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Draft Final Preliminary Assessment Report Locust Point Anti-Aircraft Artillery Firing Area FUDS Property No. G05OH0996

Volume 1 of 2

Contract No. W912QR-08-D-0013
Task Order No. DN01

November 2010

Shaw® Shaw Environmental, Inc.

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Cincinnati, OH 45212

Shaw® Shaw Environmental & Infrastructure, Inc.

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November 8, 2010

Bill Beach
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Submittal of the Draft Final Preliminary Assessment Report for the Locust Point Anti-Aircraft Artillery Firing Range – Preliminary Assessment Contract Number W912QR-08-D-0013 Task Order DN01

Dear Mr. Beach:

Shaw Environmental & Infrastructure, Inc. is pleased to submit a copy of the Draft Final Preliminary Assessment Report for the former Locust Point Anti-Aircraft Artillery Firing Range.

Should you have any questions or require additional information regarding this submittal, please do not hesitate to call the undersigned at (513) 782-4984.

Sincerely,

Paul C. McCarren

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Project Manager

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Client Name: U.S. Army Engineer District, Buffalo; CELRN-EC-R

Project Description: Preliminary Assessment
Locust Point Anti-Aircraft Artillery Firing Area, Ottawa County, Ohio

Contract No. | W | 9 | 1 | 2 | Q | R | - | 0 | 8 | - | D | - | 0 | 0 | 1 | 3 |

Delivery Order No.

Project No. | 1 | 3 | 7 | 1 | 9 | 8 |

Task/Phase Number:

Document Type	Identify specific section or segment covered by this checkprint	Document Origin
☐ Technical / Cost Proposal		☐ Originator Developed
☐ RFP		☐ Edited Standard
☐ Contract / Subcontract		☐ Client Furnished
☐ SHP, SSAP, CDAP, or QAPP		
☐ Report	Draft Final Preliminary Assessment	**Document Status**
☐ Risk Assessment / Evaluation		☐ Preliminary
☐ Specifications & Plans		☐ Internal Draft
☐ Design Calculations		☐ Draft
☐ Tables		X Draft Final
☐ Drawings / Figures		☐ Final
☐ Other:		☐ Other:

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Contract No. W912QR-08-D-0013
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November 2010

Shaw® Shaw Environmental, Inc.

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DRAFT FINAL

PRELIMINARY ASSESSMENT REPORT
Locust Point Anti-Aircraft Artillery Firing Area
FUDS Property No. G05OH0996

Formerly Used Defense Sites
Military Munitions Response Program

November 2010

Prepared For:

U.S. Army Corps of Engineers
Buffalo District
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Contract No. W912QR-08-D-0013
Task Order No. DN01

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Executive Summary

Objectives and Scope

This report presents the results of a Preliminary Assessment (PA) conducted at Locust Point Anti-Aircraft Artillery Firing Area (AAAFA), Formerly Used Defense Site (FUDS) property number G05OH0996, located approximately 12 miles northwest of the city of Port Clinton, Ohio. Historical records indicate that the Locust Point AAAFA was used for anti-aircraft artillery training by the 371st Anti-Aircraft Artillery Group, U.S. Army Ohio National Guard. The lease for the Locust Point AAAFA expired in August 1963 and the site was transferred to private owners.

The PA was performed to: "1) eliminate from further consideration those eligible properties, or areas of an eligible property, that pose little or no threat to human health or the environment; 2) determine if there is any potential need for removal action; 3) set priorities for site inspections at eligible FUDS properties; and 4) gather data useable for any future U.S. Environmental Protection Agency Hazard Ranking System (HRS) evaluation" (U.S. Army Corps of Engineers [USACE], 2009.

This PA addresses environmental issues relative to multiple FUDS project categories including: Hazardous, Toxic, or Radiological Waste (HTRW); Military Munitions Response Program; building demolition/debris removal (BD/DR); and containerized HTRW (CON/HTRW).

Field Activities

The information contained in this PA was obtained through document review, a visual site inspection, historical aerial photograph and topographic map review, and a review of environmental database reports. The document review included a record search of available information regarding environmental setting, history, and any restoration/remediation activities. Visual site inspections were conducted to look for evidence of former Department of Defense activities during property visits conducted on Monday May 5 and Tuesday May 6, 2010 at the Locust Point AAAFA and on Tuesday October 26, 2010 at Camp Perry. No ground scarring or debris associated with anti-aircraft artillery activities was observed and no Material Potentially Presenting an Explosive Hazard (MPPEH) was observed at Locust Point AAAFA, the surrounding area, or at Camp Perry. Media sampling was not part of the PA scope of work; therefore no media sampling was conducted as part of the PA research.

During the Camp Perry site visit performed on October 26, 2010 an interview was conducted with base personnel regarding military training activities conducted at Locust Point AAAFA and/or Camp Perry during the time period 1953 to 1963. Per information gathered during this site visit, it was confirmed that Remote Controlled Aerial Targets (RCATs) were launched from Camp Perry during the time period of 1953 to 1963 in support of training activities conducted at

Locust Point AAAFA. It was also confirmed that the third point/observation tower called out on the 1952 topographic map contained within the *Findings of Eligibility* (USACE, 2009a) and identified in the Archive Search Report (USACE, 1993) as being a third AAAFA was actually a short guard tower. Originally the tower was used for small arm range activities at Camp Perry. During World War II Camp Perry was used to house German and Italian prisoners of war and the tower was used as a guard tower. After the end of the war the tower was torn down because it interfered with range activities. This information was also corroborated with interviews conducted as part of this PA.

Recommendations

The Archives Search Report (USACE, 1993) describes the anti-aircraft artillery range as consisting of three firing points, with two points located at Locust Point AAAFA and one point located at Camp Perry. The review of historical records, discussions with the Ohio Army National Guard, and interviews with former employees of Camp Perry do not support a third firing point located at Camp Perry.

Based on historical evidence and the results of the PA field activities, there is no evidence of potential hazards associated with HTRW, MPPEH, BD/DR, or CON/HTRW at Locust Point AAAFA. The pathway for exposure of receptors to hazards is not considered complete. A designation of No Department of Defense Action Indicated is recommended.

Acknowledgements

The PA has been prepared for the Department of the Army, Buffalo District, USACE.

The following Shaw project team is responsible for preparation of the PA for the FUDS Locust Point AAAFA, Ottawa County, Ohio.

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1.0 Introduction

This report presents the results of a Preliminary Assessment (PA) that was conducted at the Locust Point Anti-Aircraft Artillery Firing Area (AAAFA), Ottawa County, Ohio.

This PA followed a methodical process in which available information was analyzed and conclusions were drawn about the environmental condition of the property (Appendix E). As part of the record search, previous reports, site drawings, and historical topographic maps and aerial photographs were reviewed to assist in identifying past land uses and potential environmental contamination sources. Environmental database reports were reviewed to identify areas where the presence (or absence) of contamination has been confirmed, either at the facility or on adjacent sites. Additionally, a physical inspection of the property was conducted to identify any evidence of spills, distressed vegetation, or other conditions that might indicate contamination.

A bibliography, list of references cited, and a complete acronym and abbreviations list for this document are provided in Appendices A, B, and C respectively.

1.1 Project Authorization

This project was authorized "Under the authority of the Defense Environmental Restoration Program, (10 USC 2701 et seq.), and its policies and procedures relating to Formerly Used Defense Sites (DERP-FUDS), including Department of Defense (DoD) Management Guidance for the DERP dated 28 September 2001, and Engineering Regulation 200-31-1, Environmental Quality, FUDS Program Policy, Shaw Environmental & Infrastructure, Inc. (Shaw) conducted a Preliminary Assessment at the Locust Point AAAFA, Ottawa County, Ohio." Shaw has prepared this report for the U.S. Army Corps of Engineers (USACE) in accordance with Delivery Order DN01 of Contract W912QR-08-D-0013.

1.2 Purpose and Objectives of the Preliminary Assessment

The objective of this project is to conduct a PA at the former Locust Point AAAFA FUDS. The purposes of the PA are:

1) Eliminate from further consideration those eligible properties, or areas of an eligible property, that pose little or no threat to human health or the environment
2) Determine if there is any potential need for removal action
3) Set priorities for site inspections at eligible FUDS properties
4) Gather data useable for any future U.S. Environmental Protection Agency (USEPA) Hazard Ranking System (HRS) evaluation.

The objective of a PA is to determine whether releases or potential releases of contaminants related to operation occurred while the property was under DoD jurisdiction. Jurisdiction of a FUDS is defined as "real property that was under the jurisdiction of the Secretary, and owned by, leased by, or otherwise possessed by the U.S. (including governmental entities that are the legal predecessors of Department of Defense [DoD] or its Components) and those real properties where accountability rested with DoD but where the activities at the property were conducted by contractors (i.e., government-owned, contractor-operated [GOCO] properties) that were transferred from DoD control prior to 17 October 1986." This PA addresses environmental issues relative to multiple FUDS project categories, including: Hazardous, Toxic, Radiological Waste (HTRW); Military Munitions Response Program (MMRP); building demolition/debris removal (BD/DR); and containerized HTRW (CON/HTRW).

1.3 Preliminary Assessment Report Content

This document will be distributed as presented in Appendix Q and consists of the following sections:

- Section 1 – Introduction
- Section 2 – Previous Investigations
- Section 3 – Property Description, Acreage, and Land Use
- Section 4 – Historical Property Summary
- Section 5 – Evaluation of Presence of Military Munitions and Technical Data
- Section 6 – Evaluation of HTRW Presence and Areas
- Section 7 – Evaluation of CON/HTRW and BD/DR Presence
- Section 8 – Pathway and Environmental Hazard Assessment
- Section 9 – Summary and Conclusions

In addition, the findings in this document are supported by information in the following appendices:

- Appendix A – References and Records Reviewed
- Appendix B – References
- Appendix C – Acronyms and Abbreviations
- Appendix D – Glossary (not used)
- Appendix E – Preliminary Assessment Form
- Appendix F – Ordnance Technical Data Sheets

- Appendix G – Textual References of Source Documents
- Appendix H – Still Photography References (not used)
- Appendix I – Figures, Maps, and Drawings
- Appendix J – Interviews
- Appendix K – Accident Prevention Plan (APP)
- Appendix L – Property Visit Report
- Appendix M – Property Visit Photographs
- Appendix N – Munitions Response Site Prioritization Protocol (not used)
- Appendix O– Technical Advisory Group Review Fact Sheet (not used)
- Appendix P – Responses to Comments
- Appendix Q – Report Distribution
- Appendix R– Report Plates

All comments received during the PA review process and the responses to the comments are presented in Appendix P.

2.0 Previous Investigations

A number of environmental investigations have been conducted in the area of Locust Point AAAFA; however, none have been conducted exclusively at this FUDS. The investigations primarily focused on Erie Army Depot, which includes the Locust Point AAAFA FUDS property. The following presents a summary of the investigations and the information pertaining to Locust Point AAAFA. The following documents are presented in Appendix G, Textual References of Source Documents or on the attached CD.

2.1 Inventory Project Report/Preliminary Assessment (USACE, 1991)

The USACE, Huntsville District completed an Inventory Project Report/Preliminary Assessment (IPR/PA) in 1991, which stated that several hundred pieces of munitions and explosives of concern (MEC) were found on the beach area of the former Erie Army Depot (Appendix F in the Archive Search Report [ASR], USACE, 1993). The findings of determination of eligibility (FDE) contained in the 1991 IPR/PA was revised in June 2007. The revised FDE was required to correct the property acreage and to document ineligible portions of the property.

The IPR/PA did not mention any ordnance items being observed at the former Locust Point AAAFA.

2.2 Archives Search Report (USACE, 1993)

The USACE, Rock Island District prepared an ASR for the Erie Army Depot in August 1993. The ASR addresses Locust Point AAAFA as a munitions response site associated with Erie Army Depot. The ASR was prepared after reviewing available records, photographs, and reports that documented the history of the site. The majority of available information about the FUDS is contained in the ASR. The ASR describes the following for Locust Point AAAFA: "The anti-aircraft artillery range consisted of three (3) firing points numbered One, Two, and Three, from west to east, along the south shore of Lake Erie. Points One and Two were located at the Locust Point AAAFA. Point Three was located on a separate property, Camp Perry, approximately 8 ½ miles east of the Locust Point AAAFA. Each firing point was equipped with a fifty-foot safety tower, which had a siren and horn. Targets consisted of radio-controlled aircraft and towed targets" (USACE, 1993).

2.3 Final Removal Report (Human Factors Application Inc., 1996)

In February 1996, Human Factors Application, Inc. issued a *Final Removal Report – Unexploded Ordnance Support for the Toussaint River Dredging Project*. During dredging on the Toussaint River channel, 6 live and 31 inert ordnance items, as well as 568 pounds of scrap were located and removed. Live ordnance items included M28 3.5-inch Rockets, M49A2 60-mm Mortars;

inert ordnance items included M344 106-mm projectiles, M52 zuze, M15 Smoke Grenades, M489 105-mm projectiles, and M333 90-mm projectiles.

It was recommended that any future construction or dredging projects on Lake Erie be accompanied by unexploded ordnance (UXO) personnel. Also, the report recommended that signs be posted along the shoreline to warn boaters not to come ashore.

2.4 Archives Search Report Supplement (USACE, 2004b)

The *ASR Supplement* for Erie Army Depot, which included the shoreline of Locust Point AAAFA as part of the Lake Impart Area, was completed by USACE in November 2004 as an addition to the original ASR. The *ASR Supplement* includes a ranking in accordance with the Risk Assessment Code (RAC) procedure to address explosive safety hazards. Based on a rating scale of 1 through 5 (with 5 indicating a hazard occurrence as being highly unlikely and a rating of 1 indicating a hazard occurrence as being very likely), the shoreline area of Locust Point AAAFA was assigned the highest RAC score of 1.

2.5 Final Report (Environmental Security Technology Certification Program, 2007)

A *Final Report - Assessment of Munitions Contamination at the Former Erie Army Depot Lake Erie Impact Area and Toussaint River* was issued in August 2007 by the Environmental Security Technology Certification Program (ESTCP). The ESTCP pilot program performed an investigation on the beach of and in Lake Erie, from the mouth of the Toussaint River and the Locust Point firing area (near the Davis-Besse Nuclear Power Station) to West Sister Island. The ESTCP pilot program was intended to demonstrate the effectiveness of various technologies, either alone or in combination, as tools for wide-area assessment of areas suspected of containing unexploded munitions at DoD sites.

ESTCP located 300,000 anomalies in Lake Erie (in an 8,000-acre area) and investigated 186 of these anomalies, 141 of which were munitions or munitions debris ranging in size from 37-mm projectiles to 155-mm projectiles.

Investigation of the beach area east of the mouth of the Toussaint River and shore areas resulted in 2,000 anomalies. ESTCP investigated 18 of these anomalies and found "9 munitions items (155-mm projectiles and 2.75-inch rockets) as well as 4 non-UXO objects."

According to ESTCP, historical MEC and munitions constituents (MC) identified for this area include:

- 20-mm, 40-mm, 75-mm, 90-mm, 105-mm, and 155-mm projectiles
- 60-mm mortar
- 3.5-inch rocket, M52 fuze
- M15 smoke grenade

2.6 Final Site Investigation Report Erie Army Depot (Shaw, 2008)

The *Final Site Investigation Report Erie Army Depot*, which included the 69.32 acres of Locust Point AAAFA, was completed by Shaw in 2008. The Site Investigation (SI) included reconnaissance of Locust Point AAAFA to look for evidence of MEC. No MEC associated munitions debris was identified within the Locust Point AAAFA property. During the SI, no samples were collected because all media pathways (groundwater, terrestrial, and air) were considered to be incomplete based on no MEC or munitions debris items being identified and, therefore, no MC source being identified. A third firing point, (as identified in the ASR [USACE, 1993]), was not observed during the SI.

2.7 Findings and Determination of Eligibility (USACE, 2009a)

In April 2009 the USACE issued a *Findings and Determination of Eligibility for Locust Point Anti-Aircraft Artillery Firing Area, Ottawa County, Ohio, Property Number G05OH0996.* All 69.32 acres of the site were found to be eligible under the DERP FUDS program.

2.8 Other Investigations

In 1948 the Department of the Army, Headquarters Second Army, issued a letter to the Adjutant General of the State of Ohio, requesting the establishment of anti-aircraft facilities at Camp Perry (Appendix G).

Pursuant to the aforementioned letter a "Board of Officers" was convened to survey land at Camp Perry and at Locust Point to determine the suitability of those locations for establishment of anti-aircraft facilities (Appendix G). The findings of this board included the following information:

- "...the only usable part of this beach is that extending two miles to the west of the mouth of the Toussaint River. The beach in most areas very narrow but several areas, particularly near the mouth of the Toussaint River and one area about one (1) mile west of the Toussaint have sufficient depth if cleared."
- "The general area containing suitable firing points may be described as that area from a point approximately 50 yards East of the Eastern-most dwelling on the South Shore of Lake Erie East of the vicinity of Locust Point, extending Eastward along the shoreline to the mouth of the Toussaint River with an approximate depth inland from the shore of 150 yards."
- "The firing of 120mm from this vicinity (Locust Point) would be unsatisfactory because the danger would extend into Canadian waters and into the dredged ship channel to Toledo, Ohio."

This description correlates to the approximate boundary of the FUDS.

Anti-aircraft firing regulations issued for Camp Perry in 1954 by the Department of the Army, Headquarters Second Army, stated that "The antiaircraft [sic] artillery ranges consist of these firing points, numbered one, two and three, from West to East along the south shore of Lake Erie. Points one and two are located at Locust Point, approximately 8 ½ miles west of Camp Perry. Point three is located between the 1000 yard target butts of the rifle range at Camp Perry, and the Lake Shore."

In 1992, Explosive Ordnance Disposal Technology UXO technicians, along with the USACE Louisville District, identified and removed 5,438 pieces of MEC or munitions debris and 13 tons of scrap metal from the Lake Erie shoreline from the mouth of the Toussaint River east to the Ohio National Guard's Camp Perry facility (USACE, 1993).

During an emergency preparedness drill conducted October 30, 1996 at the Davis-Besse Nuclear Power Station, 11 munitions were found in a marsh area near the edge of Lake Erie by a radiation monitoring team. The site was in the general vicinity of the Locust Point firing area. An explosive ordnance team from Wright-Patterson Air Force Base responded and disposed of two 106-mm, two 155-mm, and seven rocket rounds. Based on detonations during disposal, several of the rounds were reported to have been live (Davis-Besse, 1996).

3.0 Property Description, Acreage, and Land Use

Much of the information contained in this Section was obtained from the ASR (USACE, 1993) and the *ASR Supplement* (USACE, 2004) for the Erie Army Depot, which encompasses the Locust Point AAAFA. Additional information was obtained from Inventory Project Report/Preliminary Assessment (USACE, 1991); Final Removal Report (Human Factors Application Inc., 1996); Final Report (Environmental Security Technology Certification Program, 2007); and *Final Site Investigation Report Erie Army Depot* (Shaw, 2008), *Findings and Determination of Eligibility* (USACE, 2009a) (Appendix G).

Additional information presented in this Section was obtained during the property site visits conducted on Monday May 5 and Tuesday May 6, 2010 at the Locust Point AAAFA, and on Tuesday October 26, 2010 at Camp Perry. The purpose of the site visit conducted in October 2010 was to determine whether a third firing point had been located at Camp Perry and whether this firing point was associated with training activities conducted at Locust Point AAAFA. Notes from both site visits are presented in Appendix L, and the photographs taken during the visits are presented in Appendix M.

3.1 Location

Locust Point AAAFA, FUDS property number G05OH0996, is located in the town of Locust Point, Ottawa County, Ohio, approximately 12 miles northwest of the city of Port Clinton, Ohio (latitude 41° 35' 50" North and longitude 83° 4' 13" West) (USACE, 2009b) (Figure 1; Appendix I). The site is west of Lake Erie and is bordered on the south by the Toussaint River. The property consists of 69.32 acres in Sections 1 and 6, Township 7 North, Range 15 East. The property is located in USEPA Region 5 and in Congressional District 09.

Figure 2 (Appendix I) presents an aerial photograph dated 1951 for the general area of the FUDS. Figure 3 (Appendix I) presents a 2005 aerial photograph of the area and shows the current layout of the FUDS.

3.2 FUDS Eligible Property

Locust Point AAAFA is not listed in the MMRP Inventory in the *Defense Environmental Programs Annual Report to Congress Fiscal Year 2008* (DoD, 2008). It does, however, have a FUDS property number and one sub-range. For the purposes of this PA, the sub-range is considered an area of interest (AOI).

The FUDS covers approximately 69.32 acres (USACE, 2009b). Coordinates and range boundaries for the AOI come from Geographic Information Systems (GIS) data provided by the USACE. The approximate area of the AOI was estimated based on this data.

Range Name	Range Identification	Approximate Area (acres)	UTM Coordinates (meters)
Locust Point AAAFA	G05OH0996	69.32	N 4607140.6 E 327463.01

Coordinates for the range are in Universal Transverse Mercator (UTM), Zone 17N, NAD 83.

3.3 Land Use and Ownership History

A search of available environmental records was conducted by Environmental Data Resources Inc. (EDR) (EDR, 2009). The government records search met the requirements of the Standard Practice for Environmental Site Assessments (American Society for Testing and Materials, 2005). No mapped sites were found in EDR's search of available ("reasonably ascertainable") government records either on Locust Point AAAFA or within a search radius of 2 miles around the site in known Federal, state, or local databases with the exception of the Davis-Besse Nuclear Power Station. Based on the distance between the Locust Point AAAFA and the Power Station, it is highly unlikely that any activities at the Power Station have had an environmental effect on the FUDS.

A review of the orphan sites (sites with incomplete addresses so that they could not be definitively located on a map) indicates that none of these sites are likely to have had an adverse environmental effect on the FUDS AAAFA. Additional information on the databases searched and the results for surrounding properties are included in the EDR report found in Appendix G.

3.3.1 Land Use

The primary land use within Locust Point AAAFA is open green space associated with the Davis-Besse Nuclear Power Station. The area is restricted by fencing and locked gates.

There are several well-maintained buildings and structures within the FUDS boundaries that are part of the Davis-Besse Nuclear Power Station. Immediately bordering the FUDS to the northwest is a private housing development. The remaining surrounding areas are wetlands/marshes that are maintained by the Ohio Department of Natural Resources (ODNR).

Land use within the FUDS is anticipated to remain unchanged in the future.

3.3.1.1 Historical Land Use Investigations

During the Camp Perry site visit performed on October 26, 2010, an interview was conducted with base personnel regarding military training activities conducted at Locust Point AAAFA and/or Camp Perry during the time period 1953 to 1963. The following is a summary of the information presented in Appendix J, Appendix L, and Appendix M regarding training activities at Locust Point AAAFA and whether a third firing point had been located at Camp Perry that was associated with training activities conducted at Locust Point AAAFA:

- Camp Perry personnel were not aware of anti-aircraft firing being conducted on Camp Perry property during the time period of 1953 to 1963.
- Camp Perry personnel were aware that Remote Controlled Aerial Targets (RCATs) were launched from Camp Perry during the time period of 1953 to 1963 in support of training activities conducted at Locust Point AAAFA. The launch pole and weathered concrete from the RCAT launch ring were observed during the site visit (Camp Perry Photographs 006, 009, 010, 011, 013, 014, 016, 018, and 019; Appendix M).
- The third point/observation tower, identified on the 1952 topographic map contained within the *Findings of Eligibility* (USACE, 2009a) and called out in the ASR as being a third AAAFA, was identified by Camp Perry personnel as being a short guard tower. Originally the tower was used for small-arms range activities at Camp Perry. During WWII, Camp Perry was used to house German and Italian prisoners of war and the tower was used as a guard tower. At the end of WWII after the prisoners of war had been removed from Camp Perry, the tower was torn down because it interfered with range activities. A replacement observation tower was erected ~200 yards east from the location of the first tower. This replacement tower was torn down in 1995, and a third observation tower, approximately 1,100 yards east of the first tower, was erected for range activities (Camp Perry Photograph 020, Appendix M and Figure 3, Appendix I).
- Camp Perry personnel stated that since the end of WWII the area where the former observation tower was has been the back-stop berm for the 1,000 yard small-arms range. To the east is an 800-yard range, a 600-yard range, and a 100-yard range (Figure L-2; Appendix L).
- During the site visit two concrete footers were observed at the location of the former observation tower (Camp Perry Photographs 021, 022, 023, and 029, Appendix M and Figure L-2, Appendix L).
- Camp Perry personnel provided photocopies of news reports from the 1953 Ottawa County News that stated "...the Army plans called for housing over 600 anti-aircraft artillery permanent soldiers at Camp Perry but that their training activities will be conducted on federal lands at Locust Point range, several miles west of the state-owned reservation" (Appendix G, Item 6).

Information corroborating that the third point/observation tower, identified on the 1952 topographic map contained within the *Findings and Determination of Eligibility* (USACE, 2009a) and identified in the ASR as being a third AAAFA, was actually a short guard tower was obtained by an interview conducted with a former Contracting Officer, who was employed at Camp Perry and Erie Army Depot (Appendix J – Item 1). The following is a summary of information obtained from the interview:

- Anti-aircraft firing took place at Locust Point AAAFA during the time period of 1953 to 1963.
- The interviewee was not aware of anti-aircraft firing being conducted on Camp Perry property during the time period of 1953 to 1963 that would have been associated with training at Locust Point.
- The interviewee confirmed that RCATs were launched from Camp Perry during the time period of 1953 to 1963. As contracting officer he was responsible for payouts made for damage caused by RCATs that came down outside of the lake impact area. In particular he remembers paying for damage done to a farmer's orchard, damage to high-tension electrical wires, and money paid to a Canadian commercial fisherman whose net was damaged by a RCAT that strayed into Canadian waters.

In October 2010 a public notice was published in the *Port Clinton News-Herald* requesting information about past activities related to Locust Point AAAFA. One response was received based on the public notice. A lifelong resident of Port Clinton, Ohio responded with information regarding anti-aircraft firing taking place at Locust Point (Appendix J – Item 1). Following is a summary of information obtained from the interview:

- Per the interviewee, she remembers as a child attending a 4-H meeting held at the Sand Beach Dance Pavilion directly adjacent (west) to Locust Point. She said that her 4-H advisor was friends with a member of Military Police stationed at Camp Perry and that her 4-H club was allowed to go up to a security fence separating the private beach area near the pavilion and the area used at Locust Point for anti-aircraft artillery training.
- The interviewee's 4-H club was allowed to watch anti-aircraft artillery firing training. The training session reportedly lasted approximately 1 hour. From the 4-H club vantage point one anti-aircraft gun and its support crew were visible as well as aerial targets and projectiles hitting the aerial targets. It was explained to the 4-H club that each gun crew had a color specific projectile and that the targets could be examined as to what gun had connected with the target.

3.3.2 Ownership History

Locust Point AAAFA was established in February 1953 on property leased by the United States of America from the State of Ohio and was used until August 1963. Following termination of the lease, the property was transferred back into private hands.

The 69.32-acre site is currently located within a privately owned 733-acre wildlife refuge. According to the Energy Information Administration, the wildlife refuge is part of a larger 954-acre property owned by First Energy Corporation. A detailed site ownership chronology is contained in Section 4, Historical Property Summary. Figure 4 (Appendix I) presents current land ownership in the area of the FUDS.

3.4 Physical Property Characteristics

Information presented in this Section was confirmed during property site visits conducted Monday May 5 and Tuesday May 6, 2010 at the Locust Point AAAFA and on Tuesday October 26, 2010 at Camp Perry. Notes from both site visits are presented in Appendix L and photographs taken during the visits are presented in Appendix M.

PA field activities included site reconnaissance. The following conditions observed during the reconnaissance were recorded in the field logbook and site property visit reports (Appendix L) and/or by digital photographs (Appendix M):

- Presence or absence of evidence of HTRW, MPPEH, BD/DR, and CON/HTRW,
- land use,
- vegetative cover, and
- former DoD use of the property.

Representatives from USACE and First Energy Corporation accompanied the Shaw team during the May 5, 2010 reconnaissance. First Energy Corporation accompanied the Shaw team during the Monday May 6, 2010 reconnaissance. During the October 26, 2010 reconnaissance at Camp Perry, the Shaw team was accompanied by Camp Perry personnel.

3.4.1 Topography and Vegetation

Locust Point AAAFA is located in the northeastern portion of Ohio. The topography in the general area is relatively flat, varying in elevation from 570 to 580 feet (ft) above mean sea level (Figure 5; Appendix I). Vegetation is primarily open grassland or wetlands (Great Lakes Plains), which are predominantly barren or covered in low grasses (Appendix M).

3.4.2 Terrain Features

Locust Point AAAFA is bordered on the south by the Toussaint River, which flows eastward (Figure 6; Appendix I). The Toussaint River drains into Lake Erie, which borders the FUDS to the east and north. Lake Erie is the primary surface water source body in the area of Locust Point AAAFA. The terrain of the FUDS is interspersed with small surface water bodies, including ponds, canals, and wetlands (Appendix M).

3.4.3 Climate

According to the ASR (USACE, 1993):

> "The climate and weather conditions are influenced by the Great Lakes. The mean January temperature for this area is 27.4 degrees Fahrenheit (°F), mean July temperature of 74.2 °F, a mean annual temperature of 51.2 °F. This area has a mean average

precipitation of 31.84 inches of rain and 31.6 inches of snow. The normal relative humidity in January is approximately 75 percent and in July approximately 72.5 percent."

3.4.4 Regional Geologic and Hydrogeologic Setting

3.4.4.1 Bedrock Geology

The geology of the area surrounding the FUDS is characterized by Wisconsinan age sediments 40 to 70 ft thick. Bedrock units underlying the area are thickest along the shore of Lake Erie. These units overlie older age Silurian and Devonian sedimentary deposits of dolomites and limestone with intervening layers of shale and sandstone.

3.4.4.2 Overburden Soils

The area surrounding the FUDS is post-glacial in origin, mostly in the lake plain of glacial Lake Maumee. The shallow surface soils consist mainly of a mixture of sand, silt, clay, and organic material.

3.4.4.3 Hydrogeology

Groundwater flow in the area is from west to east, towards Lake Erie. The depth to groundwater in the area ranges from 0 ft (wetlands) to 4 ft below ground surface (bgs) (USACE, 1993).

3.4.5 Sensitive Environments

The information relative to sensitive environments associated with this site was compiled from United States Fish and Wildlife Service (USFWS) and the ODNR. The USFWS and ODNR identify two federal and state-listed endangered species within Ottawa County, the Indiana bat and the Piping plover. The Eastern prairie fringed orchid, lakeside daisy, and Lake Erie water snake, federal and state-listed threatened species, are also present in the area of Locust Point AAAFA. One federal or state candidate species, the Eastern massasauga rattlesnake, is also present in Ottawa County. The status of threatened or endangered species in the area of Locust Point AAAFA is shown in the table below:

Class	Status	Common Name	Scientific Name
Federal/State	Endangered	Indiana bat	*Myotis sodalist*
Federal/State	Endangered	Piping plover	*Charadrius melodum*
Federal/State	Threatened	Eastern prairie fringed orchid	*Platanthera leucophaea*
Federal/State	Threatened	Lakeside daisy	*Hymenoxys herbacea*
Federal/State	Threatened/Endangered	Lake Erie water snake	*Nerodia sipedon insularum*
Federal/State	Candidate/Endangered	Eastern massasauga	*Sistrurus catenatus*

The range and other areas do qualify as Important Ecological Places (IEPs), as defined by USACE (2006), or Sensitive Environments, as defined by the USEPA (1997) and are shown in Table 1 based on the presence of threatened and endangered species.

Prior to conducting site activities, the Ohio State Historic Preservation Office was contacted to evaluate the potential presence of sites on the National Register of Historic Places or any

archaeological resources within the project area. The Historic Preservation Office indicated that the project would have no effect on any cultural resources or historic properties.

Sensitive receptors located within a 4-mile radius of the FUDS are shown in Figure 7 (Appendix I).

4.0 Historical Property Summary

The Locust Point AAAFA is in the northern portion of the former Erie Army Depot. The following is a site chronology of Erie Army Depot, which includes the area for the Locust Point AAAFA property. Unless otherwise referenced, this information comes from the ASR (USACE, 1993).

4.1 Chronological Property Summary

In 1918 the Camp Perry Proving Ground was established. The installation provided the Army with facilities for acceptance of artillery. The name of Camp Perry Proving Ground was changed to Erie Proving Ground on August 31, 1918.

On October 23, 1918, the first proof firing program was initiated and continued until March 20, 1920, after having proof fired 7,694 units of artillery.

On July 1, 1920, the installation name was changed to Erie Ordnance Depot. It served as a receipt, storage, and issue point for specified items of anti-aircraft artillery, harbor defense artillery, fire control material, guided missiles, and related tools. By January 11, 1941, the name was changed back to Erie Proving Ground.

On February 1, 1946, Erie Army Depot reverted to its peacetime designation and was used for missions including the support of propulsion and internal guidance systems, inert ammunition, and missile components.

In 1951 Erie Ordnance Depot became the key depot for "secondary items of anti-aircraft materials and became the initial source of supply for all installations and activities east of the Mississippi River. This supply responsibility was expanded to include surface to air guided missiles and integrated fire control systems" (USACE, 1993).

"In 1953 Erie Ordnance Depot began furnishing field maintenance support for Organized Reserve Corps and Reserve Officers Training activities located in northern Ohio and Ordnance Field Maintenance for repair of wheeled vehicles, small arms ammunition, fire control equipment, and artillery. In this year, the former Erie Ordnance Depot was assigned the mission of furnishing logistical support to the national rifle and pistol matches at Camp Perry, Ohio" (USACE, 1993).

From February 1953 to August 1963 the War Department leased a portion of Erie Ordnance Depot to create Locust Point AAAFA.

"In 1954, a support detachment, (the U.S. Army Ordnance Depot Erie (4452)), was assigned to administer and provide logistical support to regular Army anti-aircraft artillery (AAA) troops and National Guard Units training at Camp Perry. The 78th Radio-Controlled Area Target (ARCAT)

was also transferred to the depot for training support. Support extended through 1960" (USACE, 1993).

A new guided missile rebuild facility was added in January 1955 for the overhaul, rebuilding, and repair of guided missiles. On August 1, 1959 "the missions for furnishing ordnance general supplies and maintenance of tools and equipment were transferred from Rossford Ordnance Depot to Erie Ordnance Depot" (USACE, 1993).

Erie Ordnance Depot was renamed Erie Army Depot on August 1, 1962, and was reassigned to the U.S. Army Supply and Maintenance Command.

"On October 1, 1962 Erie Army Depot was assigned the assembly mission for the eastern deployment of improved Nike Hercules Surface-to-Air Missile equipment.

"On February 18, 1963, Erie Army Depot was assigned the depot maintenance mission for HAWK [Service-to-Air [sic]] Missile ground equipment and associate secondary items on February 18, 1963" (USACE, 1993).

In 1967 the base closure, which began in 1955, was complete. In September 1970 First Energy Nuclear started construction on the Davis-Besse Nuclear Power Station. Operations at Davis-Besse Nuclear Power Station began in July 1978 and continue today.

4.2 Military Operations

The Locust Point AAFA was used for anti-aircraft artillery training by the 371st Anti-Aircraft Artillery Group, U.S. Army Ohio National Guard. According to the ASR, "The anti-aircraft artillery range consisted of three (3) firing points numbered One, Two, and Three, from west to east, along the south shore of Lake Erie. Points One and Two were located at the Locust Point AAAFA. Point Three was located on a separate property, Camp Perry, approximately 3 miles east of the Locust Point AAAFA (USACE, 2009). Each firing point was equipped with a fifty foot safety tower, which had a siren and horn. Target consisted of radio-controlled aircraft and towed targets" (USACE, 1993). Review of historical records and discussions with the Ohio Army National Guard (summarized in section 3.3.2) do not support a third point being located at Camp Perry. There is an observation tower located at the beach area of Camp Perry, but given the distance (approximately 3 miles) of the tower from the Locust Point AAAFA, it is unlikely that the tower was used for observation of anti-aircraft training conducted at Locust Point. In a letter from the Headquarters of the Second Army dated December 31, 1949, a recommendation was made that "...the only useable part of this beach is that extending two miles west of the mouth of the Toussaint River...The entire beach from Camp Perry to the Toussaint River is too narrow to warrant construction of firing points" (Appendix G).

The aforementioned information regarding the disposition of a third point/observation tower, identified on the 1952 topographic map contained within the *Findings of Eligibility* (USACE, 2009a) and identified in the ASR as being a third AAAFA, was determined to be a short guard

tower and not associated with anti-aircraft artillery training conducted at Locust Point, base on interviews with current and former Camp Perry personnel (Section 3.3.2). Originally the tower was used for small arm range activities at Camp Perry. During WWII Camp Perry was used to house German and Italian prisoners of war, and the tower was used as a guard tower. After the end of WWII, after the prisoners of war had been removed from Camp Perry, the tower was torn down because it interfered with range activities. A replacement observation tower was erected ~200 yards from the location of the first tower. This replacement tower was torn down in 1995 and a third observation tower for range activities was erected (Camp Perry Photograph 020, Appendix M and Figure 3, Appendix I).

4.2.1 Operations Involving Military Munitions

Locust Point AAAFA was used for anti-aircraft artillery training using small arms, 37-mm, 40-mm, and 90-mm weapons systems. According to the ASR, explosively configured chemical munitions were not fired at Locust Point AAAFA (USACE, 1993). Information for munitions potentially found on site is provided in Table 2, and ordnance technical data sheets are provided in Appendix F. The boundaries of the safety fans for Locust Point AAAFA, Erie Army Depot, and Camp Perry are included on Figure 8 (Appendix I). The safety fan for anti-aircraft artillery training overlapped the Lake Impact Area range and the Artillery Firing/Aerial Gunnery Bombing and Rocket Strafing ranges for Erie Army Depot, and the Short Range Firing Fan and Automatic Weapons Firing Range for Camp Perry.

4.2.2 Operations Involving HTRW

Historical documents (Appendix G) do not indicate operations involving HTRW took place on the property. The 2010 PA property visit found no evidence to indicate the presence of HTRW.

4.3 Map Analysis

Diagrams showing the range safety fan for the Locust Point AAAFA were reviewed (USACE, 1993). These drawings show the range safety fan extending into Lake Erie (Figure 8; Appendix I). The lake impact area encompassed approximately 93,585 acres, including 93,279 acres in Lake Erie. According to the ASR (USACE, 1993), the impact/safety area maintained on Lake Erie that consists of approximately 96,000 acres, and 36,033 acres of the lake impact area is still being used by Camp Perry as a target range.

Figure 11 (Appendix I) shows the 1952 topographic map contained within the *Findings and Determination of Eligibility* (USACE, 2009a) and the location, identified in the ASR as being a third observation tower and AAAFA. As discussed in Sections 3.3.2 and 4.2, the identified observation tower was originally a short (less than 50 feet) tower that was used for small arm range activities at Camp Perry. During WWII Camp Perry was used to house German and Italian prisoners of war and the tower was used as a guard tower. At the end of WWII, after the prisoners of war had been removed from Camp Perry, the tower was torn down because it

interfered with range activities. This information was verified during the during the Camp Perry site visit performed on October 26, 2010, and during interviews conducted with former and current Camp Perry and Erie Army Depot personnel (Appendices J, L, and M).

4.4 Aerial Photographic Interpretation

Aerial photographs of the FUDS from 1951 to 2005 have been reviewed and are presented in Appendix R – Report Plates. Photographs pre-dating military use have not been located. The earliest available photo, 1951, does show evidence of observation tower one and two (Historical aerial 2, Appendix R). The areas surrounding observation tower one and two have been cleared of vegetation. The roadway providing beach access to the observation towers is visible. The shoreline from Locust Point AAAFA to Camp Perry is forested. There is no visible evidence of a third observation tower on Camp Perry property (Historical aerial 4, Appendix R). This is based on the lack of any structure casting a shadow similar to those cast by the observation towers at Locust Point AAAFA. No beach disturbances are visible in the surrounding area. It was also determined that the reported location of the third observation tower on Camp Perry property is approximately 3 miles east of Locust Point, not 8 ½ miles as reported in the *Findings and Determination of Eligibility* (USACE, 2009a).

The 2005 aerial photo, shows the FUDS after the construction of the Davis-Besse Nuclear Power Station. Several buildings, a cooling tower, and a discharge drainage canal were all constructed for station operations. Observation tower one and two are no longer visible, and vegetation has returned. The shoreline from Locust Point AAAFA to Camp Perry remains forested. Shoreline regression from the 1870's to 2004 is shown in Figure 9 (Appendix I).

Historical Aerial 18 (Appendix R) shows a 2009 image of the littoral drift in Lake Erie. Figure 10 (Appendix I) shows the direction of littoral drift in the Lake Erie watershed.

Figure 11 (Appendix I) shows the 1952 topographic map contained within the *Findings and Determination of Eligibility* (USACE, 2009a) and the location identified in the ASR as being a third AAAFA, which was identified by Camp Perry personnel as being a short guard tower (Section 3.3.2). As discussed in Sections 3.3.2 and 4.2, the identified observation tower was originally a short (less than 50 feet) tower that was used for small arm range activities at Camp Perry. This is confirmed by the 1951 historical aerial photograph (Historical aerial 4, Appendix R) as discussed previously. During WWII Camp Perry was used to house German and Italian prisoners of war and the tower was used as a guard tower. At the end of WWII, after the prisoners of war had been removed from Camp Perry, the tower was torn down because it interfered with range activities. This information was verified during the during the Camp Perry site visit performed on October 26, 2010, and during the interviews conducted with former and current Camp Perry and Erie Army Depot personnel (Appendices J, L, and M).

5.0 Evaluation of Presence of Military Munitions and Technical Data

Potential and previous military munitions found at Locust Point AAAFA are presented in this section. The APP for the field work is presented in Appendix K – Accident Prevention Plan. The presence of RCWM is also evaluated in this section.

5.1 General Evaluation of Conventional MEC Presence

Munitions used at Locust Point AAAFA included 37-mm, 40-mm, and 90-mm artillery; however, munitions items and munitions debris potentially found at Locust Point AAAFA also include munitions used at Erie Army Depot and Camp Perry.

Section 2.0 of this document presents a summary of historic military documents pertaining to the establishment of anti-aircraft firing points at Locust Point. In general, the documents establish that "the general area containing suitable firing points may be described as that area from a point approximately 50 yards East of the Eastern-most dwelling on the South Shore of Lake Erie East of the vicinity of Locust Point, extending Eastward along the shoreline to the mouth of the Toussaint River with an approximate depth inland from the shore of 150 yards." The area that is described is the approximate boundary of the FUDS. These documents also contain information stating that "The firing of 120mm from this vicinity (Locust Point) would be unsatisfactory because the danger would extend into Canadian waters and into the dredged ship channel to Toledo, Ohio." This established that only anti-aircraft artillery training at Locust Point using only small arms and 37-mm, 40-mm, and 90-mm weapons systems.

In October 1996 during drilling at the Davis-Besse Nuclear Power Station, a total of 11 munitions were found in a marsh area near the edge of Lake Erie in the general vicinity of the Locust Point AAAFA. An explosive ordnance team from Wright-Patterson Air Force Base responded and disposed two 106-mm, two 155-mm, and seven rocket rounds (Davis-Besse, 1996). These munitions are assumed to be associated with weapons systems acceptance testing formerly conducted at Erie Army Depot. No MPPEH were observed during the 2010 PA site visits (Appendix L).

In February 1996, Human Factors Application, Inc. issued a *Final Removal Report – Unexploded Ordnance Support for the Toussaint River Dredging Project.* During dredging on the Toussaint River channel, 6 live and 31 inert ordnance items were located and removed, along with568 pounds of scrap. The live ordnance items included M28 3.5-inch Rockets, M49A2 60-mm Mortars and the inert ordnance items included M344 106-mm projectiles, M52 fuze, M15 Smoke Grenade, M489 105-mm projectiles, M333 90-mm projectiles. These munitions are assumed to be associated with the weapons systems acceptance testing that was formerly conducted at Erie Army Depot.

A *Final Report - Assessment of Munitions Contamination at the Former Erie Army Depot Lake Erie Impact Area and Toussaint River* was issued in August 2007 by ESTCP. The ESTCP pilot program performed an investigation on the beach of and in Lake Erie from the mouth of the Toussaint River and the Locust Point firing area to West Sister Island. ESTCP located 300,000 anomalies in Lake Erie (in an 8,000-acre area) and investigated 186 of the anomalies; of which 141 were munitions or munitions debris ranging in size from 37-mm projectiles to 155-mm projectiles. The investigation of the beach and near shore areas resulted in 2,000 anomalies. ESTCP investigated 18 of these anomalies and found "9 munitions items (155-mm projectiles and 2.75-inch rockets) as well as 4 non-UXO objects."

5.2 General Evaluation of MC Presence

No sampling for MC has been conducted at Locust Point AAAFA. The chemical constituents associated with the potential munitions found on site are presented in Table 2.

5.3 General Evaluation of RCWM Presence

Historical documents (Appendices A and G) do not indicate that Recovered Chemical Warfare Materiel (RCWM) operations took place on the property. The chemical constituents associated with potential munitions found onsite are presented in Table 2. The 2010 PA property visit found no evidence to indicate the presence of RCWM.

5.4 Property Specific Locations

The area of greatest concern for munitions debris, MPPEH, MEC, and/or MC is the Lake Erie shoreline and the mouth of the Toussaint River. Munitions were fired into Lake Erie during military activities at Locust Point AAAFA, Erie Army Depot, and Camp Perry. Range fans are discussed in Sections 4.2.1 and 4.3 of this document. Munitions debris, MEC, and/or MC have the potential to wash up on the south shore of the lake.

Subsequent to military use, a stone revetment has been installed in the area of the FUDS to prevent shoreline erosion. The revetment is 4 to 8 feet high with a limited beach area.

A review of available shoreline regression (Figure 9; Appendix I) and littoral drift (Figure 10; Appendix I) information indicates that the shoreline in the area of the FUDS had been eroding since at least the 1870's up till the stone revetment was installed. Sediment transport in the area of the FUDS is in a west-to-east direction away from the FUDS (Historical aerial 18; Appendix R). Given this information and the location of the range fans in Lake Erie to the north and east of the FUDS, it is unlikely that MEC and/or MC would be deposited in the area of the FUDS west of the mouth of the Toussaint River.

6.0 Evaluation of HTRW Presence and Areas

An evaluation of the HTRW presence and hazards is addressed in this section.

6.1 General Evaluation of HTRW Presence

Historical documents (Appendices A and G) do not indicate that operations involving HTRW took place on the property. During the 2010 PA property site visit no evidence of HTRW was observed at the FUDS.

6.2 Property Specific Locations

Not Applicable.

7.0 Evaluation of CON/HTRW and BD/DR Presence

Evaluations of CON/HTRW and BD/DR presence and hazards are addressed in this section.

7.1 Evaluation of CON/HTRW Presence and Areas

Historical documents (Appendices A and G) do not indicate that operations involving CON/HTRW took place on the property. During the 2010 PA property visit, no evidence of CON/HTRW was observed.

7.2 Evaluation of BD/DR

During the 2010 PA property visits the BD/DR that was observed posed a minimal safety hazard. The building debris that was present included concrete and metal debris and the concrete footer, partial wooden walls and galvanized zinc trough of a former latrine (Locust Point AAAFA Photographs 022-027, 044, 049, 051, 053, 055, 056, 063-066; Appendix M). Also observed were the concrete footers from the observation towers (Locust Point AAAFA Photographs 020-021 and 070-075; Appendix M).

8.0 Pathway and Environmental Hazard Assessment

No sampling or analysis for MC was conducted at the site. In the absence of a potential source of contamination, migration pathways and sensitive receptors are not a matter of concern with respect to MC at the FUDS.

Figure 6 (Appendix I) presents the surface water regime in the area of the FUDS. Figure 7 (Appendix I) presents sensitive receptors (natural resource areas, cultural resources) within 4 miles of the site. Figure 12 (Appendix I) shows the locations of groundwater wells (i.e., potential groundwater receptors). Figure 13 (Appendix I) presents population information for the general area of the FUDS.

8.1 Ground Water Pathway

8.1.1 Hydrogeologic Setting

The geology of the area surrounding the FUDS is characterized by Wisconsinan age sediments 40 to 70 ft thick. Bedrock units underlying the area are thickest along the shore of Lake Erie. These units overlie older age Silurian and Devonian sedimentary deposits of dolomites and limestone with intervening layers of shale and sandstone.

The groundwater flow in the area is from west to east, towards Lake Erie. The depth to groundwater in the area ranges from 0 ft (wetlands) to 4 ft bgs (USACE, 1993).

8.1.2 Ground Water Targets

Approximately 6,883 people use groundwater for drinking purposes in Ottawa County (EPA, 2010). There are no registered privately owned domestic water wells within the FUDS boundary (Figure 12; Appendix I). There are a total of 105 privately owned domestic water wells within 4 miles of the FUDS boundary (Table 3).

8.1.3 Ground Water Conclusions

The groundwater pathway is not considered to be a completed pathway because groundwater flows toward Lake Erie and there are no groundwater wells located between the Locust Point AAAFA and Lake Erie. No HTRW, MPPEH, BD/DR, or CON/HTRW was identified during the 2010 property visits. Because no apparent sources of groundwater contamination were identified.

8.2 Surface Water Pathway

8.2.1 Hydrologic Setting

Locust Point AAAFA is bordered by the Toussaint River, which flows eastward, on the southern boundary of the FUDS (Figure 6; Appendix I). The Toussaint River drains into Lake Erie,

bordering the FUDS to the east and north. Lake Erie is the primary surface water source body in the area of Locust Point AAAFA. The terrain of the FUDS is interspersed with small surface water bodies, including ponds, canals, and wetlands.

8.2.2 Surface Water Targets

Lake Erie is one of the primary sources of drinking water for the general area. Approximately 31,685 people in Ottawa County use surface water for drinking purposes (EPA, 2010). Two submerged surface water intakes, owned by the Erie Industrial Park, are located east of Locust Point AAAFA, approximately 0.5 mile and 1 mile offshore of the industrial park. The two water intakes supply water to the industrial park. The Ottawa County Regional Water System owns a submerged surface water intake located approximately 4,400 ft offshore from the town of Port Clinton within Lake Erie (USACE, 1993).

8.2.3 Surface Water Conclusions

No HTRW, MPPEH, BD/DR, or CON/HTRW were identified during the 2010 property visits or during previous investigations. Given that no source has been identified the surface water pathway is considered incomplete.

8.3 Soil Exposure and Air Pathways

8.3.1 Physical Conditions

The present-day land surface surrounding the FUDS is post-glacial in origin and lies atop 40 to 70 ft of lake plain sediments from glacial Lake Maumee. The shallow surface soils consist mainly of a mixture of sand, silt, clay, and organic material.

8.3.2 Soil and Air Targets

8.3.2.1 Human Targets

Ottawa County has a 2008 estimated population of 40,823, with a population density of 160 persons per square mile (U.S. Census, 2000) (Figure 13 Appendix I). Port Clinton is the closest major town located near Locust Point AAAFA and is located approximately 12 miles to the southeast. The 2008 U.S. Census data for the city reports a population of 6,135.

The reported population within the FUDS boundary is zero. Within 1 mile of the FUDS, the reported population is 295 with a total of 144 households. Within 4 miles of the FUDS, the reported population is 3,155 with 1,320 households (Figure 13; Appendix I) (U.S. Census, 2000).

There are no sensitive human receptors (schools, hospitals, parks, or daycares) within 200 feet of the FUDS. Due to the beach access, recreational users could potentially come into contact with ordnance items on the property or be exposed to windblown soil.

8.3.2.2 Environmental Targets

Federal and state-listed threatened and endangered species and wetlands are present within 4 miles of the FUDS. There are two federally or state-listed endangered species (Indiana bat and Piping plover), three federally or state-listed threatened species (Eastern prairie fringed orchid, lakeside daisy, and Lake Erie water snake), and one federal or state-listed candidate species (Eastern massasauga rattlesnake) found in Ottawa County.

A summary of the sensitive environments is provided in Table 1 and Figure 7 (Appendix I).

8.3.3 Soil Exposure and Air Pathway Conclusions

No HTRW, MPPEH, BD/DR, or CON/HTRW were identified during the 2010 property visit or during previous investigations. Given that no source has been identified the soil exposure pathway and air exposure pathways are considered incomplete.

9.0 Summary and Conclusions

The summary and conclusions of the PA are presented in this section. Locust Point AAAFA was established in February 1953 on property leased by the United States of America from the State of Ohio and was used until August 1963. Following the termination of the lease the property was transferred back into private hands.

The following agencies were contacted during the course of the PA:

- USACE District Real Estate Division
- United States Geological Survey
- USFWS
- USEPA Region 5
- Ohio EPA
- ODNR
- ODNR Office of Coastal Management
- Ottawa County Sheriff's office
- Oak Harbor Fire Department
- Oak Harbor Public Library

A summary of all interviews conducted is presented in Appendix J, Interviews.

As discussed in Sections 2.8, 3.3.2, 4.2, 4.4, 5.1, and 5.4 of this document, prior to establishment of the Locust Point AAAFA, the Department of the Army, Headquarters Second Army, required that the area from Camp Perry west to Locust Point be surveyed for the feasibility locating anti-aircraft artillery firing locations (Appendix G). The findings of the survey concluded that "The general area containing suitable firing points may be described as that area from a point approximately 50 yards East of the Eastern-most dwelling on the South Shore of Lake Erie East of the vicinity of Locust Point, extending Eastward along the shoreline to the mouth of the Toussaint River with an approximate depth inland from the shore of 150 yards." This description correlates to the approximate boundary of the FUDS.

Anti-aircraft firing regulations issued for Camp Perry in1954 by the Department of the Army, Headquarters Second Army, stated that "The antiaircraft [sic] artillery ranges consist of these firing points, numbered one, two and three, from West to East along the south shore of Lake Erie. Points one and two are located at Locust Point, approximately 8 ½ miles west of Camp Perry. Point three is located between the 1000 yard target butts of the rifle range at Camp Perry, and the Lake Shore." This third firing point was identified on a 1952 topographic map contained

within the *Findings of Eligibility* (USACE, 2009a) as an observation tower and identified in the ASR as being a third firing point.

The disposition of a third point/observation tower was confirmed by current and former Camp Perry personnel as being a short guard tower (Section 3.3.2) not associated with anti-aircraft artillery training conducted at Locust Point. Originally the tower was used for small arm range activities at Camp Perry. During WWII, Camp Perry was used to house German and Italian prisoners of war and the tower was used as a guard tower. At the end of WWII, after the prisoners of war had been removed from Camp Perry, the tower was torn down because it interfered with range activities. A replacement observation tower was erected ~200 yards due east from the location of the first tower. This replacement tower was torn down in 1995 and a third observation tower for range activities was erected approximately 1,100 yards east of the original location (Appendix M – Photographs CampPerry_020 and Figure 3, Appendix I).

9.1 Areas That May Warrant No Further Action by DoD

Based on historical evidence and the results of PA field activities, there is no evidence of potential hazards associated with HTRW, MPPEH, BD/DR or CON/HTRW at Locust Point AAAFA. The pathway for exposure of receptors to hazards is not considered complete. No Department of Defense Action Indicated (NDAI) designation is recommended.

9.2 Potential Hazards That May Warrant FUDS Projects

Based on historical evidence and the results of PA field activities, there is no evidence of potential hazards that may warrant any additional FUDS projects.

Tables

Table 1
Army Checklist for Important Ecological Places [a]
Locust Point AAAFA

		Yes / No	Comments
1	Locally important ecological place identified by the Integrated Natural Resource Management Plan, BRAC Cleanup Plan or Redevelopment Plan, or other official land management plans	☐ / ☒	
2	Critical habitat for Federal designated endangered or threatened species	☐ / ☒	
3	Marine Sanctuary	☐ / ☒	
4	National Park	☐ / ☒	
5	Designated Federal Wilderness Area	☐ / ☒	
6	Areas identified under the Coastal Zone Management Act	☐ / ☒	
7	Sensitive Areas identified under the National Estuary Program or Near Coastal Waters Program	☐ / ☒	
8	Critical areas identified under the Clean Lakes Program	☐ / ☒	
9	National Monument	☐ / ☒	
10	National Seashore Recreational Area	☐ / ☒	
11	National Lakeshore Recreational Area	☐ / ☒	
12	Habitat known to be used by Federal designated or proposed endangered or threatened species	☒ / ☐	The USFWS and ODNR identify two federally or state endangered species within Ottawa County, the Indiana bat and the Piping plover. The Eastern prairie fringed orchid, lakeside daisy, and Lake Erie water snake, federally or state threatened species, are also present in the area of Locust Point AAAFA. One federal or state candidate species, the Eastern massasauga rattlesnake, is also present in Ottawa County.
13	National preserve	☐ / ☒	
14	National or State Wildlife Refuge	☐ / ☒	
15	Unit of Coastal Barrier Resources System	☐ / ☒	
16	Coastal Barrier (undeveloped)	☐ / ☒	
17	Federal land designated for protection of natural ecosystems	☐ / ☒	
18	Administratively Proposed Federal Wilderness Area	☐ / ☒	
19	Spawning areas critical for the maintenance of fish/shellfish species within river, lake, or coastal tidal waters	☐ / ☒	
20	Migratory pathways and feeding areas critical for maintenance of anadromous fish species within river reaches or areas in lakes or coastal tidal waters in which fish spend extended periods of time	☐ / ☒	

1. Locust Point AAAFA - IEP Checklist

1. Table 1: Army Checklist for Important Ecological Places

Table 1 (Cont.)
Army Checklist for Important Ecological Places [a]
Locust Point AAAFA

		Yes / No	Comments
21	Terrestrial areas utilized for breeding by large or dense aggregations of animals	☐ / ☒	
22	National river reach designated as Recreational	☐ / ☒	
23	Habitat known to be used by state designated endangered or threatened species	☐ / ☒	
24	Habitat known to be used by species under review as to its Federal endangered or threatened status	☐ / ☒	
25	Coastal Barrier (partially developed)	☐ / ☒	
26	Federally designated Scenic or Wild River	☐ / ☒	
27	State land designated for wildlife or game management	☐ / ☒	
28	State-designated Scenic or Wild River	☐ / ☒	
29	State-designated Natural Areas	☐ / ☒	
30	Particular areas, relatively small in size, important to maintenance of unique biotic communities	☐ / ☒	
31	State-designated areas for protection or maintenance of aquatic life	☐ / ☒	
32	Wetlands	☒ / ☐	Wetlands within and adjacent to FUDS.
33	Fragile landscapes, land sensitive to degradation if vegetative habitat or cover diminishes	☐ / ☒	

[a] Based on EPA, 1990, 55 FR 51624, Table 4-23 – Sensitive Environments Rating Values, Dec. 14, 1990; EPA, 1997, ERAGS, Exhibit 1-1 List of Sensitive Environments.

2. Table 2: Munitions Information

Table 2
Munitions Information
Locust Point Anti-Aircraft Artillery Firing Area

Munitions known to have been used on site:

Munitions ID	Munitions	Description	Filler or Subcomponent	Munitions Constituents
Large Caliber (37mm and larger), HE	**90mm, Recoilless Rifle, HEAT, M371A1**		Filler	Composition B, May Contain Perchlorate
			Metals	Copper, Nickel, and Lead
	90mm, HE, M71 and HE-T, M71A1		Filler	Composition B
			Metals	Copper, Nickel, and Lead
	40mm, AP-T, M81		Filler	TNT or Tetryl
			Metals	Copper, Nickel, and Lead
	40mm, HE & HEI, Mk II		Filler	TNT or Tetryl, May Contain Perchlorate
			Metals	Copper, Nickel, and Lead

Table 2 (Cont.)

Munitions possibly found on site:

Munitions ID	Munitions	Description	Filler or Subcomponent	Munitions Constituents
Small Arms	General Small Arms (.50-caliber or smaller)	Projectile	Bullet (general).	Antimony, bismuth, brass (copper with zinc or tin), copper, iron, lead, nickel, steel.
			Tracer (general).	Barium peroxide, black powder, calcium resinate, calcium silicide, chlorinated rubber, lead dioxide, magnesium, polyvinyl chloride, strontium nitrate, strontium oxalate, strontium peroxide, toluidine, zinc stearate.
			Incendiary (general).	Aluminum, asphaltum, barium nitrate, magnesium-aluminum alloy, phosphorus, potassium perchlorate.
		Cartridge Case	Propellant (general).	Calcium carbonate, dibutylphthalate, 2,4-dinitrotoluene, diphenylamine, ethyl acetate, graphite, nitrocellulose, nitroglycerin, n-nitrosodiphenylamine, potassium nitrate, potassium sulfate, sodium sulfate.
			Primer (general).	Aluminum, antimony sulfide, barium nitrate, iron, lead dioxide, lead styphnate, lead thiocyanate, pentaerythritol tetranitrate (PETN), phosphorus, potassium chlorate, tetracene, TNT, zinc.
Bombs, High Explosive	AN-M41, Frag Bomb, 20lbs		Filler	TNT
			Metals	Copper, Nickel, and Lead
Ground Rockets, Live	M28, Rocket, HEAT, 3.5 inch		Propellant	Black Powder and Nitroglycerin, May Contain Perchlorate
			Filler	Composition B and Tetryl
			Metals	Copper, Nickel, and Lead

Table 2 (Cont.)

Rifle Grenades, Live	M31, Rifle Grenade, HEAT		Filler	Composition B
			Metals	Copper, Nickel, and Lead
Ground Rockets, Rifle Grenades (Incendiary, Smoke)	**M22, Rifle Grenade, Smoke**		Filler	Potassium Perchlorate
			Metals	Copper, Nickel, and Lead
Ground Rockets, Rifle Grenades, Practice	**M29, Practice Rocket, 3.5-inch**		Metals	Copper, Nickel, and Lead Inert, May Contain Perchlorate
Medium Caliber (20mm, 25mm, 30mm), Practice	20mm, Ball, M55A1	20mm, Ball, M55A1	Propellant	Double-base Powder
			Metals	Copper, Nickel, and Lead
		25mm, HEI-T, M792	Propellant	Double-base Powder
			Metals	Copper, Nickel, and Lead
Large Caliber (37mm and larger), HE	**37mm, HE, M54**		Filler	Tetryl and Black Powder
			Metals	Copper, Nickel, and Lead
	75mm, Gun, HE, M48		Filler	TNT
			Metals	Copper, Nickel, and Lead
	8-inch, HE, M106		Filler	TNT or Composition B
			Metals	Copper, Nickel, and Lead
	155mm, HE, M107		Filler	Composition B or TNT
			Metals	Copper, Nickel, and Lead
	106mm, Recoilless Rifle, HEAT, M344		Filler	Composition B, May Contain Perchlorate
			Metals	Copper, Nickel, and Lead
	105mm, HE, M1		Filler	Composition B or TNT
			Metals	Copper, Nickel, and Lead

Table 2 (Cont.)

Large Caliber (37mm and larger), HE	57mm Recoilless Rifle, HE, M306A1		Filler	Black Powder, TNT, Tetryl, Pentolite, Composition B
			Metals	Copper, Nickel, and Lead
	57mm Recoilless Rifle, HE, M307		Filler	Black Powder, TNT, Tetryl, Pentolite, Composition B
			Metals	Copper, Nickel, and Lead
	57mm, Recoilless Rifle, Canister, T25E5		Filler	Black Powder, TNT, Tetryl, Pentolite, Composition B
			Metals	Copper, Nickel, and Lead
Large Caliber (37mm and larger), Practice	**37mm, TP, M63**		Filler	Black Powder
			Metals	Copper, Nickel, and Lead
Mortars, HE	**60mm, HE, M49**		Filler	Composition B, May Contain Perchlorate
			Ignition	Double-base Powder
			Metals	Copper, Nickel, and Lead
	81mm, HE, M43		Filler	Composition B
			Metals	Copper, Nickel, and Lead
	4.2-inch, Mortar, HE, M329A1		Filler	TNT
			Metals	Copper, Nickel, and Lead

HEAT - High Explosive Anti-Tank
Ball - Ballistic
HE - High-Explosive
AP-T – Armor-Piercing-Tracer
HEI – High-Explosive Incendiary
TP – Tank Piercing
Bolded items have been found on or in close proximity to the FUDS.

3. Table 3: Groundwater Well Information