Operational Range Assessment
Cannon 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

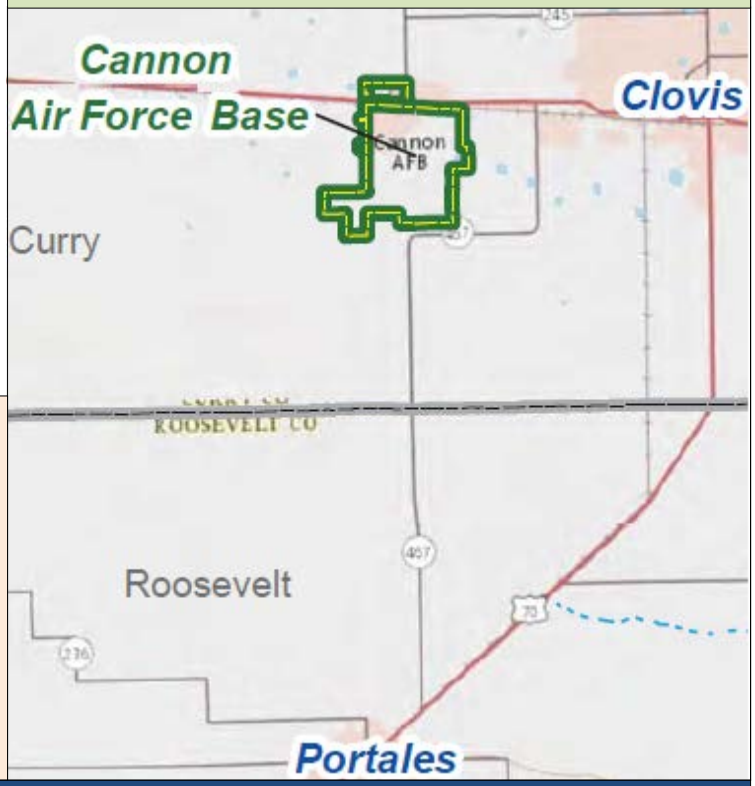
Cannon Air Force Base (AFB), part of the Air Force Special Operations Command, is located in Curry County in east-central New Mexico, approximately 14.5 miles west of the Texas state line and 4 miles west of the city of Clovis, New Mexico. Cannon AFB manages one geographically separate unit, Melrose Air Force Range (Melrose Range). The unit is located primarily in Roosevelt County with a small parcel

ORAP Findings: May 2018 ORA Report

- Migration mechanisms 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.
- No unacceptable risks to human health or the environment were identified.

Next Steps

Cannon AFB (to include Melrose Range) 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

located in Curry County, approximately 25 miles southwest of Cannon AFB and approximately 10 miles southwest of Melrose, New Mexico.

During implementation of ORAP at Cannon AFB, three ranges were verified as eligible for an assessment under the USAF ORAP – the Explosive Ordnance Disposal (EOD) Proficiency Range, the Combat Arms Training and Maintenance (CATM) Facility, and Melrose Range. Cannon AFB also has an active Skeet Range which was confirmed as ineligible due to use solely for recreational purposes. No other range assets were identified.

The following summarizes USAF ORAP efforts for the EOD Range, CATM Facility, and Melrose Range. This is the initial ORA for the EOD Range, second ORA at the CATM Facility, and third ORA for Melrose Range.

EOD Range Assessment Overview

The EOD Proficiency Range, encompassing 18 acres, is in the southeastern portion of the base. The range includes a 500 ft diameter circle outfitted with a 1 to 2 ft high earthen berm surrounded by a 1,000 ft diameter safety zone (range boundary). The EOD Range has been used for practice and proficiency training since the early 1970s. The range is used approximately once a month with a maximum net explosive weight of 5 pounds. In 1996 a concrete wall around the detonation area was constructed. The EOD Range is a permitted Solid Waste Management Unit that is currently in deferred status until the site is no longer operational.

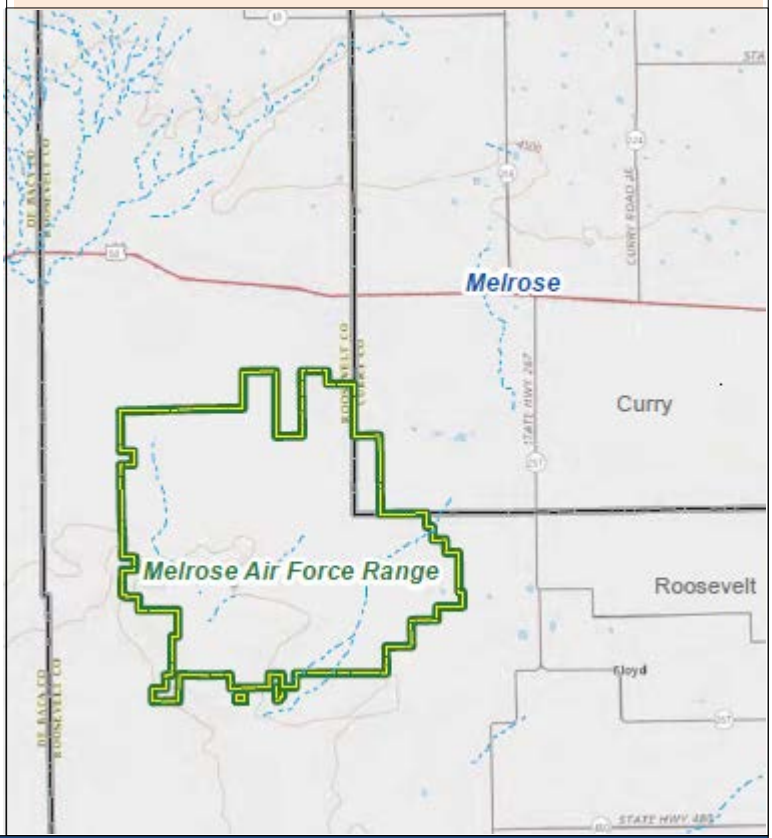
In 2018 an initial Phase 1 ORA was completed. MC may be present in soils within the detonation area. Due to infrastructure present air, soil, and surface water/sediment transport mechanisms are unlikely to transport MC. Any precipitation is expected to evaporate, or to a lesser extent, infiltrate rather than be transported via surface water flow. However, the groundwater pathway was also deemed incomplete due to environmental characteristics and sample data from another program. Available data indicates a lack of a significant MC source and demonstrates transport of MC through the soil column is limited. All exposure pathways were identified as incomplete.

CATM Facility Assessment Overview

The CATM Facility is located in the east-central portion of Cannon AFB. The facility is comprised of a fully contained outdoor small arms range (SAR) and an M203 Practice Grenade Range (GR). For the purposes of the assessment, a CATM Facility boundary was established to encompass the SAR and the GR. The CATM Facility boundary is 22.15 acres.

The perimeter of the SAR is enclosed with a 6 ft tall chain-link fence which encompasses a total of 1.70 acres. The SAR has 15 ft tall concrete walls that parallel earthen side berms, and a 30 ft tall earthen back berm. The SAR is classified as a fully contained outdoor range as such no danger zone exists. Small caliber weapons training has been occurring at the current location since 1961. Modifications to the area included relocation of the impact berm. Subsequent renovations resulted in portions of the range floor and impact berm being sifted to remove munitions debris. Currently, the SAR is used almost daily for qualification training. The primary user of the range is the USAF; however, international units also train on the range.

The GR is adjacent to the SAR and consists of a partially fenced grassy field encompassing 20.45 acres.



CATM Facility Assessment Overview Continued

It is unknown when the M203 Practice Grenade Range became active; however, only practice munitions have ever been used. All expended munitions are policed following each training event. The GR area is also used for shoot, move, and communicate training, which uses small caliber non-lethal rounds.

In 2014 an initial Phase 1 ORA was finalized which included both the GR and the SAR. Based on available data, the air and soil were identified as potentially viable transport media. As such, air and soil exposure pathways were deemed potentially complete for human and terrestrial ecological receptors. The effort recommended further evaluation (a Phase 2) to obtain additional data on the potential transport of MC.

In 2018 the Phase 2 ORA confirmed an MC source is present in soils. Sample results indicate metals above background; however, all detections aside from one lead result were below applicable soil screening values. The on-range elevated detections of metals, including the lead exceedance, were not deemed to be an indication of a release or result in an unacceptable risk to human beings or environmental receptors.

- The ORA recommended the installation address the legacy source within historic earthen berms.

Melrose Range Assessment Overview

Melrose Range, encompasses the entire geographically separate unit which has a total land area of 70,978 acres. The perimeter of the range is fully fenced and warning signs are posted. Melrose Range was established in 1952 to serve as a bombing range for aircraft stationed at Clovis AFB. However, the area comprising the range may have been used during World War II for tactical bombardment training. Melrose currently provides air and ground training capabilities. Items used at the range include live-fire and practice small, medium, and large caliber munitions as well as explosives. Melrose consists of a support complex, a primary impact area with several target areas, various ground training and maneuver

Melrose Range Assessment Overview Continued

Areas that surround the impact area, and several SARs are located throughout the area.

In 2007 an initial Phase 1 was completed. Based on review and evaluation of available data, a suspected MC source exist; however, groundwater monitoring data indicates no detections of MC. The effort concluded a release of MC to off-range receptors (source-receptor interaction) is not apparent.

The 2014 Phase 1 ORA concluded a MC source is present in soils and sediments (dry), and that MC could be transported by wind entrainment and leaching to shallow groundwater. As such the air and groundwater pathways were identified as potentially complete. The effort recommended further evaluation (a Phase 2) to obtain additional data on the potential migration of MC from source locations.

The 2018 Phase 2 ORA confirmed MC from munitions use can be deposited in soils associated with impact area as well as the surrounding maneuver and training areas. The effort indicates MC in soil may be transported off-range via surface water during heavy precipitation events into the ephemeral channels. Soil sampling conducted within ephemeral channels identified no MC at concentrations significantly different than background values. Analytical data coupled with environmental characteristics of the area make it unlikely for MC-sorbed soil to migrate off-range due to stormwater transport. Additionally, MC could potentially leach and infiltrate underlying groundwater; however, based on environmental conditions (low precipitation rates, high evaporation rates, and underlying layers of caliche) vertical migration is inhibited and it is unlikely for MC to leach to groundwater. Furthermore, continual groundwater monitoring has not identified MC within underlying groundwater. Incomplete exposure pathways were identified for air, soil, surface water/sediment, and groundwater. No source-receptor interactions are occurring; therefore, there are no unacceptable risks to human or environmental receptors.

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/