



# Operational Range Assessment Kirtland Air Force Base

Air Force Operational Range Assessment Program

February 2019

## Background

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 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 USAF Operational Range Assessment Program (ORAP), established to comply with DoD policy, sets forth procedures for consistently conducting ORAs throughout the Air Force. The USAF ORAP assessment methodology uses an installation-wide approach to verify the ORAP inventory and accomplish range-specific assessments. An Air Force ORA is comprised of two primary phases: Qualitative Assessment, Phase 1 and Quantitative Assessment, Phase 2 (if required).

- A Qualitative Assessment, Phase 1, encompasses records review, interviews, and a visual survey.
- A Quantitative Assessment, Phase 2, encompasses records review, interviews, visual survey, and environmental media sampling.

## Installation Overview

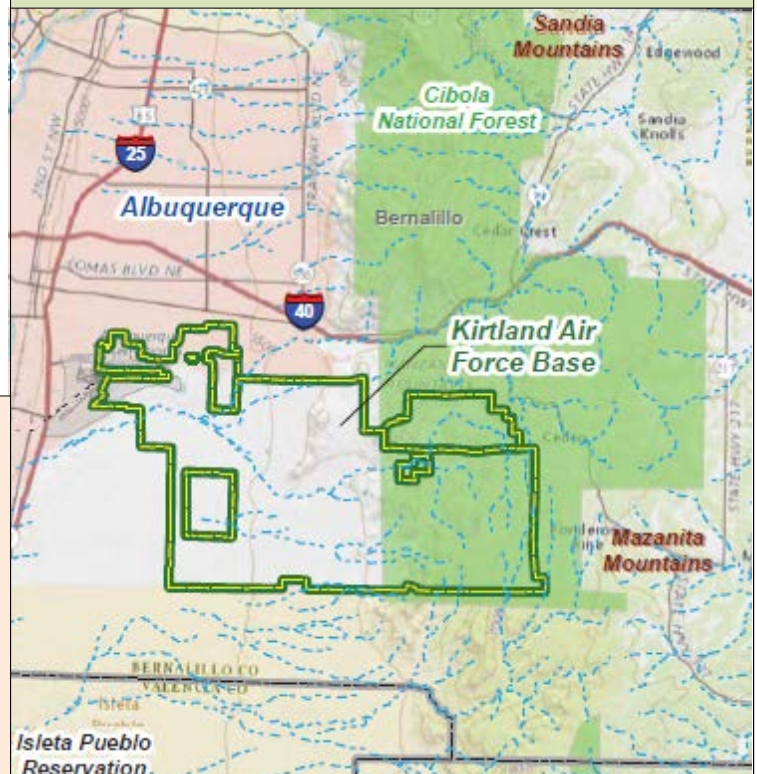
Kirtland Air Force Base (AFB), part of Air Force Global Strike Command, is located in Bernalillo County southeast of Albuquerque, New Mexico. Several tenants reside on and lease property from the USAF, including the Department of Energy (DOE) and other entities, such as the Air Force Research Lab, Defense Threat Reduction Agency, National Nuclear Security Agency, and Sandia National Laboratories.

## ORAP Findings: June 2018 ORA Report

- Migration mechanisms at Kirtland AFB were identified as unlikely to transport munitions constituents (MC) to off-range locations.
- No actual or potential off-range migration of MC exists for the areas assessed at Kirtland AFB.
- No unacceptable risks to human health or the environment were identified for the areas evaluated at Kirtland AFB.

## Next Steps

Kirtland AFB is scheduled to be assessed in accordance with USAF and DoD policy specifying periodic assessment at least every five years or sooner if significant changes occur that may impact assessment decisions.



### Installation Overview Continued

During implementation of the ORAP at Kirtland AFB, three overarching areas were verified as eligible and assessed under the USAF ORAP – Operational Range Area; Combat Arms Training and Maintenance (CATM) Complex West; and DOE Land Use Area.

It should be noted that a range complex (Military Police Ranges consisting of five sub-areas) was identified as eligible for an assessment under the ORAP; however, this complex was not specifically evaluated as part of the most recent assessment. This area will be evaluated during the next scheduled implementation of the ORAP at Kirtland AFB.

Additionally, several operational areas were determined to be ineligible for assessment under the ORAP. These ineligible areas include three indoor ranges; a fire training facility (no reported energetic use); and two training (bivouac) areas located on DOE owned lands (USAF does not maintain real property accountability). A previously assessed Explosive Ordnance Disposal (EOD) Range was identified as undergoing closure and was not further evaluated. Finally four areas that are on DOE-owned were deemed ineligible for assessment under the ORAP as these areas are DOE-owned and are not managed by Kirtland AFB.

The following summarizes USAF ORAP efforts for the Operational Range Area; CATM West Complex; and DOE Land Use Area. This is the second assessment for the Operational Range Area and CATM West; and initial assessment for the DOE Land Use Area.

### Operational Area Assessment Overview

The Operational Range Area at Kirtland AFB includes the majority of the eastern, central, and western portions of the installation and encompasses 23,211 acres. The Operational Range Area includes a total of 58 sub-areas. The boundary was determined based on the location of the operational range areas throughout the eastern, central, and western portions of Kirtland AFB so that all the operational range areas were grouped into a single complex. There is no physical restriction on access to the Operational Range Area; however, some sub-areas have restricted access.

### Operational Area Assessment Overview Continued

Kirtland AFB has been used extensively for training and research operations throughout its history. The area has been used for varying lengths of time, the majority of which has been in use since the 1950s and 1960s. The Operational Range Area and associated sub-areas are not laid out in a particular pattern, areas tend to be grouped by user and interspersed where adequate space allows for the planned activity. The use of the area varies based on need and the munitions expended depends on the sub-area type and activities being conducted. The most common items used are: small caliber rounds; 40-mm training rounds; explosives; and explosive compounds and detonators.

The 2011 Phase 1 ORA grouped operational areas at Kirtland AFB into three complexes: the Central Range Complex, Western Range Complex, and Eastern Range Complex for assessment purposes. The Central Range Complex consists of ranges located in the south central portion of the installation. The Western Range Complex consists of ranges located along the western and southwestern portion of Kirtland AFB. The Eastern Range Complex is located in the southeast corner of Kirtland AFB. The effort determined due to the historic and current activities conducted within the Central, Western, and Eastern complexes, MC is likely to be present in soils. The ORA concluded MC could be transported from its point of origin by wind erosion and surface runoff. As receptors are present, a potentially complete pathway was identified and further evaluation (a Phase 2) recommended.

In 2018 the Phase 2 ORA was completed. The effort determined that grouping into three complexes (Western, Central, and Eastern) was no longer suitable for further evaluation under the ORAP as such the Phase 2 grouped these areas into a single complex, the Operational Range Area. The Phase 2, upon further evaluation, determined it is unlikely MC would be transported off-range via the air pathway. To assess potential off-range migration of MC via surface water/sediment, samples were collected from within intermittent drainages and low-lying areas near the boundary, as well as downstream of source areas. No surface water was present during sampling, as such soil and sediment samples were collected.

Operational Area Assessment Overview Continued

The samples were analyzed for metals, explosives, and perchlorate. No metals, explosives, or perchlorate concentrations exceeded U.S. Environmental Protection Agency, or New Mexico soil screening criteria for human receptors. Metals (lead and zinc) were above avian wildlife Ecological Soil Screening Levels; however, sample locations were at least 1 mile away from potential ecological receptor habitat (e.g., no confirmed sightings of the receptor). As a conservative measure, soil samples were also compared to freshwater sediment screening criteria for ecological receptors and no detections of MC exceeded the sediment screening levels. Groundwater and soil pathways were also deemed unlikely to transport MC to off-range areas. Based on the Phase 2 assessment of the Operational Range Area no release or risks to receptors exists.

CATM West Assessment Overview

The CATM Complex West, encompassing 106 acres, is located in the northwestern part of Kirtland AFB. The CATM Complex West includes an active SAR, an inactive SAR, and an M203 Grenade Range. A fenced-in area encompasses approximately 6 acres and includes the firing positions/firing lines, target lines, bullet trap, historical back and side berms. The surface danger zone encompasses the remaining 100 acres. The use of the CATM Complex West began in 1959 and the complex has undergone several upgrades over the years. The M203 Grenade Range has been in operation since 2012. The CATM Complex West is primarily used by the USAF, but the Navy and Marines can also use the complex.

The initial 2012 ORA effort found that some selected lead removal activities occurred during renovations, and excavated soils stabilized and disposed of off-site. However, some of the original berms remain on-site as such a potential source of MC exists. MC interaction and transport in the environment through the air and soil pathways are limited. Potable groundwater is obtained from a depth of over 400 feet below land

CATM West Assessment Overview Continued

surface as such the groundwater pathway is not a viable transport route. Finally, due to infrastructure the transport of MC via surface water was found to be unlikely. All exposure pathways were determined to be incomplete; therefore, no source/receptor interactions were identified.

The 2018 ORA confirmed a source of MC may be present at the CATM Complex West at the firing line, target area(s), and historical impact berm. While a potential source of MC exists, no air, soil, surface water, or groundwater migration routes to off-range areas were identified. The ORA determined MC is not migrating, all exposure pathways are incomplete, and there are no risks to receptors.

DOE Land Use Area Assessment Overview

The DOE Land Use Areas is comprised of six non-contiguous areas encompassing approximately 728.9 acres, which are primarily located throughout the southern and south-central portion of the Operational Range Area (discussed above). There is nothing physical (i.e., perimeter fence) to demark the boundaries of the DOE Land Use Areas. These areas have been used in some capacity for military testing since the 1950s. Each of the DOE Land Use Areas are laid out in a similar fashion in that there are multiple areas within each range that are used for various testing activities. Use of the DOE Land Use Areas includes explosives and explosive compounds to perform testing of various articles.

In 2018 an initial Phase 1 ORA was completed. Due to use of explosives during testing activities, potential MC sources were identified. MC is suspected of being present within soils. However, the ORA determined it is unlikely for MC to be transported via the air, soil, surface water or groundwater pathways. As migration mechanisms were deemed unlikely to transport MC off-range, no potentially complete exposure pathways and no risk to receptors exist.

**For more information on this assessment or the Air Force Operational Range Assessment Program contact the Ranges Subject Matter Expert, Technical Branch, Environmental Quality Directorate, Air Force Civil Engineer Center**  
**For more information on the DoD Operational Range Assessment Program visit <https://denix.osd.mil/orap/home/>**