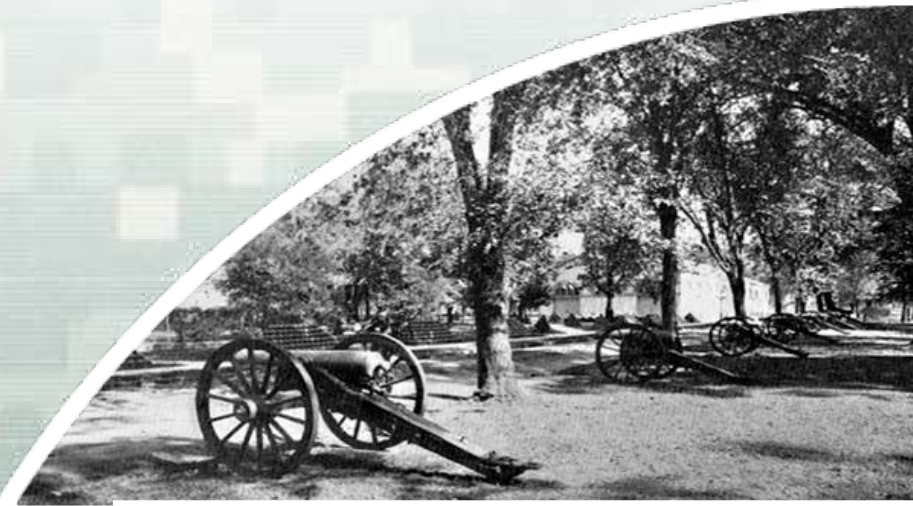


# Former Frankford Arsenal Proposed Plan for Area II Soils

**Todd Beckwith**

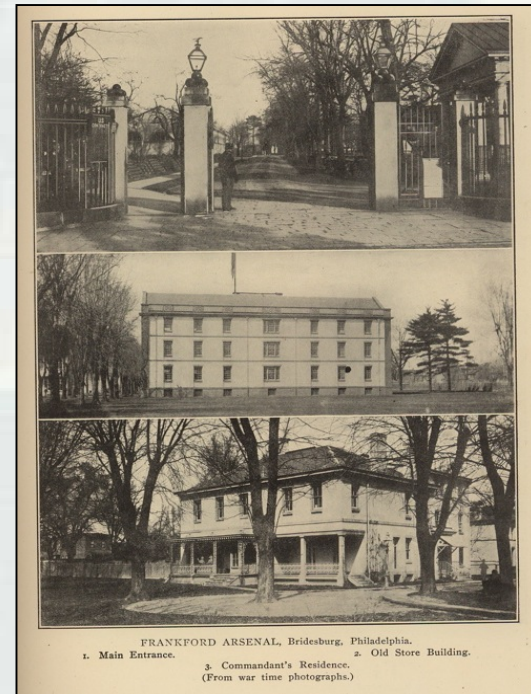
Project Manager

August 18, 2016



# Agenda

- Arsenal History
- Environmental Process
- Area II Soils Investigation
- Cleanup Alternatives
- Next Steps
- Status of Other Areas



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# Former Frankford Arsenal

- Commissioned in 1816
- Military artillery and small arms ammunition research, manufacturing, testing, and storage facility
- Closed in 1977
- Large scale decontamination and decommissioning efforts followed
- Property transferred for economic reuse
- Currently used as a commercial business park and recreational area



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# Environmental Cleanup Process

\*Coordination with the Pennsylvania Department of Environmental Protection, the lead regulatory agency, throughout the process.



Reviewed historical documents

**Remedial Investigation:** Determine the nature of the waste; assess risk to human health and the environment.

**Feasibility Study:** To develop, screen, and evaluate alternatives for clean-up.

Presents alternatives and provides a recommendation for the preferred alternative.



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#### Phase Area Boundary

- Area I
- Area II
- Area III

#### Property Boundary

- City of Philadelphia
- Dietz & Watson
- PIDC

#### Buildings

- Existing FFA Building
- Demolished FFA Building
- Outside FFA Area
- Waterbodies



**FORMER FRANKFORD ARSENAL  
AREA I AND AREA III  
PROPERTY CHANGES**

**FORMER FRANKFORD ARSENAL  
PHILADELPHIA, PENNSYLVANIA**

2/2015	CABRERA Project No. 08-3103.00	FIGURE 3
	Cabrera Services 1100 N Charles St Suite 300 Baltimore, MD 21201	 U.S. Army Corps of Engineers, Baltimore District



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# Area II Remedial Investigation

- **PURPOSE:** Collection of data to determine nature and extent of contamination. Includes human health and ecological risk assessment
  - ▶ 445 surface and subsurface samples collected
  - ▶ Risk assessment considered 5 different exposure receptors: Resident, School Student, Office Worker, Landscaper/Maintenance, Construction Worker
- **Risk assessment conclusions:**
  - ▶ NO Unacceptable risk under current land use
  - ▶ Potential unacceptable risk at six AOCs for future residential use
    - Lead in soil at AOC 1, 10, 20, 21
    - PCB 1260 in soil at AOC 6
    - Benzo(a)pyrene in soil at AOC 13







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# Area II Soil Sample Locations



## Legend

### Soil Sample Locations

- Yellow dot: Delineation Soil Sample
- Green dot: Biased Soil Sample
- Blue dot: Unbiased Soil Sample
- Purple dot: Transformer Sample
- Black dot: Location Not Sampled

### Zones

- Purple outline: Zone 1, 2 and 3
- Blue outline: Area I Boundary
- Yellow outline: Area II Boundary
- Orange outline: Philadelphia Industrial Development Corporation
- Blue square: Boring Included in Geologic Cross-Section

### Label Key

- UBZ-: Unbiased Soil Sample
- BZ-: Biased Soil Sample
- D-: Delineation Soil Sample
- Z1-: Zone 1
- Z2-: Zone 2
- Z3-: Zone 3
- SO-: mg/kg

### Sources

- ESRI (Imagery) 2011
- Cabrera, 2011
- USACE, 2009



Frankford Arsenal  
Philadelphia, Pennsylvania

Project: 6233017

Date: July 2016



0 75 150 300  
Feet  
1 inch = 175 feet

Figure 2-2  
Soil Characterization and  
Delineation Sample Locations



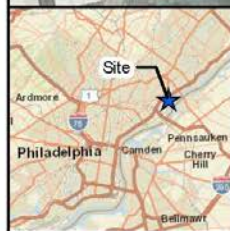


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# Area II Soils: Map of Areas of Concern



C:\GISData\Korth\asit\Pennsylvania\FrankfordArsenal\MXD\Proposed Plan Inside\Figures\_AOC\_Figure.mxd



## Legend

- Area of Concern (AOC)
- Area I Boundary
- Area II Boundary
- Philadelphia Industrial Development Corporation
- Zone 1, 2 and 3

## Sources

ESRI (Imagery) 2013  
Cabrera, 2011  
USACE, 2009



Feet  
0 50 100 200

FRANKFORD ARSENAL  
PHILADELPHIA, PENNSYLVANIA

Figure 4  
Areas of Concern



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# FFA Area II Soils Feasibility Study

## Remedial Alternatives Evaluated

### **ALTERNATIVE 1: NO ACTION**

- This alternative is not being proposed for any of the Areas of Concern in Area 2 addressed in the Proposed Plan

### **ALTERNATIVE 2: EXCAVATION AND DISPOSAL**

- Alternative 2 is being proposed for **AOCs 1, 6, 10 and 20**
- In AOCs 1, 6, 10 and 20, the contaminated soils are accessible, and can be easily excavated disposed at an offsite landfill.
- Involves the estimated excavation and disposal of an approximately 3,112 cubic yards of contaminated soil from the site

### **ALTERNATIVE 3: INSTALLATION OF A CAP AND FUTURE USE RESTRICTIONS**

- Alternative 3 is being proposed for **AOCs 13 and 21**
- In AOCs 13 and 21, the contaminated soil is below an already existing cap (asphalt and/or concrete. Leaving the caps in place at AOCs 13 and 21 is consistent with future land use in the area..





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# FFA Area II Soils Proposed Plan: Proposed Remedial Action by Area of Concern

Area of Concern	Chemicals of Concern	Preferred Remedial Alternative
AOC-1	Lead	Alt 2 – Excavation and Disposal
AOC-6	PCB 1260	Alt 2 – Excavation and Disposal
AOC-10	Lead	Alt 2 – Excavation and Disposal
AOC-13	Benzo(a)pyrene	Alt 3 – Installation of Cap and Future Use Restrictions
AOC-20	Lead	Alt 2 – Excavation and Disposal
AOC-21	Lead	Alt 3 – Installation of Cap and Future Use Restrictions





# Ways to Comment

- Orally at tonight's meeting.
- Fill out a written form and turn it tonight.
- Email or mail your written comments by August 31.

[Todd.T.Beckwith@usace.army.mil](mailto:Todd.T.Beckwith@usace.army.mil)

Or

Mail: U.S. Army Corps of Engineers  
ATTN: Todd Beckwith  
Rm. 10400-E, 10 South Howard St.,  
Baltimore, Md. 21201



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# Next Steps

- Take public comments under consideration and prepare responses to comments.
- Prepare a Decision Document, with Responsiveness Summary.
- Final Decision Document placed in the library and online.



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# Status of Areas I, II, III, and IV

- **Area I Soils:** Several removal actions were completed since 1999 and the Corps of Engineers determined there are no remaining unacceptable risks to human health or the environment. The Final No Further Action Decision Document for Area I Soils was signed on 1 July 2015
- **Area II Soils:** Proposed Plan released summer 2016 outlining preferred remedial alternatives for Areas of Concern with soil contamination. Currently accepting feedback regarding Area II Soils Proposed Plan, anticipate beginning remedial work on site later in 2016
- **Area III Soils:** The Area III Soil Remedial Investigation Report was finalized in March 2016. The Corps of Engineers is evaluating alternatives for addressing Area III soil contamination in a Feasibility Study
- **Area IV Site-Wide Groundwater:** The Groundwater Remedial Investigation Report is expected to be finalized in fall 2016



# Questions or Comments?



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