Final

Proposed Plan
for Soil, Sediment, and Surface Water
at RVAAP-43 Load Line 10

Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

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

August 18, 2016

REPORT DOCUMENTATION PAGE

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None.

14. ABSTRACT

This Proposed Plan for Load Line 10 presents to the public the physical characteristics, geology, and hydrogeology of Load Line 10. This plan summarizes nature and extent of contamination in soil, sediment, and surface water; contaminant fate and transport; and human health and ecological risk assessments. These evaluations indicate there are no chemicals of concern (COCs) that pose unacceptable risk. Therefore, this plan presents a recommendation of No Further Action (NFA) with respect to soil, sediment, and surface water to attain Unrestricted (Residential) Land Use to the public.

15. SUBJECT TERMS

proposed plan, no further action, land use, chemicals of concern

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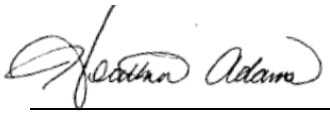
U	U	U	U	46	19b. TELEPHONE NUMBER *(Include area code)* 502.315.2624

CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

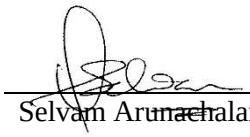
Leidos has completed the Proposed Plan for Soil, Sediment, and Surface Water at RVAAP-43 Load Line 10 at the Former Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of data quality objectives; technical assumptions; methods, procedures, and materials to be used; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing U.S. Army Corps of Engineers (USACE) policy. In addition, an independent verification was performed to ensure all applicable changes were made per regulatory and Army comments.



08/18/2016

Heather Adams, P.G.
Study/Design Team Leader

Date



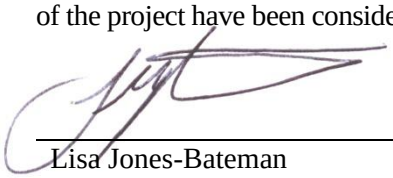
08/18/2016

Selvam Arunachalam, PE
Independent Technical Review Team Leader

Date

Significant concerns and the explanation of the resolution are as follows:

Internal Leidos Independent Technical Review comments are recorded on a Document Review Record per Leidos standard operating procedure ESE A3.1 Document Review. This Document Review Record is maintained in the project file. Changes to the report addressing the comments have been verified by the Study/Design Team Leader. As noted above, all concerns resulting from independent technical review of the project have been considered.



08/18/2016

Lisa Jones-Bateman
Senior Program Manager

Date

Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

OCT - 7 2016

Re: US Army Ravenna Ammunition PLT RVAAP
Remediation Response
Project Records
Remedial Response
Trumbull County
267000859121

Mr. Mark Leeper, Manager
Restoration/Cleanup Program
Army National Guard Directorate
ARNGD-ILE Clean Up
111 South George Mason Drive
Arlington, VA 22203

SUBJECT: "RAVENNA ARMY AMMUNITION PLANT PORTAGE/TRUMBULL COUNTIES, FINAL, PROPOSED PLAN FOR SOIL, SEDIMENT, AND SURFACE WATER AT RVAAP-43 LOAD LINE 10," DATED AUGUST 18, 2016

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Final, Proposed Plan (PP) for Soil, Sediment, and Surface Water at RVAAP-43 Load Line 10" document for the Ravenna Army Ammunition Plant (RVAAP), Portage/Trumbull Counties. The document is dated and was received at the Northeast District Office (NEDO) on August 18, 2016. This letter serves to document Ohio EPA's approval regarding the proposal of No Further Action (NFA) for the RVAAP Load Line 10 site contained in the Final Proposed Plan.

Based on the information contained in the Final PP document, other investigation documents/reports, and Ohio EPA's oversight participation during the investigation, Ohio EPA approves the Final PP document for the RVAAP Load Line 10 for NFA. As stated in the Final PP, the Army will offer a public comment period and hold an open house/public meeting in the near future to present the conclusions and investigative findings for Load Line 10.

50 West Town Street • Suite 700 • P.O. Box 1049 • Columbus, OH 43216-1049
epa.ohio.gov • (614) 644-3020 • (614) 644-3184 (fax)

If you have any questions concerning the above, please feel free to contact Vicki Deppisch, NEDO, DERR at (330) 963-1207.

Sincerely,

Michael Proffitt, Chief
Division of Environmental Response and Revitalization

VD/nvr

cc: Katie Tait/Kevin Sedlak, ARNG, Camp Ravenna
Gail Harris/Rebecca Shreffler, Vista Sciences
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ARNG = Army National Guard.
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ILE = Installation, Logistics, and Environment.
OHARNG = Ohio Army National Guard.
Ohio EPA = Ohio Environmental Protection Agency.
NEDO = Northeast Ohio District Office.
REIMS = Ravenna Environmental Information Management System.
USACE = U.S. Army Corps of Engineers.

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ACRONYMS/ABBREVIATIONS

AOC	Area of Concern
Army	U.S. Department of the Army
bgs	Below Ground Surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMCOC	Contaminant Migration
COC	Chemical of Concern
COPC	Chemical of Concern
COPEC	Chemical of Potential Concern
	Chemical of Potential
ERA	Ecological Concern Ecological
FPA	Risk Assessment Former
FWCUG	Production Area Facility-wide
HHRA	Cleanup Goal Human Health Risk Assessment
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
Ohio EPA	Ohio Environmental Protection Agency
PAH	Polycyclic Aromatic Hydrocarbon
PP	Proposed Plan
RI	Remedial Investigation Record
ROD	of Decision
RSL	Regional Screening Level
RVAAP	Ravenna Army Ammunition Plant
SRC	Site-related Contaminant
SVOC	Semi-volatile Organic Compound
USEPA	U.S. Environmental Protection Agency
USP&FO	U.S. Property and Fiscal Officer

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1.0 INTRODUCTION

This Proposed Plan (PP) presents the conclusions and recommendations for soil, sediment, and surface water within the Load Line 10 area of concern (AOC) at the former Ravenna Army Ammunition Plant (RVAAP). The former RVAAP is now known as Camp Ravenna Joint Military Training Center (Camp Ravenna) and is located in Portage and Trumbull counties, Ohio (Figure 1). Load Line 10 is designated as RVAAP-43. The U.S. Department of the Army (Army), in coordination with the Ohio Environmental Protection Agency (Ohio EPA), issues this PP to provide the public with information to comment upon the selection of an appropriate response action. The remedy will be selected for Load Line 10 after all comments submitted during the 30-day public comment period are considered. Therefore, the public is encouraged to review and comment on all alternatives presented in this PP.

The Army is issuing this PP as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 and Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 *Code of Federal Regulations* 300). Selection and implementation of a remedy will also be consistent with the requirements of the Ohio EPA *Director's Final Findings and Orders*, dated June 10, 2004.

This PP summarizes information that can be found in greater detail in the *Remedial Investigation (RI) Report for Soil, Sediment, and Surface Water at RVAAP-43 Load Line 10* (USACE 2015) and other documents contained in the Administrative Record file for Load Line 10.

The Army's preferred alternative at Load Line 10 is no further action for soil, sediment, and surface water. The Army encourages the public to review these documents to gain a more comprehensive understanding of the AOC, activities that have been conducted to date, and the rationale for this preferred alternative.

Public Comment Period:
November 14, 2016 to December 14, 2016

Public Meeting:
The Army will hold an open house and public meeting to present the conclusions and additional details presented in the *Remedial Investigation Report for Soil, Sediment, and Surface Water at RVAAP-43 Load Line 10* (USACE 2015). Oral and written comments will also be accepted at the meeting. The open house and public meeting are scheduled for 6:00PM, November 29, 2016, at the Shearer Community Center, 9355 Newton Falls Road, Ravenna, Ohio 44266.

Information Repositories:
Information used in selecting the remedy is available for public review at the following locations:

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

Hours of operation:
9AM-9PM Monday-Thursday
9AM-6PM Friday
9AM-5PM Saturday
1PM-5PM Sunday

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

Hours of operation:
10AM-8PM Monday-Thursday
9AM-5PM Friday and Saturday

Online
http://www.rvaap.org/

The **Administrative Record File**, containing information used in selecting the remedy, is available for public review at the following location:

Camp Ravenna Joint Military Training Center (former Ravenna Army Ammunition Plant)
Environmental Office
1438 State Route 534 SW
Newton Falls, Ohio 44444
(330) 872-8003

Note: Access is restricted to Camp Ravenna, but the file can be obtained or viewed with prior notice to Camp Ravenna.

2.0 RVAAP DESCRIPTION AND BACKGROUND

The facility, consisting of 21,683 acres, is federally owned and is located in northeastern Ohio within Portage and Trumbull counties, approximately 4.8 kilometers (3 miles) east/northeast of the City of Ravenna and approximately 1.6 kilometers (1 mile) northwest of the City of Newton Falls (Figure 1). The facility, previously known as RVAAP, was formerly used as a load, assemble, and pack facility for munitions production. As of September 2013, administrative accountability for the entire acreage of the facility has been transferred to the U.S. Property and Fiscal Officer (USP&FO) for Ohio and subsequently licensed to the Ohio Army National Guard for use as a military training site (Camp Ravenna). References in this document to RVAAP relate to previous activities at the facility as related to former munitions production activities or to activities being conducted under the restoration/cleanup program.

3.0 LOAD LINE 10 DESCRIPTION AND BACKGROUND

Load Line 10, formerly known as the Percussion Element Manufacturing Line, is a 36-acre, fenced AOC located south of Fuze and Booster Road, southwest of Load Line 9, and northeast of Load Line 5 in the south-central portion of Camp Ravenna (Figure 2).

The original primary purpose of RVAAP was to load medium and major caliber artillery ammunition (i.e., bombs, mines, fuze and boosters, primers and percussion elements) and to store finished components. Load Lines 5 through 11 operated to produce fuzes, boosters, primers, detonators, and percussion elements.

From 1941–1945, Load Line 10 produced 226,387,306 M36 percussion elements used during World War II. Percussion elements consist of primer cups and a percussion element charge (i.e., explosive) that ignites a less sensitive propellant.

From 1951–1957, Load Line 10 produced 49,286,628 percussion elements and 135,262,465 primers. Percussion primers are devices that contain a percussion element and the less sensitive propellant.

From 1969–1971, unknown quantities of primers were produced at Load Line 10. In 1971, Load Line 10 was deactivated permanently, and the production equipment was removed.

No historical data or information exists to indicate Load Line 10 was used for any process other than percussion element/primer manufacturing (MKM 2007). No fuel storage tanks were present at the AOC during operations. Additionally, no fuel materials were used operationally at Load Line 10, and no burning was conducted.

All buildings, including slabs and foundations, were removed in 2007. Remaining features at Load Line 10 include a one-lane asphalt perimeter road that enters the AOC from the west and encircles the former production area (FPA) and access roads within the AOC. The FPA consists of approximately 12 acres, is located within the asphalt perimeter road in the central portion of the AOC, and was historically used to manufacture percussion elements and primers and contained the former production and storage buildings and multiple access roads.

The Load Line 10 perimeter fence is still in place, although it is not currently maintained. Small construction drainage ditches border the access road and are also located within the FPA.

In 1978, the U.S. Army Toxic and Hazardous Materials Agency conducted an Installation Assessment of RVAAP to review potential for contaminant release at multiple former operations areas, as documented in *Installation Assessment of Ravenna Army Ammunition Plant* (USATHAMA 1978). The installation assessment indicated historical operations may have utilized lead azide or lead styphnate, which are primary explosives. The *Relative Risk Site Evaluation for Newly Added Sites* (USACHPPM 1998) indicated lead thiocyanate

was used in production operations at this AOC. The two primer mixes that were utilized were FA 70 and FA 90A. Each mixture contained the primary chemicals potassium chlorate, antimony sulfide, and lead thiocyanate in similar quantities. The secondary explosives used within the primers were 2,4,6-trinitrotoluene in FA 70 and pentaerythritol tetranitrate in FA 90A (USACHPPM 1998). Load Line 10 was the only AOC to use lead thiocyanate in primer production, as lead azide and lead styphnate were not used at the AOC.

The following environmental investigations have been completed for Load Line 10:

- Installation Assessment of Ravenna Army Ammunition Plant (USATHAMA 1978);
- Resource Conservation and Recovery Act Facility Assessment (Jacobs 1989);
- Preliminary Assessment for the Characterization of Areas of Contamination (USACE 1996);
- Relative Risk Site Evaluation for Newly Added Sites (USACHPPM 1998);
- Lead Azide Screening (MKM 2007);
- Characterization of 14 AOCs (MKM 2007);
- Investigation of the Under Slab Surface Soils (USACE 2009); and
- 2008 Performance-based Acquisition RI, as summarized in the *RI for Soil, Sediment, and Surface Water at the RVAAP 43 Load Line 10* (USACE 2015).

4.0 AREA OF CONCERN CHARACTERISTICS

The AOC characteristics, nature and extent of contamination, and conceptual site model are based on the various investigations conducted from 1978–2010.

Ground elevations across Load Line 10 range from approximately 1,114 to 1,133 ft above mean sea level. The central portion of Load Line 10 is a topographic high (or divide) with gentle slopes to the northwest and southeast outside of the FPA (Figure 3).

No permanent surface water features are present at the AOC. Surface water intermittently occurs as overland storm water runoff associated with heavy rainfall events and generally drains into small ditches bordering roads and within the FPA. Surface water drainage from the southern two-thirds of Load Line 10 exits to the south through a drainage channel that flows south-southeast. The channel drains to an unnamed stream, which enters the west branch of the Mahoning River. In the northern portion of Load Line 10, several small drainage ditches direct surface runoff to the northwest, ultimately into larger drainage ditches that border Fuze and Booster Road.

Sandy silt glacial soil overlies sandstone bedrock at Load Line 10, except where disturbed by RVAAP activities. Bedrock was encountered at 7–23 ft below ground surface (bgs). Groundwater depth ranged from 6.8–18.9 ft bgs.

There is a groundwater flow divide through the central portion of the AOC, and groundwater flows to the north-northwest and to the south.

In surface soil (0–1 ft bgs) and subsurface soil (less than 1 ft bgs) at Load Line 10, the prevalent site-related contaminants (SRCs) and chemicals of potential concern (COPCs) detected were inorganic chemicals and semi-volatile organic compounds (SVOCs). No conclusive spatial trend is evident for the inorganic chemicals. The majority of SVOCs were polycyclic aromatic hydrocarbons (PAHs).

No historical data or information exists to indicate Load Line 10 was used for any process other than percussion element/primer manufacturing (MKM 2007). No fuel storage tanks were present at the AOC during operations. Additionally, no fuel materials were used operationally at Load Line 10, and no burning was conducted.

Lead is a chemical associated with previous use of the site. Only 1 (L10ss-003M at 430 mg/kg) of 93 soil samples exceeded lead's risk-based screening level of 400 mg/kg. The RI did not

indicate records or field evidence of PAH-contaminated waste disposal at Load Line 10 from operational activities. Rather, evaluation of PAH concentrations associated with common anthropogenic sources (such as vehicle exhaust, particles from asphalt pavement) indicate the concentrations reported at Load Line 10 are at or near those concentrations.

One sediment sample was collected at the main drainage ditch that exits to the southwest of Load Line 10 (Figure 3). No sediment COPCs were identified at this location. A second sediment sample was collected downstream from Load Line 10 to assess off-AOC conditions. The results indicate that chemicals have not migrated downstream from the AOC.

One surface water sample was collected at the main drainage ditch that exits to the southwest of Load Line 10 (Figure 3). A second surface water sample was collected off of the AOC and downstream from Load Line 10 to assess downstream conditions. No surface water COPCs were identified for Load Line 10.

The potential for soil and sediment contaminants to impact groundwater was evaluated in a fate and transport evaluation presented in the RI Report (USACE 2015). The fate and transport evaluation included modeling and comparing the model results to current groundwater monitoring data. Modeling evaluated the potential for contaminants to leach from soil and sediment and impact groundwater beneath the AOC. Modeling also evaluated if contaminants could potentially migrate from Load Line 10 to the closest surface water feature (e.g., the tributary to Sand Creek north of the AOC for soil and the small, un-named stream south of the AOC for sediment). Modeling results indicated 11 soil and 4 sediment contaminant migration chemicals of potential concern could potentially leach from soil and mix with groundwater beneath Load Line 10 at concentrations above maximum contaminant levels, U.S. Environmental Protection Agency regional screening levels (RSLs), and RVAAP groundwater facility-wide cleanup goals (FWCUGs).

Evaluation of modeling results with respect to current AOC groundwater data and model limitations indicate identified soil SRCs are not currently impacting groundwater beneath the source areas and that predicted future impacts would be mitigated by factors such as chemical and biological degradation and lateral dispersivity. Based on the fate and transport evaluation, no contaminant migration chemicals of concern (CMCOCs) for soil or sediment were identified as impacting groundwater. Groundwater will be further evaluated under the Facility-wide Groundwater Monitoring Program.

5.0 SCOPE AND ROLE OF RESPONSE ACTION

An evaluation using Resident Receptor (Adult and Child) FWCUGs was used to provide an Unrestricted (Residential) Land Use evaluation. Unrestricted (Residential) Land Use is considered protective for all categories of Land Use at Camp Ravenna, such as Military Training and Commercial/Industrial Land Use. Additional human health receptors associated with Camp Ravenna are the National Guard Trainee and Industrial Receptor. The response action evaluated alternatives to attain Unrestricted (Residential) Land Use for soil, sediment, and surface water.

Groundwater will be addressed under the RVAAP Facility-wide Groundwater AOC (RVAAP-66) as a separate decision. However, the selected remedy for soil at Load Line 10 must also be protective of groundwater.

6.0 SUMMARY OF HUMAN AND ECOLOGICAL RISKS

6.1 Human Health Risk Assessment

A human health risk assessment (HHRA) was performed to identify chemicals of concern (COCs) and provide a risk management evaluation to determine if remediation is required under CERLCA based on potential risks to human receptors.

The exposure depths evaluated in the HHRA for the Resident (Adult and Child) were surface soil (0–1 ft bgs), subsurface soil (1–13 ft bgs), sediment, and surface water.

No sediment or surface water COPCs were identified for Load Line 10 and, therefore, no COCs were identified for sediment or surface water.

The only soil (surface and subsurface) COCs identified were four PAHs [benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene], as concentrations of these chemicals in soil either exceeded FWCUGs or contributed to a sum-of-ratios greater than one. The evaluation of elevated PAH concentrations indicated that the samples having the highest sum-of-ratios either (1) contained building debris or fill material (L10sb-071) or (2) were on a gravel access roadway (L10ss-080). Neither of these samples were collected near potential sources of potential site-related PAH contamination, such as the Heater Houses. Other samples with slightly elevated PAH concentrations above FWCUGs were also located in areas impacted by sources such as asphalt parking lots and roads, vehicle traffic, etc.

Lead is a chemical associated with previous use of the site. Only 1 incremental sampling methodology sample (L10ss-003M at 430 mg/kg) of 93 soil samples exceeded lead's risk-based screening level of 400 mg/kg. This sample area is approximately 0.1 acres, and is well below the Industrial RSL of 800 mg/kg. The co-located discrete surface soil sample collected in 2010 had a concentration of 79.4 mg/kg.

The HHRA did not identify COCs from previous Army activities requiring remediation under CERCLA to be protective of the Resident Receptor.

6.2 Ecological Risk Assessment

The ecological habitat in Load Line 10 is approximately 36 acres and consists of grasses, forest, and shrubs. The vegetation provides a habitat for birds, mammals, insects, and other organisms. Although there are no streams, ponds, or wetlands on the AOC, small drainage ditches exist bordering the roads and within the FPA. During most of the year, there is no water in the drainage ditches; in turn, no signs of an aquatic habitat have been observed.

Ecological resources at Load Line 10 were compared to the list of important ecological places and resources. Based on the 39 criteria defining important places as identified by the Army and Ohio EPA, no important/significant ecological resources were identified at the AOC. The vegetation types present at Load Line 10 are also found elsewhere near the AOC, at Camp Ravenna, and in the ecoregion.

The northern long-eared bat (*Myotis septentrionalis*; federally threatened) exists at Camp Ravenna. There are no other federally listed species or critical habitats on Camp Ravenna. Load Line 10 has not been previously surveyed for federal or state-listed species; however, there have been no documented sightings of state-listed, federally listed, threatened, or endangered species at the AOC (OHARNG 2014).

The ecological risk assessment (ERA) for Load Line 10 (USACE 2015) evaluated chemical contamination to determine if it posed a risk to the environment. The ERA incorporated available data to identify integrated chemicals of potential ecological concern (COPECs). A total of 23 integrated soil COPECs were identified in the Level I ERA. In addition, three integrated sediment COPECs and one

COPECs and one integrated surface water COPEC were identified in the Level I ERA.

However, Load Line 10 does not have any important and significant ecological resources such as wetlands, terrestrial areas used for breeding by large or dense populations of animals, habitats used by threatened and endangered species, state land designated for wildlife or game management, or locally important ecological places. Consequently, the ERA for Load Line 10 concludes with a Level I Scoping Level Risk Assessment, with a recommendation of no further action from the ecological risk perspective.

7.0 CONCLUSIONS

The HHRA determined that no remediation is required to be protective for the Resident Receptor. The ERA concluded there are no significant ecological resources. The fate and transport assessment determined chemicals in soil and sediment are not impacting groundwater. Groundwater will be further evaluated under the Facility-wide Groundwater Monitoring Program. Accordingly, the Army, in coordination with Ohio EPA, is recommending no further action to attain Unrestricted (Residential) Land Use for soil, sediment, and surface water at Load Line 10.

This recommendation is not a final decision. The Army, in coordination with Ohio EPA, will select the remedy for Load Line 10 after reviewing and considering all comments submitted during the 30-day public comment period.

8.0 COMMUNITY PARTICIPATION

8.1 Community Participation

Public participation is an important component of the remedy selection. The Army, in coordination with Ohio EPA, is soliciting input from the community on the preferred alternative.

The comment period extends from November 14, 2016 to December 14, 2016. This period includes a public meeting at which the Army will present this PP. The Army will accept oral and written comments at this meeting.

8.2 Public Comment Period

The 30-day comment period is from November 14, 2016 to December 14, 2016, and provides an opportunity for public involvement in the decision-making process for the proposed action. The public is encouraged to review and comment on this PP.

All public comments will be considered by the Army and Ohio EPA before selecting a remedy. During the comment period, the public is encouraged to review documents pertinent to Load Line 10.

This information is available at the Information Repository and online at www.rvaap.org. To obtain further information, contact Kathryn Tait of the Camp Ravenna Environmental Office at kathryn.s.tait.nfg@mail.mil.

8.3 Written Comments

If the public would like to comment in writing on this PP or other relevant issues, please deliver comments to the Army at the public meeting or mail written comments (postmarked no later than December 14, 2016).

POINT OF CONTACT FOR WRITTEN COMMENTS

Mailing Address:
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

8.4 Public Meeting

The Army will hold an open house and public meeting on this PP on November 29, 2016, at 6:00PM, in the Shearer Community Center, 9355 Newton Falls Road Ravenna, Ohio 44266 to accept comments.

This meeting will provide an opportunity for the public to comment on the proposed action. Comments made at the meeting will be transcribed.

8.5 Army Review of Public Comments

The Army will review the public's comments as part of the process in reaching a final decision for the most appropriate action to be taken.

The Responsiveness Summary, a document that summarizes the Army's responses to comments received during the public comment period, will be included in the Record of Decision (ROD). The Army's final choice of action will be documented in the ROD.

The ROD will be added to the RVAAP Restoration Program Administrative Record and Information Repositories.

ADMINISTRATIVE RECORD FILE

Camp Ravenna Joint Military Training Center (former Ravenna Army Ammunition Plant)
Environmental Office
1438 State Route 534 SW
Newton Falls, Ohio 44444
(330) 872-8003
Note: Access is restricted to Camp Ravenna, but the file can be obtained or viewed with prior notice to Camp Ravenna.

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Newton Falls Public Library
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10AM-8PM Monday-Thursday
9AM-5PM Friday and Saturday

Online
http://www.rvaap.org/

GLOSSARY OF TERMS

Administrative Record: a collection of documents, typically reports and correspondence, generated during site investigation and remedial activities. Information in the Administrative Record represents the information used to select the preferred alternative.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): a federal law passed in 1980, commonly referred to as the Superfund Program. It provides liability, compensation, cleanup, and emergency response in connection with the cleanup of inactive hazardous substance release sites that endanger public health or the environment.

Contaminant Migration Chemical of Concern (CMCOC): a chemical substance specific to an area of concern that potentially poses significant potential to leach to groundwater at a concentration above human health risks goals. CMCOCs are typically further evaluated for remedial action.

Chemical of Concern (COC): a chemical substance specific to an area of concern that potentially poses significant human health or ecological risks. COCs are typically further evaluated for remedial action.

Chemical of Potential Concern (COPC): a chemical substance specific to an area of concern that potentially poses human health risks and requires further evaluation in the RI. COPCs are typically not evaluated for remedial action.

Chemical of Potential Ecological Concern (COPEC): a chemical substance specific to an area of concern that potentially poses ecological risks and requires further evaluation in the RI. COPECs are typically not evaluated for remedial action.

Ecological Receptor: a plant, animal, or habitat exposed to an adverse condition.

Human Receptor: a hypothetical person, based on current or potential future land use, who may be exposed to an adverse condition. For example, the National Guard Trainee is considered the hypothetical person when evaluating Military Training Land Use at the former RVAAP.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): the set of regulations that implement CERCLA and address responses to hazardous substances and pollutants or contaminants.

Record of Decision (ROD): a legal record signed that describes the cleanup action or remedy selected for a site, the basis for selecting that remedy, public comments, and responses to comments.

Remedial Investigation (RI): CERCLA investigation that involves sampling environmental media, such as air, soil, and water, to determine the nature and extent of contamination and to calculate human health and environmental risks that result from the contamination.

Responsiveness Summary: a section of the ROD that documents and responds to written and oral comments received from the public about the PP.

Risk Assessment: an evaluation that determines potential harmful effects, or lack thereof, posed to human health and the environment due to exposure to chemicals found at a CERCLA site.

Sum-of-Ratio (SOR): to adjust for multiple chemicals, divide the standard for each COC by the number of COCs. The adjusted value can then be compared to the single chemical value, and each ratio summed. If the summed ratios are less than 1, the applicable standards are met. If summed ratios exceed 1, the applicable standards are not met.

Target Risk: the Ohio Environmental Protection Agency (2009) identifies 1E-05 as a target for cancer risk for carcinogens and an acceptable target hazard index of 1 for non-carcinogens.

Unrestricted (Residential) Land Use: A land use defined for the former RVAAP restoration that is considered protective for all three Land Uses at Camp Ravenna Joint Military Training Center (Camp Ravenna). If an AOC meets the requirements for Unrestricted (Residential) Land Use, then the AOC can also be used for Military Training and Commercial/Industrial purposes.

REFERENCES

Jacobs (Jacobs Engineering Group, Inc.) 1989. *Resource Conservation and Recovery Act Facility Assessment, Preliminary Review/ Visual Site Inspection Ravenna Army Ammunition Plant Ravenna, Ohio*. October 1989.

MKM (MKM Engineers, Inc.) 2007. *Characterization of 14 AOCs at Ravenna Army Ammunition Plant.* March 2007.

OHARNG (Ohio Army National Guard) 2014. *Integrated Natural Resources Management Plan at the Camp Ravenna Joint Military Training Center, Portage and Trumbull Counties, Ohio.* December 2014.

Ohio EPA (Ohio Environmental Protection Agency) 2009. *Technical Decision Compendium: Human Health Cumulative Carcinogenic Risk and Non-carcinogenic Hazard Goals for DERR Remedial Response Program.* August 2009.

USACE (U.S. Army Corps of Engineers) 1996. *Preliminary Assessment for the Characterization of Areas of Contamination at the Ravenna Army Ammunition Plant, Ravenna, Ohio*. February 1996

USACE 2009. *Final Investigation of the Under Slab Surface Soils, Post Slab and Foundation Removal at RVAAP-39 Load Line 5, RVAAP-40 Load Line 7, RVAAP-41 Load Line 8, and RVAAP-43 Load Line 10, Version 1.0, Ravenna Army Ammunition Plant, Ravenna, Ohio*. January 2009.

USACE 2015. *Remedial Investigation Report for Soil, Sediment, Surface Water at RVAAP-43 Load Line 10, Former Ravenna Army Ammunition Plant Portage and Trumbull Counties, Ohio.* June 2015.

USACHPPM (U.S. Army Center for Health Promotion and Preventive Medicine) 1998. *Relative Risk Site Evaluation for Newly Added Sites at the Ravenna Army Ammunition Plant, Ravenna, Ohio*. Hazardous and Medical Waste Study No. 37-EF-5360-99. October 1998.

USATHAMA (U.S. Army Toxic and Hazardous Materials Agency) 1978. *Installation Assessment of Ravenna Army Ammunition Plant*, Records Evaluation Report No. 132. 1978.

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FIGURES

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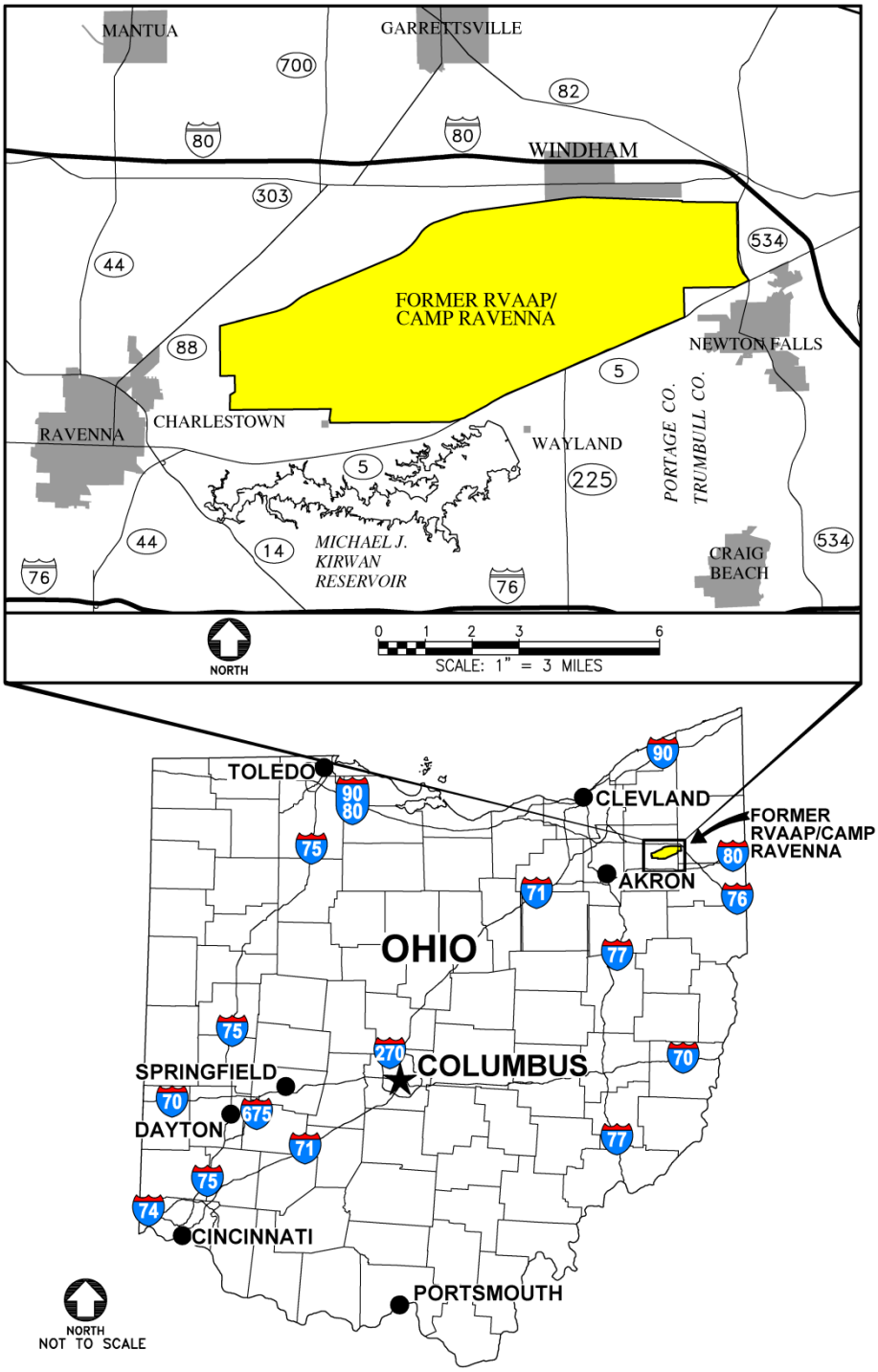

Figure 1. General Location and Orientation of Camp Ravenna

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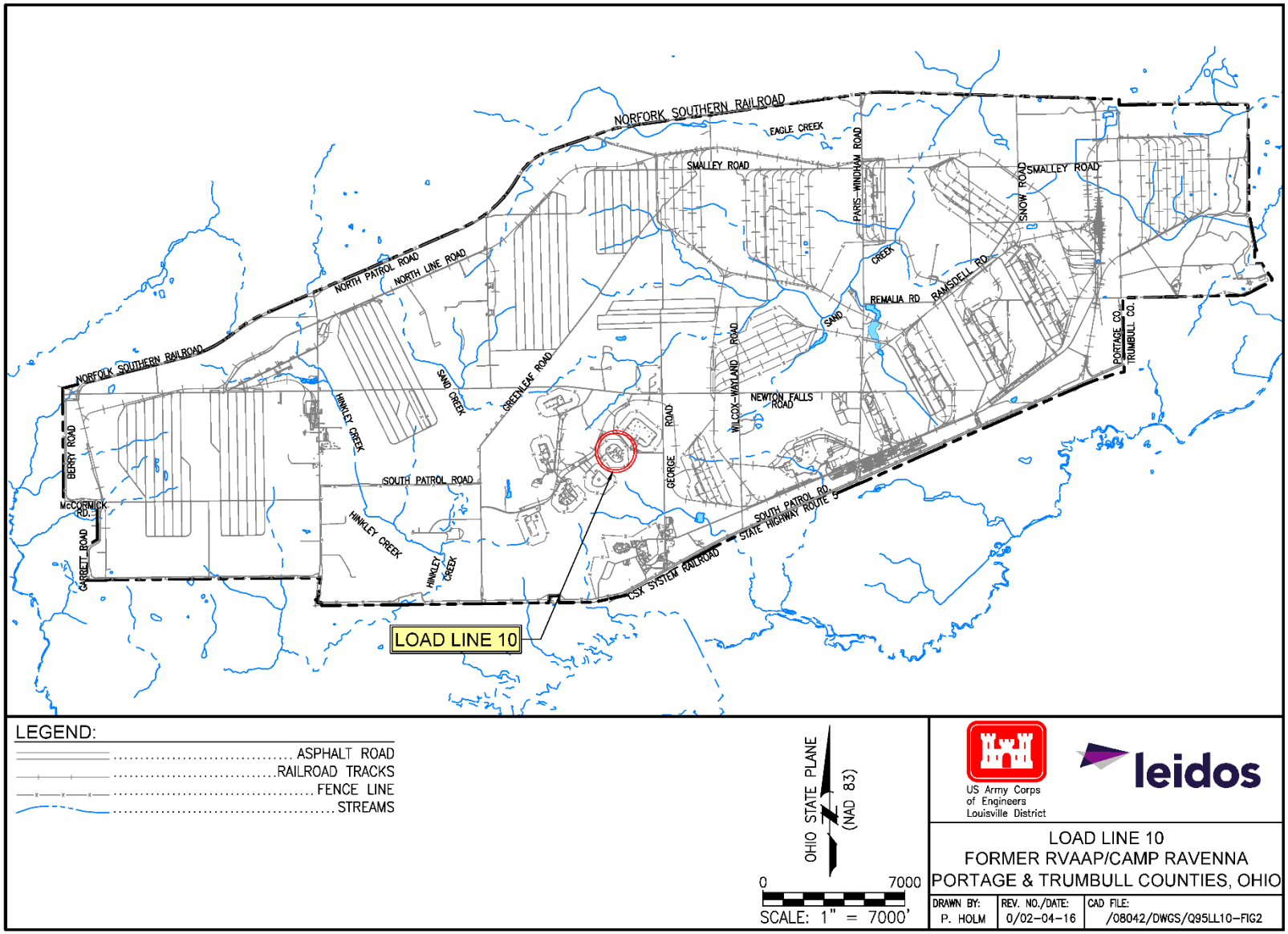

Figure 2. Location of Load Line 10 at Camp Ravenna

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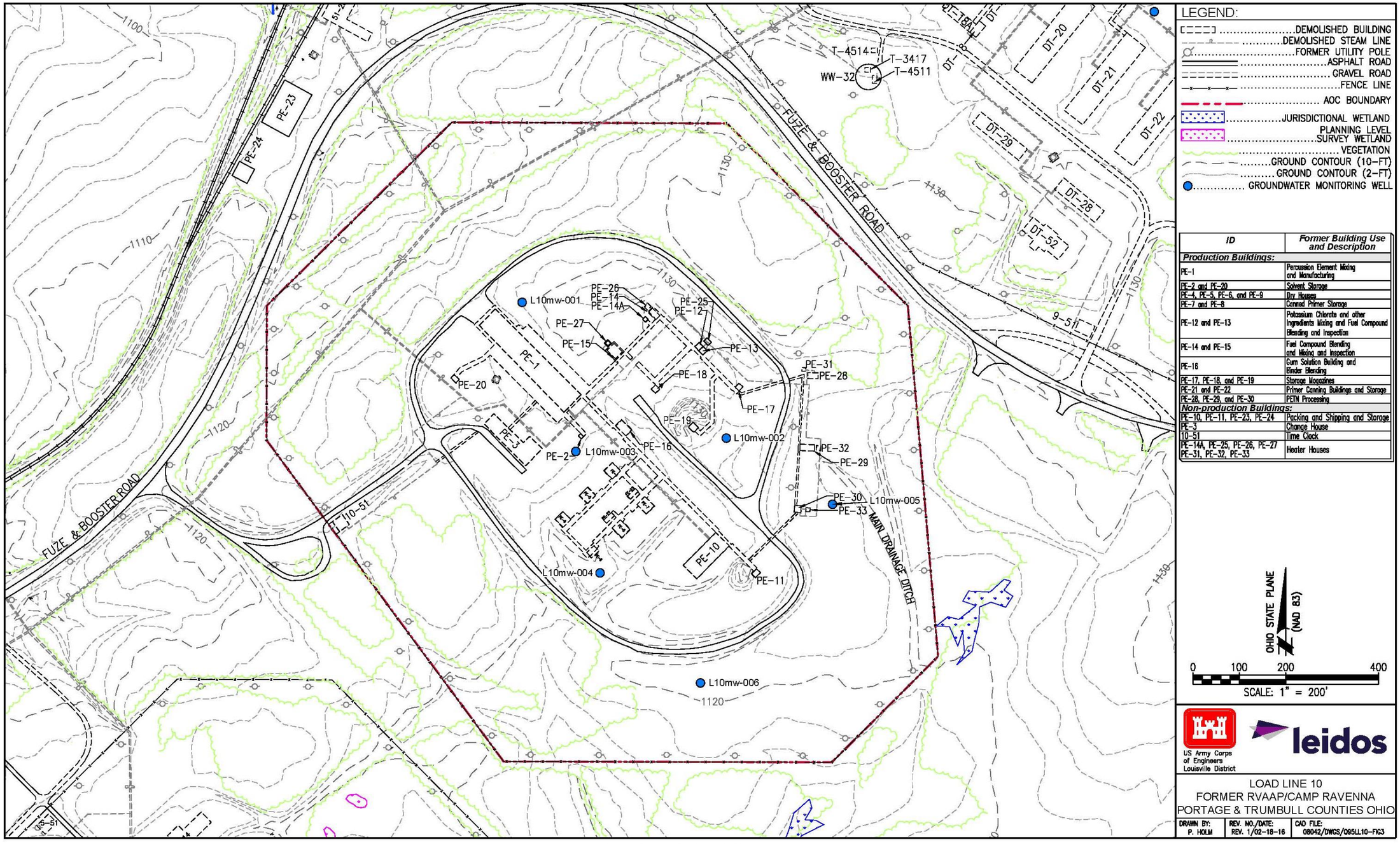

Figure 3. Load Line 10 Site Features

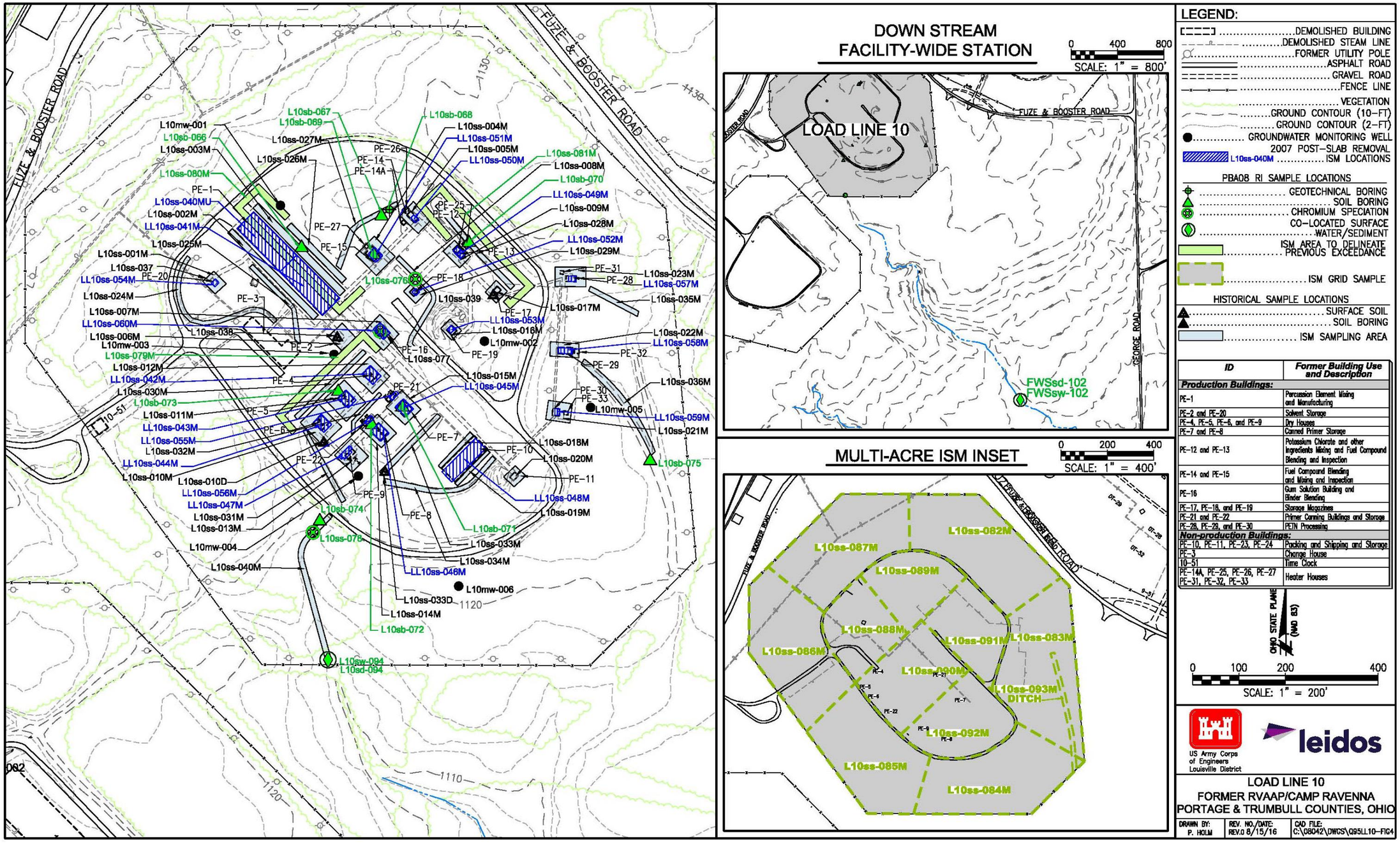

Figure 4. Load Line 10 Sample Locations

ATTACHMENT 1
OHIO EPA COMMENTS

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Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

August 3, 2016

Re: US Army Ravenna Ammunition PLT RVAAP
Remediation Response
Project Records
Remedial Response
Trumbull County
267000859121

Mr. Mark Leeper
Restoration/Cleanup Program Manager
Army National Guard Directorate
ARNGD-ILE Clean Up
111 South George Mason Drive
Arlington, VA 22203

SUBJECT: "RAVENNA ARMY AMMUNITION PLANT PORTAGE/TRUMBULL COUNTIES, RESPONSE TO COMMENTS ON THE DRAFT, PROPOSED PLAN FOR SOIL, SEDIMENT, AND SURFACE WATER AT RVAAP-43 LOAD LINE 10" DATED JULY 27, 2016

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Response to Comments on the Draft, Proposed Plan (PP) for Soil, Sediment, and Surface Water at RVAAP-43 Load Line 10," for the Ravenna Army Ammunition Plant, Portage/Trumbull Counties. The Response to Comments is dated July 27, 2016, and was received via email from Mr. Greg Moore, USACE. It was prepared by Leidos Engineering of Ohio, Inc.

All response to comments have been adequately addressed except for the following:

1. **The LL-10 PP page 4, line 6, regarding PAHs:** states "...the maximum detected concentration during the facility-wide background study was 3.7 mg/kg." The Facility-Wide Background Study was conducted and approved within the "Final, Phase II, Remedial Investigation Report, Winklepeck Burning Grounds" dated April 2001. The Facility-Wide Background Study, surface soil background analysis, removed the results for four samples "because outliers for multiple analytes would suggest a potential problem with the entire sample. PAHs, in addition to metals, were elevated in these four samples. PAHs are related to combustion products and so could indicate human disturbance at the locations where they were detected. Visits to the sampling locations and review of aerial photography from before the plant activities started indicate that these sampling locations were near homes or farms and could have been influenced by activities with those structures."

   The Facility-Wide Background Study was accepted and approved, clearly eliminating these outliers. The four statistical outliers should not be considered representative of natural background. Please remove the text that states that "the maximum detected concentration during the Facility-Wide Background Study was 3.7 mg/kg." It misconstrues

that the background level was 3.7 mg/kg. This misrepresents the Facility-Wide Background Study's conclusions.

Action Item: Please delete reference to background 3.7 mg/kg as part of the WOE. Please do not include the background 3.7 mg/kg for future PPs.

2. **Revision to Section 6.1 HHRA language, 4th paragraph, regarding the elevated but lower levels of PAHs:** The response states "Other samples with PAH concentrations above the FWCUGs were also located in areas impacted by sources such as vehicle exhaust and run-off from roads."

   Suggest revision and using as appropriate: "Other samples with slightly elevated levels of PAH concentrations above the FWCUGs were located in areas impacted by sources such as asphalt parking lots and roads, vehicle traffic, etc."

Action Item: Please change language as suggested above and use as appropriate.

As per the August 2, 2016, conference call, the above was discussed and agreed upon. Please make the appropriate revisions to the above and the July 28, 2016, email from USACE and submit the Final PP to Ohio EPA for review and approval.

If you need any additional information, clarification or have questions on the above, please call me at (330) 963-1207.

Sincerely,

Vicki Deppisch

Vicki Deppisch
Hydrogeologist/Project Coordinator
Division of Environmental Response and Revitalization

VD:cla

cc: Katie Tait/Kevin Sedlak, ARNG, Camp Ravenna
Gail Harris/Rebecca Shreffler, Vista Sciences
Greg Moore, USACE Louisville

ec: Justin Burke, Ohio EPA, Central Office, DERR
Kelly Kaletsky, Ohio EPA, Central Office, DERR
Brian Tucker/Carrie Rasik, Ohio EPA, Central Office, DERR
Rod Beals, Ohio EPA, NEDO, DERR
Vanessa Steigerwald Dick, Ohio EPA, NEDO, DERR
Bob Princic, Ohio EPA, NEDO, DERR

NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON VA 22204-1373

July 27, 2016

Ohio Environmental Protection Agency
DERR-NEDO
Attn: Vicki Deppisch, Hydrogeologist/Project Coordinator
2110 East Aurora Road
Twinsburg, Ohio 44087-1924

Subject: Responses to Comments on the Draft, Proposed Plan for Soil, Sediment, and Surface Water at RVAAP-43, Load Line 10, Dated May 6, 2016 for the Former Ravenna Army Ammunition Plant (RVAAP) Restoration Program, Portage/Trumbull Counties (Work Activity No. 267000859121)

Dear Ms. Deppisch:

The Army appreciates your time and comments (dated July 8, 2016) on the *Draft Proposed Plan for Soil, Sediment, and Surface Water at RVAAP-43, Load Line 10*. Enclosed for your review are responses to your comments.

Upon the final resolution of these responses to comments, the Army will distribute the final version of this report and will begin scheduling the public meeting.

Please contact the undersigned at (703) 607-7955 or Mark.S.Leeper.civ@mail.mil if there are issues or concerns with this submission.

Sincerely,

Mark Leeper
RVAAP Restoration Program Manager
Army National Guard Directorate

ec: Rodney Beals, Ohio EPA, NEDO-DERR
Robert Princic, Ohio EPA NEDO-DERR
Kelly Kaletsky, Ohio EPA, CO, DERR
Brian Tucker, Ohio EPA, CO-DERR
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Kevin Sedlak, ARNG, Camp Ravenna
Katie Tait, OHARNG, Camp Ravenna
Nat Peters, USACE Louisville
Greg Moore, USACE Louisville
Gail Harris, Vista Sciences Corporation
Jed Thomas, Leidos

Responses to Ohio EPA Comments (dated July 8, 2016)
Draft, Proposed Plan for Soil, Sediment, and Surface Water at RVAAP-43, Load Line 10
Former Ravenna Army Ammunition Plant (RVAAP), May 6, 2016
(Work Activity No. 267000859121)

In general, Ohio EPA suggests the following be incorporated in the LL-10 PP and all forthcoming PPs:

1) Each PP should be tailored for the specific AOC RI or RI/FS that was submitted and supports the approved conclusion of the report that can be understood by the general public. This includes addressing specific exceedances with sufficient detail. For LL-10, there are two samples that stand out with higher elevated PAH levels that should be addressed in the PP with supporting data for an NFA. One is for surface soil (Figure 5-2, sample #L10ss-080M) and the other for subsurface soil (Figure 5-6, sample #L10sb-071). These should be addressed specifically with enough detail to support the approval of an NFA. In addition, the other detected lower, but still elevated, PAH ISM samples above the FWCUGs should also be addressed with supporting Wight-Of-Evidence (WOE). A short sentence or two summary regarding the elevated level of lead (L10ss-003M at 430 mg/kg) and WOE as presented in the RI would also be helpful.

Action Item: The LL-10 and future PPs must be tailored for the specific AOC that supports the conclusion of the RI or the RI/FS that can easily be understood by the general public. Please add each of the two samples identified above to the PP with enough discussion to support the approved NFA. Please include the lower, but still elevated, PAH samples and lead. Please include this approach in all future PPs.

Response: *Agree. Section 6.1 has been revised as presented below to include sufficient details on the specific samples cited above and WOE summaries from the Approved Load Line 10 RI. In addition, a new Figure 4 will be added to the Proposed Plan that shows the sample locations for the Load Line 10 investigations. This will be the same as Figure 4-7 of the RI Report.*

2) The LL-10 PP page 4, line 6, regarding PAHs states "...the maximum detected concentration during the facility-wide background study was 3.7 mg/kg." Although stated in the RI, Ohio EPA could not locate this value anywhere in the background study which was conducted and included in the Winklepeck RI. Ohio EPA recommends deleting this from the PP and all other references to PAH background levels and approach the elevated PAH levels with different WOEs.

Action Item: Please delete reference to background 3.7 mg/kg and craft WOE language to support the NFA. Please implement this for future PPs.

Response: *Clarification. This weight-of-evidence (WOE) discussing soil PAH concentrations in facility-wide background samples is an important aspect in explaining that PAH concentrations at Load Line 10 may be near background concentrations and are not a product of RVAAP activities. This information and explanation is presented in the approved Load Line 10 RI Report which is available for public review. To be consistent amongst the approved RI Report and Proposed Plan, the Army recommends the same WOE be presented between the RI Report and the Proposed Plan.*

To ensure the reader can efficiently find the information regarding PAHs in the background study, the text will be revised as follows:

"… the maximum detected concentration during the facility-wide background study was

3.7 mg/kg. Details regarding the PAH concentrations in the background samples are presented in Section 7.2.5.1 and Table 7-7 of the Load Line 10 RI Report (USACE 2015)."

3) In addition, the PP states, page 3, line 93, ".....evaluation of PAH concentrations associated with common anthropogenic sources (such as vehicle exhaust, particles from asphalt pavement, etc....." language should be tied back to specific AOC activities, if possible, for the WOE (example: elevated PAH sample(s) was detected adjacent to an asphalt road and asphalt fragments were included in the sample).

Action Items: Please support elevated levels of PAHs and the NFA with AOC specific activities whenever possible. Please include this approach for all future PPs.

Response: *Agree. Section 6.1 (Human Health Risk Assessment) has been revised as presented below to further explain the elevated levels of PAHs discussed on Page 3. This revision will support the levels of PAHs and the NFA recommendation.*

4) For public understanding, more detail regarding the historical activities that occurred at the AOC would be helpful. For example, Page 2, Section 3.0 states "...to manufacture percussion elements and primers." Please briefly discuss what percussion elements and primers are and the role they played at RVAAP.

Action Items: For public understanding, please briefly discuss what percussion elements and primers are and the role they played at RVAAP. Please include this approach for all future PPs.

Response: *Agree. The first two paragraphs of Section 3.0 have been revised as follows:*

Section 3.0 Load Line 10 Description and Background

Load Line 10, formerly known as the Percussion Element Manufacturing Line, is a 36-acre, fenced AOC located south of Fuze and Booster Road, southwest of Load Line 9, and northeast of Load Line 5 in the south-central portion of Camp Ravenna (Figure 2).

The original primary purpose of RVAAP was to load medium and major caliber artillery ammunition (bombs, mines, fuze and boosters, primers and percussion elements) and to store finished components. Load Lines 5 through 11 operated to produce fuzes, boosters, primers, detonators, and percussion elements.

From 1941 to 1945, Load Line 10 produced 226,387,306 M36 percussion elements used during World War II. Percussion elements consist of primer cups and a percussion element charge (explosive) that ignites a less sensitive propellant.

From 1951 to 1957, Load Line 10 produced 49,286,628 percussion elements and 135,262,465 primers. Percussion primers are devices that contain a percussion element and the less sensitive propellant.

From 1969 to 1971, unknown quantities of primers were produced at Load Line 10. In 1971, Load Line 10 was deactivated permanently, and the production equipment was removed.

No historical data or information exists to indicate Load Line 10 was used for any

process other than percussion element/primer manufacturing (MKM 2007). No fuel storage tanks were present at the AOC during operations. Additionally, no fuel materials were used operationally at Load Line 10, and no burning was conducted.

5) Although ground water is being addressed under the Facility-Wide Groundwater Monitoring Program (FWGWMP), the LL-10 RI and the other RIs and RI/FSs have modeled soil and sediment contaminants regarding impact to ground water. The modeling results for LL-10 and the other RI and RI/FS reports have various interpretations and the monitoring well data within that AOC are compared to the modeling results. As stated in the LL-10 RI and the other RI and RI/FS reports, it is noted the wells may not exist near the sample location with the maximum concentration and should not be considered in direct correlation. As the locations (horizontal and vertical) of the monitoring wells were not evaluated, it is not possible to confirm the modeling results or identified data gap locations where a monitoring well may be needed. This remains a concern by Ohio EPA and affects the modeling results and interpretation. The LL-10 PP, page 4, states "Based on the fate and transport evaluation, no contaminant migration chemicals of concern (CMCOCs) for soil or sediment were identified as impacting groundwater." Ohio EPA suggests adding "the groundwater will be further evaluated under the FWGWMP." Also, please add to Section 7.0, Conclusions, page 5.

Action Item: Please add "the groundwater will be further evaluated under the Facility-Wide Groundwater Monitoring Program (FWGWMP) after line 62, page 4 and to Section 7.0, page 5, line 94.

Response: *Agree. Line 62, page 4 and Section 7.0, page 5, line 94 will be revised as suggested.*

6) The LL-10 PP, page 5, line 19-22 states, "The distribution of PAHs across LL-10 suggests that the PAH contamination is from common anthropogenic sources." As there are two samples with higher elevated levels of PAHs than the other lower, but still elevated PAH samples, this statement may not be accurate. Please change as suggested above to include various WOE or delete.

Action Items: Please change the sentence to specify various WOEs which include the two PAH elevated samples and the overall lower, but still elevated, PAH samples. Please incorporate this approach in all future PPs.

Response: *Agree. Section 6.1 Human Health Risk Assessment has been revised as presented in comment 1 response.*

REVISION TO SECTION 6.1 HUMAN HEATH RISK ASSESSMENT (per comments 1, 3, and 6)

6.1 Human Health Risk Assessment

A human health risk assessment (HHRA) was performed to identify chemicals of concern (COCs) and provide a risk management evaluation to determine if remediation is required under CERLCA based on potential risks to human receptors.

The exposure depths evaluated in the HHRA for the Resident (Adult and Child) were surface soil (0-1 ft bgs), subsurface soil (1-13 ft bgs), sediment, and surface water.

No sediment or surface water COPCs were identified for Load Line 10 and, therefore, no COCs were identified for sediment or surface water.

The only soil (surface and subsurface) COCs identified were four PAHs [benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene], as concentrations of these chemicals in soil either exceeded FWCUGs or contributed to a sum-of-ratios greater than one. Evaluation of elevated PAH concentrations indicated that the samples having the highest sum-of-ratios either 1) contained building debris or fill material (L10sb-071) or 2) were on a gravel access roadway (L10ss-080). Neither of these samples were collected near potential sources of potential site-related PAH contamination, such as the Heater Houses. Other samples with PAH concentrations above FWCUGs were also located in areas impacted by sources such as vehicle exhaust and run-off from roads. ~~associated with common anthropogenic sources indicate the concentrations at Load Line 10 are at or near those concentrations. The distribution of PAHs across Load Line 10 suggests that the PAH contamination is from common anthropogenic sources.~~

Lead is a chemical associated with previous use of the site. Only 1 ISM sample (L10ss-003M at 430 mg/kg) of 93 soil samples exceeded lead's risk-based screening level of 400 mg/kg. This sample area is approximately 0.1 acres in size, and is well below the Industrial RSL of 800 mg/kg. The co-located discrete surface soil sample collected in 2010 had a concentration of only 79.4 mg/kg.

The HHRA did not identify COCs from previous Army activities requiring remediation under CERCLA to be protective of the Resident Receptor.

Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

July 8, 2016

Re: US Army Ravenna Ammunition PLT RVAAP
Remediation Response
Project Records
Remedial Response
Trumbull County
267000859121

Mr. Mark Leeper
Restoration/Cleanup Program Manager
Army National Guard Directorate
ARNGD-ILE Clean Up
111 South George Mason Drive
Arlington, VA 22203

SUBJECT: "RAVENNA ARMY AMMUNITION PLANT PORTAGE/TRUMBULL COUNTIES, DRAFT, PROPOSED PLAN FOR SOIL, SEDIMENT, AND SURFACE WATER AT RVAAP-43 LOAD LINE 10" DATED MAY 6, 2016

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Draft, Proposed Plan (PP) for Soil, Sediment, and Surface Water at RVAAP-43 Load Line 10," for the Ravenna Army Ammunition Plant, Portage/Trumbull Counties. The report is dated and was received at the Northeast District Office (NEDO) on May 6, 2016. It was prepared by Leidos Engineering of Ohio, Inc.

The LL-10 PP is the first of many forthcoming PPs that are following approval of RIs and RI/FSs with proposed public meetings for each. As such, it is anticipated by Ohio EPA that the LL-10 PP format will be used for the future PPs. Ohio EPA is suggesting the following be considered for the PPs that will summarize each report with enough detail for public understanding that supports the conclusion of each RI or RI/FS report. This will also hopefully facilitate more approvable PPs in the future.

In general, Ohio EPA suggests the following be incorporated in the LL-10 PP and all forthcoming PPs:

1. Each PP should be tailored for the specific AOC RI or RI/FS that was submitted and supports the approved conclusion of the report that can be understood by the general public. This includes addressing specific exceedances with sufficient detail. For LL-10, there are two samples that stand out with higher elevated PAH levels that should be addressed in the PP with supporting data for an NFA. One is for surface soil (Figure 5-2, sample #L10ss-080M) and the other for subsurface soil (Figure 5-6, sample #L10sb-071). These should be addressed specifically with enough detail to support the approval of an NFA. In addition, the other detected lower, but still elevated, PAH ISM samples above the FWCUGs should also be addressed with supporting Wight-Of-Evidence (WOE). A short sentence or two summary regarding the elevated level of lead (LL 10ss-003M at 430 mg/kg) and WOE as presented in the RI would also be helpful.

   Action Item: The LL-10 and future PPs must be tailored for the specific AOC that supports the conclusion of the RI or the RI/FS that can easily be understood by the general public. Please add each of the two samples identified above to the PP with enough discussion to support the approved NFA. Please include the lower, but still elevated, PAH samples and lead. Please include this approach in all future PPs.

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3. In addition, the PP states, page 3, line 93, ".....evaluation of PAH concentrations associated with common anthropogenic sources (such as vehicle exhaust, particles from asphalt pavement, etc....." language should be tied back to specific AOC activities, if possible, for the WOE (example: elevated PAH sample(s) was detected adjacent to an asphalt road and asphalt fragments were included in the sample).

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   Action Items: For public understanding, please briefly discuss what percussion elements and primers are and the role they played at RVAAP. Please include this approach for all future PPs.

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   Action Item: Please add "the groundwater will be further evaluated under the Facility-Wide Groundwater Monitoring Program (FWGWMP) after line 62, page 4 and to Section 7.0, page 5, line 94.

6. The LL-10 PP, page 5, line 19-22 states, "The distribution of PAHs across LL-10 suggests that the PAH contamination is from common anthropogenic sources." As there are two samples with higher elevated levels of PAHs than the other lower, but still elevated PAH samples, this statement may not be accurate. Please change as suggested above to include various WOE or delete.

Action Item: Please change the sentence to specify various WOEs which include the two PAH elevated samples and the overall lower, but still elevated, PAH samples. Please incorporate this approach in all future PPs.

Please address the above comments. Ohio EPA is open to a meeting or conference call to discuss the content and format of the LL-10 PP and future PPs. If you have any questions on the above, please call me at (330) 963-1207.

Sincerely,

Vicki Deppisch
Hydrogeologist/Project Coordinator
Division of Environmental Response and Revitalization

VD/nvr

cc: Katie Tait/Kevin Sedlak, ARNG, Camp Ravenna
Gail Harris/Rebecca Haney, Vista Sciences
Greg Moore, USACE Louisville

ec: Justin Burke, Ohio EPA, CO, DERR
Kelly Kaletsky, Ohio EPA, CO, DERR
Brian Tucker/Carrie Rasik, Ohio EPA, CO, DERR
Rod Beals, Ohio EPA, NEDO, DERR
Vanessa Steigerwald Dick, Ohio EPA, NEDO, DERR
Bob Princic, Ohio EPA, NEDO, DERR