

1 **Draft**
2 **No Further Action Proposed Plan**
3 **for**
4 **RVAAP-001-R-02 Ramsdell Quarry Area 1 (North)**
5 **Munitions Response Site**
6

7 **Former Ravenna Army Ammunition Plant**
8 **Portage and Trumbull Counties, Ohio**

9 **Contract No. W912DR-15-D-0016**
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12 **US Army Corps
of Engineers.**

13 **U.S. Army Corps of Engineers**
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14. ABSTRACT
The U.S. Department of the Army (U.S. Army) is presenting this No Further Action (NFA) Proposed Plan to involve the public in the remedy selection process for the former Ravenna Army Ammunition Plant, RVAAP-001-R-02 Ramsdell Quarry Landfill Munitions Response Site (MRS) in Portage and Trumbull Counties, Ohio. This NFA Proposed Plan presents the U.S. Army's preliminary recommendations for addressing the RVAAP-001-R-02 Ramsdell Quarry Landfill MRS. Investigations have not found material potentially presenting an explosive hazard (MPPEH) or munitions and explosives of concern (MEC) at the MRS. Therefore, no explosive hazards and no risk to receptors exist from historical activities associated with manufacturing, storing, transporting, testing, training, and/or disposal that occurred at the facility.

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Documentation of Ohio EPA Concurrence of Final Document

3

4

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3

4

ARNG—Army National Guard

5

COR—Contracting Officer's Representative

6

IED—Installation and Environment Division

7

OHARNG—Ohio Army National Guard

8

RVAAP—Former Ravenna Army Ammunition Plant

9

USACE—United States Army Corps of Engineers

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ACRONYMS AND ABBREVIATIONS

1	AOC	Area of Concern
2	Camp Ravenna	Camp Ravenna Joint
3		Military Training Center
4	CB&I	CB&I Federal Services LLC
5	CERCLA	<i>Comprehensive</i>
6		<i>Environmental Response,</i>
7		<i>Compensation, and Liability</i>
8		<i>Act of 1980</i>
9	DFFO	Director's Final Findings
10		and Orders
11	e ² M	Engineering-Environmental
12		Management, Inc.
13	MC	munitions constituents
14	MD	munitions debris
15	MEC	munitions and explosives of
16		concern
17	MPPEH	material potentially
18		presenting an explosive
19		hazard
20	MRS	Munitions Response Site
21	NFA	No Further Action
22	Ohio EPA	Ohio Environmental
23		Protection Agency
24	RI	Remedial Investigation
25	RVAAP	former Ravenna Army
26		Ammunition Plant
27	SI	Site Inspection
28	U.S. Army	U.S. Department of the
29		Army

1 **1.0 INTRODUCTION**

2 The United States Department of the Army (U.S.
3 Army) is presenting this No Further Action
4 (NFA) **Proposed Plan*** to involve the public in
5 the **remedy selection process** for the RVAAP-
6 001-R-02 Ramsdell Quarry Area 1 (North)
7 **Munitions Response Site (MRS)** at the former
8 Ravenna Army Ammunition Plant (RVAAP).
9 The former RVAAP is located in Portage and
10 Trumbull Counties, Ohio, as shown on **Figure**
11 **1**. The location of the MRS relative to the former
12 RVAAP is shown on **Figure 2**.

13 The U.S. Army, in consultation with the Ohio
14 Environmental Protection Agency (Ohio EPA),
15 is the lead agency for investigating, reporting,
16 making **remedial decisions**, and taking
17 **remedial actions** at the former RVAAP. This
18 NFA Proposed Plan presents the U.S. Army’s
19 preliminary recommendations for a preferred
20 remedy to address the Ramsdell Quarry Area 1
21 (North) MRS. Investigations indicate that
22 **material potentially presenting an explosive**
23 **hazard (MPPEH), munitions and explosives**
24 **of concern (MEC), or concentrated areas of**
25 **munitions debris (MD)** are not present at the
26 MRS. As no MPPEH, MEC, or MD is present,
27 there cannot be a source for **munitions**
28 **constituents (MC)**. Therefore, no **explosive**
29 **hazards** or MC risks to **human** or
30 **environmental receptors** exist.

31 The U.S. Army is issuing this NFA Proposed
32 Plan to address its public participation
33 responsibilities under Section 117(a) of the
34 **Comprehensive Environmental Response,**
35 **Compensation, and Liability Act of 1980**
36 **(CERCLA)**, as amended by the Superfund
37 Amendments and Reauthorization Act of 1986
38 and Section 300.430(f)(2) of the **National Oil**
39 **and Hazardous Substances Pollution**
40 **Contingency Plan** (40 Code of Federal
41 Regulations 300). Implementation of the
42 selected remedy at the MRS will comply with
43 the requirements of the *Director’s Final*

44 *Findings and Orders (DFFO) for RVAAP* (Ohio
45 EPA, 2004).

46 This NFA Proposed Plan summarizes
47 information that can be found in the *Final*
48 *Remedial Investigation Report for RVAAP-001-*
49 *R-01 Ramsdell Quarry Landfill Munitions*
50 *Response Site, Version 1.0* (Final **Remedial**
51 **Investigation [RI]** Report; CB&I Federal
52 Services LLC [CB&I], 2015). The U.S. Army
53 encourages the public to review this document
54 to better understand the history of the MRS,
55 activities that have been conducted there, and
56 determinations that have been made for the MRS
57 under the **Military Munitions Response**
58 **Program**.

59 The U.S. Army, in consultation with the Ohio
60 EPA, will review and consider all comments on
61 this NFA Proposed Plan received during the 30-
62 day public comment period. The public is
63 encouraged to review and comment on all
64 recommendations presented in this NFA
65 Proposed Plan.

66 **2.0 FACILITY AND MRS**
67 **BACKGROUNDS**

68 This section summarizes the history of the
69 former RVAAP and of the Ramsdell Quarry
70 Area 1 (North) MRS.

71 **2.1 Facility History**

72 The former RVAAP (Federal Facility ID No.
73 OH213820736), now known as the Camp
74 Ravenna Joint Military Training Center (Camp
75 Ravenna), is located in northeastern Ohio within
76 Portage and Trumbull Counties and is
77 approximately 3 miles east-northeast of the city
78 of Ravenna. The federally owned facility,
79 approximately 11 miles long and 3.5 miles wide,
80 is bounded by a Norfolk Southern railroad line
81 to the north; State Route 5, the Michael J.
82 Kirwan Reservoir, and a CSX railroad line to the
83 south; State Route 534 to the east; and Garret,
84 McCormick, and Berry Roads to the west. The

* Terminology used in this Proposed Plan is defined in the
Glossary found at the back of this document.

Public Comment Period:

April 17 to May 12, 2017

Public Meeting:

The U.S. Army will hold an open house/public meeting to explain the NFA Proposed Plan. Oral and written comments on the document will be accepted at the meeting. The open house/public meeting is scheduled for 6:00 p.m. on April 19, 2017, at the Newton Falls Community Center, 52 East Quarry Street, Newton Falls, Ohio 44444.

Information Repositories:

Information used in selecting the preferred remedy is available online at www.rvaap.org and at the following locations:

Reed Memorial Library

167 East Main Street
Ravenna, Ohio 44266
(330) 296-2827

Hours of Operation:

9 a.m.–9 p.m., Monday–Thursday
9 a.m.–6 p.m., Friday
9 a.m.–5 p.m., Saturday
1 p.m.–5 p.m., Sunday

Newton Falls Public Library

204 South Canal Street
Newton Falls, Ohio 44444
(330) 872-1282

Hours of Operation:

10 a.m.–8 p.m., Monday–Thursday
9 a.m.–5 p.m., Friday and Saturday

The **Administrative Record** File, which includes the information used to select the preferred remedy, is available for review at the following location:

Camp Ravenna Joint Military Training Center (Camp Ravenna)

Environmental Office
1438 State Route 534
Newton Falls, Ohio 44444
(330) 872-8003

Note: Access to Camp Ravenna is restricted, but an appointment to review the Administrative Record File can be scheduled.

1
2 facility is surrounded by the communities of
3 Windham, Garrettsville, Newton Falls,
4 Charlestown, and Wayland.

5 **Administrative control** of the 21,683-acre
6 facility has been transferred to the U.S. Property
7 and Fiscal Officer for Ohio and subsequently
8 licensed to the Ohio Army National Guard for
9 use as a training site, Camp Ravenna. The
10 restoration program for the facility involves the
11 remediation of areas affected by past activities
12 of the former RVAAP.

13 The former RVAAP was constructed in 1940
14 and 1941 for assembly/loading and **depot**
15 **storage** of ammunition. While serving as an
16 ammunition plant, the former RVAAP was a
17 U.S. Government-owned and contractor-
18 operated industrial facility. The ammunition
19 plant consisted of 12 munitions assembly
20 facilities, referred to as “load lines.” Load Lines
21 1 through 4 were used to melt and load 2,4,6-
22 Trinitrotoluene and Composition B (a mixture of
23 2,4,6-Trinitrotoluene and Research Department
24 Explosive]) into **large-caliber shells** and
25 bombs. Operations on the load lines produced
26 explosive dust, spills, and vapors that collected
27 on the floors and walls of each building.
28 Periodically, the floors and walls were cleaned
29 with water and steam. After cleaning, the “pink
30 water” wastewater, which contained 2,4,6-
31 Trinitrotoluene and Composition B, was
32 collected in concrete holding tanks, filtered, and
33 pumped into unlined ditches for transport to
34 **earthen settling ponds**. Load Lines 5 through
35 11 manufactured **fuzes, primers, and boosters**.
36 From 1946 to 1949, Load Line 12 produced
37 ammonium nitrate for explosives and fertilizers;
38 subsequently it was used as a **weapons**
39 **demilitarization facility**.

40 In 1950, the facility was placed in standby
41 status, and operations were limited to
42 **renovation, demilitarization,** and normal
43 maintenance of equipment, along with storage
44 of munitions. **Production** activities were
45 resumed from July 1954 to October 1957 and
46 again from May 1968 to August 1972.
47 Demilitarization and production activities were
48 conducted at Load Lines 1, 2, 3, and 12.
49 Demilitarization activities included
50 disassembling munitions and melting out and
51 recovering explosives using hot water and steam

1 processes. These activities continued through
2 1992.

3 In addition to production and demilitarization
4 activities at the load lines, other facilities at the
5 former RVAAP included areas used for the
6 burning, demolition, and testing of munitions.
7 These burning and demolition grounds consisted
8 of large, open areas and abandoned quarries.
9 **Other Areas of Concern (AOCs)** at the former
10 RVAAP include landfills, an aircraft fuel tank
11 testing area, and various industrial support and
12 maintenance facilities (CB&I, 2015).

13 **2.2 MRS Background and History**

14 Prior to the completion of the RI, the MRS was
15 called the Ramsdell Quarry Landfill MRS
16 (RVAAP-001-R-01). The total area of the MRS
17 was 13.43 acres and consisted of two sections:
18 Area 1 and Area 2. Area 1 is 6.5 acres in the
19 northern section of the MRS and is the location
20 of an old quarry bottom where **open**
21 **burning/open demolition** operations
22 historically took place. Area 2 is 6.93 acres
23 located south of Area 1 and contains a small,
24 inactive soil **borrow pit** and wooded area where
25 installation personnel found MD prior to the RI
26 field work (Engineering-Environmental
27 Management, Inc. [e²M], 2008). The Ramsdell
28 Quarry Landfill MRS that was investigated
29 during the RI is presented in **Figure 3**.

30 Following the RI, Area 1 and Area 2 at the
31 Ramsdell Quarry Landfill MRS were separated
32 into two MRSs: Ramsdell Quarry Area 1 (North)
33 MRS (RVAAP-001-R-02) and Ramsdell Quarry
34 Area 2 (South) MRS (RVAAP-001-R-01). The
35 Ramsdell Quarry Area 2 (South) MRS, where
36 MD was found, will proceed to a **Feasibility**
37 **Study** as recommended in the Final RI Report
38 (CB&I, 2015) and is not discussed further in this
39 NFA Proposed Plan. The Ramsdell Quarry Area
40 1 (North) MRS and features associated with the
41 MRS is presented in **Figure 4**.

42 The Ramsdell Quarry Area 1 (North) MRS, the
43 subject of this NFA Proposed Plan, is located on
44 the south side of Ramsdell Road and north of
45 Load Line 1. The MRS is co-located with the

46 Ramsdell Quarry Landfill AOC (RVAAP-01)
47 that is managed under the **Installation**
48 **Restoration Program**. The MRS is located
49 within a former quarry that was initially mined
50 to recover material for use as construction
51 ballast. Quarry operations ceased in 1941, and
52 from 1946 to 1950 the quarry was used to
53 thermally treat waste explosives from Load Line
54 1. In addition, approximately 18,000 500-pound
55 **incendiary** or **napalm bombs** were burned on
56 the surface of the former quarry bottom.
57 Beginning in 1976, the areas of the quarry to the
58 east, west, and south of the MRS were used as a
59 **nonhazardous solid waste landfill**. From 1978
60 until its closure in 1990, the area operated under
61 a **sanitary landfill permit** issued by the State of
62 Ohio (e²M, 2007). The landfill is not part of the
63 MRS; however, small areas of the landfill
64 slightly overlap the southwest and southeast
65 boundaries of the MRS. Approximately 4 acres
66 of **moderate quality wetland** are present at the
67 MRS. The water levels in the wetlands can
68 fluctuate seasonally, ranging from dry
69 conditions at the higher areas at the east and
70 south sections of the MRS to a maximum depth
71 of 8 feet at the northwest section of the MRS
72 (Leidos Engineering of Ohio, Inc., 2014; CB&I,
73 2015).

74 The landfill AOC under the Installation
75 Restoration Program is managed as **Restricted**
76 **Access** due to residual contamination that was
77 left in-place following previous remedial
78 actions. The perimeter boundary of the AOC is
79 surrounded by a fence to prevent unauthorized
80 access. The fence along Ramsdell Road is chain-
81 link. The remainder of the fence surrounding the
82 AOC consists of five-tension wires. The
83 Ramsdell Quarry Area 1 (North) MRS is located
84 north of the landfill within the fenced area. The
85 MRS can be accessed through two gates located
86 on Ramsdell Road; however access is only
87 granted after a briefing is provided and a sign in
88 tracking sheet is filled out prior to entry. There
89 is a gravel access road at the northwest corner of
90 the fenced area. No other buildings or structures
91 are present at the MRS.

1 **2.3 MRS Historical Investigations**

2 The following investigations and reports have
3 been completed for the Ramsdell Quarry Area 1
4 (North) MRS under the Military Munitions
5 Response Program:

- 6 · *Final Military Munitions Response Program*
7 *Historical Records Review, Ravenna Army*
8 *Ammunitions Plant, Ohio* (e²M, 2007)
- 9 · *Final Site Inspection Report, Ravenna Army*
10 *Ammunitions Plant, Ohio* (Final Site
11 Inspection [SI] Report; e²M, 2008)
- 12 · Final RI Report (CB&I, 2015)

13 **2.3.1 2007 SI Summary**

14 An SI was completed at the MRS in 2007.
15 **Subsurface anomalies** were identified at
16 several locations surrounding the wetland area;
17 however, the nature of the anomalies was not
18 determined because an intrusive investigation
19 was not performed at that time. No MPPEH was
20 found on the ground surface during the SI
21 fieldwork.

22 Prior to the SI, sampling was performed at the
23 MRS under the Installation Response Program.
24 The results of this sampling indicated that
25 widespread MC contamination potentially
26 existed across the entire former open
27 burning/open detonation area. No additional
28 samples were collected at the MRS during the SI
29 fieldwork.

30 Based on the results of the SI field activities,
31 which identified potential burial areas, “Further
32 Characterization” for MEC at the MRS was
33 recommended. The Final SI Report did not
34 recommend further characterization for MC at
35 the MRS because chemicals of concern were
36 already being addressed at the co-located AOC
37 under the Installation Response Program
38 (e²M, 2008).

39 **2.3.2 2011/2013 RI Summary**

40 An RI was conducted at the MRS in two field
41 work mobilizations, one from May through
42 August 2011, and the other in August 2013. The

43 RI fieldwork included a **digital geophysical**
44 **mapping** survey and an investigation of buried
45 anomalies at the dry areas (i.e., outside wetland
46 areas) at the MRS. An **underwater**
47 **investigation** of the deeper areas in the wetland
48 was conducted by former U.S. Navy Explosive
49 Ordnance and Disposal divers. No MPPEH was
50 identified on the ground surface or in the
51 underwater areas in the wetland.

52 Sampling for MC at the MRS was not proposed
53 as part of the RI fieldwork unless evidence of
54 MPPEH was found (Shaw Environmental &
55 Infrastructure, Inc., 2011). No MPPEH was
56 identified at the MRS during RI fieldwork, and
57 sampling for MC was not warranted.

58 To date, no MPPEH has been found at the
59 Ramsdell Quarry Area 1 (North) MRS. The RI
60 fieldwork confirmed the results of previous
61 investigations at the MRS; therefore, an
62 **explosive hazard** is not expected to be present
63 at the MRS. The chemicals of concern identified
64 in surface soil and dry sediment during previous
65 investigations will continue to be addressed
66 under the Installation Response Program
67 (CB&I, 2015).

68 **3.0 SCOPE AND ROLE OF RESPONSE**
69 **ACTION**

70 The results of the RI fieldwork conducted at the
71 Ramsdell Quarry Area 1 (North) MRS support
72 the determination that NFA is the preferred
73 remedy. The preferred remedy must be
74 protective of the receptors associated with the
75 future land use. The MRS is federal property
76 licensed to the Ohio Army National Guard. Due
77 to the residual contamination left in-place under
78 the Installation Response Program, the future
79 land use is Restricted Access. The likely human
80 receptors for the future land use are the Security
81 Guard/Maintenance Worker. Environmental
82 receptors (biota) identified for the MRS include
83 terrestrial invertebrates (earthworms), voles,
84 shrews, robins, foxes, barn owls, hawks,
85 muskrats, mink, mallards, great blue herons,
86 benthic invertebrates, and aquatic biota
87 (CB&I, 2015).

1 No explosive hazards were found at the
2 Ramsdell Quarry Area 1 (North) MRS during
3 investigations conducted at the MRS or co-
4 located AOC. Further, because no MPPEH has
5 been identified, no potential source of MC
6 exists. Therefore, there are no source materials
7 or impacted environmental media resulting from
8 potential explosive hazards at the MRS.

9 The MRS is within the boundary of the fence
10 that surrounds the Ramsdell Quarry Landfill
11 AOC. The fence is a designated land use control
12 for the AOC and is inspected and maintained
13 under the Installation Restoration Program and
14 in accordance with CERCLA. Although not
15 anticipated, if any additional hazards are
16 identified at the MRS, they would be addressed
17 under the Military Munitions Response Program
18 as a separate response action.

19 **4.0 SUMMARY OF HUMAN AND** 20 **ECOLOGICAL RISKS**

21 Under the Military Munitions Response
22 Program, a recommendation of NFA must be
23 protective of the human and environmental
24 receptors at the MRS. The likely receptor
25 identified for future land use at the Ramsdell
26 Quarry Area 1 (North) MRS is the Security
27 Guard/Maintenance Worker. Environmental
28 receptors (biota) identified for the MRS include
29 terrestrial invertebrates (earthworms), voles,
30 shrews, robins, foxes, barn owls, hawks,
31 muskrats, mink, mallards, great blue herons,
32 benthic invertebrates, and aquatic biota
33 (CB&I, 2015).

34 No MPPEH/MEC is present on the Ramsdell
35 Quarry Area 1 (North) MRS. Therefore, no
36 explosive safety hazards or risks associated with
37 MC exist for the receptors that may be present
38 on the MRS.

39 **5.0 CONCLUSIONS AND** 40 **RECOMMENDATIONS**

41 The results of the RI fieldwork for the Ramsdell
42 Quarry Area 1 (North) MRS support the
43 determination that no hazards associated with
44 exposure to MPPEH/MEC and no potential for

45 MC risk to human or environmental receptors
46 exist at the MRS. The U.S. Army, in
47 consultation with the Ohio EPA, is
48 recommending NFA as the preferred remedy
49 under the Military Munitions Response Program
50 for the MRS.

51 As no risks have been identified at the MRS, the
52 overall recommendation of NFA under the
53 Military Munitions Response Program is
54 protective of receptors that may be present at the
55 MRS. This recommendation is not a final
56 decision. The U.S. Army, in consultation with
57 the Ohio EPA, will select the remedy for the
58 MRS after reviewing and considering all
59 comments submitted during the 30-day public
60 comment period.

61 **6.0 COMMUNITY PARTICIPATION**

62 Public participation is an important component
63 of the remedy selection. The U.S. Army, in
64 coordination with the Ohio EPA, is soliciting
65 input from the community on the preferred
66 alternative. The comment period extends from
67 _____ to _____, 2017. This period includes a
68 public meeting at which the U.S. Army will
69 present this NFA Proposed Plan. The U.S. Army
70 will accept oral and written comments on the
71 Proposed Plan at this meeting.

72 **6.1 Public Comment Period**

73 The 30-day comment period extends from _____
74 _____, and provides an opportunity for
75 public involvement in the decision-making
76 process for the proposed action. The public is
77 encouraged to review and comment on this NFA
78 Proposed Plan. All public comments will be
79 considered by the U.S. Army and Ohio EPA
80 before selecting a remedy. During the comment
81 period, the public is also encouraged to review
82 documents pertinent to the Ramsdell Quarry
83 Area 1 (North) MRS. This information is
84 available at the Information Repositories and
85 online at www.rvaap.org. To obtain further
86 information, contact the Camp Ravenna
87 Environmental Office.

1 **6.2 Public Meeting**

2 The U.S. Army will hold an open house and
3 public meeting on this NFA Proposed Plan on
4 _____, at the Newton Falls Community
5 Center, 52 East Quarry Street, Newton Falls,
6 Ohio 44444. This meeting will provide an
7 opportunity for the public to comment on the
8 proposed action. Comments made at the meeting
9 will be transcribed.

10 **6.3 Written Comments**

11 If the public would like to provide comments,
12 questions, or suggestions on this NFA Proposed
13 Plan or other relevant issues in writing, they
14 should be delivered to the U.S. Army at the
15 public meeting or mailed (postmarked no later
16 than _____, 2017). The public can also
17 submit comments, questions, or suggestions via
18 email before the end of the comment period to
19 the Camp Ravenna Environmental Office at
20 kathryn.s.tait.nfg@mail.mil.

**POINT OF CONTACT FOR
WRITTEN COMMENTS**

Camp Ravenna Environmental Office
1438 State Route 534 SW
Newton Falls, Ohio 44444

21 **6.4 U.S. Army Review of Public Comments**

22 The U.S. Army will review the public's
23 comments as part of the process in reaching a
24 final decision for the most appropriate action to
25 be taken. A **Responsiveness Summary**, a
26 document that summarizes the U.S. Army's
27 responses to comments received during the
28 public comment period, will be included in the
29 **Record of Decision**. The U.S. Army's final
30 choice of action will be documented in the
31 Record of Decision. The Record of Decision
32 will be added to the RVAAP Administrative
33 Record and Information Repositories.

GLOSSARY OF TERMS

1 **Administrative Control:** Direction or exercise
2 of authority over subordinate or other
3 organizations in respect to administration and
4 support, including organization of Service
5 forces, control of resources and equipment,
6 personnel management, unit logistics,
7 individual and unit training, readiness,
8 mobilization, demobilization, discipline, and
9 other matters not included in the operational
10 missions of the subordinate or other
11 organizations.

12 **Administrative Record:** A collection of
13 documents, typically reports and
14 correspondence, generated during site
15 investigation and remedial activities.
16 Information in the Administrative Record is
17 used to select the preferred remedy. It is
18 available for public review at the Camp
19 Ravenna Environmental Office; call
20 (330) 872-8003 for an appointment.

21 **Area of Concern (AOC):** A term used by
22 regulatory bodies to refer to environmentally
23 sensitive or damaged areas.

24 **Booster:** A sensitive explosive charge that acts
25 as a bridge between a (relatively weak)
26 conventional detonator and a low-sensitivity
27 (but typically high-energy) explosive such as
28 2,4,6-Trinitrotoluene. By itself, the initiating
29 detonator would not deliver sufficient energy
30 to set off the low-sensitivity charge. However,
31 it detonates the primary charge (the booster),
32 which then delivers an explosive shockwave
33 sufficient to detonate the secondary, main,
34 high-energy charge.

35 **Borrow Pit:** An area where material (usually
36 soil, gravel or sand) has been dug for use at
37 another location.

38 **Comprehensive Environmental Response,
39 Compensation, and Liability Act of 1980
40 (CERCLA):** This federal law was passed in
41 1980 and is commonly referred to as the
42 Superfund Program. It provides for liability,
43 compensation, cleanup, and emergency
44 response in connection with the cleanup of
45 inactive hazardous waste release sites that
46 endanger public health or the environment.

47 **Digital Geophysical Mapping:** The process by
48 which geological features are observed,
49 analyzed, and recorded in the field and

50 displayed in real-time on a computer or
51 personal digital assistant.

52 **Demilitarization:** The reduction of one or more
53 types of weapons or weapons systems.

54 **Depot Storage:** A designated location for the
55 storage of military supplies.

56 **Discarded Military Munitions:** Military
57 munitions that have been abandoned without
58 proper disposal or removed from storage in a
59 military magazine or other storage area for the
60 purpose of disposal. The term does not include
61 **unexploded ordnance**, military munitions
62 that are being held for future use or planned
63 disposal, or military munitions that have been
64 properly disposed of consistent with
65 applicable environmental laws and
66 regulations.

67 **Earthen Settling Pond:** An earthen structure
68 that uses sedimentation to remove matter that
69 will settle and turbidity from wastewater.

70 **Environmental Receptor:** Any living
71 organisms other than humans, the habitat that
72 supports such organisms, or natural resources
73 that could be adversely affected by
74 environmental contaminations resulting from
75 a release at or migration from a site.

76 **Explosive Hazard:** Any hazard containing an
77 explosive component. Explosive hazards
78 include unexploded explosive ordnance
79 (including land mines), booby traps,
80 improvised explosive devices, and bulk
81 explosives.

82 **Feasibility Study:** A CERCLA document that
83 reviews and evaluates multiple remedial
84 technologies under consideration at a site. It
85 also identifies the preferred remedial action
86 alternative.

87 **Fuze:** A device that detonates a munition's
88 explosive material under specified conditions.
89 In addition, a fuze has safety and arming
90 mechanisms that protect users from premature
91 or accidental detonation.

92 **Human Receptor:** Any human individual or
93 population that is presently or will potentially
94 be exposed to, and adversely affected by, the
95 release or migration of contaminants.

96 **Incendiary Bomb:** A weapon designed to start
97 fires or destroy sensitive equipment using fire

9

GLOSSARY OF TERMS

1 (and sometimes used as anti-personnel
2 weaponry), that uses materials such as napalm.

3 **Information Repository:** A collection of
4 documents relating to a facility with
5 investigations and response actions under
6 CERCLA and/or a site's permitting activity or
7 corrective action. It includes documents and
8 information about site activities as well as
9 general information about environmental
10 regulations and CERCLA. The purpose of an
11 Information Repository is to (1) ensure open
12 and convenient public access to site-related
13 documents and (2) better inform the public of
14 the restoration process.

15 **Installation Restoration Program:** A
16 comprehensive program to identify,
17 investigate, and clean up contamination at
18 active/operating U.S. Army installations.
19 Eligible sites include those contaminated by
20 past defense activities that require response
21 under CERCLA, as amended by the
22 Superfund Amendments and Reauthorization
23 Act, and certain corrective actions required by
24 the Resource Conservation and Recovery Act.
25 The objective of the Installation Restoration
26 Program is to clean up contaminated
27 environmental impacts from past U.S. Army
28 activities with the following goals: (1) reduce
29 risk to acceptable levels to protect the health
30 and safety of installation personnel and the
31 public, and (2) restore the quality of the
32 environment. The Installation Restoration
33 Program also complies with state, regional,
34 and local requirements applicable to the
35 cleanup of hazardous materials contamination,
36 as well as related site safety. Community
37 involvement activities are an integral part of
38 the U.S. Army's Installation Restoration
39 Program. Installation commanders seek
40 community involvement early and throughout
41 the cleanup process.

42 **Large-Caliber Shell:** A projectile or shell is a
43 missile fired from the muzzle of a gun; it is
44 always the projectile, whether issuing from the
45 muzzle of a breech-loading rifle, using
46 separate ammunition, or from the muzzle of a
47 rapid-fire gun, using fixed, cartridge-case
48 ammunition. Projectiles for guns of and above
49 7 inches in caliber are considered large-
50 caliber.

51 **Material Potentially Presenting an Explosive
52 Hazard (MPPEH):** Material that, prior to
53 determination of its explosives safety status,
54 potentially contains explosives or munitions
55 (e.g., munitions containers and packaging
56 material; munitions debris remaining after
57 munitions use, demilitarization, or disposal;
58 and range-related debris); or potentially
59 contains a high enough concentration of
60 explosives such that the material presents an
61 explosive hazard (e.g., equipment, drainage
62 systems, holding tanks, piping, or ventilation
63 ducts that were associated with munitions
64 production, demilitarization, or disposal
65 operations).

66 **Military Munitions Response Program:** A
67 U.S. Department of Defense program
68 consisting of actions necessary to ensure
69 protection of human health, welfare, and the
70 environment from the hazards associated with
71 MEC and MC at locations impacted by
72 historical military activities.

73 **Moderate Quality Wetland:** A Category 2
74 wetland as identified by Ohio Rapid
75 Assessment Method 5.0 that supports
76 moderate wildlife habitat and hydrological
77 functions.

78 **Munitions Constituents (MC):** Any material
79 originating from unexploded ordnance,
80 **discarded military munitions**, or other
81 military munitions, including explosive and
82 nonexplosive materials, and emission,
83 degradation, or breakdown elements of such
84 ordnance or munitions.

85 **Munitions Debris (MD):** Remnants of military
86 munitions (e.g., fragments, penetrators,
87 projectiles, shell casings, links, fins)
88 remaining after munitions use,
89 demilitarization, or disposal.

90 **Munitions and Explosives of Concern
91 (MEC):** A munition or explosive that may
92 pose an explosive safety risk because it either
93 did not function as designed, was discharged
94 and/or abandoned, or is an explosive
95 constituent. MEC includes unexploded
96 ordnance, discarded military munitions, and
97 explosive constituents of munitions present in
98 high enough concentrations to pose an
99 explosive hazard.

GLOSSARY OF TERMS

1 **Munitions Response Site (MRS):** Any area on
2 a defense site that is known or suspected to
3 contain MEC or MC.

4 **Napalm Bomb:** A bomb made from a thick and
5 highly incendiary liquid, usually consisting of
6 petrol gelled with aluminum soaps.

7 **National Oil and Hazardous Substances**
8 **Pollution Contingency Plan:** The National
9 Oil and Hazardous Substances Pollution
10 Contingency Plan is a collection of CERCLA
11 regulations that provide the U.S. Government
12 the authority to respond to the problems of
13 abandoned or uncontrolled hazardous waste
14 disposal sites as well as to certain incidents
15 involving hazardous wastes (e.g., spills).

16 **Nonhazardous Solid Waste Landfill:** Also
17 known as a municipal solid waste landfill, this
18 is a discrete area of land or excavation that
19 receives (or received) household waste. Other
20 types of wastes routinely disposed of in a
21 nonhazardous solid waste landfill can include
22 commercial solid waste, nonhazardous sludge,
23 conditionally exempt small quantity generator
24 waste, and industrial nonhazardous solid
25 waste.

26 **Open Burning/Open Demolition:** A disposal
27 method of unserviceable and obsolete
28 munitions through controlled burn and
29 detonation.

30 **Primer:** A primer, also known as a blasting cap,
31 is a small, sensitive, primary explosive device
32 generally used to detonate a larger, more
33 powerful and less-sensitive secondary
34 explosive such as 2,4,6-Trinitrotoluene,
35 dynamite, or plastic explosive. Primers come
36 in a variety of types, including nonelectric
37 caps, electric caps, and fuse caps.

38 **Production:** The action of making or
39 manufacturing from components or raw
40 materials.

41 **Proposed Plan:** A CERCLA document that
42 provides the public with information
43 necessary to participate in the selection of a
44 remedy. It is designed to solicit public
45 comment on a preferred remedy before a
46 Record of Decision is established.

47 **Receptor:** See human or ecological receptor.

48 **Record of Decision:** A legal record signed by
49 the U.S. Army following coordination and
50 concurrence with the Ohio EPA as per a June
51 10, 2004, agreement between the two parties.
52 It describes the cleanup action or remedy
53 selected for a site, the basis for selecting that
54 remedy, public comments, responses to
55 comments, and the estimated cost of the
56 remedy.

57 **Remedial Action:** The actual construction or
58 implementation phase of a CERCLA site
59 cleanup that follows Remedial Design.

60 **Remedial Decision:** A formal, written
61 communication from the regulating authority
62 that approves a site investigation, identifies
63 the preferred remedy, and approves the
64 remedial action, if any, at a site.

65 **Remedial Investigation (RI):** A CERCLA
66 investigation that is performed to collect data
67 to characterize site conditions and assess
68 risk/hazard to human health and the
69 environment.

70 **Remedy Selection Process:** A part of the
71 CERCLA process, typically from the
72 Proposed Plan through the Record of
73 Decision, that involves public participation in
74 identifying the preferred remedy. The final
75 selection of the preferred remedy is made in
76 the Record of Decision after taking into
77 consideration the recommendations in the
78 Proposed Plan and any comments received
79 from the public during the 30-day comment
80 period.

81 **Renovation:** The process of improving a
82 broken, damaged, or outdated structure or
83 piece of equipment.

84 **Responsiveness Summary:** A section of the
85 Record of Decision where the U.S. Army
86 documents and responds to written and oral
87 comments received from the public about the
88 Proposed Plan.

89 **Restricted Access:** An area with limited
90 availability to certain groups.

91 **Sanitary Landfill Permit:** A permit issued for
92 nonhazardous solid waste landfills (also
93 known as municipal solid waste landfills) in
94 the State of Ohio under Ohio Administrative
95 Code Chapter 3745-27, Rules 01 to 20, and

GLOSSARY OF TERMS

1 regulated pursuant to Subtitle D of RCRA
2 under Section 40, Part 258 of the Code of
3 Federal Regulations.

4 **Subsurface Anomaly:** An item seen as a
5 subsurface irregularity (i.e., deviates from
6 expected subsurface items such as pipes,
7 utility lines, etc.) after geophysical
8 investigation.

9 **Underwater Investigation:** A method for
10 investigating submerged portions of a site that
11 can include the use of underwater instruments
12 and/or tactile (i.e., feel by hand) techniques to
13 identify and reacquire underwater anomalies.

14 **Unexploded Ordnance:** Military munitions
15 that have been primed, fuzed, armed, or
16 otherwise prepared for action; have been fired,
17 dropped, launched, projected, or placed in
18 such a manner as to constituent a hazard to
19 operations, installations, personnel, or
20 material; and remain unexploded either by
21 malfunction, design, or any other cause.

22 **Weapons Demilitarization Facility:** A facility
23 or installation involved in the reduction of a
24 nation's army, weapons, weapons systems, or
25 military vehicles to an agreed upon minimum.

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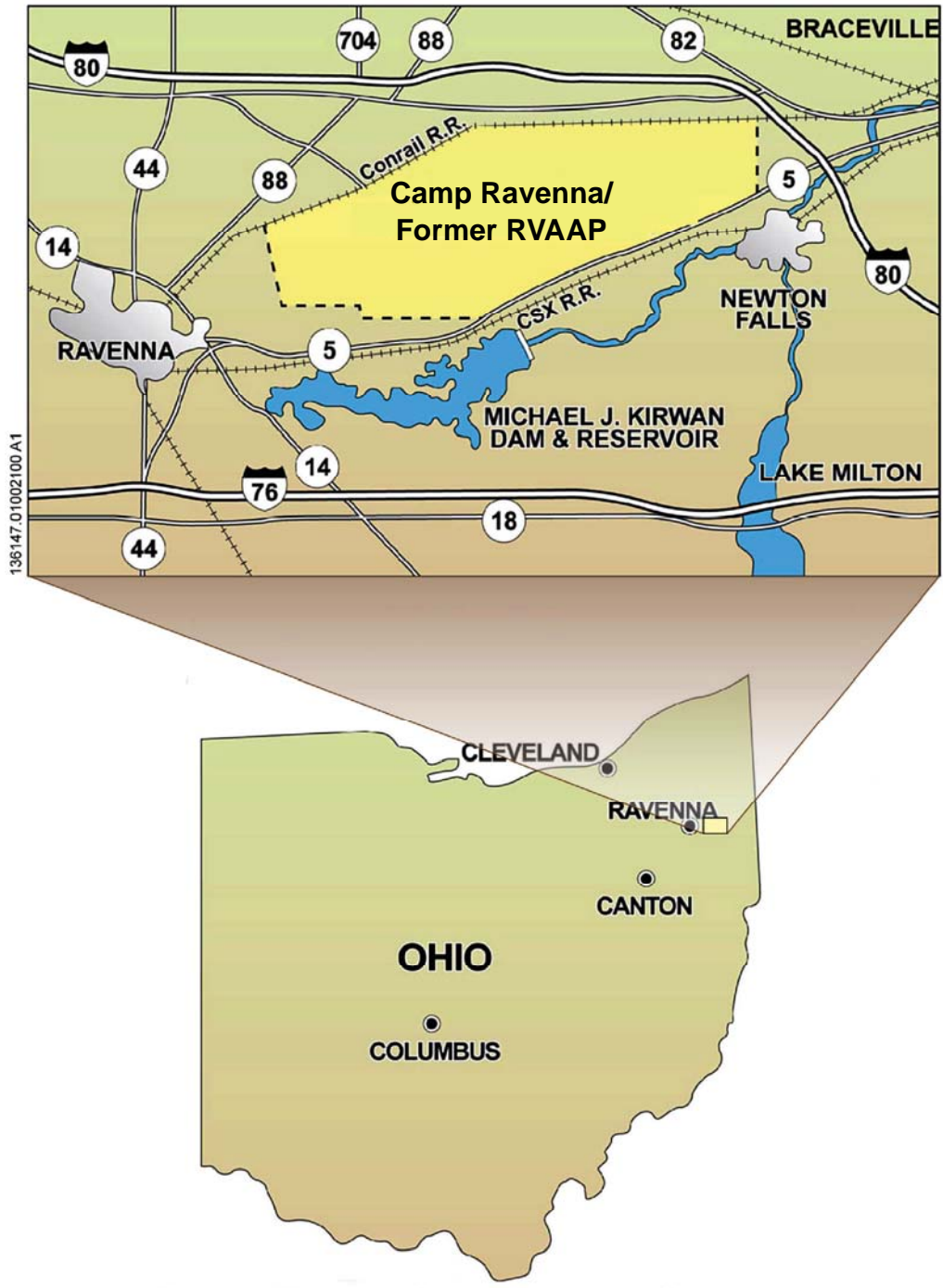
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FIGURES

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Legend

 Camp Ravenna/Former RVAAP




Figure 1
Location Map
Camp Ravenna/Former RVAAP
Portage/Trumbull Counties Ohio



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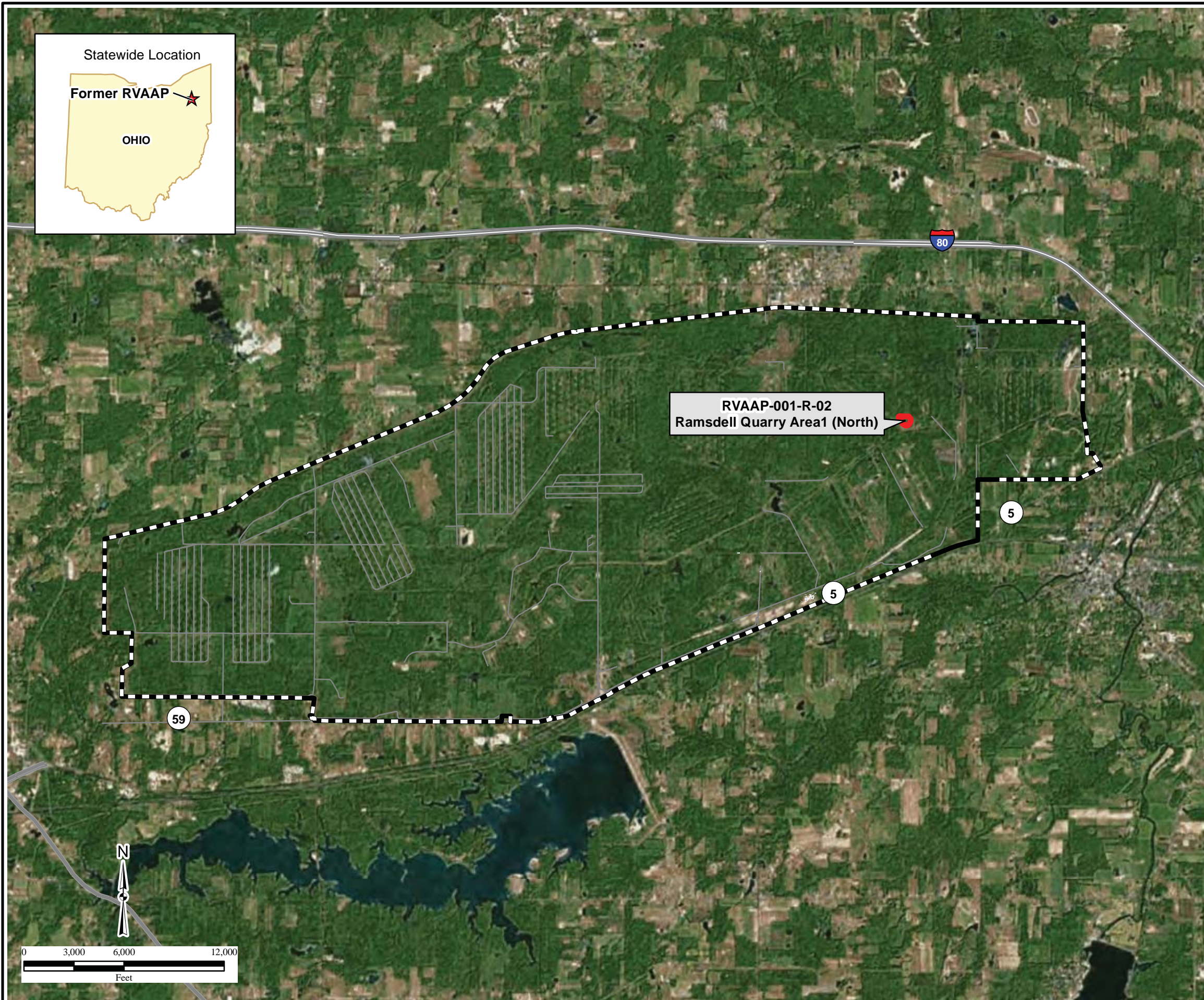
Figure 2 MRS Location Map Ramsdell Quarry Area 1 (North) MRS Camp Ravenna Portage/Trumbull Counties, Ohio

Legend

-  RVAAP-001-R-02 Ramsdell Quarry Area 1 (North) Munitions Response Site
-  Facility Boundary
-  Road

Notes:
MRS denotes Munitions Response Site
RVAAP denotes Former Ravenna Army Ammunition Plant

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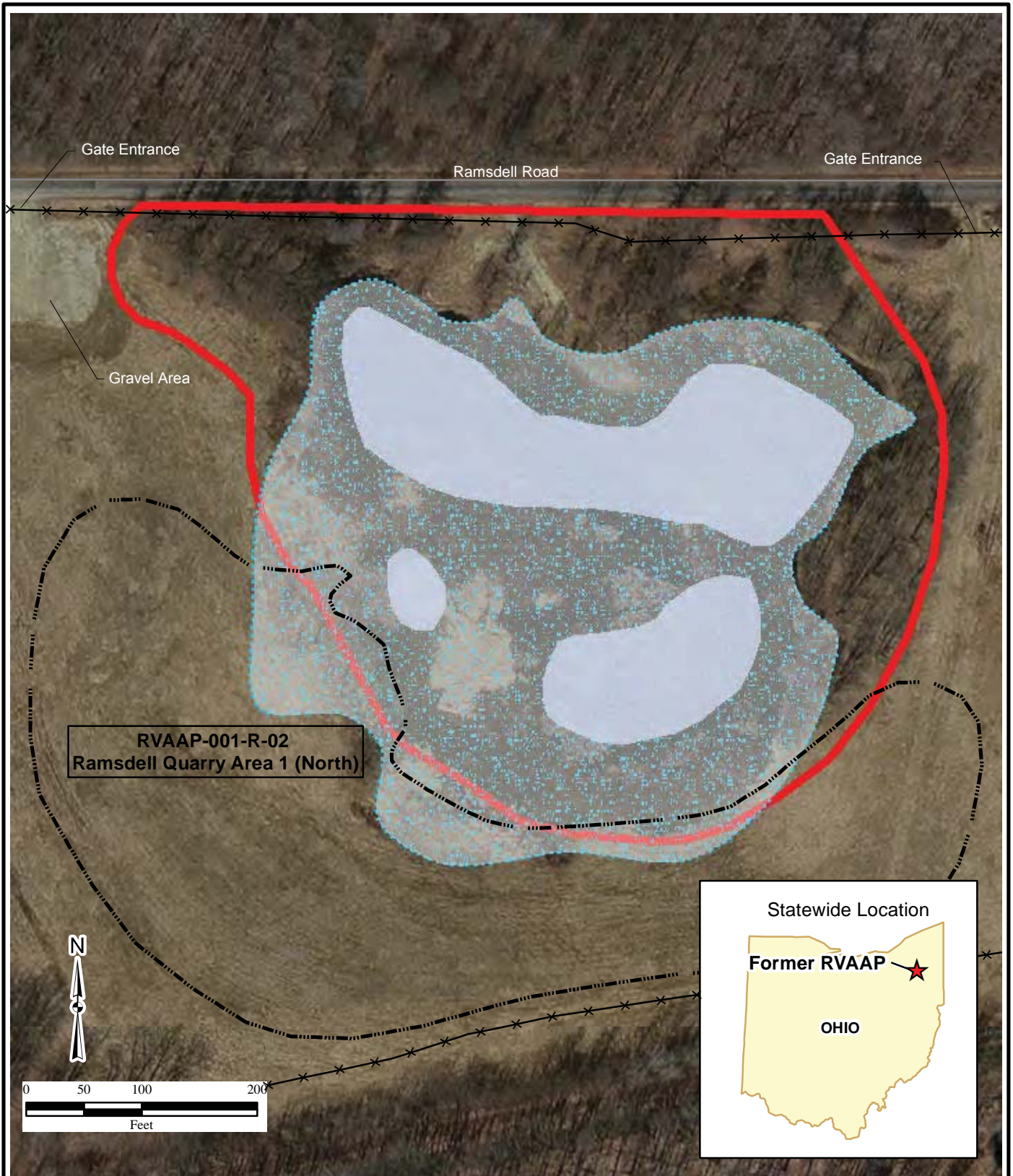
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- RI MRS Boundary
- Surface Water
- Wetland
- Approximate Landfill Boundary
- Former Soil Borrow Pit
- Railroad
- Fence Line

Figure 3
Remedial Investigation MRS Boundary Map
Ramsdell Quarry Area 1 (North) MRS
Camp Ravenna/Former RVAAP
Portage/Trumbull Counties, Ohio



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Legend






-  MRS Boundary
-  Surface Water
-  Approximately Landfill Boundary
-  Wetland
-  Fence Line

Figure 4
Site Features Map
Ramsdell Quarry Area 1 (North) MRS
Camp Ravenna/Former RVAAP
Portage/Trumbull Counties, Ohio

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