



Range Condition Assessment for the Potomac River Test Range

Background

The Department of Defense uses and manages operational ranges in support of national security objectives in maintaining the high state of operational readiness essential to mission requirements. The department conducts non-regulatory, proactive, and comprehensive operational range assessments (ORA) to support the long-term sustainability of 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 from an operational range to an off-range area that exceeds an applicable regulatory standard or creates a potentially unacceptable risk to human health or the environment.

The U.S. Navy meets the DoD ORA requirements by conducting Range Condition Assessments (RCA) under its Range Sustainability Environmental Program Assessment (RSEPA).

Range Overview

- The Potomac River Test Range (PRTR) is located in the lower portion of the Potomac River, is roughly 51 NM long, and ranges in width from 1.5 NM in the North to more than 9.7 NM at the river's mouth.
- This range is the nation's largest fully instrumented, over-water test range.
- The PRTR is used to conduct testing and evaluation on a wide range of both fielded and developmental weapon systems. This includes: conventional guns and ammunition, directed energy weapons, unmanned systems, and many other developmental items for the DoD.
- The majority of the ordnance tested on the PRTR includes conventional gun projectiles (small, medium, and large caliber), though additional types of ordnance are tested periodically.

Location of NSWCDD PRTR



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Potomac River Test Range



Range Condition Assessment Findings

- Based on the May 2013 RCA, there are no known adverse effects to human health and the environment from past or current range operations.
- Computer modeling was conducted to determine potential concentrations of select metals and explosive compounds in sediment and surface water within the Potomac River Test Range. Concentrations in surface water and sediment were well below Federal and State established screening values, indicating no current impact to plant and animal life in and around the range or to people from incidental ingestion of surface water or from ingestion of fish and shellfish within the range.
- Munitions constituent levels anticipated in surface water and sediment were found to be within acceptable Environmental Protection Agency limits.

Next Steps:

- The next Range Condition Assessment is planned to be conducted in Fiscal Year 2024.

Range Condition Assessment Overview

- In 2013, Naval Sea Systems Command (NAVSEA) conducted a RCA of the range following the DoD and Navy policies.
- To conduct the assessment, NAVSEA consulted with a team of environmental and operational range experts to evaluate the current and historical range uses, the types and quantities of munitions used, the chemical constituents of those munitions, target locations, environmental conditions, natural resources data, regulatory requirements and range management procedures.

- The information was combined to develop a site model of how munitions and their chemical components (known as munitions constituents) may move within the environment on and off this range and at what concentrations they may be present. These concentrations were used in both a human health risk assessment and an ecological risk assessment to determine if munitions constituents from range operations have the potential to impact human health and/or the environment.
- The assessment concluded the activities at the Potomac River Test Range at the time of the assessment did not pose an unacceptable risk to human health and the environment.

Munitions Constituents Evaluated

- The munitions constituents which made up the majority of the total mass of munitions fired on the range and had the greatest potential for toxic effects on human health and the environment were selected for modeling and evaluation in the ecological and human health risk assessments.
- The metals and explosives munitions constituents selected for evaluation were:
 - **Metals:** cadmium, chromium, copper, lead, manganese, nickel, and zinc.
 - **Explosives:** ammonium picrate, HMX, RDX, tetryl, and TNT.
- The results of the ecological and human health risk assessments indicated that the munitions constituents from munitions testing in the range are orders of magnitude – hundreds to billions of times – below both Federal and State established levels that could cause adverse effects to human health and the environment.