

Ravenna Army Ammunition Plant Restoration Program

**Public Notification and Public Meeting Summary Packet
for:**

**Proposed Plan for Sediment and Surface Water at Six
Areas of Concern/Munitions Response Sites**
(final version dated May 10, 2019)

Public Comment Period: Aug 12, 2019 to Sept 10, 2019
Public Meeting: August 29, 2019

Contract No. W912QR-15-C-0046

Prepared for:



**US Army Corps
of Engineers®**

**U.S. Army Corps of Engineers
Louisville District**

Prepared by:



**Leidos
8866 Commons Boulevard, Suite 201
Twinsburg, Ohio 44087**

Ravenna Army Ammunition Plant Restoration Program

**Public Notification and Public Meeting Summary Packet
for:**

**Proposed Plan for Sediment and Surface Water at Six
Areas of Concern/Munitions Response Sites**

(final version dated May 10, 2019)

PUBLIC NOTIFICATION

THIS PAGE INTENTIONALLY LEFT BLANK.

Public Notice

THIS PAGE INTENTIONALLY LEFT BLANK.



Public Notice

For Immediate Release
Camp James A. Garfield
Environmental Office

Camp James A. Garfield Joint Military Training Center

Camp James A. Garfield Environmental Office — 1438 State Route 534 SW — Newton Falls, OH 44444
614-336-6136

Public meeting to be held Thursday, August 29, 2019 for Army National Guard Release of the Proposed Plans for Sediment and Surface Water at Six Areas of Concern/Munitions Response Sites

Ravenna – The Army National Guard, in consultation with the Ohio Environmental Protection Agency, submits for public review and comments the Proposed Plan associated with historical former activities at the former Ravenna Army Ammunition Plant (RVAAP) in Portage and Trumbull counties, Ohio.

Sediment and surface water have been evaluated at six areas of concern (AOCs) and munitions response sites (MRSs) within the former RVAAP in Portage and Trumbull Counties, Ohio. These AOCs/MRSs are being addressed under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The Proposed Plan presents the current status and information regarding the AOCs/MRSs. The Proposed Plan presents a recommendation of No Further Action.

On Thursday, August 29, 2019, a public meeting will be held at the Charlestown Town Hall, 6735 Rock Spring Road, Ravenna, Ohio 44266 beginning at 6:00 p.m., with an informal open house. Technical staff will be available to answer questions. At 6:30 p.m., the Army National Guard will briefly describe the assessment of the AOCs/MRSs, present the No Further Action recommendation, and then request verbal or written comments from the public. Written comments regarding these recommendations may also be submitted to the Army National Guard during the 30-day comment period from August 12 to September 10, 2019. All written comments should be addressed to Camp James A. Garfield Environmental Office; 1438 State Route 534 SW, Newton Falls, OH 44444 and must be postmarked no later than September 10, 2019.

In accordance with CERCLA, the No Further Action recommendation presented in the Proposed Plan is also presented in earlier remedial investigation (RI) report. All reports are now available for public review at the RVAAP Information Repository at the Reed Memorial Library (167 East Main Street, Ravenna) and the Newton Falls Public Library (204 South Canal Street, Newton Falls). The reports are also available online at the RVAAP Restoration Program public website, www.rvaap.org.

The final remedy for Sediment and Surface Water at the six AOCs/MRSs will be selected based, in part, on public comments. In coordination with Ohio Environmental Protection Agency, the Army National Guard will select a final remedy after reviewing and considering all public comments submitted during the 30-day public comment period from August 12, 2019 to September 10, 2019. The Army National Guard encourages the public to review and comment on the recommendation presented in the document.

For more information or to participate in the review, please visit the RVAAP Restoration Program website (www.rvaap.org) or call Katie Tait at 614-336-6136.

###

THIS PAGE INTENTIONALLY LEFT BLANK.

Affidavits

THIS PAGE INTENTIONALLY LEFT BLANK.

STATE OF OHIO
TRUMBULL COUNTY

SS: CONNIE PACEK

NOTICE OF DOCUMENT AVAILABILITY
Proposed Plan for Sediment and Surface Water at Six Areas of Concern/Munitions Response Sites at the Former Ravenna Army Ammunition Plant (RVAAP)
 The Proposed Plan for Sediment and Surface Water at Six Areas of Concern/Munitions Response Sites presents a recommendation of No Further Action and provides the rationale for these recommendations. The Proposed Plan is available for public review from August 12, 2019 to September 10, 2019.

The Proposed Plan is available at:
 Newton Falls Public Library Reed Memorial Library
 204 South Canal Street 167 East Main Street
 Newton Falls, Ohio 44444 Ravenna, Ohio 44266

The Proposed Plan is also available at: www.rvaap.org
 Please join us for an **OPEN HOUSE** and **PUBLIC MEETING**.
 The Army National Guard will host an informational open house and a public meeting to explain the recommendation in the Proposed Plan. Oral and written comments will be accepted at the meeting. Written comments may also be mailed to the Camp James A. Garfield Environmental Office, 1438 State Route 534 SW, Newton Falls, OH 44444. Comments will be accepted during the public comment period from August 12, 2019 to September 10, 2019.

The public meeting is scheduled for:
 Thursday August 29, 2019 at: Charlestown Town Hall
 6:00 pm Open House 6735 Rock Spring Road
 6:30 pm Public Meeting Ravenna, OH 44266

For more information or if you need special accommodations to attend, please contact Katie Tait at 814-338-6186.
 #224-1T-August 12, 2019 #4220

BEING DULY SWORN, UPON OATH STATES THAT SHE IS AN AUTHORIZED REPRESENTATIVE OF THE TRIBUNE CHRONICLE, (A DIVISION OF EASTERN OHIO NEWSPAPERS INC). A DAILY NEWSPAPER PRINTED IN THE CITY OF WARREN, COUNTY OF TRUMBULL, STATE OF OHIO AND OF GENERAL CIRCULATION IN THE CITY OF WARREN, TRUMBULL COUNTY, OHIO AND IS INDEPENDENT IN POLITICS.

THAT THE ATTACHED ADVERTISEMENT WAS PUBLISHED IN THE TRIBUNE CHRONICLE EVERY Monday FOR One CONSECUTIVE WEEKS AND THAT THE FIRST INSERTION WAS ON Monday THE 12th DAY OF August 2019

Connie Pacek

SWORN TO BEFORE ME AND SUBSCRIBED IN MY PRESENCE ON THIS 14th DAY OF August 2019

Lawrence J. Kovach
NOTARY PUBLIC

LAWRENCE J. KOVACH, Notary Public
STATE OF OHIO
MY COMMISSION EXPIRES SEPTEMBER 23, 2022

SEAL

ADVERTISING COST \$ 274.18

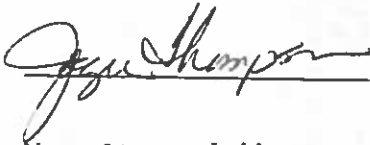
31193993

Proof of Publication

Record Publishing Company
1050 W. Main Street,
Kent, OH 44240
Phone (330) 541-9400
Fax (330) 673-6363

I, Thompson being first duly sworn depose and say that I am Advertising Clerk of
Record Publishing Company

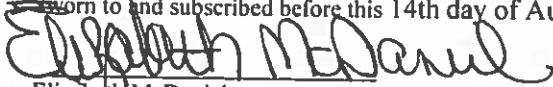
30 Record-Courier a newspaper printed and published in the city of Kent, and of General circulation in the County of Portage, State of Ohio, and personal knowledge of the facts herein stated and that the notice hereto annexed was Published in said newspapers for 1 insertions on the same day of the week from and after the 14th day of August, 2019 and that the fees charged are legal.



Name of Account: Leidos
Ad Number: 12584514
No. of Lines: 28

Day(s) Published: 08/14.
Printers Fee: \$115.20

Sworn to and subscribed before this 14th day of August, 2019.



Elizabeth McDaniel
Notary Public
Commission Expires June 19, 2021

Notice of Document Availability



Proposed Plan for Sediment and Surface Water at Six Areas of Concern/Munitions Response Sites at the Former Ravenna Army Ammunition Plant (RVAAP)

The Proposed Plan for Sediment and Surface Water at Six Areas of Concern/Munitions Response Sites presents a recommendation of No Further Action and provides the rationale for these recommendations. The Proposed Plan is available for public review from August 12, 2019 to September 10, 2019.

The Proposed Plan is available at:

Newton Falls Public Library	Reed Memorial Library
204 South Canal Street	167 East Main Street
Newton Falls, Ohio 44444	Ravenna, Ohio 44266

The Proposed Plan is also available at: www.rvaap.org

Please join us for an OPEN HOUSE and PUBLIC MEETING.

The Army National Guard will host an informational open house and a public meeting to explain the recommendation in the Proposed Plan. Oral and written comments will be accepted at the meeting. Written comments may also be mailed to the Camp James A. Garfield Environmental Office; 1438 State Route 534 SW, Newton Falls, OH 44444. Comments will be accepted during the public comment period from August 12, 2019 to September 10, 2019.

The public meeting is scheduled for:

Thursday August 29, 2019	at:
6:00 pm Open House	Charlestown Town Hall
6:30 pm Public Meeting	6735 Rock Spring Road
	Ravenna, OH 44266

For more information or if you need special accommodations to attend, please contact Katie Tait at 614-336-6136.

THIS PAGE INTENTIONALLY LEFT BLANK.

PUBLIC MEETING

THIS PAGE INTENTIONALLY LEFT BLANK.

Sign-in Sheet

THIS PAGE INTENTIONALLY LEFT BLANK.

W



US Army Corps
of Engineers
Louisville District

SIGN-IN SHEET

Camp James A. Garfield Public Meeting – Proposed Plan for Sediment and Surface
Water at Six Areas of Concern/Munitions Response Sites at the Former Ravenna Army
Ammunition Plant

PLEASE PRINT

LOCATION: Charlestown Town Hall; Ravenna, OH

DATE: August 29, 2019

TIME: 6:30 p.m.

Name	Address/City/State/Zip	Phone	Email
Jed Thomas			
Nicholas Rogge			
HEATHER ADAMS			
Nat Peters			
Katie Tait			
KEVIN SFOLAK			
JOSEPH BEUTLER			
Sharon Roberts			
Burb Tille			

Presentation

THIS PAGE INTENTIONALLY LEFT BLANK.

Proposed Plan for Sediment and Surface Water at Six Areas of Concern/Munitions Response Sites

Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Presented by:
Rupa Price - Leidos

August 29, 2019

Welcome!

Areas of Concern

- Six Areas of Concern addressing sediment and surface water:

- Ramsdell Quarry Landfill/MRS Area 1
- Ramsdell Quarry Landfill MRS Area 2
- Erie Burning Grounds
- Open Demolition Area No. 2
- Fuze and Booster Quarry Landfill/Ponds
- Block D Igloo MRS

[Note: A Facility-Wide Remedial Investigation is currently underway for groundwater at all these sites. The decision for all site groundwater will be documented separately.]

Decisions related to soil (and dry sediment) at each site are have also been addressed through separate decision documents.]

Presentation Agenda

- Description of CERCLA
- CERCLA Site Evaluation
- Site Features
- Historical Operations
- Remedial Investigations
- Remedial Investigation Conclusions
- Public Participation
- Questions

What is CERCLA?



- The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) was passed in December 1980 in response to the discovery of a large number of abandoned, leaking hazardous waste sites that posed a serious threat to both human health and the environment.
- CERCLA was designed to impose clean up and reporting requirements on the private sector, as well as federal facilities, by:
 - Identifying those sites where releases of hazardous substances had occurred or might occur, and pose a serious threat to human health and the environment;
 - Taking appropriate action to remedy those releases; and
 - Seeking those parties responsible for the environmental hazards to pay for the clean up activities.
- This phase of the CERCLA process is to seek input from the public on the recommendations.

- For each site, we will discuss the investigations performed and summarize the following evaluations provided in the Remedial Investigation Report:
 - **Fate and transport assessment** - performed to determine if chemicals at the site may adversely impact groundwater.
 - **Human health risk assessment (HHRA)** - performed to determine if chemicals sediment or surface water pose unacceptable risk.
 - **Ecological risk assessment (ERA)** - performed to evaluate 1) if there are important or significant ecological resources at a site (e.g., wetlands, protected species) and 2) if chemical contamination requires an action to protect those resources.
- These assessments determine if a site can be used for:
 - Unrestricted (Residential) Land Use - The Army can use the site with no restrictions.
 - Commercial (Industrial) Land Use – The Army can use the site, but restrictions will be placed on the site.



Areas of Concern Location

Ramsdell Quarry Landfill Area 1

Ramsdell Quarry Landfill MRS Area 2

Erie Burning Grounds

Open Demolition Area No. 2

Fuze and Booster Quarry Landfill/Ponds

Block D Igloo MRS

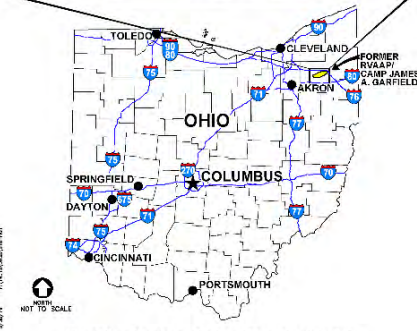
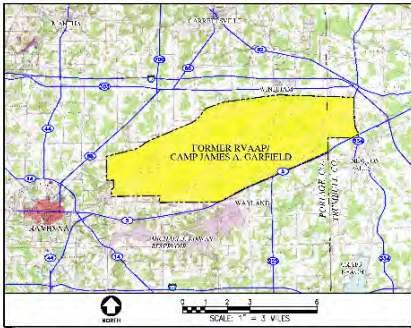
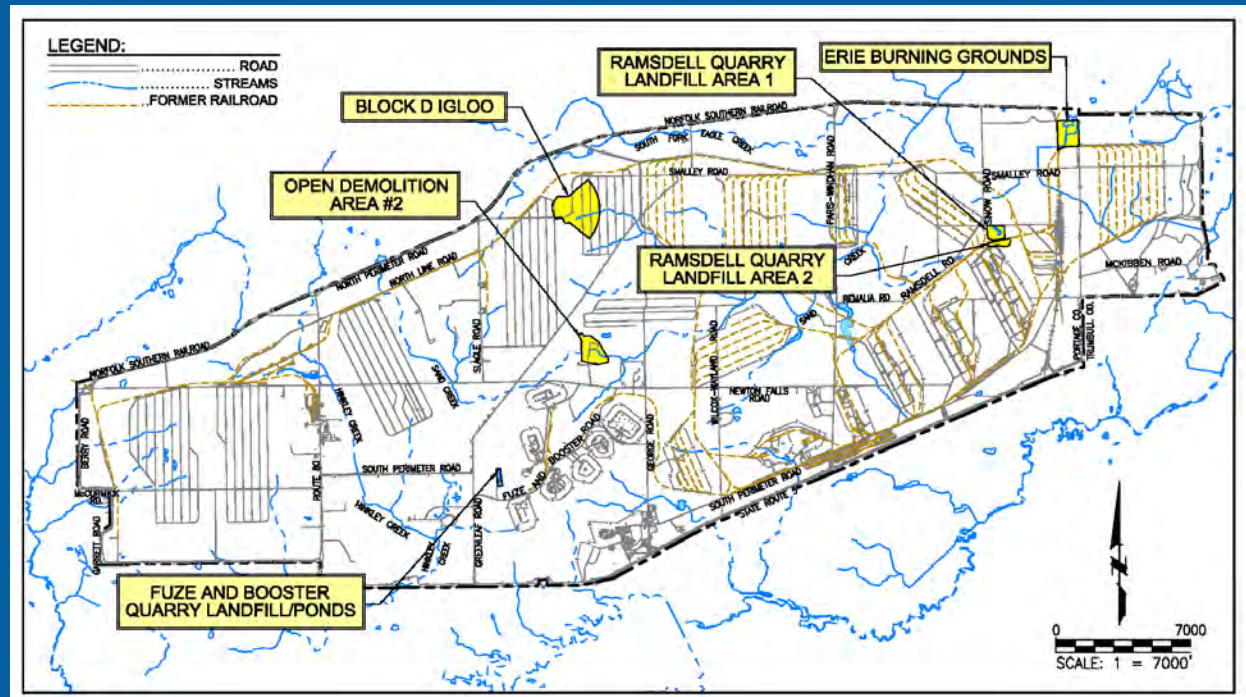


Figure 1. General Location and Orientation of Camp James A. Garfield



Refer to Handout,
Figure 1



Ramsdell Quarry Landfill Area 1

Site Features



- Approximately 14 acres (7 acre MRS).
- Quarry bottom is ~40 feet below surrounding area.
- Closed landfill is U-shaped with a soil cover that is vegetated (~4 acres).
- Site perimeter is fenced.
- Bedrock in quarry bottom is either exposed or covered by a thin layer of soil.
- Ponds in quarry bottom are intermittent.
- Refer to Handout, Figure 2

Ramsdell Quarry Landfill Area 1

Historical Operations



- Quarry was in operation until 1941 – excavated sandstone and quartzite pebble conglomerate were used for road and construction ballast.
- 1946 to 1950s – Quarry bottom was used to thermally treat waste explosives from Load Line 1.
- 1941 to 1989 – Western and southern sections of the quarry were used for landfill operations.
- 1976 to 1989 – Solid waste materials were disposed in the landfill.
- 1978 to 1990 – State of Ohio permitted a portion of the quarry as a sanitary landfill.

Ramsdell Quarry Landfill Area 1

IRP Investigations



- Site was investigated under both Installation Restoration Program (IRP) and the Military Munitions Response Program (MMRP)
- IRP Investigations
 - **1998 Phase I Remedial Investigation**
 - Surface soil and groundwater samples collected.
 - Contaminants of concern were identified in surface water and sediment using historical data.
 - Recommended proceeding to a Feasibility Study.
 - **2006 Feasibility Study**
 - Assessed contaminated soil and dry sediment within quarry bottom.
 - Remedial alternatives developed to remediate contaminated soil and implement land use controls to prevent exposure.

Ramsdell Quarry Landfill Area 1 Removal Action



- 2010 Soil/Dry Sediment Remedial Action
 - Included removal of 1,100 tons of contaminated soil from quarry bottom.
 - Installation of perimeter fencing to limit exposure to soil contaminants.
 - Wetlands were restored to an enhanced Modified Class 2 Wetland.
 - Land use controls were put in place.



Ramsdell Quarry Landfill Area 1

MMRP Remedial Investigation



- MMRP Investigations – Ramsdell Quarry was divided into 2 areas, RQL MRS Area 1 and RQL MRS Area 2.
 - **2011 Remedial Investigation**
 - Digital geophysical mapping, intrusive investigation of anomalies, underwater investigation of pond sediment.
 - No MEC/MD found.
 - No further investigation recommended.
- Refer to Handout, Figure 3 for location of RQL Area 1 and RQL Area 2.



Ramsdell Quarry Landfill Area 1

Remedial Investigations



- 2016 Supplemental Remedial Investigation

- Evaluated potential for human health and ecological COCs in surface water and sediment.
- Collected additional samples to supplement findings of previous investigations.
 - Four sediment samples collected.
 - No surface water was present during the October 2016 sampling event; however, it was determined that adequate historical data allowed for characterization of the site.
- In total 22 sediment samples and 11 surface water samples were used to evaluate Ramsdell Quarry Landfill Area 1. Samples were analyzed for metals, explosives, pesticides, PCBs, SVOCs, VOCs, cyanide, nitrate.

Ramsdell Quarry Landfill Area 1 Remedial Investigations Conclusions



- Nature and extent of contamination is defined. No further sampling is required to characterize sediment or surface water at Ramsdell Quarry Landfill Area 1.
- No further action is required to protect human health.
 - The HHRA did not identify sediment or surface water chemicals of concern (COCs) from previous Army activities requiring remediation under CERCLA to be protective of the Resident Receptor.
- No further action is required to protect ecological resources.
 - No risk was identified for important or significant ecological places or resources.
- No further action is required to protect groundwater.
 - Groundwater will continue to be evaluated under the Facility-wide Groundwater Monitoring Program.

The Army, in coordination with Ohio EPA, is recommending no further action to attain Unrestricted (Residential) Land Use for sediment and surface water at Ramsdell Quarry Landfill Area 1.

Ramsdell Quarry Landfill MRS Area 2

Site Features



- Approximately 7 acres, south of RQL Area 1.
- Small, inactive soil borrow pit.
- Wooded area where munitions debris found previously.
- Approximately ½ acre of wetlands identified in the former soil borrow pit.
- Surface runoff flows east toward borrow pit during heavy rain events.
- Refer to Handout, Figure 4

Ramsdell Quarry Landfill MRS Area 2

Historical Operations



- Minimal information is available regarding historical operations.
- It is suspected that this area was used as a disposal area for the munitions that were thermally treated at RQL Area 1.
- Area is remote and not easily accessible.

Ramsdell Quarry Landfill MRS Area 2

MMRP Investigations



- Site was investigated under the Military Munitions Response Program.
 - **2011 Remedial Investigation**
 - Digital geophysical mapping and intrusive investigation of anomalies.
 - Two ISM surface soil samples were collected.
 - No MEC was found; however, MD was identified.
 - The risk assessments indicated there were no MC risks to human or ecological receptors.
 - Sediment and surface water in soil borrow pit and wetland area were not sampled.

Ramsdell Quarry Landfill MRS Area 2 IRP Investigations



- 2016 Supplemental Remedial Investigation
 - Collected samples to supplement findings of previous investigations.
 - Four sediment samples collected and analyzed for metals, SVOCs, nitrocellulose, explosives, propellants, PCBs, total organic carbon (TOC), and pH.
 - No surface water was present during the October 2016 sampling event.

Ramsdell Quarry Landfill MRS Area 2

Remedial Investigations Conclusions



- Nature and extent of contamination is defined. No further sampling is required to characterize sediment or surface water at RQL MRS Area 2.
- No further action is required to protect human health.
 - The HHRA did not identify sediment or surface water COCs from previous Army activities requiring remediation under CERCLA to be protective of the Resident Receptor.
- No further action is required to protect ecological resources.
 - No risk was identified for important or significant ecological places or resources.
- No further action is required to protect groundwater.
 - Groundwater will continue to be evaluated under the Facility-wide Groundwater Monitoring Program.

The Army, in coordination with Ohio EPA, is recommending no further action to attain Unrestricted (Residential) Land Use for sediment and surface water at Ramsdell Quarry Landfill MRS Area 2.

Erie Burning Grounds

Site Features



- Approximately 35 acres.
- Access road surrounds the site.
- Three pairs of shallow trenches were connected to the original creek channel that flowed through the center of the site.
- Surface water drainage flows from north to southwest.
- Mostly inundated since early 1990s because of topography and beaver activity.
- Majority of site is wetland.
- Refer to Handout, Figure 5

Erie Burning Grounds

Historical Operations



- 1941 to 1951 – Open burning of explosives and related materials.
 - Materials included bulk, obsolete, non-specification explosives, propellants, and general materials in U.S. Army railcars used for transporting explosives.
- Aerial photographs depict open boxcars staged at the end of Track 49.
 - Presumably materials were tipped out of the cars on either side of the embankment to be burned.
- 1941 Engineering Drawings show a waste chute approximately 200 ft. north of Track 49. The chute leads to a designated burning area.

Erie Burning Grounds

IRP Investigations



- Site was investigated under both Installation Restoration Program (IRP) and the Military Munitions Response Program (MMRP).
- IRP Investigations
 - **1999 Phase I Remedial Investigation**
 - Collected soil, sediment, and surface water samples.
 - Contaminants of concern were identified in soil, sediment, and surface water.
 - Recommended additional characterization.
 - **2003-2006 Phase II Remedial Investigation**
 - Collected and evaluated surface soil, sediment, surface water, and groundwater samples.
 - The HHRA indicated surface water did not require remediation. Only one COC was identified in wet sediment that required further evaluation for Unrestricted Land Use.
 - The ERA concluded that remediation of soil or sediment was not warranted and would cause more ecological damage than the contaminant reduction was worth.
- In total, 114 sediment samples and 33 surface water samples were collected at the Erie Burning Grounds and analyzed for metals, explosives, pesticides, PCBs, SVOCs, VOCs, cyanide, hexavalent chromium.

Erie Burning Grounds MMRP Remedial Investigation



- MMRP Investigations
 - 2012 Remedial Investigation
 - Digital geophysical mapping, intrusive investigation of anomalies, and surface water and sediment sampling.
 - No MEC found; however, MD was encountered.
 - HHRA and ERA did not find any chemicals of concern.
 - No further investigation required.



Erie Burning Grounds

Remedial Investigations Conclusions



- 2016 Work Plan evaluated data related to the Erie Burning Grounds and concluded that no further action was required.
 - Previous sampling of wet sediment and surface water sampling during the Phase II RI and MMRP RI was comprehensive.
 - There aren't any data gaps between the IRP Phase II RI and the MMRP RI.
 - Sediment ISM samples collected during the 2012 MMRP RI are representative of the ponds in their entirety.
 - Results in sediment and surface water are consistent with the previous conclusions of soil and dry sediment. None of the media pose risks to likely human or ecological receptors.
 - No chemicals in surface water or sediment are present at concentrations great enough to pose any risk to human or ecological receptors.

The Army, in coordination with Ohio EPA, is recommending no further action to attain Unrestricted (Residential) Land Use for sediment and surface water at Erie Burning Grounds.

Open Demolition Area No. 2

Site Features



- Approximately 35 acres.
- Gravel access roads.
- 2 above-ground earth covered magazines.
- Vegetated with native grasses surrounded by mature hardwood forest to the east, west and south.
- Surface water flows to perennially present Sand Creek, flowing west to east.
- Refer to Handout, Figure 6



Open Demolition Area No. 2

Historical Operations



- Since 1948, ODA2 was used to detonate large caliber munitions and off specification bulk explosives including primer elements, bombs, and various caliber munitions.
- 1981 to 1986 – Open burning area was used to thermally destroy sludge from the Load Line 6 Evaporation Unit.
- Munitions and ordnance components were buried onsite.
- White phosphorus was disposed on the south side of Sand Creek.
- Projectiles were fired into targets in 40 mm Prototype Testing Range.
- Due to the potential for MEC, ODA2 is currently managed as “restricted access,” and the area is closed to all normal training and administrative activities.

Open Demolition Area No. 2

IRP Investigations



- Site was investigated under both Installation Restoration Program (IRP) and the Military Munitions Response Program (MMRP)
- IRP Investigations
 - **1998 Phase I Remedial Investigation**
 - Assessed soil and sediment.
 - Determined that contaminants are not migrating away from ODA2 via surface runoff.
 - **Phase II Remedial Investigation and Addendum**
 - Assessed soil, surface water, and sediment.
 - The human health and ecological risk assessments concluded that no further action was required for soil and dry sediment.
 - **2016 Supplemental Remedial Investigation**
 - Due to the existing sediment and surface water dataset, no additional surface water or sediment samples were required at ODA2. (Complete evaluation summarized in upcoming slides.)
 - In total 20 sediment samples and 66 surface water samples were used to evaluate ODA2. Samples were analyzed for metals, explosives, pesticides, PCBs, SVOCs, VOCs, cyanide, and hexavalent chromium.

Open Demolition Area No. 2

MMRP Remedial Investigation



- MMRP Investigation
 - 2011 Remedial Investigation
 - Digital geophysical mapping, intrusive investigation of anomalies, and soil sampling for MC.
 - No human health risk to anticipated receptors.
 - Ecological risk present in surface soil.
 - Recommended evaluation in a feasibility study.

Open Demolition Area No. 2 Removal Actions



- **Open Demolition Area No. 2 Removal Actions**
 - 2009 Time Critical Removal Action (TCRA) – Removed approximately 770 cy of material including soil and materials potentially presenting an explosive hazard (MPPEH) from Rocket Ridge Area.
 - 2011 TCRA – Removed 488 cy of material including soil, MEC, MDAS, M19 series stabilizers, and rifle grenades from Rocket Ridge Area.
 - 2019 Removal Action - MEC and MPPEH materials were removed from ODA2.
 - Best management practices were implemented to ensure contamination was not released to the surface water or sediment.

Open Demolition Area No. 2

Remedial Investigations Conclusions



- Nature and extent of contamination is defined. No further sampling is required to characterize sediment or surface water at Open Demolition Area No. 2.
- No further action is required to protect human health.
 - The HHRA did not identify sediment or surface water COCs from previous Army activities requiring remediation under CERCLA to be protective of the Resident Receptor.
- No further action is required to protect ecological resources.
 - No risk was identified for important or significant ecological places or resources.
- No further action is required to protect groundwater.
 - Groundwater will continue to be evaluated under the Facility-wide Groundwater Monitoring Program.

The Army, in coordination with Ohio EPA, is recommending no further action to attain Unrestricted (Residential) Land Use for sediment and surface water at Open Demolition Area No. 2.

Fuze and Booster Quarry Landfill/Ponds Site Features



- Approximately 45 acres.
- Gravel access roads entering and going through the site.
- 3 man-made Quarry Ponds in the eastern portion of the AOC.
- Drainage ditch receives surface water discharge from the southern Quarry Pond via a culvert under the main access road in FBQ.
- Refer to Handout, Figure 7

Fuze and Booster Quarry Landfill/Ponds

Historical Operations



- 1945 to 1976 – Used for open burning and as a landfill.
- 1976 – Construction of Quarry Ponds.
 - The debris resulting from the open burning/landfilling activities were removed during construction of the Quarry Ponds.
 - The Quarry Ponds were constructed to receive spent discharge from one the former water plants.
- 1993 – Operations cease.

Fuze and Booster Quarry Landfill/Ponds IRP Investigations



- Site was investigated under both Installation Restoration Program (IRP) and the Military Munitions Response Program (MMRP)
- IRP Investigations
 - **2003/2004 Phase I/Phase II Remedial Investigation**
 - Evaluated soil, groundwater, sediment, and surface water.
 - Contaminants of concern were identified in sediment and surface water.
 - **2003 Facility-wide Biological Water Quality Study**
 - Assessed surface water and sediment from one of the Quarry Ponds.
 - Determined that surface water and sediment quality in the FBQ Pond was sufficient to not adversely impact the biological community.
 - **2006 Feasibility Study**
 - Evaluated soil and dry sediment and recommended removal of contaminated sediment in drainage ditch.
 - Sediment removal conducted in 2010.

Fuze and Booster Quarry Landfill/Ponds IRP Investigations



- 2010 Soil/Dry Sediment Remedial Action
 - Included removal of 184 tons of contaminated sediment from drainage ditch.
 - Six to ten inch stone was used to line excavated ditch.
 - Disturbed areas were reseeded and inspected until adequate vegetation growth.



Fuze and Booster Quarry Landfill/Ponds

MMRP Investigations



- MMRP Investigations
 - 2011 Remedial Investigation
 - Digital geophysical mapping, intrusive investigation of anomalies, underwater investigation of pond sediment, and sediment sampling for MC.
 - No MEC found; however, MD was encountered and recovered.
 - No munitions-related human health or ecological COCs were identified.
 - The Army selected a No Further Action alternative for FBQ under the MMRP.

Fuze and Booster Quarry Landfill/Ponds IRP Investigations



- 2016 Supplemental Remedial Investigation
 - Due to extensive dataset, no additional surface water or sediment samples were required at Fuze and Booster Quarry Landfill/Ponds.
 - In total 59 sediment samples and 20 surface water samples were used to evaluate Fuze and Booster Quarry Landfill/Ponds. Samples were analyzed for metals, explosives, pesticides, PCBs, SVOCs, VOCs, perchlorate, and hexavalent chromium.

Fuze and Booster Quarry Landfill/Ponds Remedial Investigations Conclusions



- Nature and extent of contamination is defined. No further sampling is required to characterize sediment or surface water at Fuze and Booster Quarry Landfill/Ponds.
- No further action is required to protect human health.
 - The HHRA did not identify sediment or surface water COCs from previous Army activities requiring remediation under CERCLA to be protective of the Resident Receptor.
- No further action is required to protect ecological resources.
 - No risk was identified for important or significant ecological places or resources.
- No further action is required to protect groundwater.
 - Groundwater will continue to be evaluated under the Facility-wide Groundwater Monitoring Program.

The Army, in coordination with Ohio EPA, is recommending no further action to attain Unrestricted (Residential) Land Use for sediment and surface water at Fuze and Booster Quarry Landfill/Ponds.

Block D Igloo

Historical Operations



- 1943 - Igloo 7-D-15 (“D” Block) accidentally exploded
 - The igloo was 60 feet long and constructed of reinforced concrete with a steel door.
 - The igloo was filled to 95% capacity at the time of the explosion.
 - The side walls of the igloo were sheared off at the footings during the explosion.
 - The igloo’s steel door was propelled 1,800 ft. to the east.

Block D Igloo

MMRP Investigations



- Site was investigated under the Military Munitions Response Program
 - **2011 Remedial Investigation**
 - Instrument-assisted visual survey and intrusive investigation of subsurface anomalies.
 - MEC and MD were found at the site.
 - Soil samples were collected.
 - The HHRA and ERA concluded there were no chemical risks to human or environmental receptors.
 - **Anticipated Remedial Action for Munitions**
 - Instrument aided surface sweeps for munitions to be conducted with manual removal.
 - This includes saturated areas and wetlands within the MRS boundary.
 - No remedial action is required for chemical exposure.

Block D Igloo

Remedial Investigations Conclusions



- 2016 Work Plan evaluated data related to the unnamed tributary to Sand Creek within the Block D Igloo MRS.
 - The Work Plan concluded that no further action was required to address chemicals in the unnamed tributary to Sand Creek.
 - MEC and MD were not observed in this surface water body during the visual survey.
 - The HHRA and ERA concluded there were no chemical risks to human or environmental receptors.
 - The Army is planning additional munitions investigation and removal at the site under the MMRP.

The Army, in coordination with Ohio EPA, is recommending no further action to attain Unrestricted (Residential) Land Use for sediment and surface water at the Block D Igloo.

Public Participation

Your Comments and Inputs are Appreciated!



- Public participation is an important component of remedy selection.
- The U.S. Army is soliciting input from the community as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).
- Written comments will be accepted until September 10, 2019.

Public Participation

Your Comments and Inputs are Appreciated!



- Provide written or verbal comments at this public meeting.
- Submit written comments by September 10, 2019 to the following addresses:

Camp Ravenna Joint Military Training Center
Environmental Office
Attn: Kathryn Tait
1438 State Route 534 SW
Newton Falls, Ohio 44444

E-mail address: kathryn.s.tait.nfg@mail.mil

Questions?

Court Reporter Transcript

THIS PAGE INTENTIONALLY LEFT BLANK.

CAMP JAMES A. GARFIELD PUBLIC MEETING

PROPOSED PLAN
FOR SEDIMENT AND SURFACE WATER
AT SIX AREAS OF CONCERN/MUNITIONS
RESPONSE SITES

RAMSDELL QUARRY LANDFILL/MRS AREA 1,
RAMSDELL QUARRY LANDFILL/MRS AREA 2,
ERIE BURNING GROUNDS, OPEN DEMOLITION AREA
NO. 2, FUZE AND BOOSTER QUARRY LANDFILL/PONDS
AND BLOCK D IGLOO MRS

THE FORMER RAVENNA ARMY AMMUNITION PLANT
PORTAGE AND TRUMBULL COUNTIES, OHIO

Presented by:
Rupa Price - Leidos

PUBLIC MEETING

Thursday

August 29, 2019

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Charlestown Town Hall
6735 Rock Spring Road
Ravenna, Ohio 44266

- - -

1 **APPEARANCES :**

2

3 Barbara Tittle, Facilitator

4

5 Rupa Price, Environmental Engineer

6 Leidos

7 8866 Commons Boulevard

8 Suite 201

9 Twinsburg, Ohio 44087

10

11 Heather Adams, P.G.

12 Leidos

13 8866 Commons Boulevard

14 Suite 201

15 Twinsburg, Ohio 44087

16

17 Jed Thomas, PE, PMP

18 Environmental Engineer

19 Leidos

20 8866 Commons Boulevard

21 Suite 201

22 Twinsburg, Ohio 44087

23 330/405-5802

24 Email: jed.h.thomas@leidos.com

25

1 **ALSO PRESENT:**

2 Ryan Laurich, Leidos

3 Nathaniel Peters, II, USACE

4 Sharon Robers, Leidos

5 Nicholas Roope, Ohio EPA

6 Kevin Sedlak, ARNG

7 Katie Tait, Ohio ARNG

8

9 - - -

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 **MS. TITTLE:** Good evening.
2 Welcome to this public meeting. My name is
3 Barbara Tittle. I am a private citizen from
4 Kent, Ohio. And I am here tonight to serve as
5 the meeting's facilitator.

6 This public meeting serves as one of several
7 opportunities for public comment on the Army's
8 proposed plan. I am responsible to ensure that
9 everyone who wishes to is able to comment about
10 the proposed plan and has the opportunity to do
11 so.

12 However, before we get started, please
13 take a moment to silence all of your electronic
14 devices. Thank you.

15 There are emergency exits located at the
16 entrance, back that way. And the restrooms are
17 located to my right and behind me. So please
18 help yourself to the refreshments.

19 This public meeting will present the Army's
20 proposed plan for the sediment and surface water
21 media at six sites within the Former Ravenna Army
22 Arsenal Ammunition Plant.

23 These six sites are the Ramsdell Quarry
24 Landfill Area, Areas 1 and 2; the Erie Burning
25 Grounds; the Open Demolition Area Number 2; the

1 Fuze and Booster Quarry Landfill and Ponds; and
2 the Block D Igloo.

3 Comments received from the public on
4 the proposed plan will be considered when
5 determining the final remedy that will be
6 documented in the Record of Decision. The Record
7 of Decision will include a Responsiveness Summary
8 addressing public comments.

9 Tonight we have Kevin Sedlak and Katie
10 Tait representing the Army, and Nick Roope
11 representing the Ohio EPA. The Ohio EPA would
12 like to make an opening remark.

13 **MR. ROOPE:** The Ohio EPA has
14 reviewed the proposed plan and concurs with the
15 remedy solution.

16 **MS. TITTLE:** Thank you, Mr.
17 Roope.

18 In addition, we have a court reporter here
19 to document tonight's meeting. Our presenter
20 tonight is Rupa Price. Rupa is an Environmental
21 Engineer from Leidos, which is a contractor for
22 the Army. Rupa will present information
23 regarding the six sites and the Army's proposed
24 plan for these sites.

25 Following the presentation, we will open

1 the floor for your questions and comments.

2 Rupa?

3 **MS. PRICE:** Thank you,
4 Barbara.

5 Good evening. Before we get started, I want
6 to make sure that you are aware that there are
7 some handouts out in the vestibule: There is a
8 copy of the slide presentation, there is a list
9 of acronyms and a packet of figures for your
10 reference.

11 Tonight we are going to discuss the sediment
12 and surface water at six Areas of Concern. Now,
13 a little bit of background, though: The surface
14 water and sediment at these particular AOC's were
15 identified when the Army performed an inventory
16 of CERCLA investigations to see if there were any
17 sites that needed additional evaluation to reach
18 a CERCLA decision for surface water and/or
19 sediment, because they weren't being addressed as
20 part of an existing contract.

21 So it is important to note that the
22 groundwater at these sites are being investigated
23 with a Facility-Wide Groundwater Investigation,
24 and any decisions related to the groundwater will
25 be addressed separately.

1 And, similarly, decisions related to soil
2 and dry sediment at each of these sites are
3 addressed through separate decision documents.

4 I will start out with a brief description
5 of CERCLA, which sets the framework for
6 investigating and cleaning up a site, and then I
7 will dive into the site features, historical
8 operations, Remedial Investigations and the
9 conclusions for each site. I will also discuss
10 the public participation associated with the
11 final recommendation at these sites, and then we
12 will open the floor to any questions that you may
13 have.

14 So what is CERCLA? CERCLA is the
15 Comprehensive Environmental Response,
16 Compensation and Liability Act that was passed
17 in December of 1980, because of the discovery
18 of a large number of abandoned, leaking and
19 hazardous waste sites that posed a serious threat
20 to human health and the environment.

21 It was designed to identify sites where
22 releases of hazardous substances had occurred and
23 posed a serious threat to human health and the
24 environment, taking appropriate action to remedy
25 those releases and find the parties responsible

1 for the environmental hazards to pay for the
2 clean up activities.

3 The overall CERCLA process is shown
4 graphically on a poster in the back there. It is
5 important to note that at this stage of the
6 CERCLA process, we are looking for input from the
7 public on the Army's recommendations for these
8 sites.

9 For each site, I am going to discuss the
10 investigations performed and summarize the
11 results of a couple of the assessments. There is
12 a Fate and Transport Assessment, a Human Health
13 Risk Assessment and an Ecological Risk
14 Assessment.

15 The Fate and Transport Assessment evaluated
16 if the chemicals in the sediment could adversely
17 affect the groundwater. The Human Health Risk
18 Assessment determined if chemicals in the
19 sediment or surface water posed an unacceptable
20 risk to future users at the site. And the
21 Ecological Risk Assessment assessed if there are
22 any important or significant ecological resources
23 at the site, and if chemical contamination
24 requires an action to protect those resources.

25 And then all of these assessments help

1 determine if the site requires remediation, and
2 if that site can be used for Unrestricted Land
3 Use, which allows the Army to use the site with
4 no restrictions; or if the site can be used for
5 Commercial Industrial Land Use, which allows the
6 Army to use the site, but there may be some
7 restrictions put in place.

8 On this side, you can see the location of
9 the Former Ravenna Army Ammunition Plant, or as
10 it is known now as Camp James A. Garfield within
11 the State of Ohio. And then in the bottom right
12 figure, you see the locations of our six Areas of
13 Concern. And they are also Figure 1 in your
14 handout.

15 The first site I am going to talk about is
16 the Ramsdell Quarry Landfill Area 1. I will
17 probably refer to it as RQL Area 1. It is a site
18 that is approximately 14 acres. Where the quarry
19 bottom is, it is about 40 feet below the
20 surrounding area. There was a landfill, it is
21 closed now, that was in the south and west
22 sections of the quarry. Currently there is a
23 soil cover and vegetation on top of the
24 landfill. The site is fenced. And there are
25 intermittent ponds at the quarry bottom. You

1 can see a map of RQL Area 1 in Figure 2 of your
2 handout.

3 The quarry was in operation until 1941.
4 The excavated material was used for road and
5 construction ballast. From 1946 to the 1950s,
6 the quarry bottom was used to thermally treat
7 explosives from Load Line 1. From 1941 to 1989,
8 the western and southern sections of the quarry
9 were used for landfill operations. From 1976 to
10 1989, solid waste materials were disposed in the
11 landfill. And from 1978 to 1990, the State of
12 Ohio permitted a portion of the quarry as a
13 sanitary landfill.

14 Now, RQL Area 1 was investigated under two
15 separate programs; the Installation Restoration
16 Program, or IRP, and the Military Munitions
17 Response Program, or MMRP.

18 For the IRP Investigations, it included a
19 Phase I Remedial Investigation where surface
20 soil and groundwater samples were collected.
21 Contaminants of concern were identified in
22 surface water and sediment using historical
23 data. So the Remedial Investigation recommended
24 proceeding with a Feasibility Study.

25 The Feasibility Study assessed contaminated

1 soil and dry sediment at the quarry bottom. The
2 remedial alternatives were developed to remediate
3 the contaminated soil and implement land use
4 controls to prevent exposure.

5 So in 2010, there was a Sediment Remedial
6 Action -- or Soil and Dry Sediment Remedial
7 Action, which included the removal of 1,100 tons
8 of contaminated soil from the quarry bottom;
9 installing perimeter fencing; restoring some
10 wetlands and implementing land use controls.

11 Under the MMRP, there was also a Remedial
12 Investigation that included digital geophysical
13 mapping, intrusive investigation of anomalies,
14 underwater investigation of pond sediment where
15 no MEC or munitions debris were found. So the
16 Remedial Investigation recommended no further
17 investigation.

18 And here, in this photo, you can see there
19 is an Unexploded Ordnance Technician using a
20 magnetometer to detect metallic anomalies.

21 So in 2016, a Supplemental Remedial
22 Investigation focusing on surface water and
23 sediment was conducted to evaluate the potential
24 for human health and ecological Chemicals of
25 Concern in surface water and sediment.

1 During the Remedial Investigation, four
2 additional sediment samples were collected.
3 However, when those surface water samples were
4 planned, there was no surface water present
5 during the sampling event, but it was determined
6 that we had enough data to be able to
7 characterize the site.

8 So in total, 22 sediment samples and 11
9 surface water samples were analyzed for metals,
10 explosives, pesticides, PCBs, SVOCs, VOCs,
11 cyanide and nitrate to evaluate the RQL Area 1.

12 The Supplemental Remedial Investigation
13 concluded that the nature and extent of
14 contamination for surface water and sediment is
15 defined, so no further sampling will be
16 required. No further action was required to
17 protect human health, because during the Human
18 Health Risk Assessment, no chemicals of concern
19 were identified in the surface water or
20 sediment.

21 No further action is required to protect
22 ecological resources. And no further action is
23 required to protect groundwater.

24 So the Army, in coordination with Ohio EPA,
25 is recommending no further action to attain

1 Unrestricted Land Use for sediment and surface
2 water at Ramsdell Quarry Landfill Area 1.

3 The next site is Ramsdell Quarry Landfill
4 MRS Area 2, or RQL Area 2. This is an
5 approximately 7 acre site south of RQL Area 1.
6 And if you look at Figure 3 on your handout, you
7 will see where the sites are in relation to each
8 other.

9 There was a small, inactive soil borrow pit.
10 There is a wooded area where munitions debris has
11 been found. There is a small wetland within the
12 former soil borrow pit. And surface runoff flows
13 east towards the borrow pit during heavy rain
14 events. And there is a map -- Figure 4 is a map
15 of the site.

16 There is very little information available
17 regarding the historical operations. But it is
18 suspected that the area was used as a disposal
19 area for the munitions that were thermally
20 treated at RQL Area 1. But the area is remote
21 and it is not easily accessible.

22 Under the MMRP -- this site was investigated
23 under the MMRP. There was a Remedial
24 Investigation conducted that included digital
25 geophysical mapping and intrusive investigation

1 of anomalies, and two surface soil samples were
2 collected. And the results indicated that no MEC
3 was found, but munitions debris was encountered.

4 The risk assessments indicated that there
5 were no chemical risks to human or ecological
6 receptors. But it should be noted that sediment
7 and surface water in the soil borrow pit and
8 wetland area were not sampled.

9 So in 2016, the Supplemental Remedial
10 Investigation did collect samples from RQL Area
11 2. There are four additional sediment samples
12 that were collected and analyzed for metals,
13 SVOCs, nitrocellulose, explosives, propellants,
14 PCBs, total organic carbon and pH. But similar
15 to RQL Area 1, surface water was not present at
16 the time of the investigation.

17 The Supplemental Remedial Investigation
18 concluded that the nature and extent of
19 contamination for surface water and sediment is
20 defined, so no further sampling is required. No
21 further action is required to protect human
22 health, because no chemicals of concern were
23 identified during the Human Health Risk
24 Assessment in the surface water or sediment.

25 No further action is required to protect

1 ecological resources. And no further action is
2 required to protect groundwater.

3 So the Army, in coordination with Ohio EPA,
4 is recommending no further action to attain
5 Unrestricted Land Use for sediment and surface
6 water at Ramsdell Quarry Landfill MRS Area 2.

7 Our next site is the Erie Burning Grounds.
8 It is an approximately 35 acre site with an
9 access road surrounding it. There were three
10 pairs of shallow trenches that were connected to
11 an original creek channel that flowed through
12 the center of the site. The surface water
13 drainage flows from north to southwest. And the
14 site has been mostly inundated since the early
15 1990s due to the topography of the area, as well
16 as beaver activity. And as a result, a majority
17 of the site is considered a wetland. The map of
18 the Erie Burning Grounds is available as Figure 5
19 in your handout.

20 From 1941 to 1951, open burning of
21 explosives and related materials took place at
22 the Erie Burning Grounds. Some of these related
23 materials included bulk explosives, propellants
24 and general materials that were in Army railcars
25 that were used for transporting explosives.

1 There are some aerial photographs that
2 depict open boxcars staged at the end of Track
3 49, which is shown on the figure. And it is
4 assumed that the materials were tipped out of the
5 cars on either side of the embankment to be
6 burned.

7 There are also 1941 Engineering Drawings
8 that show a waste chute north of Track 49 that
9 leads to a designated burning area.

10 This site was also investigated under both
11 the IRP and MMRP. The IRP Investigations
12 included a Phase I Remedial Investigation where
13 soil, sediment and surface water samples were
14 collected. And contaminants of concern were
15 identified in all three media.

16 So the Phase I RI recommended additional
17 characterization, which was done in a Phase II
18 Remedial Investigation, where surface soil,
19 sediment, surface water and groundwater samples
20 were collected and evaluated.

21 The Human Health Risk Assessment indicated
22 that surface water did not require remediation.
23 However, there was one chemical of concern
24 identified in wet sediment that required further
25 evaluation for Unrestricted Land Use.

1 The Ecological Risk Assessment concluded
2 that remediating the soil or sediment wasn't
3 warranted and would actually cause more
4 ecological damage than the contaminant reduction
5 was worth.

6 So in total, 114 sediment samples and 33
7 surface water samples were analyzed for metals,
8 explosives, pesticides, PCBs, SVOCs, VOCs,
9 cyanide and hexavalent chromium for the Erie
10 Burning Grounds.

11 Under the MMRP, there was a Remedial
12 Investigation conducted that included digital
13 geophysical mapping, intrusive investigation of
14 anomalies and surface water and sediment
15 sampling. No MEC was found. However, MD --
16 munitions debris was encountered.

17 The Human Health and Ecological Risk
18 Assessments did not find any chemicals of
19 concern. And the Remedial Investigation
20 concluded that no further investigation was
21 required.

22 In 2016, during a Work Plan Analysis, the
23 Erie Burning Grounds data was evaluated, and the
24 Work Plan concluded that no further action was
25 required. And this was based on previous

1 sampling of the sediment and surface water during
2 the Phase II RI and the MMRP RI, in determining
3 that that was a comprehensive investigation, and
4 that there weren't any data gaps between the
5 Phase II RI and the MMRP RI.

6 And, furthermore, no chemicals in surface
7 water and sediment are present at concentrations
8 high enough to pose any risk to human or
9 ecological receptors.

10 So the Army, in coordination with the Ohio
11 EPA, is recommending no further action to attain
12 Unrestricted Land Use for sediment and surface
13 water at the Erie Burning Grounds.

14 The next site is Open Demolition Area
15 Number 2, which I will refer to as ODA2. The
16 site is approximately 35 acres and has gravel
17 access roads throughout. There are two
18 above-ground earth covered magazines on site, but
19 a lot of the site is vegetated with native
20 grasses and surrounded by mature hardwood forest.
21 Surface water flows to Sand Creek. And the map
22 is available for ODA2 as Figure 6 in your
23 handout.

24 Since 1948, ODA2 was used to detonate large
25 caliber munitions and bulk explosives. From 1981

1 to 1986, the open burning area was used to
2 thermally destroy sludge from the Load Line 6
3 Evaporation Unit. Munitions and ordnance
4 components were buried on site.

5 White phosphorus was disposed on the south
6 side of Sand Creek. And projectiles were fired
7 into targets in the 40 millimeter Prototype
8 Testing Range. So due to the potential for MEC,
9 ODA2 is currently managed as a restricted access
10 site. And the area is closed off to all normal
11 training and administrative activities.

12 This site was also investigated under both
13 the IRP and MMRP. For the IRP Investigations,
14 it included a Phase I Remedial Investigation
15 which assessed soil and sediment. And the
16 determination that was made was that contaminants
17 are not migrating away from ODA2 via surface
18 runoff.

19 A Phase II Remedial Investigation and
20 Addendum assessed soil, surface water and
21 sediment. And the Human Health and Ecological
22 Risk Assessments concluded that no further action
23 was needed for soil and dry sediment.

24 So in 2016, the Supplemental Remedial
25 Investigation was conducted. And because of the

1 existing sediment and surface water data, no
2 additional surface water or sediment samples were
3 required.

4 A total of 20 sediment samples and 66
5 surface water samples that were analyzed for
6 metals, explosives, pesticides, PCBs, SVOCs,
7 VOCs, cyanide and hexavalent chromium were used
8 to evaluate ODA2.

9 A Remedial Investigation was also conducted
10 under the MMRP. And it included digital
11 geophysical mapping, intrusive investigation of
12 anomalies and soil sampling for munitions
13 constituents.

14 No human health risk to the anticipated
15 receptors was found. Ecological risk was present
16 in the surface soil, so the result was a
17 recommendation for evaluation in a Feasibility
18 Study.

19 There were several removal actions conducted
20 at ODA2. In 2009, there was a Time Critical
21 Removal Action of approximately 770 cubic yards
22 of material, which included soil and material --
23 materials potentially presenting an explosive
24 hazard, or MPPEH, from the Rocket Ridge Area.

25 In 2011, another TCRA, or Time Critical

1 Removal Action, was performed and removed 488
2 cubic yards of material including soil and MEC
3 items.

4 And then recently, another Removal Action
5 was conducted at ODA2, and MEC and MPPEH
6 materials were removed. And it is important to
7 note that best management practices were
8 implemented during all of these removal actions
9 to make sure that contaminants weren't released
10 to the surface water or sediment.

11 So the Supplemental Remedial Investigation
12 concluded, again, that nature and extent of the
13 contamination in surface water and sediment is
14 defined, and no further sampling is required. No
15 further action is required to protect human
16 health, because the Human Health Risk Assessment
17 did not identify sediment or surface water
18 chemicals of concern from previous activities.

19 No further action is required to protect
20 ecological resources. And no further action is
21 required to protect groundwater.

22 So the Army, in coordination with Ohio EPA,
23 is recommending no further action to attain
24 Unrestricted Land Use for sediment and surface
25 water at Open Demolition Area Number 2.

1 Our next site is the Fuze and Booster
2 Quarry Landfill/Ponds. It is an approximately 45
3 acre site with gravel roads going into and
4 through the site. There are three man-made
5 Quarry Ponds in the eastern portion of the Area
6 of Concern, and a drainage ditch that receives
7 surface water discharge from the southern Quarry
8 Pond with a culvert under the main access road.
9 And, again, this map is provided in the handout
10 as Figure 7.

11 From 1945 to 1976, this site was used for
12 open burning and as a landfill. And then in
13 1976, the Quarry Ponds were constructed to
14 receive spent discharge from one of the former
15 water plants. And during the construction, the
16 debris resulting from the open burning and
17 landfilling activities was removed. In 1993, the
18 operations were ceased.

19 The site was also investigated under both
20 the IRP and MMRP. The IRP Investigations
21 included a Phase I and Phase II Remedial
22 Investigation that evaluated soil, groundwater,
23 sediment and surface water. And contaminants of
24 concern were identified in the sediment and
25 surface water.

1 In 2003, a Facility-wide Biological Water
2 Quality Study assessed the surface water and
3 sediment from one of the Quarry Ponds and
4 determined that the surface water and sediment
5 quality in the Pond was sufficient to not
6 adversely affect the biological community.

7 There was a Feasibility Study conducted
8 that evaluated alternatives for soil and dry
9 sediment, and recommended the removal of
10 contaminated sediment in a drainage ditch. And
11 that sediment removal was conducted in 2010, as
12 you can see here. It included the removal of 184
13 tons of contaminated sediment from the drainage
14 ditch before restoring the site.

15 There was a Remedial Investigation conducted
16 under the MMRP. And that included digital
17 geophysical mapping, intrusive investigation of
18 anomalies, underwater investigation of pond
19 sediment and sediment sampling for munitions
20 constituents.

21 No MEC was found, but munitions debris was
22 encountered and recovered. There were no
23 munitions-related human health or ecological
24 chemicals of concern identified. And the Army
25 selected a No Further Action alternative for the

1 site under the MMRP.

2 In 2016, a Supplemental Remedial
3 Investigation focusing on surface water and
4 sediment was conducted. And because of the
5 extent of dataset that already existed,
6 additional surface water and sediment samples
7 weren't required.

8 In all, 59 sediment samples and 20 surface
9 water samples were analyzed for metals,
10 explosives, pesticides, PCBs, SVOCs, VOCs,
11 perchlorate and hexavalent chromium to evaluate
12 the Fuze and Booster Quarry Landfill/Ponds.

13 As a result, the Supplemental RI concluded
14 that the nature and extent of contamination in
15 the surface water and sediment is defined. And
16 no further sampling is required. No further
17 action is required to protect human health,
18 because chemicals of concern were not identified
19 in sediment or surface water.

20 No further action is required to protect
21 ecological resources. And no further action is
22 required to protect groundwater.

23 So the Army, in coordination with Ohio EPA,
24 is recommending no further action to attain
25 Unrestricted Land Use for sediment and surface

1 water at Fuze and Booster Quarry Landfill/
2 Ponds.

3 Our last site is the Block D Igloo. This is
4 an area within a suspected debris field from an
5 accidental igloo explosion in 1943. The site is
6 a semi-circle with a 3,000 foot radius. And the
7 slab of the igloo is the only remaining part of
8 the bunker.

9 Surface water flows towards the southeast
10 about 1,000 feet to an unnamed tributary to Sand
11 Creek and is a permanent surface water feature
12 there. Wetlands are present at the site. And
13 the map is provided for you as Figure 8 in your
14 handout.

15 So in 1943, Igloo 7-D-15 ("D" Block)
16 accidentally exploded. It was a 60 foot long
17 igloo constructed with reinforced concrete and a
18 steel door. And the igloo was at 95 percent
19 capacity when the explosion occurred. The side
20 walls of the igloo were sheared off at the
21 footings during the explosion, and the steel door
22 was propelled 1,800 feet to the east.

23 This site was investigated under the MMRP.
24 There was a Remedial Investigation conducted that
25 included an instrument-assisted visual survey and

1 intrusive investigation of subsurface anomalies.
2 Both MEC and munitions debris were found at the
3 site and soil samples were collected.

4 The Human Health Risk Assessment and the
5 Ecological Risk Assessment concluded that there
6 were no chemical risks to human or environmental
7 receptors. However, this -- the site is still
8 being actively investigated. And a Remedial
9 Action for Munitions is anticipated and would
10 include instrument aided surface sweeps for
11 munitions and manual removal.

12 This would also include areas that are
13 saturated and wetlands within the Block D Igloo,
14 but no remedial action is required for chemical
15 exposure.

16 The 2016 Work Plan evaluated data related to
17 the unnamed tributary to Sand Creek and concluded
18 that no further action was required to address
19 the chemicals in the unnamed tributary to Sand
20 Creek. MEC and munitions debris were not
21 observed during the visual survey in the
22 tributary.

23 And the Human Health and Ecological Risk
24 Assessments concluded that there were no chemical
25 risks to human or environmental receptors.

1 However, as I mentioned earlier, the Army is
2 planning additional munitions investigation and
3 the removal of at the site under the MMRP.

4 So the Army, in coordination with Ohio EPA,
5 is recommending no further action to attain
6 Unrestricted Land Use for sediment and surface
7 water at the Block D Igloo.

8 As I indicated earlier, public participation
9 is an important component of remedy selection at
10 these sites. The Army is requesting your input
11 and will accept written comments until September
12 10th.

13 With that, I turn it over to Barb.

14 **MS. TITTLE:** Thank you, Rupa.

15 So you can ask questions tonight, or you
16 can provide written or verbal comments at this
17 meeting or after this meeting, and you can submit
18 them to Ms. Tait at the Environmental Office at
19 the Camp Garfield Military Training Center. And
20 her address is there if you wish to note that for
21 future use.

22 Otherwise, if anyone has any questions at
23 this time, please stand up, let us know what your
24 name is and where you are from, and we will try
25 to find an answer to your question.

1 And I will ask one more time. If anyone has
2 any questions, just let us know.

3 Seeing no questions, I will therefore
4 adjourn the meeting. Thanks so much for coming
5 tonight.

6 (Thereupon, the public meeting
7 was concluded at 7:03 p.m.)

8 - - -

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

A	16:16	1:15 5:22 10:9	10:6,9 13:24	7:13
abandoned	Adams	Analysis	16:3,24 19:10	ballast
8:18	3:11	18:22	22:22 24:24	11:5
able	Addendum	analyzed	25:23 28:1,4	Barb
5:9 13:6	20:20	13:9 15:12 18:7	28:10	28:13
above-ground	addition	21:5 25:9	Army's	Barbara
19:18	6:18	and/or	5:7,19 6:23 9:7	3:3 5:3 7:4
accept	additional	7:18	ARNG	based
28:11	7:17 13:2 15:11	anomalies	4:6,7	18:25
access	17:16 21:2	12:13,20 15:1	Arsenal	beaver
16:9 19:17 20:9	25:6 28:2	18:14 21:12	5:22	16:16
23:8	address	24:18 27:1	assessed	best
accessible	27:18 28:20	answer	9:21 11:25 20:15	22:7
14:21	addressed	28:25	20:20 24:2	biological
accidental	7:19,25 8:3	anticipated	Assessment	24:1,6
26:5	addressing	21:14 27:9	9:12,13,14,15,18	bit
accidentally	6:8	AOC's	9:21 13:18	7:13
26:16	adjourn	7:14	15:24 17:21	Block
acre	29:4	APPEARANC...	18:1 22:16	1:13 6:2 26:3,15
14:5 16:8 23:3	adjournment	3:1	27:4,5	27:13 28:7
acres	30:12	appropriate	assessments	Booster
10:18 19:16	administrative	8:24	9:11,25 15:4	1:12 6:1 23:1
acronyms	20:11	approximately	18:18 20:22	25:12 26:1
7:9	adversely	10:18 14:5 16:8	27:24	borrow
Act	9:16 24:6	19:16 21:21	associated	14:9,12,13 15:7
8:16	aerial	23:2	8:10	bottom
action	17:1	April	assumed	10:11,19,25 11:6
8:24 9:24 12:6,7	affect	30:24	17:4	12:1,8
13:16,21,22,25	9:17 24:6	area	attain	Boulevard
15:21,25 16:1	affiliated	1:9,10,11 5:24	13:25 16:4 19:11	3:7,13,20
16:4 18:24	30:16	5:25 10:16,17	22:23 25:24	boxcars
19:11 20:22	affixed	10:20 11:1,14	28:5	17:2
21:21 22:1,4	30:18	13:11 14:2,4,4	attorney	brief
22:15,19,20,23	aforesaid	14:5,10,18,19	30:13	8:4
24:25 25:17,20	30:9	14:20,20 15:8	August	bulk
25:21,24 27:9	aided	15:10,15 16:6	1:24	16:23 19:25
27:14,18 28:5	27:10	16:15 17:9	available	bunker
30:14	Akron	19:14 20:1,10	14:16 16:18	26:8
actions	30:18	21:24 22:25	19:22	buried
21:19 22:8	allows	23:5 26:4	aware	20:4
actively	10:3,5	areas	7:6	burned
27:8	alternative	1:6 5:24 7:12	B	17:6
activities	24:25	10:12 27:12	back	burning
9:2 20:11 22:18	alternatives	Army	5:16 9:4	1:11 5:24 16:7
23:17	12:2 24:8	1:15 5:21 6:10	background	16:18,20,22
activity	Ammunition	6:22 7:15 10:3		17:9 18:10,23

19:13 20:1 23:12,16	chromium 18:9 21:7 25:11	8:15 19:3	20:16 22:9 23:23	10:22 20:9
<hr/> C <hr/>	chute 17:8	Computer-Aid... 30:8	contaminated 11:25 12:3,8 24:10,13	cyanide 13:11 18:9 21:7
C	citizen 5:3	concern 7:12 10:13 11:21 12:25 13:18 15:22 17:14,23 18:19 22:18 23:6,24 24:24 25:18	contamination 9:23 13:14 15:19 22:13 25:14	<hr/> D <hr/>
30:1,1	Civil 30:16	CONCERN/... 1:6	contract 7:20 30:16	D
caliber 19:25	clean 9:2	concluded 13:13 15:18 18:1 18:20,24 20:22 22:12 25:13 27:5,17,24 29:7	contractor 6:21	1:13 6:2 26:3,15 27:13 28:7
Camp 1:2 10:10 28:19	cleaning 8:6	conclusions 8:9	controls 12:4,10	damage 18:4
capacity 26:19	closed 10:21 20:10	concrete 26:17	coordination 13:24 16:3 19:10 22:22 25:23 28:4	data 11:23 13:6 18:23 19:4 21:1 27:16
caption 30:11	collect 15:10	concurs 6:14	copy 7:8	dataset 25:5
carbon 15:14	collected 11:20 13:2 15:2 15:12 17:14,20 27:3	conducted 12:23 14:24 18:12 20:25 21:9,19 22:5 24:7,11,15 25:4 26:24	correct 30:9	day 30:19
cars 17:5	coming 29:4	connected 16:10	counsel 30:14	debris 12:15 14:10 15:3 18:16 23:16 24:21 26:4 27:2,20
cause 18:3	comment 5:7,9	considered 6:4 16:17	COUNTIES 1:16	December 8:17
ceased 23:18	comments 6:3,8 7:1 28:11 28:16	constituents 21:13 24:20	COUNTY 30:4	decision 6:6,7 7:18 8:3
center 16:12 28:19	Commercial 10:5	constructed 23:13 26:17	couple 9:11	decisions 7:24 8:1
CERCLA 7:16,18 8:5,14 8:14 9:3,6	commission 30:24	construction 11:5 23:15	court 6:18 30:16	defined 13:15 15:20 22:14 25:15 30:16
certify 30:7,10,13,15	commissioned 30:6	contaminant 18:4	cover 10:23	Demolition 1:11 5:25 19:14 22:25
channel 16:11	Commons 3:7,13,20	contaminants 11:21 17:14	covered 19:18	depict 17:2
characterization 17:17	community 24:6		creek 16:11 19:21 20:6 26:11 27:17,20	description 8:4
characterize 13:7	Compensation 8:16		Critical 21:20,25	designated 17:9
Charlestown 2:1	completed 30:11		cubic 21:21 22:2	designed 8:21
chemical 9:23 15:5 17:23 27:6,14,24	component 28:9		culvert 23:8	destroy 20:2
chemicals 9:16,18 12:24 13:18 15:22 18:18 19:6 22:18 24:24 25:18 27:19	components 20:4		currently	
	comprehensive			

detect 12:20	17:7	Engineer 3:5,18 6:21	exits 5:15	10:12,13 11:1 14:6,14 16:18
determination 20:16	dry 8:2 12:1,6 20:23 24:8	Engineering 17:7	expires 30:24	17:3 19:22 23:10 26:13
determine 10:1	due 16:15 20:8	ensure 5:8	exploded 26:16	figures 7:9
determined 9:18 13:5 24:4	duly 30:6	entrance 5:16	explosion 26:5,19,21	final 6:5 8:11
determining 6:5 19:2	<hr/> E <hr/>	environment 8:20,24	explosive 21:23	financially 30:14
detonate 19:24	E 30:1,1	environmental 3:5,18 6:20 8:15 9:1 27:6,25 28:18	explosives 11:7 13:10 15:13 16:21,23,25 18:8 19:25 21:6 25:10	find 8:25 18:18 28:25
developed 12:2	earlier 28:1,8	EPA 4:5 6:11,11,13 13:24 16:3 19:11 22:22 25:23 28:4	exposure 12:4 27:15	fired 20:6
devices 5:14	early 16:14	Erie 1:11 5:24 16:7 16:18,22 18:9 18:23 19:13	extent 13:13 15:18 22:12 25:5,14	firm 30:16
digital 12:12 14:24 18:12 21:10 24:16	earth 19:18		<hr/> F <hr/>	first 10:15
discharge 23:7,14	easily 14:21		F 30:1	floor 7:1 8:12
discovery 8:17	east 14:13 26:22	evaluate 12:23 13:11 21:8 25:11	facilitator 3:3 5:5	flowed 16:11
discuss 7:11 8:9 9:9	eastern 23:5	evaluated 9:15 17:20 18:23 23:22 24:8 27:16	Facility-Wide 7:23 24:1	flows 14:12 16:13 19:21 26:9
disposal 14:18	ecological 9:13,21,22 12:24 13:22 15:5 16:1 18:1,4,17 19:9 20:21 21:15 22:20 24:23 25:21 27:5,23	evaluation 7:17 17:25 21:17	Fate 9:12,15	focusing 12:22 25:3
disposed 11:10 20:5		Evaporation 20:3	Feasibility 11:24,25 21:17 24:7	Following 6:25
ditch 23:6 24:10,14	either 17:5	evening 5:1 7:5	feature 26:11	foot 26:6,16
dive 8:7	electronic 5:13	event 13:5	features 8:7	footings 26:21
document 6:19	Email 3:24	events 14:14	feet 10:19 26:10,22	foregoing 30:8,11
documented 6:6	embankment 17:5	excavated 11:4	fenced 10:24	forest 19:20
documents 8:3	emergency 5:15	existed 25:5	fencing 12:9	former 1:15 5:21 10:9 14:12 23:14
door 26:18,21	employee 30:13	existing 7:20 21:1	field 26:4	found 12:15 14:11 15:3 18:15 21:15 24:21 27:2
drainage 16:13 23:6 24:10 24:13	encountered 15:3 18:16 24:22		figure 13:1 15:11	
Drawings				

framework 8:5 further 12:16 13:15,16 13:21,22,25 15:20,21,25 16:1,4 17:24 18:20,24 19:11 20:22 22:14,15 22:19,20,23 24:25 25:16,16 25:20,21,24 27:18 28:5 30:10,13,15 furthermore 19:6 future 9:20 28:21 Fuze 1:12 6:1 23:1 25:12 26:1	16:18,22 18:10 18:23 19:13 groundwater 7:22,23,24 9:17 11:20 13:23 16:2 17:19 22:21 23:22 25:22	high 19:8 historical 8:7 11:22 14:17 human 8:20,23 9:12,17 12:24 13:17,17 15:5,21,23 17:21 18:17 19:8 20:21 21:14 22:15,16 24:23 25:17 27:4,6,23,25	17:12 18:12 20:14 21:10,22 23:21 24:12,16 26:25 including 22:2 indicated 15:2,4 17:21 28:8 Industrial 10:5 information 6:22 14:16 input 9:6 28:10 Installation 11:15 installing 12:9 instrument 27:10 instrument-as... 26:25 interested 30:14 intermittent 10:25 intrusive 12:13 14:25 18:13 21:11 24:17 27:1	13:12 14:24,25 15:10,16,17 17:12,18 18:12 18:13,19,20 19:3 20:14,19 20:25 21:9,11 22:11 23:22 24:15,17,18 25:3 26:24 27:1 28:2 investigations 7:16 8:8 9:10 11:18 17:11 20:13 23:20 IRP 11:16,18 17:11 17:11 20:13,13 23:20,20 items 22:3
<hr/> G <hr/>	<hr/> H <hr/>	<hr/> I <hr/>	<hr/> J <hr/>	<hr/> K <hr/>
gaps 19:4 Garfield 1:2 10:10 28:19 general 16:24 geophysical 12:12 14:25 18:13 21:11 24:17 going 7:11 9:9 10:15 23:3 Good 5:1 7:5 graphically 9:4 grasses 19:20 gravel 19:16 23:3 Grounds 1:11 5:25 16:7	Hall 2:1 hand 30:18 handout 10:14 11:2 14:6 16:19 19:23 23:9 26:14 handouts 7:7 hardwood 19:20 hazard 21:24 hazardous 8:19,22 hazards 9:1 health 8:20,23 9:12,17 12:24 13:17,18 15:22,23 17:21 18:17 20:21 21:14 22:16,16 24:23 25:17 27:4,23 Heather 3:11 heavy 14:13 help 5:18 9:25 hereunto 30:18 hexavalent 18:9 21:7 25:11	identified 7:15 11:21 13:19 15:23 17:15,24 23:24 24:24 25:18 identify 8:21 22:17 igloo 1:13 6:2 26:3,5 26:7,15,17,18 26:20 27:13 28:7 II 4:3 17:17 19:2,5 20:19 23:21 implement 12:3 implemented 22:8 implementing 12:10 important 7:21 9:5,22 22:6 28:9 inactive 14:9 include 6:7 27:10,12 included 11:18 12:7,12 14:24 16:23	instrument-as... 26:25 intrusive 12:13 14:25 18:13 21:11 24:17 27:1 inundated 16:14 inventory 7:15 investigated 7:22 11:14 14:22 17:10 20:12 23:19 26:23 27:8 investigating 8:6 investigation 7:23 11:19,23 12:12,13,14,16 12:17,22 13:1	James 1:2 10:10 Jed 3:17 jed.h.thomas... 3:24 Jerri 30:5,21
			<hr/> L <hr/>	land 10:2,5 12:3,10 14:1 16:5

17:25 19:12 22:24 25:25 28:6 landfill 5:24 6:1 10:16 10:20,24 11:9 11:11,13 14:2 14:3 16:6 23:12 Landfill/ 26:1 LANDFILL/... 1:9,10 Landfill/Ponds 1:12 23:2 25:12 landfilling 23:17 large 8:18 19:24 Laurich 4:2 leads 17:9 leaking 8:18 Leidos 1:19 3:6,12,19 4:2,4 6:21 Liability 8:16 Line 11:7 20:2 list 7:8 little 7:13 14:16 Load 11:7 20:2 located 5:15,17 location 10:8 locations 10:12 long 26:16	look 14:6 looking 9:6 lot 19:19 Lynn 30:5,21 <hr/> M <hr/> magazines 19:18 magnetometer 12:20 main 23:8 majority 16:16 man-made 23:4 managed 20:9 management 22:7 manual 27:11 map 11:1 14:14,14 16:17 19:21 23:9 26:13 mapping 12:13 14:25 18:13 21:11 24:17 material 11:4 21:22,22 22:2 materials 11:10 16:21,23 16:24 17:4 21:23 22:6 mature 19:20 MD 18:15 means	30:8 MEC 12:15 15:2 18:15 20:8 22:2,5 24:21 27:2,20 media 5:21 17:15 meeting 1:2,22 5:2,6,19 6:19 28:17,17 29:4,6 meeting's 5:5 mentioned 28:1 metallic 12:20 metals 13:9 15:12 18:7 21:6 25:9 migrating 20:17 Military 11:16 28:19 millimeter 20:7 MMRP 11:17 12:11 14:22,23 17:11 18:11 19:2,5 20:13 21:10 23:20 24:16 25:1 26:23 28:3 moment 5:13 MPPEH 21:24 22:5 munitions 11:16 12:15 14:10,19 15:3 18:16 19:25 20:3 21:12 24:19,21 27:2 27:9,11,20 28:2	munitions-rela... 24:23 <hr/> N <hr/> name 5:2 28:24 Nathaniel 4:3 native 19:19 nature 13:13 15:18 22:12 25:14 needed 7:17 20:23 Nicholas 4:5 Nick 6:10 nitrate 13:11 nitrocellulose 15:13 normal 20:10 north 16:13 17:8 Notary 30:6,22 note 7:21 9:5 22:7 28:20 noted 15:6 number 5:25 8:18 19:15 22:25 <hr/> O <hr/> observed 27:21 occurred 8:22 26:19 ODA2 19:15,22,24 20:9 20:17 21:8,20 22:5	office 28:18 30:18 Ohio 1:16 2:3 3:9,15 3:22 4:5,7 5:4 6:11,11,13 10:11 11:12 13:24 16:3 19:10 22:22 25:23 28:4 30:3,6,19,22 open 1:11 5:25 6:25 8:12 16:20 17:2 19:14 20:1 22:25 23:12,16 opening 6:12 operation 11:3 operations 8:8 11:9 14:17 23:18 opportunities 5:7 opportunity 5:10 ordnance 12:19 20:3 organic 15:14 original 16:11 overall 9:3 <hr/> P <hr/> P.G 3:11 p.m 29:7 packet 7:9 pairs 16:10
---	---	---	---	---

part 7:20 26:7	12:18	prepared 30:8	6:4,14,23	rain 14:13
participation 8:10 28:8	photographs 17:1	present 4:1 5:19 6:22 13:4 15:15 19:7 21:15 26:12	protect 9:24 13:17,21,23 15:21,25 16:2 22:15,19,21 25:17,20,22	Ramsdell 1:9,10 5:23 10:16 14:2,3 16:6
particular 7:14	pit 14:9,12,13 15:7	presentation 6:25 7:8	Prototype 20:7	Range 20:8
parties 8:25	place 10:7 16:21 30:11	Presented 1:18	provide 28:16	Ravenna 1:15 2:3 5:21 10:9
party 30:13	plan 1:4 5:8,10,20 6:4,14,24 18:22,24 27:16	presenter 6:19	provided 23:9 26:13	reach 7:17
passed 8:16	planned 13:4	presenting 21:23	public 1:2,22 5:2,6,7,19 6:3,8 8:10 9:7 28:8 29:6 30:6 30:22	receive 23:14
pay 9:1	planning 28:2	prevent 12:4	put 10:7	received 6:3
PCBs 13:10 15:14 18:8 21:6 25:10	Plant 1:15 5:22 10:9	previous 18:25 22:18	<hr/> Q <hr/>	receives 23:6
PE 3:17	plants 23:15	Price 1:19 3:5 6:20 7:3	qualified 30:6	receptors 15:6 19:9 21:15 27:7,25
percent 26:18	please 5:12,17 28:23	private 5:3	quality 24:2,5	recommendati... 8:11 21:17
perchlorate 25:11	PMP 3:17	probably 10:17	quarry 1:9,10,12 5:23 6:1 10:16,18 10:22,25 11:3 11:6,8,12 12:1 12:8 14:2,3 16:6 23:2,5,7 23:13 24:3 25:12 26:1	recommendati... 9:7
performed 7:15 9:10 22:1	pond 12:14 23:8 24:5 24:18	proceeding 11:24	question 28:25	recommended 11:23 12:16 17:16 24:9
perimeter 12:9	ponds 6:1 10:25 23:5 23:13 24:3 26:2	proceedings 30:7,9,10	questions 7:1 8:12 28:15 28:22 29:2,3	recommending 13:25 16:4 19:11 22:23 25:24 28:5
permanent 26:11	PORTAGE 1:16	process 9:3,6	<hr/> R <hr/>	Record 6:6,6
permitted 11:12	portion 11:12 23:5	produced 30:8	radius 26:6	recovered 24:22
pesticides 13:10 18:8 21:6 25:10	pose 19:8	Program 11:16,17	railcars 16:24	reduced 30:7
Peters 4:3	posed 8:19,23 9:19	programs 11:15		reduction 18:4
pH 15:14	poster 9:4	projectiles 20:6		refer 10:17 19:15
Phase 11:19 17:12,16 17:17 19:2,5 20:14,19 23:21 23:21	potential 12:23 20:8	propellants 15:13 16:23		reference 7:10
phosphorus 20:5	potentially 21:23	propelled 26:22		refreshments
photo	practices 22:7	proposed 1:4 5:8,10,20		

5:18	removed	23:16	4:2	Sedlak
regarding	22:1,6 23:17	results		4:6 6:9
6:23 14:17	reporter	9:11 15:2	S	see
reinforced	6:18 30:6,22	reviewed	sampled	7:16 10:8,12
26:17	reporting	6:14	15:8	11:1 12:18
related	30:16	RI	samples	14:7 24:12
7:24 8:1 16:21	representing	17:16 19:2,2,5,5	11:20 13:2,3,8,9	Seeing
16:22 27:16	6:10,11	25:13	15:1,10,11	29:3
relation	requesting	Ridge	17:13,19 18:6	selected
14:7	28:10	21:24	18:7 21:2,4,5	24:25
relative	require	right	25:6,8,9 27:3	selection
30:13	17:22	5:17 10:11	sampling	28:9
released	required	risk	13:5,15 15:20	semi-circle
22:9	13:16,16,21,23	9:13,13,17,20,21	18:15 19:1	26:6
releases	15:20,21,25	13:18 15:4,23	21:12 22:14	separate
8:22,25	16:2 17:24	17:21 18:1,17	24:19 25:16	8:3 11:15
remaining	18:21,25 21:3	19:8 20:22	Sand	separately
26:7	22:14,15,19,21	21:14,15 22:16	19:21 20:6 26:10	7:25
remark	25:7,16,17,20	27:4,5,23	27:17,19	September
6:12	25:22 27:14,18	risks	sanitary	28:11 30:19
remedial	requires	15:5 27:6,25	11:13	serious
8:8 11:19,23	9:24 10:1	road	saturated	8:19,23
12:2,5,6,11,16	resources	2:2 11:4 16:9	27:13	serve
12:21 13:1,12	9:22,24 13:22	23:8	seal	5:4
14:23 15:9,17	16:1 22:20	roads	30:18	serves
17:12,18 18:11	25:21	19:17 23:3	sections	5:6
18:19 20:14,19	Response	Robers	10:22 11:8	set
20:24 21:9	1:7 8:15 11:17	4:4	sediment	30:18
22:11 23:21	responsible	Rock	1:5 5:20 7:11,14	sets
24:15 25:2	5:8 8:25	2:2	7:19 8:2 9:16	8:5
26:24 27:8,14	Responsiveness	Rocket	9:19 11:22	shallow
remediate	6:7	21:24	12:1,5,6,14,23	16:10
12:2	Restoration	Roope	12:25 13:2,8	Sharon
remediating	11:15	4:5 6:10,13,17	13:14,20 14:1	4:4
18:2	restoring	RQL	15:6,11,19,24	sheared
remediation	12:9 24:14	10:17 11:1,14	16:5 17:13,19	26:20
10:1 17:22	restricted	13:11 14:4,5	17:24 18:2,6	show
remedy	20:9	14:20 15:10,15	18:14 19:1,7	17:8
6:5,15 8:24 28:9	restrictions	Rule	19:12 20:15,21	shown
remote	10:4,7	30:17	20:23 21:1,2,4	9:3 17:3
14:20	restrooms	runoff	22:10,13,17,24	side
removal	5:16	14:12 20:18	23:23,24 24:3	10:8 17:5 20:6
12:7 21:19,21	result	Rupa	24:4,9,10,11	26:19
22:1,4,8 24:9	16:16 21:16	1:19 3:5 6:20,20	24:13,19,19	significant
24:11,12 27:11	25:13	6:22 7:2 28:14	25:4,6,8,15,19	9:22
28:3	resulting	Ryan	25:25 28:6	silence

5:13	6:15	24:5	sweeps	tonight
similar	south	Suite	27:10	5:4 6:9,20 7:11
15:14	10:21 14:5 20:5	3:8,14,21		28:15 29:5
similarly	southeast	summarize	<hr/> T <hr/>	tonight's
8:1	26:9	9:10	T	6:19
site	southern	Summary	30:1,1	tons
8:6,7,9 9:9,20,23	11:8 23:7	6:7	Tait	12:7 24:13
10:1,2,3,4,6,15	southwest	SUMMIT	4:7 6:10 28:18	top
10:17,24 13:7	16:13	30:4	take	10:23
14:3,5,15,22	specified	Supplemental	5:13	topography
16:7,8,12,14	30:11	12:21 13:12 15:9	taken	16:15
16:17 17:10	spent	15:17 20:24	30:7,9,11	total
19:14,16,18,19	23:14	22:11 25:2,13	talk	13:8 15:14 18:6
20:4,10,12	Spring	sure	10:15	21:4
23:1,3,4,11,19	2:2	7:6 22:9	targets	Town
24:14 25:1	SS	surface	20:7	2:1
26:3,5,12,23	30:3	1:5 5:20 7:12,13	TCRA	Track
27:3,7 28:3	stage	7:18 9:19	21:25	17:2,8
sites	9:5	11:19,22 12:22	Technician	training
1:7 5:21,23 6:23	staged	12:25 13:3,4,9	12:19	20:11 28:19
6:24 7:17,22	17:2	13:14,19 14:1	Testing	transcription
8:2,11,19,21	stand	14:12 15:1,7	20:8	30:8,9
9:8 14:7 28:10	28:23	15:15,19,24	Thank	Transport
six	start	16:5,12 17:13	5:14 6:16 7:3	9:12,15
1:6 5:21,23 6:23	8:4	17:18,19,22	28:14	transporting
7:12 10:12	started	18:7,14 19:1,6	Thanks	16:25
slab	5:12 7:5	19:12,21 20:17	29:4	treat
26:7	State	20:20 21:1,2,5	thermally	11:6
slide	10:11 11:11 30:3	21:16 22:10,13	11:6 14:19 20:2	treated
7:8	30:6,22	22:17,24 23:7	Thomas	14:20
sludge	steel	23:23,25 24:2	3:17	trenches
20:2	26:18,21	24:4 25:3,6,8	threat	16:10
small	Stenographic	25:15,19,25	8:19,23	tributary
14:9,11	30:5,21	26:9,11 27:10	three	26:10 27:17,19
soil	Stenotypy	28:6	16:9 17:15 23:4	27:22
8:1 10:23 11:20	30:7	surrounded	Thursday	true
12:1,3,6,8 14:9	Study	19:20	1:23	30:8
14:12 15:1,7	11:24,25 21:18	surrounding	time	TRUMBULL
17:13,18 18:2	24:2,7	10:20 16:9	15:16 21:20,25	1:16
20:15,20,23	submit	survey	28:23 29:1	try
21:12,16,22	28:17	26:25 27:21	30:11	28:24
22:2 23:22	substances	suspected	tipped	turn
24:8 27:3	8:22	14:18 26:4	17:4	28:13
solid	subsurface	SVOCs	Title	Twinsburg
11:10	27:1	13:10 15:13 18:8	3:3 5:1,3 6:16	3:9,15,22
solution	sufficient	21:6 25:10	28:14	two

11:14 15:1 19:17	26:20	30:18	14	2003
	want	White	10:18	24:1
	7:5	20:5	184	2009
<hr/> U <hr/>	warranted	wish	24:12	21:20
unacceptable	18:3	28:20	1941	201
9:19	wasn't	wishes	11:3,7 16:20	3:8,14,21
underwater	18:2	5:9	17:7	2010
12:14 24:18	waste	WITNESS	1943	12:5 24:11
Unexploded	8:19 11:10 17:8	30:18	26:5,15	2011
12:19	water	wooded	1945	21:25
Unit	1:5 5:20 7:12,14	14:10	23:11	2016
20:3	7:18 9:19	Work	1946	12:21 15:9 18:22
unnamed	11:22 12:22,25	18:22,24 27:16	11:5	20:24 25:2
26:10 27:17,19	13:3,4,9,14,19	worth	1948	27:16
Unrestricted	14:2 15:7,15	18:5	19:24	2019
10:2 14:1 16:5	15:19,24 16:6	written	1950s	1:24 30:19
17:25 19:12	16:12 17:13,19	28:11,16	11:5	2023
22:24 25:25	17:22 18:7,14		1951	30:24
28:6	19:1,7,13,21		16:20	22
USACE	20:20 21:1,2,5		1976	13:8
4:3	22:10,13,17,25		11:9 23:11,13	28(D)
use	23:7,15,23,25	yards	1978	30:17
10:3,3,5,6 12:3	24:1,2,4 25:3,6	21:21 22:2	11:11	29
12:10 14:1	25:9,15,19		1980	1:24
16:5 17:25	26:1,9,11 28:7		8:17	
19:12 22:24			1981	<hr/> 3 <hr/>
25:25 28:6,21	way		19:25	3
users	5:16		1986	14:6
9:20	Welcome		20:1	3,000
	5:2	1	1989	26:6
	weren't	1:9 5:24 10:13	11:7,10	33
<hr/> V <hr/>	7:19 19:4 22:9	10:16,17 11:1	1990	18:6
vegetated	25:7	11:7,14 13:11	11:11	330/405-5802
19:19	west	14:2,5,20	1990s	3:23
vegetation	10:21	15:15	16:15	35
10:23	western	1,000	1993	16:8 19:16
verbal	11:8	26:10	23:17	
28:16	wet	1,100		<hr/> 4 <hr/>
vestibule	17:24	12:7		4
7:7	wetland	1,800	<hr/> 2 <hr/>	14:14
visual	14:11 15:8 16:17	26:22	2	40
26:25 27:21	wetlands	10th	1:10,12 5:24,25	10:19 20:7
VOCs	12:10 26:12	28:12	11:1 14:4,4	44087
13:10 18:8 21:7	27:13	11	15:11 16:6	3:9,15,22
25:10	Wheat	13:8	19:15 22:25	44266
	30:5,21	114	20	2:3
<hr/> W <hr/>	WHEREOF	18:6	21:4 25:8	45
walls				

488 22:1				
49 17:3,8				
<hr/> 5 <hr/>				
5 16:18				
59 25:8				
<hr/> 6 <hr/>				
6 19:22 20:2				
60 26:16				
66 21:4				
6735 2:2				
<hr/> 7 <hr/>				
7 14:5 23:10				
7-D-15 26:15				
7:03 29:7				
770 21:21				
<hr/> 8 <hr/>				
8 26:13 30:24				
8866 3:7,13,20				
<hr/> 9 <hr/>				
95 26:18				
9th 30:19				

WRITTEN PUBLIC COMMENTS

THIS PAGE INTENTIONALLY LEFT BLANK.

No written comments were received during the public notification period.

No oral comments were provided during the public meeting or during the public notification period.

THIS PAGE INTENTIONALLY LEFT BLANK.