DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, PICATINNY
PICATINNY ARSENAL, NEW JERSEY 07806-5000

January 7, 2015

REPLY TO ATTENTION OF
Environmental Affairs Division

SUBJECT: Operational Range Assessment Program Final Phase II Quantitative Assessment Report, United States Army Picatinny Arsenal, NJ

Mr. William Roach
U.S. Environmental Protection Agency
290 Broadway, 18th Floor
New York, NY 10007-1866

Ms. Anne Pavelka, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
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Trenton, New Jersey 08625-0028

Mr. Roach and Ms. Pavelka:

Enclosed for your review is the **Operational Range Assessment Program (ORAP) Final Phase II Quantitative Assessment Report** (The *ORAP Report*).

This report is being submitted to you to advise you of its findings and to determine whether you agree with the report's recommendation to refer seven of the twelve ranges investigated for further investigation under the Defense Environmental Restoration Program (DERP). The other five ranges were not identified as needing further investigation, and are not eligible for DERP. Therefore, we are not asking for your opinion on those.

The ORAP Report details findings of an assessment completed at Picatinny Arsenal as part of the Department of Defense Operational Range Assessment program (ORAP). ORAP[1] assesses the military's operational ranges to determine if *there is a current or imminent migration of munitions constituents from on-range (MC) that pose an unacceptable risk to receptors* (human and/or ecological) *off range.* ORAP is meant to identify issues before the issue

[1] The ORAP is being implemented to fulfill requirements contained implicitly and explicitly in the following:

- Department of Defense Directive (DODD) 4715.11, Environmental and Explosives Safety Management on Operational Ranges Within the United States (10 May 2004)
- Department of Defense Instruction (DODI) 4715.14, Operational Range Assessments (30 November 2005).

The DODD and DODI require that U.S. Army installations maintain an operational range inventory and evaluate the potential for off-range migration of munitions constituents. The DODI identifies munitions constituents to be evaluated and lays out a scientifically sound process for assessing and presorting potential off-range environmental impacts of munitions used on operational ranges. In particular, the DODI requires the Department of Defense (DoD) components to respond to a release or substantial threat of release of MCOC from an operational range to off-range, when such a release poses an unacceptable risk to human health or the environment.

impacts the testing missions. As you know, neither the Military Munitions Response Program (MMRP) nor the Installation Restoration Program (IRP) can address munitions or munitions constituents on operational ranges. The ORAP assessment at Picatinny was done independent of the Picatinny IRP and the MMRP. The fieldwork for this effort occurred in calendar year 2013, and the report was finalized recently, following verification of consistency with the definition of Picatinny's operational range boundaries. The ORAP Report was developed by EA Engineering, Science and Technology, Inc., teamed with ARCADIS—US Inc. and has been approved by an Army team composed of the U.S. Army Environmental Command (USAEC), the U.S. Army Corps of Engineers, Picatinny Arsenal and the U.S. Army Institute of Public Health. This document is neither a Primary nor Secondary document as defined in the Federal Facility Agreement (FFA).

The Picatinny ORAP Report "refers" seven of the 12 ranges assessed in the Phase II report, which means the assessment identified "***compelling evidence indicating the presence of an off-range release that potentially poses an unacceptable risk to human health or the environment***". When a range is referred, the Army typically conducts a Site Investigation (SI) in the off-operational range area where MC was found to be migrating unless additional coordination with appropriate regulatory agencies determine otherwise. These 'referred range sites' would become sites under the FFA and are eligible for Environmental Restoration, Army funding under the Defense Environmental Restoration Program (DERP).

In my opinion, however, the protocol used in ORAP for deciding whether a range should be 'referred' did not fully consider a variety of factors, such as previous IRP investigations and decision documents that I believe might result in a different recommendation and better use of Government funds. The protocol is too heavily reliant on comparing new or existing data to the Project Action Limits (PALs). The referrals are triggered by the PALs, not the cleanup criteria agreed to in previous RODs. I would like you to consider the following factors as you review the document and make an assessment on these referral recommendations:

- RDX levels in groundwater at Range[2] 1, Range 2, and Range 5 exceeded the PAL of 0.61 ug/l. However, all detected RDX levels were below the 2 ug/l cleanup criteria used in both the Mid-Valley Groundwater Record of Decision (ROD) and the Group 1 ROD.

- The ORAP Report referrals for Ranges 5 and 6 were triggered by comparing the 2006 surface water results for those ranges of 1.1 ug/l and 2.6 ug/l of RDX, respectively, to the PAL of 0.61 ug/l. These 2006 results were preliminary to the investigation that resulted in the 2009 **600 Area, RDX Investigation Data Report** that recommended NFA for the RDX 'contamination' in the 600 area surface water and groundwater. The **600 Area, RDX Investigation Data Report** was concurred on both EPA and NJDEP[3]. The approval of the NFA for RDX was also implicitly included by

[2] For clarification as you read the report please use table called "Crosswalk between Co-located ORAP Referred Ranges, Common Picatinny Nomenclature and IRP Site Numbers and AEDB-R Site IDs" at the end of this letter.

[3] MFR dated June 10, 2009 from Richard Krauser to William Roach and the May 6, 2009 MFR from Joe Marchesani to Greg Zalaskus

the EPA's and NJDEP's approval of the **2013 600 Hill Groundwater Feasibility Study**.

- For Range 7, the referral was based on two historical exceedances of the PAL for lead of .54 ug/l in surface water. The first was the 1998 surface water sample of 1.0 ug/l that is lower than the 'action level' of 5 ug/l used in the Green Pond Brook/Bear Swamp Brook monitoring program. The 2nd exceedance was the 6.9 ug/l in 2006 sample taken by Shaw for the 600 Hill investigations. Both levels were part of the workplans and FS for the 600 Hill, but lead in surface was never considered a CoPC or COC and never required sampling after that one event. It implies that the review team thought that lead in surface water was not an issue.

- Range 8, commonly called the Gorge Area and includes the RCRA-regulated Open Denotation Area (ODA), was referred based on the exceedances of the PALs by decade-old information collected by the RCRA monitoring program for the ODA. The RCRA monitoring program is ongoing and recent data has shown that concentrations of RDX and lead have decreased significantly from the levels used in the ORAP Report. Please see the table below for a comparison of this data evaluation using data from the **Annual Analytical Report for Open Detonation Area/Gorge dated December 2013.**

Constituent and media	**Concentration used to compare to PAL**	**Annual Analytical Report for Open Detonation Area/Gorge dated December 2013**
RDX in Surface Water(SW)	23 ug/l in 2011 to PAL of .61	No explosives compounds including RDX was found the 5 samples in SW Mastrocola, Krista
Lead in SW	190 ug/l (1998) compared to PAL of 0.54 ug/l	Lead was detected in one sample of the 5 collected at concentration of 8.6 ug/l The LOC for the program in 5 ug/l. All other samples were below that level.
Lead in GW	390 ug/l compared to PAL of 10 ug/l	Lead was detected in two samples at 7 ug/l and 24.7 ug/l. The LOC for the program is 5.

Please note that if an SI is performed, due to the buffer on the operational range, the nearest SI groundwater wells would be approximately 600 feet south and down-gradient of the current RCRA wells.

- Range 9 was triggered by the RDX level of 99 ug/l found in the groundwater addressed in the 1996 Shaw Phase II investigation at Site 3. However, the RDX was further investigated and resulted in that entire site being recommended for NFA in the **No Further Action with Monitoring of Land Use**
- **Proposed Plan for Areas D, H, J, K, M, and P Sites,**(Group B)Proposed Plan. Please see the table below for a comparison of data.

Constituent and media	**Concentration used to compare to PAL**	**Most recent information as summarized in the page 22 and Page 23 of the approved "48-Site FS for**
RDX in GW	99 ug/l compared to a PAL of .61 ug/l. This sample was found in K-3-MW-002 in October of 1996	"..*the concentration of RDX at K-3-MW-002 in May of 2000 was 8.1 ug/L, and a nearby hydropunch sample collected in March of 2000 had a concentration of 12 ug/L RDX. There were also no detections of RDX in downgradient wells or surrounding sites, indicating the high concentration detected in 1996 was an isolated occurrence. RDX was not detected above the SC in any soil samples at Site 3, and or above the SC in groundwater samples from surrounding wells.*"
Lead in SW	3.58 compared to the PAL of .54	The maximum level found in any of the 16 surface water samples was 23.3 ug/l which was below the SC of 38.1 ug/l.

Thank you for your review and input on the ranges referred by the ORAP report. If desired, a conference call or meeting could be set up to discuss the report and the recommendations.

Sincerely,

Ted Gabel, Project Manager for
Environmental Restoration

Enclosures
CC (letter only via email)
Mr. Jim Kealy, NJDEP
Mr. Joe Marchesani, NJDEP

Crosswalk between Co-located ORAP Referred Ranges, Common Picatinny Nomenclature and IRP Site Numbers and AEDB-R Site IDs		
ORAP Report's Referred Range Numbers	***Common Picatinny Nomenclature***	***RI Concept Plan number/PICA number & general status***
Range 1:	Building 604F	Sites 115, 152 & 153, all captured under PICA-175, are included in the Group B PP and are recommended for NFA with Monitoring of Land Use.
Range 2:	Area 616	Site 15/PICA-061 was deemed ER-A ineligible in FY 2001
Range 5:	649	Site 11/PICA-182 was deemed ER-A ineligible in FY 2001. The 600 Hill groundwater investigation addressed the area beneath Range 5.
Range 6:	650	Site 11/PICA-182 was deemed ER-A ineligible in FY 2001. The 600 Hill groundwater addressed the area beneath Range 6.
Range 7:	670	Site 9/PICA-055 was deemed ER-A ineligible in FY 2001
Range 8:	Gorge/1222	Site 8/PICA-054 was deemed -ER-A eligible in FY 2001. The RCRA Open Detonation Area is also within Range 8.
Range 9:	Building 1505	Site 3/Area K/PICA-050 is included in the 45 Site Group B PP and is recommended for NFA with Monitoring of Land Use. Site 3 excludes the small arms firing range which was deemed ER,A ineligible.