

APPENDIX K

Ohio EPA Comments and Responses

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

December 14, 2016

Mr. Mark Leeper
Chief (Acting)
Cleanup and Restoration Branch ARNG
111 George Mason Drive
Arlington, VA 22204

**Re: US Army Ammunition PLT RVAAP
Remediation Response
Project Records
Remedial Response
Portage County
267000859103**

**Subject: Ravenna Army Ammunition Plant, Portage/Trumbull Counties.
"Revised Draft, Remedial Investigation Report for Soil, Sediment, and
Surface Water at RVAAP-45 Wet Storage Area, Responses to
Comments on the Revised Draft Remedial Investigation Report
(October 5, 2016)" Dated December 12, 2016**

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Revised Draft, Remedial Investigation for Soil, Sediment, and Surface Water at RVAAP-45 Wet Storage Area, Responses to Comments on the Revised Draft Remedial Investigation Report (October 5, 2016)" document for the Ravenna Army Ammunition Plant, Portage/Trumbull Counties. The responses to comments document is dated December 12, 2016, and was received at Ohio EPA, Northeast District Office (NEDO) on December 13, 2016.

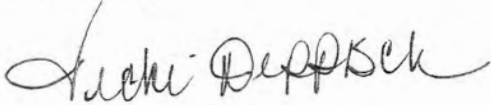
Ohio EPA's comment letter of November 8, 2016, included identifying some elevated PAH sampling locations that should be moved forward for consideration for remedial activities evaluation in a Feasibility Study (FS). The Army has agreed to move sampling locations WSAss-004M, WSAsb-028 and WSAsb-024 forward into an FS with the goal to attain unrestricted (residential) land use. WSAsb-027 (0.3J mg/kg) and WSAsb-022 (1.1 mg/kg) will be presented in the revised human health risk assessment (HHRA) with a weight-of-evidence approach.

The responses to comments have been adequately addressed. Please revise the text and incorporate the responses to comments in all appropriate sections of the Final RI Report.

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22 Dec 2016

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:cla

- cc: Katie Tait/Kevin Sedlak OHARNG RTLS
Craig Coombs/Gregory F. Moore, USACE
Rebecca Shreffler/Gail Harris, VISTA Sciences Corp.
- ec: Mark Leeper, ARNG
Nat Peters, USACE
Rodney Beals, Ohio EPA, NEDO, DERR
Bob Princic, Ohio EPA, NEDO, DERR
Vanessa Steigerwald-Dick, Ohio EPA, NEDO, DERR
Tim Christman, Ohio EPA, Central Office, DERR
Kelly Kaletsky, Ohio EPA, Central Office, DERR



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

December 12, 2016

Ohio Environmental Protection Agency
DERR-NEDO
Attn: Ms. Vicki Deppisch
2110 East Aurora Road
Twinsburg, OH 44087-1924

Subject: Ravenna Army Ammunition Plant (RVAAP) Restoration Program, Portage/Trumbull Counties, RVAAP-45 Wet Storage Area, Responses to Comments on the Revised Draft Remedial Investigation Report (Work Activity No. 267-000-859-103)

Dear Ms. Deppisch:

The Army appreciates your time and comments (dated November 8, 2016) on the Revised Draft Remedial Investigation Report for Soil, Sediment, and Surface Water at RVAAP-45 Wet Storage Area. 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.

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,

A handwritten signature in cursive script, appearing to read "Mark Leeper".

Mark Leeper
RVAAP Restoration Program Manager
Army National Guard Directorate

cc: Bob Princic, Ohio EPA, NEDO
Rod Beals, Ohio EPA, NEDO
Kelly Kaletsky, Ohio EPA, CO
Kevin Sedlak, ARNG, Camp Ravenna
Katie Tait, OHARNG, Camp Ravenna
Craig Coombs, USACE Louisville
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Kevin Jago, Leidos
Jed Thomas, Leidos
Rebecca Shreffler, Vista Sciences Corporation
Gail Harris, Vista Sciences Corporation

Subject: Ravenna Army Ammunition Plant (RVAAP) Restoration Program, Portage/Trumbull Counties, RVAAP-45 Wet Storage Area (Work Activity No. 267-000-859-103)

Ohio EPA Comments

- 1) Page 7-17, lines 19-22, regarding background concentrations and PAHs: The report states, “PAH concentrations were less than the Resident Receptor FWCUGs in all but one surface soil sample location (WSAss-004M) where concentrations were up to 25 times the FWCUG of 0.221 mg/kg for benzo(a)pyrene.....” Figure 5-3 identifies five surface soil samples above the FWCUG for benzo(a)pyrene that ranged in concentrations from 0.3 to 5.5 mg/kg. Section ES.2.2.1 correctly states that benzo(a)pyrene exceeded the Resident Receptor FWCUG at discrete PBA08 RI sample locations WSAsb-022, WSAsb-024, WSAsb-027, and WSAsb-028 in addition to WSAss-004. Please verify and revise the text.

Army Response: Clarification and agree. Of the ISM samples collected, only one surface soil sample exceeded the Resident Receptor FWCUG. The text will be revised as follows:

“At Wet Storage Area, PAHs were detected across the entire AOC; one or more PAHs were detected in 6 of 6 surface soil ISM samples and 3 of 19 discrete subsurface soil samples analyzed for SVOCs. PAH concentrations were less than the Resident Receptor (Adult and Child) FWCUGs in all but one surface soil **ISM** sample location (WSAss-004M) where concentrations were up to 25 times the FWCUG of 0.221 mg/kg for benzo(a)pyrene and 4.2 times the FWCUG of 0.221 mg/kg for dibenz(a,h)anthracene **PAH concentrations exceeded the Resident Receptor (Adult and Child) FWCUGs in surface soil (0-1 ft bgs) at discrete sample locations WSAsb-022, WSAsb-024, WSAsb-027, and WSAsb-028. Of those four samples, WSAsb-024 had a maximum benzo(a)pyrene concentration of 3.6 mg/kg.**”

- 2) Page 7-23 regarding PAHs: The report attributes the elevated level of PAHs in sample WSAss-004M “likely to diesel and gasoline engine exhaust particles from trucks idling in front of the storage igloo.” In addition, the report states ISM sample WSAss-036M was collected to define the lateral extent of contamination in the area around igloos WS-1 and WS1A, including sample WSAss-004. PAHs were not identified as an exceedance in ISM sample WSAss-036M in the report. As stated in previous Ohio EPA comment letters, in general, when an area sampled within an AOC exceeds the FWCUGs and/or RSLs for a COC, the area needs to be evaluated for remedial alternatives in the FS or a strong weight of evidence based on specific data must be presented. The above statement presented for the elevated PAH level is not appropriate. In addition, the ISM sample WSAss-036M was not physically located adjacent to sample WSAss-004 on any of the sample boundaries. Consequently, this rationale is also inappropriate. Please revise the text. This area should be moved forward for remedial activities evaluation in the FS. The other elevated four PAH samples above the FWCUG were not discussed in the text. These should be discussed in the text and moved forward for remedial activities evaluation in the FS.

Army Response: Clarification and agree.

Regarding locations WSAss-004M, WSAsb-028, and WSAsb-024, the Army agrees to move this area forward into an FS. The HHRA will be revised to recommend these locations go forward in a FS, and an FS will be developed to evaluate remedial alternatives for soil removal and/or remediation to attain Unrestricted (Residential) Land Use. As the COCs identified for the Resident Receptor will undergo

Subject: Ravenna Army Ammunition Plant (RVAAP) Restoration Program, Portage/Trumbull Counties, RVAAP-45 Wet Storage Area (Work Activity No. 267-000-859-103)

evaluation in an FS and remediation will attain Unrestricted (Residential) Land Use, new evaluations of the National Guard Trainee and Industrial Receptor will not be added to the HHRA.

Regarding the other two locations:

WSAsb-027 (0-1 ft bgs) – The sample associated with this location and depth had a slight exceedance (0.3J mg/kg) of the Resident Receptor FWCUG (0.221 mg/kg) and does not warrant remediation. The HHRA will be revised to present this weight-of-evidence.

WSAsb-022 (0-1 ft bgs) – The sample associated with this location and depth had a slight exceedance (1.1 mg/kg) of the Resident Receptor FWCUG (0.221 mg/kg). In addition, this sample was on or adjacent to ISM sample WSAss-034M that had very low concentrations of benzo(a)pyrene at 0.071 mg/kg. The HHRA will be revised to present this weight-of-evidence.

- 3) Table 7-10 (page 7-59), Environmental Concentrations of PAHs Measured in Background Surface Soil Samples at RVAAP, page 7-17 line 28: As stated in previous Ohio EPA comment letters, this table identifies 15 samples which were used to calculate PAH background. This is incorrect. Four outlier samples were eliminated, leaving 11 that were used to calculate background. Please change the table and text to reflect this in all forthcoming reports/documents.

Army Response: Agree. The entirety of the weight-of-evidence discussion PAHs in the background study, including the four outlier samples noted, will be removed from the text.

- 4) Page 8-5, regarding PAHs: The report states, “PAHs were not identified as COCs for potential remediation in surface soil at the Wet Storage Area.” All sampling locations which detected PAHs above the FWCUG of 0.221 mg/kg for unrestricted use must be moved forward for further evaluation of remedial activities in the FS.

Army Response: Comment noted. Changes to the HHRA will be reflected in Section 8, and an FS will be developed to evaluate the locations identified in Comment 2 as requiring remediation.



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

November 8, 2016

Mr. Mark Leeper
Chief (Acting)
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The Wet Storage Area is a 36-acre fenced AOC which housed six earth-covered igloos and a generator house. The floors, walls and ceilings of the igloos were constructed of reinforced concrete. From 1941-1945, the Wet Storage Area was used to store highly explosive, shock-sensitive primary explosives, including lead azide, mercury fulminate, tetryl and potentially nitroguanidine. During storage activities, explosive materials were containerized and covered with water within drums that were stored separately in the igloos. There is no documentation indicating any spills occurred at the AOC. During remedial activities in 2011, Open Demolition Area #2 (ODA2) Munitions Response Site, a temporary staging area, was established in the Wet Storage Area. This area was deemed acceptable after being demobilized. Four igloos (WS-1, WS1A, WS-2, and WS-2A) were removed in 2003-2004. Igloos WS-3 and WS-3A remain at the AOC.

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The Army is recommending no further action to attain unrestricted (residential) land use at the Wet Storage Area.

The following are Ohio EPA's comments. Please note some of these comments have been provided in previous comment letters regarding other AOCs:

Page 7-17, lines 19-22, regarding background concentrations and PAHs: The report states, "PAH concentrations were less than the Resident Receptor FWCUGs in all but one surface soil sample location (WSAss-004M) where concentrations were up to 25 times the FWCUG of 0.221 mg/kg for benzo(a)pyrene....." Figure 5-3 identifies five surface soil samples above the FWCUG for benzo(a)pyrene that ranged in concentrations from 0.3 to 5.5 mg/kg. Section ES.2.2.1 correctly states that benzo(a)pyrene exceeded the Resident Receptor FWCUG at discrete PBA08 RI sample locations WSAsb-022, WSAsb-024, WSAsb-027, and WSAsb-028 in addition to WSAss-004. Please verify and revise the text.

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Sincerely,



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

VD/nvr

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