



Iowa Army Ammunition Plant, Iowa

March 2020

Background

The Department of Defense (DoD) uses and manages operational ranges to support national security objectives and maintain the high state of operational readiness essential to its mission requirements. The Department conducts non-regulatory, proactive, and comprehensive operational range assessments (ORAs) to support the long-term sustainability of these ranges while protecting human health and the environment. The purpose of an ORA is to determine if there is a release or substantial threat of a release of munitions constituents (MC) from an operational range to an off-range area that exceeds an applicable regulatory standard or creates a potential unacceptable risk to human health or the environment.

The Army ORA effort was developed to address DoD requirements detailed in DoD Directive 4715.11 (10 May 2004) and DoD Instruction 4715.14 (15 November 2018). The overall objective of the ORA is to assess operational ranges/range complexes to determine if an off-range MC release or substantial threat of an off-range MC release exists; if an off-range MC release exists, does it exceed an applicable regulatory reporting standard; and if an MC release or substantial threat of a release exists, determine whether it creates a potentially unacceptable risk to off-range human health or the environment.

Operational Range Assessment Findings (03/2020)

Based on data evaluated for the updated CSM, the conclusions from the 2012 Phase II remain valid and no further sampling is required at this time. The Advanced Assessment determined that no potential MC, associated with current training at Iowa AAP, are migrating off-range and pose no risks to human and/or ecological receptors.

Next Steps

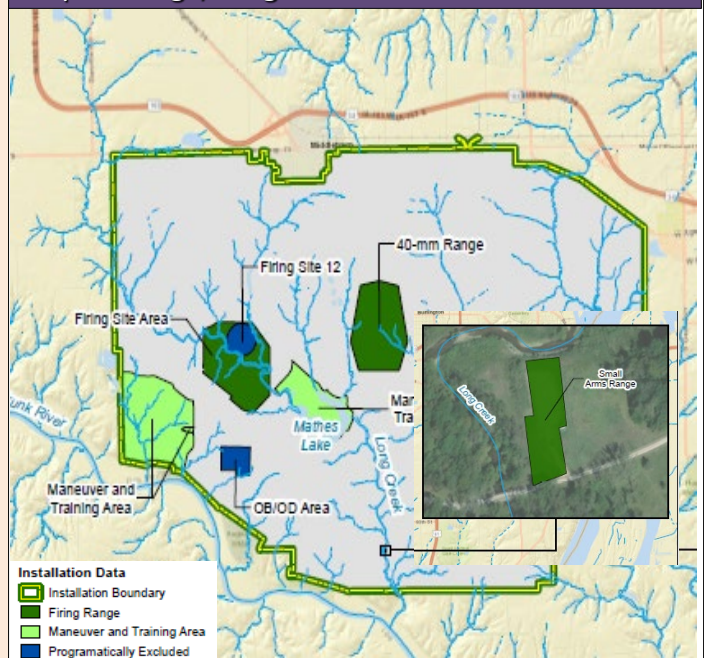
The installation's operational ranges should be included in the FY23-27 cycle of ORAs to satisfy re-assessment requirements.

Installation Overview

Iowa Army Ammunition Plant (AAP) encompasses 19,011 acres in southeast Iowa within Des Moines County. The installation is bordered to the north by an 11-acre U.S. Army Reserve Compound and U.S. Highway 35, the town of Burlington to the east, and by largely undeveloped lands to the south and west.

Iowa AAP was established in 1941 as a shell loading and munitions production facility. Following World War-II, Iowa AAP was used for storage, demilitarization, and reconditioning of wartime munitions. During the post-World War-II period, the Atomic Energy Commission used portions of Iowa AAP to assemble sealed components into nuclear weapons from 1948 through 1975. Ammunition production expanded significantly with the onset of the Korean War in 1950 and again in 1961 to support the Southeast Asia Conflict.

Map of Range/Range Area



Installation Overview (continued)

Munitions produced during these times included artillery and mortar shells, grenade components, mines, and demolition blocks. In 1975, the Atomic Energy Commission announced it was phasing out operations at Iowa AAP at which time the U.S Army gained full control.

Currently Iowa AAP is a government owned, contractor-operated facility with a mission to load, assemble, and pack ammunition items including projectiles, mortar rounds, warheads, demolition charges, and various munitions components

Iowa AAP currently consists of six eligible operational ranges encompassing 1,593 acres including a small arms range, three maneuver training areas, and two testing and evaluation ranges for munitions produced at Iowa AAP (not previously assessed). One non-eligible range, a Resource Conservation and Recovery Act (RCRA) permitted open burn/open (OB/OD) detonation range is also present at Iowa AAP.

Previous ORA Investigations

The 2008 Phase I ORA evaluated four ORA-eligible operational ranges, including three maneuver training areas and one small arms range totaling 769 acres. The ORA concluded that three ranges were Unlikely to have a source-pathway-receptor interaction because there was limited to no munitions use on the ranges. The ORA categorized one range as Inconclusive based on the presence of a current and historical source, potential surface water pathways, and off-range human and ecological receptors. This Inconclusive range was recommended for further evaluation through a Phase II.

Subsequent to the ORA Phase I, an ORA Phase II site reconnaissance was conducted in 2012 to confirm/update the Phase I findings and collect additional data to refine the CSM prior to the ORA Phase II investigation.

Based on a re-evaluation of data, it was determined the small arms range boundary had been revised and the historical source area was no longer included within the operational range. The current source area, the impact berm, was determined to have been refurbished and erosion controls were implemented

Previous ORA Investigations (continued)

to reduce potential surface water migration. As such, this area was determined to contain a limited source of potential MCOC and it was reclassified as Unlikely. Therefore, no sampling was performed as part of the Phase II. The Phase II recommended that all operational ranges be re-categorized as Unlikely and placed into the review cycle to periodically re-evaluate whether future changes in conditions pose unacceptable risk to off-range human or ecological receptors.

Advanced Assessment Overview (2019)

Based on an evaluation of updated data gathered as part of the 2019 Advanced Assessment, it was determined that there are a total of six ORA eligible range areas including three maneuver training areas, a 40-mm range, the Firing Sites Area, and a small arms range.

A limited source was identified for the three maneuver training areas and, as such, no complete migration pathways nor risks were identified for human and/or ecological receptors.

The 40-mm range was constructed in 2012 and is used for testing and evaluation of 40-mm munitions produced at Iowa AAP. All MCOC containing munitions undergo high order detonations and all duds and munitions debris are policed from the range area resulting in a limited source. No surface water pathways were identified for the 40-mm range, and due to the limited source, transport of MCOC to groundwater was deemed unlikely.

The Firing Sites Area, deemed ineligible for assessment under previous ORAs, was determined to be eligible for assessment. The Firing Sites Area is used for testing and evaluation of high explosive munitions produced at Iowa AAP. One subarea at the range, Firing Site 12, is being remediated under the Formerly Utilized Sites Remedial Action Program due to depleted uranium contamination. As such, Firing Site 12 is ineligible for assessment under the ORA. Upon completion of the remedial action at these areas, they will be returned to the operational status. All MCOC containing munitions expended at the Firing Sites Area undergo high order detonations and all duds and munitions debris are policed from the range

ORA Advanced Assessment (continued)

area resulting in a limited source. Additionally, sampling of surface water, sediment, and groundwater at the Firing Sites Area indicates no MCOC are migrating off-range at concentrations that pose unacceptable risks to off-range human and/or ecological receptors.

Since 2014, approximately 12,000 small caliber munitions have been expended at the small arms range annually. Although changes have occurred to receptors, no changes to the surface water or groundwater pathways have occurred since the previous ORA. Shallow groundwater underlying the small arms range likely discharges to the adjacent Long Creek. During the site visit, no evidence of erosion or overland migration was observed at the small arms range. Additionally, the historic source area associated with the previous layout of the small arms range was remediated in 2017. Surface water and sediment sampling conducted as part of the remediation indicated no MCOC were migrating off-range at concentrations that pose unacceptable risks to human and/or ecological receptors.

The OB/OD area was confirmed to be ineligible for assessment under the ORAP as the area operates under a RCRA permit.

As such, based on observed conditions, Military Munitions Response Program reports, Formerly Utilized Sites Remedial Action Program, and documents from the Iowa AAP administrative record, and the refined CSM, the Unlikely conclusions of the 2012 Phase II remain valid and Iowa AAP's operational ranges should be entered into a review cycle to periodically update the CSM.

For more information on Iowa Army Ammunition Plant, contact USARMY.RIA.JMC.MBX.AMSJM-PA@MAIL.MIL
For more information on the DoD Operational Range Assessment Program visit <https://www.denix.osd.mil/orap/home/>