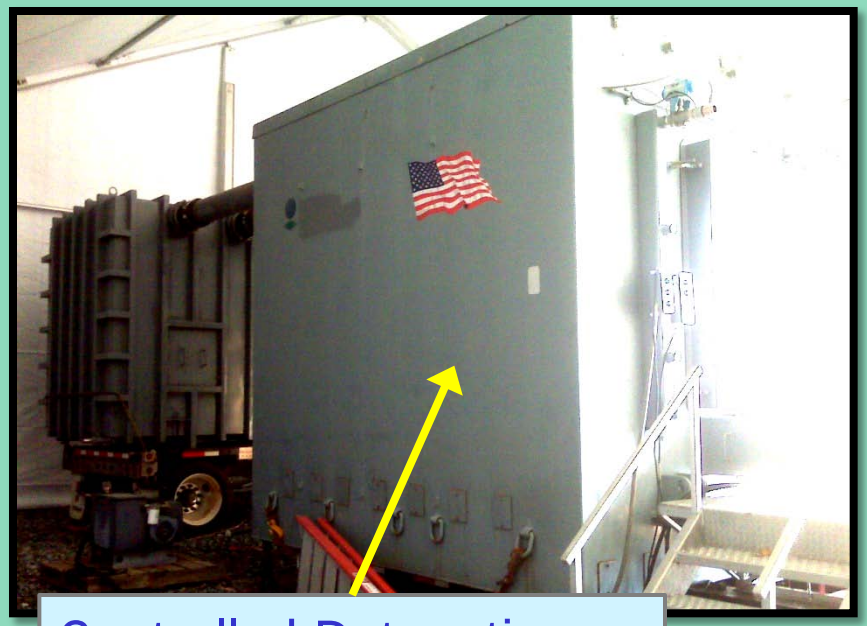
Military Munitions Response Program (MMRP)

Controlled Detonation Chamber

75mm to be destroyed in Feb. 2012 operations



75mm prepared for detonation in the CDC in Jan. 2011



Controlled Detonation Chamber inside temporary structure

Results: Scrap metal

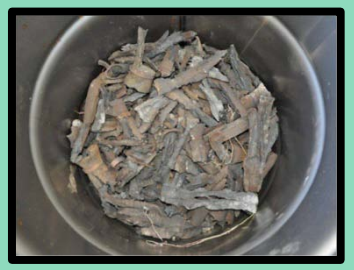
Expansion Tank & Filters

Military Munitions Response Program (MMRP)

Controlled Detonation Chamber

Using Safety and Site Set-Up Plans from January 2011 CDC operations

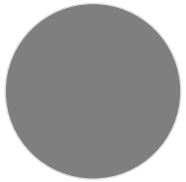
- **Approved by:**
  - Department of Defense Explosive Safety Board (DDESB)
  - U.S. Army Technical Center for Explosives Safety
  - U.S. Army Corps of Engineers
- **Concurrence**
  - District Department of the Environment (DDOE)
  - U.S. Environmental Protection Agency (USEPA)
- **Coordination**
  - D.C. Homeland Security and Emergency Management Agency
  - D.C. Metropolitan Police Department
  - D.C. Fire Department



Military Munitions Response Program (MMRP)
Controlled Detonation Chamber

Summary of Outreach Activities

- News Release sent to the NW Current, & posted on Project website
- E-mail and listserv notifications
  - January 2012 Monthly project update
  - ✓ RAB and local elected officials
  - ✓ Spring Valley Stakeholders
  - ✓ 2 Community listserv notices
- Door-to-door outreach
- RAB update



Spring Valley
Formerly Used Defense Site
Washington, D.C.

We stopped by today to discuss upcoming Spring Valley activities in your neighborhood, specifically:

The mobile Controlled Detonation Chamber, which was last used in Jan. 2011, is being transferred to the West Coast to support another project. Before it leaves USACE, working with EPA and DDOE, will safely destroy the 2 conventional munitions recovered during the Dalecarlia Woods Investigation.

The operation will last about 2-3 hours and will occur at the Spring Valley Federal Property Site on

Friday, Feb. 17, 2012

A brief popping noise from the detonation procedure may be heard in the neighboring area.

Please call our Community Outreach Team to schedule a visit or answer questions:

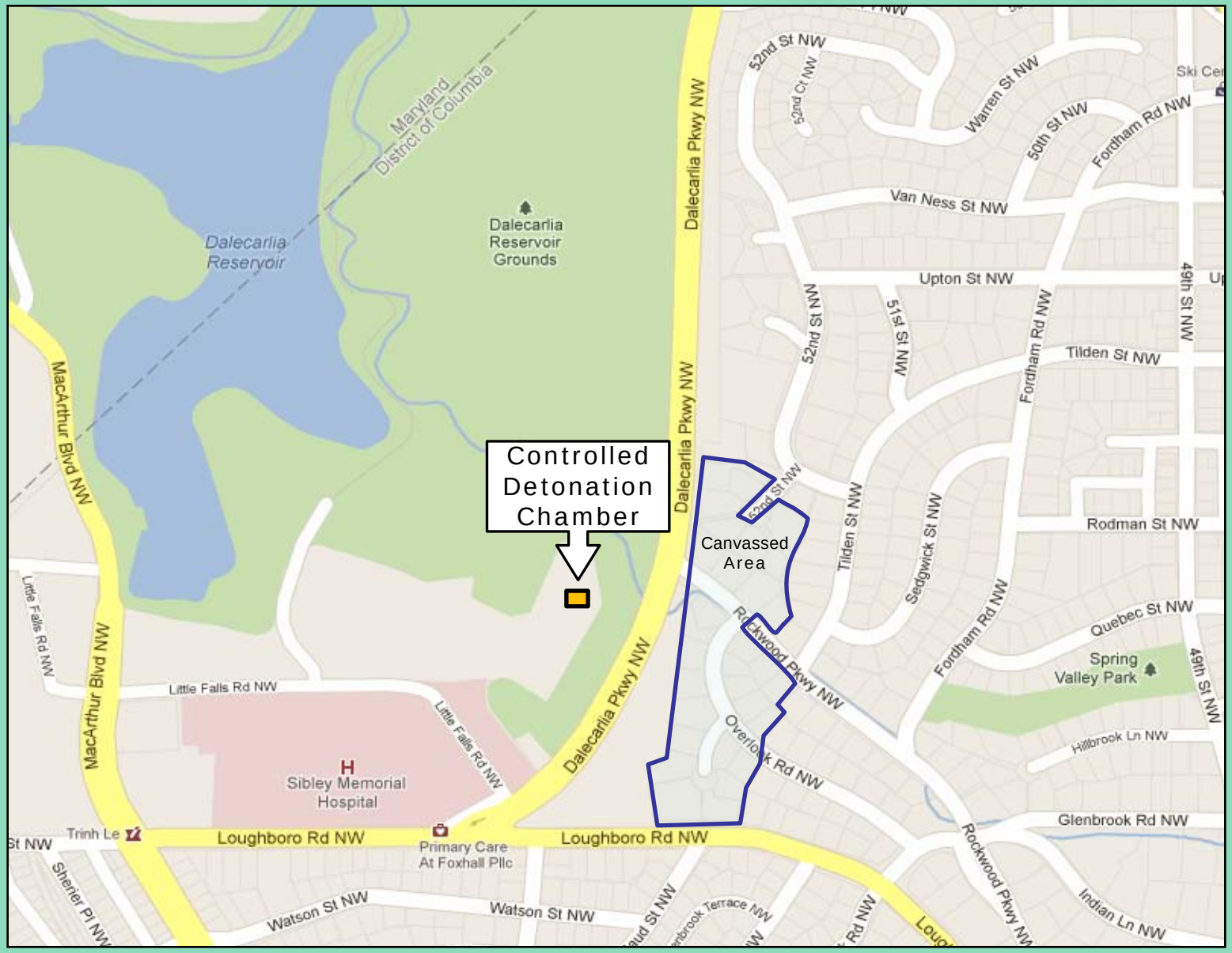
Cell: **(410) 808-0830**

More information about the Spring Valley project can be found at

http://www.nab.usace.army.mil/Projects/SpringValley

Controlled Detonation Chamber

Outreach Area



Military Munitions Response Program (MMRP)
Anomaly Investigations: American University

January:

- **Intrusively investigated 18 single-point anomalies on the AU campus near Kreeger Hall**
  - **No WWI-related items recovered**

Investigation of 4 anomalous areas in the Kreeger Hall roadway and parking lot planned for March 2012

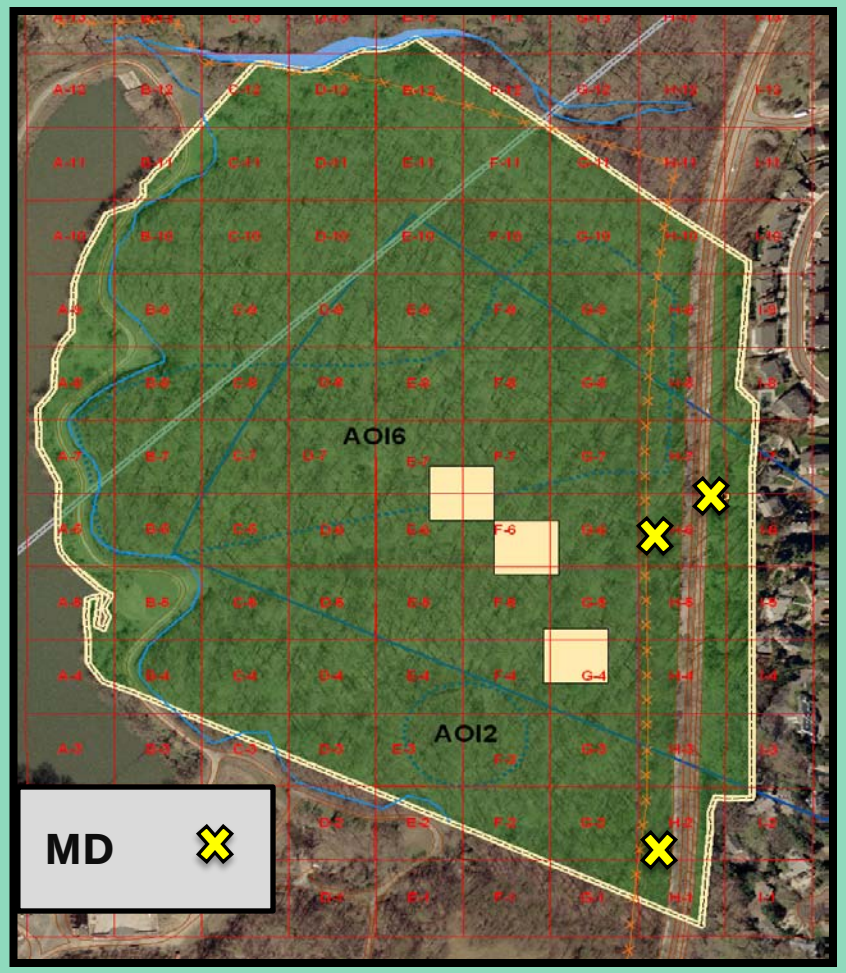
Military Munitions Response Program (MMRP)
Anomaly Investigations: Dalecarlia Woods

Summary of Dalecarlia Woods Geophysical Investigations

Area approx. 62 acres

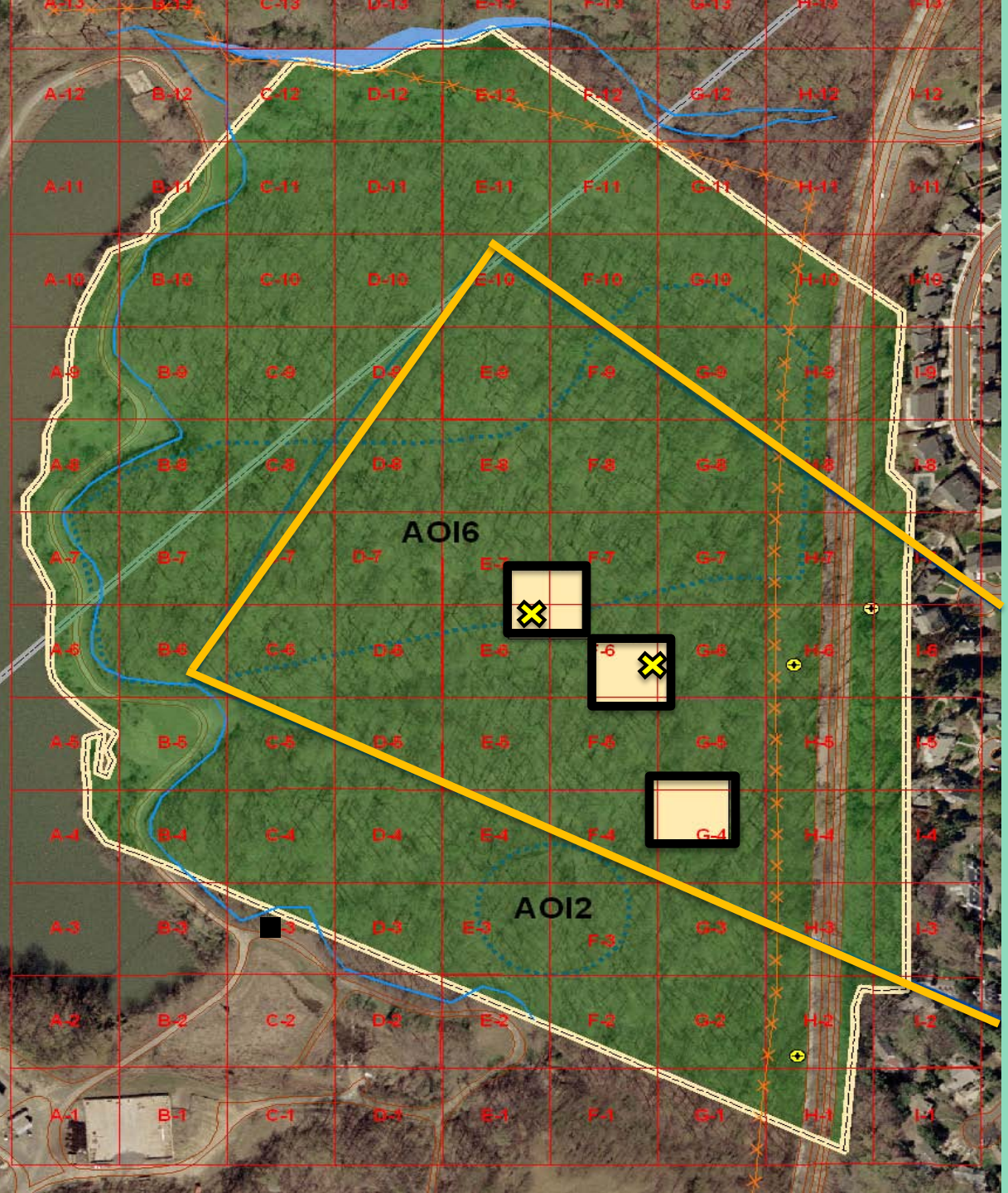
- **Geophysical Surveys**
  - **September 2008, &**
  - **Aug. 2009 - Dec. 2010**

    3 munitions debris (MD) recovered during clearance



Dalecarlia Woods Anomaly Investigations

May 2010



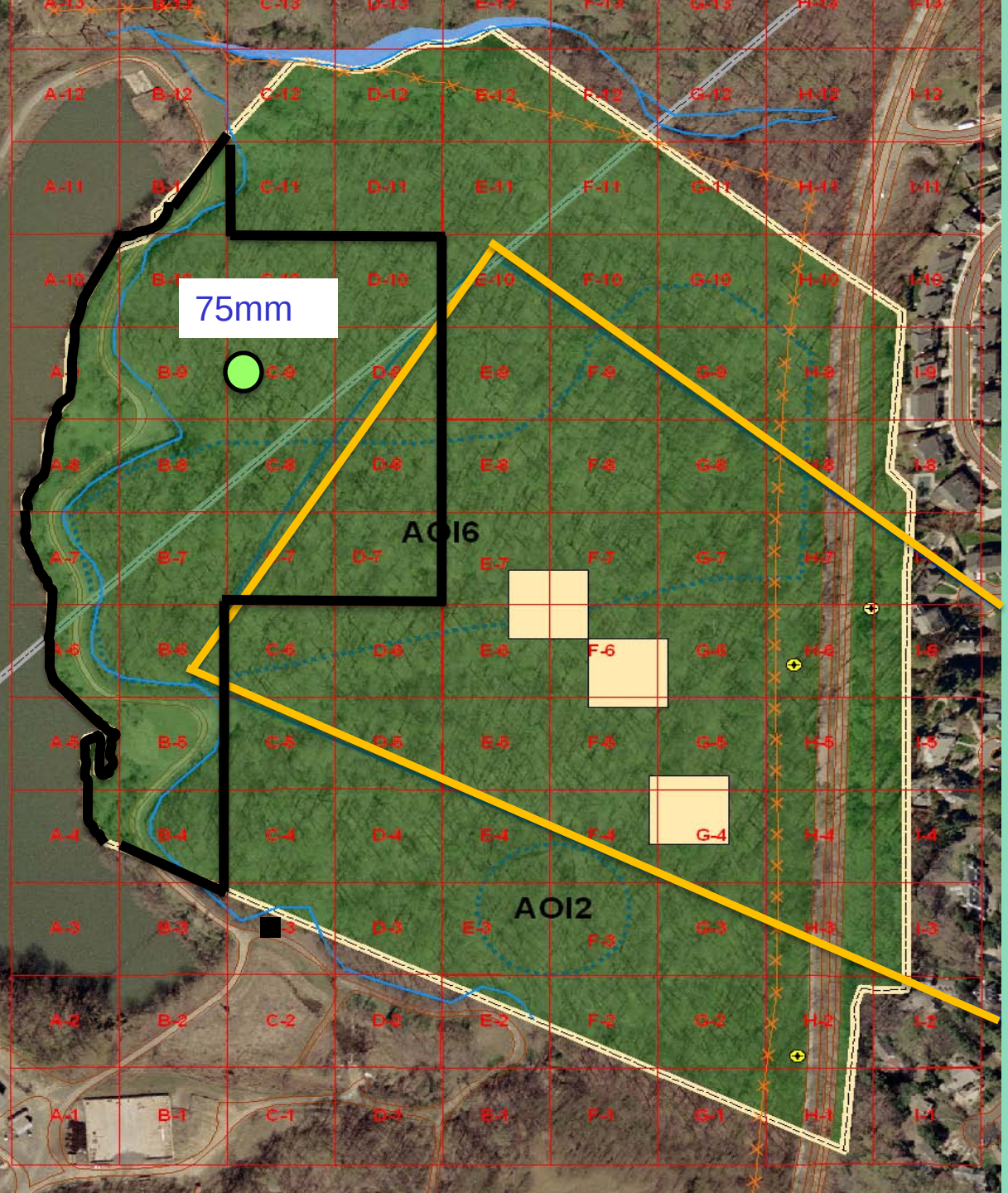
May 2010 Investigation Area

Range Fan

MD

Dalecarlia Woods
Anomaly Investigations

Jan. – Feb. 2011



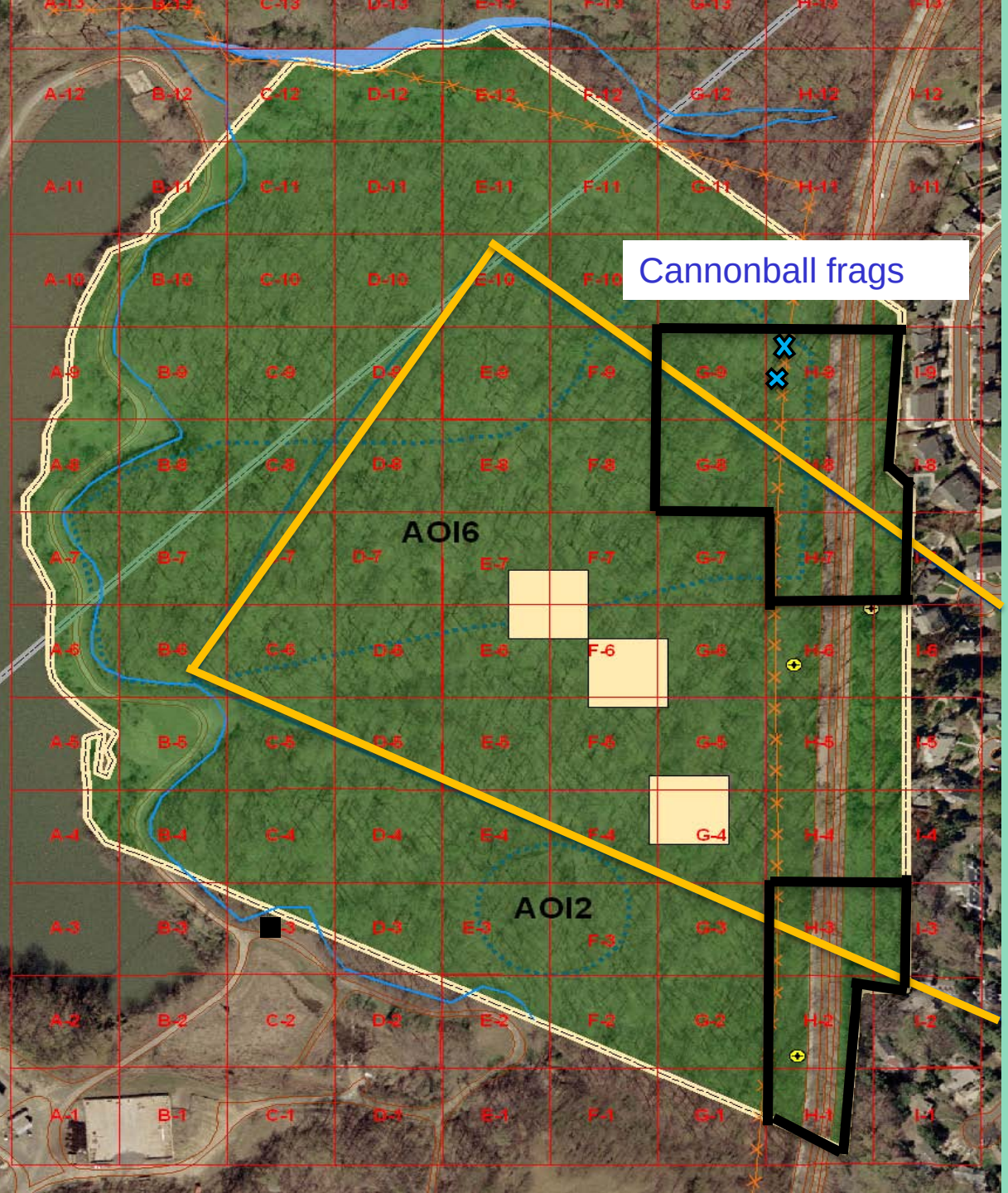
Jan.-Feb. 2011 Investigation Area

Range Fan

MEC

Dalecarlia Woods Anomaly Investigations

April - May 2011



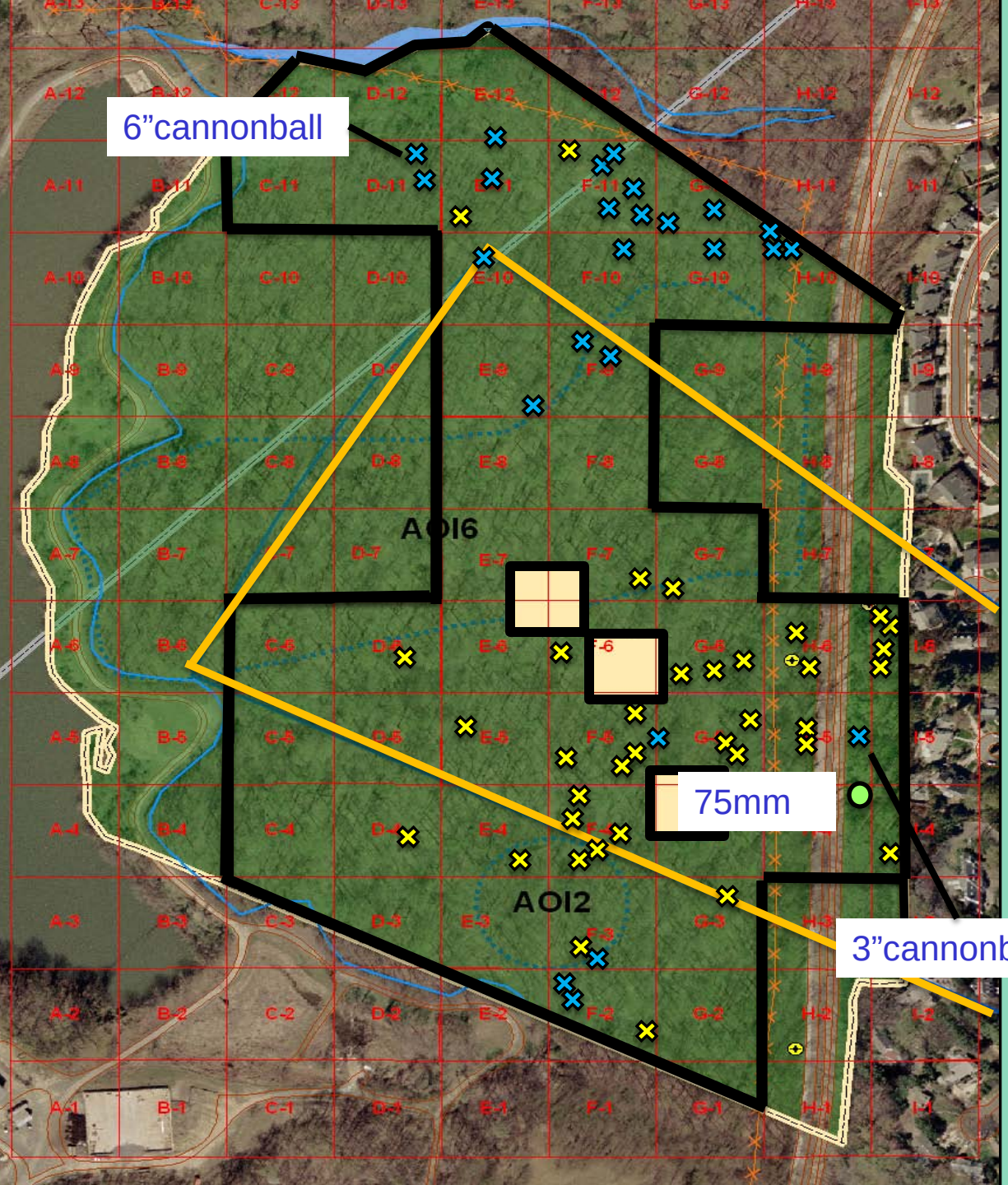
April-May 2011 Investigation Area

Range Fan

Non-AUES Related MD

Dalecarlia Woods Anomaly Investigations

Oct. – Dec. 2011



Oct.-Dec. 2011 Investigation Area

Range Fan

MD

Non-AUES related MD

MEC

Military Munitions Response Program (MMRP)
Anomaly Investigations: Dalecarlia Woods

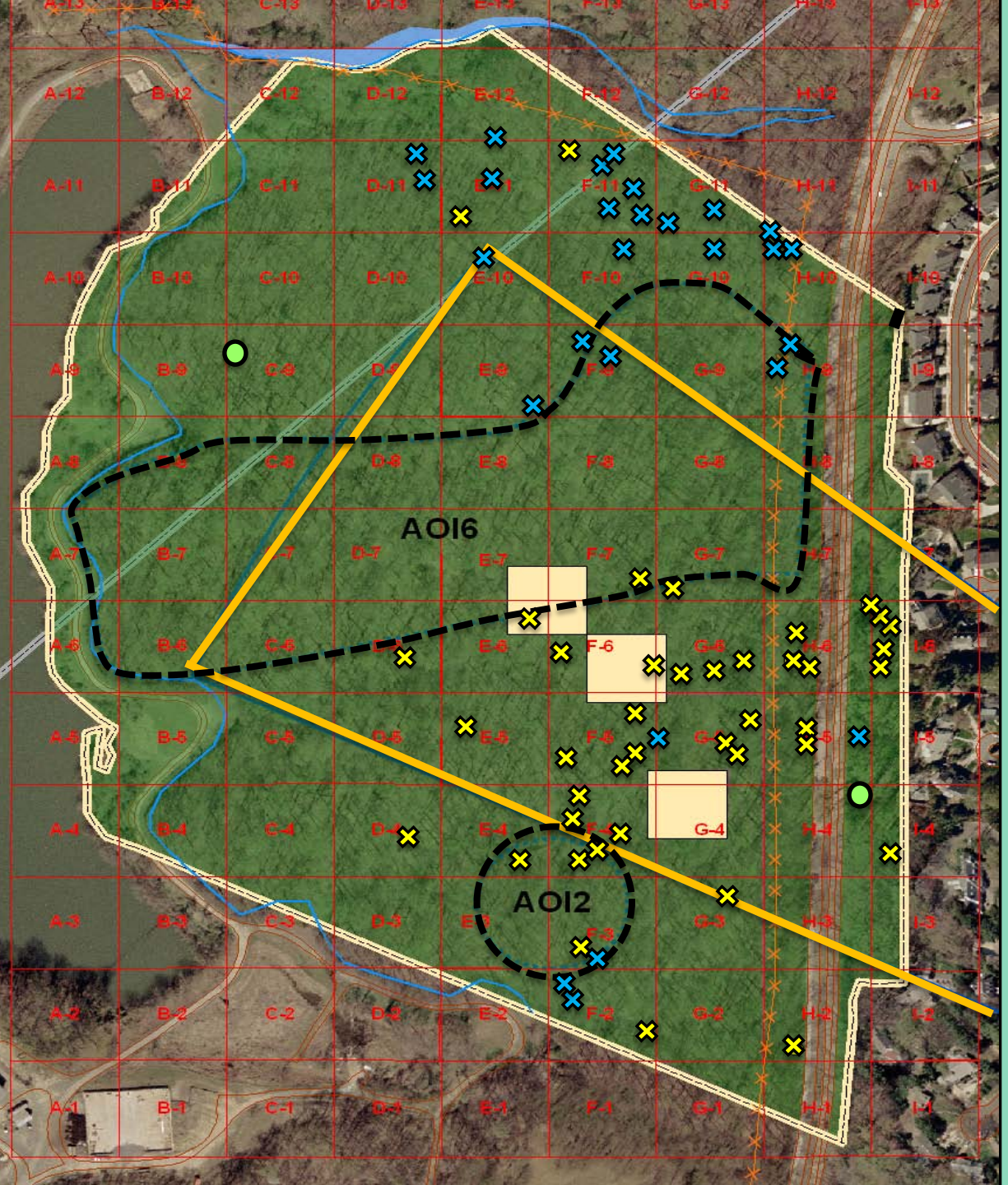
Summary of Dalecarlia Woods Anomaly Investigation Results since 2008

- Munitions and Explosives of Concern (MEC): **2**
  - 75 mm munitions to be safely destroyed in Feb. 2012 CDC operations
- Munitions Debris (MD) items: **41**
- Non-AUES related MD: **27**

70 TOTAL Dalecarlia Woods Finds

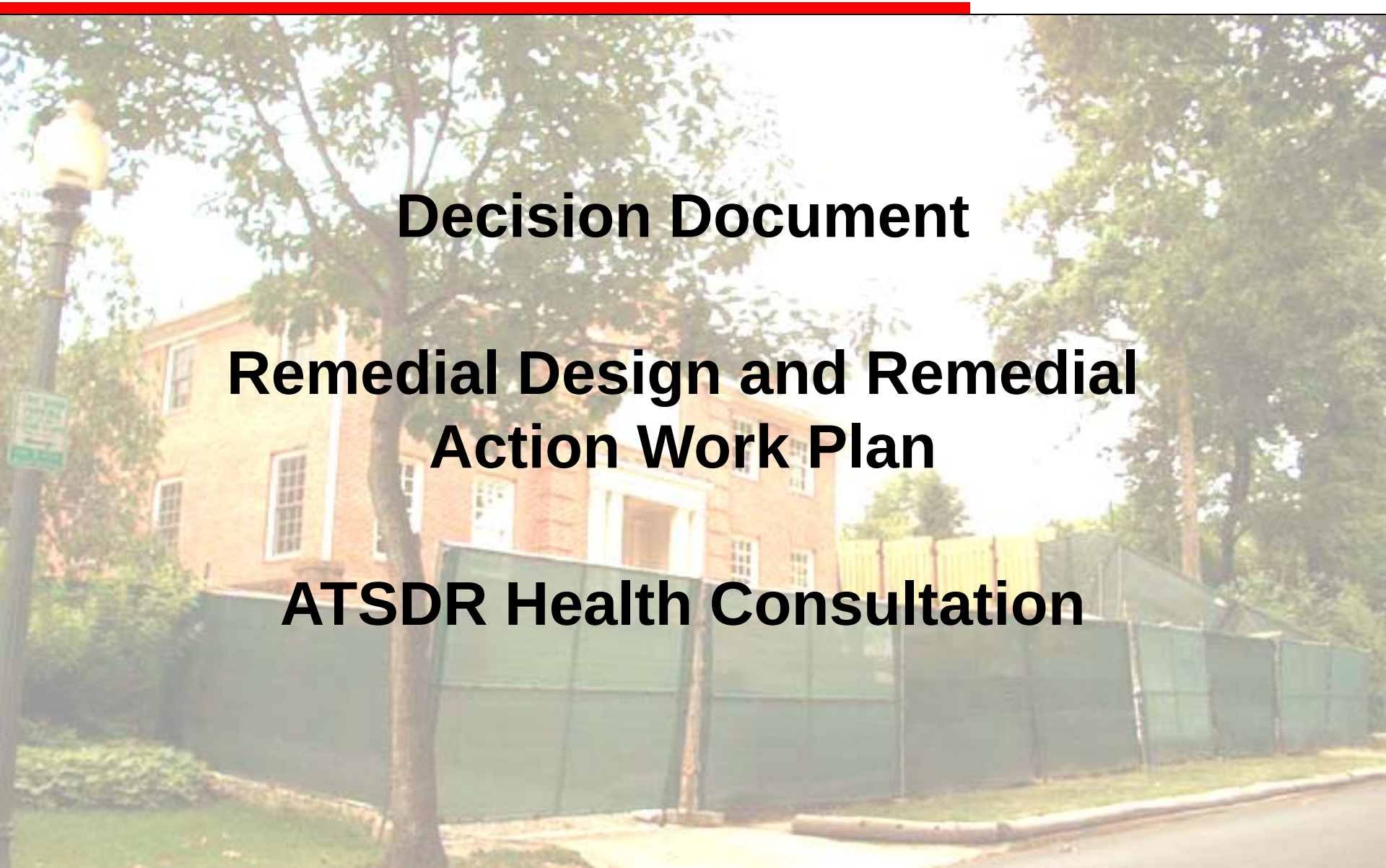
Dalecarlia Woods Anomaly Investigations

Summary



- Geophysical Investigation Area
- Range Fan
- MD
- Non-AUES related MD
- MEC
- Area of Interest (AOI)

4825 Glenbrook Road



Decision Document

Remedial Design and Remedial Action Work Plan

ATSDR Health Consultation

4825 Glenbrook Road
Decision Document

Jan. 2012:

Interagency regulatory partners reviewed and provided concurrence on the draft final Decision Document

- **District Department of the Environment**
- **Environmental Protection Agency, Region III**

Feb. 2012:

Decision Document distributed to several offices within USACE and the Dept. of Army for approval and signature

4825 Glenbrook Road
Decision Document

Final Approval & Signature from:

- Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational Health
- Army's Assistant Chief of Staff for Installation Management

Final Expected by March 2012:

- To be available on Spring Valley project website and at the Tenley-Friendship Branch Library

Includes Responsiveness Summary & Proposed Plan public meeting transcript

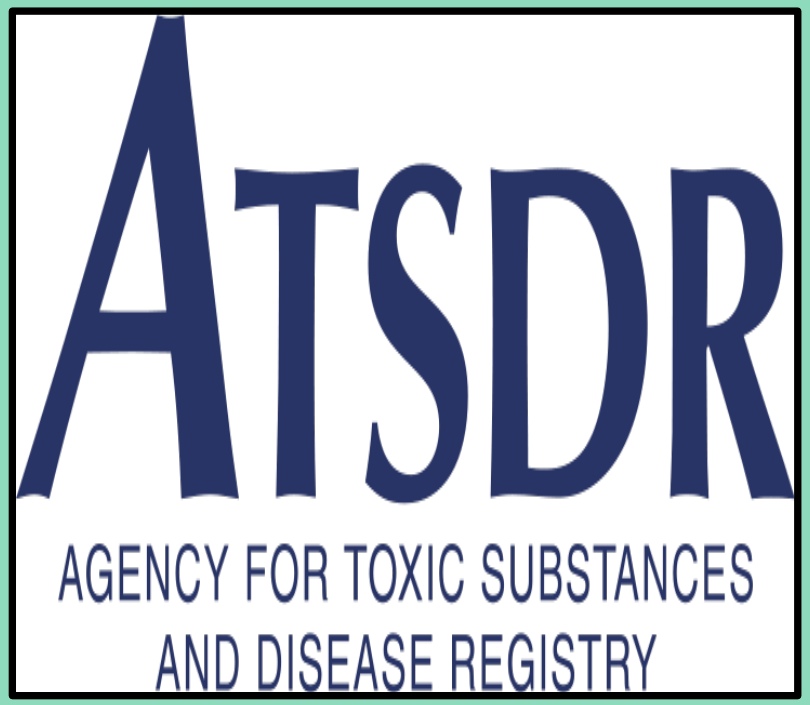
4825 Glenbrook Road
Work Plan Update

Reviewing draft Work Plans

- **Demolition Plan**
  - Draft: January 2012
  - Final: late February 2012
  - RAB Briefing: March 2012
- **Remedial Design and Remedial Action Work Plan**
  - Draft: March 2012
  - Draft Final: late March 2012
  - RAB Briefing: April 2012
  - Community Meeting: April 2012
  - Final: mid-April 2012

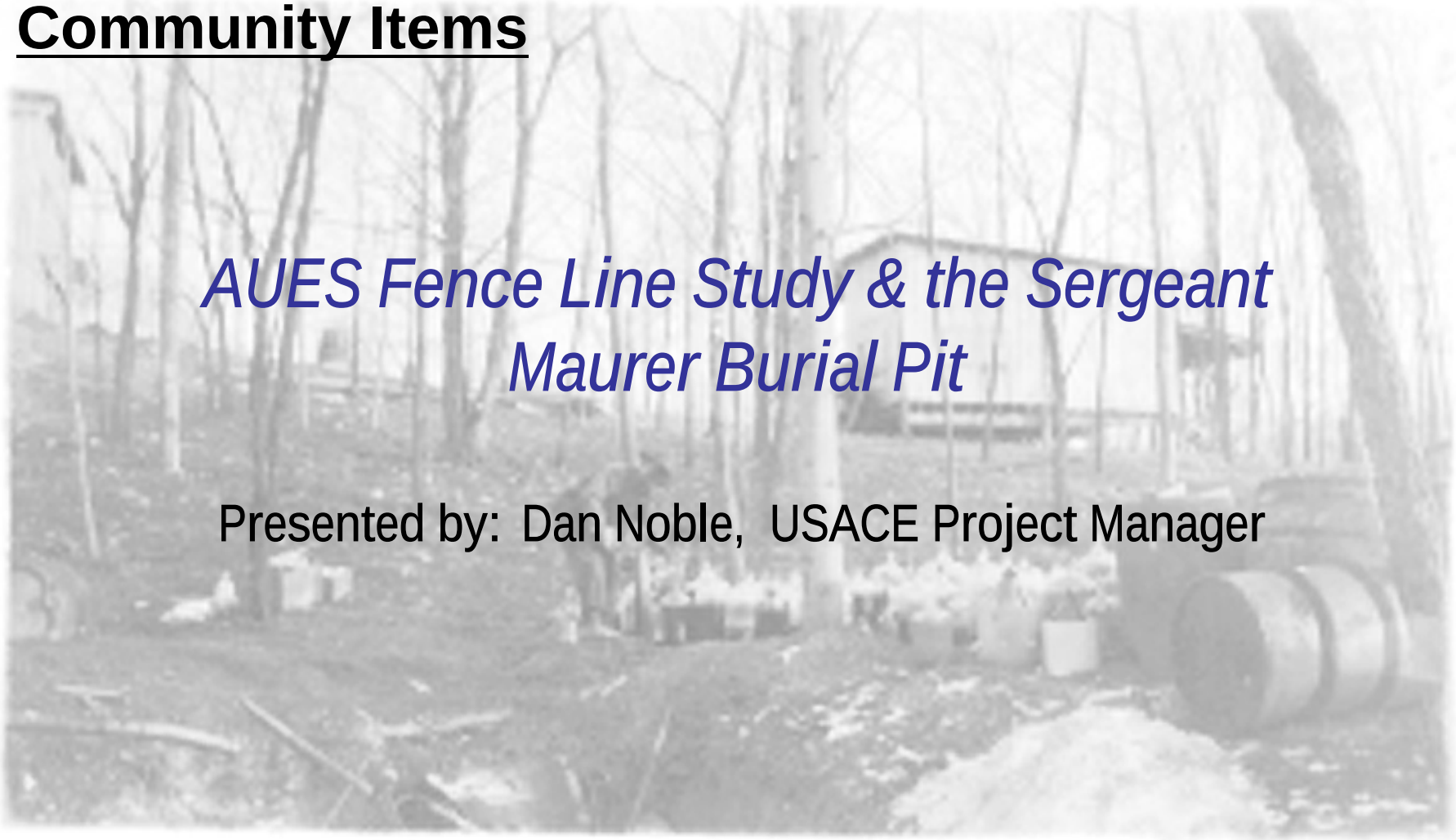
4825 Glenbrook Road
ATSDR Health Consultation

- USACE reviewing revised draft Health Consultation
- USACE and ATSDR reviewing potential for a public comment period on the Health Consultation
  - USACE has requested details on schedule



Spring Valley FUDS
Restoration Advisory Board

Community Items

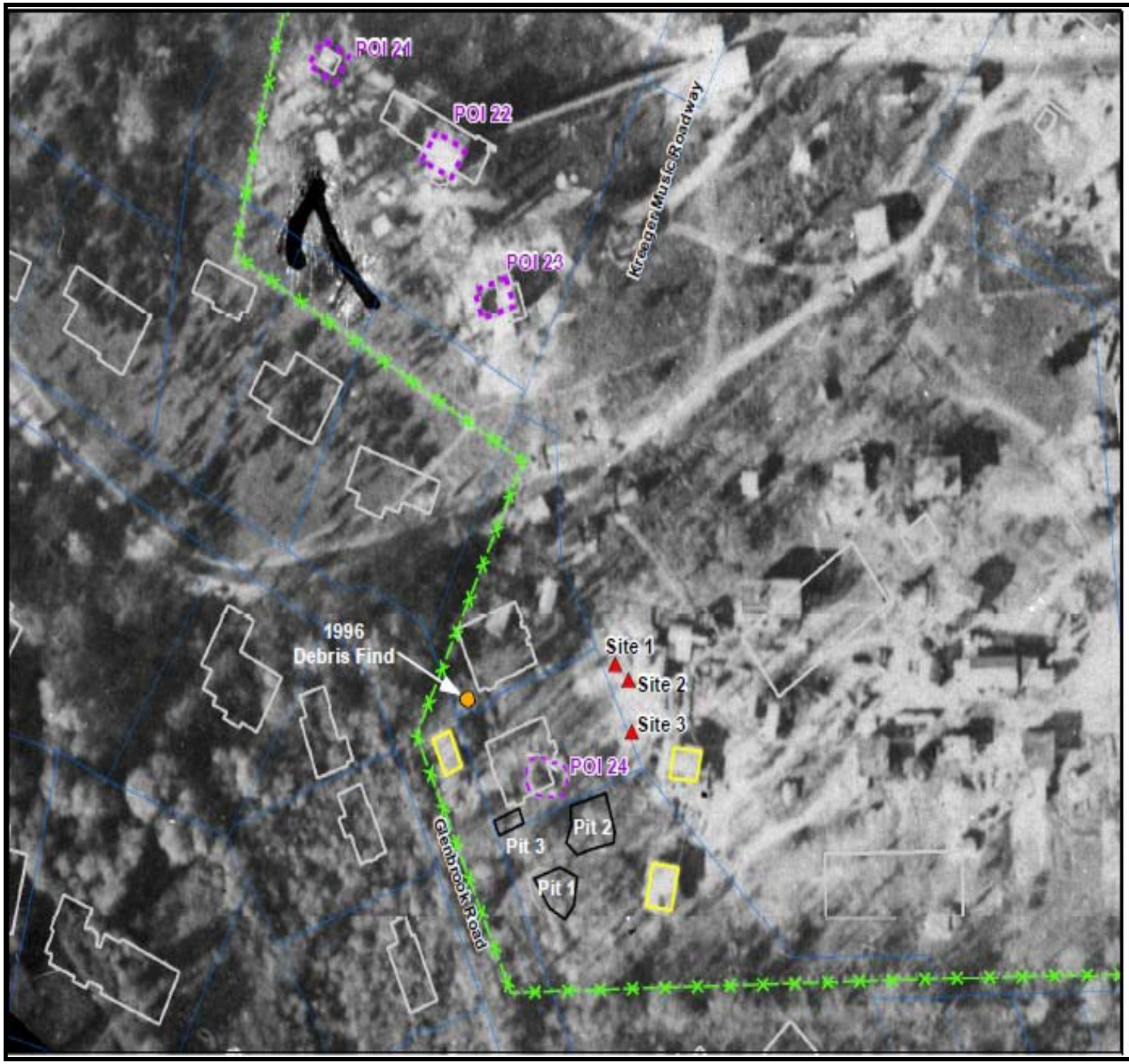


AUES Fence Line Study & the Sergeant Maurer Burial Pit

Presented by: Dan Noble, USACE Project Manager

“SGT Maurer” Photo - 1918

1918 aerial photo



AUES Fenceline Study with 1918 Aerial Photo

Spring Valley FUDS
Washington, DC

Legend

- Present Day Parcels
- Present Day Buildings
- 1918 Structures
- Historical Fenceline
- Identified Burial Pits
- POIs
- 1996 Debris Find
- "Possible location of 1918 Pit," per Lockheed Martin Services; (December 2000).

80 40 0 80 Feet

1 inch = 80 feet

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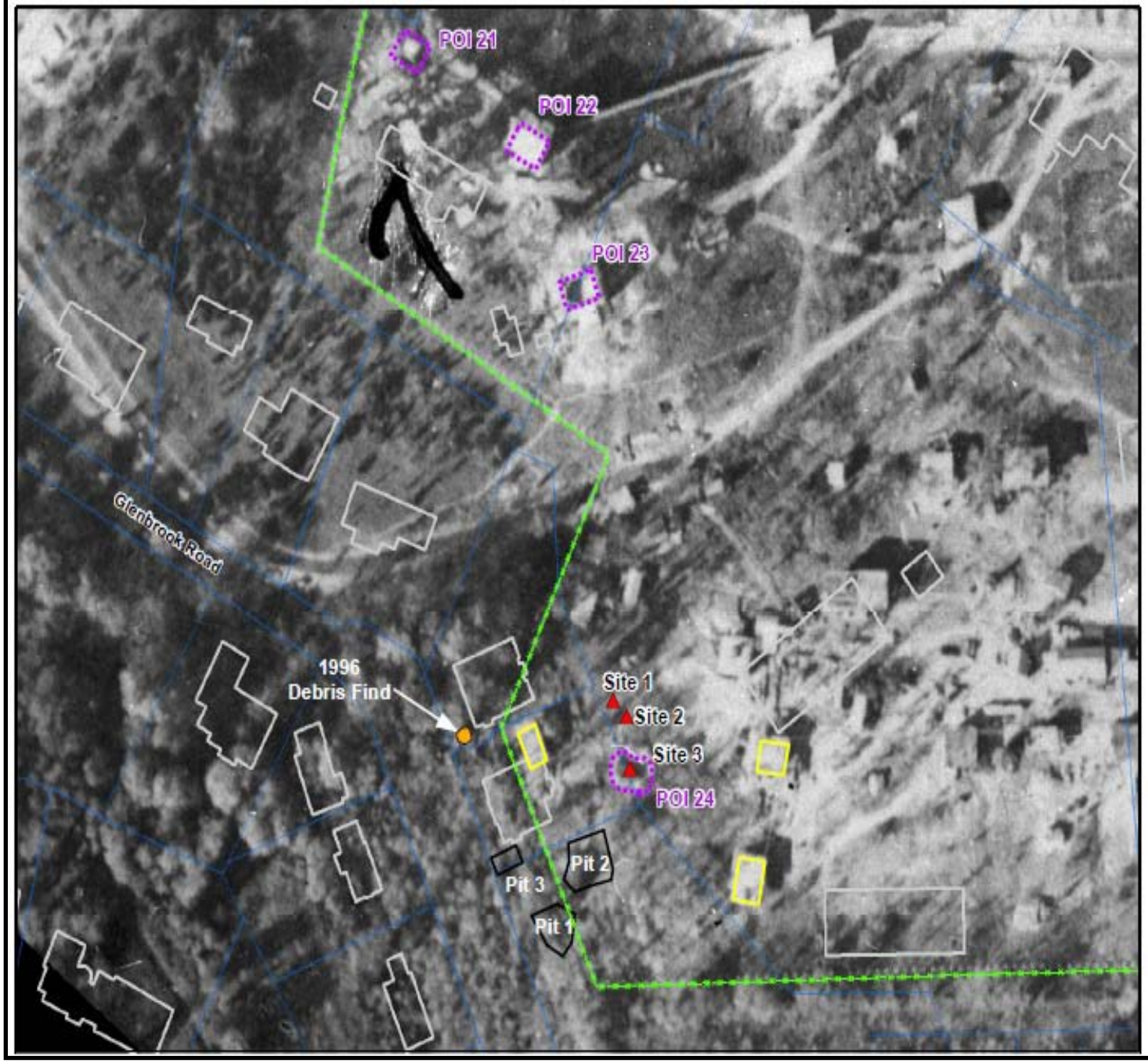
PARSONS



1918 Building Locations Based on December 2000 Terrestrial Photogrammetry Report

Spring Valley FUDS
Washington, DC

Legend

- Present Day Parcels
- Present Day Buildings
- 1918 Structures
- Historical Fenceline
- Identified Burial Pits
- POIs
- 1996 Debris Find
- "Possible location of 1918 Pit," per Lockheed Martin Services; (December 2000).

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1 inch = 80 feet

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PARSONS

4825 Glenbrook Road - Pit 3 Area

Examples of Items Recovered to Date

Spring Valley FUDS
Restoration Advisory Board

Community Items (*Con't.*)

Spring Valley Follow-On Health Study:
An Update

Presented by: Dr. Mary Fox, Assistant Professor,
Johns Hopkins University
Bloomberg School of Public Health

JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH

Johns Hopkins Spring Valley Public Health Study Update

RAB Meeting
February 14, 2012
Washington, D.C.

Mary Fox, PhD, MPH
Patricia Truant, MPH

Update: Data gathering phase

Environment Component

- Surface and groundwater sampling data received from URS
- Exposure pathway review underway

Health Component

Part I: Mortality and Cancer Data Analysis

- JHU IRB approval obtained
- Data requests in process at DCDOH

Update: Data gathering phase

Health Component

Part II: Community Survey

- JHU IRB Submitted
- Next steps
  - DCDOH IRBPH application
  - Pilot testing
  - Survey availability
    - Late Spring
    - At least 2 months

Community Survey Approach

- Designed for individual responses and individual may respond for other household members
- Will be available online and in hard copy

Outline

- Residential/work/study history in Spring Valley/Chevy Chase
- Overall health status
- Specific health conditions with age of onset
- Ranking of public health and community concerns

Specific content subject to change in response to IRB review and pilot testing

Thank you!

Mary Fox

mfox@jhsph.edu

443-287-0778

Beth Resnick

bresnick@jhsph.edu

410-614-5454

Spring Valley FUDS
Restoration Advisory Board

- **Open discussion**

- **Upcoming Agenda Items**
  - **4825 Glenbrook Road Remedial Design (Work Plan)**
  - **4825 Glenbrook Road ATSDR Health Consultation Update**
  - **Spring Valley JHU Follow-On Health Study Update**
  - **Review of 2011/2012 Quarterly Sampling Results**
  - **?**

Spring Valley FUDS
Restoration Advisory Board

- **Public Comments**
- **Wrap-Up**

Happy Valentine's Day

U.S. Army Corps of Engineers
Spring Valley Restoration Advisory Board Meeting
St. David's Episcopal Church
Minutes of the February 14, 2012 RAB Meeting

RESTORATION ADVISORY BOARD MEMBERS PRESENT AT THIS MEETING	
Dan Noble	Military Co-Chair/USACE, Spring Valley MMRP Manager
Greg Beumel	Community Co-Chair
Mary Bresnahan	Community Member
Dr. Peter deFur (represented by Laura Williams)	Environmental Stewardship Concepts/RAB TAPP Consultant
Mary Douglas	Community Member
Alma Gates	At Large Representative – Horace Mann Elementary School
Steve Hirsh	Agency Representative- US Environmental Protection Agency Region III
William Krebs	Community Member
Lawrence Miller	Community Member
Lee Monsein	Community Member
James Sweeney	Agency Representative – District Department of the Environment
George Vassiliou	Community Member
John Wheeler	Community Member
RESTORATION ADVISORY BOARD MEMBERS NOT PRESENT AT THIS MEETING	
Mario Aguilar	Community Member
Kathleen Connell	Community Member
Paul Dueffert	Community Member
Malcolm Pritzker	Community Member
Penny Pagano	At Large Representative – American University
ATTENDING PROJECT PERSONNEL	
Todd Beckwith	USACE, Spring Valley Project Manager
Lan Reeser	USACE, Technical Manager
Brenda Barber	USACE, Spring Valley Project Manager
Clem Gaines	USACE, Public Affairs

Carrie Johnston	Spring Valley Community Outreach Program Manager
Betsey Hutton	Spring Valley Community Outreach Program
Jessica Bruland	ERT
HANDOUTS FROM THE MEETING	
I. Final Agenda for the January 10, 2012 RAB Meeting II. Army Corps of Engineers Presentation III. Johns Hopkins Follow-up Spring Valley Health Study Update Presentation IV. Sergeant Maurer Burial Pit, Terrestrial Photogrammetry Report, prepared by EPA Photographic Interpretation Center (EPIC) in December 2000	

AGENDA

Starting Time: The February 14, 2012 RAB meeting began at 7:00 PM.

I. Administrative Items

A. Co-Chair Updates

Greg Beumel, Community Co-Chair, opened the meeting.

Dan Noble, Spring Valley Project Manager and Military Co-Chair, welcomed the group and reviewed the evening's agenda.

B. Introduce Guests

Officer McElwee of the District of Columbia Metropolitan Police Department (MPD) 2nd District briefly attended the meeting. No questions were asked regarding the 2nd District's role in current Spring Valley operations.

Laura Williams of Environmental Stewardship Concepts represented Dr. Peter deFur, RAB TAPP Consultant, at the meeting.

Dr. Mary Fox and Patricia Truant of Johns Hopkins University attended the meeting to present an update on the follow-on Spring Valley public health study.

C. General Announcements

D. Noble mentioned that the last surviving veteran of World War I, Florence Green, was 110 years old when she recently died in England. During the war, Ms. Green was a service member of Britain's Royal Air Force.

D. Noble announced that the Spring Valley project website layout has been redesigned and website links have been updated, including a page dedicated to recent news events and the 4825 Glenbrook Road site. The purpose of the new website layout is to make information about ongoing project activities easily accessible to the public. Recent website updates include the November 2011 RAB minutes, the November 2011 Partnering minutes, and the November 2011 Groundwater Partnering minutes, along with the January 2012 monthly project summary. Partnering and RAB meetings were not held in December 2011.

Other website updates include a new monthly photograph corresponding with each monthly project summary.

D. Noble mentioned that available interagency meeting minutes and agendas from the 1998 to 2000 time frame will be posted on the Spring Valley project website. In some cases, only the meeting agenda is available, which provides information on the meeting date and the discussion topics. This is in response to a community request at the January 2012 RAB meeting. (Currently, Spring Valley Regulatory Partnering meeting minutes from February 2001 to November 2011 are available on the Spring Valley project website.)

Question from Allen Hengst, Audience Member – Will a continuous timeline of meeting minutes be available through February 2001, without large gaps between meeting dates?

D. Noble replied that all meeting minutes and agendas prior to February 2001 that USACE is able to locate will be arranged chronologically on the Spring Valley project website. Spring Valley interagency project meetings were not held monthly like they are today, and in some cases minutes were not recorded at the meetings.

Carrie Johnston, Spring Valley Community Outreach Program Manager, added that the formal Spring Valley Regulatory Partnership was not established until 2001.

Comment from A. Hengst, Audience Member – At the January 2012 RAB meeting, Ken Schuster said that the first Spring Valley Partnering meeting may have been held in June or July 2000. The earliest meeting minutes currently available on the project website are from 2001.

C. Johnston clarified that the interagency meetings between the USACE, EPA, and DDOE shared the same components as Partnering meetings, but the Partnership bylaws had not been established.

D. Task Group Updates

RAB membership task group activities were briefly noted. One open RAB membership position is still available for interested members of the Spring Valley community.

II. USACE Updates

D. Noble, Spring Valley Project Manager and Military Co-Chair, provided a brief update on follow-on arsenic soil removal and restoration efforts and geophysical anomaly removals.

Todd Beckwith, Spring Valley Project Manager, provided a brief update on the groundwater investigation and the upcoming Controlled Detonation Chamber (CDC) operation.

Brenda Barber, Spring Valley Project Manager, provided a brief update on the Decision Document for 4825 Glenbrook Road and the associated Remedial Design and Remedial Action Work Plan, along with an update on the ATSDR Health Consultation on 4825 Glenbrook Road.

A. Arsenic Removal

Completed Soil Removal

Follow-on arsenic soil removal was completed in January 2012 at a residential property on the 3900 block of 52nd Street, where 35 grids were previously removed. As described at the January 2012 RAB meeting, one soil boring sample containing an elevated arsenic concentration (56 ppm arsenic at a depth of 2 feet) was inadvertently not addressed during soil removal activities. This soil boring sampling result was subsequently noticed during preparation of the arsenic removal closeout report for the property.

A small area of soil surrounding this elevated soil boring was removed by hand, followed by soil backfill and sod restoration. The contaminated soil was transported via wheelbarrow along a plywood pathway to the street for off-site disposal, to minimize damage to previously completed restoration. Results will be incorporated into the property's soil removal closeout report prior to review and approval by DDOE and EPA.

Arsenic Exceedances Associated with Soil Borings

All arsenic sampling results from the Spring Valley arsenic sampling and removal project were recently reviewed to assess whether any arsenic exceedances at depth (associated with soil borings) were inadvertently not addressed, aside from the recently completed follow-on soil removal effort at the property on the 3900 block of 52nd Street.

A total of 2 additional soil borings containing arsenic exceedances not previously addressed were identified. Elevated soil samples included 22.8 ppm arsenic at a depth of 5 feet at a residential property on the 5100 block of Tilden Street, and 20.6 ppm arsenic at a depth of 3 feet on AU's campus. Although both soil borings slightly exceeded the 20 ppm cleanup level, they were not previously addressed because the surface screening samples for these locations were below the 12.6 ppm arsenic screening level. It is possible that these results were previously discussed the with property owners without recording their decisions to leave the soil in place.

The Spring Valley Community Outreach Team will ensure that these arsenic results are shared with the property owners, who have the option to remove the soil containing the slightly elevated arsenic or leave it in place. The interagency regulatory partners previously established that arsenic exceedances between 20 ppm and 43 ppm may be left in place without posing a human health hazard if the removal would adversely impact landscaping or hardscaping.

Question from Kent Slowinski, Audience Member – Where is the arsenic exceedance located on the AU campus?

D. Noble replied that this arsenic exceedance is located in a landscaped area of Lot 44 on AU's campus. AU has previously requested that slightly elevated arsenic exceedances be left in place to minimize damage to mature trees.

Lan Reeser, USACE Technical Manager, added that the soil boring was situated northeast of the Mary Graydon Center.

Question from K. Slowinski, Audience Member – Can you briefly explain the soil boring protocol? Did you collect only 2 or 3 inches of soil from each 12 inch interval?

D. Noble replied that approximately 4 ounces of soil were collected in sample jars from each sampling depth identified for the soil boring. He added that an additional 4 ounce jar of soil was probably collected from each location to ensure that a sufficient volume of soil was obtained for analysis.

B. Groundwater Investigation

[Previous groundwater study efforts were described at the November 2010 RAB meeting as well as various earlier RAB meetings. Additional planned groundwater study efforts were described at the May 2011 RAB meeting and various subsequent RAB meetings. Completed and upcoming groundwater study efforts were summarized at the January 2012 RAB meeting.]

Quarterly sampling: The fourth (and final) quarterly sampling effort was completed in early February 2012. Water samples were collected in sample jars, using tubing connected to a pump, and then shipped to the analytical chemistry laboratory. Results will be presented as early as the April 2011 RAB meeting.

This concludes the quarterly sampling effort of 21 existing groundwater monitoring wells and 14 surface water locations, with the goal of assessing whether seasonal fluctuations affect contaminant concentrations. (The first, second, and third quarterly sampling efforts were completed in May, August, and November 2011, respectively.)

Existing deep monitoring wells: Final FLUTe liner installations in both recently installed deep wells are in progress. Each FLUTe sampling liner is custom-made and constructed with sampling ports at each specific well depth interval of interest. The existing blank FLUTe liner, which was filled with mud to help push the liner down the borehole, must be removed prior to installing the flexible ported FLUTe liner, and the resulting mud will be drained into a tank for off-site disposal. A total of two days are anticipated to complete this effort at each well location.

These wells are situated on the 4900 block of Rockwood Parkway, and the 4800 block of Glenbrook Road, across the street from the 4825 Glenbrook Road site. Both wells were drilled to an approximate depth of 200 feet in October 2011, with the goal of determining whether perchlorate has migrated into the deep aquifer in this area.

Additional planned deep monitoring well: Installation and sampling of one additional planned deep well near Kreeger Hall on AU's campus is pending final permit approvals and coordination with AU. This effort will tentatively be completed in March 2012, during AU's spring break, to minimize potential disruptions to the campus community.

Isotopic Perchlorate Analysis: Two perchlorate samples will be collected at AU's campus and near Sibley Hospital, where some of the highest perchlorate concentrations in the Spring Valley project area have been detected to date. The purpose of this effort is to determine whether these two perchlorate plumes originated from the same source. Perchlorate is comprised of chlorine and oxygen, and specific isotope ratios of these elements can reveal information about the perchlorate source. Completion of the isotopic perchlorate analysis effort is tentatively scheduled for summer 2012.

D. Military Munitions Response Program

Upcoming Conventional Munitions Destruction Operation

Conventional (non-chemical) item disposal will be conducted on February 17, 2012 at the Spring Valley federal property using the controlled detonation chamber (CDC). A total of 2 conventional items will be safely and securely destroyed, with an anticipated completion time frame of 2 to 3 hours. Both items are 75 mm projectiles that were recovered during the recently-completed anomaly investigations in the Dalecarlia Woods geophysical survey area. These items are currently in storage at the Spring Valley federal property awaiting disposal.

Detonations in the CDC will sound like a car backfiring. Each detonation lasts a fraction of a second, and only 2 detonations (1 detonation per item) are planned.

Completion of this disposal operation is planned before the CDC is shipped off-site to the West Coast, where munitions requiring conventional destruction were recently found at a dock in Seattle. The CDC has been at the federal property since the successful completion of the January 2011 conventional munitions destruction operation, during which approximately 100 conventional items were destroyed. (Details of this previously completed disposal operation were presented at the January 2011 and previous RAB meetings.)

The safety and site setup plans from the January 2011 disposal operation will be used for the upcoming effort. These documents were reviewed and approved in winter 2010/2011 by the Department of Defense Explosive Safety Board (DDESB), the U.S. Army Technical Center for Explosives Safety, and the Army Corps of Engineers (USACE). Concurrence was obtained from the District Department of the

Environment (DDOE) and the Environmental Protection Agency (EPA) Region III, in coordination with several District of Columbia (DC) agencies (including the Fire Department, the Metropolitan Police Department, and the Homeland Security and Emergency Management Agency). MPD 2nd District Special Operations Division (SOD) personnel will escort the explosives to the Spring Valley federal property and will remain on-site until the operation is complete.

The chamber technology is designed to fully contain each detonation and has been successfully used for over two decades. The chamber is comprised of two nested thick steel boxes separated by approximately 30 tons of sand to absorb shocks from the detonation, and the interior walls are lined with thick armor plating to protect the chamber from detonated scrap metal fragments. Conventional munition items are individually wrapped in sheet explosives, placed and sealed inside the chamber, and detonated remotely. The resulting scrap metal can be disposed of safely. All exhaust air produced during the detonation is filtered through an expansion tank (to reduce pressure and temperature) and air pollution control equipment. Additional details of the detonation chamber history, configuration, and site layout were provided at the September 2010 RAB meeting.

The community was notified of the upcoming disposal operation via several community outreach efforts. A media news release was submitted to the *Northwest Current* and posted on the Spring Valley project website, followed by an announcement in the January 2012 monthly project update, e-mail and listserv updates, and a briefing at the February 2012 RAB meeting. Door-to-door outreach was conducted at nearby residences where the detonation sounds could potentially be heard. Informational door hangers were distributed, summarizing the planned disposal operation along with Community Outreach Team contact information.

Completed and Upcoming Anomaly Investigations

Dalecarlia Woods: Anomaly investigations for the remaining grids in the 62 acre Dalecarlia Woods geophysical investigation area were completed in December 2011. A large portion of the Dalecarlia Woods overlaps with the American University Experiment Station (AUES) Range Fan, where historical documentation notes that Stokes mortars and Livens projectiles were fired. The Dalecarlia Woods also contains AOI 6 (Dalecarlia Woods Impact Area), which is centered on the range fan terminus, and AOI 2 (Rick Woods Burial Pit), where surface AUES-related munitions debris items were reportedly recovered by a Civil War relic hunter in the 1980s.

A total of 70 military-related items were recovered during Spring Valley project activities in the Dalecarlia Woods geophysical investigation area since 2008. Of these items, 2 were classified as intact conventional munitions and will be destroyed during the upcoming February 2012 munitions destruction operation. Forty-one (41) items were identified as AUES-related munition debris, and the remaining 27 items were associated with non-AUES-related military activities.

Most AUES-related munitions debris items were clustered within the range fan, and neither of the two intact items were found within AOI 6. Most non-AUES-related items from the Civil War time frame were clustered north of the range fan, with a few scattered items inside and south of the range fan. The locations of these items are summarized below.

- **2008 through 2009:** Three (3) AUES-related munition debris items were recovered in the DC right-of-way along the Dalecarlia Parkway during brush and surface debris clearance. (This effort ensured geophysical survey instrument access and prevented surface metals from interfering with survey instruments.)
- **May 2010:** Two (2) AUES-related munition debris items were found during anomaly investigations in three test plots on federal property. (These test plots were geophysically surveyed prior to the current effort to test and confirm the approach used during the recent effort.)

- **January-February 2011:** One (1) AUES-related conventional munition item was found in the northwestern interior portion of the Dalecarlia Woods during anomaly investigations and was identified as a 75 mm projectile.
- **April-May 2011:** Two (2) non-AUES-related munitions debris items were recovered in the eastern portion of the Dalecarlia Woods, near the DC right-of-way along the Dalecarlia Parkway, and identified as cannonball fragments likely from the Civil War era. (Anomaly removals in these grids were prioritized to ensure timely completion of co-located arsenic soil removal.)
- **October-December 2011:** One (1) AUES-related conventional munition item was found in the DC right-of-way, just west of the Dalecarlia Parkway, and identified as an intact fuzed 75 mm incendiary round. The remaining items found during this effort were distributed throughout the Dalecarlia Woods survey area, and were identified as AUES-related munitions debris items or non-AUES-related munitions debris items.

(Locations of AUES-related items recovered prior to 2008, including anomaly investigations during the 1993 to 1995 time frame and 75 mm debris items historically removed from the AOI 2 vicinity, were presented at various previous RAB meetings.)

All anomaly investigation results from the Dalecarlia Woods geophysical survey area, including all AUES-related items recovered prior to 2008, will be summarized in the Site-Wide Remedial Investigation (RI) report. Any need for future investigation of the Dalecarlia Woods geophysical survey area will be discussed in the Site-Wide RI Report.

Question from K. Slowinski, Audience Member – Considering the fact that the munition items were not found inside the range fan, does this mean that the existing range fan boundary should be enlarged?

D. Noble clarified that the munitions items were primarily found within the range fan and identified as 75 mm projectile munitions debris. No intact munitions items were found within AOI 6, which was identified as a potential Livens impact area associated with the terminus of the (Livens) range fan. Of the items found in the Dalecarlia Woods survey area to date, only 2 items were classified as pieces of Livens projectiles (one in 1995 and one during the current effort).

Question from K. Slowinski, Audience Member – Were all of the munitions items fired, or do some have intact rotating bands, potentially indicating that they were not fired?

D. Noble explained that the best way to determine whether an item has been fired is to examine the condition of the rotating band. Most AUES-related items recovered in the Dalecarlia Woods consisted of detonated munition fragments, which cannot be determined as ballistically or statically fired. Only one intact fuzed 75 mm munition item was recovered, as described at the January 2012 RAB meeting and the rotating band is missing from this incendiary round.

AU Campus: Anomaly investigations on approximately 2.5 acres of the AU campus in the vicinity of Kreeger Hall are in progress. A total of 18 single-point anomalies were investigated in January 2012 and no AUES-related items were recovered. Anomalous areas characterized by large geophysical responses will be resolved by excavating a total of 4 trenches underneath the Kreeger Hall parking lot and the Kreeger Music Roadway in March 2012, during AU's spring break. These anomalous areas (identified as possible disposal areas that could be potential sources of perchlorate contamination) were identified during review of the data from the geophysical survey and the co-located perchlorate source area boring sampling results. These efforts (geophysical survey and source area borings) were completed in May 2011 and July 2011, respectively

This effort will mark the completion of all planned anomaly investigations in the Spring Valley FUDS. Any potential need for future anomaly investigations will be determined during preparation of site-wide remedial investigation and feasibility study process. USACE tentatively plans to present results from the

AU campus anomaly investigations to the interagency partners at the March 2012 Partnering meeting, and share results with the RAB at the April 2012 RAB meeting.

E. 4825 Glenbrook Road (Decision Document, Remedial Design and Remedial Action Work Plan, and ATSDR Health Consultation)

Tentative Document Schedule: Finalized 4825 Glenbrook Road CERCLA-related documents are posted on the Spring Valley Project website and are also available at the Information Repository at the Tenley-Friendship Branch Library. (Details of finalized documents were provided at the October 2011 and previous RAB meetings).

Decision Document (DD) finalization is underway. Concurrence on the selected remedial alternative was obtained from the District Department of the Environment (DDOE) and the Environmental Protection Agency (EPA) Region III in January 2012. The Decision Document is currently under review by the Army Corps of Engineers (USACE) Baltimore District Commander, whose signature is anticipated this week (mid-February 2012). Due to the cost of the selected remedy, final approvals and signatures are pending from the Deputy Assistant of the Army for Environment, Safety, and Occupational Health and from the Army's Assistant Chief of Staff for Installation Management.

Completion of the final signature process for the Decision Document is anticipated by March 2012. Upon finalization, the Decision Document will be made available on the Spring Valley project website and at the Tenley-Friendship Branch Library. Included in the Decision Document is the transcript of the Proposed Plan public meeting as well as the Responsiveness Summary containing U.S. Army responses to all comments received during the public comment period. The Decision Document formally selects Alternative 5 (removal of the house and cleanup to residential standards) as the cleanup alternative for the 4825 Glenbrook Road site.

The draft Demolition Plan (for demolishing the 4825 Glenbrook Road house) was completed in January 2012. This document was prepared separately from the Remedial Design and Remedial Action Work Plan to allow site preparations to continue even if the overall work plan process is delayed. The Demolition Plan is expected to be finalized in February 2012, and the details will tentatively be outlined at the March 2012 RAB meeting.

Preparation of the draft Remedial Design and Remedial Action Work Plan (which details how the selected cleanup alternative will be implemented) is underway. The work plan will be supported by Site Safety and Public Protection Plans. The draft work plan will tentatively be completed in March 2012, and is expected to be finalized in April 2012. The draft work plan contents will be outlined at an upcoming RAB meeting (tentatively April 2012, depending on the draft work plan submission time frame). Prior to beginning cleanup activities at the site, an informational public meeting will be held (tentatively in April 2012) to present the details of the Remedial Design and Remedial Action Work Plan.

As described at the January 2012 RAB meeting, remedial action will tentatively begin in summer 2012 and continue through fall 2013. The length of the cleanup process depends on the remediation methodologies outlined in the Remedial Design and Remedial Action Work Plan. Site access logistics and right-of-entry negotiations at the neighboring properties are in progress.

Question from K. Slowinski, Audience Member – Have the meeting minutes from the October 2011 town hall meeting, which was held at the Tenley-Friendship Library, been posted to the Spring Valley project website?

B. Barber clarified that the 'town hall meeting' referred to by K. Slowinski was the public meeting held during the 4825 Glenbrook Road Proposed Plan public comment period. The public meeting transcript

will be posted on the website as part of the final Decision Document (DD) for the 4825 Glenbrook Road site.

Question from K. Slowinski, Audience Member – Is it still the USACE's opinion that the Sergeant Maurer Burial Pit is the current burial pit at 4825 Glenbrook Road?

B. Barber confirmed that this is the USACE's conclusion. Additional information on this topic will be presented by D. Noble.

ATSDR Health Consultation Update: The Agency for Toxic Substances and Disease Registry (ATSDR) is preparing a health consultation focused specifically on the 4825 Glenbrook Road site. This document is being prepared in response to a request from USACE, who asked ATSDR to assess possible health concerns for the construction workers who built the house and the family who lived in the house. (Details of this health consultation were described at the January 2012 RAB meeting.)

The revised draft health consultation is currently under review by USACE. ATSDR will provide a formalized document finalization schedule, pending a joint decision by USACE and ATSDR on whether a public comment period will be held for the report.

III. Community Items

A. AUES Fenceline Study and the Sergeant Maurer Burial Pit

D. Noble provided an update on the most likely location of the Sergeant Maurer Burial Pit. (This topic was previously presented at the November 2007 RAB meeting by Ed Hughes, former Spring Valley Project Manager.) The goal of this presentation was to share this information with the RAB and discuss USACE's conclusions regarding the most likely location of the Sergeant Maurer Burial Pit.

G. Beumel added that he requested this presentation in response to an inquiry from K. Slowinski at the January 2012 RAB Meeting, regarding the conclusions of the EPA EPIC Terrestrial Photogrammentry Report containing the analysis of the potential locations of the Sergeant Maurer Burial Pit. USACE has concluded that the most likely Sergeant Maurer burial pit location is on the 4825 Glenbrook Road property. The 2000 Terrestrial Photogrammtry Report conclusions differ from current USACE assessments as to the location of the pit on the property. This is an important topic to explain for the benefit of new RAB members, so that everyone understands why the 4825 Glenbrook Road house is being demolished.

Background: As mentioned in a recent article in the *Northwest Current*, the EPIC Terrestrial Photogrammetry Report was completed in December 2000 by an EPA contractor (Lockheed Martin). This was the third report on this topic prepared for Terry Slonecker of EPA. The report was written by M. McKenzie of Lockheed Martin, and the cover transmittal letter was written by T. Slonecker. The report was shared with the USACE, EPA, and DC in 2000, according to the transmittal letter. The report provides a snapshot of the potential Sergeant Maurer burial pit locations as defined in 2000.

EPIC Report Analysis: Three possible locations for the Sergeant Maurer burial pit were identified in the December 2000 EPIC Terrestrial Photogrammetry Report. Compared to the possible locations identified in the two earlier reports, these revised locations were based on the highest quality copies at the time of the Sergeant Maurer photograph, the 1918 aerial photomosaic, and georeferenced site details such as buildings.

The 1918 aerial photo-mosaic is comprised of several aerial photographs that were spliced together to create a single complete aerial photograph of what is now the Spring Valley project area. Each individual aerial photograph has a slightly different tonal quality and color, and these differences are visible along the lines where these individual photographs were spliced together.

Geo-referencing is a method for spatially matching locations of features from two different sources (such as a plat map and an aerial photograph). The first step is to identify the location of a known feature with a high degree of confidence, such as archived records containing building corners surveyed using a specific coordinate system or a recognizable existing feature that can be accurately measured in the field. Additional feature locations can then be geo-referenced in the same way.

Sources of Error: Estimation errors affect the conclusions of every report identifying the most likely location of a feature. Analytical techniques, such as the use of old photographs to identify features in the modern landscape, are not 100 percent accurate. In this case, the Sergeant Maurer photograph and the 1918 aerial photograph are almost 100 years old. The EPIC report acknowledges that these inherent errors are part of the analysis process, and the best possible estimates were obtained when identifying the most likely location of the Sergeant Maurer Burial Pit.

- Splicing individual aerial photographs to make the 1918 aerial photo-mosaic must be done as accurately as possible. Geo-referencing errors are introduced if these separate aerial photographs are not properly lined up. Splicing errors can be avoided by geo-referencing features that are on the same side of a photo-mosaic line (on the same individual aerial photograph). The EPIC report does not specify whether AU campus buildings on different sides of a photo-mosaic line were used for geo-referencing purposes, or whether buildings on the same side of the line were used instead. USACE feels that the geo-referenced locations of the three possible burial pits, as outlined in the 2000 EPIC report, may have suffered from splicing errors.
- Hard copies of photographs warp and shrink over time, making it more difficult to properly splice photographs together or properly geo-reference features such as buildings. It is not possible to determine how much warping and shrinking occurred since a photograph was taken, and this source of error in the EPIC report cannot be quantified.
- There is a small discrepancy regarding how the building locations were geo-referenced. The cover letter states that building locations were geo-referenced based on the geo-registered version of the 1918 aerial photograph, while the report states that building locations were plotted based on a geo-referenced map of the area. It is unclear whether this geo-referenced map was actually a plat map from historical archives or a map generated using the building locations as seen in the aerial photograph.

EPIC Report (2000) Conclusions: One of the three possible burial pit locations (referred to as Site 3) was selected as the most probable location of the Sergeant Maurer Burial Pit as seen in the photograph. Site 3 is stated by EPIC to be in the back, southeast corner of the 4825 Glenbrook Road property, near the property line with American University. The EPIC Report provided the reasoning for the selection of Site 3: Corroborating evidence for this location is based on the nadir point of the Sergeant Maurer photograph, which is the location where the photographer was standing when the photograph was taken. Site 3 corresponds with the burial pit that would be visible from the nadir point. Although there is no documentation stating that the visible burial pit in the 1918 aerial photo-mosaic is the same disposal pit shown in the Sergeant Maurer photograph, this analysis of the photograph's nadir point provides an independent confirmation that these two burial pits may be the same, and that Site 3 is the most probable Sergeant Maurer burial pit location.

T. Slonecker continued to refine the conclusions from the EPIC report, with assistance from the Army Corps, and the interpretation of the potential Sergeant Maurer burial pit location has evolved during the past 12 years.

USACE Analysis: USACE feels that it has produced an accurate representation of the POI 24 burial pit location using a GIS overlay of the 1918 aerial photo-mosaic with a present day map of the Spring Valley area. The location of POI 24 (Probable Pit) appears to be underneath the 4825 Glenbrook Road house, and this is where the Sergeant Maurer burial pit is likely located, based on the assumption that the two

burial pits are the same. USACE wishes to point out that the assumption that the POI 24 pit and the Maurer pit are the same features is just that, an assumption.

The overlay of the 1918 aerial photo-mosaic and the current digital Spring Valley map includes existing buildings, the historical AUES fence line, and the current location of POI 24 (Probable Pit). The known locations and coordinates of the excavated disposal pits on 4825 and 4801 Glenbrook Road (Pits 1, 2, and 3) were plotted on this map, along with the present-day locations of the EPIC report's approximate coordinates for the three possible locations of the Sergeant Maurer burial pit.

- To determine the location of POI 24 (probable pit and the likely Sergeant Maurer burial pit), USACE independently geo-referenced the 1918 aerial photo-mosaic using three known features. The locations of the historical structures overtop of the concrete shell pits (POIs 21, 22, and 23), which are visible on the aerial photograph, were matched up with the present-day known, accurate coordinates of these POIs with a high degree of confidence. These geo-referenced features appear to be on the same individual aerial photograph as the location of POI 24, rather than on opposite sides of a spliced photo-mosaic line, which eliminates spatial errors resulting from splicing separate photographs.
    - Based on this analysis, the location of POI 24 (Probable Pit) appears to be underneath the 4825 Glenbrook Road house.
- USACE also examined the assumptions presented in the EPIC report, which defines 'Site 3' and POI 24 as the same burial pit. The known geo-referenced points used in USACE's analysis were discarded, and the December 2000 EPIC report's 'Site 3' location was geo-referenced to match the current POI 24 location (*Note: When the geo-referenced location of one digital map feature is adjusted, the entire map overlay shifts in the same direction to preserve spatial accuracy. The same process is used to shift the geo-referencing of the 1918 aerial photo-mosaic underneath the digital map. Individual feature locations cannot be adjusted without affecting the position of the entire map or photo-mosaic.*).
    - Based on this analysis, there are two discrepancies that cast doubt on the December 2000 EPIC report's conclusions about the three possible burial pit locations. The historical AUES fence line shifted to the northeast indicating that Pits 1 and 3 were dug outside of the AUES fence line, which is an unlikely scenario. More importantly, the plotted structures associated with the concrete shell pits, as shown in Figure 9 of the December 2000 EPIC report, no longer match up with the known concrete shell pit locations.

The USACE analysis using updated geo-referencing and GIS, has led to refinement of the position and location of POI 24 (the likely Sergeant Maurer burial pit). The December 2000 EPIC report conclusion that 'Site 3' is the most likely location for POI 24 is no longer considered the best assessment for the location of POI 24. The EPIC report may have used geo-referenced points (such as AU campus quad buildings) that were further away from the possible burial pits and/or on the opposite side of a photo-mosaic line, introducing spatial error into the analysis.

Question from Lee Monsein, RAB Member – Could you please elaborate on the significance of the Sergeant Maurer photograph, for the benefit of the new RAB members?

D. Noble explained that the Sergeant Maurer photograph is the single best record of disposal activities that occurred at the AUES. This photograph is the only visual documentation of a burial pit in the Spring Valley project area. This photograph shows the burial of jars allegedly containing mustard, with the location (AUES) and date (1918) written on the back along with the soldier's name (Sergeant Maurer). Pinpointing the exact disposal pit location would be difficult, if not impossible, but significant effort was spent identifying the vicinity of the area depicted in the photograph with as much confidence as possible.

The resulting estimated location was plotted on a map, followed by thorough investigations of the area using the best available techniques to locate and properly remove any large scale disposal areas.

Steve Hirsh, U.S. Environmental Protection Agency (EPA) Region III, agreed with USACE's viewpoint. Historical documentation includes references to digging holes for burials, and the Sergeant Maurer photograph is set in the general area of the AUES fence line based on the visual and brief written information.

Comment from L. Monsein, RAB Member – This burial pit is not considered the only location where burials occurred. It is simply the only burial pit for which we have a visual record.

EPA confirmed this.

D. Noble added that two additional burial pits associated with the AUES are visible in the 1918 aerial photograph (these would be the POI 24 pit and the 52nd Court trenches pit).

Comment from L. Monsein, RAB Member – From the historical point of view, those who are relatively new to the Spring Valley project might get the impression that there was only one burial pit at the AUES that could be referred to as the Sergeant Maurer burial pit. We simply have a single photograph of one AUES disposal area, and although it is reasonable to research the area surrounding this burial pit, there may have been and probably were other AUES burial pits in Spring Valley.

Question from J. Wheeler, RAB Member – Why would the EPIC report's author not specify whether their geo-referenced points were on opposite sides of the photo-mosaic line?

D. Noble was not sure. The author may have felt that this process was adequately described in the report.

S. Hirsh added that he can try to find out if M. McKenzie still works for the EPA contractor, for the purpose of answering this question.

Comment from S. Hirsh, U.S. Environmental Protection Agency (EPA) Region III – The inherent errors in geo-referencing the potential burial pit locations were analyzed in the EPIC report.

George Vassiliou, RAB Member, added that the geo-referencing error analysis was based on the assumption that the Study Area map was created correctly. This geo-referenced overlay map may have introduced additional error.

K. Slowinski mentioned that the error was estimated to be between 20 and 60 feet.

D. Noble clarified that the one-sigma level of error is 20 feet.

Question from K. Slowinski, Audience Member – On the marked-up version of the 1918 aerial photograph, are the three structures that are highlighted as the three concrete shell pits on a Woodway Lane property?

D. Noble confirmed that these three features are on a Woodway Lane property.

Question from K. Slowinski, Audience Member – When did USACE conduct the most recent analysis of the Sergeant Maurer burial pit location?

D. Noble explained that USACE's conclusions have not changed significantly since the previous presentation at the November 2007 RAB meeting. Based on the geo-referenced analysis subsequently conducted by USACE, the current location of POI 24 (likely Sergeant Maurer burial pit) is underneath the house at 4825 Glenbrook Road, which matches the 2007 description that POI 24 is possibly co-located with the known Pit 3.

Comment from A. Hengst, Audience Member – The Spring Valley project website says that the backyard of the 4825 Glenbrook Road property is the most likely location of the Sergeant Maurer burial pit, based on the 2000 EPIC photogrammetry study. However, this is not the conclusion made in the EPIC report.

Figure 10 of the EPIC report shows the intersection of 6 circles denoting the likely location of the 1918 burial pit, but the map provided tonight is incomplete because it does not show the Kreeger Roadway on the AU campus. T. Slonecker provided me with a copy of the original report that shows the burial pit located adjacent to the Kreeger Roadway. This burial pit location is not on the 4825 Glenbrook Road property. The burial pit is situated on the AU campus, along the edge of the Kreeger Roadway.

D. Noble acknowledged location as depicted on the Figure 10 map.

Comment from A. Hengst, Audience Member – During the November 2007 presentation, E. Hughes incorrectly stated that the burial pit was located on the 4825 Glenbrook Road property based on the 2000 EPIC report, but it was actually portrayed on the AU campus.

D. Noble replied that the cover letter for the EPIC report identifies the burial pit location as being in the backyard of the 4825 Glenbrook Road property.

A. Hengst acknowledged this and explained that T. Slonecker must have thought that the 4825 Glenbrook Road property extended to the Kreeger Roadway. The property fence is actually located approximately 6 feet from the Kreeger Roadway, and the 6 circles in the EPIC report intersect at a point located on the AU campus, between the Kreeger Roadway and the 4825 Glenbrook Road property fence.

D. Noble clarified that the AU campus property does extend further down the slope from the Kreeger Roadway. USACE is not denying that the EPIC report identified 'Site 3' as situated on the AU campus, but based on further analysis of geo-referencing discrepancies, USACE believes that there is doubt regarding the EPIC report's 2000 conclusions.

Comment from A. Hengst, Audience Member – It sounds like USACE is saying that the first two EPIC reports were more accurate than the third corrected EPIC report released in December 2000. However, the Spring valley project website currently states that the current burial pit location on 4825 Glenbrook Road is based on the 2000 EPIC study, and this was the information shared by E. Hughes at the November 2007 RAB meeting.

D. Noble explained that E. Hughes was probably referring to T. Slonecker's cover letter for the EPIC report.

A. Hengst added that T. Slonecker did not appear to know that the burial pit coordinates were situated on the AU campus next to the Kreeger Hall roadway.

D. Noble acknowledged that T. Slonecker and E. Hughes may have misstated, but that is because the December 2000 EPIC report makes the same misstatement.

Comment from A. Hengst, Audience Member – Although the Spring Valley project website does not specify which 2000 EPIC study was the basis for the burial pit location on the 4825 Glenbrook Road property, it seems that USACE is referring to one of the previous two studies, because the third corrected study places the burial pit approximately 6 feet behind the 4825 Glenbrook Road property fence line.

D. Noble noted that the EPIC report's author used the transect method to determine the nadir point (where the photographer stood when he took the Sergeant Maurer photograph) relative to AUES buildings in the photograph background. Using an overlay of these transect lines on the AUES building map, three different possible burial sites were identified depending on which two buildings are visible in the photograph.

A. Hengst replied that this was resolved in the third corrected EPIC report using a better quality photograph and known coordinates.

D. Noble acknowledged this and added that the author identified two of the buildings as the correct structures.

Comment from A. Hengst, Audience Member – We seem to disagree on exactly where the 6 circles intersect in the December 2000 EPIC report (Figure 10). My copy of the map (provided by T. Slonecker) shows the location of Kreeger Roadway, but the road is whited out on USACE's version of the map.

D. Noble clarified that the same map presented in the EPIC report is shown as part of the presentation, and the roadway is visible as part of the report.

A. Hengst acknowledged that the roadway is barely visible, but the two different map appearances may confuse some individuals. He emphasized that the burial pit portrayed in the EPIC report is located on the AU campus, based on the coordinates provided in the report.

Clarification from D. Noble, Spring Valley Project Manager and Military Co-Chair – USACE questioned the analytical process used to develop the EPIC report's conclusions. Using the transect method, the relative locations of 1918 buildings and the Sergeant Maurer photograph's nadir point were established. The possible pit locations were then calculated using the nadir point and the map of building locations (which were based on a 1918 plat map or the 1918 aerial photo-mosaic). Geo-referencing errors associated with the known concrete shell pit locations are evident in the EPIC report's final determination of the most likely burial pit location, which was situated in the backyard of the 4825 Glenbrook Road property or possibly on the adjacent portion of the AU campus. When the geo-referencing process is conducted using the current digital Spring Valley map, the possible burial pit locations are shifted, and the most likely Sergeant Maurer burial pit location is identified on the 4825 Glenbrook Road property, downhill from the AU campus closer to the 4825 Glenbrook Road house.

Comment from A. Hengst, Audience Member – K. Slowinski and I are asking whether the Army Corps' interpretation of the potential Sergeant Maurer burial pit location has evolved to the point where the conclusions of the third corrected EPIC report were dismissed. Why was the 2000 photogrammetry study cited (by E. Hughes at the November 2007 RAB meeting and on the current Spring Valley website) as the basis for concluding that the burial pit is located on the 4825 Glenbrook Road property? The 2000 study identifies the most likely burial pit location as being on the AU campus, not on the 4825 Glenbrook Road property. The discussion on the Spring Valley project website currently includes the same misstatement that E. Hughes made in 2007. If the Army Corps' interpretation has evolved to the point where the 2000 photogrammetry study is considered incorrect, then the Army Corps needs to explain this rationale on the Spring Valley project website to match the explanation provided during this RAB meeting. The discussion on the website makes it sound as though the Army Corps is basing their current conclusions on the December 2000 photogrammetry study, instead of the previous two studies or updated interpretations of the data.

G. Beumel ended the discussion by stating that the RAB and audience members can review the report and the presented information, followed by further discussion at the March 2012 RAB meeting. The Army Corps will review the information currently provided on the Spring Valley project website and modify the wording as needed to reflect why they believe the POI 24 (Possible Pit), and potentially the Sergeant Maurer burial pit, is located underneath the 4825 Glenbrook Road house.

Question from Mary Douglas, RAB Member – Is there any physical evidence, such as magnetometer data, to further corroborate the burial pit location?

D. Noble confirmed that part of the area containing the possible pit locations outlined in the December 2000 EPA EPIC Terrestrial Photogrammtry Report is currently under investigation as part of the 2.5-acre AU Kreeger Hall area anomaly investigation. A total of 4 trenches will be dug in March 2012, with the goal of investigating large anomalous areas identified during geophysical data review. This effort will provide further evidence as to whether another disposal pit is present. As mentioned at the January 2012 RAB meeting, these trenches are located very close to, if not co-located with, T. Slonecker's estimated burial pit locations.

D. Noble added that Pit 3 on the 4825 Glenbrook Road property cannot be definitively identified as the Sergeant Maurer burial pit or POI 24 (Probable Pit) visible in the 1918 aerial photo-mosaic. However, the POI 24 location (likely the pit depicted in the Sergeant Maurer photo) is narrowed to a relatively small area in the vicinity of the 4825 Glenbrook Road property, with the caveat that errors are inherent in every analysis of potential burial pit locations. Thorough investigation of this area is in progress, with completion anticipated before the project team leaves Spring Valley.

D. Noble noted that community members have expressed the opinion that nothing remotely similar to the items shown in the Sergeant Maurer photograph was found during previous investigations at the 4825 Glenbrook Road property. This is not a valid argument, as numerous AUES-related findings at the property to date in the vicinity of Pit 3 do resemble the items in the photograph. A total of four steel-ribbed drums were recovered (three side-by-side in 2001 and one underneath the retaining wall in 2007) that are similar to the metal drums in the Sergeant Maurer photograph. Also, large pieces of AUES-related glassware recovered near the front house corner resemble the large-necked jars in the photograph.

Suggestion from K. Slowinski, Audience Member – Could you plot all possible locations of the Sergeant Maurer burial pit, as identified by the EPA contractor (Lockheed Martin) reports and subsequently USACE, on a single map?

D. Noble replied that all possible burial pit locations identified by USACE and Lockheed Martin are represented on the map shown during the presentation, which is an overlay on top of the 1918 aerial photograph. USACE cannot make a definitive conclusion as to whether POI 24 or any of the nearby disposal pits (Pits 1, 2, and 3) is actually the Sergeant Maurer burial pit, but all of these possible locations are represented on the map.

K. Slowinski emphasized that he would like to see all 11 possible burial pit locations on a single map without the aerial photograph.

G. Beumel replied that this suggestion will be considered.

Comment from G. Beumel, Community Co-Chair – Further discussion of the AUES fence line study will be postponed until the March 2012 RAB meeting.

B. Follow-on Spring Valley Health Study Update

Dr. Mary Fox, Assistant Professor at Johns Hopkins University Bloomberg School of Public Health, provided an update on the follow-on Spring Valley health study.

Background: A detailed overview of the follow-on Spring Valley health study (including the overall scope, objectives, project team, funding, tentative schedule, and a summary of the original 2007 Spring Valley Public Health Scoping Study) was provided by M. Fox at the September 2011 RAB meeting.

Status: The project team is currently gathering data that will be analyzed to further examine potential contamination exposures, health risks, and associated concerns of the Spring Valley community.

Environmental Exposure and Analysis: Available groundwater and surface water data and exposure pathways are currently being evaluated as the primary environmental issue of interest.

- All available surface water and groundwater data were received from URS (the Spring Valley groundwater study contractor). Receipt of the most recent sampling data from the February 2012 quarterly sampling effort is pending. Surface water and groundwater exposure pathways are currently under review.

Community Health Assessment: Potential site-related health effects and concerns are currently under evaluation, with the goal of providing an updated Spring Valley community health status and addressing health outcomes that were identified in the original 2007 scoping study as warranting additional attention.

- Additional data on potential site-related health effects, such as arsenic-related cancers and mortality, were requested from the DC Department of Health. Receipt of health data is pending.
- The community survey is currently under development to gather input from Spring Valley residents to further understand any ongoing site-related health concerns. Approval of an internal Johns Hopkins University Institutional Review Board (IRB) application is pending, and will be followed by submission and approval of a DC Department of Health IRB application. Pilot testing of the draft survey will be conducted, and interested members of the Spring Valley community can sign up for the pilot testing phase.
    - The draft survey includes questions about overall health status, specific health conditions and age of onset, and ranking of public health and community concerns, along with the opportunity to provide additional comments. Survey questions will also address residential, work, and study history in Spring Valley versus Chevy Chase, MD, for comparison purposes. The draft survey content is subject to revision, pending both IRB reviews and pilot testing results.
    - The final survey will be made available to Spring Valley residents for at least two months, beginning in late spring 2012. The survey will be available online and in hard copy format, and is designed to collect individual responses. Individuals can also respond to survey questions for a household member using the online version.

Question from M. Douglas, RAB Member – What is the Institutional Review Board??

M. Fox replied that the Institutional Review Board (IRB) is a committee that provides appropriate controls for maintaining privacy and confidentiality of research subjects. These committees primarily focus on human subjects but also provide oversight for other scientific research subjects. The draft community survey must undergo a two-step review process via the internal Johns Hopkins University IRB and the external DC Department of Health IRB.

Question from Alma Gates, RAB Member – Will you be analyzing mortality and cancer data that have become available since the original 2007 Spring Valley Public Health Scoping Study?

M. Fox confirmed that updated mortality and cancer data that have become available since 2007 will be evaluated as part of the follow-on health study.

G. Beumel thanked M. Fox for providing a follow-on health study update.

IV. Open Discussion and Agenda Development

A. Next Meeting: Tuesday, March 13, 2012

Upcoming meetings will be held in March and April 2012.

RAB meetings are not held in August or December.

B. Future agenda topics

- Remedial Design for 4825 Glenbrook Road (Work Plan)
- Update on the ATSDR Health Consultation for 4825 Glenbrook Road

- Spring Valley Follow-On Health Study Update
- Summary of AU Kreeger Hall Anomaly Investigations
- Review of 2011/2012 Groundwater Quarterly Sampling Results

C. Open Discussion

No additional future agenda topics were discussed.

V. Public Comments

Question from Ginny Durrin, Audience Member – Does the current POI 24 (Probable Pit) location match the probable pit location on the original 1918 map? This map was shown to the community in 1993. Based on this map, POI 24 appeared to be situated on AU's campus, and the other map features were labeled as possible pits or possible trenches.

D. Noble mentioned that the history and status of POI 24 was presented by Lan Reeser, USACE Technical Manager, at the February 2011 RAB meeting.

Question from G. Durrin, Audience Member – Has the current POI 24 location been reviewed using as much as of the scientific process as possible, compared to the original location on the 1918 aerial photo-mosaic? Where was POI 24 located on the aerial photo-mosaic map that was shared with us in 1993?

D. Noble clarified that POI 24 has always been situated in the same location on the historical aerial photo-mosaic. The present-day digital Spring Valley map was shifted overtop of the aerial to assess what present day features this probable pit location corresponds to on the present-day map.

Question from G. Durrin, Audience Member – Why was an area of the AU campus circled and identified as a probable pit? Did there appear to be a ground scar or shifted soil in this area?

G. Vassiliou replied that the circles in the 2000 photogrammetry report are associated with the distances from the possible burial pit to various buildings.

Question from G. Durrin, Audience Member – I am referring to the original 1918 aerial photo-mosaic map that was shown in 1993. A circular area was identified as POI 24 (Probable Pit), and we were told that these features were labeled based on how they appeared in the aerial photo-mosaic, as incorrect as the photo-mosaic map may have been. POI 24 was the only feature that was labeled as a 'probable' pit, in contrast to 'possible' pits. How have you addressed the POI 24 location since 1993, and how important is this location now? POI 24 is currently located underneath the 4825 Glenbrook Road house instead of on the AU campus.

W. Krebs noted that the frame of reference moved, which shifted the location of the probable pit based on how the present-day map features overlay the aerial photo-mosaic.

Question from G. Durrin, Audience Member – Where would POI 24 have been situated based on information provided in 1993?

G. Beumel noted that POI 24 is currently located on AU's property, as AU owns the 4825 Glenbrook Road site, and thus the probable pit is still located at the edge of the AU campus. The Army Corps still believes that this probable pit is located on AU's property.

G. Durrin replied that this is a very good point.

Comment from G. Durrin, Audience Member – Regardless of whose property POI 24 is on, a very distinctive circle surrounding POI 24 was drawn in 1993. Has this circle been moved since 1993?

D. Noble explained that the location of POI 24 was shifted over several years to ensure that the spatial analysis of this feature was as accurate as possible. The original POI 24 placement corresponded with the vicinity of Kreeger Hall on the AU campus, but as the interpretation of this analysis evolved, the estimated present day location of POI 24 shifted onto the adjacent 4801 Glenbrook Road property and finally onto the neighboring 4825 Glenbrook Road property.

Question from G. Durrin, Audience Member – So you used the same 'best guess' analysis for determining the location of POI 24 and the location of the Sergeant Maurer burial pit.

L. Reeser replied that the historical 1918 aerial photograph was always used as the basis for assessing the present day location of POI 24. All POIs were identified on the aerial photograph, and POI 24 was identified as a probable pit.

Question from G. Durrin, Audience Member – Was POI 24 identified as a probable pit based on the presence of a ground scar?

L. Reeser clarified that this probable pit is visible on the aerial photograph, and appears to be a pit with dirt piled around the hole's perimeter.

Clarification from L. Reeser, USACE Technical Manager – The location of POI 24 shifted based on the digital map geo-referencing process using known present-day features, as described earlier during the meeting by D. Noble.

G. Vassiliou added that the original points of reference used were inaccurate; therefore the digital map location had to be corrected accordingly. At the same time, digging efforts have helped to support the current assumptions of the burial pit location.

D. Noble added that the location of POI 24 shifted and evolved over time as the Army Corps conducted and refined the geo-referencing process. Similarly, T. Slonecker and the EPA contractor shifted the Sergeant Maurer burial pit location as they refined their georeferencing process, particularly when they thought they detected small errors that required corrections. This is the reason that EPIC released a series of three reports instead of just one. Anyone who conducts this georeferencing process must do their best to identify and refine a feature's location using evidence of existing errors, new technological changes, and additional information that is brought to light.

M. Bresnahan added (for the benefit of the RAB) that, based on her recollections, the Sergeant Maurer burial pit location was fine-tuned over the past several years. Associated RAB meeting presentations and regular updates on the adjusted burial pit location were provided, and the project team is now most comfortable with the current burial pit location.

Question from K. Slowinski, Audience Member – Thank you for the AUES fence line presentation. It was very helpful. Why wasn't this information included in the Remedial Investigation (RI) report for 4825 Glenbrook Road?

D. Noble explained that these reports address two separate issues. The EPIC report focuses on analysis of historical archived data and potential locations where AUES-related debris disposals may have occurred. In contrast, the 4825 Glenbrook Road RI report focuses on all site-specific remedial investigation results and what is known to date, including the characterization and distribution of AUES-related findings.

Suggestion from K. Slowinski, Audience Member – I think it would be helpful to show all 11 possible locations of the Sergeant Maurer burial pit on a single map, to see how these burial pit locations align with the proposed investigation areas at 4825 Glenbrook Road. I think this is a serious concern, as the use of a blast containment structure is not proposed for investigation of Area A in the backyard of the property.

J. Wheeler disagreed with this concern.

G. Beumel restated that further discussion of this topic is planned for the March 2012 RAB meeting.

VI. Adjourn

The meeting was adjourned at 8:46 PM.